

Knowledge of Orthodontics as a Dental Specialty: A Preliminary Survey among LASUCOM Students

Adegbite KO, Ogunbanjo BO, Ajisafe OA, Adeniyi AA¹

Pediatric/Orthodontic Unit, Dental Clinic, ¹Preventive Unit, Dental Department, Lagos State University College of Medicine, Ikeja, Lagos, Nigeria

Address for correspondence:
Dr. Kikelomo Adegbite,
Orthodontic Unit, Dental Clinic,
Lagos State University College of
Medicine, Ikeja, Lagos, Nigeria.
E-mail: kikeadegbite@yahoo.co.uk

Abstract

Background: Awareness of malocclusion and the need to make corrections has increasingly becomes prevalent among our population. However, very few patients have presented in the orthodontic clinics with referrals from medical practitioners, an indication that the primary caregivers may be deficient in the knowledge of orthodontic practice. **Objective:** To assess the knowledge of orthodontics and the awareness of the effects of malocclusion on the general well-being, among medical students at the Lagos State University College of Medicine (LASUCOM). **Materials and Methods:** This cross-sectional study was conducted using a self-administered questionnaire. A total of 85 medical students in the institution participated in the study. Data entry and analysis was done using Epi info version 3.5. Frequency counts were generated for all variables and measures of central tendency for numerical variables. **Results:** All participants were medical students. Majority (75.3%) were in their clinical years while 24.7% were in their preclinical years. Only 45.9% of the respondents had heard of the term “orthodontics” and only 20% correctly answered that orthodontics involves malocclusion and its management. Concerning the treatment procedures used in orthodontic clinics, 54.1% of them selected rearrangement of teeth. When asked to identify the appliances used in orthodontics, 49.4% selected dentures, 40% selected removable appliances, and 57.7% selected braces. Most of the respondents (81.2%) agreed that as medical doctors they would refer patients for orthodontic care, while 3.5% were undecided and 15.3% disagreed. **Conclusion:** The medical students surveyed had limited knowledge of orthodontics as a specialty and also knew very little about the impact of malocclusion on the well-being of the individual. They would, therefore, benefit from basic education in orthodontics to stimulate their interest in the specialty and improve their ability to refer patients appropriately.

Keywords: Knowledge, Malocclusion, Medical students, Orthodontics

Introduction

The specialty of orthodontics relates to facial and occlusal development and involves the supervision, interception, and correction of occlusal and dentofacial anomalies known as malocclusion. Malocclusion is a term which refers to malalignment of teeth and incorrect relationship between the upper and lower arches.^[1] Patients with malocclusion have no specific signs and symptoms, but may complain about esthetics,

difficulty with speech, and mastication. The prevalence of malocclusion has been found to vary in different countries, ranging from 20 to 43% in India,^[2,3] from 20 to 35% in the United States,^[4] 62.4% in Saudi Arabia,^[5] and 88.1% in Colombia.^[6] In Nigeria, a prevalence of 87.7% was reported among children in the north,^[7] 76% in Ibadan,^[8] and 84.1% in Benin,^[9] clearly indicating that malocclusion is prevalent among Nigerian children. The early management of malocclusion is important because of its impact on self-esteem and quality of life.^[10]

Globally there has been an increase in the awareness of orthodontics as a dental specialty among children as well as adults.^[11] A similar trend has also been reported in Nigeria with an associated increase in demand for orthodontic care in the last decade.^[7] Nonetheless, the number of orthodontists available in Nigeria is still inadequate to meet the rising demand. This increased awareness could be attributed to several factors,

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particularly an increase in the value placed on dental esthetics and physical appearance.^[12] This is important because research suggests that there is a relationship between physical attractiveness and self-esteem.^[13] Esthetic awareness has also been associated with increasing influence of the entertainment media.^[14] People are fascinated by the beautiful and confident smiles of models and public figures in popular media and are thus motivated to improve their appearance.^[15] Thus, a desire to enhance the appearance is often the major factor motivating people to seek orthodontic treatment.^[16]

In Nigeria, as in most developing countries, medical doctors are the primary caregivers for a vast majority of health-related complaints. Thus, they could serve as a good point of referring patients with malocclusion. However, very few patients have presented in the orthodontic clinic with referrals from medical practitioners. This may be because of the limited knowledge of orthodontics as a specialty among medical doctors or the fact that they are unaware of the impact of malocclusion (Orthodontics) on the health and general well-being of the patient. Also, many patients present with more pressing health complaints and as such malocclusion may be considered a minor complaint. Consequently, many patients who require orthodontic interventions are not referred for care. This is not surprising because most medical doctors did not receive any training in oral health in medical school and very few perceive a need to update their knowledge in that area after graduation. In two separate Nigerian studies, medical doctors displayed inadequate knowledge of dental sub-specialties.^[17,18] Considering that the present-day medical students are the future medical doctors, we sought to assess their level of orthodontic awareness. This will identify the gaps in their knowledge which may be corrected through health education interventions and possibly curriculum review. It is hoped that this would stimulate their interest in identifying and appropriately referring patients with malocclusion.

Materials and Methods

Study location

Lagos state is located in the southwestern part of Nigeria and is the commercial capital of Nigeria. Although Lagos state is the smallest state in Nigeria by land mass, it has the highest population, which is over 17 million out of a national estimate of 150 million. The population is very diverse and consists of all ethnic groups. Lagos state is home to six universities of which only two have facilities for medical and dental training, namely, The University of Lagos and the Lagos State University.

This was a cross-sectional questionnaire-based study carried out among medical students in Lagos State University College of Medicine (LASUCOM), Ikeja, Lagos. LASUCOM was established in 1987 and presently comprises three faculties. The first set of doctors graduated in 2006. At the time of this study, there were totally 187 medical students in the institution.

Questionnaire

The survey instrument, a self-administered questionnaire, was specifically designed by the researchers for this study. The survey instrument consisted of two parts; the first obtained information on demographic data, previous dental experience, and sources of information about dentistry. The second part examined the respondent's knowledge of orthodontics as a specialty and included questions such as who is an orthodontist, what procedures are carried out in an orthodontic clinic, and the effect of abnormally arranged teeth on well-being. The instrument was pre-tested for construct validity and reliability on 20 students at the College of Medicine of the Lagos University Teaching Hospital (LUTH) before final data collection and necessary modifications were made based on the results of the pre-test.

Sample selection

All 187 medical students in the LASUCOM were eligible to participate in the survey; however, some of the students were away from the school on outside posting and electives on the day of data collection, and thus could not participate in the study. The questionnaire was administered to participants during lectures and was collected immediately after they had been filled to reduce bias. A total of 120 questionnaires were distributed to all consenting medical students during data collection, of which only 85 were properly completed and returned, giving a response rate of 70.8%. The students who participated in this study were in year two to year six, as the year one students are in the main campus of the university and are not yet part of the medical school. Consent was given verbally by the medical students after a detailed explanation of the investigation was given by the researcher.

Data entry and analysis

The data were entered using Microsoft Excel and analyzed with Epi info version 3.5. Frequency distribution was generated for all variables and measures of central tendency were generated for all numerical variables.

Results

Socio-demographic features

The respondents' age range was 16–40 years with mean(SD) of 23.8(10.1). More than half of them (54.1%) were in the 21–25 years age group. Almost all the respondents (78 or 92.9%) were single and majority (75.3%) were clinical medical students, while the others (24.6%) were in the preclinical years of study. Almost half (45.9%) reported at least one previous visit to the dentist. While only two persons had previously received orthodontic treatment, 72.9% had friends or relatives who had received orthodontic treatment. Table 1 shows the socio-demographic features of the study population.

Respondents' knowledge of orthodontics

Over 75% reported receiving some information on oral health prior to this study; Figure 1 shows their sources of

oral health information. Only 45.9% were familiar with the term orthodontics and only 20% correctly answered that orthodontics involves malocclusion and its management. Concerning the treatment procedures carried out in an orthodontic clinic, 39% of the respondents selected filling and extracting teeth, 29.4% scaling and polishing teeth, and 54.1% agreed that orthodontists arranged teeth [Table 2].

Concerning the appliances used in orthodontics, 49.4% selected dentures, 40% selected removable appliances, and 57.7% selected braces [Table 3].

When asked about the daily functions which would be affected by malocclusion, 83.5% of the respondents selected

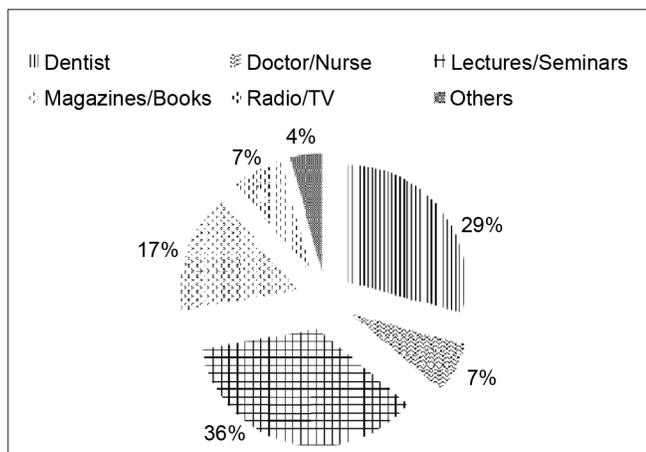


Figure 1: Respondents' sources of information

	No.	Percentage
Age category (years)		
16–20	18	21.2
21–25	46	54.1
26–30	19	22.3
31–35	1	1.2
36–40	1	1.2
Gender		
Male	44	51.8
Female	41	48.2
Marital status		
Single	79	92.9
Married	6	7.1
Previous dental experience		
Yes	39	45.9
No	46	54.1
Level of study		
Year 2	15	17.1
Year 3	4	4.9
Year 4	17	19.5
Year 5	12	14.6
Year 6	37	43.9
Total	85	100.0

appearance, speech (60%), quality of life (40%), self-esteem (76.5%), and mastication (68.2%) [Table 4].

When asked whether doctors should refer patients to orthodontists, 80% agreed with the statement, 4.7% were undecided, and 15.3% disagreed. When asked if they would refer patients to medical doctors, 81.2% responded in the affirmative, 3.5% were undecided, and 15.3% disagreed.

Discussion

Orthodontic problems are generally not associated with high mortality or morbidity; hence, they tend to be overlooked by most health professionals as less important. However, studies indicate that malocclusion has significant impact on the psychosocial health of the affected person.^[19,20] Hence, there is a need to bring more focus on the appropriate referral and prompt management of persons with occlusal disharmony. In the Nigerian situation, most patients in the orthodontic clinic are usually self-referred, with very few receiving referrals

Table 2: Procedures carried out by orthodontists

Procedures carried out by orthodontists	Yes		No	
	n	%	n	%
Filling	33	38.8	52	61.2
Extractions	33	38.8	52	61.2
Scaling and polishing	25	29.4	60	80.6
Rearrangement of teeth	46	54.1	39	45.9

Table 3: Appliances used by orthodontists

Appliances used by orthodontists	Yes		No	
	n	%	n	%
Braces	49	57.7	36	43.3
Dentures	42	49.4	43	50.6
Removable appliance	34	40.0	51	60.0

Table 4: Perceived functions which would be affected by abnormally arranged teeth

	Frequency	Percentage
Speech		
No	34	40.0
Yes	51	60.0
Appearance		
No	14	16.5
Yes	71	83.5
Mastication		
No	27	32.8
Yes	58	68.2
Self-esteem		
No	20	23.5
Yes	65	76.5
Quality of life		
No	51	60.0
Yes	34	40.0
Total	85	100.0

from medical practitioners. This is worrying given that a larger proportion of the Nigerian population visit the doctor more often than they visit the dentist. To the best of our knowledge, no research has been conducted on this topic. Thus, our decision to explore the knowledge of medical students on orthodontics was because the poor referral might not be unconnected with poor knowledge of orthodontics and the low ability to recognize cases requiring orthodontic intervention.

The results obtained from this survey showed that there are indeed gaps in the knowledge of the study participants concerning orthodontics as a dental specialty. Even though a large proportion claim to have received some form of dental education, very few could correctly define who an orthodontist is. This indicates poor understanding or inadequacy of the information received concerning orthodontics among the study population. This is further highlighted by their inability to correctly identify the procedures carried out and the appliances used by an orthodontist. Many erroneously selected restorations, extractions, and preventive care as components of the orthodontist's treatment schedule. This may be because many of the respondents have had little exposure to dentistry, and therefore do not fully understand the differing roles of the various sub-specialties in the profession. A study carried out on the knowledge of the various sub-specialties in dentistry among medical doctors revealed limited knowledge of the sub-specialties in the study population.^[17] Unfortunately, our literature search did not reveal any studies assessing the orthodontic knowledge of medical students.

Nearly all respondents agreed that appearance would be affected by malocclusion. This agrees with another study.^[21] This may be because it has been observed that the demand for orthodontic treatment is motivated primarily by esthetic values and the high social premium placed on well-aligned teeth and attractiveness in general.^[22] Less than half of the respondents agreed that malocclusion affects the quality of life, while majority believed that self-esteem would be affected. This result is surprising considering that self-esteem is arguably an important component of quality of life.

In a society with a high prevalence of malocclusion,^[7-9] it was not surprising that majority of the respondents have friends or relatives wearing braces. Despite this, their perception of orthodontics was largely incorrect, a finding confirmed by research suggesting that the public awareness of malocclusion differs widely from that of the dental professional.^[21] Majority of the respondents believe that it is appropriate for medical doctors to refer patients who require orthodontic treatment to the orthodontist and that they would refer if they had any patients requiring orthodontic treatment. This high number justifies the need for proper orthodontic awareness amongst medical students in order to ensure appropriate referral patterns in their future careers as medical doctors.

This study is not without its limitations. First, the sample size was small and therefore the results cannot be generalized to all

medical students. In addition, cross-sectional studies are often limited by respondent bias, but can serve as impetus for further studies in this area. It is also noteworthy that there are no first year medical students as this group are residents in the main campus of the university and become students of the medical school only from their second year of study. There is limited research conducted in this area; therefore, it was difficult to make any comparisons.

Conclusion

The medical students surveyed have limited knowledge of orthodontics as a specialty and would benefit from basic introduction to the dental sub-specialties, especially in orthodontics. This should stimulate their interest in the specialty and improve their ability to refer and manage patients appropriately. They would benefit the most, especially from the ability to recognize malocclusion and when and where to refer such patients.

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