

Emotional Effects of Malocclusion in Nigerian Orthodontic Patients

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Abstract

Aim: To assess the emotional effects of malocclusion among Nigerian orthodontic patients.

Design: A questionnaire survey.

Subjects and Methods: A questionnaire was completed by 221 Nigerian orthodontic patients undergoing routine orthodontic care at the Orthodontic Unit, Department of Preventive Dentistry, University College Hospital, Ibadan and the Department of Child Dental Health, Lagos University Teaching Hospital, Lagos, both in South-West Nigeria. The participants were comprised of 97 (43%) males and 124 (56.1%) females with age range of 6-40 years (mean age, 13.82 ± 8.01 SD). Data were analyzed using descriptive statistics and Chi-square test.

Results: About 44% of all participants had not yet accepted their malocclusions, while 56.6% of all subjects reported for orthodontic care due to aesthetic reasons. Twenty-seven percent of the subjects were depressed the first time they notice their malocclusions. Over 40% of the participants reported feeling less confident as a result of their malocclusions and about 55% of them felt their malocclusions negatively affected their general

facial appearances. Normal activities restricted in some of the subjects due to malocclusion included laughing in public (48.9%), meeting people in public (32%), and forming close relationships (20.4%). The majority (64.7%) of the subjects discussed their malocclusions with their parents, followed by dentists (35.3%).

Conclusion: The psychosocial effects of malocclusion in Nigerian orthodontic patients were considerable with no significant gender differences. Considering such factors, professional counseling of Nigerian orthodontic patients is encouraged.

Keywords: Malocclusion, psychosocial effects, Nigerian orthodontic patients

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Introduction

Professional assessment of the need for orthodontic treatment implies considerations to whether the malocclusion has or will have adverse effects on the oral health and/or the social or psychological well being of the individual.¹ The motivation to seek orthodontic treatment appears to be strongly related to the individual's perceptions of the extent to which their dental facial appearance deviates from sociocultural norms.²⁻⁴



A person's response to dental facial attractiveness can be viewed as a type of psychosocial response to occlusal status⁵ and as such have a cultural emphasis.² There is a body of opinion that an individual's level of satisfaction with their facial appearance may have important implications for their self esteem.^{3, 6-11} Although there are substantial reports on social or psychosocial aspects of malocclusion among the population of the industrialized parts of the globe, there has been little in the way of systematic study of the area to shed light on the actual effects of malocclusion on the individual's perception of self.¹² In an American study¹³ demonstrable differences were found in body-image and self-concept satisfaction between a prospective orthodontic patient sample, a treated group, and a general population sample.

In a carefully structured investigation Sergl and Stodt¹⁴ found that minor variation in tooth positions could be a significant determinant for

the overall aesthetic impression of a face. The teeth also seem to be an important target for teasing and ridicule among school children, 7% of whom were teased about their teeth once per week or more in the study of Sergl and Stodt.¹⁴ Research with children indicates physical appearance is important in biasing judgments of social acceptability, ability and person ability, and whether the judges are adults or other children.¹⁵⁻¹⁷ Children themselves see peers who are physically attractive as more socially attractive¹⁸⁻²⁰, and unattractive children are more likely to be the victims of bullying²¹ In deed unacceptable dental appearance including deviant dental characteristics are a phenomena that may affect many facets of social interaction including career advancement, peer group acceptance, and negative effect on self concept.²²⁻²⁴

Nigeria is the most populous black nation in the world today with well over 120 million people. Ibadan City is the capital of Oyo State in Nigeria and the largest city in the southern Sahara, while Lagos is the most populated city in Nigeria and a major economic nerve centre in the country. The practice and teaching of orthodontics started at the Lagos University Teaching Hospital (LUTH), Idi-araba, Lagos. Dental centre, University College Hospital, Ibadan, Nigeria and the Dental centre, Lagos University Teaching hospital (LUTH), Lagos, Nigeria, are among the major referral centres for orthodontic care in Nigeria.

Knowledge about orthodontic patients' psychosocial or emotional reactions to malocclusion in Nigeria could be helpful in

effective professional counseling and treatment of patients within the Nigerian context; therefore, the aim of this study was to assess the psychosocial or emotional effects of malocclusion among orthodontic patients in Nigeria.

Materials and Methods

A survey was conducted of patients attending the orthodontic clinics in two teaching hospitals in Nigeria: University College Hospital, Ibadan and Lagos University Teaching Hospital, Lagos, both in South-West Nigeria.



A pre-tested, 15-item questionnaire (Figure 1) modified from the work of Fiske et al.²⁵ to elucidate psychosocial or emotional effects of malocclusion in orthodontic patients was administered to 221 consecutive patients. The subjects consisted of 97 (43.9%) males and 124 (56.1%) females with age range of 6-40 and mean age of 13.82 ± 8.01 (SD) years, respectively.

Questionnaires were distributed and collected in accordance with the guidelines recommended by Gosney.²⁶ To eliminate biased responses from the subjects, the replies were anonymous. All the patients who came for treatment or were already receiving treatment between March and September, 2003 who were willing to participate in the study were included.

Statistical Analysis

The data were analyzed using descriptive statistics (frequency distribution, percentage ratio for each of the variables, mean age, and standard

deviation), while chi-square tests were used to test for gender differences with the variables. The critical level of statistical significance was set at $P < 0.05$. All analyses were done using statistical package for social sciences (SPSS for MS WINDOWS Release 6.0).

Results

The age and gender distribution of the patients is shown in Table 1 with well over half of them belonging to age 15 years and below. More females sought orthodontic treatment than males.

The majority of subjects needed orthodontic care for aesthetics (56.6%). Functional reasons accounted for 12.2%, while psychological reasons gave 10.0% as shown in Table 2.

Table 3 shows the distribution of the time taken to accept the malocclusion by the subjects with the majority (44.3%) yet to accept their malocclusions. No statistically significant ($p > 0.05$) gender differences were observed.

With regard to confidence, over 40% of the participants reported feeling less confident as a result of malocclusion, while 2.7% claimed they felt more confident. Close to 40% claimed no difference in confidence as shown in Table 4. Thinking back on their initial feelings when they first noticed the malocclusions, 34.4% said they felt sad, 6.3% were angry, 26.7% had depression, and 35.3% were unconcerned.

Regarding confidence, 23.1% reported having less confidence eating in public, while 3.6% and 73.3% indicated feeling more confident and no difference in confidence, respectively. Over 32% felt less confident meeting people publically, 5.4% claimed feeling more confident, and 62.0% said it did not make any difference. Laughing in the public was a problem for 48.9%, while 5.9% and 45.2% claimed feeling more confident and no difference in confidence, respectively. About 20.4% felt less confident to form close relationships, 6.3% felt more confident, and 73.3% said they experienced no difference.

Table 5 shows the distribution of activities restricted due to malocclusion as reported by the subjects. Laughing in public was mostly affected (47.1%).

Figure 1.

QUESTIONNAIRE FOR ORTHODONTIC PATIENTS

- (1) Age group: (a) 6-10yrs (b) 11-15yrs (c) 16-20yrs (d) 21-25yrs
 (e) 26-30yrs (f) 31-35yrs (g) 36-40yrs (h) 41yrs and above
- (2) Sex: Male Female
- (3) Occupation: _____
- (4) What is the problem? _____
- (5) Will you say you needed the treatment for (tick one or more)
 (a) Aesthetics (b) Function (c) Stable occlusion
 (d) Psychological reasons (c) Others _____
- (6) For how long have you noticed the problem? _____
- (7) Since the time you noticed the problem, did you find it difficult to accept the condition?
 Yes No Don't know
- (8) How long was it before you felt that you had accepted the condition?
(Please tick one answer only)
 I still haven't accepted it
 Immediately
 Within 6 months
 Within a year
 It took over a year
- (9) Thinking back to when you first noticed the condition, how did you feel?
(Please tick all those words that describe how you felt them)
I felt... Sad Angry Depressed Unconcerned
- (10) How the condition has affected you
Did it affect yourself-confidence? *(please tick one answer only)*
 Made me more confident Didn't affect my confidence
 Made me less confident Don't know

Table 1. Age and gender distribution of the subjects.

Age groups (years)	Gender				Total	
	Male		Female			
	n	%	n	%	n	%
6 – 10	24	63.2	14	36.8	38	17.2
11 – 15	32	41.6	45	58.4	77	34.8
16 – 20	13	28.3	33	71.7	46	20.8
21 – 25	15	42.9	20	57.1	35	15.8
26 – 30	12	57.1	9	42.9	21	9.5
31 – 35	1	33.3	2	66.7	.3	1.4
36 – 40	-	-	1	100.0	1	0.5
Total	97	43.9	124	56.1	221	100.0

Table 2. Motivating factors in seeking orthodontic care by gender.

Motivating factor	Gender				Total	
	Male		Female			
	n	%	n	%	n	%
Aesthetics	61	48.8	64	51.2	125	56.6
Function	9	33.3	18	66.7	27	12.2
Psychological reasons	9	40.9	13	59.1	22	10.0
Stable Occlusion	7	31.8	15	68.2	22	10.0
Other reasons	3	60.0	2	40.0	5	2.3
No response	8	40.0	12	60.0	20	9.0
Total	97	43.9	124	56.1	221	100.0

$\chi^2 = 4.48$; $df = 5$; $P = 0.48^*$ (*No statistically significant differences).

Table 3. Distribution of time taken to accept the malocclusion by the subjects in relation to gender.

Time taken	Gender				Total	
	Male		Female			
	n	%	n	%	n	%
Immediately	25	39.7	38	60.3	63	28.5
Within 6 months	7	41.2	10	58.8	17	7.7
Within a year	8	61.5	5	38.5	13	5.9
Over a year	11	36.7	19	63.3	30	13.6
Still not accepted	46	46.9	52	53.1	98	44.3
Total	97	43.9	124	56.1	221	100.0

$\chi^2 = 3.15$; $df = 4$; $P = 0.53^*$ (*No statistically significant sex differences).

Table 4. Distribution of the effects of malocclusion on self-confidence.

Effect	Gender					
	Male		Female		Total	
	n	%	n	%	n	%
More confident	3	3.1	3	2.4	6	2.7
Confidence unaffected	40	41.2	48	38.7	88	39.8
Less confident	44	45.4	54	43.5	98	44.3
Uncertain	10	10.3	19	15.3	29	13.1
Total	97	43.9	124	56.1	221	100.0

$\chi^2 = 1.26$; $df = 3$; $P = 0.74^*$ (*No statistically significant sex differences)

Table 5. Distribution of activities restricted due to malocclusion as reported by the subjects.

Activity	Effect					
	No response		Not restricted		Restricted	
	n	%	n	%	n	%
Choice of food	15	6.8	170	76.9	36	16.3
Eating in public	18	8.1	169	76.5	34	15.4
Going out in public	18	8.1	191	86.4	12	5.4
Laughing in Public	10	4.5	107	48.4	104	47.1
Forming close relationship	24	10.9	168	76.0	29	13.1
Enjoying food as much	19	8.6	173	78.3	29	13.1

Concerning the people the subjects discussed their malocclusions with before coming for treatment, parents had the highest percentage of 64.7%, followed by dentists (35.3%).

Most of the subjects (57.5%) presented for orthodontic care within 1-5 years after noticing the problem, followed by 23.5% who reported for treatment after 6-10 years of noticing the malocclusion. About 11% came for care between the ages of 11-15 years and 1.8% after 16 years. The remainder (5.9%) could not remember the time lapse.

Concerning the perceived effects of malocclusions on the general appearance of their faces, 54.8% felt their malocclusions affected their faces negatively, while 45.2% did not think their facial appearances were affected. Close to 40% of those whose facial appearances were negatively affected said they were displeased, while 6.8% were upset by such effects.

Discussion

The psychosocial or emotional handicap imposed by an unaesthetic dental appearance may have a significant impact on individual well-being, particularly for children who are stigmatized or ridiculed by their peers and come to view themselves as inadequate. On the other hand, minor imperfections in dental appearance may be of little real significance and the demand for cosmetic correction is unlikely to bear a simple relationship to the degree of anatomical deviation.¹²

The authors are not aware of any previous report on emotional or psychological effects of malocclusion in the Nigerian population. Although the present data can not be seen as representative of the whole Nigerian population, it gives a good impression of the pattern of psychosocial or emotional effects malocclusions have on real orthodontic patients in Nigeria. Therefore, it could be a

good guide in the effective management of Nigerian orthodontic patients. This study also has shown that although the majority of the patients were children and adolescents, Nigerian adults are equally showing interest in orthodontic care.



The results of this study showed more females sought orthodontic treatment than males. The higher number of females presenting for orthodontic treatment as observed in this study is consistent with the report of Shaw.²⁷ However, it must be noted this is not a reflection of the prevalence and orthodontic treatment need in the general Nigerian population where no significant gender differences have been documented and no gender bias was demonstrated in the parental orthodontic concern.²⁸ This observed gender difference in seeking orthodontic care could be a reflection of the discrepancy observed in self-perception of dental appearance among Nigerian adolescents²⁹, which influences their desire for orthodontic treatment. This Nigerian situation supports the experience of Ingervall and Hedegard.³⁰ In addition the societal expectations and roles of the female gender could also encourage more females in Nigeria to seek orthodontic care for aesthetic and psychosocial reasons. This Nigerian study recorded most of the patients seeking orthodontic care for aesthetic reasons.

This present study recorded about 44.3% of the subjects who had not accepted their malocclusions compared to 49% in a similar study on tooth loss involving populations from the industrialized parts of the world.²⁵ In that very study²⁵ 46% accepted their tooth loss immediately compared to 28.5% in this Nigerian study on malocclusion. The following are factors that may influence attitudes towards oral health: age, sex, social class, cultural, regional and national variables.¹² This present study did not investigate all these factors, but the different age groups, social and cultural climates, and

nations involved in the study of Fiske et al.¹² and this Nigerian study could account for the differences. In addition the expected loss of teeth with age in their study unlike the unexpected obvious deviations of dental arrangements or appearances in the Nigerian study population could further account for the relatively low acceptance of malocclusion among the Nigerians.

The same pattern of results observed in the study of Fiske et al.¹² and this present Nigerian study in relation to acceptance of occlusal anomalies is maintained in regard to effects on confidence level of the subjects (patients). Thirty-seven percent of the people reported feeling less confident as a result of tooth loss compared to 44.3% in this Nigerian study. According to Heldt et al.³¹ patients with dentofacial deformities, regardless of severity, are frequently the victims of ridicule, teasing, and jokes; the emotional trauma being evident in interviews with patients victimized by this abuse.

The present Nigerian study has shown over half (54.8%) of the subjects believed their malocclusions affected their facial appearances generally. According to Shaw³² about 200 investigations conducted over the last decade did demonstrate ubiquitous effect of facial attractiveness in many social settings. These include friendship, dating and marriage choice, scholastic assessments, helping behavior, criminal identification, and simulated court setting. Unexpected obvious deviations of dental arrangements or appearances in this Nigerian study population could further account for the relatively low acceptance of malocclusion among the Nigerians. Recently Kerosuo et al.³³ showed poor dento-facial appearance produces negative perceptions of personal characteristics.

The same pattern of results in the acceptance of occlusal anomaly and that of Fiske et al.¹² was observed in the confidence level of the subjects (patients). Thirty-seven percent of the people reported feeling less confident as a result of tooth loss compared to 44.3% in this Nigerian study. The present Nigerian study also observed considerable restriction of normal activities among the study sample due to their malocclusions. Optimum oral health, among other things, should

include a socially acceptable smile and dentofacial profile.³⁴ In fact health, as currently viewed, involves the ability of an individual to perform daily activities including social and emotional well being and quality of life.^{35, 36}

Although parental orthodontic awareness in Nigeria is still relatively low²⁸, the present study shows they (parents) will remain very crucial in the utilization of orthodontic care in the country as a majority of the subjects discussed their

worries with them. The important role of parents in the motivation for orthodontic care has been demonstrated in other reports.^{2, 37, 38}

Conclusion

This clinical study has shown considerable psychosocial or emotional effects of malocclusion on Nigerian orthodontic patients, which should be considered during professional counseling and treatment of such patients in order to improve their self-esteem and social interactions.

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