

# Burden of oral diseases and dental treatment needs of an urban population in Port Harcourt, Rivers State, Nigeria

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## ABSTRACT

**Objectives:** The objective of the following study is to determine the burden of oral disease and oral hygiene practices among urban population in Port Harcourt, Rivers State Nigeria. **Materials and Methods:** Individuals who attended the free screening exercise as part of activities to mark 2013 World Oral Health Day were recruited for this study. Data were collected through self and interviewer-administered questionnaire and clinical oral examination. **Results:** One hundred and sixty subjects between the ages of 5 and 78 years participated in the study. Females (59.4%) were significantly ( $P = 0.005$ ) more than males (40.6%). Most of the participants (57.5%) were between 16 and 30 years. Only 33% of the screened population had visited a dentist and most of the previous visits (91%) were to the Dental Center of University of Port Harcourt Teaching Hospital. All the participants cleaned their teeth using toothpaste and toothbrush with 83.4% doing it once a daily. The prevalence of gingival bleeding and dental caries was 91.9% and 23.1%, respectively. **Conclusion:** The burden of oral disease and unmet dental treatment needs among the study population were high. Majority of the participants cleaned their teeth once daily; this falls short below the internationally recommended twice daily. There is a need to advocate for the creation of an enabling environment for oral health through government policies that will be focused on preventive and restorative care.

## Key words

Gingival bleeding, oral hygiene practices, screening, unmet treatment need, urban population

## INTRODUCTION

The pattern of oral disease in hospital is quite different from that in a community. A far greater proportion of disease is hidden from view in the community than is evident to the dentist or the general public. This suggests that there is mass of unrecognized oral disease in communities and its detection and control is a challenge. Screening, as an active search for disease among apparently healthy people is a fundamental aspect of prevention.

Globally, oral diseases constitute a major public health problem and the burden is enormous. The burden of

oral diseases is significantly more on the underprivileged and disadvantaged population groups in developed and developing countries. Dental caries and periodontal disease are the most important global oral health burdens. Other burdens include oral cancer, oral mucosal lesions, maxillofacial and dental trauma, developmental disorders and teeth wear lesions among others. The factors that contribute to this burden of oral disease include poverty, illiteracy, poor oral hygiene practices and lack of access to affordable oral health services.<sup>[1]</sup> In addition, many developed and developing countries have weak national oral health programs, greater inequitable distribution of dental professionals between urban and rural areas, and public dental health facilities that are poorly managed with inadequate dental materials and equipment.<sup>[2-4]</sup> Poor oral health besides causing pain, difficulty in chewing and eating, esthetic problem due to missing, broken or damaged teeth; may have a profound effect on general health, quality of life and well-being.<sup>[5,6]</sup>

During the 2013 World Oral Health Day (WOHD), free oral health screening was organized to screen participants for oral disease. The aim was to determine the burden

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of oral disease, dental treatment need and oral hygiene practices among the urban population in Port Harcourt, Rivers State Nigeria.

## MATERIALS AND METHODS

All the individuals who attended the free screening exercise as part of activities to mark 2013 WOHD participated in the study. Public announcement was made on radio and television stations inviting the general public for the free oral health screening. Data were collected through self and interviewer-administered questionnaire and clinical oral examination. Oral health education was given to all subjects and subsidized treatment was given to those who were diagnosed with oral health problems. World Health Organization criteria<sup>[7]</sup> were used to assess oral diseases and oral examination was done using caries probe, tweezers and mouth mirror on a dental unit. Questionnaire contained information on general background, oral health knowledge and oral hygiene habits. Data analysis was done with Statistical Package for Social Sciences (SPSS 20.0, Inc., and Chicago, IL), descriptive statistics were obtained and frequency distribution calculated. Statistical significance was done with Chi-square test and  $P < 0.05$  was considered to be significant.

## RESULTS

One hundred and sixty subjects between the ages of 5 and 78 years participated in the study. Females (59.4%) were significantly ( $P = 0.005$ ) more than males (40.6%). Most of the participants (57.5%) were between 16 and 30 years [Table 1]. Only 33% of the screened population had visited a dentist and most of the previous visits (91%) were to the Dental Centre of University of Port Harcourt Teaching Hospital where this screening was done. None of the participant knew they have to see the dentist twice a year and use fluoride containing toothpaste to clean their teeth. All the participants cleaned their teeth using toothpaste and toothbrush with 83.4% doing it once a daily [Table 2]. The prevalence of gingival bleeding and dental caries was 91.9% and 23.1%, respectively. Dentine hypersensitivity and trauma to anterior teeth accounted for 8.1% and 16.3% of oral diseases seen in the participants [Table 3].

## DISCUSSION

Oral health plays a crucial role in the overall health and social well-being of an individual, it is important to screen the public for oral health problems particularly the underserved and disadvantaged populations. Coincidentally, the population screened during this exercise might be considered as disadvantaged group. The parents/guardian of children and young adults who participated in the survey remarked that they have not

**Table 1: Age and sex distribution of the screened population**

Characteristics	Frequency	Percentage
Age (years)		
0-15	3	1.9
16-30	92	57.5
31-45	40	25
Above 45	25	15.6
Sex		
Male	65	40.6
Female	95	59.4

**Table 2: Oral hygiene practices of populace**

	Frequency	Percentage
Past dental visit		
No	107	66.9
Yes	53	33.1
Hospital visited		
Screening center	48	91
Other hospital	5	9
Method of tooth cleaning		
Paste and toothbrush	160	100
Frequency of daily cleaning		
Once daily	134	83.4
More than once	26	16.6

**Table 3: Prevalence of oral diseases in the population**

Variable	Frequency	Percentage
Gingival bleeding	147	91.9
Toothache	62	38.8
Recession	10	6.3
Pericoronitis	8	5
Untreated caries	37	23.1
Fractured anterior teeth	26	16.3
Attrition	16	10.0
Missing teeth	26	16.3
Discoloration/stains	11	6.9
Dentine sensitivity	13	8.1
Hypoplasia	4	2.5
Supernumerary	1	0.6
Impacted	14	8.8
Mobile teeth	11	6.9
Displaced	16	10.0
Cervical abrasion	4	2.5
Retained teeth	6	3.8
Cleft lip	1	0.6
Ulcer	2	1.3
Peg shape lateral	1	0.6
Abscess	2	2.5

visited the dentist because they could not afford the cost of treatment. Again 91% of those with previous dental visit have been diagnosed with oral health problems in the center where the screening was done, but could not

afford the cost of treatment; however decided to come back when they heard of the free screening and possibly free treatment.

Results obtained from the screening revealed various forms of oral diseases in the population. Dental caries and periodontal disease over time have been considered as the most important oral health burden. The result of this study was not different. The most prevalent oral diseases were gingival bleeding and untreated dental caries. The prevalence of gingivitis was 92% indicating that almost all the participants had inflammation of the gingiva and would require dental treatment, at least oral hygiene instruction and scaling. In addition, tooth mobility and gingival recession as a result of periodontal disease was seen in 6.9% and 6.3% of the participants respectively. This group besides scaling and oral hygiene instruction would need other forms of periodontal treatment. These results may invariably be considered as small, effort should be made to ensure that 92% of the participants presenting with gingival bleeding do not progress to chronic periodontal disease.

In this study, 23.1% of the participants had one or more unrestored carious teeth, 16.3% of participants had missing teeth and no participant had filled teeth. This result is in agreement with other studies that have reported decayed and missing teeth as a major contributor to mean decayed, missing, filled primary teeth in developing countries.<sup>[8-11]</sup> Regular visit to the dentist is not a well-established tradition in developing countries as dental visits are often motivated by pain and need for emergency care.<sup>[12]</sup> A number of reasons have been given for low dental care utilization in developing countries, these ranged from low level of perceived need for dental services to limited availability of dental care.<sup>[12]</sup>

The prevalence of periodontal disease and unrestored carious teeth indicate high unmet dental treatment need. Other studies have documented high unmet dental treatment need in Nigeria and other developing countries.<sup>[8-11,13]</sup> The prevalence of dental caries seen in this study is similar to 22.1% obtained among rural dwellers in Nigeria.<sup>[14]</sup> This may be due to similarities in the study population as a disadvantaged group.

In spite of the various forms of oral diseases recorded in this group, only one-third had previously visited dentist. In addition to inability to afford treatment, lack of awareness, poor attitude and behavior toward oral health may be responsible.

All the participants used toothbrush and toothpaste to clean their teeth. This is in contrast to the previous study which reported the use of chewing sticks alone or in combination with toothpaste and toothbrush among rural and urban dwellers in Nigeria.<sup>[15]</sup> This may not be unconnected to increased access to toothpaste and

toothbrush, as well as increased information on the use and acceptability of toothbrush and toothpaste as teeth cleaning aid.

Majority (83.4%) of the study population cleaned their teeth once daily. Cleaning of teeth once daily has been reported in other studies,<sup>[16-18]</sup> this is different from the internationally recommended twice/day that has reported in developed economies of the world.<sup>[19,20]</sup>

One of the obvious tasks of oral health professionals is to educate the public on correct oral habits that would provide relevant knowledge and raise awareness on oral health. WOH 2013 provided us opportunity to raise awareness on the causes and consequences of oral diseases, provide information on how to prevent oral diseases, encourage the general populace to regularly go for a dental checkup and follow the advice of dental healthcare professionals, encourage self-care to prevent oral diseases, provide information on the negative impact of poor oral health on quality of life and increase advocacy for national and local authorities to create enabling environments for oral health and healthy behaviors.

## CONCLUSION

The burden of oral disease and unmet dental treatment need among the study population were high. Majority of the participants were visiting the dental clinic for the first time and cleaned their teeth once daily. All the participants became aware of the need to go for a dental checkup every 6 months and the use of fluoride containing toothpaste to clean their teeth. Our hope is to continue to use the occasion provided by the WOH, in raising awareness and educate the general public on oral health matters and advocate for the creation of an enabling environment for oral health through government policies that will be focused on preventive and restorative care particularly the underserved.

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