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The Correlation of Smile Line with the Vertical Cephalometric Parameters of Anterior Facial Height

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Abstract:

Statement of the problem: In the evolution of orthodontics, the changes in soft tissue, especially smile line attracts considerable attention. Purpose: The present study was carried out to evaluate the correlation of the smile line with the vertical parameters of anterior part of face. Materials and Methods: Forty-six Iranian adults, aged between 18-25 years were selected. Five quantitative and three qualitative variables of smile analysis were recorded for each subject. Cephalometric analysis was carried out using angular and linear parameters. The correlations between smile line variables and cephalometric parameters were calculated using Spearman and Pearson's correlation analyses. Results: The result of this study showed that the cephalometric parameters of N-Me, Pn-Line, N-B, N-Pg had significant correlations with quantitative variable of tooth-lower lip position. The P-values were $P=0.003$, $P=0.027$, $P=0.006$, $P=0.002$ respectively. N-Me, N-B, N-Pg represented significant correlations with interlabial gap on smile ($P=0.006$, $P=0.036$, $P=0.002$ respectively). There was a significant correlation between N-Pg and quantitative factor of tooth-upper lip position ($P=0.034$). Upper incisor to palatal plane showed a significant correlation with qualitative variable of tooth-upper lip position ($P=0.019$), interlabial gap on smile ($P=0.004$), and tooth-upper lip position ($P=0.006$). Upper incisor to FH represented a reverse relation with incisal edge to lower lip ($P=0.028$). This parameter also showed significant correlations with quantitative factors of tooth-lower lip position ($P=0.040$) and crown height ($P=0.002$). Conclusions: According to the results of this study, it can be concluded that, linear skeletal and dental vertical factors affect the vertical features of smile. Angular vertical parameters, except gonial angle, influence the vertical position of smile.

Keywords:

[Smile analysis](#) , [Vertical parameters](#) , [Soft tissue analysis](#)

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