

The Awareness and Knowledge of Secondary School Teachers on Malocclusion and Orthodontic Treatment in Southwest Nigeria.

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Abstract

Background: The role of secondary school teachers in conveying knowledge on the causes and treatment of malocclusion cannot be overemphasized, however, there is still paucity of reports on this subject. This present study assessed the awareness and knowledge of secondary school teachers on malocclusion and orthodontic treatment, focusing on the factors that might influence their awareness and knowledge.

Method: A cross-sectional study was conducted among 120 randomly selected secondary school teachers in Ile-Ife central local government, using a pre-structured self-administered questionnaire.

Results: Over 70% of the respondents had never heard the word malocclusion, while only 5% were aware of associated causes of malocclusion. About one-third of the respondents, had an idea of the average cost of orthodontic treatment and the presence of orthodontic clinics in the local government area respectively. Teachers in private schools and those below 30 years of age showed a significantly higher level of awareness on malocclusion and knowledge of orthodontic treatment than those in public schools and above 30 years of age ($p < 0.05$).

Conclusion: Generally, the awareness and knowledge level of secondary school teachers on malocclusion and orthodontic treatment in Ile-Ife central local government area is low. The teachers' age and the type of school in which they teach, were found to have significant effects on their awareness and knowledge level of orthodontics.

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Introduction

Awareness is defined as having or showing knowledge and understanding about something or a subject at the present time, based on information¹. Secondary schoolteachers' possess several inherent qualities that make them suitable for the presentation of oral health information on malocclusion and orthodontic treatment².

Foremost is the fact that most orthodontic patients are children and adolescents in secondary school and it is believed that secondary school teachers can help find these patients and make them aware of their orthodontic problems.³ Moreover the impact of malocclusion is primarily psychosocial⁴ and bullying or teasing is common among school

commercial capital of Nigeria.

The schools were randomly selected using the local government secretariat-sampling frame. Initial stratification technique was carried out using ownership of school as a stratum. A pilot study comprising of 10 public and 5 private secondary school teachers was conducted to assist in calibrating the Principal researcher for appropriate data collection, with prior permission from Obafemi Awolowo University Teaching Hospital Ethics review committee and concerned school authorities.

Demographic pattern of each participant was obtained. A pre-structured self-administered questionnaire consisting of twenty-four questions in three domains, with multiple answers was used to assess the awareness level of the teachers about malocclusion and orthodontic treatment. The subjects were expected to tick only one correct answer. The first domain assessed the respondents' awareness level on malocclusion. The second domain consisted of questions on assessing the awareness level on orthodontic treatment, while the third domain assessed the knowledge on orthodontic treatment.

Statistical Analysis

Data was analyzed using the Statistical Package for Social Sciences (SPSS) version 22.0 for windows, SPSS Inc, Chicago IL). Frequency and percentage rates were computed for the socio demographic characteristics of the respondents. Cross tabulation, t-test and chi-square were used to determine the effects of gender, type of school, marital status, age, educational qualification and years of teaching experience on teachers' awareness about malocclusion and orthodontic treatment. In carrying out this analysis, the data on awareness about malocclusion and the level of knowledge of orthodontic treatment were dichotomized into two groups, with those who responded positively recorded as having 'good' knowledge, while those who responded negatively, were considered to have poor knowledge, with respect to their awareness of malocclusion and orthodontic treatment. The level of significance was set at $p < 0.05$.

Results

Table 1 shows the socio-demographic distribution of the respondents. Majority of the respondents, 71.7% were in public schools and 75% of the entire teachers were first-degree holders. The female to male ratio of the sample was 1.6:1, while greater percentages were married (71.7%), and 70.8% were

Table 1: Socio - Demographic Characteristics of the Respondents

Statements	Frequency	Percentage
Type of School		
Public teachers	86	71.7%
Private teachers	34	28.3%
Total	120	100%
Sex		
Male	47	39.2%
Female	73	60.8%
Total	120	100%
Marital status		
Single	34	28.3%
Married	86	71.7%
Total	120	100%
Designation		
Regular teacher	85	70.8%
Youth Corper	35	29.2%
Total	120	100%
Age		
Less than 30 years	52	43.3%
Above 30 years	68	56.7%
Total	120	100%
Educational		
Qualification	90	75%
Bachelor	30	25%
Postgraduate	120	100%
Total		
Teaching Experience		
Less than 10 years	64	53.3%
Equal to and above 10 years	56	46.7%
Total	120	100%

regular teachers. Only 43.3% were less than 30 years while less than half of the teachers (46.7%), had above 10 years teaching experience.

Awareness about malocclusion

In Table II, a small percentage of the teachers knew about malocclusion (27.5%) and only 5% were aware of the causes of malocclusion. Only 29.2% thought that thumb sucking could affect the arrangement of the teeth, while about 34.2% felt that crooked teeth have ill effects. Most of respondents (91.7%) were aware of people living with irregular teeth and 48.3% of the sample considered spaces between the teeth as abnormal, while 76.7% agreed that crowded teeth were abnormal.

Awareness of Orthodontic Treatment.

As shown in table III almost all 94.2% were aware of who a dentist was and 43.3% had visited a dentist,

Table II: Response on Awareness about Malocclusion amongst Respondents (School Teachers)

Statements	No n (%)	Yes n (%)
Have you heard of Malocclusion Before?	71 (59.2%)	33 (27.5%)
Have you noticed people having Irregular Teeth?	10 (8.3%)	110 (91.7%)
Are you aware that spaces between People's Teeth are Abnormal?	62 (51.7%)	58 (48.3%)
Do you think that crowded teeth are abnormal?	28 (23.3%)	92 (76.7%)
Do you think having upper front teeth (Incisors) bite in front of the lower front teeth (Incisors) is abnormal?	52 (43.3%)	68 (56.7%)
Do you think having upper front teeth (Incisors) bite behind the lower front teeth (Incisors) is abnormal?	49 (40.8%)	71(59.2%)
Have you noticed people having upper front teeth (Incisors) stand out too far?	36 (30%)	84(70.0%)
Have you notice people having upper front teeth (Incisors) cover too much of the lower front teeth (Incisors)?	41(34.2%)	79 (65.8%)
Do you know the causes of Scattered teeth?	114 (95%)	6 (5.0%)
Do you know that thumb sucking can affect the arrangement of the teeth?	85 (70.8%)	35 (29.2%)
Do you know crooked teeth have ill effects?	79 (65.8%)	41 (34.2%)

while only 50% had heard of 'an orthodontist'. Less than one-half of the respondents (40.8%) were aware that orthodontists align teeth. About 36.7% and 30.8% of respondents were aware of the presence of an Orthodontic clinic in the State and their local government respectively.

Knowledge of Orthodontic Treatment.

As showed in Table IV above, about 47.5% did not know that crooked teeth could be corrected, however, 65.8% considered arrangement of crooked teeth as important while 48.3% believed that the treatment is only for cosmetic reasons. Concerning

Table III: Respondents' Awareness of Orthodontic Treatment

Statements	No n (%)	Yes n (%)
Are you aware of a dentist?	5 (4.2%)	115 (95.8%)
Have you visited a dentist before? Have you heard of Orthodontist before?	67 (55.8%)	53(44.2%)
Are you aware that they align teeth?	60 (50.0%)	60 (50.0%)
Are you aware of any Orthodontic Clinic in Osun State?	71 (59.2%)	49(40.8%)
Are you aware of Orthodontic Clinic in Ile-Ife?	76 (63.3%)	44 (36.7%)
	83 (69.2%)	37 (30.8%)

Table IV: Respondents' Knowledge of Orthodontic Treatment

Statements	No n (%)	Yes n(%)
Can crooked teeth be arranged or straightened?	57 (47.5%)	63 (52.5%)
Do you consider arrangement of crooked teeth important?	41 (34.2%)	79 (65.8%)
Do you think that Orthodontic treatment is not only for Cosmetic purposes?	58 (48.3%)	62 (51.7%)
Do you think that Orthodontic treatment can be rendered at any age?	78 (65.0%)	42 (35.0%)
Do you think that age is an important factor in beginning and duration of Orthodontic treatment?	55 (45.8%)	65 (54.2%)
Do you think that teeth can be moved in the bone?	88 (73.3%)	32 (26.7%)
Do you have an idea about the average cost of Orthodontic Treatment	78 (65.0%)	42 (35.0%)

knowledge about age, more than one-half (54.2%) considered age as an important factor in orthodontic treatment. Regarding the knowledge about tooth movement in bone, 73.3% had no knowledge and only 35% the secondary school teachers had an idea about the average cost of orthodontic treatment.

Table V: Association between Socio - Demographic Characteristics and Awareness about Malocclusion

Variables	Good n (%)	Poor n (%)	Total	X ²	P
Type of School				0.88	0.011*
Public	18 (20.9%)	68(79.1%)	86		
Private	15(44.1%)	19(55.9%)	34		
Sex				0.21	0.642
Male	10(21.3%)	37(78.7%)	47		
Female	23(31.5%)	50(68.5%)	73		
Marital status				0.13	0.900
Single	9(26.5%)	25(73.5%)	34		
Married	21(24.4%)	65(75.6%)	86		
Designation				0.21	0.564
Regular teacher	27(31.8%)	58(68.2%)	85		
Youth Corper	10(28.6%)	25(71.4%)	35		
Age				0.41	0.037*
<30 years	22(42.3%)	30(57.7%)	52		
>30 years	13(19.1%)	55(80.9%)	68		
Degree				0.35	0.503
Postgraduate	8(26.7%)	22(73.3%)	30		
Teaching experience					
< 10 years	18(28.1%)	46(71.9%)	64	0.35	0.503
>10 years	15(26.8%)	41(73.2%)	56		

Table VI: Association between Socio - Demographic Characteristics and Knowledge of Orthodontic Treatment

Variables	Good n (%)	Poor n (%)	Total	X ²	p
Type of School					
Public	19(22.1%)	67(77.9%)	86	0.82	0.026*
Private	15(44.1%)	19(55.9%)	34		
Sex					
Male	11(23.4%)	36(76.6%)	47	0.23	0.496
Female	18(24.7)	55(75.3%)	73		
Marital status					
Single	9(26.5%)	25(73.5)	34	0.15	0.760
Married	22(25.6%)	64(74.4)	86		
Designation					
Regular teacher	25(29.4%)	60(70.6%)	85	0.16	0.698
Youth corper	8(22.9%)	27(77.1%)	35		
Age					
<30 years	21(40.4%)	31(59.6%)	52	0.78	0.028*
>30 years	15(22.1%)	53(77.9%)	68		
Degree					
Bachelor	26(28.9%)	64(71.1%)	90	0.06	0.992
Postgraduate	10(33.3%)	20(66.7%)	30		
Teaching experience					
< 10 years	17(26.6%)	47(73.4%)	64	0.31	0.241
>10 years	15(26.8%)	41(73.2%)	56		

Effects of Socio-Demographic Characteristics on Awareness and Knowledge of Orthodontic Treatment.

Table V and VI show that only private school teachers and respondents' less than 30 years of age demonstrated a significantly higher awareness of orthodontics and knowledge of orthodontic treatment ($p < 0.05$)

Discussion

Globally there has been an increasing interest in the early detection and treatment of malocclusion⁷ with a corresponding emphasis on awareness.⁸ Secondary schools provide a big opportunity for creating such awareness. Assessing the awareness and knowledge of secondary school teachers about malocclusion and orthodontic treatment is a critical factor in the prevention and treatment of malocclusion.

The awareness and knowledge about malocclusion in this study was observed to be low among the teachers. The word malocclusion seems to be unheard of among majority of the teachers in the study. The relatively low level in this study may be attributed to the poor knowledge about dental terminologies due to absence of a dental health curriculum in most Teachers' training schools in Nigeria.⁹

Similarly, the teachers demonstrated a low level of awareness and knowledge on the aetiology of malocclusion, with only 5% of the teachers aware of the associated causes of scattered teeth. This is further highlighted by the findings that few of the school teachers (about 29.2 %) were aware that thumb or digit sucking could affect the arrangement of teeth. This is contrary to the study conducted by Raj,¹⁰ in India where most of the school teachers, about 81.7% of government secondary school teachers considered thumb sucking as an important factor in the development of malocclusion.

Furthermore, the awareness regarding the associated effects and consequences of malocclusion was low. This is in accordance with a previous study on the consequences of poor oral health.⁹

The reason might be due lack of or incomplete and sometimes inaccurate knowledge of teachers' about oral health and malocclusion.¹¹

Generally in agreement with a similar study, the high awareness level in this study on irregular arrangement of teeth may be attributed to high prevalence of malocclusion in Nigeria¹² and associated endemic bullying among secondary school age children with the most salient feature of

bullying in one study being dentofacial characteristics.⁵

The awareness and knowledge about orthodontic treatment in this study was also observed to be low, just as a previous study on the subject had documented similar results¹². Teachers generally had little idea about orthodontic treatment, the cost and factors affecting the treatment. The fact that only 50% of the teachers had heard about orthodontists indicated a sub optimal level of awareness about orthodontic treatment and services. This was lower than 79% reported by Rafigh and associates³ in Iran, in a related study. This might be due to the fact that orthodontic treatment is not a common dental procedure in Nigeria, unlike other countries such as India and Germany in which the frequency of orthodontic treatment is about one third of the population of 11-14 years old.¹³

In addition, not only are there few trained orthodontists in private and government hospital in Nigeria¹⁴, they are also unevenly distributed. Unlike United Kingdom and Germany where the number of orthodontists per capital is 1:73,333 and 1:27,779 respectively.¹⁵

In this present study, teachers showed low level of awareness about the presence of orthodontic services in their local environment. This might be due to inadequate awareness and information dissemination about the available services and the specialty by dental practitioners and mass media.

Private schools teachers and those less than 30 years of age showed a significantly higher level of awareness and knowledge about malocclusion and orthodontic treatment, than public school teachers. This finding is similar to a Nigerian study conducted by Aikins and daCosta.¹² This may be due to the fact that the younger age group teachers were found in the private schools and those that could afford orthodontic treatments attend private school. No significant differences were recorded in the awareness and knowledge level based on gender, marital status, type of qualification, and years of experience of the teachers, indicating a generalized low awareness among the teachers

Conclusion

In this study, it can be concluded that the awareness and knowledge level of secondary school teachers' about malocclusion and orthodontic treatment in Ile- Ife central local government area was generally poor. The younger age group (< 30 years) and private school teachers demonstrated a significantly higher level of awareness and

knowledge about malocclusion and orthodontic treatment than other age groups and public teachers respectively.

Recommendations

There is a need to improve the oral health education on malocclusion and orthodontic treatment among secondary school teachers, especially in the curriculum of teachers at the Colleges of education and other training institutions. Also, there is a need for advocacy to create awareness with regards to the presence of orthodontic facilities in Southwest Nigeria.

Contributors

Otuyemi OD initiated the study, designed and contributed to analysis and writeup. Ogunyemi MM collected data, contributed to analysis and writeup. Oshomoji VO contributed to analysis and writeup.

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Conflict of Interests

Nil

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