

# Esthetics & Tooth Morphology while Grinning According to Golden Proportion

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## ABSTRACT

**Background:** Anterior teeth have considerable impression on the personality of every person. It is accurate because while taking and smiling, anterior teeth are visible. Furthermore, patient's demands of esthetics for anterior teeth while getting restored by dentist, the method for restoration may become sensitive requiring more science as well as handful of art may accomplish the desires of patients. Therefore, sometimes it is more demanding to materialize the results that actually patient wants. Golden proportion is a ratio that exist between maxillary anterior teeth when look from front.

**Aim:** To evaluate golden proportions existence in Out Patient Department visiting Institute De'Montmorency College of Dentistry, Lahore.

**Methods:** The present study was conducted at Institute De'Montmorency College of Dentistry, Lahore during the period from 01.03.2016 to 30.08.2016. In this study, total 140 patients were included between the ranges of age 25-years to 35-years. In these selected patients, male patients were 40 and female patients were 100. With the help of manual caliper, maxillary anterior teeth size was measured while smiling.

**Results:** Among patients ratio of 1.3 & 1.4 was more general that is 30% and 28.5% respectively instead of golden proportion.

**Conclusion:** In study group involving local population golden proportion is not a general finding.

**Key words:** Golden Proportion, Restorative Intervention, Esthetics, maxillary Anterior Teeth.

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## INTRODUCTION

The most attractive feature of the face is beautiful smile. However, loveliness is not total and is to a great degree subjective. A grin might be an enthusiastic blessing or gift, not a material one. It is an indication of euphoria and joy. It is a blessing whose amusement is gotten by the heart. Grinning helps our psychological and in addition physical well-being. Neuro transmitters such as serotonin or 5-hydroxytryptamine, endorphins and dopamine are altogether discharge when a grin given over the face.<sup>1</sup> Without any doubt, specialists have started to consolidate smile into their treatments/therapies. Smile adds to bringing down pulse (blood pressure), enhanced course and the excellence. It supports the system of immune. It works where ever depression as well as stress cause hurt. Grinning unwinds us and enhances our passionate solidness. Esthetics is gotten from a Greek word Aisthetikos that way to detect recognition<sup>2</sup>. It is philosophy concerned branch about the investigation of ideas like as taste, excellence, beauty and so on. Our Prophet Muhammad (PBUH) said that "it is a charity/gift when you smile to your brother face". It is stated in Sunan Al Trimidi and is authentic Hadith. There is vast knowledge in the words of Prophet Muhammad (PBUH). Commonly, the people are much mindful about their esthetic looks and their smile. If anterior teeth of any patient have been lost, he is much mindful about the smile and his esthetics. Due to this, patient might be deprived felt a psychological

sense. Furthermore, unable to smile as well as talk in open way according to his wants. Therefore, a better esthetics rather a good grin which is dependent on harmonious anterior tooth of face. It has additionally been found that patients who required restoration of anterior teeth take a distinct fascination in the treatment result and examine all the techniques with doctors before going to begin as he utilizes all where withal. In this manner it turns out to be to some degree additionally difficult to the doctor particularly when patient has decayed or missing teeth<sup>3</sup>. A persuasive instructions to the patients about the treatment is now and then more supportive. It is likewise to be noticed that the congenitally missing laterals are suited influencing canines to mask giving looks of laterals giving a decent commitment to getting esthetics. The whole reminiscent treatment design is to be is foreordained. In the event that the patient is fulfilled from the treatment result the dental specialist may have a decent cynosure. The state as well as size of maxillary anterior teeth is of most extreme significance while thinking about the smile and the esthetics<sup>4</sup>.

The width and length are essential for thinking about the restoration. There has been mesiodistal measurement and the inciso-gingival one. Both are to be remembered as how to reestablish in the most worthy mold. As compared to other dimension, the width of tooth matters most<sup>5</sup>. When all restorative techniques concur with a natural look of esthetic than patient will also be satisfied. Mark Bar American mathematician presented the golden ratio by utilizing a Greek sign  $\phi$ . The perfect extent for esthetic and symmetry was observed to be lie in the proportion of 0.618 to 1.06<sup>6</sup>. Golden proportion is a consistent proportion

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between the bigger and the littler teeth. Approximately this ratio is 1.618:1. As indicated by this proportion the littler anterior tooth is about sixty two percent of the adjacent bigger teeth. Euclid was introduced this proportion. While grinning, the front teeth are visible. Therefore, the general population is more cognizant about their front teeth than posterior teeth. The lost front teeth may trade off the esthetics and smile / grin. The primary elements in charge of the esthetics are the lip line angulations of teeth, incisal line, facial symmetry and shade of teeth.<sup>7</sup> extraordinary concentration is likewise given while restoring these foremost teeth. A considerable measure of remedial materials are accessible that are utilized to restore the lost tooth part for the protection. Exceptional thought is given to coordinate the excellence of esthetics and a decent agreement among all the anterior teeth. Since the feel is of prime concentration, the nature of therapeutic technique and additionally the material matters much. The aim of this examination is to discover the anterior teeth natural proportions in contrast with golden proportion.

**MATERIALS AND METHODS**

The present study was carried out at Institute De'Montmorency College of Dentistry, Lahore during the period from 01.03.2016 to 30.08.2016. In this study 140 patients were selected out of which females were 100 and male patients were 40. The age range of the selected patients was twenty five years to thirty five years. Manual vernier caliper was utilized to gauge the tooth measurements as per golden proportion. Maxillary incisors width was produced using the mesiodistal contact focuses. Canine width was estimated from the mesial contact point to the most distal point noticeable from front side. For good examination finding and keeping any in precision, every estimation was taken thrice by a similar administrator. Bigger central incisor was multiplied by 62% when contrasted with the littler laterals and canines. Results were examined by the use of SPSS-20 at  $\alpha = 0.05$ . Different ratios of golden proportion were estimated based on sex. Incorporation criteria was followed as (i) no spacing or teeth crowding, (ii) in anterior teeth performing no restorative treatment, (iii) no missed anterior teeth, (iv) no gum recession or periodontal disease, and (v) no abrasion, erosion, attrition present.

**RESULTS**

In patients, 1.3 and 1.4 ratio mostly common i.e. thirty percent and 28.50 percent respectively rather than golden proportion. The proportion of 1.5 and 1.6 were discovered 11.42 percent and 18.57 percent respectively. Among

Table 1: In Study Group Percentage and Frequency of Golden Proportion:

| Ratio   | Males    | Females  | Total |
|---------|----------|----------|-------|
| 1.1 : 1 | 2 (5%)   | --       | 1.42  |
| 1.2 : 1 | 4 (10%)  | 10 (10%) | 10.00 |
| 1.3 : 1 | 12 (30%) | 30 (30%) | 30.00 |
| 1.4 : 1 | 14 (35%) | 26 (26%) | 28.50 |
| 1.5 : 1 | 4 (10%)  | 12 (12%) | 11.42 |
| 1.6 : 1 | 4 (10%)  | 22 (22%) | 18.57 |

proportion of 1.6, it was found that females had more perfect connection of golden proportion which is 22% when contrasted with the males having 10%. The general extent of golden proportion was 18.57%. The predominance of golden proportion in female was 22 percent and it was 10% in males. In males the proportion of 1.4 was 35% when contrasted with females having 28.5%. However, the ratio of 1.3 in female was more general which is 30 percent which was equivalent to males (Table I).

**DISCUSSION**

Dental and facial esthetics has normally been characterized in term of micro and macro components. Macro esthetics correspond the interrelationships between lips, face, teeth and gingiva and the recognition that these connections typically present. Micro scale esthetic includes the feel of an individual tooth and the discernment that the shading and form are engaging. Relationship of dentolabial gingival, which is viewed as a piece of oral esthetics, has customarily been the place treatment arranging is started. This procedure starts by deciding perfect maxillary incisal edge situation in the jaw. This is expert by comprehension the incisal edge position with respect to various landmarks in the oral cavity. The accompanying things are viewed as primer to decide perfect incisal edge position (i) the correct arrangement of maxillary incisors looking esthetically satisfying, (ii) the requirement of any restorative or orthodontic mediation required for esthetic, (iii) the best possible measurements of tooth show statically and additionally progressively and (iv) length, size of tooth and arch estimate all in understanding to facial symmetry. The association among teeth, or curve frame, includes the golden proportion and tooth width position. Despite the fact that it is esthetically satisfying yet it only sometimes reflects characteristic tooth extents. As per an examination, the regular bits show a parallel incisor between 60 percent to 70 percent of the focal incisor width, which is bigger than the golden proportion.<sup>6</sup> Anyway a decide directing proportion is that the canine and all teeth distal ought to be seen to possess less visual space as we look from frontal view point. Another lead to help keep up proportions all through the arch / curve is 1 – 2 – 3 – 5; 2/3 of the central is the lateral and canine is 4/5 of the lateral, with some scope inside those spaces. At long test, contact territories can be moved remedially that may match the esthetic results.

As per examination, the golden proportion was not found between apparent mesiodistal widths of maxillary central and parallel incisors and not between saw mesiodistal widths of maxillary sideling incisors and canines. In majority subjects, the width – to – tallness proportion of maxillary central incisor was inside 75 percent to 80 percent. In addition there was no measurably critical contrast in maxillary foremost teeth proportions amongst females and males. These outcomes may fill in as rules for treatment arranging in helpful dentistry and periodontal surgery.<sup>8</sup> The point of this examination was to decide the predominance of golden extent and repeating esthetic dental extents in people with appealing grins going to the Out Patient Department at Institute De'Montmorency College of Dentistry, Lahore.

The grins were broke down to assess the pervasiveness of golden proportion and acquired information was measurably dissected. In an investigation of assessment golden proportion, repeating esthetic dental proportion (RED) extent was available in 6.6% of populace instead of golden proportion which was found in 0.6% of populace. It was discovered that seventy percent RED was more pervasive than golden proportion in appealing and ugly smiles<sup>9</sup>. Our examination shows that the golden extent isn't regular in the nearby populace. It was observed to be more typical in females than males going to the open air division of dental doctor's facility.

It is additionally to be noticed that the tooth, size of arch and the inter arch connections are for the most part particular for a specific population in this way having preference for the specific population and the sexual orientation. Along these lines, the golden proportion might be variable<sup>10-12</sup>. As indicated by the examination of Hasanreisoglu<sup>13</sup> about the anterior teeth width among population of Turkey, it was discovered that the measurements of the central incisors & canines had variations by sexual orientation without the golden proportion.

There has been no proof calling attention to that the golden proportion ought to be viewed as the perfect esthetic standard while making space for the substitution of the missed lateral incisors<sup>14</sup>. As indicated by Gillen et al<sup>12</sup>, the golden proportion was infrequently seen in his investigation gather with 54 people just utilizing dental throws to gauge golden extent. Different examinations have likewise demonstrated that the recurrence of the golden proportion in grins was very low<sup>15</sup>. The investigation conducted by Woelfel additionally demonstrated that golden proportion had not generally been regular wonders and varieties had been every now and again watched<sup>16</sup>. Based on comes about got in our examination gathering and on the outcomes from the diverse researchers<sup>17,18</sup>. We may reason that golden proportion ought not to be considered and perfect parameter for each case yet rather a range. Crafted by Ahmed et al<sup>19</sup> uncovered that golden proportion can be a decent beginning stage keeping in mind the end goal to acquire esthetically worthy outcomes, anyway any proportion of 0.6 to .08 might be esthetically adequate. The golden proportion can be useful to accomplish esthetic reclamations of the maxillary central and sideling incisors. Be that as it may the golden proportion between the apparent widths of the maxillary horizontal incisors to the canines does not appear to be unequivocal for an alluring grin and different variables ought to be considered.<sup>17</sup> As indicated by the Castro<sup>18</sup>, golden proportion was not regularly found in adjoining teeth appeared in grins in the example contemplated. Works of Mahshid at el likewise exhibited that the golden extent is definitely not a typical factor in esthetic grins<sup>19</sup>.

## CONCLUSION

Golden proportion is definitely not a typical finding in the investigation gathering. In spite of the fact that the golden

proportion is useful for the felicity of the esthetic rebuilding efforts yet it ought to never be considered as a vital part for each esthetic result. It may be beneficial for one situation yet may stay pointless for the next one. It is smarter to think the golden proportion as a range which may be balanced by both the patient's and additionally doctors' judgment.

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