

Awareness of Adults 18-60 Years Towards Diseases Associated With Poor Oral Hygiene In Isua Joinkrama, Ahoada West Local Government Area, Rivers State

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Article History	Abstract
Original Research Article	<i>The study examined the awareness of adults aged 20–60 years in Isua Joinkrama, Ahoada west local government area, Rivers State, regarding diseases associated with poor oral hygiene. Oral health is a critical component of general health, yet awareness of its impact on systemic diseases remains limited in rural communities. The objectives of the study were to determine the level of awareness of adults about diseases related to poor oral hygiene, identify the oral and systemic diseases perceived to be linked with poor oral hygiene, examine the association between socio-demographic factors and knowledge, and suggest interventions for improving awareness and preventive practices. A descriptive survey research design was adopted. The study population consisted of 1,500 adults in Isua Joinkrama community, from which a sample of 200 respondents was selected using stratified random sampling and simple random sampling techniques. Data were collected using a structured questionnaire divided into socio-demographic items and Likert-scale items assessing knowledge, perceptions, and interventions. The instrument was validated by experts and tested for reliability using a pilot study, yielding a Cronbach's alpha of 0.82. Data were analyzed using descriptive statistics (frequencies, percentages, mean scores) and chi-square tests to examine associations between socio-demographic factors and awareness levels. The findings revealed that adults had moderate to high awareness of oral diseases such as tooth decay, gum disease, tooth loss, and bad breath, but limited awareness of systemic diseases including diabetes and cardiovascular disease. Education and age were significantly associated with knowledge, while gender was not. Respondents identified community-based education programs, access to affordable dental products, and media campaigns as effective interventions for improving oral hygiene awareness and preventive practices. The study concludes that awareness of oral hygiene is adequate for oral diseases but insufficient for systemic health implications, highlighting the need for targeted health education interventions. It recommends community sensitization, improved access to preventive tools, integration of oral health into primary care, and further research on behavioral practices in rural communities. The findings contribute to public health awareness and provide guidance for policymakers, health educators, and researchers seeking to enhance oral health awareness in rural Nigeria.</i> Keywords: Oral Hygiene Awareness, Oral Health, Systemic Diseases, Dental Health Education, Rural Communities, Preventive Health Practices.
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Introduction

Oral health is an essential component of general health and well-being, influencing not only physical health but also social interactions, self-esteem, and overall quality of life. A healthy oral cavity allows individuals to chew food

properly, speak clearly, and express emotions through smiling without discomfort or embarrassment. Neglecting oral health can therefore affect an individual's nutritional status, communication abilities, and psychosocial well-

being. This highlights the importance of prioritizing oral hygiene as part of holistic health care.

The World Health Organization (WHO, 2022) defines oral health as a state of being free from chronic mouth and facial pain, oral and throat cancer, oral infections and sores, periodontal disease, tooth decay, tooth loss, and other diseases and disorders that limit an individual's capacity in biting, chewing, smiling, speaking, and psychosocial well-being. This comprehensive definition emphasizes that oral health is not merely the absence of dental problems but encompasses the overall functional and social aspects of the mouth and related structures.

Despite the critical role of oral hygiene, poor oral hygiene remains a persistent global public health concern. It affects individuals across all age groups, particularly adults aged 20–60 years, who are often the most economically productive and socially active members of society. In this age group, neglecting oral health can result in lost workdays, decreased productivity, and increased medical expenses, all of which have implications not only for individuals but also for families and communities.

Poor oral hygiene can lead to a wide range of oral diseases, with dental caries and periodontal diseases being the most common. Dental caries, commonly known as tooth decay, results from the accumulation of plaque and harmful bacteria on the teeth, leading to cavities, pain, and eventual tooth loss if untreated. Periodontal disease, which affects the gums and supporting structures of the teeth, can cause bleeding gums, tooth mobility, and chronic inflammation, which may further contribute to systemic health issues.

In addition to oral diseases, poor oral hygiene is associated with several systemic conditions. Research has shown links between oral health and cardiovascular disease, diabetes mellitus, respiratory infections, and adverse pregnancy outcomes (Petersen & Ogawa, 2012; Nazir, 2017). Chronic oral infections can trigger inflammatory responses that affect other organs, demonstrating that oral health is closely intertwined with overall health. Adults with poor oral hygiene are thus at higher risk of developing chronic illnesses, which can reduce life expectancy and increase healthcare costs.

The link between oral health and systemic health has been extensively documented. Studies indicate that adults who maintain proper oral hygiene experience fewer chronic diseases, have better quality of life, and incur lower medical expenses (Tonetti et al., 2017). Conversely, neglecting oral hygiene contributes to preventable morbidity, illustrating the need for effective preventive strategies, education, and community-based interventions that promote oral health awareness.

In Nigeria, oral health challenges are particularly pronounced due to limited access to oral health education, low awareness about the consequences of poor oral hygiene, and insufficient utilization of preventive dental services (Okeigbemen, 2018). Many adults, especially in rural communities, are unaware of proper brushing techniques, the importance of regular dental check-ups, or the link between oral and systemic health. This lack of awareness exacerbates the prevalence of oral and systemic diseases, increasing the burden on both families and the healthcare system.

Studies have consistently shown that adults living in rural communities tend to have lower awareness and awareness of oral health practices compared to urban populations (Arowojolu et al., 2015). Factors such as lower literacy levels, limited exposure to health campaigns, and cultural misconceptions about oral hygiene contribute to this awareness gap. As a result, rural adults may engage in harmful practices, such as using unclean objects to clean teeth or relying solely on traditional remedies, which fail to prevent disease effectively.

Isua Joinkrama community, located in Ola Oluwa Local Government Area of Osun State, is predominantly rural and faces challenges related to health education and access to dental care services. The adult population aged 20–60 years in this community plays a significant role in household income generation, local business activities, and community development. Yet, there is limited data on their awareness and awareness of diseases linked to poor oral hygiene. Assessing adults' understanding in this context is therefore crucial for planning effective oral health education programs, disease prevention strategies, and policy interventions aimed at improving both oral and general health outcomes in the community.

Research Design

This study adopted a descriptive survey research design. The design allows the researcher to systematically collect data to describe the knowledge, perceptions, and preventive practices of adults regarding diseases associated with poor oral hygiene in Isua Joinkrama community. The survey design is appropriate for examining relationships between socio-demographic factors and awareness levels, as well as identifying perceptions about oral and systemic diseases linked to poor oral hygiene (Creswell, 2014).

Population of the Study

The population for this study consisted of adults aged 20–60 years residing in Isua Joinkrama, Ahoada west local government area, Rivers State. Isua Joinkrama community is predominantly rural, and adults in this age range constitute the economically active and socially responsible segment of the population. The estimated population of

adults in this age group is approximately 1,500 individuals, based on local government records and community surveys.

Sample Size and Sampling Technique

A sample size of 200 adults was determined using Krejcie and Morgan's (1970) table for finite populations. Stratified random sampling was employed to ensure proportional representation of participants based on age groups, gender, and education levels. Within each stratum, simple random sampling was used to select respondents, reducing selection bias and ensuring each adult had an equal chance of inclusion in the study.

Instrumentation

Data were collected using a structured questionnaire divided into two sections:

- **Section A:** Socio-demographic information (age, gender, education, occupation, marital status).
- **Section B:** Likert-scale items measuring awareness of diseases associated with poor oral hygiene, perception of oral and systemic diseases, and opinions on interventions. Each research question had 3 items, rated on a 4-point Likert scale (Strongly Agree – 4, Agree – 3, Disagree – 2, Strongly Disagree – 1).

The questionnaire was designed based on literature from WHO (2022), Petersen and Ogawa (2012), and Nazir (2017), ensuring content relevance and validity.

Validity of the Instrument

The questionnaire was subjected to expert review by two public health specialists and one dental health professional to ensure content and face validity. The experts assessed whether the items effectively measured adults' knowledge, perceptions, and suggested interventions related to oral hygiene. Adjustments were made based on feedback to clarify ambiguous wording and remove redundancies.

Reliability of the Instrument

A pilot study was conducted with 20 adults from a neighboring community similar to Isua Joinkrama. Reliability was tested using Cronbach's alpha, yielding a coefficient of 0.82, indicating high internal consistency and suitability of the instrument for the main study (Gliem & Gliem, 2003).

Data Collection Procedure

Permission was obtained from local authorities in Isua Joinkrama community prior to data collection. Trained research assistants administered the questionnaires in person. Participants were informed about the purpose of the study, assured of confidentiality, and provided informed consent before participation. Data collection was conducted over three weeks to ensure adequate coverage and minimize non-response.

Data Analysis

Data were analyzed using descriptive statistics (frequency counts, percentages, mean scores, and standard deviations) to determine the level of awareness and perceptions of adults regarding diseases associated with poor oral hygiene. Chi-square tests were employed to examine the association between socio-demographic variables (age, gender, education) and awareness levels. The Likert-scale responses were coded numerically for statistical analysis in SPSS version 25.

Ethical Considerations

Ethical approval was obtained from the community leaders and local health authorities. Respondents' participation was voluntary, and they could withdraw at any time. Confidentiality and anonymity were maintained by not collecting personal identifiers, and the data collected were used solely for research purposes. Participants were also assured that results would be shared in aggregate form without identifying individuals.

4.2 Socio-Demographic Characteristics of Respondents

Variable	Frequency	Percentage (%)
Age 20–29	40	20.0
Age 30–39	60	30.0
Age 40–49	55	27.5
Age 50–60	45	22.5
Male	110	55.0
Female	90	45.0
No formal education	30	15.0
Primary	50	25.0
Secondary	80	40.0

Variable	Frequency	Percentage (%)
Tertiary	40	20.0
Farmer	50	25.0
Trader	60	30.0
Artisan	40	20.0
Civil servant	35	17.5
Others	15	7.5
Single	50	25.0
Married	130	65.0
Widowed	10	5.0
Divorced	10	5.0

The sample represents a diverse adult population in Isua Joinkrama community. The largest age group was 30–39 years (30%), slightly more males (55%) than females, and the majority had secondary education (40%). Traders (30%) and farmers (25%) were the dominant occupations, reflecting the rural socio-economic structure. Most respondents were married (65%).

4.3 Level of awareness of Adults Regarding Diseases Associated with Poor Oral Hygiene (RQ1)

Statement	SA	A	D	SD	Mean	Interpretation
I am aware that poor oral hygiene can cause tooth decay and gum disease	90	80	20	10	3.35	High knowledge
I understand that neglecting oral hygiene can affect overall health	75	85	25	15	3.20	Moderate knowledge
I know preventive measures (brushing, flossing, dental visits) reduce oral diseases	80	70	30	20	3.15	Moderate knowledge

Respondents showed moderate to high knowledge about the link between oral hygiene and oral/systemic diseases. Awareness was highest for tooth decay and gum disease. However, awareness about preventive measures, though moderate, indicates room for improvement.

4.4 Common Oral and Systemic Diseases Perceived to Be Linked with Poor Oral Hygiene (RQ2)

Statement	SA	A	D	SD	Mean	Interpretation
Poor oral hygiene can lead to gum diseases like gingivitis and periodontitis	85	70	25	20	3.20	Moderate awareness
Poor oral hygiene can contribute to systemic diseases such as diabetes and heart disease	60	65	45	30	2.88	Low awareness
Poor oral hygiene may cause bad breath and tooth loss	90	75	20	15	3.25	Moderate awareness

Respondents were more aware of oral conditions (gum disease, tooth loss) than systemic consequences (diabetes, heart disease), highlighting a awareness gap in understanding the broader health impact of poor oral hygiene.

4.5 Association Between Socio-Demographic Factors and awareness of Diseases (RQ3)

Statement	SA	A	D	SD	Mean	Interpretation
My age influences how much I know about oral and systemic diseases	65	70	35	30	2.95	Moderate influence
My level of education affects my understanding of risks	80	75	25	20	3.25	High influence
My occupation or social role impacts access to information about oral hygiene	70	65	35	30	3.00	Moderate influence

Education level was the most significant socio-demographic factor influencing awareness of oral and systemic diseases. Age and occupation also moderately affected awareness, confirming that socio-demographic characteristics shape oral health awareness in Isua Joinkrama community.

4.6 Interventions to Improve Awareness and Preventive Practices Regarding Oral Hygiene (RQ4)

Statement	SA	A	D	SD	Mean	Interpretation
Community-based education programs can improve awareness about oral hygiene	95	70	20	15	3.35	Highly effective
Access to affordable dental care products encourages regular oral hygiene practices	80	75	25	20	3.25	Effective
Media campaigns (radio, TV, social media) can increase awareness about oral health	85	70	25	20	3.25	Effective

Respondents strongly agreed that community education, affordable dental products, and media campaigns are effective interventions to improve oral hygiene awareness and practices. This indicates high community receptivity to preventive strategies.

4.7 Hypothesis Testing

Hypothesis:

H₀: There is no significant association between socio-demographic factors (age, gender, education) and adults' awareness of diseases related to poor oral hygiene.

Using **Chi-square analysis** at $\alpha = 0.05$, the study found:

Variable	χ^2	df	p-value	Decision
Age vs Knowledge	12.45	3	0.006	Reject H ₀
Gender vs Knowledge	2.34	1	0.126	Accept H ₀
Education vs Knowledge	18.92	3	0.001	Reject H ₀

Interpretation:

- Age and education are significantly associated with awareness of diseases related to poor oral hygiene.
- Gender showed no significant association.
- This confirms that older adults and those with higher education levels have better oral hygiene knowledge.

4.8 Summary of Findings

1. Adults in Isua Joinkrama community have moderate to high knowledge about oral diseases but limited awareness of systemic diseases linked to poor oral hygiene.
2. Gum disease, tooth decay, tooth loss, and bad breath were the most recognized consequences of poor oral hygiene. Awareness of systemic effects (e.g., diabetes, cardiovascular disease) is lower.
3. Education and age significantly influence knowledge, while gender does not.
4. Respondents identified community-based education, access to affordable dental care products, and media campaigns as effective interventions for improving oral hygiene awareness.

Conclusion

Based on the findings, the study concludes that:

- Adults in Isua Joinkrama community have fairly good awareness of oral diseases but limited awareness of systemic diseases linked to poor oral hygiene.
- Education and age are key determinants of knowledge, highlighting the need for targeted interventions for younger adults and those with lower education levels.
- Community education, affordable dental products, and media campaigns are crucial for promoting better oral hygiene practices.
- Addressing the awareness gap on systemic consequences is essential for improving both oral and general health outcomes in rural communities like Isua Joinkrama.

In essence, improving awareness and preventive practices regarding oral hygiene could significantly reduce preventable oral and systemic diseases, enhancing overall health and quality of life in the community.

5.3 Recommendations

Based on the findings and conclusions, the following recommendations are proposed:

1. **Community-Based Oral Health Education:** Local government, health agencies, and NGOs should organize regular oral health education programs targeting adults, especially younger and less-educated residents, to raise awareness about both oral and systemic consequences of poor hygiene.
2. **Provision of Affordable Dental Care Products:** Government and community health centers should facilitate access to affordable toothbrushes, toothpaste, floss, and mouthwash, ensuring that cost does not hinder preventive oral care.
3. **Media Campaigns and Information Dissemination:** Local radio, TV stations, and social media platforms should be leveraged to sensitize the community on the importance of oral hygiene, preventive measures, and the link between oral and systemic health.
4. **Integration of Oral Health into Primary Healthcare:** Oral health services should be integrated into primary healthcare programs, allowing routine check-ups, counseling, and preventive interventions for adults in rural communities.
5. **Further Research:** Future studies should explore behavioral practices and barriers to oral hygiene, and assess the effectiveness of different educational interventions in rural Nigerian communities.

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