

Knowledge and Attitude of Teachers In Public Schools Towards Orthodontics And Orthodontic Treatment

Onyinye Dorothy UMEH*, Grace Emamoke ODAH**, Ikenna Gerald ISIEKWE***, Oluranti daCosta***, Ifeoma Linda UTOMI ***, Oluwatosin SANU***

[*Department of Child Dental Health, Faculty of Dentistry, CMUL/Lagos University Teaching Hospital, Lagos, Nigeria, **Lagos University Teaching Hospital, Lagos, Nigeria, ***Department of Child Dental Health, CMUL/Lagos University Teaching Hospital Lagos, Nigeria]

Correspondence

Dr. Onyinye D. Umeh

Department of Child Dental Health, Faculty of Dentistry, CMUL/Lagos University Teaching Hospital, Lagos, Nigeria

Email: umehod@gmail.com

Onyinye D. Umeh

<https://orcid.org/0000-0001-6700-037X>

Grace E. Odah

<https://orcid.org/0009-0008-1768-7992>

Ikenna G. Isiekwe

<https://orcid.org/0000-0002-4041-2128>

Oluranti DaCosta

<https://orcid.org/0000-0001-9419-435X>

ABSTRACT

Background Children and adolescents constitute a large number of orthodontic patients. Teachers can play a role in introducing orthodontic care to children as they spend a lot of time with them.

Objective: This study aimed to determine the knowledge and attitude of teachers towards orthodontics and orthodontic treatment.

Methods: This was a descriptive cross-sectional study done among public secondary school teachers. Data collection was done via a structured questionnaire comprising 33 questions administered to teachers in public schools in Lagos Nigeria. Descriptive and inferential statistical methods were employed to interpret the data with statistical significance set at $P < 0.05$.

Results: About 76.4% reported awareness of orthodontics, only 42% had good knowledge with misconceptions being common, 36.1% believed orthodontics involves replacing missing teeth. A positive attitude was observed in 61% of respondents, and 66.7% was willing to wear braces. Practice scores were low: only 28% demonstrated good orthodontic-related practice. Higher education was significantly associated with better knowledge ($p = 0.012$), and gender was associated with attitude ($p = 0.009$), with females more likely to report a positive attitude.

Conclusion: Although awareness of orthodontics was moderate among teachers, detailed understanding and practical engagement were limited. Teachers with higher education and female teachers had better knowledge and attitudes.

Keywords: Knowledge, Attitude, Teachers, Orthodontics, Orthodontic Treatment

Ifeoma L. Utomi

<https://orcid.org/0000-0003-0602-1438>

Oluwatosin Sanu

<https://orcid.org/0000-0003-0007-5857>

Received: 22-June, 2025

Revision: 13 July, 2025

Accepted: 19 July, 2025

Citation: Umeh OD, Odah GE, Isiekwe IG, DaCosta, Utomi IL, Sanu O. Knowledge and attitude of teachers in public schools towards orthodontics and orthodontic treatment. Nigeria. Nig J Dent Res 2025; 10(2):82-93

<https://dx.doi.org/10.4314/njdr.v10i2.10>

INTRODUCTION

Orthodontics and Dentofacial Orthopedics is the dental specialty that includes the diagnosis, prevention, interception and correction of malocclusion, including neuromuscular and skeletal abnormalities of the developing or mature orofacial structures.¹ Orthodontic treatment options have evolved over the past decades and accessibility to specialist care in developing countries has improved. Children and adolescents form the majority of orthodontic patients, though there has been a recent increase of adults seeking orthodontic care.² Parents and teachers play a vital role in introducing orthodontic care to their wards and children and as such play an important role in the motivation for orthodontic treatment.¹⁻⁷

Teachers are uniquely positioned to serve as oral health influencers due to their daily interaction with children and adolescents. When equipped with appropriate knowledge, teachers can identify oral health issues, provide guidance, and facilitate early referral.^{4,8} Ehizele et al. concluded that teachers may accomplish the function of oral health educators if they have good knowledge, attitude, and practice of oral health; therefore, they can help as oral health educators after organized training to expand their understanding of oral health.⁹ It is thus important to know to what extent school teachers are aware of the field of orthodontics, as students' decisions about seeking orthodontic care can be influenced by their teachers, who are also equally capable of recommending and referring their students to an orthodontist for appropriate care.

Previous studies from Nigeria, Pakistan, and Iran show wide variability in teacher awareness, ranging from 40.7% in Rivers State, Nigeria, to 96% in urban Pakistan.^{4,10,11} Common findings include confusion about treatment timing, cost concerns, and lack of knowledge about available services.^{4,8,12-14} Notably, most existing Nigerian studies focus on private schools. This study aimed to add to the body of work currently existing in the literature about the knowledge and attitude of teachers towards orthodontics and orthodontic treatment in our immediate environment as they aid in dental education and dissemination of information.

METHODS

This study was a descriptive cross-sectional study. The research was conducted in Surulere Local Government Area of Lagos State, South-West

Nigeria. Participants were public secondary school teachers in Surulere LGA. Sample size was calculated using the Formula for sample size calculation for cross-sectional studies on a non-finite population.¹⁵ Formula for calculating sample size for a non-finite population:

$$n = (z^2 \times p(1-p)) / \epsilon^2$$

Where,

n = Sample size calculation for a non-finite population

z = Z score at the chosen level

ε = margin of error

p = population proportion

Here,

$$z = 1.96$$

$$\epsilon = 0.05$$

p = a study done in Pakistan reported an 96 % awareness of orthodontic treatment among school teachers.¹¹ The Pakistani study was used for sample size estimation due to the lack of orthodontic awareness data from public school teachers in Lagos. While the contexts are not identical, both represent urban settings where access to health information may be relatively higher than rural areas.

Therefore,

$$n = ([1.96]^2 \times 0.96(1-0.96)) / [0.05]^2$$

$$n = 59.007 \approx 60$$

To account for potential attritions such as non-response, missing questionnaires, and incorrectly/incompletely filled questionnaires, an attrition rate of 10% will be applied to the initial sample size. Considering an initial sample size of 60 participants, the maximum sample size can be calculated as follows:

$$\text{Attrition rate} = 10\% \text{ of } 60 = 0.10 \times 60 = 6$$

To determine the final sample size, the initial sample size is added to the attrition rate:

$$\text{Final sample size} = 60 + 6 = 66$$

The final sample size is 66 participants. The schools included in the study were randomly selected by simple ballot. Informed consent was obtained from all participants and data was collected using a structured questionnaire comprising thirty-three questions in four sections (sociodemographic information, knowledge of orthodontics, attitudes towards orthodontic treatment and practice and willingness for orthodontic treatment). Collected data was coded, entered, and stored using Microsoft Excel 2019, Microsoft Corporation, (<https://office.microsoft.com/excel>). Statistical analysis is

performed using SPSS v26, IBM Corp. Released 2019. IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp. Descriptive and inferential statistical methods were employed as appropriate. Statistical significance was set at $\alpha = 0.05$.

Ethics approval was obtained from the Health Research and Ethics Committee of the Lagos University Teaching Hospital (ADM/DSCST/HREC/APP/7000).

RESULTS

The questionnaire had good reliability according to the Cronbach's Alpha coefficient (0.77). A total of 72 teachers participated in this study with an age distribution of 20-59 years and a median age of 35.5 years. Majority (36.1%) fell within the 20-29 age group, followed closely by those aged 40-49 (34.7%). Females made up 58.3% of the respondents, while males account for 41.7%. Most respondents identified as Christians (58.3%), muslims (36.1%), with a small proportion (5.6%) adhering to other religious beliefs. Data on the educational background of the teachers showed that 87.5% had tertiary education, 11.1% had secondary education, and just 1.4% completed primary education. (Table 1)

Table 1: Sociodemographic Distribution of Respondents

Demographic Characteristics	N = 72 ¹ (%)
Age	
Age Group	
20-29	26.0 (36.1%)
30-39	19.0 (26.4%)
40-49	25.0 (34.7%)
50-59	2.0 (2.8%)
Gender	
Female	42.0 (58.3%)
Male	30.0 (41.7%)
Religion	
Christianity	42.0 (58.3%)
Islam	26.0 (36.1%)
Others	4.0 (5.6%)
Highest Level of Education	
Primary	1.0 (1.4%)
Secondary	8.0 (11.1%)
Tertiary	63.0 (87.5%)

¹Median (IQR); n (%)

Responding to questions assessing knowledge showed that a majority of the study population

(76.4%) were aware of orthodontics, 13.9% reported no awareness, while 9.7% were unsure, with 54.2% correctly identifying wearing braces as part of orthodontic care. More than one-third of respondents (36.1%) believed that orthodontics involved the replacement of missing teeth, 29.2% thought it included filling decayed teeth, and 34.7% associated it with teeth cleaning. The most commonly recognized malocclusion types were spacing (41.7%), open bite (37.5%), crossbite (36.1%), crowding (34.7%), and deep bite (30.6%). Few respondents (16.7%) identified protruded teeth as a type of malocclusion, suggesting gaps in knowledge of malocclusion. Responses on orthodontic treatment methods had braces being the most well-known method (69.4%), removable appliances (37.5%), jaw growth modifications (31.9%), and aligners (25.0%). (Table 2)

The median knowledge score was 7.00, with an interquartile range (IQR) of 5.75 to 8.00 (Fig. 1), and when categorized, 42% of respondents demonstrated good knowledge about orthodontics, while the majority (58%) fell into the poor knowledge category

Table 2: Knowledge about Orthodontics

Characteristic	N = 72 ¹
Awareness of Orthodontics	
Yes	55.0 (76.4%)
No	10.0 (13.9%)
I don't know	7.0 (9.7%)
The scope of orthodontics involves	
Replacement of Missing Teeth	26.0 (36.1%)
Filling of Decayed Teeth	21.0 (29.2%)
Wearing Braces	39.0 (54.2%)
Teeth Cleaning	25.0 (34.7%)
Types of Malocclusion	
Crowding	25.0 (34.7%)
Spacing	30.0 (41.7%)
Deep Bite	22.0 (30.6%)
Open Bite	27.0 (37.5%)
Crossbite	26.0 (36.1%)
Protruded Teeth	12.0 (16.7%)
Orthodontic treatment methods	
Removable Appliances	27.0 (37.5%)
Braces	50.0 (69.4%)

Jaw Modifications	Growth	23.0 (31.9%)
Aligners		18.0 (25.0%)
Knowledge Score		7.00 (5.75, 8.00)
Knowledge Category		
Good Knowledge		30 (42%)
Poor Knowledge		42 (58%)
¹ n (%)		

An assessment of the best time for orthodontic consultation showed half of the respondents (50.0%) believe orthodontic consultation should occur in adulthood (greater than 18 years), while 31.9% thought the ideal time was between 13-18 years. About 43.1% of respondents estimated that orthodontic treatment lasts more than 24 months, while 39.7% believed it spanned between 12-24 months.

The set of questions which evaluated the possible impact of malocclusion on patients showed most respondents (62.5%) agreed that malaligned teeth

affect appearance, and 58.3% believed they interfere with chewing. Regarding other impacts, 43.1% thought malaligned teeth could cause mouth odour, while 44.4% associated malocclusion with tooth fractures. Most of the study population acknowledged that malaligned teeth reduce confidence (69.4%) and affect speech (61.1%) and that arranging teeth can improve oral health (70.8%), appearance (69.4%), and function (61.1%). However, a minority of the respondents, between 8.3% and 29.2%, remained unsure of these benefits, suggesting some gaps in knowledge about the full impact of orthodontic treatment. (Table 3a)

When it comes to willingness to wear braces, 66.7% expressed a positive attitude, while 19.4% were unwilling and 13.9% were uncertain. (Table 3b).

Overall, respondents' median attitude score was 6.50, with an interquartile range (IQR) of 5.00 to 10.00. Categorically, 61% of the respondents exhibited a positive attitude toward orthodontics, while 39% showed a negative attitude (Table 3b).

Table 3a: Attitude towards orthodontics

Characteristic	N= 72 ¹
Best Time for Consultation	
greater than 18 years (adulthood)	36.0 (50.0%)
13 - 18 years	23.0 (31.9%)
6 - 12 years	11.0 (15.3%)
1 - 5 years	2.0 (2.8%)
Duration of Orthodontic Treatment	
> 24 months	25.0 (43.1%)
12 - 24 months	23.0 (39.7%)
6 - 12 months	0.0 (0.0%)
3 - 6 months	10.0 (17.2%)
Unknown	14
Malaligned Teeth Affect Appearance	
Yes	45.0 (62.5%)
No	12.0 (16.7%)
I don't know	15.0 (20.8%)
Malaligned Teeth Affect Chewing	
Yes	42.0 (58.3%)
No	11.0 (15.3%)
I don't know	19.0 (26.4%)
Malaligned Teeth Cause Mouth Odour	
Yes	31.0 (43.1%)
No	23.0 (31.9%)
I don't know	18.0 (25.0%)
Malaligned Teeth Cause Fracture	
Yes	32.0 (44.4%)
No	16.0 (22.2%)

I don't know	24.0 (33.3%)
Malaligned Teeth Reduce Confidence	
Yes	50.0 (69.4%)
No	10.0 (13.9%)
I don't know	12.0 (16.7%)
Malaligned Teeth Affect Speech	
Yes	44.0 (61.1%)
No	13.0 (18.1%)
I don't know	15.0 (20.8%)
Arranging Teeth Improves Oral Health	
Yes	51.0 (70.8%)
No	6.0 (8.3%)
I don't know	15.0 (20.8%)
Arranging Teeth Improves Appearance	
Yes	50.0 (69.4%)
No	8.0 (11.1%)
I don't know	14.0 (19.4%)
Arranging Teeth Improves Function	
Yes	50.0 (69.4%)
No	8.0 (11.1%)
I don't know	14.0 (19.4%)

Table 3b: Willingness to Wear Braces and Attitude Score

Willingness to Wear Braces	
Yes	48.0 (66.7%)
No	14.0 (19.4%)
I don't know	10.0 (13.9%)
Attitude Score	6.50 (5.00, 10.00)
Attitude Category	
Negative Attitude	28 (39%)
Positive Attitude	44 (61%)

About 47.2% of the teachers have noticed the need for orthodontic treatment in their students and 37.5% have advised students to seek orthodontic care.

Regarding personal orthodontic needs, 29.2% of respondents have felt the need to wear braces and 25.2% of respondents have personally visited an orthodontist.

Further assessment of their attitude towards orthodontics showed that they considered a treatment duration of 1-2 years adequate (48.6%), were willing to undergo extraction as part of orthodontic treatment (59.7%), were willing to wear a retainer post-treatment (51.4%) and 54.2% were willing to continue treatment despite discomfort.

Only 23.6% of respondents had previously undergone orthodontic treatment, and of these, 76.5% completed their treatment within two years. Additionally, 58.8% of those who completed treatment wore retainers as prescribed, showing moderate adherence to orthodontists' recommendations post-treatment.

The overall practice score, with a median of 3.00 and an interquartile range (IQR) of 1.00 to 4.00, suggests varying levels of engagement in orthodontic practices. In terms of practice categories, 28% of respondents demonstrated good practice, while 72% exhibited poor practice (Table 4).

Table 4: Attitude and Willingness for Orthodontic Treatment

Characteristic	N = 72(%)
Noticed Need for Treatment in Students	34.0 (47.2%)
Advised Students for Orthodontics	27.0 (37.5%)
Visited Orthodontist	16.0 (25.2%)
Felt Need to wear Braces	21.0 (29.2%)
Recommend Treatment for 1-2 Years	35.0 (48.6%)
Agree to Teeth Removal	43.0 (59.7%)
Willingness to Wear Retainer	37.0 (51.4%)
Willingness to continue Treatment Despite Discomfort	39.0 (54.2%)
Previous Orthodontic Treatment	17.0 (23.6%)
Treatment Completed within 2 Years	13.0 (76.5%)
Wore Retainers as Prescribed	10.0 (58.8%)
Practice Score	3.00 (1.00, 4.00)
Practice Category	
Good Practice	20 (28%)
Poor Practice	52 (72%)
¹ n (%); Median (IQR)	

Table 5 explores the association between knowledge of orthodontics and various sociodemographic characteristics, results showed there was no statistically significant association between age and knowledge level ($p = 0.12$). Similarly, gender did not show a significant relationship with knowledge level ($p = 0.2$), though more females were represented in the "Good Knowledge" group (66.7%) compared to males (33.3%).

The association between attitude and sociodemographic factors, seen in Table 6, showed differences across age, gender, and education with varying statistical significance. There was no significant association between age groups and attitude levels ($p = 0.6$). In the 20-29 age group, 31.8% had a positive attitude, while 42.9% had a negative attitude. For those aged 30-39, 29.5% exhibited a positive attitude, compared to 21.4% with a negative one. In the 40-49 age group, the

distribution was relatively even, with 34.1% showing a positive attitude and 35.7% a negative one. Interestingly, only 4.5% of individuals aged 50-59 displayed a positive attitude, while no individuals in this age group exhibited a negative attitude.

Gender showed a statistically significant association with attitude levels ($p = 0.009$). Females, 70.5% had a positive attitude, compared to only 39.3% with a negative attitude while males had a more negative attitude (60.7%), compared to 29.5% who had a positive attitude. (Figure 3)

In terms of the highest level of education, the differences were not statistically significant ($p = 0.2$), and showed 90.9% of individuals with a tertiary education had a positive attitude, while 82.1% of those with a negative attitude also had a tertiary education. Secondary education was more common among individuals with a negative attitude (17.9%) compared to those with a positive attitude (6.8%)

Table 5: Association between Knowledge Level and Sociodemographic Distribution

Knowledge Category	Good Knowledge, N = 30 ¹	Poor Knowledge, N = 42 ¹	p-value ²
Age Category			0.12
20-29	7.0 (23.3%)	19.0 (45.2%)	
30-39	10.0 (33.3%)	9.0 (21.4%)	
40-49	13.0 (43.3%)	12.0 (28.6%)	
50-59	0.0 (0.0%)	2.0 (4.8%)	

Gender			0.2
Female	20.0 (66.7%)	22.0 (52.4%)	
Male	10.0 (33.3%)	20.0 (47.6%)	
Highest Level of Education			0.012
Primary	1.0 (3.3%)	0.0 (0.0%)	
Secondary	0.0 (0.0%)	8.0 (19.0%)	
Tertiary	29.0 (96.7%)	34.0 (81.0%)	

¹n (%), ²Fisher's exact test; Pearson's Chi-squared test

Table 6: Association between Attitude level and sociodemographic distribution

Attitude Category	Positive Attitude, N = 44 ¹	Negative Attitude, N = 28 ¹	p-value ²
Age Category			0.6
20-29	14.0 (31.8%)	12.0 (42.9%)	
30-39	13.0 (29.5%)	6.0 (21.4%)	
40-49	15.0 (34.1%)	10.0 (35.7%)	
50-59	2.0 (4.5%)	0.0 (0.0%)	
Gender			0.009
Female	31.0 (70.5%)	11.0 (39.3%)	
Male	13.0 (29.5%)	17.0 (60.7%)	
Highest Level of Education			0.2
Primary	1.0 (2.3%)	0.0 (0.0%)	
Secondary	3.0 (6.8%)	5.0 (17.9%)	
Tertiary	40.0 (90.9%)	23.0 (82.1%)	

¹n (%), ²Fisher's exact test; Pearson's Chi-squared test

Table 7: Association between Attitude level and Sociodemographics Distribution

Practice Category	Good Practice, N = 20 ¹	Poor Practice, N = 52 ¹	p-value ²
Age Category			0.3
20-29	4.0 (20.0%)	22.0 (42.3%)	
30-39	6.0 (30.0%)	13.0 (25.0%)	
40-49	9.0 (45.0%)	16.0 (30.8%)	
50-59	1.0 (5.0%)	1.0 (1.9%)	
Gender			0.2
Female	14.0 (70.0%)	28.0 (53.8%)	
Male	6.0 (30.0%)	24.0 (46.2%)	
Highest Level of Education			0.12
Primary	0.0 (0.0%)	1.0 (1.9%)	
Secondary	0.0 (0.0%)	8.0 (15.4%)	
Tertiary	20.0 (100.0%)	43.0 (82.7%)	

Table 7 explored the relationship between practice levels and sociodemographic factors, highlighting differences across age, gender, and education. These associations were tested using statistical methods,

with none of the factors found to be statistically significant.

The distribution of good and poor practices across age categories was not statistically significant (p = 0.3). Among those practicing good behaviors,

individuals aged 40-49 made up the largest proportion (45.0%), followed by those aged 30-39 (30.0%), and 20-29 (20.0%). Only 5.0% of those aged 50-59 exhibited good practice. For poor practice, younger individuals (20-29 years) represented the largest group (42.3%), followed by those aged 40-49 (30.8%) and 30-39 (25.0%). Poor practice was least common in the 50-59 age category (1.9%).

Gender differences in practice levels were also examined, but the association was not statistically significant ($p = 0.2$). females 70.0% exhibited good practice while only 30.0% of males exhibited good

practice. Among those with poor practice, the gender distribution was more balanced, with females at 53.8% and males at 46.2%.

Education level revealed interesting trends, though the association was not statistically significant ($p = 0.12$). All individuals practicing good behaviors had attained tertiary education (100.0%), while the majority of those with poor practice had also reached the tertiary level (82.7%). However, there was a small representation of individuals with secondary education (15.4%) and primary education (1.9%) among those with poor practice

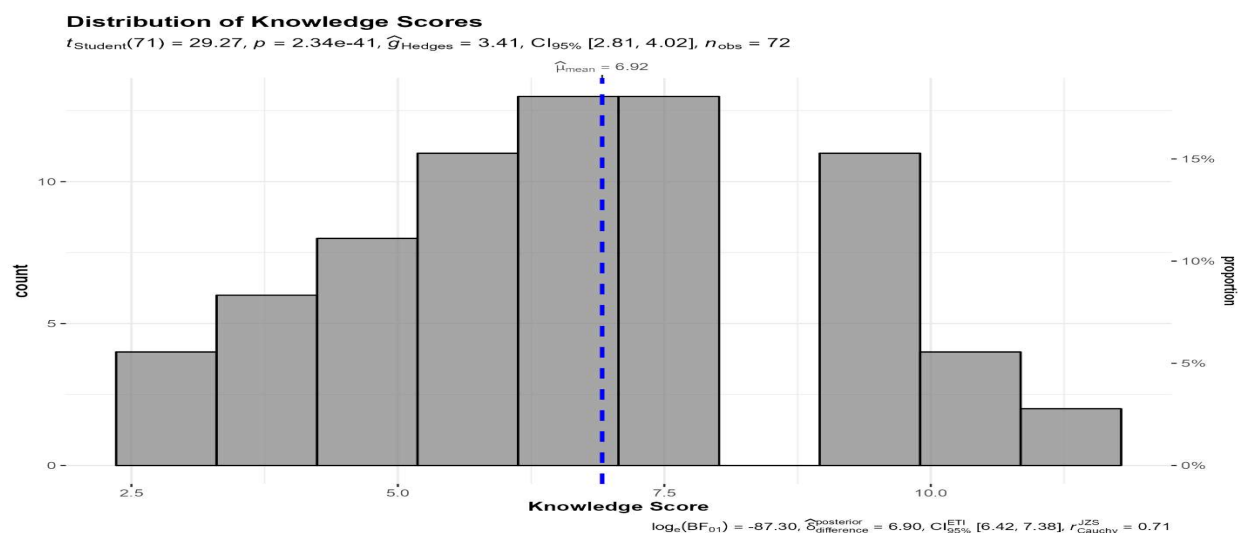


Figure 1: Distribution of Knowledge Scores

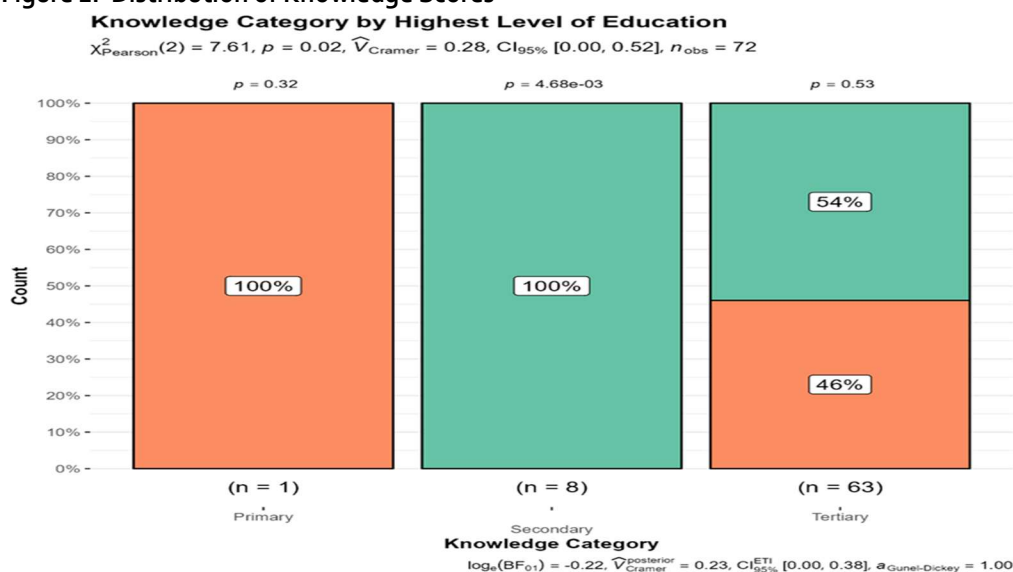


Figure 2: Association between Level of education and Knowledge Level

The most notable finding from the table was the significant association between education level and knowledge ($p = 0.012$) with respondents having tertiary education more likely to have "Good Knowledge" (96.7%) compared to those with secondary education, who were more prevalent in

the "Poor Knowledge" group (19.0%). This strong correlation between higher education and better orthodontic knowledge highlights the importance of education in shaping individuals' understanding of oral health (Figure 2).

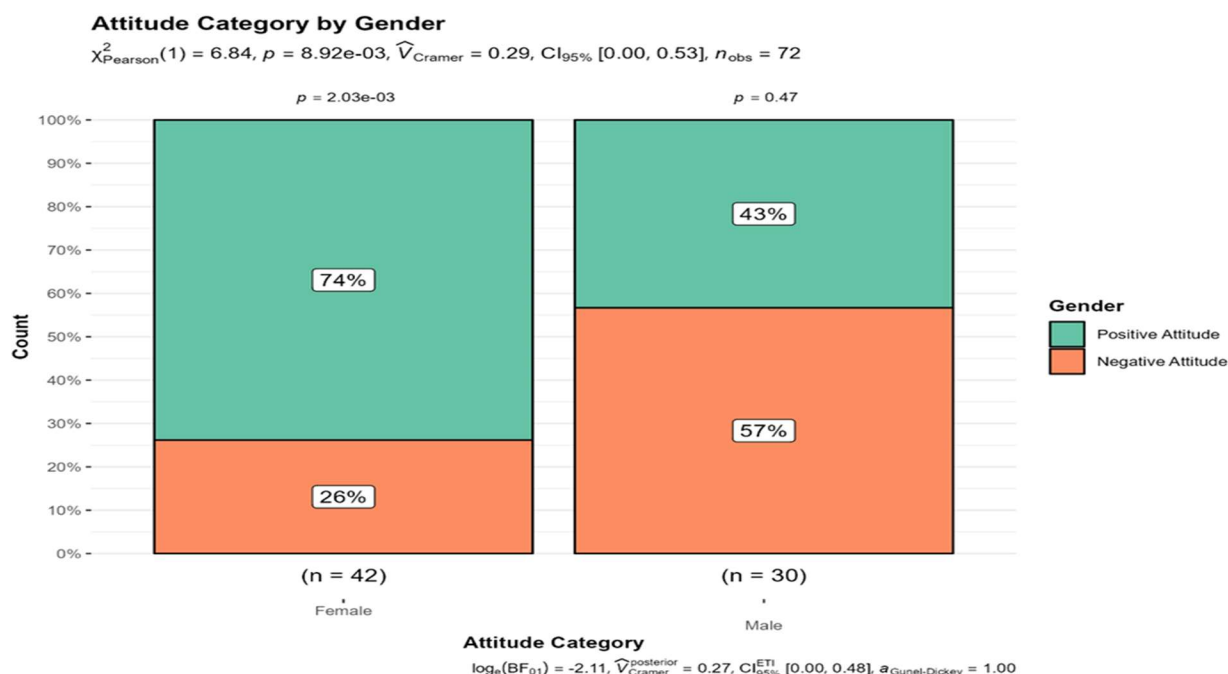


Figure 3: Association between Gender and attitude Level

DISCUSSION

The present cross-sectional survey of 72 school teachers in Surulere, Lagos, revealed moderate awareness but notable knowledge gaps regarding orthodontic treatment. These findings broadly echo trends seen in the literature; our awareness rate (76.4%) is higher than reported in several Nigerian studies of similar populations. Aikins and daCosta found that only 40.7% of secondary school teachers in Rivers State, Nigeria, had even heard of orthodontics.¹⁰ Similarly, Adegbite et al. reported that only 24% of Nigerian secondary school students had heard the term, with only a handful of students who had heard of orthodontics correctly describing it.¹⁶ The higher awareness in our Lagos sample may reflect the urban setting and the sample's predominantly tertiary education, but it nonetheless highlights the persistent gap between awareness and understanding.

In contrast, studies in other regions have found higher baseline awareness. For example, a survey of school teachers in Iran found that 94% recognized that orthodontic treatment involves arranging teeth with braces.⁴ Similarly, in Pakistan a recent study reported that teachers were generally more aware of orthodontics than lay parents.¹¹ While Lagos teachers may be more aware than some Nigerian cohorts, their level of knowledge is still far from ideal, aligning with the global pattern of "limited awareness" noted among non-dental populations.¹⁷ Female teachers in Surulere not only had a higher mean knowledge score but were significantly more likely to express positive attitudes toward orthodontic treatment than male teachers (74% vs. 43% positive attitude). This gender effect parallels several prior studies that showed significantly higher orthodontic awareness among females.^{12,14,18-20} By contrast, Aikins et al. found that in their Nigerian

teacher sample, male teachers (especially in private schools) had slightly better knowledge; the reasons for this discrepancy are unclear but may relate to differences in region or sampling.²¹

Educational level had an even stronger influence. In our study, almost all teachers with tertiary education had good orthodontic knowledge, whereas those with only secondary education were concentrated in the poor-knowledge group ($p=0.012$) (only 3.3% of good-knowledge teachers had a secondary school diploma). This mirrors findings from other studies that found significant associations between levels of education and awareness of malocclusion and its treatment.^{22–24} Although some studies have even reported no significant effect of education.⁴

Overall, the attitudes towards orthodontic treatment in this study were fairly positive, but many teachers did not perceive a need for their own treatment. This trend is also seen in other Nigerian studies, where most respondents did not believe they needed orthodontic care.^{25,26} These findings suggest that the reduced level of knowledge may translate into reduced willingness. Our results carry several practical implications. School teachers, as potential health promoters, currently lack adequate orthodontic knowledge to fulfill that role effectively. The importance of school teachers as a target group for various health educational activities has been noted in literature because they have frequent contact with children.^{10,27} However, these findings are specific to public secondary school teachers in an urban Lagos setting and may not be generalizable to all Nigerian teachers. Broader multi-regional studies are needed to assess national trends. In conclusion, this study highlights that even among educated urban professionals, knowledge of orthodontic treatment can be surprisingly limited. Less than half of the teachers in Surulere could accurately describe orthodontic care, and many were uncertain of the appropriate age or the local availability of services. These results agree with prior Nigerian and international studies showing generally low KAP levels in non-specialist groups and they underscore that female and higher-educated individuals fare better. Given the key role teachers play in children's education, improving their orthodontic literacy should be a public health priority. Integrating simple orthodontic health modules into teacher training, along with broader awareness campaigns, could help bridge these gaps.

Source of Support

Nil

Conflict of interest

None Declared

REFERENCES

1. Abeleira MT, Pazos E, Ramos I, Outumuro M, Limeres J, Seoane-Romero J, et al. Orthodontic treatment for disabled children: a survey of parents' attitudes and overall satisfaction. *BMC Oral Health*. 2014 Aug 5;14(1):98.
2. Aldweesh AH, Ben Gassem AA, AlShehri BM, AlTowaijri AA, Albarakati SF. Parents' Awareness of Early Orthodontic Consultation: A Cross-Sectional Study. *Int J Environ Res Public Health*. 2022 Feb 5;19(3):1800.
3. Anderson LE, Arruda A, Inglehart MR. Adolescent patients' treatment motivation and satisfaction with orthodontic treatment. Do possible selves matter? *Angle Orthod*. 2009 Sep;79(5):821–7.
4. Rafighi A, Foroughi Moghaddam S, Alizadeh M, Sharifzadeh H. Awareness of Orthodontic Treatments among School Teachers of Two Cities in Iran. *J Dent Res Dent Clin Dent Prospects*. 2012;6(1):25–8.
5. Di Spirito F, Cannatà D, Schettino V, Galdi M, Bucci R, Martina S. Perceived Orthodontic Needs and Attitudes towards Early Evaluation and Interventions: A Survey-Based Study among Parents of Italian School-Aged Children. *Clin Pract*. 2024 Jun 18;14(3):1159–70.
6. Zhou X, Wang J, Gou Q, Luo J. Parental knowledge, attitudes, and practices regarding malocclusion in preschool children. *Sci Rep*. 2025 May 4;15(1):15567.
7. Mohammed Alwusaybie M, AlBaqshi FS, Alshaks MA, Zaki Alabdullah M, Abdulaziz Alwosaibei M, AlBahrani HJ, et al. Parental Knowledge and Awareness Regarding Early Orthodontic Consultation in Children: A Cross-Sectional Study. *Cureus*. 2024 Nov;16(11):e73842.
8. Mhatre AH, Mane P, Mathew KR, Ganigar CR, Pawar R, Phaphe S, et al. Awareness of orthodontic treatment among school teachers in Karad Taluka. *Indian J Dent Res Off Publ Indian Soc Dent Res*. 2019;30(3):363–7.
9. Ehizele A, Chiwuzie J, Ofili A. Oral health

- knowledge, attitude and practices among Nigerian primary school teachers. *Int J Dent Hyg*. 2011 Nov;9(4):254–60.
10. Aikins EA. Knowledge, Awareness and Attitude to the Practice of Orthodontics among a Population of Secondary School Teachers in Nigeria. *West Afr J Orthod*. 2012;1(2):12–21.
11. Abbottabad International Dental College Abbottabad., Farooq A, Khan VA, Hafeez SD, Hussain Shah SM, Afsar M, et al. Awareness of Orthodontic Treatment among Primary, Middle, and High School Teachers in Pakistan. *J Pak Dent Assoc*. 2023 Jun 5;32(01):13–6.
12. Cigerim SC, Erhamza TS. Evaluation of awareness and knowledge of orthodontic treatment among primary and secondary school students: A cross-sectional epidemiological school study. *APOS Trends Orthod*. 2021 Jul 9;11(2):140–7.
13. Singh H, Chaudhary S, Gupta A, Bhatta A. Oral Health Knowledge, Attitude, and Practices among School Teachers in Chitwan District, Nepal. *Int J Dent*. 2021;2021:9961308.
14. Mansoor A, Kasana MA, Nazir R, Siddiqui TA, Mansoor S, Rahim S. Orthodontic awareness amongst middle school teacher sand parents of twin cities. *JPM A J Pak Med Assoc*. 2024 Mar;74(3):480–4.
15. Israel GD. Determining sample size. 1992 [cited 2025 Jul 6]; Available from: https://www.researchgate.net/profile/Subhas-h-Basu-3/post/how_could_i_determine_sample_size_for_my_study/attachment/5ebaa4924f9a520001e613b6/AS:890361492811785@1589290130539/download/samplesize1.pdf
16. Adegbite KO, Ajisafe OA, Ogunbanjo BO, Adeniyi AA, daCosta OO. Knowledge and awareness of orthodontics among Nigerian school children in selected private and public schools in Lagos. *Niger Dent J*. 2012 Jan 1;20(1):19–22.
17. Ali HMHM, Abukhier MBH, Alsalam AMA, Alamir AH, Zain EMM, Bahmaid KMM. Orthodontic awareness among medical and non-medical university students, Sudan. *BMC Oral Health*. 2025 Jul 6;25(1):1121.
18. El Mofty M. Attitude and Knowledge of Orthodontics among Egyptian Patients: A Cross-Sectional Survey. *Al-Azhar J Dent* [Internet]. 2022 Aug 1;9(4). Available from: <https://azjd.researchcommons.org/journal/vol9/iss4/20>
19. Sri TS, Balakrishnan N, Sreenivasagan S, Nivethigaa B. Knowledge, attitude, and awareness toward orthodontic treatment among patients: A questionnaire survey. *J Adv Pharm Technol Res*. 2022 Dec;13(Suppl 2):S578–83.
20. Arslan Z, Elekdag-Türk S. Awareness about the orthodontic specialty: A survey study. *J World Fed Orthod*. 2024 Apr;13(2):86–94.
21. Aikins EA, daCosta OO, Onyeano CO, Isiekwe MC. Self-Perception of Malocclusion Among Nigerian Adolescents Using The Aesthetic Component of The IOTN. [cited 2025 Jul 6]; Available from: <https://opdentistryjournal.com/VOLUME/6/PAGE/61/>
22. Ogunjimi MM, Oshomoji VO, Otuyemi OD. The Awareness and Knowledge of Secondary School Teachers on Malocclusion and Orthodontic Treatment in Southwest Nigeria. *West Afr J Orthod*. 2014 Dec 1;3(2):24–9.
23. Edomwonyi A, Ikimi N, Edun OT, Tariah OS. Awareness of Malocclusion and Desire for Orthodontic Treatment Among Secondary School Pupils in Ondo City, Ondo State. *Niger Dent J* [Internet]. 2025 Feb 19 [cited 2025 Jul 6];33(1). Available from: <https://nigeriandentaljournal.ng/index.php/ndj/article/view/319>
24. Opoku P, Salu S, Azornu CK, Komesuor J. Oral health knowledge, practice and associated factors among Junior High School students of Koforidua, Ghana: a cross-sectional study. *BMC Oral Health*. 2024 Apr 12;24(1):449.
25. Folaranmi N, Ndu A, Akaji E, Okeke A. A Cross-sectional Assessment of Knowledge, Social Perceptions and Willingness to Undergo Orthodontic Treatment amongst Adults in Enugu, Nigeria. *West Afr J Orthod*. 2015 Jun 1;4(1):14–8.
26. Bala M, Braimah RO, Taiwo AO, Sulaiman AO, Sulaiman KA, Bawa AT, et al. Evaluation of Awareness, Knowledge, and Approval of Orthodontic Treatment among Dental Patients in Northwestern Nigeria: A Cross-sectional Study. *J Prim Care Dent Oral Health*.

- 2023 Aug;4(2):31.
27. Doshi DA, Bapna DD, Qadri DAW, Palak D, Garg DA, Abhishek DSD. Effectiveness of School-Based Oral Health Education Programs in Improving Knowledge, Attitude, and Practice Among Primary School Students: A Pre-Post Intervention Study. *Afr J Biomed Res.* 2024 Nov 30;27(4S):5578–82.