Dental Education 2019- Balancing Profession, Family and Cultural Norms by Women Dentists in Pakistan - Rubina Mumtaz-Islamabad Medical and Dental College, Pakistan

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Abstract

The objective is based on the study that evaluates the upper lip length and thickness changes in the vertical dimensions of maximum smile in patients with class I and class II div 1,2 of malocclusion According To Angle's Classification.

Participants the present study was conducted on 120 subjects randomly which are selected from the students and staff of faculty of dentistry in Hama University. It was explained that this was a study on lip movements involving a short question naire followed by a (5- 10 second) video clip capturing only a small part of the face (chin to nose). Video graphic records on these 120 subjects, who are consented to participate in the study, were taken to the study on perioral zone at rest and on smiling. The subjects were mainly divided into three groups, namely, group 1 (class I), group 2 (class II div1), group 3 (class II div2), containing 20 males and 20 females. Inclusion criteria:

 • Age between 18 and 28 years.

• No active orthodontic treatment

Selection Criteria for the Class-II

 Sample Class II div 1:

• Bilateral Class-II Buckle segments "Molar and Canine" with convex facial profile. (The skeletal classification was not considerable)

• Proclamation of maxillary front teeth with an overset of > 4 mm.

 Class II div 2:

• Bilateral Class-II Buckle segments "molar and canine". (The skeletal classification was not considerable) Exclusion criteria:

• Missing tooth visible on smiling

• Prosthodontics /Restorative work on tooth/ teeth visible on smiling

• Gross facial asymmetry

• Visible periodontal disease, caries, excessive dental attrition

• History of orthodontic treatment

• Lip irregularities, or history of lip surgery.
Smile Recording and Measurements The subjects are explained on the study of smile involving between 5- 10-second video clip on the small part of the face. An informed consent was obtained from each subject who are agreed to participate in the study voluntarily. A video camera (SONY DSC-H200) was set on the tripod 4 feet from the subject. The subjects are mainly based on the adjustable stool and instructed to hold the head in a natural head position by looking straight towards an imaginary mirror. If head position is in the required position, then the research will carry out in natural head orientation. The camera lens was adjusted to be parallel across the apparent plane and the camera is focused only on the mouth (from nose to chin), So that the person could not be identified which are included in the capture area (frame) with 2 rulers and millimeter markings. The rulers are screwed in the cross configuration so that if the subject accidentally rotates the 1 ruler, and the other ruler could be used to analyze the frame. The lip position is achieved based on the subject of lick the lips and then swallow. Then, the subjects are instructed to say

''Subject number __''. Recording began 1 second before the subject started and ended with the smile. The video clip was downloaded to a computer (LG RD590) and then uploaded to Screen analyzer Live (version 4.0, Andreas Winter, Vienna, Austria),which is a video-editing software program. Each frame was analyzed, and 2 frames were captured for the study. Each frame was then finally analyzed and two

frames were selected for the study. The first frame represents the subject on lips at relaxed lip position, and the second frame represented the subject on natural unstrained posed smile. The widest range of the subject was posed on smile frame and was selected as one of 10 or more frames the identical smile. Thus, the selected smile image represents a sustainable and repeatable smile position. Each frame was opened in Adobe Photoshop 6.0 (Adobe Systems, San Jose, Calif) and is adjusted by using the millimeter ruler in the frame. Calibration of the software is done based on the previous study of Desai Dental.

Measurements on Rest Frame (Figure 1) 1. Upper lip length- from subscale to station superiors 2. Upper lip thickness-The vertical distance from the most superior point of cupid's bow to the most inferior portion of the tubercle of the upper lip

Figure 1 Measurements made on rest position photograph.

(1) Upper lip length (2) Upper lip thickness
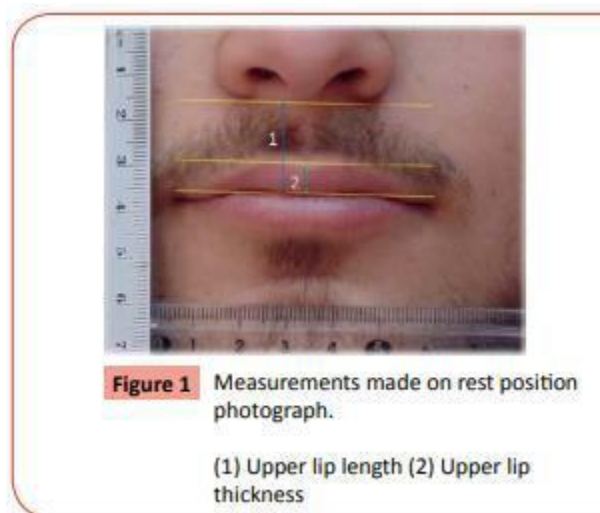
Measurements on Smile Frame (Figure 2) 1. Upper lip length-The distance from sub scale to stomion superiors 2. Upper lip thickness-The vertical distance from the most superior point of cupid's bow to the most inferior portion of the tubercle of the upper lip The measurements were made based on the posed smile photograph as shown in Figures 1 and 2

Figure 2 Measurements made on smile photograph.

(1)Upper lip length (2) Upper lip thickness

Statistical Analysis

Minitab 15 (Minitab Inc, State College, PA, USA) is used to perform the statistical analysis. With the alpha set at 5%, Data which is summarized as mean 6 SD. Groups are compared by two-factor (class of malocclusion and sex) analysis of variance (ANOVA) using general linear models. If the ANOVA shows the statistical significance, the Bonferroni post hoc test was done to determine which groups were significant from the others.

Results: Statistically significant differences are made which were apparent in most of the measured variables. Changes in upper lip length and upper lip thickness were higher in class I followed by class II div2 then via class II div1. The upper lip smile of patients based on Class II division 1 was positioned downward, and the upward movement of the upper lip (changes in length and thickness) is smaller when compared to the other groups. Changes in upper lip length and upper lip thickness were greater in males when compared with females in all groups.

Conclusions: The data from this study clearly states that malocclusion effects on the changes in upper lip length and thickness, besides the changes differ between males and females.

Keywords: Smile, Digital video, Malocclusion, Lip length, Lip thickness.

Note: This work is partly presented at 24th International Conference on Dental Education During March 18-19, 2019 held at Paris, France