

# EVALUATION OF SMILE ESTHETICS USING DIMENSIONAL ANALYSIS – AN IN VIVO STUDY

## ABSTRACT

**Aim:** To evaluate smile esthetics in all three planes of space from the frontal and profile view, and to relate it to overall facial attractiveness.

**Materials and Methodology:** A total of 20 samples were included in the study and divided equally into 2 groups based on gender; following which objective and subjective assessments were done. All standardization procedures were carried out and a video of 10 seconds duration was recorded with two cameras, placed at right angles to each other, covering both the views at the same time. The best frame depicting unstrained posed smile was selected for both the views and transferred to SmileDesignerPro software and Microsoft Office PowerPoint and quantification was done for objective assessments. A questionnaire together with a template consisting of photographs in frontal and profile view were distributed to the samples for assessing facial attractiveness subjectively.

**Results:** Statistical analysis was done using the statistical software SPSS version 22.0 for Windows. For continuous variables, means and standard deviations were calculated. Chi- square test, N – par test, ANOVA test, Percentage analysis, Cross tabulations were carried out for each parameter. Intra group and inter group comparisons were carried out for both the views based on gender; separately for objective and subjective assessments. Statistically significant values were obtained in transverse and sagittal planes of space. 70% of males and 40% of females selected chin as the best viewable structure from profile view to assess overall facial attractiveness. 90% of

males and females had selected teeth as the best viewable structure from frontal view to assess overall facial attractiveness. 77.8% of males and 71.4% of females had opted for correction of their teeth to improve their overall facial attractiveness.

**Conclusion:** No objective measures of smile could predict attractive or unattractive smiles as judged subjectively. This could be attributed to the fact that individual perception of smile esthetics is influenced by national/cultural backgrounds which in turn can affect multiple variables in unequal ways.

**Key Words:** Smile esthetics, Facial attractiveness, Sagittal plane, Transverse plane, Vertical plane, Frontal view, Profile view.