

الموضوع:

The Influence of Varying Maxillary Lateral Incisor Dimensions on Perceived Smile Aesthetics

المشرف:

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ملخص رسالة الماجستير (إنجليزي)

Patients with congenital absence of maxillary lateral incisors present a significant challenge in achieving ideal smile aesthetics. Clinicians have often used the Golden Proportion as a guide to determine the ideal amount of space to create for incisor replacement. Use of this proportion has been suggested to produce the ideal aesthetic outcome; however, there is very little evidence to support this claim. Furthermore, no study has investigated the views of Hypodontia patients, in particular when assessing smile aesthetics. This group of patients maybe more dentally aware than the average dental patient.

The Aim: We are interested in determining the influence of varying the size of maxillary lateral incisor teeth on perceived smile aesthetics. This will help to guide clinicians in the future about the ideal replacement tooth size when managing patients with developmentally absent lateral incisors.

Materials and Methods: A photograph of a smiling female displaying only the lips and teeth was digitally altered using “Adobe® Photoshop® CS2” software to generate two sets of images. In the first set, the width of the maxillary lateral incisors, in proportion to the central incisor, was altered at 5% intervals to produce a total of 6 images, namely 52%, 57%, 62% “the golden proportion”, 67%, 72% and 77%. In the second set, the length of the lateral incisor was altered at 0.5mm increments to produce a total of 5 images with the lateral incisor in 0.5mm, 1mm, 1.5mm, 2mm and 2.5mm shorter than the

adjacent central incisor. The two sets of photos were ranked from the “most attractive” to the “least attractive” by 117 participants (41 hypodontia patients, 46 normal ‘control’ patients and 30 dentists). Descriptive and series of global and post-hoc non-parametric statistics (Chi-squared test (χ^2)), for independent samples was used to analyse the data. The critical level of significance was set at P value ≤ 0.05 .

Results: Our results showed that (with reliability of $\geq 70\%$) the 67% lateral-to-central width proportion is the “most preferred” by all groups, followed by the 72% width proportion. The general population is less tolerant to reductions in maxillary lateral incisor width. The 52% proportion is least preferred by all groups. A maxillary lateral incisor that is 1-1.5mm shorter than the central incisor was the “most popular” maxillary lateral incisor length. However, hypodontia patients showed a preference to longer lateral incisors as compared to the other groups. The very short and very long maxillary lateral incisor was consistently perceived as “least attractive”. Overall, there was no difference in perception between the hypodontia and the normal control patients and dentists seem to be more consistent with their choices.

Conclusions: There is no evidence to suggest that the Golden Proportion should be considered the ideal aesthetic standard when creating space for the replacement of missing lateral incisors.