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**ORIGINAL ARTICLE**

## **The Differences between Dentist's and Non-Dentist's Perceptions of Facial Attractiveness**

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### **ABSTRACT**

Orthodontics plays a role in an individual's appearance which can affect the perception of others that can vary greatly depending on their educational and social economic background. **Objective:** To determine if there were differences between dentist's and non-dentist's perceptions on facial attractiveness with normal occlusion and various types of malocclusions in Indonesian population. **Methods:** A cross sectional study was conducted on 80 dentists and 80 non-dentists aged 23-49 years old. The perceptions differences between groups were assessed using visual analogue scale on ten photographs for each gender that have been digitally manipulated. Mann Whitney test was used to analyze the differences. **Results:** Normal occlusion is the most attractive condition for dentists and non-dentists. There are significant differences between dentist's and non-dentist's perceptions of facial attractiveness showing normal occlusion, increased overjet, increased overbite, reduced overjet, reduced overbite, mild crowding, open bite, and reversed overjet malocclusions ( $p < 0.05$ ). Whilst both groups agreed ( $p > 0.05$ ) that severe and moderate crowding were the least attractive malocclusion. **Conclusion:** Regarding the facial attractiveness, dentist's and non-dentist's perceptions are significantly different for most malocclusion types. However, there is an agreement that severe and moderate crowding are the most disturbing malocclusion that have a considerable effect on facial attractiveness.

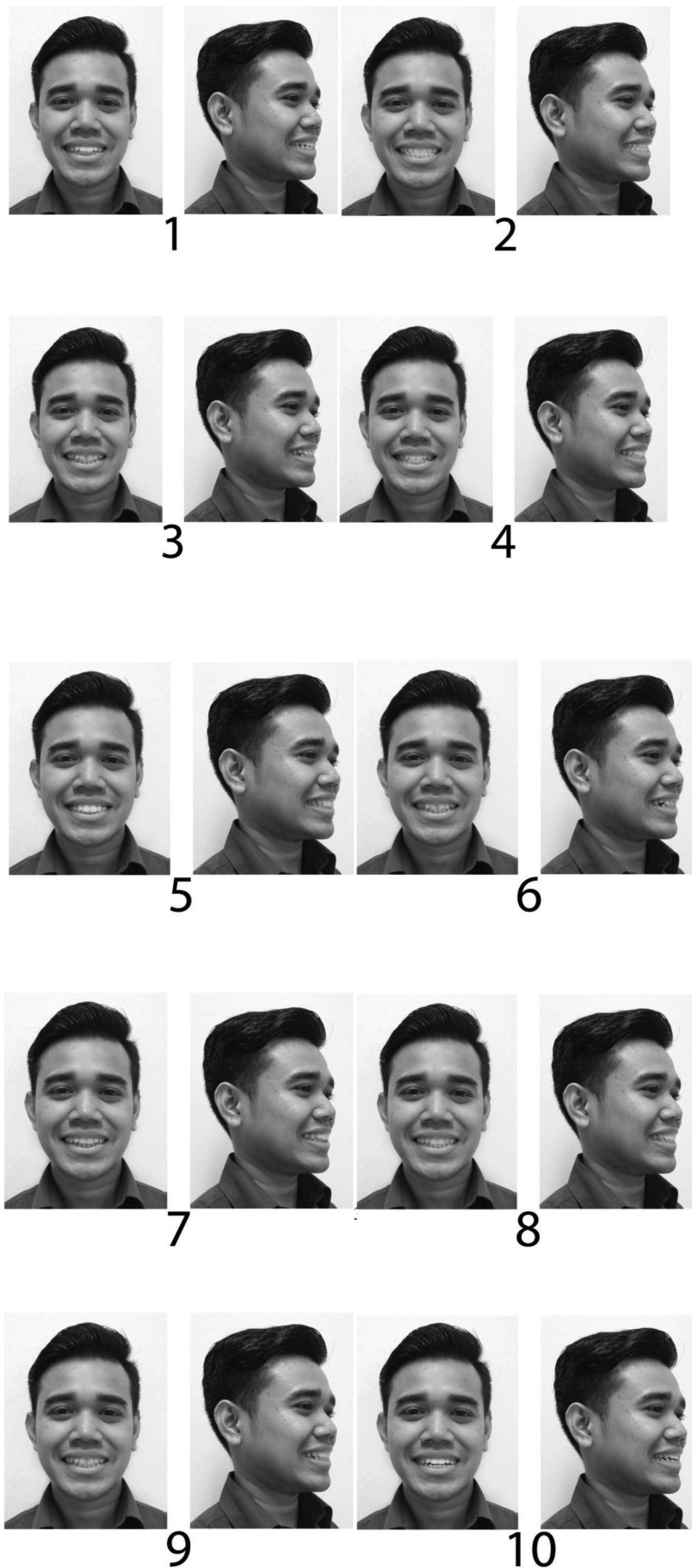
**Keywords:** facial attractiveness, malocclusion, orthodontics, perceptions.

### **INTRODUCTION**

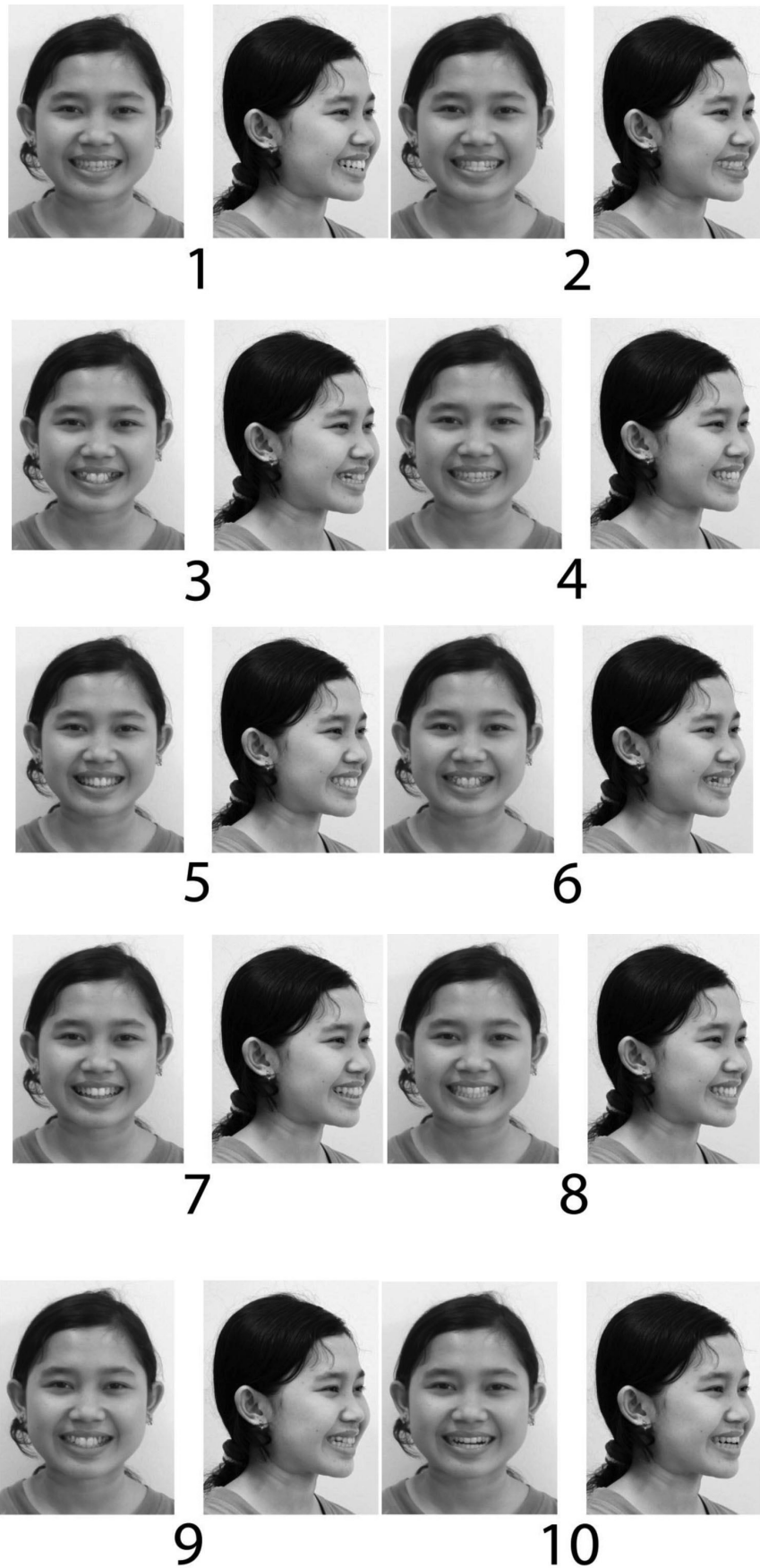
In the nineteenth century, malocclusion was thought to represent an abnormal state, but by the mid-twentieth century orthodontists questioned whether malocclusion was really a disfigurement or a malformation. In the twentyfirst century, we recognize that malocclusion is rarely a disfigurement, can occasionally be a malformation, but most often simply represents anatomical variation. In many cases, orthodontic treatment is used to improve dentofacial appearance and function to achieve a state that is considered "normal" and approach the theoretical ideal. Today, the goal of orthodontic treatment is often associated with an increase in the social life and quality of life of individuals. In an individual with Class I, spacing or mild crowding, which previously said was within normal limits and not needing orthodontic treatment, can now choose to obtain more than the normal

state and achieve perfection. Orthodontic treatment is currently considered to play a role in providing psychosocial impression to display social welfare and improvement in quality of life.<sup>1</sup>

Some studies showed that an individual's appearance can affect the perception of others. People with more attractive faces are judged more positively, more outgoing, socially competent and powerful, sexually responsive, intelligent, and healthy.<sup>2</sup> Children aged 8 to 10 year old with a pleasant dental alignment are seen by their peer to be happier, more loved by their parents, better mannered, more honest, and more altruistic.<sup>3</sup> Malocclusion has a psychological impact in adolescents and this impact increases with the severity of malocclusion.<sup>4</sup> A study in Michigan showed that malocclusions affect ratings of attractiveness,



**Figure 1.** Ten digitally manipulated male facial photographs showing normal occlusion and various types of malocclusion.



**Figure 2.** Ten digitally manipulated females facial photographs showing normal occlusion and various types of malocclusion.

intelligence, and personality, as well as behavioral intentions to interact with others.<sup>5</sup>

Positive or negative perceptions were influenced by environment, media, and culture in which individuals live.<sup>6,7</sup> Perceptions of attractiveness by dentists and non-dentists would be different because of their different background knowledge and expectation. It was previously showed that dental professionals and lay people have different smile esthetics perceptions.<sup>8</sup> Different results were shown in several studies.<sup>9,10</sup> They mentioned that there was no difference between a professional and a lay person's perception of facial attractiveness. A previous study showed that there was no significant difference in perception of orthodontists and general practitioners.<sup>11</sup>

The above studies showed that there were inconsistent results about the effect of various malocclusion types towards dentist's and non-dentist's perceptions of facial attractiveness. The objective of this study is to determine the differences between dentist's and non-dentist's perceptions of facial attractiveness with various malocclusions particularly in Indonesian population.

## **METHODS**

A cross sectional study was conducted to assess 160 subjects with age range between 23-49 years old. Research subjects consist of 80 dentists working at Faculty of Dentistry Trisakti University or Suku Dinas Kesehatan Jakarta Barat and 80 non-dentists with occupation as lecturers at Faculty of Law and Faculty of Economic, Trisakti University. The non-dentist samples were taken from the same level of education and social economic status to ensure their homogeneity. Ethical clearance for this research was issued by Faculty of Dentistry Trisakti University Research Ethic Commission. The entire research subjects were given the preliminary information about this research and signed an informed consent if they agree to participate in this study.

The photos of male and female faces of average attractiveness were manipulated to depicted persons with a normal occlusion and nine types of malocclusion using Adobe Photoshop CS5 Extended Program, version 12.0 x64 (Adobe System Inc., USA). This design ensured every aspect of the photos characteristics other than malocclusion types were remains constant.

The differences between dentist's and non-dentist's perceptions were assessed by every subjects in each group giving scores on ten males (Figure 1) and ten females (Figure 2) models gray scale facial photographs that have been digitally manipulated, showing normal occlusion and nine types of malocclusion.

The nine malocclusion types included in this study were crowding mild (1-<5 mm), moderate (5-8 mm), and severe (>8 mm), anterior openbite (overbite <0 mm), reduced overbite (overbite 0-<2 mm), and increased overbite (overbite >2 mm), anterior crossbite (overjet <0 mm), reduced overjet (overjet 0-<2 mm), and increased overjet (overjet >2-6 mm), Normal (crowding 0 mm, overbite 2 mm, overjet 2 mm) was also included in this study.

Perception of facial attractiveness was measured by visual analogue scale (VAS) scoring 0-10. Correlation test was used to assess the inter and intra reliability of the questionnaires using ten randomly selected subjects for both dentists and non-dentists groups. The photographs as part of the questionnaires were scored twice at seven days apart. Kolmogorov-Smirnov was used for normality test. Subsequently, Mann Whitney test was used to analyze the differences between dentist's and non-dentist's perceptions of facial attractiveness with various types of malocclusions.

## **RESULTS**

The intra observer reliability of the questionnaire by means of correlation test showed good correlation (r value 0.764-0.998). Kolmogorov-Smirnov normality test indicated that all data from both dentists and non-dentists group for all types of malocclusion is not normally distributed (p <0.05). Therefore, the Mann Whitney non-parametric test was chosen to test the relationship between malocclusion and ranks of attractiveness between dentists and non-dentists. The test found statistically significant different between dentists and non-dentists in their perception of attractiveness as influenced by malocclusion. The test also found that the most attractive facial appearance was the face with normal occlusion, followed by increased overjet, increased overbite, reduced overjet, reduced overbite, mild crowding, open bite, reversed overjet, moderate crowding, and severe crowding (Table 1).

The perceptions of facial attractiveness showing various malocclusions were significantly different between dentists and non-dentists for normal occlusion, increased overjet, increased overbite, reduced overjet, reduced overbite, mild crowding, open bite and reversed overjet. There were no significant differences between dentist's and non-dentist's perceptions on facial attractiveness showing severe crowding and moderate crowding (Table 2).

## **DISCUSSION**

Previous studies showed that different malocclusions can affect person perceptions.<sup>4,5</sup> There was contradictory agreement on perception of facial attractiveness

**Table 1.** Malocclusion ranks of attractiveness between dentists and non-dentists

Malocclusion ranks of attractiveness by dentists (n =160)	Median	Malocclusion ranks of attractiveness by non-dentists (n=160)	Median
Normal	8.00	Normal	7.00
Increased overjet	7.00	Increased overjet	6.00
Increased overbite	6.00	Increased overbite	6.00
Reduced overjet	5.00	Reduced overjet	6.00
Reduced overbite	5.00	Reduced overbite	6.00
Mild crowding	5.00	Mild crowding	5.00
Open bite	4.00	Open bite	5.00
Reversed overjet	4.00	Reversed overjet	5.00
Moderate crowding	3.00	Moderate crowding	3.00
Severe crowding	3.00	Severe crowding	3.00

between dental professionals and lay-persons.<sup>8-10</sup> We analyzed whether dentists and non-dentists perceived facial attractiveness differently depending on the type of occlusion exhibited.

Normal occlusion was the most attractive condition for dentists and non-dentists. The results were similar to a study before, photos showing the target persons with normal occlusion were evaluated as most attractive, most intelligent, most agreeable, most extraverted, and very conscientious.<sup>5</sup> Although the malocclusion rank of attractiveness between dentists and non-dentists were relatively the same, there were some discrepancies detected. Dentists tend to give higher scores for normal and increased overjet, and lower scores for open bite and reversed overjet. It showed that dentists were more sensitive in detecting various malocclusions from photographs.<sup>13</sup>

Severe crowding and moderate crowding were the least attractive malocclusion. There were no differences between dentist’s and non-dentist’s perceptions of facial attractiveness showing severe crowding and moderate crowding. The results were consistent with a previous study which stated that crowding created the worst impression and were among the most dislike malocclusion traits. People with crowding trait were easily noticed for their compromised aesthetics and had to face discrimination.<sup>12</sup>

This study showed that perception of facial attractiveness showing different type of malocclusions were different between dentists and non-dentists. Thus, it is highly recommended to line up expectations between provider and patient prior to treatment.

**CONCLUSION**

Regarding the facial attractiveness, dentists and non-dentists perceptions particularly in Indonesian

**Table 2.** Differences between dentist’s and non-dentist’s perceptions of facial attractiveness

Malocclusion	Dentist (n=160)	Non-dentist (n=160)	p
Normal	8.00	7.00	0.000*
Increased overjet	7.00	6.00	0.000*
Increased overbite	6.00	6.00	0.000*
Reduced overjet	5.00	6.00	0.001*
Reduced overbite	5.00	6.00	0.008*
Mild crowding	5.00	5.00	0.001*
Open bite	4.00	5.00	0.000*
Reversed overjet	4.00	5.00	0.000*
Moderate crowding	3.00	3.00	0.126
Severe crowding	3.00	3.00	0.061

\* p <0.05

population are significantly different for most of the malocclusion types. However, there is an agreement that severe and moderate crowding are the type of malocclusion that showed considerable effect on facial attractiveness. Differences in perception of facial attractiveness were found to be influenced by educational background and specific professional training. Further study needs to be conducted involving orthodontists.

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**CONFLICT OF INTEREST**

There are no potential conflicts of interest or any financial or personal relationships with other people or organizations that could inappropriately bias the conduct and findings of this study. The people in this article understand that the information will be published without name attached, but that full anonymity cannot be guaranteed. They understand that the text and any pictures or videos published in the article will be freely available on the internet and may be seen by the general public. The pictures, videos and text may also appear on other websites or in print, may be translated into other languages or used for commercial purposes. They have been offered the opportunity to read the manuscript. They have signed written informed consent for publication of their clinical details and/or clinical images was obtained from the patient/parent/guardian/ relative of the patient. A copy of the consent form is available for review by the Editor of the Journal of Dentistry Indonesia.

## REFERENCES

1. Graber LW, Vanarsdall Jr RL, Vig KWL. Orthodontics: Current Principles and Techniques. 5<sup>th</sup> ed. Philadelphia: Mosby; 2012.p. 4-5, 9-10.
2. Zebrowitz LA, Montepare JM. Social psychological face perception: why appearance matters. *Soc Personal Psychol Compass*. 2008;3:1497
3. Verdecchia F, Bee M, Lombardo L, Sgarbanti C, Gracco A. Influence of anterior tooth alignment on peer perception in 8- to 10-year-old children. *Eur J Orthod*. 2011;33:155-60.
4. Bellot-Arcis C, Montiel-Company JM, Almerich-Silla JM. Psychosocial impact of malocclusion in Spanish adolescents. *Korean J Orthod*. 2013;4:193-200.
5. Olsen JA, Inglehart MR. Malocclusions and perceptions of attractiveness, intelligence and personality, and behavioral intentions. *Am J Orthod Dentofac Orthop*. 2010;140:669-79.
6. Sharma RK, Sharma R. *Social Psychology*. New Delhi: Atlantic Publishers and Distributors; 2013. p.119-24.
7. Vaughn LM. *Psychology and Culture: Thinking, Feeling and Behaving in a Global Context*. New York: Psychology Press; 2010. p. 81-5.
8. Rosa M, Olimpo A, Fastuca R, et al. Perceptions of dental professionals and laypeople to altered dental esthetics in cases with congenitally missing maxillary lateral incisors. *Prog Orthod*. 2013;14:34.
9. Maple JR, Vig KW, Beck FM, Larsen PE, Shanker A. A comparison of providers' and consumers' perceptions of facial-profile attractiveness. *Am J Orthod Dentofac Orthop*. 2005;128:690-6.
10. Knight H, Keith O. Ranking facial attractiveness. *Eur J Orthod*. 2005;27:340-8.
11. Bilal R, Arjumand B, Raheem S, Shabir O, Kanwal Q. Smile as perceived by orthodontists and general practitioners. *Pak Orthod J*. 2010; 2:60-5.
12. Srivastava SC, Verma V, Panda S, Anita G. Perception of esthetics of different malocclusion traits by laypersons. *J Indian Orthod Soc*. 2013;47:474-8.
13. Badran SA, Mustafa M. A comparison between lay people and orthodontists in evaluating the effect of buccal corridor and smile arc on smile esthetics. *J World Fed Orthod*. 2013;2:e123-6.

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