



EVALUATION OF EFFECTS OF AUDIO-VISUAL AIDS IN REDUCING ANXIETY IN PATIENTS REQUIRING ORTHODONTIC EXTRACTIONS: A COMPARATIVE CLINICAL STUDY

Orthodontics

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ABSTRACT

Background: Dental anxiety is a common concern among patients undergoing orthodontic extractions and may adversely affect treatment acceptance and compliance. Effective patient education plays a key role in alleviating such anxiety. **Aim:** To evaluate and compare the effectiveness of audiovisual aids and conventional verbal explanation in reducing anxiety among patients requiring orthodontic extractions. **Materials and Methods:** A total of 200 patients indicated for orthodontic extractions were included and randomly divided into two groups of 100 each. Group I received conventional verbal explanation, while Group II was shown an audiovisual presentation explaining the need and procedure of orthodontic extraction. Anxiety levels were assessed using a structured questionnaire administered before and after the intervention. Intragroup and intergroup comparisons were performed using paired and independent t-tests. **Results:** Both groups showed a reduction in anxiety levels following intervention. The group receiving verbal information showed a mean reduction of 4.5 ± 2.1 , whereas the group where audiovisual aids were used demonstrated a significantly greater reduction of 10.5 ± 2.9 ($p < 0.001$). **Conclusion:** Audiovisual aids are significantly more effective than verbal explanation in reducing anxiety among patients undergoing orthodontic extractions and should be incorporated into routine clinical practice.

KEYWORDS

Orthodontic Extraction, Dental Anxiety, Audiovisual Aids, Patient Education

INTRODUCTION

Orthodontic treatment often necessitates dental extractions, particularly in cases involving crowding and dentoalveolar discrepancies. Despite being routine procedures, extractions are commonly associated with fear and anxiety among patients, which can negatively affect treatment acceptance and cooperation (1,2).

Dental anxiety is multifactorial and is influenced by fear of pain, lack of knowledge, and misconceptions regarding dental procedures (3,4). Conventional patient education relies heavily on verbal communication, which may not always effectively alleviate these concerns (5).

Audiovisual aids provide a more comprehensive method of patient education by enabling visualization and improving understanding of procedures. Previous studies have shown that audiovisual interventions significantly reduce anxiety in dental patients (6–8). Additionally, audiovisual tools have been shown to improve patient behavior and reduce anxiety in clinical settings (9–12).

However, limited evidence exists regarding their effectiveness in orthodontic patients undergoing extractions. Therefore, this study was undertaken to evaluate and compare the effectiveness of audiovisual aids and verbal explanation in reducing anxiety in such patients.

MATERIALS AND METHODS

This study was conducted as a cross-sectional survey with convenient sampling technique among 200 patients visiting the Department of Orthodontics at Government Dental College and Hospital, Mumbai. The patients were divided randomly into two groups, group 1 and 2. Group 1 includes patients which were given verbal information regarding orthodontic treatment and the need for extractions. Group 2 includes patients that were explained about orthodontic treatment and extractions needed using audiovisual aids. After obtaining a consent from the participants the questionnaire was given to them and collected after its completion. The questionnaire was filled by each patient twice. Once before the intervention and once after the intervention. The

Questionnaire consisted of demographic details of patient like age, sex and education. The next portion consisted of questions for evaluation of Dental Anxiety based on modified Norman Corah's Dental Anxiety Scale (DAS). The questionnaire was based on commonly reported determinants of dental anxiety such as fear of pain, lack of knowledge, and misconceptions (1–5) and followed principles of self-reported anxiety assessment tools widely used in dental research (13–15).

Study Population

200 patients requiring orthodontic extraction.

Grouping

- **Group I (Verbal, n=100):** Verbal explanation
- **Group II (Audiovisual, n=100):** Video-based explanation

Assessment of Anxiety

A structured, self-administered questionnaire was used to assess anxiety before and after intervention.

The questionnaire evaluated:

- Dental visit anxiety
- Instrument-related fear
- Extraction anxiety
- Local anesthesia fear
- Pain perception
- Space closure concerns
- Relapse concerns
- Functional and psychological concerns

Study Protocol

- Pre-intervention assessment
- Intervention (verbal/video)
- Post-intervention assessment

Statistical Analysis

- Paired t-test (intragroup)
- Independent t-test (intergroup)
- Significance level: $p < 0.05$

RESULTS

A total of 200 patients were evaluated.

Table 1: Mean Anxiety Scores

Group	Pre Mean $\pm$ SD	Post Mean $\pm$ SD	Reduction
Verbal	32.5 $\pm$ 4.8	28.0 $\pm$ 4.5	4.5 $\pm$ 2.1
Audiovisual	34.0 $\pm$ 5.1	23.5 $\pm$ 4.3	10.5 $\pm$ 2.9

Both groups showed significant reduction in anxiety. However, reduction was greater in audiovisual group.

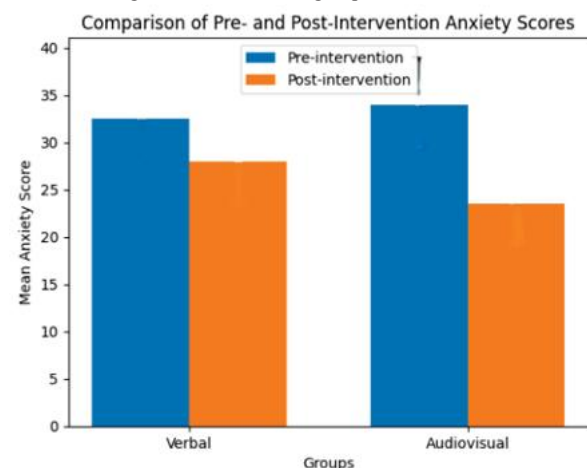


Figure 1: Pre- and Post-Intervention Anxiety Scores

Comparison of mean pre- and post-intervention anxiety scores between verbal and audiovisual groups with standard deviation error bars.

Figure 1 shows that both groups experienced a reduction in anxiety after intervention, with a more pronounced decrease in the audiovisual group.

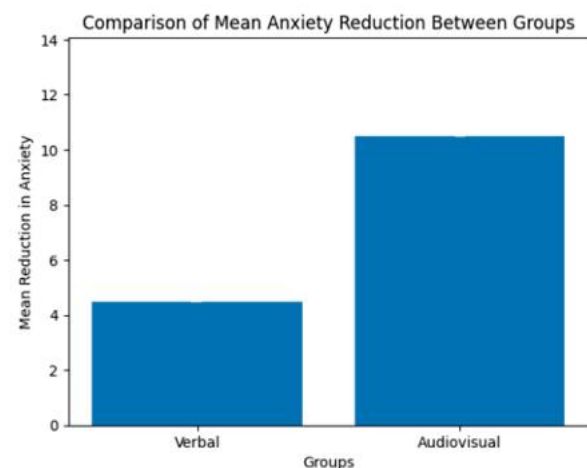


Figure 2: Mean Reduction in Anxiety

Figure 2 demonstrates that the audiovisual group showed a significantly greater reduction in anxiety compared to the verbal group.

DISCUSSION

Dental anxiety is a major concern in orthodontic practice. The present study demonstrates that audiovisual aids are more effective than verbal explanation in reducing patient anxiety.

The improved outcomes in the audiovisual group may be attributed to better understanding and visualization of the procedure, reducing fear of the unknown.

These findings are consistent with previous studies demonstrating the effectiveness of audiovisual aids in reducing dental anxiety (6,9,13).

Previous studies have also shown that audiovisual interventions

improve patient cooperation and reduce procedural anxiety (10–12). Verbal communication alone may not sufficiently address patient concerns (5).

Effective communication strategies are essential for managing dental anxiety and improving patient experience (1,2).

Limitations

- Short-term study
- Self-reported questionnaire
- No long-term follow-up

CONCLUSION

Audiovisual aids are significantly more effective than verbal explanation in reducing anxiety among patients undergoing orthodontic extractions. Their routine use is recommended.

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