

# Survey of Expectations, Motivation and understanding of Orthodontic Treatment and its Outcomes among Patients and Parents in Navi Mumbai Region

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**Abstract:** ***Objectives:** This study aimed to evaluate the patients' and parents' motivation, expectation and understanding of orthodontic treatment; estimate their perceptions and thus influence cooperation in treatment regimens. **Materials and methods:** This study is based on a self - completed questionnaire survey of new patients who were referred for specialist orthodontic consultation at five private dental clinics in Navi Mumbai region, Maharashtra, India. Patients and parents were asked to respond to separate anonymous questionnaires. A total of 500 questionnaires were issued (250 issued to patients and 250 to parents). The patient questionnaire consisted of 24 questions. The parent questionnaire consisted of 13 questions. **Results:** The patient and parent questionnaire response rate was 95%. 91% of patients were aged between 8 - 16 years; 81% were bothered by the appearance of their teeth. Majority of patients and parents good understanding and had positive mindset to get braces. 73% were referred by their general dentist. Participants were inadequately informed on the nature and duration of orthodontic retention. **Conclusions:** Improvement of facial appearance was the primary motivating factor. General dental practitioner referred the patient for orthodontic treatment in majority of the cases. Patients and parents had good understanding and practical expectations from orthodontic treatment. Understanding of duration and use of retainers was inadequate.*

**Keywords:** orthodontic treatment, motivation, expectations, quality of life and orthodontics, questionnaire

## 1. Introduction

Patient compliance in orthodontics is highly important in achieving the desired treatment outcome. Patients must maintain good oral health and monitor their diets, as well as maintain a good retention protocol after active treatment. Parents must help their children follow these guidelines and bring the child to the scheduled appointments. For these reasons, both children and their parents need to be aware of and understand their responsibilities in the treatment process before starting orthodontic treatment.<sup>[1]</sup>

A US study of younger patients and their parents compared motivation for treatment with their subsequent cooperation. This study concluded that more than 90% of the children involved rated aesthetic concerns as the most important reason for seeking treatment. Furthermore, they also noted that the greater the motivation before treatment, better the cooperation during treatment.<sup>[2]</sup>

External appearance is an important factor in receiving positive peer appraisal, and contributes to positive self - image.<sup>[3]</sup> Optimal facial appearance is not only seen as being more attractive but also more socially accepted by peers, teachers, employers, and others.<sup>[4 - 6]</sup>

A desire to enhance the dental appearance motivates most patients to seek orthodontic treatment.<sup>[7]</sup> Several quality - of - life studies have demonstrated that orthodontic treatment could improve patient's quality of life and may influence parent motivation behind seeking treatment for their child.<sup>[8, 9]</sup>

Orthodontic treatment predominantly involves young adults or minors and compared to most other dental treatments is often long. Furthermore, both the patient and parent (or guardian) are integrally involved in decision - making processes. The expectations of both patient and parent (s) must be taken into account, as divergence of understanding the proposed treatment by either party may compromise a satisfactory treatment outcome.<sup>[10]</sup> Expectation is considered a strong belief that something will happen or be the case or a belief that someone will or should achieve something (Oxford English Dictionary, 2000). Thus, it is also important to determine prior to treatment both the patient's and their parents/guardians' motivations for and expectations of treatment.

Although previous studies have investigated the factors that motivate either parents and patients, few have studied the motivation, expectation and understanding of orthodontic treatment of both patients and their parents.

## 2. Materials and Methods

A survey was carried out of new patients who were referred for specialist orthodontic consultation at private dental clinics in Navi Mumbai region, Maharashtra, India.

This survey was based on a self - completed questionnaire which was issued at the orthodontic consultation appointment. Patients and parents were asked to respond to separate anonymous questionnaires. A total of 500 questionnaires were issued (250 issued to patients and 250 to parents). The patient questionnaire consisted of 24

questions. The parent questionnaire consisted of 13 questions. These questions were divided into three domains: expectations, motivation and understanding regarding orthodontic treatment.

Both questionnaires are adapted from originally validated questionnaires previously used in a hospital setting. These questionnaires from the original study were piloted and used in secondary setting to assess for comprehensibility and suitability of questions at the East Kent Hospitals University Foundation Trust.<sup>[11]</sup> These questionnaires were adapted and amended by expanding on existing sections in light of the primary care setting.<sup>[12]</sup>

The receptionist issued the questionnaires to the candidates and the nature of the study was explained. Informed consent was taken. All answers were kept anonymous. This is done to eliminate bias that may arise if candidates feel that their answers might influence any aspects of their further treatment as the responses cannot be traced back to the candidate. The data collected was analysed considering each domain separately.

### 3. Results

The patient questionnaire response rate was 95% (n = 238). Out of these patients, 91% were aged between 8 - 16 years and only 9% were above 17 years. 34% patients were self-motivated to get braces, 33% were motivated by parents and 29% were advised by their dentist to consult the orthodontist. 72% of these patients had friends who have or had braces and 57% had family members who had braces. 81% patients were bothered by the appearance of their teeth but only 14% experienced teasing due to malocclusion. 24% really wanted braces and 41% didn't mind to get braces. Patient concerns in decreasing order of frequency as depicted in [Figure 1] were as follows: 41% thought that their teeth were crooked, 23% thought that the top ones stuck out, 20% thought that their teeth had gaps. Patient expectations from orthodontic treatment in decreasing order of frequency were as follows: to make teeth straighter, make bite better, make cleaning of teeth easier, stop getting holes in teeth and stop people saying hurtful things about their teeth. 79% understood the importance of tooth brushing but only 43% people were demonstrated tooth brushing by their dentist. More than 80% patients knew that they will need to avoid certain foods and drinks and thus need dietary adjustments after getting braces. 49% preferred removable braces, 32% preferred fixed braces and of these 35% preferred clear braces. 46% felt that colours on braces are important whereas only 20% felt that the type of braces would affect their decision to have braces. 56% thought braces treatment duration ranges between 1 - 2 years; only 49% knew what a retainer was.

The response rate for the parent questionnaire was 95% (n = 238). 27% of parents had undergone orthodontic treatment themselves and had a satisfactory experience; overall it had a positive effect on their lives. 73% were apprised by their dentist that child needs braces whereas only 15% themselves initiated the visit to the orthodontist. Majority of parents understood the importance of orthodontic treatment. 77% expected orthodontic treatment to improve self - confidence and self - esteem of child, 72% thought it would make it

easier for them to keep their teeth clean, 69% thought it would make their bite better, 27% expect it to make their speech better. Only 53% children were advised previously to clean teeth by dentist/hygienist. 67% thought that orthodontic treatment duration ranges between 1 - 2 years; 38% knew what a retainer was and of these 43% thought that a retainer needs to be worn for 1 - 2 years.

### 4. Discussion

Medical research questionnaires or surveys are vital tools used to gather information on individual perspectives in a large cohort.<sup>[13]</sup> In orthodontics, this is particularly applicable as treatment is often patient - driven. Patients and dentists differ in their evaluation of dental aesthetics and the perception of malocclusion.<sup>[14]</sup>

In this study it was seen that referral for orthodontic treatment was initiated by the patient's general dental practitioner in the majority of cases as depicted in [Figure 2]. Thus general dental practitioners play an important role in orthodontic case referral. Very few parents initiated the referral themselves but once referred, they were anxious that their children receive orthodontic treatment.<sup>[11]</sup> Parents who themselves had orthodontic treatment are keen that their children benefit from orthodontics. From this finding, it may be inferred that their motivation behind seeking treatment for their child reflects their own beneficial experience of orthodontics.<sup>[12]</sup>

Majority of patients (81%) were bothered by the appearance of their teeth. A desire to enhance the dental appearance motivates most patients to seek orthodontic treatment.<sup>[15]</sup> As depicted in [Figure 3], majority of parents (77%) expected orthodontic treatment to improve self - confidence and self - esteem of child, others expected it to enhance the maintenance of oral hygiene, improve occlusion of teeth and enhance smile. Enhanced facial appearance has been linked to improved social skills, greater desirability as friends, higher intellectual ability, and enhanced occupational prospects.<sup>[16 - 18]</sup> In this study we saw that many parents (85%) are ok with children missing school if needed for orthodontic treatment; also majority of patients (65%) had positive mindset to undergo orthodontic treatment and appeared to be highly motivated and accepting of appliances.<sup>[11]</sup> Similarly Bergstrom et al. (1998) inferred from his study that majority of individuals considered orthodontic treatment important, even when irregularities of the teeth were minor.<sup>[19]</sup> Most of the patients had friends and family members who had braces at some point of life thus making orthodontic treatment more acceptable. Thus parental and patient expectations and understanding of the benefits of orthodontics were realistic and achievable; similar levels of expectation were demonstrated in the both the questionnaire groups showing a broad correlation in understanding of the proposed benefits of treatment.<sup>[12]</sup>

Very few patients (14%) experienced teasing due to malocclusion. Those patients who reported teasing about the appearance of their teeth were significantly fewer than in previous hospital - based studies.<sup>[11, 20]</sup> The significantly lower rate of patients who reported teasing may reflect the setting of the study - specialist practice, where a broader

range of malocclusion may present in comparison to the more complex level of malocclusion that traditionally are referred to a hospital department.<sup>[12]</sup>

The presence of orthodontic appliances complicates oral hygiene and the use of specially designed toothbrushes alone may not offer a solution for easy and effective tooth brushing.<sup>[21]</sup> Majority (98%) of patients understood the importance of tooth brushing and knew that more meticulous brushing is required than before but only few people were demonstrated tooth brushing by their dentist. Thus patients should be educated about proper tooth brushing techniques by the dentist as this will help in better patient compliance.

Most of the patients knew that they will need to avoid certain foods and drinks and thus need dietary adjustments after getting braces. Because the nutritional requirements of adolescents (the age of a common orthodontic patient) are already strained by growth and development, the emotional stress of puberty, maintaining a well - balanced diet is critical.<sup>[22]</sup>

Many patients (49%) preferred removable braces; among those who wanted fixed braces (32%), majority preferred clear ones. This implicates that most of them are affected by the appearance of orthodontic appliances. It has been shown that public perception, as well as self - perception of attractiveness, confidence, education, intelligence, social skills, popularity, employment, and success may be affected by the appearance of orthodontic appliances.<sup>[23 - 25]</sup> But only 20% patients felt that the type of braces would affect their decision to have braces which implicates the understanding of importance of orthodontic treatment.

Majority of parents (67%) and patients (56%) both had good understanding of the orthodontic treatment duration but there is inadequate understanding of retainers in terms of function, importance and duration. Thus they should be educated about retainers before starting the treatment as this will help in better patient compliance.

The gap between expectations and reality possibly can influence cooperation in treatment regimens.<sup>[26]</sup> Furthermore, unfulfilled expectations could contribute to dissatisfaction, which is more likely to lead to poor compliance as well.<sup>[27, 28]</sup> Seen from a positive perspective, expectation is also regarded as a catalyst for improving the success of treatment.<sup>[29]</sup> When treating these people we need to adapt their expectations, change their negative experiences into positive experiences and promote health.<sup>[30]</sup> It requires accurate estimation of the patients' perceptions toward treatment, therefore it is necessary to investigate the motivation of patients for seeking orthodontic treatment and to analyze the barriers preventing them from starting orthodontic treatment.<sup>[31]</sup>

## 5. Conclusions

- 1) Improvement of facial esthetics was the main motivating factor for undergoing orthodontic treatment.
- 2) Majority of cases were referred for orthodontic consultation by the general dentist.

- 3) Majority of patients and parents displayed high level of acceptance of orthodontic appliances
- 4) The expectations of patients and parents from orthodontic treatment were rational.
- 5) Understanding of duration and use of retainers was inadequate.

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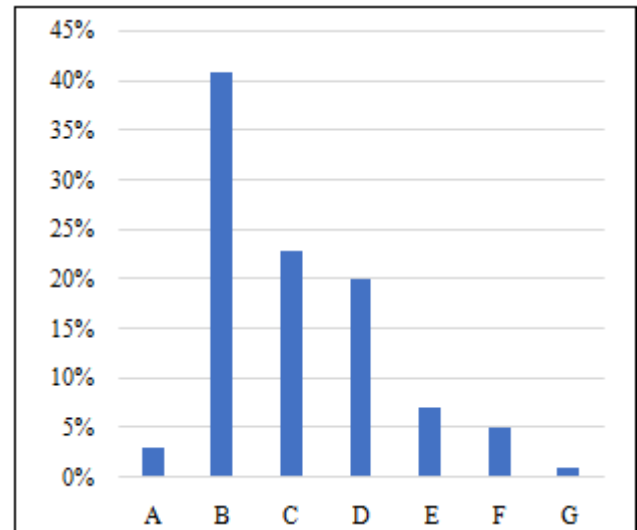
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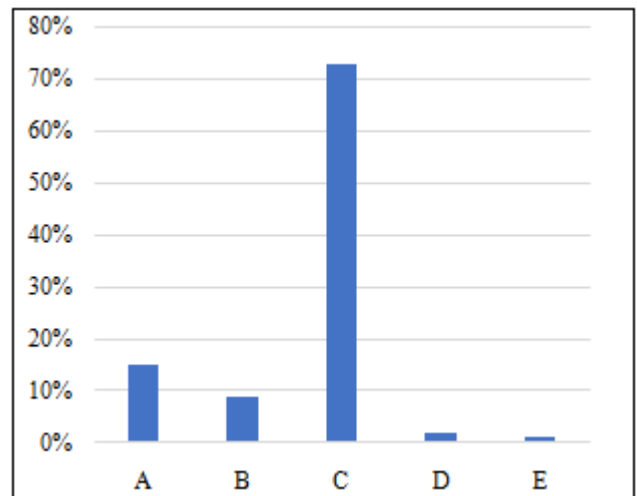
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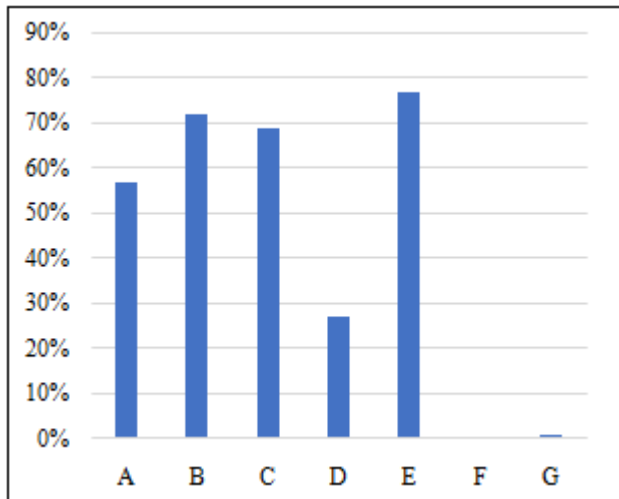
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**Figure 1:** What do you think is wrong with your teeth? A. There is nothing wrong with them B. They are crooked C. Top ones stick out D. Gaps E. Bite not right F. Don’t like colour G. Don’t know



**Figure 2:** Who first suggested your child needs a brace? A. I did B. My child C. My dentist D. Someone else E. I don't know



**Figure 3:** What benefits do you think having straight teeth will give your child? (Tick more than one box) A. Improve their smile B. Make it easier for them to keep their teeth clean C. Make their bite better D. Make their speech better E. Improve their self - confidence/self - esteem F. None G. Don't know