

Comparison of Aesthetic Perception of Smile Between Dentists and General Population

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ABSTRACT

Objective: To compare aesthetic perception of smile between general population and dentists by varying lengths of maxillary lateral incisors.

Introduction: Patient perception and expectation of their smile plays a very important role when providing an anterior tooth restoration. The aim of conducting the study was to compare the perception of esthetic smile between general population and dentists by varying length of maxillary lateral incisors.

Design: Cross sectional study.

Materials and Methods: A photograph of a female smile from frontal view was digitally altered to produce images with varying lengths of maxillary lateral incisor. These images were arranged in descending order; from most attractive to least attractive by the participants. The participants of the study included two groups; first group comprised of Dental Surgeons where as second group consisted of general population.

Results: Evaluation of the results showed a significant difference in aesthetic perception of smile between the Dentist and general population.

Conclusion: Perception of aesthetics is not similar between the dentists and the general population.

Key words: Smile perception, perception of general population, smile esthetics, maxillary lateral incisors.

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INTRODUCTION

Facial and smile attractiveness appear to be strongly connected to each other. The mouth and eyes are the main focus of attention, of the speaker's face, during a social interaction. The mouth is the center of communication in the face, and the smile plays an important role in facial expression and appearance⁸.

Absence or malformed teeth of the anterior segment greatly affect the aesthetics of a smile, which itself affects the appearance, personality and psychological well being of an individual^{2,3}.

Missing lateral incisors is one of the most common causes for restorative intervention in the anterior region of mouth. Hypodontia, the developmental absence of

teeth, is the most common dental developmental problem in humans⁴.

A meta analysis by Polder's indicated that excluding the third molar, most frequently missing tooth was the mandibular second premolar, which was followed by the maxillary lateral incisor and the maxillary second premolar⁴. It's a significant challenge to obtain optimal esthetics in patients presenting with congenital missing lateral incisors.

Managing a patient with missing lateral incisors can be obtained in two ways, closure of space with orthodontic intervention and substitution of the lateral incisor by the canine, or opening the space for tooth replacement⁶⁻¹¹. Currently, osseointegrated implants are the preferred treatment alternative by many dentists for replacing missing anterior teeth¹¹.

Perception and appreciation of esthetics varies from an individual to individual, and is also influenced by personal experience and social environment. An observant and trained eye easily points out any asymmetry or what is out of balance and harmony with the surrounding environment, stated by the Miller¹².

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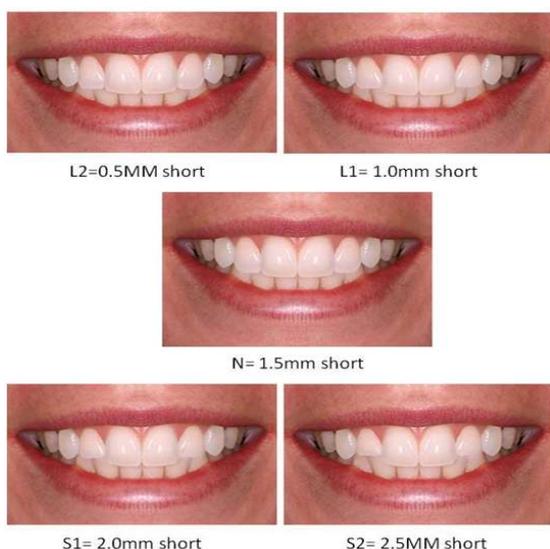
Thus the preferences and opinions of the trained professionals regarding esthetics of the face may not coincide with the expectations as well as perceptions of the patients and/or general population¹³.

To the best of author’s knowledge, no study has been carried out to evaluate difference in perception of smile esthetics by varying lengths of maxillary lateral incisors, in southern population of Pakistan. This study was carried out to highlight the importance of the patient input during treatment planning and designing and to evaluate the difference in perception of smile esthetics between dentists and general population coming to the OPD of Dr Ishrat-ul-ibad Khan Institute of Oral Health Sciences.

MATERIALS & METHODS

A photographic image of a female smile, displaying only lips and teeth from frontal view was selected. The image was digitally edited using Adobe Photoshop CS2 software by professional graphic designer. A total of five images were created. In each image, length of Lateral incisor was reduced by 0.5mm compared to the central Incisor. Thus, five images, with lengths of lateral incisor 0.5mm, 1.0mm, 1.5, 2.0mm and 2.5mm shorter than central incisor were created. Five photographs were printed in size 4x6 inches, matt finish, using HP-Laser Jet 2050.

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008. Informed consent was obtained from all subjects for being included in the study.



Data collection:

Participants included in the study were Dentists and general population. General population group was selected randomly from patients and attendants coming to dental OPD at DIKIIOHS. The participants were briefed about the research and a verbal consent was received. The participation was unpaid and voluntarily. Thus a total of 100 subjects were included in the study, 50 from each group.

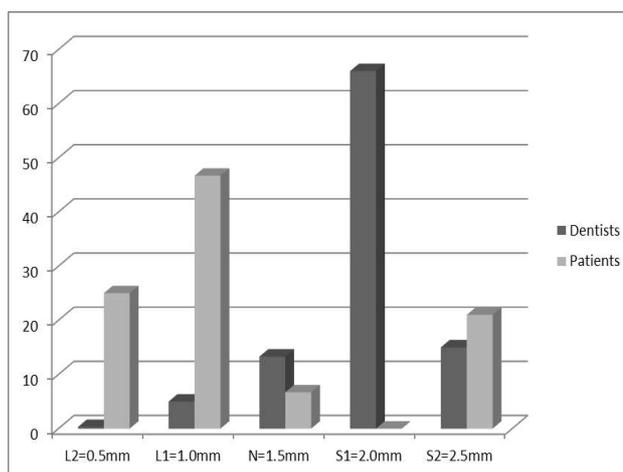
The evaluators were shown each photograph for a period of 20sec and at the end were requested to rank the photographs in order of the most attractive to least attractive photographs.

RESULTS

The data obtained from this study shows that the perception of the most attractive smile between the dentist and the general population was significantly different.

The majority of the dentists; 66% voted for S1 as the most attractive smile (lateral incisor 2mm short).

On the other hand the general population was more in favor of relatively longer lateral incisor and thus the majority; 46.7% voted for L1; (lateral incisor 1mm short).



Most attractive smile perceived, after changes were made to the length of maxillary lateral incisors.

	L2	L1	N	S1	S2
Dentists	0.3%	5 %	13.3%	66%	15%
General population	25 %	46.7	6.7 %	0%	21%

Majority of the dentists had similar choice for the least attractive smile, L2; the one with the longest Lateral incisors. While on the other hand, the general public perception for least attractive smile was not that uniform. Majority of the population considered short lateral incisor as least attractive. With about 31.7% of the population depicting S1 as least attractive, followed by 30% population declaring S2 as least attractive.

DISCUSSION

This study aimed at determining if there was any difference in aesthetic perception of smile between dentists and general population, by varying the length of lateral incisors in a picture of smile of a female patient using Adobe photoshop software.

The study was conducted involving two groups, dentists and general population. The difference in perception of smile aesthetics was to be determined. Since dentists are the care givers in cases of demanding restoration of anterior smile segment, they often believe that the restoration provided according to the ideal guideline as the most attractive and that is what is best for the patient. But occasionally what may be perfect and ideal in view of the dentist might not be ideal in the eyes of the general population. Expectation and perception of the patient plays a significant role in treatment planning.

Brisman reported that patients were more inclined to have anterior dental arrangement at the same level in horizontal plane¹⁴, whereas dentists were more in favor of anterior dental arrangement with radiating symmetry, with the incisal edge of the lateral incisor off the plane of the adjacent central incisor¹⁴.

A lateral incisor 1-1.5 mm shorter than central incisor was thought to add a more natural look to the dental arrangement¹⁵, The result obtained from this study indicates that dentist perception of attractive smile was much closer to ideal dental arrangement, S1; Lateral incisor 2mm shorter than the central incisor where as the general population was in favor relatively longer lateral incisor.

This study was conducted using two dimensional images that were edited using a software and were not real three dimensional smiles or tooth arrangement, which was a major limitation.

The results of this study suggest that general population is found to be more inclined towards longer lateral incisors compared to dentists. The results of the study

conducted suggest a diagnostic step should be included when providing a restoration to the altered length of incisors. This would aid in keeping patients appreciation and perception, of aesthetics of anterior dental segment in consideration, when formulating the treatment plan.

CONCLUSION

The following conclusion can be made from the study conducted, keeping the limitation of our study in mind;

The dentists' perception of length of lateral incisor was in accordance with the established 1-1.5mm shorter lateral incisor compared to the central incisors, however the general population was more attracted to longer lateral incisors.

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