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Assessment of the Oral Health-Related Quality of Life of Completely Edentulous Non-Denture Wearers

Uyiosa Julia EREGIE[1], Julie Omole OMO[2], Matthew Asizide SEDE[3] and Temitope Ayodeji ESAN[4]

[1]Lecturer / Honorary Consultant, Department of Restorative Dentistry, University of Medical Sciences, Laje Road, Ondo City, Ondo State, Nigeria.

[2]Associate Professor/ Honorary Consultant, Department of Restorative Dentistry, University of Benin, Benin City, Edo State, Nigeria.

[3]Professor/ Honorary Consultant, Department of Restorative Dentistry, University of Benin, Benin City, Edo State, Nigeria.

[4]Professor/ Honorary Consultant, Department of Restorative Dentistry, Obafemi Awolowo University, Ile-Ife, Osun State, Nigeria.

*Correspondence:

Uyiosa Julia EREGIE, Department of Restorative Dentistry, University of Medical Sciences, Laje Road, Ondo City, Ondo State, Nigeria.

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ABSTRACT

Background: *Despite the myriads of reported negative effects associated with complete edentulism, there still exist some individuals who have never sought treatment for their edentulous state.*

Objective*: To assess the Oral health-related quality of life (OHRQoL) of completely edentulous Non-denture wearers.*

Materials and method: *A Nigerian Pidgin English version translation of the modified 11-item GOHAI questionnaire was used in assessing the OHRQoL of 20 completely edentulous patients who have never sought treatment for their edentulous state. The questionnaire consisted of positive and negative items with a 3-point Likert scale. The 11-item GOHAI questions were further organized into three (3) domains which includes, physical function domain, psychosocial function domain, and pain or discomfort domain. The items under each domain were added together to give the total score of each domain. The total GOHAI score for each patient was the summation of all scores obtained from the 11 questions (comprising the three domains) with the scoring for the positive items reversed. Following assessment of their OHRQoL, reasons why they had never sought treatment was also inquired from the respondents. Afterwards, oral health education was given to them and they were all encouraged to come to the dental clinic for proper treatment of their edentulous state.*

Results*: The highest GOHAI score of 10.1 ± 3.2 was observed in the psychosocial domain. This was followed by a score of 6.0 ± 1.3 in the physical function domain, while the least score of 4.6 ± 0.6 was observed in the pain and discomfort domain. Overall, a total GOHAI score of 20.7 ± 3.9 was observed among the respondents. When asked about the reasons for not seeking complete denture treatment, ten patients (50%) reported that using dentures was not a priority. Five patients (25%) reported that they were not aware of dentures. Furthermore, inability to afford the cost of treatment for complete dentures and the clinic being too far were reported by 15% and 10% of the participants respectively. None of the participants reported fear and bad experiences from others who have used dentures as a reason for not seeking treatment.*

Conclusion*: The OHRQoL of completely edentulous patients who have never sought treatment for their edentulous state is low.*

Keywords

Introduction

Quality of life (QoL) is a concept, which has generated a great deal of interest especially in the field of oral health [1]. In response to the WHO's definition of health as "a complete state of physical, mental and social well-being and not just the absence of disease or infirmity" [2], health service researchers have focused on health as a multi-dimensional concept. This concept of health status embraces the bio psychosocial model of health into which symptoms, physical functioning, emotional and social well-being are incorporated [3]. A specific branch of QoL is oral health–related quality of life (OHRQoL) which has important implications for the clinical practice of dentistry and dental research.

Oral health-related quality of life (OHQoL) has been described as the perception of how oral conditions affect daily function and well-being [4]. It has been widely used in clinical studies as an outcome to assess the quality, effectiveness and efficacy of oral health care [5,6]. The use of patient-based outcome measures in oral health, like oral health-related quality of life (OHRQoL), has increased since the 1980's [7]. OHRQoL is a multi-dimensional idea which can be defined as a person's assessment of how functional, psychological, social factors, pain or discomfort affect his/her well-being in the context of oral health [8]. Several OHRQoL instruments have been developed since the 1990s in different countries and cultures, and they are more or less widespread among researchers. The use of these OHRQoL questionnaires is mainly seen in oral epidemiological surveys and lately in clinical studies. One of these instruments is the Geriatric Oral Health Assessment Index [9], which groups oral health self-perception in three basic functions: physical, psychosocial and pain/discomfort [10]. In this way, the perceived oral health becomes an important tool for diagnosing the priority requirements of patients especially as regards the elderly and implementing actions that result in an improvement in quality of life [11]. Among the several oral conditions that have been implicated in negatively affecting the OHRQoL of patients, complete edentulism seems to be in the front burner as it has been described as the "final marker of disease burden for oral health" [12]. There is overwhelming evidence showing the negative effects of edentulism on OHRQoL [13,14]. This negative effect has been revealed to not only influence oral function, but also social life and day-to-day activities [15]. Despite the numerous reported negative impacts of complete edentulism on OHRQoL, there still exist some individuals who are living with their edentulous state and have never sought any form of treatment. Some studies have also revealed that OHRQol is subjective and that the felt need of patients is quite different from the normative need [16-18]. It is therefore important to assess the quality of life of completely edentulous people who have never used dentures and are not motivated towards its use. This will help us understand the extent to which complete edentulism is actually debilitating to its sufferers, and if it is actually necessary to rehabilitate every person presenting with complete edentulism.

Methodology

This study comprised a total of 20 consenting completely edentulous elderly patients who have never sought dental treatment for their edentulous state. They were recruited from rural communities located within Edo South Senatorial district of Edo State, Nigeria. Following history taking and clinical examination of the patients, an assessment of their OHRQoL was carried out using a Nigerian Pidgin English version translation of the 11-item modified Geriatric Oral Health Assessment Index Questionnaire. It was necessary to translate the questionnaire into the local colloquial language, understood by majority of the elderly populace in the region of study. Two dentists fluent in both English and Nigerian Pidgin English translated the original English version to Nigerian Pidgin English. The version was then back-translated into English by another two dentists fluent in both Nigerian Pidgin English and English. The back- translated version was then compared with the original English version to verify that the questions were properly translated. Following translation, the content and face validity of the questionnaire was found to be acceptable as reported by two consultant dentists. A pilot testing of the translated questionnaire was carried out on three completely edentulous patients who were not part of the study. Their responses were analyzed for internal consistency/Reliability of the questionnaire. The results revealed an adequate internal consistency and homogeneity between items with a Cronbach's alpha coefficient of 0.73.

The questionnaire consisted of positive items (3,5 and 7) and negative items (1,2,4,6,8,9 10 and 11) with a 3-point Likert scale scoring as (always-1, sometimes-2, never-3). The 11-item GOHAI questions were further organized into three (3) domains which includes, Physical function domain (which is related to problems of eating, speech and swallowing and comprises items 1, 2, 3 and 4); Psychosocial function domain (related to problems of worry, self- consciousness about oral health and avoidance of social contacts; items 6, 7, 9, 10 and 11), and Pain or discomfort domain (comprising items 5 and 8). The items under each domain were added together to give the total score of each domain. The total GOHAI score for each patient was the summation of all scores obtained from the 11 questions (comprising the three domains) with the scoring for the positive items (3, 5, and 7) reversed. A total GOHAI score of 30-33 was assessed as a high score, 24-29 as a moderate score while ≤ 23 was assessed as a low GOHAI score reflecting a low OHRQoL. Following assessment of their OHRQoL, reasons why they had never sought treatment was also inquired from them. Afterwards, oral health education was then given to them and they were all encouraged to come to the clinic for proper treatment of their edentulous state.

Results

The study comprised a total of 20 completely edentulous patients with an age range of 61-89years and a mean age of 75.2 ± 8.1 years. The majority of the respondents were in the age group 60-69 years. There were more males than females with a male: female

ratio of 1: 0.8 (Table 1). Most of the respondents, 14 (70.0%) had received no form of formal education and none of the respondents had been educated beyond the primary level (Table 2). Majority of the respondents accounting for 80% belonged to the unskilled occupational category and none of the respondents belonged to the skilled or semi-skilled occupational category (Table 3). There was no significant variation in the OHRQoL according to gender and educational level of the respondents in all domains. However, there was a significant variation according to their occupation in the physical function domain only with the unskilled participants having a higher mean score of 6.4 ± 1.2 compared to that of the dependents with a mean score of 4.5 ± 0.6 (Table 4). Furthermore, in assessing their OHRQoL in the three domains as well as the total GOHAI score, the highest GOHAI score of 10.1 ± 3.2 was observed in the psychosocial domain. This was followed by a score of 6.0 ± 1.3 in the physical function domain, while the least score of 4.6 ± 0.6 was observed in the pain and discomfort domain. Overall, a total GOHAI score of 20.7 ± 3.9 was observed among the respondents (Table 5). When asked about the reasons for not seeking complete denture treatment, ten patients (50%) reported that using dentures was not a priority. Five patients (25%) reported that they were not aware of dentures. Furthermore, inability to afford the cost of treatment for complete dentures and the clinic being too far were reported by 15% and 10% of the participants respectively. None of the participants reported fear and bad experiences from others who have used dentures as a reason for not seeking treatment (Figure 1).

Table 1: Age and Gender distribution of the respondents.

Characteristics	Frequency (n)	Percent (%)
Age (years)		
60 – 69	8	40.0
70 – 79	6	30.0
≥80	6	30.0
Gender		
Male	11	55.0
Female	9	45.0
Total	20	100.0

Table 2: Educational distribution of the respondents.

Characteristics	Frequency(n)	Percent (%)
Educational Level		
No Formal Education	14	70.0
Primary	6	30.0
Secondary	0	0.0
Tertiary	0	0.0
Total	20	100.0

| Characteristics	Frequency(n)	Percent (%)
Occupation		
Skilled	0	0.0
Semi-skilled	0	0.0
Unskilled	16	80.0
Dependent	4	20.0
Total	20	100.0

Table 4: Oral health-related quality of life of the respondents in relation to Gender, Occupation and Educational level (N = 20).

Characteristics	Physical function (Maximum score= 8) Mean ± SD	Psychosocial function (Maximum score = 14) Mean ± SD	Pain and discomfort (Maximum score = 5) Mean ± SD	GOHAI-T scores (Maximum score = 26) Mean ± SD
Gender				
Male	6.3 ± 1.1	10.2 ± 3.1	4.6 ± 0.7	21.0 ± 3.3
Female	5.7 ± 1.6	9.9 ± 3.5	4.7 ± 0.5	20.2 ± 4.6
p value	0.327	0.844	0.664	0.667
Occupation				
Unskilled	6.4 ± 1.2	10.1 ± 3.2	4.7 ± 0.6	21.1 ± 4.0
Dependent	4.5 ± 0.6	10.0 ± 3.6	4.3 ± 0.5	18.8 ± 3.2
p value	**0.008**	0.973	0.199	0.284
Educational Level				
Nil	6.2 ± 1.3	10.3 ± 3.4	4.6 ± 0.6	21.1 ± 4.0
Primary	5.5 ± 1.4	9.5 ± 2.9	4.7 ± 0.5	19.7 ± 3.6
p value	0.286	0.626	0.754	0.472

Table 5: Oral health related quality of life scores of the respondents in the various domains and total GOHAI scores.

Characteristics	Mean±SD
Physical function	6.0± 1.3
Psychosocial function	10.1±3.2
Pain and discomfort	4.6±0.6
GOHAI-T scores	20.7± 3.9

Figure 1: Reasons for not seeking complete denture treatment among non-denture wearers.
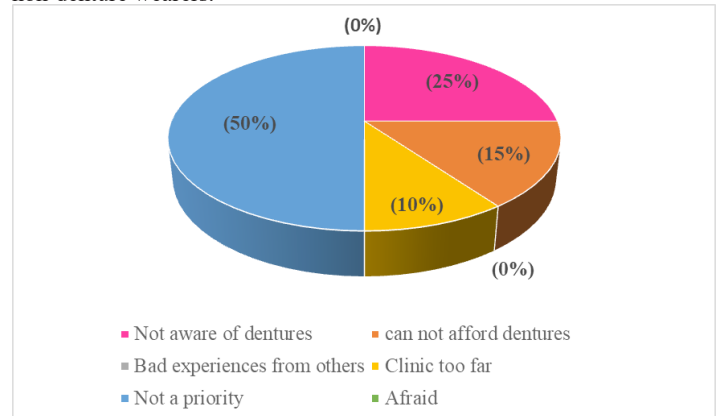
Discussion

Self-perceived oral health-related quality of life is a significant determinant of oral health seeking behavior of edentulous patients [11]. Despite, the several documented reports of the negative impact of complete edentulism on the OHRQoL of patients [13,14,19-21], it has been observed that there still exist some individuals in our environment who have never sought any form of rehabilitation for their edentulous state. Hence, it is important to assess the OHRQoL of these individuals with the view to understand the extent of their self-perceived oral health, and also find out reasons why they never sought treatment.

A notable finding from this study was the fact that most of the respondents belonged to the unskilled occupational group

comprising farmers, messengers and cleaners. This was in agreement with previous studies [22,23]. A finding that could be attributed to the fact that these group of persons in the society belong to the low-income earners and may not be able to afford professional preventive oral care earlier in life. Individuals of a low socioeconomic status rarely seek dental care regularly due to a perceived high cost of dental treatment leading to an increased incidence of edentulous cases especially among the elderly [24,25]. In a study by Owotade *et al.,* it was reported that 52.8% of the elderly population surveyed had never visited a dentist; a situation which he attributed to a general lack of awareness about dental diseases and services especially in rural areas [24].

It was also observed from this study that majority of the respondents had little or no formal education. A situation that could be linked to the rural environment in which they reside where the majority are farmers. The deficiency in formal education could have resulted in reduced awareness of preventive dental care thereby acting as a contributory factor to complete edentulism. This finding had been documented by previous studies [22,23]. Thompson and Kreisel (1998) [25] stated that subjects with least education and lowest income are most likely to be edentulous.

Another notable finding from this study was that the highest mean score of the respondents was seen in the psychosocial domain while the lowest mean scores was noted in the pain and discomfort domain. The higher score in the psychosocial domain may be attributed to the fact that the study group comprised of elderly persons who may not pay particular attention to the psychosocial aspects of tooth loss such as aesthetics and avoidance of social contacts; as they attribute tooth loss to a normal aging process and are less psychologically affected [26]. On the other hand, low scores observed in pain and discomfort domain as well as the functional domain could be attributed to the functional impact of tooth loss on oral health related quality of life especially as regards mastication, speech and swallowing irrespective of age. Overall, a low total GOHAI score is indicative of the fact that complete edentulism still impacts negatively on the Oral Heath quality of life of patients irrespective of whether patients are motivated towards treatment or not.

When asked about the reasons for not seeking treatment for their edentulous state, the commonest reason given was the fact that the use of dentures was not a priority to them. This was reported by 50% of the participants. This may be because preference is usually given to general health rather than oral health in our environment especially among patients residing in rural communities [24]. They are therefore not willing to spend their already lean resources on improving their oral health as they do not see it as an emergency, hence the nonchalant attitude towards treatment. Another reason given for not seeking treatment reported by about 25% of the respondents was the fact that they were not aware about complete dentures as a treatment option for complete edentulism. The reason for this could be because of their lack of formal education and the rural settlement in which they reside, where dental facilities and the provision of dental care and oral health education is almost non-existent. Other reasons given for not seeking treatment from those who were aware were financial constraint and the clinic being too far from their places of residence. This is understandable as majority of the respondents are farmers and low-income earners who are unable to afford proper dental care. Furthermore, most elderly persons present with comorbid conditions which may hinder their mobility to and from the distant locations of the dental facilities. None of the participants reported fear or bad experiences from others using dentures as a reason for not seeking treatment in this study. The reason for this could be because the patients probably have never been exposed to persons who have used dentures and may not be able to relate to the experience of denture use. However, a previous study reported dental fear and anxiety as a reason for not seeking dental treatment [27].

In a similar study by Teófilo and Leles [28], it was reported that the most commonly reported reason for not seeking treatment after teeth extraction in order of importance was financial constraint, lack of time, not feeling necessary and poor motivation.

In a study conducted among several rural communities in Nigeria, it was reported that the treatment seeking behavior of the elderly, their life style, habits and values tend to be both culturally related and restrictive [29]. The illiterate elderly populace who resides in rural communities devoid of modern health care facilities are believed to engage in a kind of cost-benefit analysis wherein the benefits of their actions are weighted against perceptions that it may be expensive, unpleasant, inconvenient, time consuming and may even be harmful based on their cultural beliefs and exercises [29]. If the oral health action is perceived as inaccessible, inconvenient, or unpleasant, they are less likely to partake in it [29]. There is therefore an urgent need to intensify efforts in addressing the factors responsible for inadequate treatment seeking behaviours especially among the elderly rural dwellers in our environment. This will ensure that preventive oral care is offered earlier on in life and will in turn curb the incidence of complete edentulism with its associated negative impacts.

Conclusion
The OHRQoL of completely edentulous patients who have never sought treatment for their edentulous state is low.

Recommendation
It is important to rehabilitate completely edentulous patients with the rehabilitation option suited to their individual circumstances. However, most importantly, barriers to seeking treatment should be addressed such as proper oral health education, provision of dental facilities and the manpower to man such facilities especially in rural communities. In addition, government policies should be put in place to ensure reduced cost of treatment especially for the elderly. This will ensure that treatment is accessible and affordable especially to the rural dwellers in our community who are currently disadvantaged.

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Appendix

Nigerian Pidgin English translated version of the modified 11-item Geriatric Oral Heal Assessment Index (GOHAI) questionnaire

FOR THE PAST (1 or 3) MONTHS…….	ALL THE TIME	SOMETIMES	AT ALL, AT ALL
1. How many times this your teeth, gum or artificial teeth wahala nor dey let you eat the kind food wey you dey like to eat?			
2. How many times you dey get wahala if you wan bite or chop food like meat wey strong or apple?			
3. How many times you dey fit swallow food wey e nor dey give you wahala?			
4. How many times this teeth, gum or artificial teeth wahala no dey let you talk well?			
5. How many times you dey fit chop well wey e no dey give you wahala?			
6. How many times you no wan see person because of this your teeth, gum or artificial teeth wahala?			
7. How many times you dey happy well well because of the way this your teeth, gum or artificial teeth come be like?			
8. How many times you dey use medicine to solve the pain and wahala inside your mouth?			
9. How many times this your teeth, gum or artificial teeth wahala dey make you dey worried?			
10. How many times your mind no take dey reach ground because of your teeth, gum or artificial teeth wahala?			
11. How many times you don dey worry when you dey chop food with other people because of this your teeth, gum or artificial teeth wahala?			

All the time=1, Sometimes=2, At all, at all=3