

Smile aesthetics and malocclusion in advertising models on Nigerian billboards

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Abstract

Objective: There is a growing influence of advertising media on the perception of dental appearance in the Nigerian society. This study examined the portrayal of malocclusion on advertising billboards that is directed at the Nigerian public

Method: A representative selection of 100 advertising models on billboards from three major Nigerian cities was investigated. The prevalence and severity of malocclusions observed including the median diastema, which is of cultural importance, were assessed using a modification of Aesthetic Component of Index of Orthodontic Treatment Need (IOTN). Intra-examiner calibration of all the smiles showed adequate agreement.

Results: It showed that the aesthetic scores were low for the majority of models (94%) indicating “no need or a borderline need” for treatment, whilst insignificant models (6%) exhibited a “definite need for treatment”. However, median diastema, a sign of personal beauty in this cultural setting did not feature prominently in the smile aesthetics.

Conclusion: The study concluded that the portrayal of occlusal disharmonies on models in billboards may not be generalized to the entire Nigerian population.

Keywords: Smile Aesthetics, Malocclusion, Advertising models, IOTN, Nigeria

Introduction

Historically, science has tried to define dental and facial beauty in its own terms. Social psychologists have stressed the importance of facial attractiveness on the socialization process. Many social science research indicates that unacceptable dento-facial appearance, including visible dental characteristics that deviate from the norm, are phenomena that may stigmatize, impede career advancement and peer group acceptance, encourage negative stereotyping and may have a profound effect on self concept⁽¹⁻³⁾. All these may reduce one's life chances.

For professions where dental appearance plays an important role, those that are prestigious and those in which a person is visible to the public, an individual's dento-facial disorders may definitely influence career aspirations and employment opportunities⁽³⁾. Generally, the two interrelated ways in which unacceptable dento-facial traits may affect psychosocial well being of an individual negatively are unfavourable social response and poor self esteem⁽⁴⁾.

In the developing world especially the African culture, physical attractiveness is an important social issue and dento-facial appearance is one of its key features. The concept of “ideal body image” is very evident in the African society today, though beauty involves more than being fat or thin. In certain places in Africa, particularly in South-Eastern Nigeria, prospective brides are shut up in “fattening farms,” where they are fed large amount of rich food with the idea that they will become more attractive. In the Yoruba culture (a major ethnic group in Nigeria), the importance of good and pleasing dento-facial structures

cannot be overemphasized. Certain expressions such as “when the front teeth of a woman are lost, her beauty is destroyed” and “when the teeth are lost, the beautiful smile is gone” are often used. Some are even called by nicknames based on their dental characteristics, for example, 'eyinafe' meaning “someone with a set of teeth that can be exhibited socially”.

The media, through advertisement on billboards and television have done much to further this thinking. There is also a growing influence of advertising media on the perception of dento-facial appearance in the Nigerian society.

The objective of this study was to determine the level of desirability of dental attractiveness of advertising models presented on Nigerian billboards.

Materials and Method

This study was carried out in three major Nigerian cities (Lagos, Ibadan and Ile-Ife) using a representative selection of 100 advertising models on billboards. Models selection was based on systematic random sampling from a list of 300 photographed advertising models that fulfilled the criteria for inclusion in the study. The broad smile of each model showing the frontal intra-oral details of dental appearance was photographed using FujiFine Pix S2 Pro digital camera with Tamron AF28-200mm Super Zoom Macro lens. Only those smiles that clearly showed both first premolars of the upper arch and some visible lower labial segment were photographed (**Figure 1**). Each model to be assessed was assigned an identification number from 1 to 300. The pictures were later transferred to a personal

laptop computer. The surrounding region including the lips of each model was blocked out from the digital photograph as described by Mattrick, Gordon and Gillgrass⁽⁵⁾ in order to eliminate bias. The Aesthetic Component (AC) of IOTN which consists of a scale of 10 colour photographs showing different levels of dental attractiveness, grade 1 representing the most attractive and grade 10 the least attractive dentitions was matched with the overall dental appearance of each model to determine the level of dental attractiveness (**Table 1**).

Earlier, a subset of 20 photographs of advertising models was selected (excluded from the main study) for the intra-examiner reliability test using Kappa statistics.

Result

Repeat observations were found to show adequate agreement (kappa = 0.91). Table 1 showed the distribution of orthodontic treatment need according to the IOTN AC scale for analyzed smiles. Majority of the models were female (88%).

The results showed that most of the smiles (85%) had low aesthetic scores, therefore had no or only a slight need for orthodontic treatment while 9% of the smiles had a borderline or moderate need for treatment, as assessed using the AC. Only 6% of the smiles had a definite need for orthodontic treatment. Median diastema which is a sign of beauty in this culture did not feature prominently in the smile aesthetics. In this survey, only two cases (2%) were seen with median diastema.

Table 1. Treatment needs of smiling models according to aesthetic score

Aesthetic Component (AC)	Treatment Category	No. of smiles (%)
Grades 1-4	No need/slight need for treatment	85
Grades 5-7	Moderate/borderline need for treatment	9
Grades 8-10	Definite need for treatment	6

Discussion

Though the sample size was small, but represented a variety of advertising models on the billboards across the region and the coverage was also wide.

Predictably, the majority of the models had an appearance where the treatment required was either "slight or not indicated" according to the AC. Interestingly, the finding of this study is similar to the report of Mattrick, Gordon and Gillgrass⁽⁵⁾ which showed that only 7.2% of models in UK teenage magazines exhibited a definite need for treatment. One can argue that since the entire dentition could not be seen, more malocclusion could have been detected. Since the scope of the study was limited to the area naturally seen during smile, it could easily be acceptable.

Generally, the proportion of individuals in "definite need of treatment" was much lower in this study than the general Nigerian population which is about one-tenth^(6,7). The representation of "ideal" occlusion as the "norm" in



Figure 1. A billboard on one of Nigerian roads showing the smile of a model with an inset of frontal intra-oral details



advertising models in this survey is expected, as this is a marketing strategy to trigger favourable response from the public. Over-representation by this “ideal occlusion” may stimulate or drive public dissatisfaction with their occlusion, hence encourage orthodontic treatment. With increasing advertising models in the Nigerian society due growth in the Nigerian economy, public perception of “ideal” dental occlusion will definitely improve in the near future. This will in turn translate into more people seeking orthodontic treatment and more work for the few orthodontists.

One important finding that emerged from this study was that median diastema, a malocclusion trait that is well admired and seen as a sign of personal and natural beauty among Africans was only found in 2% of the advertising models. This probably indicates that the basic elements of perception of dental aesthetics populations are essentially the same. This finding tends to support those of McCuller and Staat⁽⁸⁾ and Otuyemi et al⁽⁹⁾, who suggested that different racial and cultural groups share a common concept of dental aesthetics.

Conclusion

The study concluded that there is an overwhelming representation of “ideal” occlusion on billboards and the portrayal of dental appearance of advertising models on these billboards was not a true representative of the general Nigerian population. The smiles on billboards may have persuasive messages on the Nigerian public, which may encourage their desire for orthodontic treatment.

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