

Influence of aesthetic dental and facial measurements on patient satisfaction between genders in Indian patients

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Abstract

Purpose: The purpose of the present study was to investigate patients satisfaction and correlate the variability of aesthetic dental and facial measurements by the maxillary anterior teeth appearance in different gender group among Indian patients.

Materials and methods: The dental and facial measurements were made on 80 Indian subjects: Central incisor width/length ratio, gingival zenith displacements, the upper lip height, intercommisural width, maximum maxillary central incisal at rest and smile were measured. All the patients rated their satisfaction with the dental appearance on the visual-analogue scale. All the parameters have been analyzed with respect to gender.

Results: The great majority of the participants were completely satisfied with their dental appearance ($p > 0.05$). In the men, maximum maxillary central incisal display at rest and intercommisural width during smile showed statistical significant difference. In women, the combination of central incisor width/length ratio, intercommisural width at rest and smile, and maximum maxillary incisal display measurements were statistically significant.

Conclusions: Within the population tested, the results suggest that the use of aesthetic dental and facial measurement may serve as an aesthetic guideline. The gingival architecture should be considered in aesthetic anterior oral rehabilitation.

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Keywords: Anterior teeth; Dental aesthetics; Gingival zenith

1. Introduction

Smile is the most visible record of the patient for the dentist. The aesthetic restoration of the edentulous patient has an important psychological effect. Once properly restored, the patient's self esteem and self confidence are often improved, which is also the goal of the oral rehabilitation treatment [1]. Selection of anterior teeth and their arrangement to meet aesthetic and functional requirements demand artistic skill in addition to scientific

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knowledge. Several authors have presented guidelines regarding anterior aesthetics in order to achieve excellent results. One of the most important guidelines is the “Golden Proportion” value. According to this standard, the optimal width to length proportion of maxillary central incisor varies between 66% and 85% [2,3].

In 1914, Williams suggested a correlation between the inverted shape of the face and the shape of the upper permanent central incisors, the so called law of harmony [4]. The contours of central incisors were classified into three categories: triangular, oval and square. Later Frush and Fisher suggested the “Dentogenic Theory” that described the existence of relationship between the shapes of the face and the teeth together with gender and personality traits [5]. Patient's attitude towards their dental appearance are also important and should be acknowledged in dental treatment decisions [6].

Numerous studies have addressed the discrepancy between the patient's and dentist's perception of dento-facial aesthetics, highlighting the importance of dentist in determining the patient's aesthetic expectation prior to beginning treatment [6–8]. The dental measurements like the shape, position and size of the teeth, gingival morphology and the facial measurements like upper lip height, maxillary incisal display and the inter commissural width at the rest position and smile are the most important factors in determining facial attractiveness. It was hypothesized that these measurements would demonstrate the variability in satisfaction between the genders and that of females would evaluate a greater number of parameters than males.

The aim of the study was to determine.

1. Patient's satisfaction with the existing maxillary anterior teeth appearance among the gender groups.
2. The dental measurements like width/length ratios, gingival zenith displacement and facial measurements like upper lip height, maximal maxillary central incisal display and inter commissural width at the rest position and at smile, among the Indian population.
3. Correlate the variability of aesthetic dental and facial measurements by the maxillary anterior teeth appearance in different gender groups at rest and smile and the patient's satisfaction on the existing maxillary anterior teeth appearance.

2. Materials & methods

The study sample consisted of 80 Indian volunteer subjects, of whom 32 were males and 48 were females. The subjects were dental students who had not

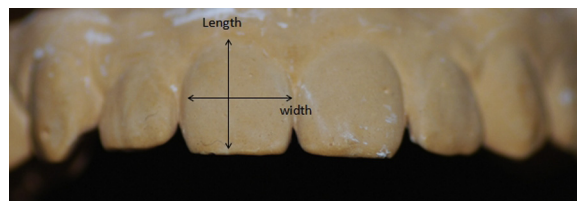


Fig. 1. Width and length of the central incisor in the model.

previously received formal instruction about aesthetic dentistry. The inclusion criteria for the six maxillary anterior teeth were:

1. Continuous natural dentitions with natural teeth.
2. No crowns, porcelain laminate veneers, or composite resin restorations in the anterior maxillary segment.
3. Fixed restorations on the posterior segments.

For the six maxillary anterior teeth, the exclusion criteria were:

1. Evidence of gingival hyperplasia
2. Inflammation
3. Altered passive eruption
4. Attachment loss
5. Gingival recession
6. Periodontal surgery
7. Prior visible composite resin restorations on the facial surfaces of the teeth
8. Prior traumatic injury or occlusal wear into the dentin on maxillary anterior teeth
9. Dental malocclusion or prior orthodontic treatment.

During the clinical examination, 14 possible participants were excluded due to the presence of one or more of the criteria listed. Only 66 subjects participated in the study, 28 males and 38 females. All the participants included in the study gave written informed consent to the survey procedures approved by the ethical committee of the dental institution.

2.1. Dental measurements

A maxillary impression was made using irreversible hydrocolloid¹ and poured in die stone². The model was measured using a precise caliper with precision of 0.01 mm. Each parameter was measured three times and the average value was recorded. The widest mesial-distal portion and the longest apical-coronal portion of the maxillary anterior teeth were measured, and the width/length ratio (W/L-%) were calculated as in Fig. 1.

¹ Tulip regular set Cavex, Holland.

² Kalabhai dental stone.

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