

Patient's Psychological Response to Twin-block Therapy

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ABSTRACT

Aims and objectives: To determine the psychological response of the patient to twin-block therapy. To design and formulate a questionnaire to patient on twin-block therapy in the orthodontic clinic and the result will be evaluated.

Materials and methods: A total of 14 patients within the age group of 12 to 14 years on twin-block therapy for treatment of skeletal class II malocclusion with a mandibular deficiency in the Department of Orthodontics were selected. A questionnaire was formulated at the end of twin-block therapy. The completed questionnaire was analyzed and the patient responses to the different aspects of twin-block treatment were recorded.

Results: Of the 14 patients, 12 patients liked wearing the appliance. All the patients wore it comfortably full time. About 3 out of 14 had pain, 1 had ulcer, 9 had difficulty in eating, 6 patients had altered taste, and 3 had altered speech. A total of 13 patients observed improvement in lower jaw position. A total of 13 patients considered recommending the appliance to families and friends.

Conclusion: The response of the patient to twin-block appliance was positive. The twin block appears to be well accepted by the patients despite their age.

Clinical significance: Patient compliance directly affects the treatment outcome of the appliance.

Keywords: Patient response, Questionnaire, Twinblock.

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INTRODUCTION

Malocclusion may be treated by different techniques depending on the type of malocclusion, the age of the patient, the type of treatment required, the operator's familiarity of the appliance, etc. The patient response to each of the different treatment options available is varied. It was found that the self-perceived dental irregularity and negative impact of dental esthetics might affect oral health, whereas previous extensive orthodontic treatment may have favorable effects by improving dental health

compliance.¹ It was also suggested that the doctor-patient relationship remains the most important factor contributing to patient satisfaction.² Patients treated nonextraction showed more dissatisfaction with their dentition.³ Evaluation of the oral health-related quality of life was excellent during fixed orthodontic treatment, showing a compromised quality of life during treatment. The score improved after the completion of treatment.^{4,5} In adult patients, the desire to straighten the teeth and improve the smile were the key motivating factors for seeking orthodontic treatment apart from other factors, such as patients' desire to improve the bite, improve facial appearance, and close (dental) spacing.⁶

Functional appliance is an integral part of orthodontic treatment, especially in a growing child. Of these, the twin block is the most frequently indicated because of ease of fabrication and patient comfort after insertion. Twin-block appliances are simple bite blocks that are designed for full-time wear to skeletal class II div I malocclusion in a growing child.⁷ They achieve rapid functional correction of malocclusion by the transmission of favorable occlusal forces to occlusal inclined planes that cover the posterior teeth.⁷ The forces of occlusion are used as the functional mechanism to correct the malocclusion. This type of treatment is most effective during a growth spurt. Therefore, it is important to see an orthodontist early to assess the timing of this treatment to avoid missing out on the growth spurt. Every person is an individual and everybody's growth spurt is different. The appliance holds the lower jaw forward over a specific period of time until the teeth, jaws, and joints have "adapted" and the desired jaw position has been obtained. Twin-block treatment offers noticeable results, and therefore, a much better profile. The appliance aligns the jaws but not the teeth; therefore, it is considered to be a "first phase" treatment before the full orthodontic treatment or braces to align the teeth correctly. The dental, skeletal, and psychological effects of the twin block have been previously evaluated.⁸⁻¹⁰ The aim of this study was to evaluate the patient's psychological response to twin-block therapy in patients reporting to our department.

MATERIALS AND METHODS

Patients on twin-block therapy for treatment of skeletal class II malocclusion with a mandibular deficiency in the Department of Orthodontics were selected. A total of

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Table 1: Patient response to twin-block therapy

Question	n	Patient response	
		Yes	No
Recommend appliance to family and friends	14	13	1
Approval of the patient toward twin block	14	12	2
Appliance wear	14	14	0
Full time	14	14	0
<i>Problems encountered during appliance wear</i>			
Pain	14	3	11
Ulcer	14	1	13
Difficulty in eating	14	9	5
Taste	14	6	8
Speech	14	3	11
Were treatment changes observed after 6 months?	14	13	1
Relapse after treatment	14	1	13
Recommend appliance to friends and relatives	14	13	1

14 patients were enlisted. The age of the patients ranged from 12 to 14 years. These patients were on treatment for 6 months. At the end of twin-block therapy, they were requested to complete a questionnaire (Appendix) to assess their response to treatment. The questionnaire was formulated in English as well as in the local language for the patient to understand it. The child’s parent/guardian was present during the completion of the questionnaire. The completed questionnaire was analyzed and the patient responses to the different aspects of twin-block treatment were recorded (Table 1, Graphs 1 and 2).

RESULTS

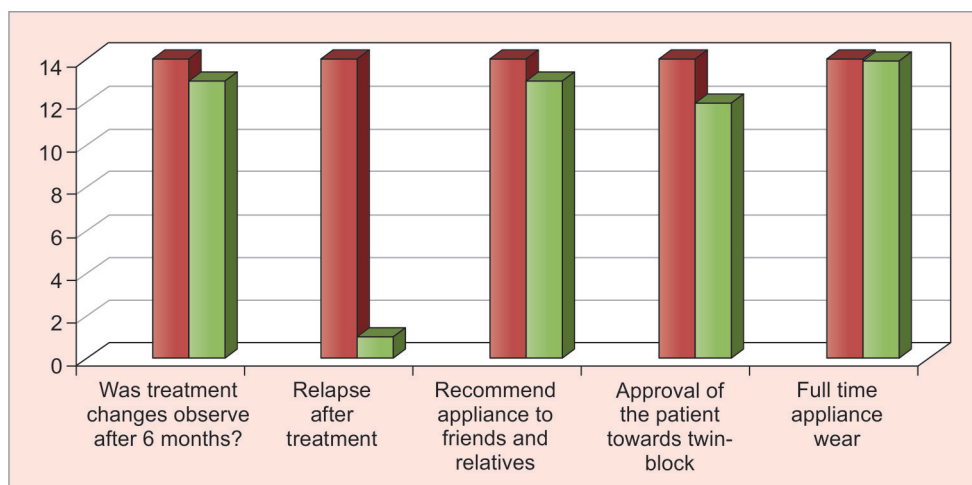
Of the 14 patients, 12 patients liked wearing the appliance and 2 did not like the appliance (Table 1 and Graph 1). All the patients wore it comfortably full time. There were several problems encountered during the

appliance wear. About 3 out of 14 patients had pain, 1 had ulcer, 9 had difficulty in eating, 6 had altered taste, and 3 had altered speech (Table 1 and Graph 2). A total of 13 patients considered treatment to be successful with improvement in lower jaw position (Table 1 and Graph 1). However, one patient complained that there was no change. Relapse after the treatment was noted only by one patient (Table 1 and Graph 1). A total of 13 patients were satisfied with the appliance and considered suggesting it to families and friends (Table 1 and Graph 1).

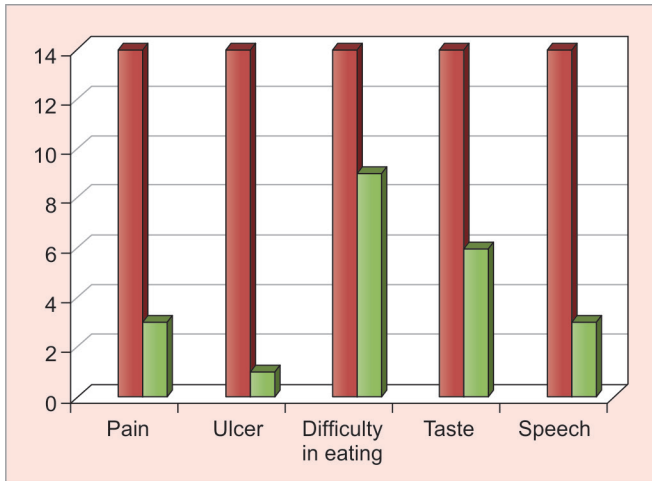
DISCUSSION

Patient response is an important aspect of orthodontic treatment. Gaining the confidence of a young child is of utmost importance, especially with a twin block with acrylic blocks placed in the maxillary and mandibular arch. This study attempted to identify the problems associated with twin-block therapy and evaluate the patients’ response. The results obtained showed a satisfactory response to twin-block therapy, with 85.71% of the patients showing a positive response to treatment, while 14.29% did not like the appliance. All patients were comfortable wearing the appliance throughout the day even to school. However, few patients removed the appliance during meals due to difficulty in eating. About 92.86% of the patients observed an improvement in their facial appearance after 6 months, but 7.14% of patients noted a relapse with a backward placement of the mandible if twin-block therapy was discontinued. Patient satisfaction was 92.86% and they were willing to recommend the treatment to their family and friends.

Despite the good patient response, several problems were encountered during appliance wear, such as pain, ulceration, difficulty in eating, altered taste, and altered speech. About 21.43% of patients encountered pain during treatment, especially in the molar region. Some



Graph 1: Patient response among the 14 patients selected for twin-block therapy



Graph 2: The different problems encountered during twin-block therapy in the selected sample

of them complained of the appliance being too tight on insertion. About 7.14% developed ulcers during appliance wear, most probably due to an ill-fitting appliance. About 64.29% of the patients had difficulty during eating. Altered taste was noted by 42.86% of the patients possibly due to the acrylic cover in the palatal block. Altered speech was observed by 21.43% after initial insertion of the appliance. The speech gradually improved with continued appliance wear.

Thus, twin-block therapy seems to be an appliance of choice for correction of skeletal class II malocclusion with a mandibular deficiency. However, care should be taken to fabricate the appliance precisely to reduce the problems encountered by the patients.

CONCLUSION

The response of the patient to twin-block appliance was positive. The twin block appears to be well accepted by the patients despite their age.

REFERENCES

1. Klages U, Rost F, Wehrbein H, Zentner A. Perception of occlusion, psychological impact of dental esthetics, history of orthodontic treatment and their relation to oral health in naval recruits. *Angle Orthod* 2007 Jul;77(4):675-680.
2. Keles F, Bos A. Satisfaction with orthodontic treatment. *Angle Orthod* 2013 May;83(3):507-511.
3. Al-Omiri MK, Abu Alhaija ES. Factors affecting patient satisfaction after orthodontic treatment. *Angle Orthod* 2006 May;76(3):422-431.
4. Zhang M, McGrath C, Hägg U. Changes in oral health-related quality of life during fixed orthodontic appliance therapy. *Am J Orthod Dentofacial Orthop* 2008 Jan;133(1):25-29.
5. Chen M, Wang DW, Wu LP. Fixed orthodontic appliance therapy and its impact on oral health-related quality of life in Chinese patients. *Angle Orthod* 2010 Jan;80(1):49-53.
6. Pabari S, Moles DR, Cunningham SJ. Assessment of motivation and psychological characteristics of adult orthodontic patients. *Am J Orthod Dentofacial Orthop* 2011 Dec;140(6):e263-e272..
7. Mahony DR, Witzig J. A modification of the twin block technique for patients with a deep bite. *Funct Orthod* 1999 Apr-Jun;16(2):4-8, 10.
8. O'Brien K, Wright J, Conboy F, Sanjie Y, Mandall N, Chadwick S, Connolly I, Cook P, Birnie D, Hammond M, et al. Effectiveness of treatment for class II malocclusion with the herbst or twin-block appliances: a randomized, controlled trial. *Am J Orthod Dentofacial Orthop* 2003 Aug;124(2):128-137.
9. O'Brien K, Wright J, Conboy F, Sanjie Y, Mandall N, Chadwick S, Connolly I, Cook P, Birnie D, Hammond M, et al. The effectiveness of treatment of class II malocclusion with the twin block appliance: a multicenter, randomised, controlled trial. Part 1: dental and skeletal effects. *Am J Orthod Dentofacial Orthop* 2003 Sep;124(3):234-243.
10. O'Brien K, Wright J, Conboy F, Chadwick S, Connolly I, Cook P, Birnie D, Hammond M, Harradine N, Lewis D, et al. The effectiveness of treatment of class II malocclusion with the twin block appliance: a multicenter, randomised, controlled trial. Part 2: psychological effects. *Am J Orthod Dentofacial Orthop* 2003 Nov;124(5):488-495.

APPENDIX

Proforma Sheet showing the Questionnaire to Assess Patient's Psychological Response to Twin-block Therapy

Patient Name:

- Did you like this appliance?
 - Yes
 - No
- Did you wear this appliance?
 - Yes
 - No
- How many hours a day did you wear this appliance?
 - Seldom or rarely
 - Night time full
 - In school
 - Full time (day and night)
- Can you specify approx. number of hours?
- What problems you had while wearing the appliance?
 - Pain
 - Difficulty in mouth opening
 - Mouth ulcer

- Altered taste
- Altered speech
- Difficulty in eating
- Have you noticed any change in your face after wearing it for 6 months?
 - Yes
 - No
 - If yes specify?
- After wearing it for 6 months, and then stopping it, did you notice the lower jaw going to the original position again?
 - Yes
 - No
- Will you suggest this treatment to your friends?
 - Yes
 - No