



Original Research Article

Assessment of orthodontic treatment satisfaction in patients of Himachal Pradesh, India: An observational study

Sonia Chauhan^{1*} 

¹Dept. of Orthodontics & Dentofacial Orthopedics, Deendyal Upadhyay Zonal Hospital, Shimla, Himachal Pradesh, India

Abstract

Introduction: Patient satisfaction is an important determinant for assessing the quality of health care services provided by a practitioner in a government or private setup. A satisfied patient ensures patient retention especially in private practice. Malocclusion is a condition which has a negative impact on the social and emotional status of an individual. The desire for improved facial appearance and dental function has led to recent surge in demand for orthodontic treatment.

Aims & Objective: The aim of this study was to examine the satisfaction of patients who had undergone orthodontic treatment at different government hospitals and private dental clinics in Himachal Pradesh, India.

Materials and Methods: A total of 127 patients who had undergone orthodontic treatment at various government hospitals and private clinics in Himachal Pradesh participated in the study. A validated questionnaire was created using Google form and was circulated through WhatsApp group to the concerned participants. The response was recorded in a yes/no format.

Statistical analysis: Data analysis was carried out using the Statistical Package for Social Science (SPSS) computer software version 11. Descriptive statistics were obtained i.e. means, standard deviation and frequency distribution were calculated.

Results: Satisfaction score was 98.4% as far as the maintenance of hygiene by orthodontist during procedure was concerned. 97.6% of the patient could ask the orthodontists their doubt regarding malocclusion. 96.9% of patients were satisfied with their smile and facial appearance. 96.1% of the respondents admitted that orthodontists were gentle in behaviour and their approach towards patient's problem was appreciable. There was an increase in level of self-confidence of the patients. 95.3% seemed satisfied with the amount of time allotted during each procedure. However 40.9 % of the patient admitted that final result could have been better according to their expectations. Overall 94.5% of the patients were satisfied with their smile and facial appearance and 93.7% reported an increase in self-confidence post orthodontic treatment.

Conclusion: Overall the patients treated in the government hospitals and private dental clinics of Himachal Pradesh were satisfied with orthodontic care. A large portion of the sample affirmed that good orthodontist –patient relations were the prime contributing factor for treatment satisfaction. Majority of the patients were satisfied as there was an increase in their self-confidence and social acceptance.

Keywords: Orthodontics, Treatment satisfaction

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1. Introduction

Patient satisfaction is an important determinant for assessing the quality of health care services provided by a practitioner in a government or private setup. A satisfied patient ensures patient retention especially in private practice.

Malocclusion is a condition which has a negative impact on the social and emotional status of an individual. The desire for improved facial appearance and dental function has led to recent surge in demand for orthodontic treatment. High income, education and increased awareness through social

media and internet about various options available for correction of mal-aligned teeth has led to an increased demand for orthodontic treatment.¹

Orthodontic treatment has a great impact on the appearance, speech, self-esteem and social life of an individual.^{2,3,4} Reasons for seeking orthodontic treatment may vary for every individual thereby altering the assessment of treatment outcome. An assessment of orthodontic treatment outcome by a professional may not be equally relatable to patient's satisfaction.^{5,6}

*Corresponding author: Sonia Chauhan
Email: chauhan.sonia2508@gmail.com

There are many factors which affect patient's satisfaction like cost of treatment, accessibility of care, quality of services, competence of provider, age, sex, duration of treatment, improvement in dentofacial appearance.^{7,8,9,10} Patient satisfaction has had limited coverage in orthodontic literature.^{11,12,13,14,15,16} The present study aims to explore the satisfaction among treated orthodontic patients in government hospitals and private dental clinics of Himachal Pradesh.

2. Materials and Methods

A total of 127 patients who had undergone orthodontic treatment by fixed mechanotherapy from various government hospitals and private clinics in Himachal Pradesh participated in the study. A validated questionnaire,¹⁷ whose Cronbach's alpha reliability scale (0.92) was very good was used and a modified questionnaire (**Table 1**) consisting of 13 questions was created using Google form and was circulated through whatsapp group to the concerned participants. Consent for participation was obtained during online survey by the patients and the response was recorded in a yes/no format. No pilot survey was conducted prior to conducting the survey but the participants reported no difficulty in filling out the survey form.

2.1. Inclusion criteria

1. Patient who had undergone and completed orthodontic treatment.

2.2. Exclusion criteria

1. Cleft lip and palate patient.
2. Patient who were currently undergoing orthodontic treatment.

Table 1: Questionnaire for assessment of orthodontic treatment satisfaction in treated patients

S No.	Question	Yes	No
1)	Did you like the orthodontist approach towards your problem?		
2)	Was orthodontic treatment explained to you in an elaborate manner?		
3)	Was the orthodontist gentle in their behaviour?		
4)	Was the cost of treatment explained to you?		
5)	Could you ask the orthodontist your doubts related to your problem (malocclusion)?		
6)	Did the orthodontist spend sufficient time for procedure during each appointment?		
7)	Were the standards of hygiene maintained by the orthodontists good?		

8)	Did you ever doubt your orthodontist regarding the treatment procedure?		
9)	Did you ever think of discontinuing the treatment before it was completed?		
10)	Do you think that the present treatment result could have been better than the final result		
11)	Are you satisfied with your smile and facial appearance?		
12)	Do you think that social acceptance has increased after the treatment?		
13)	Is there an increase in the level of your self-confidence?		

2.3. Statistical analysis

Data analysis was carried out using the Statistical Package for Social Science (SPSS) computer software version 11. Descriptive statistics were obtained i.e. means, standard deviation and frequency distribution were calculated.

3. Result

A total of 127 treated orthodontic patients participated in the study. 58% females and 42% males participated in the study. A large number of participants were in the age group of 10-20 years. 82.7% of the patient underwent orthodontic treatment at government hospital while 17.3% were treated at private clinics (**Table 2**)

Table 2: Distribution of participants according to age, sex and hospital settings

Age group	No. and percentage of participants
0-9	1
10-20	52
20-30	48
30-40	21
40-50	4
50-60	1
Males	42%
Females	58%
Govt. Hospital	82.7%
Private Hospital	17.3%

Of all the factors highest satisfaction among the patients (98.4%) was seen related to the standards of hygiene maintained by the orthodontists during each procedure. 97.6% of the patient admitted that they could ask orthodontists questions related to malocclusion. (**Figure 1**) 96.9% of patients were satisfied with their smile and facial appearance. (**Figure 2**)

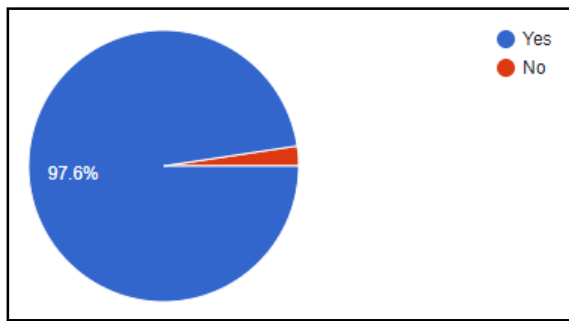


Figure 1: Patients could ask questions related to orthodontic treatment

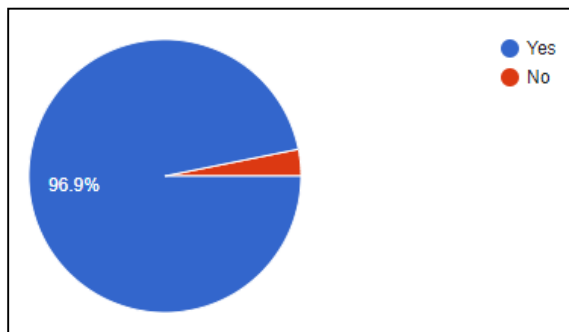


Figure 2: Patient satisfied with their smile and facial appearance

96.1% of the respondents admitted that orthodontists were gentle in behaviour, their approach towards patient's problem was appreciable and there was an increase in level of self-confidence. (Figure 3) 95.3% of the patient reported that orthodontist spend sufficient time for procedure during each appointment. (Figure 4) 94.5% of the patient claimed that orthodontic treatment was explained to them in an elaborate manner

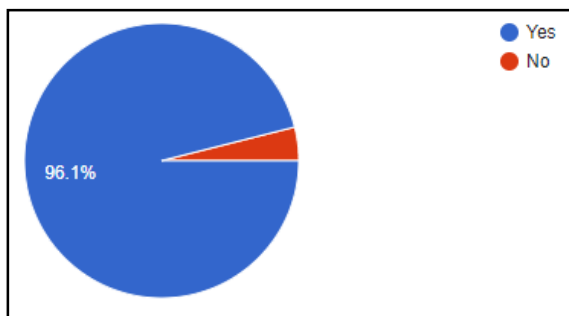


Figure 3: Orthodontist gentle in their behaviour, approach towards patient's problem and increase in level of self confidence

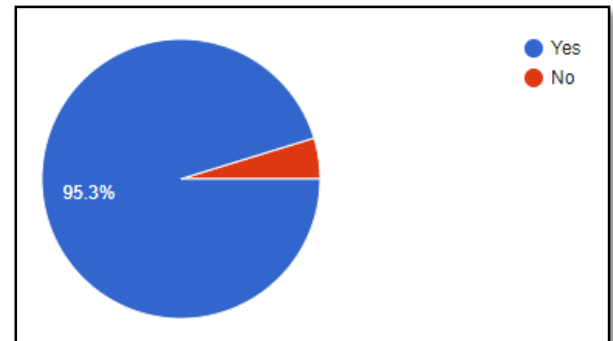


Figure 4: Orthodontist spend sufficient time for procedure

93.7% of the patients were satisfied that treatment cost was explained to them. 82.7 % of the participants admitted that there was an increase in social acceptance after orthodontic treatment. (Figure 5)

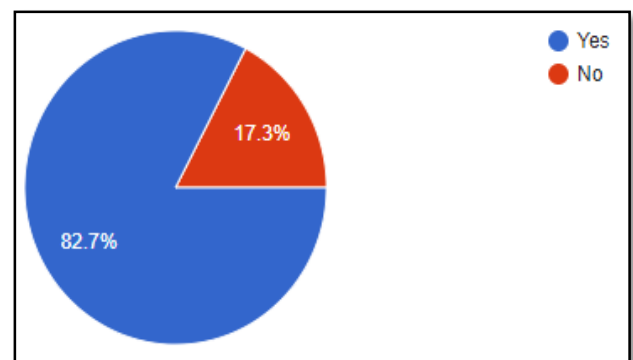


Figure 5: Increase in social acceptance

However 42.5 % of the patient expressed their concern and reported that the treatment results could have been better than the final outcome. (Figure 6) 24.4% of the patient did even think of discontinuing orthodontic treatment before it was over. (Figure 7) 22 % of the patients did even doubt their orthodontists regarding their treatment planning. (Figure 8)

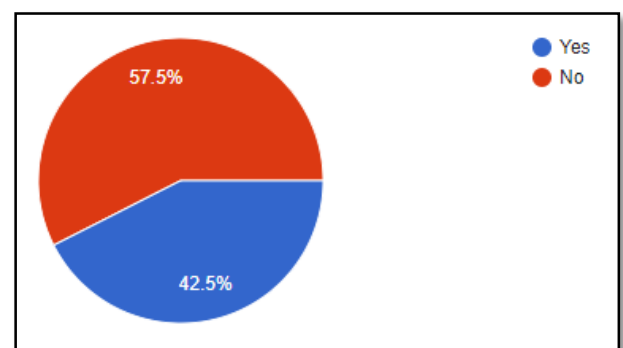


Figure 6: Treatment result could be better

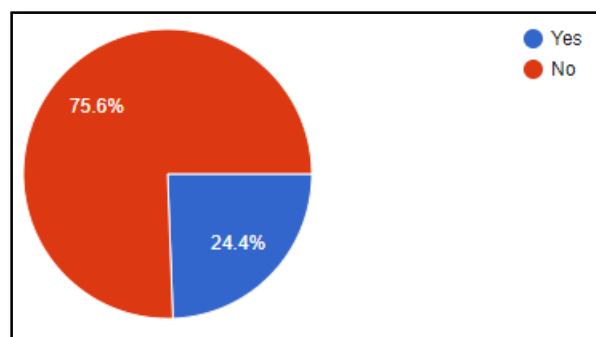


Figure 7: Discontinuing the treatment before completion

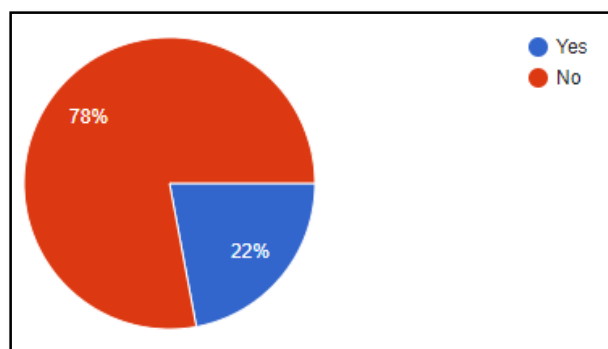


Figure 8: Doubt the orthodontist regarding treatment

4. Discussion

Patient satisfaction is the fundamental method to evaluate the quality of health care and depends upon a number of factors.¹⁸ Patient reported factors have now become the central dogma of evidence based practise.^{7,17}

The standard of hygiene maintained by the orthodontist satisfied 98.4 % of patient in the current study which is similar to a study conducted by Aljughaiman A et al¹⁹ in Saudi Arabia and Bennett ME et al¹⁷ in North Carolina and Columbus. It was more when compared to a study conducted by Tiwari et al¹⁹ in population of Orissa which was only 65%.

97.6% of the participants could ask the orthodontists their doubts regarding their malocclusion that 96.1 % orthodontist was gentle in behaviour which was similar to two studies.^{17,19} But it was more as compared to a study by Tiwari A et al¹⁹ (75%) and Lyros I et al²¹ (81%). Other studies which concluded that patient satisfaction depends upon doctor- patient relationship and good communication were those reported by Keles F et al,²² Anderson LE et al²³ Bos A et al,⁸ Feldmann I et al,¹³ Bergstrom K et al,¹⁵ Fernandes LM et al²⁴ and Mascarenhas AK et al,²⁵ Buyukbayraktar ZC et al,²⁶ Shahrain IA et al,²⁷ Clardia B et al.²⁸ All these studies point that a positive and friendly relationship between the patient and the orthodontist help in building a good rapport between them finally leading to a satisfied patient leaving the clinic.

96.9% of the participants were satisfied with their smile and facial appearance which was similar to that reported by

Feldmann I et al¹³ (96%), Tiwari A et al¹⁹ (92%), Alomiri MK et al⁷ (90%) but was more than that reported by Lyros I et al [21] (74%), Larsson et al²⁹ (74%), Anderson LE et al²⁷ (74.6%) and Olga F et al³⁰ (77.5%). Other studies which supports the idea that improvement in appearance post orthodontic treatment leads to more satisfied patients are those reported by Uslu O et al,³¹ Oliveira G et al,³² Birkeland et al,⁹ Espeland LV et al.³³

95.3% of the patients admitted that the orthodontists spent sufficient time for procedure at each appointment which was similar than that reported by Bennett ME et al¹¹ but was less as compared to Feldmann I et al [13] (99%). It was more as compared to a study by Tiwari et al¹⁹ (44%) and Aljughaiman A et al.¹⁹

According to the present study 94.5%of the orthodontist explained the orthodontic treatment in an elaborate manner which was similar to that reported by Bennett et al.¹⁷ but was more than that reported by Lyros I et al²¹ (78%) and Tiwari A et al¹⁹ (68%) but was less when compared to a study by Feldmann I et al¹³ (97%).

93.7% of the participants reported that treatment cost was explained to them which was similar to a study by Bennett ME et al.¹⁷ The reported percentage was more than a study by Alnasyan NS et al.³⁴ (75%) 41% of the participants were of the opinion that treatment results could have been better which were similar to a study by Larsson and Bergstrom²⁹ (29%). Alomiri MK et al⁷ reported that 62% of the patients were relatively satisfied. Olga F et al³⁰ also stated that 22% of the patients were relatively satisfied by orthodontic treatment. They must have expected better results than existing finished occlusal relationship and facial/smile appearance.

However it was surprising that despite high satisfaction rate (94.5%) with respect to smile and facial appearance, 24.4% of the patients thought of discontinuing the treatment before it was completed. This was more than a study reporting 17.6% subjects who discontinued the treatment due to long waiting period, 10.45% were not given appointment due to work overload and 18.3% had to leave city due to personal reasons.

Reasons for discontinuation of treatment on the part of the patient in the present study could be due to inability to keep up with appointments or due to excessive long treatment time which led to treatment fatigue with respect to cost and time. Discontinuation of treatment might be due to doubt related to orthodontist competence and case handling, unrealistic expectation on the part of patient regarding treatment outcomes. Factors for discontinuation of orthodontic treatment on the part of the orthodontists could be improper case selection, faulty diagnosis and treatment planning

According to Haynes³⁵ the patient age was directly proportional to discontinuation rate. The older the patient, the higher the rate of discontinuation. Myrberg and Thilander³⁶ found discontinuation rate to be equal between girl and boys. Fazio and Boffa³⁷ found out that those patients who had paid for their treatment were regular in keeping appointment. According to Kottraba³⁸ patient discontinued the treatment if the treatment time exceeded 2 years.

According to the present study 52% of patients older than 20 years were not satisfied with the final treatment result which was similar to a study reported by Wezel et al.³⁹ Some studies^{40,41} reported opposite results stating that older patients were more contented with orthodontic treatment. According to some studies,^{7,13,42} age was not associated with the treatment satisfaction.

According to the present study equal percent of males and females were satisfied with the orthodontic treatment (60%) which was different from studies^{8,43} where females were more dissatisfied with treatment outcomes

5. Conclusion

94.5% of patients treated in the government hospitals and private dental clinics of Himachal Pradesh were satisfied with smile and facial appearance. A large portion of the sample affirmed that good orthodontist –patient relations were the prime contributing factor for treatment satisfaction. Majority of the patients were satisfied as there was an increase in their self-confidence and social acceptance. However 41% of the patients were of the opinion that their treatment results could have been better.

6. Source of Funding

None.

7. Conflict of Interest

None.

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