

I want braces: factors motivating patients and their parents to seek orthodontic treatment.

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Objective: To determine patients' and parents'/ guardians' motivation for orthodontic treatment. **Basic Research Design:** A self-completion postal questionnaire survey of new patients referred for orthodontic assessment. **Clinical Setting:** Kent and Canterbury Hospital (January 2003–January 2004). **Participants:** Five hundred patients referred from general dental practice and community dental service within East Kent. **Results:** Response rate was 66%. Fifty percent of the patients were between 11 and 13 years old. In 81% of cases referral was initiated by the dentist. Most of the patients (87%) were concerned with the appearance of their teeth, 38% reported teasing related to their dental appearance. Only 20% of patients thought there was nothing wrong with their teeth. **Conclusions:** The patients' general dental practitioner initiated referral for orthodontic treatment in the majority of the cases. Most patients and parents appeared to be highly motivated and accepting of appliances for orthodontic treatment. Teasing was a commonly reported consequence of malocclusion with negative psychosocial impact.

Key words: Motivation, orthodontic treatment, patients, parents

Introduction

The demand for orthodontic treatment has increased in the United Kingdom over the last two decades (BASCD, 1994). A desire to enhance the dental appearance motivates most patients to seek orthodontic treatment (Shaw *et al*, 1991). The public has a growing awareness of the importance of dental features in overall attractiveness ratings, with teeth being rated second in importance only to facial complexion in one study (Lew, 1993). Enhanced facial appearance has been linked to improved social skills, greater desirability as friends, higher intellectual ability, and enhanced occupational prospects (Shaw *et al*, 1979, Baldwin, 1980, Jacobsen, 1984).

In general, children undergo orthodontic treatment because of a parental decision; adult patients are self-motivated to seek treatment (Baldwin and Barnes, 1966, Proffit and Fields, 1986). Although parental attitude to orthodontic treatment and perceived severity of the malocclusion influences treatment uptake, it has been shown that layperson's awareness of malocclusion and need for orthodontic treatment differs widely from that of the dentist (Shaw *et al*, 1991).

Malocclusion is not a pathological process but a variation from an accepted norm and little agreement has been reached, even among orthodontists, as to when orthodontic treatment becomes necessary (Richmond *et al*, 1984). External appearance is an important factor in receiving positive peer appraisal, and contributes to positive self-image (Jacobsen, 1984). It is well-known that severe malocclusion may make children targets for harassment, teasing and bullying, with obvious psychosocial implications (Shaw *et al*, 1980); orthodontic treatment is

usually indicated in such instances. Orthodontic treatment may have psychosocial benefits (Shaw *et al*, 1980, O'Brien *et al*, 2003). However, Albino *et al* (1984) suggested that parent, peer and self-evaluation of dento-facial attractiveness improved following orthodontic treatment with little effect on social competency and self-esteem. Patients who have undergone orthognathic surgery have reported notably improved self-esteem (Hunt *et al*, 2001), and improved quality of life (Arndt *et al*, 1986).

Uptake of orthodontic treatment is influenced by various factors including gender, access to care, social factors and peer influences (Burden, 1995). While several studies have explored the factors predicting the need for orthodontic treatment, few have investigated motivation for treatment. The aims of this study were to assess patients' and parents'/guardians' motivation for seeking orthodontic treatment.

Subjects and Methods

A survey of new patients referred for orthodontic assessment at Kent and Canterbury Hospital was carried out with support of the Clinical Audit Department between January 2003 and January 2004. Patients referred to the Orthodontic Department as new patients from general dental practice and the community dental services within East Kent were included. Referrals from specialist orthodontic practice and from other hospital orthodontic departments were excluded. The survey was based on a postal self-completed questionnaire enclosed with the appointment letter. Patients and parents were asked to complete separate anonymous questionnaires. The patient questionnaire consisted of 14 close-ended questions

divided into three domains: motivation, understanding and expectation of orthodontic treatment. The parent questionnaire consisted of eight questions again covering the three domains as previously listed. Questions pertaining to motivation for treatment will be discussed in this paper. Both questionnaires were piloted on patients, and parents of children already undergoing treatment, and the East Kent Trusts 'Involving Our Patients Group' to assess for comprehensibility and suitability of questions. Questions addressed issues of motivation, perceived benefits and understanding of treatment. A cover letter and pre-paid envelope were sent with the questionnaires to encourage response. All responses were anonymous and could not be traced to the respondent when they attended for their initial consultation. This was explained in the covering letter and eliminated bias that may have arisen in responses if those surveyed felt their answers would influence whether they received treatment.

Results

Five hundred questionnaires were sent out of which 328 (66%) were returned and correctly completed. Of those surveyed, 19% were aged 8-10 years, 50% 11-13 years, 14% 14-16 years and 17% were aged 17 or over.

The great majority of subjects (87%) were unhappy with the appearance of their teeth. Chief complaints in decreasing order of frequency included crookedness, protrusion of the maxillary incisors, spacing, and an incorrect bite. Thirty eight percent reported teasing related to their dental appearance. Of these only 10% were untroubled by the teasing. Seventy-four percent of children had friends currently wearing fixed appliances. Twenty six percent of parents of prospective patients had previous orthodontic treatment themselves. Parents of prospective patients felt the benefits of orthodontics included improved smile (29%), enhanced oral hygiene (28%), improved bite (29%), and speech (13%).

Most prospective patients were accepting of fixed appliances (70%) while only 12 percent did not want to wear appliances (Fig 1). In most instances (57%) referral for orthodontics was initiated by the dental practitioner, with just 4% being solely self-motivated and only 18% of referrals instigated unilaterally by parents (Fig 2). Almost all parents (99%) regarded straight teeth as important with 58% of these considering a satisfactory dental appearance to be very important (Table 1). The majority of parents/guardians (84%) were unconcerned about their child having teeth extracted as part of their orthodontic treatment (Table 1)

Discussion

Questionnaires are a popular method of gathering information regarding consumer and patient opinion and in the right setting can be of significant value (Williams, 2003). This is particularly applicable in a speciality such as orthodontics where receipt of treatment is often patient-driven.

Patients and dentists differ in their evaluation of dental aesthetics and the perception of malocclusion (Hunt *et al*, 2002). This user survey showed most patients to be aware of their malocclusion without perceiving a need to

the same extent as the dentist. Consequently most patients appeared to know the reason for referral for orthodontic treatment; however, the dentist usually initiated the referral. These findings supported conclusions derived from previous research carried out in the UK (Mandall *et al*, 1999). The dependence on general practitioners to instigate referrals is important as patients in lower socio-economic groups are less likely to visit their dentist initially; consequently, malocclusion may not be identified and addressed (Mandall *et al*, 1999). However, Kenealy *et al* (1989) has shown that patients with a high objective orthodontic need in lower socio-economic groups tend to receive treatment as frequently as those in higher groups. The imbalance in treatment uptake may reflect a class-related effect for less profound orthodontic conditions whereby greater numbers of middle class children with a low objective need seek treatment.

Assessment of parents' perception of their child's malocclusions has shown parents to have an understanding of rationale for treatment and an awareness of the benefits of orthodontic treatment (McComb *et al*, 1996). Baldwin and Barnes (1966), in an analysis of over 600 children in the United States, have shown treatment uptake reflected the motivation of the mother in a high percentage of cases. Therefore, it may be surprising, that in this study only 18% of parents were solely responsible for initiating the referral. However, the inability of parents to recognise occlusal irregularities, including severe crowding has previously been reported (BASCD, 1994).

Despite rarely initiating the referral, it appears that most parents are anxious that their children have orthodontic treatment. A high level of parental approval for orthodontic treatment in England has been highlighted previously (Pratelli *et al*, 1998). One quarter of parents analysed in this study had previous orthodontics themselves. There is some evidence that parents who received orthodontic treatment or desire orthodontic treatment themselves are more likely to approve of orthodontic care for their child (Pratelli *et al*, 1998).

Parents also had realistic aspirations for the impact of orthodontics on their child's appearance; the majority expected improved facial appearance, improved occlusion, and an enhanced ability to maintain optimal oral hygiene. A significant percentage believed that orthodontics would result in improved speech. There is, however, no definitive proof that alteration of tooth position can improve articulation disorders (Johnson and Sandy, 1999).

In the present study the high rate of teasing related to occlusal abnormalities is of particular interest. Research has indicated that teasing might play a major role in uptake of orthodontic treatment (Mandall *et al*, 2005). Lowered self-concept, self-esteem and ability to socialize have been linked to deviation from occlusal norms (Helm, 1985). Teasing bothered 90% of those surveyed with 23% being severely affected, supporting findings by Shaw *et al* (1980) who found that approximately 60% of children teased about the appearance of their teeth disliked it. Shaw *et al* (1980) reported that dental features provided a significant target for teasing and increasing severity of malocclusion resulted in more salient teasing. Increased teasing has also been reported in socially-deprived children with malocclusion, although it is unclear whether teasing is related to the severity of

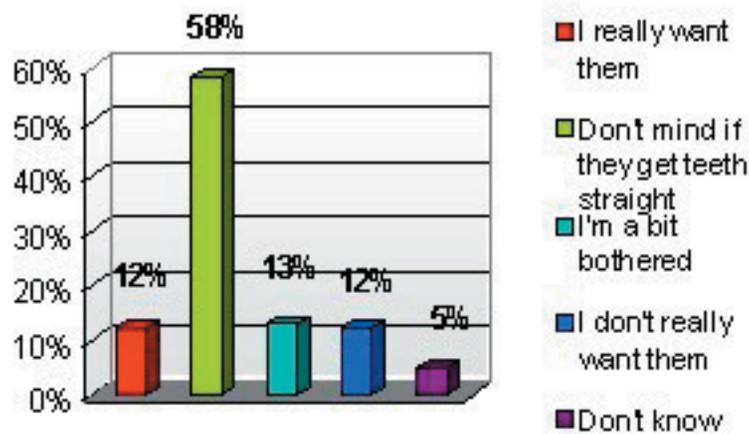


Figure 1. Patients' response to question "What do you think about wearing braces?"

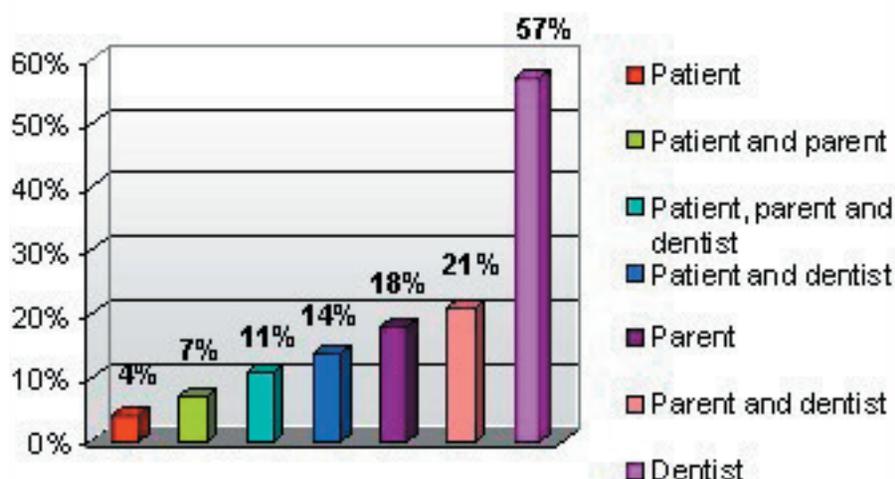


Figure 2. Patients' response to question "Who thinks you need a brace?"

Table 1. Percentage of positive responses received from respondents within certain domains of questions

	Patient	Parent/Guardian
Important to have straight teeth	-	99
Accepting of treatment	70	-
Accepting of extractions	59	84
Remembers being advised about good oral hygiene	26	53
Realistic expectations of treatment	71	58
Realistic expectations of duration of treatment	61	80
Realistic expectations on retention duration	-	30

the malocclusion or to the degree of social deprivation (Mandall *et al.*, 1999).

The results of this study should be taken in context. Although the sample size is large, not all questionnaires have been returned; the degree of motivation of the non-respondents and their attitude to treatment must be questioned. The sample consisted of children referred to a district general hospital by local dentists, which is unlikely to be representative of all prospective orthodontic patients and their parents. Moreover, children and parents of different gender and social class may have different

attitudes, knowledge, expectations, and perceived benefits of orthodontic treatment; this information was not obtained in this study. Indeed it has been reported that girls are more likely to want orthodontic treatment than boys and that children from less affluent backgrounds, although having a similar desire for treatment, may be less likely to pursue treatment (O' Mullane & Robinson, 1977). However, Burden (1995) found that familiarity with orthodontic appliances among peers has a greater influence on the uptake of treatment among adolescents than either social class or gender. In that study 72% of

those surveyed reported knowing at least one patient undergoing fixed appliance treatment. The massive increase in the uptake and availability of orthodontic treatment must contribute to the high levels of acceptance reported in the current study. Increasing familiarity may also explain the realistic expectations regarding treatment duration in the majority of patients and parents. However, the majority of patients believed retainers were routinely required for less than 12 months; with the increasing emphasis on long-term retention, it is important that the retention protocol is explained at the outset.

There appears to be significant regional variation in the receipt of orthodontic treatment in the United Kingdom (O'Brien *et al*, 1989). This regional inequality is explained to a limited degree by specialist practitioner distribution. There is also national variation in the utilisation of orthodontic services between the UK and USA, although over the last two decades this discrepancy may have reduced (Tulloch, 1984). However, this sample is likely to be representative of patients seen within the NHS hospital services within many parts of the UK.

Conclusions

1. Referral for orthodontic treatment was initiated by the patients' general dental practitioner in the majority of the cases.
2. Most patients and parents appeared to be highly motivated and accepting of appliances and extractions for orthodontic treatment.
3. Teasing is a common experience for children with malocclusions and this appears to have psycho-social implications on those affected.
4. Patients and parents/guardians generally had realistic expectations of treatment but parents/guardians were less well informed on the duration of orthodontic retention.

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