

READER'S FORUM

Hsin-Chung Cheng, Pei-Chin Cheng

Factors affecting smile esthetics in adults with different types of anterior overjet malocclusion.

- *Korean J Orthod* 2017;47:31-38

I appreciate the authors for this interesting article about smile.

I think that the smile line is very important esthetic point to finish orthodontic treatment. I have some questions that are listed below.

Q1. Although this question may not be concerned with your article theme, which factor in your smile measurements do you think is the most crucial in each skeletal group for making a good smile, considering the fact that you have a profound knowledge of smile analysis?

Q2. The buccal corridor is one of the important factors for making a beautiful smile. I have anticipated that the buccal corridor ratio in J2 group would be higher than the other groups because Class II vertical patients were often associated with a smaller molar width than the normal group. But the result did not go as I expected. What do you think about this result?

Questioned by

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A1. In the past literature review, the relationship between smile esthetic variables and malocclusion lacked solid and sufficient evidence, therefore it aroused our interest to design a study of analyzing smile characteristics in different malocclusions. In our study, we found that arc ratio, upper teeth number showing, upper lip height, archform index, lower teeth exposure and interlabial gap were significantly different ($p < 0.001$) in each group according to Table 1. We couldn't verify which variable was the most crucial factor to affect smile because smile is influenced by multiple factors.

A2. The buccal corridor ratio of J2 group (1.67 ± 0.03) was higher than the other groups (J1: 1.48 ± 0.02 ; J3: 1.57 ± 0.03) in Table 1 as you anticipated. Thanks for your question.

Replied by

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Table 1. Comparison of smile measurements between different types of anterior overjet malocclusion using ANOVA

| | J1 (n = 30) | J2 (n = 34) | J3 (n = 42) | p-value | J1 vs. J2 | J1 vs. J3 | J2 vs. J3 |
|-----------------------|-------------|-------------|-------------|----------------------|--------------------------|--------------------------|--------------------------|
| Arc ratio | 0.64 ± 0.03 | 0.63 ± 0.08 | 0.34 ± 0.03 | < 0.001 [‡] | 0.01 ± 0.07 | 0.30 ± 0.07 [‡] | 0.29 ± 0.07 [‡] |
| Tooth number | 7.33 ± 0.18 | 6.79 ± 0.43 | 8.02 ± 0.28 | < 0.001 [‡] | 1.46 ± 0.48* | 0.69 ± 0.45 | 0.77 ± 0.44 [‡] |
| Upper lip height | 1.14 ± 0.04 | 1.00 ± 0.06 | 0.77 ± 0.04 | < 0.001 [‡] | 0.14 ± 0.07 | 0.37 ± 0.07 [‡] | 0.23 ± 0.07 [‡] |
| Upper midline | 0.60 ± 0.09 | 0.56 ± 0.04 | 0.43 ± 0.08 | 0.943 | 0.04 ± 0.11 | 0.17 ± 0.10 | 0.37 ± 0.10 |
| Buccal corridor ratio | 1.48 ± 0.02 | 1.67 ± 0.03 | 1.57 ± 0.03 | 0.266 | 0.19 ± 0.04 | 0.09 ± 0.04 | 0.10 ± 0.04 |
| Smile index | 4.44 ± 0.11 | 5.88 ± 0.37 | 5.31 ± 0.24 | 0.002 [‡] | 1.44 ± 0.40 [‡] | 0.87 ± 0.31* | 0.57 ± 0.37 |
| Archform index | 0.77 ± 0.01 | 0.70 ± 0.03 | 0.73 ± 0.01 | < 0.001 [‡] | 0.03 ± 0.02 | 0.03 ± 0.02 | 0.01 ± 0.02 |
| Lower teeth exposure | 0.39 ± 0.04 | 0.66 ± 0.06 | 0.80 ± 0.06 | < 0.001 [‡] | 0.27 ± 0.09 [‡] | 0.41 ± 0.08 [‡] | 0.15 ± 0.09 |
| Interlabial gap | 0.31 ± 0.01 | 0.34 ± 0.02 | 0.35 ± 0.02 | < 0.001 [‡] | 0.03 ± 0.02 [‡] | 0.04 ± 0.02 [‡] | 0.01 ± 0.02 |

Values are presented as mean ± standard error.

Group J1, 0 < OJ < 4 mm; Group J2, OJ > 4 mm; Group J3, OJ < 0 mm.

* $p < 0.05$, [‡] $p < 0.01$, [‡] $p < 0.001$; the *post hoc* test: J1 vs. J2, J1 vs. J3, J2 vs. J3.

Adapted from the article of Cheng and Cheng (Table 3; Korean J Orthod 2017;47:31-38).

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