

ORIGINAL RESEARCH

A CROSS-SECTIONAL STUDY SOCIAL PERCEPTIONS OF ADULTS WEARING ORTHODONTIC APPLIANCES

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Abstract

In this study, young adult orthodontic patients' subjective assessments of their own social competence (SC), intellectual ability (IA), psychological adjustment (PA), and beauty were evaluated. With 260 undergraduates, a cross-sectional analytical questionnaire study was done. Each participant was required to see a single, randomly chosen colour photograph of a young adult girl before making assessments of her personality traits. The same young adult female was depicted in five altered photos: (1) with no appliance, (2) with a fixed stainless steel orthodontic appliance, (3) with a fixed ceramic orthodontic appliance, (4) with a fixed gold orthodontic appliance, and (5) with a clear, colourless aligner. Likert scales were utilised, with higher scores denoting more favourable reviews. The chi-square test was used to analyse the results. For SC and PA, there were no discernible differences in the looks of the various orthodontic appliances. There was a tendency where the transparent aligner or no appliance appearance was viewed as more attractive than the visible buccal fixed appliances. In the absence of additional information, a young adult's perceptions of a young adult's personal traits are influenced by their teeth's look and the design of their orthodontic appliances. This might affect how you choose your orthodontic device.

Keywords: Orthodontic appliances, Social Perception, Aligners, Orthodontic treatment.

Introduction

Adults seem to be seeking orthodontic treatment in greater demand (1). This is believed to be the outcome of greater social acceptance of appliance therapy, higher dental and orthodontic understanding, and (2). The improvement in adult orthodontic treatment acceptance may also be significantly attributed to cosmetic appliance innovation. Adults contemplating treatment now have a variety of appliance designs to choose from, such as traditional steel, ceramic, and gold-plated metal buccal brackets; lingual appliances; and detachable appliances, such as clear plastic aligners. Treatment appliances have improved, making it possible to correct malocclusions that were previously impossible to correct without surgery or extraoral anchorage. The necessity for orthodontics as an adjuvant to other dental specialties has increased as a result of an increase in collaborative treatment planning.

It has been demonstrated that a person's facial features can be used to infer a number of traits about them, such as their personality, moral character, level of social and intellectual aptitude, and mental health (3). People who are deemed attractive typically earn more money, achieve more in life, and feel more valuable than people who are not as attractive (4,5). The condition of the mouth and teeth is crucial to face aesthetics. According to studies, when two people are face to face, the eyes predominantly scan the other person's mouth and eye regions, spending minimal time on other facial features (6). Some professional associations think that distinguished employment demand a decent dental look (7). Extreme departures from accepted standards for facial and dental appearance are considered inappropriate (8). People have negative views of your personality when your dentofacial look is poor (9). Less dental illness is associated with better psychological adjustment (PA), greater

academic success, and social competence in people. In the absence of additional information, a person's perceptions about another person's personality are influenced by their oral health (10).

According to research on adult patients, people have distinct opinions about the sort of appliance they use, with headgear receiving the most negative feedback. They have highlighted embarrassing situations as deterring features of treatment (11). When it comes to significant life events like finding work or a relationship, how others see young adults getting braces is crucial. Therefore, the optimal orthodontic device for social acceptance would be one that received the most favourable social opinions.

Prior research has employed the alteration of standardised photographs to vary along one dimension to examine the effect of dental appearance on the evaluation of personal qualities(10). There are no documented studies directly connecting fixed orthodontic appliances to arbitrary assessments of another person's traits. The purpose of this study was to determine how orthodontic appliances affected an adult patient's subjective assessments of their social competence (SC), intellectual ability (IA), psychological adjustment (PA), and beauty. The null hypothesis was that there is no relationship between orthodontic appliances and assessments of an adult's personality.

Methods

The Institute Research and Ethics Committee gave its blessing to this project. In this cross-sectional study, participants' evaluations of a young adult female's personal traits in a colour photograph were compared to the presence or absence of an orthodontic appliance. Prior to gathering any other information, each participant was given a random envelope containing a single photograph and asked about their impressions. Each participant had a fair chance of receiving any of the five chosen images. No participant strata were used. Throughout the entire process, the researcher's interest in oral aesthetics was kept a secret by informing participants that she was studying "the way we look at each other."

Undergraduates were selected because they age-wise correspond to the peer group of a young adult between the ages of 18 and 25. The exclusion criteria included those outside of this age range as well as those with substantially impaired vision because the majority of adult orthodontic patients are between the ages of 18 and 25. A young adult female was photographed in standardised full-face colour images. In keeping with natural look guidelines, the patient smiled to show as much of the maxillary anterior teeth as she could. Her lack of malocclusion and apparent lack of oral pathology made it possible to exclusively study the impact of fixed appliances on her look. To temporarily secure the various permanent appliances to the teeth so that the standardised photos could be taken, an upper removable appliance was employed.

A systematic questionnaire asked about the SC, IA, PA (3), and attractiveness categories of human traits that were substantially correlated with physical appearance. SC was the focus of questions 1, 2, and 3, while IA was the focus of questions 4, 5, and 6, PA was the focus of questions 7, 8, and 9, and attractiveness was the focus of question 10.

Individual scores were added together to provide final scores for the four scales: SC, IA, PA, and attractiveness. Higher scores meant that an attribute was rated more highly. The Office of Population Census and Surveys (1992) categories for gender, self-identified ethnicity, dental attendance behaviour, perceived oral health, and questions from the Adult Dental Health Survey of England and Wales (12) were used to collect additional information about the participants. Participants were asked to rate their personal oral health as either outstanding, very good, good, fair, or poor (13).

Results

264 undergraduate students in all were enrolled in the study, making for a total of 260 participants. Four were disqualified because they didn't fit the age inclusion criteria. For each photograph, the randomization procedure did not provide an equal number of participants. 100% of the subjects had complete data for each of the three perception and attractiveness tests. For gender and self-rated dental health, no statistically significant differences were detected between the photograph groups (Table 1). The distribution of participants' dental attendance patterns among the photograph groups revealed significant disparities. But the three perceptual measurements and attractiveness scores did not change as a result of this (chi-square 0.35, significance 0.84). To examine ethnic disparities for

each photograph, there weren't enough people in each ethnic group. There was no statistically significant difference between the opinions of white and non-white ethnic groups (chi-square 5.49, $P = 0.24$). There was a statistically significant difference in each photograph's attractiveness, but not for any other quality (Table 2).

Table 1: Description of sample

	No appliance	Steel	Ceramic	Gold	Aligner	Chi square (P value)
Gender						
Male	28	14	30	20	18	8.20 (0.09)
Female	22	40	22	32	34	
Attendance Pattern						
Regular	14	36	18	18	18	19.23 (0.01)
Occasional	24	16	12	24	16	
In trouble	12	2	22	10	18	
Self-rating of oral health						
Excellent	6	8	8	8	8	19.09 (0.26)
Very good	20	20	12	16	30	
Good	14	24	26	20	12	
Fair	10	0	6	8	2	
Poor	0	2	0	0	0	

Table 2: Responses to each question across the five appliance groups.

	Chi square (P value)
1. Popularity with colleagues	15.74 (0.20)
2. Friendly appearance	15.15 (0.23)
3. Good social life	13.90 (0.08)
4. Successful at school	13.98 (0.30)
5. How intelligent	18.78 (0.09)
6. Went to university	09.22 (0.32)
7. Extrovert	11.41 (0.78)
8. Happy person	10.77 (0.55)
9. How self-confident	22.79 (0.12)
10. How attractive	34.30 (0.01)*

Discussion

The findings showed that, compared to ceramic and steel appliances, but similar to gold and aligner appliances, greater perceived IA was related with the no appliance appearance (looking like a lingual appliance). For SC and PA, there were no discernible variations between the various appliances. There was a trend where the absence of an appliance (which resembled a lingual appliance) or the presence of an appliance with a clear aligner were seen more appealing than apparent buccal fixed equipment. These findings imply that the appearance of orthodontic appliances affects how people are judged in social settings.

It is difficult to quantify subjective judgments based on visual perception. In the present study, individuals were forced to make arbitrary decisions in an artificial circumstance. Participants in this fictitious scenario did, however, make decisions that revealed a recurrent pattern for the IA of the person being portrayed. Previous research employing this method has demonstrated that participants do not provide random responses and that dental defects have an impact on participants' responses (10). However, judging someone solely on their outward look is unlikely to be accurate. Participants in this study could only concentrate on appearance because other criteria were precluded by the artificial experimental setting. All of the participating parties were undergraduate students.

The results of this study imply that a visible orthodontic appliance has an impact on social contact and, consequently, the social wellbeing of a young female adult. It is unknown how much these impressions will affect a person's psychological health. An individual's perception of themselves may be negatively impacted by social perceptions (14). Social interaction and the creation of social judgments are important parts of many facets of life. Therefore, the optimal orthodontic device for social acceptance would be one that received the most favourable social opinions.

Depending on cultural customs and socioeconomic background, the effect of orthodontic appliance aesthetics on impressions of personal traits may differ. There weren't enough participants from each ethnic group in the current study to conduct a meaningful comparison. However, when comparing the opinions of white and non-white ethnic groups, no appreciable distinction was discovered. Living in an atmosphere that was similar to Western multiculturalism may have had an impact on both groups. A blonde Caucasian woman served as the study's volunteer and was photographed. Due to preconceived notions, photographs of persons from various ethnic groups with varying appearances may have yielded varied results.

Conclusions

In the absence of other information, a young adult's perceptions of the personal traits of other young adults are influenced by dental appearance and the design of orthodontic appliances. This may therefore affect the choice of orthodontic appliances. Individuals with an undetectable lingual brace or no appliance appearance were thought to have higher IA than those with metal or ceramic appliances. There is a current trend where invisible or clear aligner appliances are viewed as more beautiful than obvious ones. The null hypothesis, according to which orthodontic equipment have no effect on people's assessments of an adult's personal qualities, was thus disproved.

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