

## ORIGINAL RESEARCH

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## Awareness of consent among Nigerian orthodontic patients; a study of perceptions and practices.

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### Abstract

Introduction: Orthodontic treatment is elective but not without risks. Prospective patients need to be fully informed of their treatment options and understand the associated risks and benefits.

Aim of the study: To assess the perception of Nigerian orthodontic patients regarding the consent and assent-giving process before orthodontic treatment.

Material and Methods: A total of 349 patients from the University of Port Harcourt Teaching Hospital and Lagos University Teaching Hospital, who received orthodontic treatment between December 2023 and May 2024, participated in this study. A 21-item questionnaire was administered via Google Forms. The questionnaire contained demographic questions and items assessing knowledge, perception, and practice of consent in orthodontics. Data were analyzed using IBM SPSS Version 26, employing descriptive statistics (frequencies and percentages).

Results: Of the 349 participants, 99 (28.4%) were male, and 250 (71.6%) were female, with a mean age of 23.43 ± 10.49 years. Of the study population, 88% of female and 91.9% of male participants had heard of consent before treatment. A total of 93.1% of participants gave consent, with 78.5% of these being verbal. Pain (45.6%) was the most commonly explained complication, while infection (6.9%) was the least. In terms of satisfaction, 92% of participants were satisfied with the consent process.

Conclusion: Most Nigerian orthodontic patients are aware of the consent process and are generally satisfied with it. Orthodontists in Nigeria should prioritize obtaining written informed consent to ensure patient protection and avoid potential legal issues.

**Keywords:** elective, consent, orthodontic patients, complications, informed consent .

### Introduction

Orthodontic treatment is primarily pursued for aesthetic reasons, often in response to concerns about the appearance of teeth. These concerns may arise from the individual or a guardian, especially in the case of adolescent patients. Orthodontists specialize in correcting dental and facial irregularities, and although orthodontic treatment is elective, it is not without potential risks [1]. This makes it imperative for orthodontists to obtain valid informed consent before initiating treatment.

Informed consent is a patient's voluntary decision, made with full knowledge of the risks and benefits of a proposed treatment [2]. Effective communication between healthcare providers and patients is a key element in ensuring valid consent [3,4]. Prospective orthodontic patients must be fully informed of all viable treatment options, including the option of no treatment, and the implications of each [3,4,5]. Orthodontic treatments often

extend over long periods, making it essential for parents or guardians and adult patients to be actively involved in decision-making.

Though orthodontic treatments are primarily performed on adolescents, there is a need for cooperation from all, including parents, and guardians' compliance is also essential in achieving successful outcomes [6, 7]. A previous study indicated that well-informed patients tend to have more realistic expectations and are better involved in their treatment process [8-11]. Conversely, poor communication can lead to dissatisfaction and non-compliance, ultimately impacting treatment outcomes [12].

In Nigeria, the implementation of informed consent in medical practice has been found to be insufficient, and the legal framework around informed consent remains inadequate [13, 14]. Given that orthodontic treatments can involve irreversible procedures and potential complications, written informed consent is

critical [5]. Verbal consent, while common in clinical practice, may not be admissible in legal disputes, underscoring the need for documentation [16, 17]. Though, over a decade ago, there was a study [18] on the experience of Nigerian patients on informed consent in orthodontics, presently with increased awareness of patients about their rights and litigations, it became necessary to know the current perception of Nigerian orthodontic patients about consent-giving and assent-giving process during their treatment.

Therefore, this study aims to assess Nigerian orthodontic patients' perception of the consent-giving process and their satisfaction with obtaining consent before treatment in this era of increased medico-legal consciousness.

### Material and methods

The study involved 349 patients who received orthodontic treatment at the University of Port Harcourt Teaching Hospital and Lagos University Teaching Hospital between December 2023 and May 2024. A 21-item questionnaire was administered via Google Forms. The questionnaire was divided into two sections: Part A gathered demographic data, and Part B evaluated

participants' knowledge, perception, and practice of consent in orthodontics. Participants consented to partake in the study by ticking a consent box before answering the questions. The data were analyzed using IBM SPSS Version 26, with descriptive statistics (frequencies and percentages) applied in the analysis. The test of significance was set at  $p \leq 0.05$ .

Ethical clearance was obtained from the University of Port Harcourt Teaching Hospital Ethics and Research Committee (UPTH/ADM/90/S.II/VOL.XI/718).

### Results

A total of 349 orthodontic patients participated in the study, with 99 males (28.4%) and 250 females (71.6%), giving a male-to-female ratio of approximately 1:2.5. The mean age of the participants was  $23.43 \pm 10.49$  years, with the majority (45.6%) falling within the 10-19 age group. In terms of education, most participants (63%) had a tertiary education, followed by those with secondary education (35.2%), and a small minority (1.7%) with primary education. A significant portion of the participants (40.1%) were students, while others were self-employed (26.6%) or civil servants (21.8%) (Table 1).

Table 1: Socio-demographics and Consent

		Have you heard of consent before?			Chi-square	p-value
		No	Yes	Total		
		n (%)	n (%)	n (%)		
Age group	>10	0 (.0)	2 (100.0)	2 (.6)	4.559	0.472
	10-19	20 (12.6)	139 (87.4)	159 (45.6)		
	20-29	7 (7.2)	90 (92.8)	97 (27.8)		
	30-39	9 (15.8)	48 (84.2)	57 (16.3)		
	40-49	2 (6.9)	27 (93.1)	29 (8.3)		
	above 50	0 (.0)	5 (100.0)	5 (1.4)		
Sex	Female	30 (12.0)	220 (88.0)	250 (71.6)	1.123	0.289
	Male	8 (8.1)	91 (91.9)	99 (28.4)		
Level of education	Primary	0 (.0)	6 (100.0)	6 (1.7)	0.992	0.609
	Secondary	15 (12.2)	108 (87.8)	123 (35.2)		
	Tertiary	23 (10.5)	197 (89.5)	220 (63.0)		
Occupation	Civil servant	8 (10.5)	68 (89.5)	76 (21.8)	0.410	0.938
	Non-applicable	4 (10.0)	36 (90.0)	40 (11.5)		

Self-employed	9 (9.7)	84 (90.3)	93 (26.6)
Student	17 (12.1)	123 (87.9)	140 (40.1)

Significant Value where  $p \leq 0.05$

### Knowledge and Practice of Consent

When asked whether they had heard of consent before their orthodontic treatment, 88% of female participants and 91.9% of male participants responded affirmatively. Overall, 93.1% of participants indicated that they gave consent before treatment, with the majority of

these (78.5%) giving verbal consent. Only 13.8% provided written consent, while 7.7% stated they did not give any form of consent. A significant proportion of participants (84.2%) felt that the consent process was not rushed, while a minority (4.6%) thought it was rushed, and 11.2% were indifferent (Table 2).

Table 2: Knowledge and Involvement in Consent in Orthodontic Treatment

		n	%
Did you give the Doctor consent before your treatment?	No	24	6.9
	Yes	325	93.1
If Yes, what kind of Consent did you give the doctor treating you?	No consent given	27	7.7
	Verbal	274	78.5
	Written	48	13.8
Do you think the consent was rushed?	No	294	84.2
	indifferent	39	11.2
	Yes	16	4.6
Were you told about your treatment before you started?	No	11	3.2
	Indifferent	3	.9
	Yes	335	96.0
Were alternatives to the treatment explained to you?	No	97	27.8
	indifferent	51	14.6
	Yes	201	57.6
Were you given opportunities to ask questions?	No	20	5.7
	Indifferent	2	.6
	Yes	327	93.7
Were possible complications to the treatment explained to you?	No	69	19.8
	indifferent	13	3.7
	Yes	267	76.5

Regarding patient involvement in the consent process, 96% of participants reported that they were informed about their treatment before it began, and 57.6% were informed about alternative treatment options. However, 27.8% indicated that they were not told about alternatives, and 14.6% were indifferent. When asked whether they were given opportunities to ask questions, an overwhelming majority (93.7%) stated that they were, while 5.7% said they were not given such opportunities. Importantly, 76.5% of participants reported that potential treatment complications were explained, with pain being the most commonly mentioned complication (45.6%). Conversely, infection was the least mentioned

complication, cited by only 6.9% of participants (Table 2).

### Perception of Consent

In terms of their overall perception of the consent process, 94.3% of participants believed that obtaining consent was necessary for dental treatments, and 94.8% thought it was required for orthodontic procedures specifically. A small minority (5.7%) disagreed with the necessity of consent for dental treatments, while 5.2% felt that consent was not needed for orthodontic treatments. Notably, 92% of participants expressed satisfaction with the consent process, while 8% were dissatisfied (Table 3).

Table 3: Perception of Patients on Consent Obtained

		n	%
Do you think obtaining consent is necessary for dental treatments?	No	20	5.7
	Yes	329	94.3
Do you think obtaining consent is necessary for orthodontic treatment?	No	18	5.2
	Yes	331	94.8
Do you think the consent procedure was satisfactory?	No	28	8.0
	Yes	321	92.0
<b>Total</b>		<b>349</b>	<b>100.0</b>

## Discussions

This study provides important insights into the knowledge and perception of consent among Nigerian orthodontic patients. One of the most notable findings is that most participants were aware of the importance of consent, with a majority having heard of consent before treatment. This aligns with previous research, which found that patients who are informed tend to have better treatment outcomes and satisfaction levels [8-11]. However, the high reliance on verbal consent, as reported by 78.5% of participants, raises concerns. Although verbal consent is ethically acceptable for non-invasive procedures, it may not offer sufficient protection for both patients and orthodontists in cases of legal disputes [16,17].

The study found that 96% of participants were informed about their treatment, which is encouraging. However, only 57.6% were informed about alternative treatment options. This communication gap could lead to dissatisfaction and non-compliance, as patients may feel limited in their decision-making process. It is critical that orthodontists provide comprehensive information about all viable treatment options and their respective risks and benefits, as recommended by best practices in orthodontics [3,4,5].

Pain was the most frequently explained complication, mentioned by 45.6% of participants. This finding is inconsistent with an earlier study [19], where the pain was not cited as a concern to have, among orthodontic patients. Nonetheless, the low mention of infection as a possible complication (6.9%) suggests that not all potential risks are being communicated effectively. More than half of the studied participants stated that they were told about alternatives to their treatment options and possible adverse effects of the

treatment option they went for. This result is contrary to previous studies [18,20] where most said they were not informed about alternative treatment plans, however, in the study by Itir et al. [21], more than half of the participants were aware that orthodontic treatment could have adverse effects which are consistent with the findings in this present study. Various possible complications of the treatment options were alluded to, to be explained to them in this present Nigerian study. Orthodontists must ensure that patients are fully informed of all potential complications, even those that are less common, to ensure true informed consent [2-5].

Informed consent is not just about informing patients; it also involves ensuring that they fully understand the information provided. In this study, 93.7% of participants stated that they were given opportunities to ask questions, which is a positive indicator of patient involvement. Prior research has shown that patients who have the opportunity to ask questions feel more empowered and engaged in their treatment [22].

Although most participants expressed satisfaction with the consent process, the fact that verbal consent dominates suggests there is room for improvement. Orthodontists should prioritize written informed consent, particularly for more invasive procedures that could be done as adjuncts during fixed orthodontic treatment, to safeguard both the patient and the clinician. Written consent provides a record that can be referred to in the future, reducing the risk of misunderstandings or disputes [16,17].

In summary, while Nigerian orthodontic patients appear to be aware of the consent process, there are gaps in how comprehensive the consent process is. Orthodontists must

ensure that patients are not only informed, but are also fully engaged in their treatment decisions. Written consent should become the standard practice, especially for more complex treatments. This aligns with previous recommendations on improving consent practices in orthodontics in Nigeria [18].

### Conclusions

Most Nigerian orthodontic patients are aware of the importance of consent and are generally satisfied with the consent process. However, orthodontists in Nigeria should adopt written consent more widely, particularly for invasive procedures, to protect both the patient and the practitioner.

### Recommendations

- The Nigerian Association of Orthodontists should advocate for the standardization of written informed consent, especially for treatments involving fixed appliances.
- Orthodontists should ensure that patients are provided with detailed documentation outlining treatment options, potential complications, and alternatives.
- Further studies should explore the relationship between demographic factors (such as education level) and knowledge of consent to tailor patient education more effectively.

**Conflict of interest:** None declared

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