ABSTRACT

Background: Most people who seek orthodontic treatment want to have attractive smile. Smile attractiveness and facial attractiveness appear strongly correlated to each other. The smile plays a key role in facial expression and appearance. There are eight components to make ideal frontal smile, but only lip line was examined in this study because it is more prominent in designing a beautiful smile.

Objective: The study was to describe position of lip line on three facial types of young adult population in Makassar.

Material and Methods: The study was conducted at three Senior High Schools in Makassar. The subjects involved was 123 students, 14-17 years old, consisted of 40 males and 83 females. Each subject was photographed while smiling from the frontal direction and saying long “cheese”. The images were measured with Adobe Photoshop CS6 program to determine the facial type and the lip line. The data were tabulated.

Results: The percentages of male facial types were: dolicofacial (40 %), mesofacial (52.5 %), and brachyfacial (7.5 %), while the percentages of female facial types were: dolicofacial (32.5 %), mesofacial (65.1 %), and brachyfacial (2.4 %). The highest percentage of medium lip line was found in three facial types, followed by low- and high lip lines.

Conclusion: The highest percentage of the subject’s facial type was mesofacial, while the highest percentage of lip line position found in three facial types was medium one.

Keywords: Facial type; Lip line; Young adult; Makassar
INTRODUCTION

The development of dentistry and a variety of current technologies supporting the dentistry anticipation of the community needs to improve their appearance. The advancement of science in general was very influential in the community will shift its original dental care from only about the disappearance of pain and fulfillment functions of mastication, to the dental care.¹

Esthetics in dentistry aims to create beauty, attractive face, and to the satisfaction of the patient care outcomes. Most patients go to a doctor to get an esthetic smile, stimulated by a pattern from the media, which is associated with success.² Physical appearance greatly affect the acceptance of environmental, psychological well-being, and self-confidence of each individual.³ To get the perfect facial must have occlusion, bone relationships, and ideal facial profile.⁴

Facial esthetics refers to dynamic facial expressions, such as smiling and talking. Lip movement is a controlling factor for dental and gingival display.⁵ Face and smiles related to each other. One major concern is directed at the person's mouth and the eyes of the speaker's face. As the mouth is the communication center of the face, the smile has an important role in the appearance and facial expression.

The facial shape, the condition of the teeth and surrounding tissues greatly affect the esthetic smile and even the facial esthetic overall. In designing esthetic smile, there are several components that need to be considered as the orientation i.e.: lip line, smile arc, negative lateral space, fronto-occlusal plane, upper lip curvature, smile symmetry, dental components, and gingival components.⁶ The display of person's smile is so important that the results of treatment with very good occlusion will appear unsatisfactory when accompanied by a less attractive smile.⁷

In general, shape of human face can be categorized into: dolicofacial, brachyfacial, and mesofacial.⁸ The human face can be identified by its characteristic, is comprised of
the eyes, nose, and lips. In previous studies, face recognition can also be classified by ethnic group / race, gender, and age.10,11

Lip line is the number of teeth vertically visible when smiling, in other words the height of the upper lip to the maxillary central incisors.12 As a general rule, the lip line is optimal when the upper lip reaches the gingival margin, showing the overall maxillary central incisor inciso-cervically with minimal interproximal gingiva.13

In Orthodontics, lip lines are classified into three categories: high, medium, and low. High, medium, and lower lip line, showing 75% - 100%, 50-75%, and less than 50% of the maxillary anterior teeth respectively.

The population of Indonesia has reached 241 million, consisting of 360 tribes. They inhabit the island and has its own customs and culture. Each tribe has its special characteristics, so it cannot be used as a standard for other tribes. Most of Minang and Mentawai tribes who live in West Sumatar have mesofacial and brachyfacial types. Mesofacial type has usually been owned by Javanese (Deutro-Malay) and Naulu people (Proto-Malay).14

Makassarese, Buginese and Torajanese are the major tribes who inhabited the region of South Sulawesi. Makassarese is the largest tribe residing in South Sulawesi. The existence of tribes can be found in the city of Makassar, Gowa, Takalar, Je'neponto, Bantaeng, Bulukumba, and Maros. It is estimated that the population of Makassarese ± 2 million people.

Based on the above description then arises a problem that makes researchers interested in knowing the description of one of smile components, i.e. lip line based on facial shape of young adult people in Makassar.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted at 3 Senior High School (SMU) in Makassar who met the following criteriae: (1) never undergone orthodontic and prosthodontic treatments, (2) never performed surgery, (3) the permanent teeth have erupted entirely up to the second molar, (4) he shape of the anterior and posterior tooth
anatomy intact and normal, and (5) do not have facial abnormalities and oral cavity disorders. The number of subjects was 123 students.

The photograph of subjects (while smiling) were taken from the frontal direction by using a 5.2 mega pixel digital camera mounted on a tripod, at a distance of 50 cm from the front of the lens to the base of the nose without zoom. Subject were sitting with head and face positioned in front of lenses with the FHP field parallel to the floor. Subjects photographed by holding a white board (serves as a benchmark measurement scale) on the right side at shoulder height. Subjects were instructed to do social smile while spelling “cheese” for 2 minutes.

To determine the facial types, it was used Adobe Photoshop CS6 program and measured a distance from the top of the head (TH) to soft tissue menton (ME) The ideal proportion a / b = 1.618, based on the golden proportion by Jefferson.

In this study, the range of ratios to determine the criteria for facial type is as follows:

a. dolicofacial = > 1.693

b. mesofacial = 1.693 to 1.543

c. brachyfacial = <1.543

The lip line was determined whether it was high, medium, or low.

The resulted data was presented in a table to describe the type of facial forms, gender, and the lip line as a component of smile.

RESULTS

The result of the study was presented in below table:
Table 1. The proportion of subject numbers based on lip line of facial types and gender

<table>
<thead>
<tr>
<th>Variable</th>
<th>Lip line</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Facial types</td>
<td>Dolico facial</td>
<td>Number (n)</td>
</tr>
<tr>
<td></td>
<td>Percentage (%)</td>
<td>18.6</td>
</tr>
<tr>
<td></td>
<td>Mesofacial</td>
<td>Number (n)</td>
</tr>
<tr>
<td></td>
<td>Percentage (%)</td>
<td>24.0</td>
</tr>
<tr>
<td></td>
<td>Brachyfacial</td>
<td>Number (n)</td>
</tr>
<tr>
<td></td>
<td>Percentage (%)</td>
<td>0</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Number (n)</td>
</tr>
<tr>
<td></td>
<td>Percentage (%)</td>
<td>25.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Number (n)</td>
</tr>
<tr>
<td></td>
<td>Percentage (%)</td>
<td>19.3</td>
</tr>
</tbody>
</table>

Table 1 shows that among 123 subjects, mesofacial, dolicofacial, and brachyfacial types have been owned by 43, 75, and 5 subjects respectively. Based on gender, there were 40 males and 83 females. Concerning the position of lip lines, the percentage of medium lip line was the most often found on all face types and both gender compared with high and low percentage. The percentages of medium lip line on dolicofacial, mesofacial and brachyfacial types were 48.8%, 48.0% and 60.0% respectively.

DISCUSSION

Facial attractiveness plays an important role in social interaction. It influences mating success, personal evaluations, performance, and employment prospects. It is also influence personality development and social interaction. It was studied that attractive people are judged and treated more positively than unattractive people. Attractive people correlated with self confident/ self esteem, dominance, emotional stability
Smile attractiveness and facial attractiveness appear strongly correlated to each other. In social interaction, the mouth of the speaker’s face are the main focuses to be seen. The smile plays a key role in facial expression and appearance. It is a non-verbal communication to express spontaneous feelings and emotions. Most people who seeks orthodontic treatment want to have an attractive smile.\textsuperscript{16}

There are eight components to make ideal frontal smile: lip line, smile arc, upper lip curve, buccal corridor, symmetry of smile, occlusal plane, dental and gingival components. In this study, only lip line was examined because it is more prominent in designing a beautiful smile.

In this study, the medium lip line got the highest percentages in all facial types. The medium lip line shows 1-3 mm of gingival, measured from the top point of free gingival margin to the inferior line of upper lip or 50-75 % of teeth was apparent.

Lip line can be affected by age and sex in which the female average of 1.5 mm higher than those in males i.e. 1-2 mm. The tendency to the lower lip line is parallel to the age. The starting point of a smile is a lip line at rest position, with an average of maxillary incisors were seen 1.91 mm in men and 3.40 mm in women\textsuperscript{18}

The study results conducted by Al-Khawaja\textsuperscript{19} of 54 women samples showed that the high lip line got the highest percentage (20.4%), while the low lip line in men got the highest percentage (22.1%), however between men and women there was no significant difference. It was described that the woman usually showed upper teeth twice bigger than those in men. Abdullah\textsuperscript{20} in his research concluded that the lower lip line pattern is more common both in women and men. Anwar and Fida\textsuperscript{21} who examined the lip line preferences for different facial types concluded that the 100 number of assessors agreed that lip line only shows the maxillary incisors preferably in the dolicofacial and mesofacial types in men and women while the height of the lip line that shows 2 mm of gum was more preferably for brachyfacial type for both sexes.
CONCLUSIONS

Based on the data obtained from the study on 123 Senior High School students in Makassar, it can be concluded that the percentage of mesofacial type of young adult population in Makassar was the highest compared to brachyfacial and dolicofacial, while the percentage of medium lip line was the highest compared to low and high lip line.

REFERENCES


