



Assessment of Oral Health Awareness and Hygiene Practices Among Rural Populations: A Cross-Sectional Study

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ABSTRACT:

Background: Oral health plays a significant role in overall well-being and quality of life. Rural populations often experience limited access to dental healthcare services, inadequate awareness regarding oral hygiene, and poor preventive practices, which contribute to a higher burden of oral diseases. Understanding the level of oral health awareness and hygiene behaviors among rural communities was important for developing targeted public health interventions.

Aim: The study aimed to assess oral health awareness and hygiene practices among rural populations and to identify common factors influencing oral healthcare behaviors.

Methodology: A cross-sectional study was conducted at Lahore General Hospital from April 2025 to March 2026. The study included 80 participants selected from rural communities through convenient sampling techniques. Data were collected using a structured and pre-validated questionnaire that assessed demographic characteristics, oral health awareness, frequency of tooth brushing, use of oral hygiene aids, dietary habits, and frequency of dental visits. The collected data were analyzed using SPSS version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to evaluate oral health awareness and hygiene practices among the participants.

Results: The study demonstrated that 56.3% of participants possessed basic awareness regarding oral health and dental diseases, while only 38.7% were aware of the relationship between oral health and systemic diseases. Regular tooth brushing twice daily was reported by 35.0% of participants, whereas 48.8% brushed once daily and 16.2% brushed irregularly. The use of fluoride toothpaste was observed in 42.5% of participants, while only 18.7% reported using additional oral hygiene aids such as dental floss or

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mouthwash. A majority of participants (62.5%) visited a dentist only when experiencing pain or discomfort, and 21.3% had never attended a dental check-up. Poor dietary habits, including frequent consumption of sugary foods and beverages, were reported by 57.5% of participants.

Discussion: The findings indicated that although a moderate level of oral health awareness existed among rural populations, oral hygiene practices remained inadequate. Limited knowledge regarding preventive dental care, irregular dental visits, and insufficient use of advanced oral hygiene measures reflected the need for enhanced educational programs and improved accessibility to dental healthcare services in rural areas. Socioeconomic limitations and lack of community-based oral health promotion initiatives may have contributed to poor oral health practices among the study population.

Conclusion: The study concluded that rural populations demonstrated insufficient oral health awareness and suboptimal hygiene practices, which may increase the risk of oral diseases and associated complications. Community-based awareness campaigns, preventive dental education, and accessible oral healthcare services were recommended to improve oral health outcomes among rural communities.

Keywords: Oral Health Awareness, Oral Hygiene Practices, Rural Population, Dental Care, Preventive Dentistry.

INTRODUCTION:

Oral health had been recognized as an essential component of general health and well-being, influencing nutrition, communication, self-esteem, and overall quality of life. Good oral hygiene practices had played a significant role in preventing dental caries, periodontal diseases, halitosis, and other oral health complications. Despite considerable advancements in dental sciences and preventive strategies, oral diseases had continued to remain among the most prevalent public health problems worldwide, particularly in low- and middle-income countries [1]. Rural populations had been disproportionately affected due to limited access to oral healthcare facilities, inadequate awareness regarding oral hygiene, low socioeconomic status, and lack of preventive health education.

In many developing regions, oral health had often been neglected in comparison to other medical conditions, resulting in increased prevalence of untreated dental problems [2]. Rural communities had faced multiple barriers in maintaining proper oral hygiene practices, including scarcity of dental professionals, long distances to healthcare centers, financial constraints, and insufficient knowledge regarding preventive dental care. These factors had contributed to delayed diagnosis and treatment of oral diseases, thereby increasing the burden of oral morbidity among underserved populations [3]. Poor oral health awareness had also been associated with unhealthy habits such as irregular tooth brushing, infrequent dental visits, use of traditional cleaning methods, and excessive consumption of sugary foods and tobacco products.

Awareness regarding oral health had been considered a fundamental determinant in promoting healthy behaviors and preventing dental diseases. Individuals possessing adequate knowledge about oral hygiene practices had been more likely to adopt preventive measures such as regular tooth brushing with fluoride toothpaste, flossing, mouth rinsing, and periodic dental checkups. Conversely, lack of awareness had resulted in poor oral hygiene practices and increased susceptibility to oral infections and tooth loss [4]. Educational status, cultural beliefs, and socioeconomic conditions had significantly influenced oral health behaviors among rural residents. In many cases, misconceptions regarding dental treatment and fear of dental procedures had further discouraged individuals from seeking timely oral healthcare services.

Previous studies conducted in various rural settings had demonstrated inadequate oral health awareness and poor hygiene practices among community members [5]. High prevalence of dental caries, gingivitis, periodontal diseases, and oral lesions had been reported in populations with limited oral health education. Furthermore, many individuals had only sought dental treatment when severe pain or complications had occurred, rather than attending regular preventive consultations. Such findings had highlighted the urgent need for community-based oral health promotion programs aimed at improving awareness and encouraging positive hygiene practices.

Public health initiatives focusing on oral hygiene education had shown beneficial outcomes in enhancing oral health knowledge and reducing disease burden [6]. School-based awareness campaigns, community dental camps, and health counseling programs had contributed to improved oral hygiene practices in certain populations. However, rural communities had still remained inadequately targeted in many healthcare systems, leading to persistent disparities in oral healthcare access and utilization. Understanding the level of awareness and hygiene practices within rural populations had therefore become essential for planning effective interventions and health promotion strategies [8].

The present cross-sectional study had been conducted to assess oral health awareness and hygiene practices among rural populations. The study had aimed to evaluate the knowledge, attitudes, and daily oral hygiene behaviors of participants while identifying gaps in awareness and barriers to maintaining oral health. The findings of this study had been expected to provide valuable insights for healthcare professionals, policymakers, and public health authorities in designing targeted educational and preventive programs to improve oral health outcomes in rural communities [9].

MATERIALS AND METHODS:

A cross-sectional study was conducted at Lahore General Hospital, Lahore, to assess oral health awareness and hygiene practices among rural populations. The study was carried out over a period from April 2025 to March 2026. A total of 80 participants from rural communities were enrolled in the study using a non-probability convenience sampling technique.

The study population included individuals residing in rural areas who attended outpatient services or were contacted through community outreach programs associated with Lahore General Hospital. Both male and female participants aged 18 years and above were included. Individuals who were unwilling to participate, had severe cognitive impairment, or were critically ill at the time of data collection were excluded from the study.

Ethical approval was obtained from the Institutional Review Board of Lahore General Hospital prior to the commencement of the study. Written informed consent was obtained from all participants after explaining the objectives and procedures of the study in a language they could easily understand. Confidentiality and anonymity of all participants were strictly maintained throughout the study.

Data were collected using a structured, pre-validated questionnaire designed specifically for this study. The questionnaire was developed after an extensive review of the literature and consultation with dental public health experts. It was divided into three main sections: demographic information, oral health awareness, and oral hygiene practices. The demographic section included age, gender, education level, occupation, and socioeconomic status. The awareness section assessed knowledge regarding causes of dental caries, periodontal diseases, the role of diet in oral health, and the importance of regular dental check-ups. The hygiene practice section evaluated frequency of tooth brushing, type of cleaning aid used (toothbrush, miswak, or other traditional methods), use of toothpaste, mouthwash usage, and frequency of dental visits. The questionnaire was pre-tested on a small group of 10 individuals from a similar rural background to ensure clarity, relevance, and comprehensibility. Necessary modifications were made based on the feedback obtained during the pilot testing phase.

Data collection was carried out through face-to-face interviews conducted by trained dental health professionals to ensure accuracy and minimize response bias. Each interview lasted approximately 15–20 minutes. The responses were recorded manually and later entered into a computer database for analysis.

Data were analyzed using Statistical Package for Social Sciences (SPSS) version 25.0. Descriptive statistics were calculated for all variables. Categorical variables were expressed as frequencies and percentages, while continuous variables were presented as mean and standard deviation. Associations between oral health awareness and hygiene practices with demographic variables were assessed using the Chi-square test. A p-value of less than 0.05 was considered statistically significant.

Quality control measures were implemented throughout the study to ensure data accuracy and reliability. Double data entry and random cross-checking of questionnaires were performed to minimize errors. The study adhered to ethical principles of research involving human participants as outlined in the Declaration of Helsinki.

This methodology provided a structured approach to evaluate the level of oral health awareness and hygiene practices among rural populations, thereby generating evidence that could be useful for planning targeted oral health education and preventive strategies.

RESULTS:

A total of 80 participants from rural populations attending Lahore General Hospital, Lahore, were included in this study conducted from April 2025 to March 2026. The findings were analyzed in terms of socio-demographic characteristics and oral health awareness and hygiene practices.

Table 1: Socio-Demographic Characteristics of Participants (n = 80):

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	46	57.5
	Female	34	42.5
Age (years)	18–30	22	27.5
	31–45	28	35.0
	46–60	20	25.0
	>60	10	12.5
Education	Illiterate	18	22.5
	Primary	24	30.0
	Secondary	22	27.5
	Higher	16	20.0
Monthly Income	Low	38	47.5
	Middle	30	37.5
	High	12	15.0

Table 2: Oral Health Awareness and Hygiene Practices Among Participants (n = 80):

Variable	Category	Frequency (n)	Percentage (%)
Tooth brushing frequency	Once daily	44	55.0
	Twice daily	26	32.5
	Irregular	10	12.5
Use of fluoride toothpaste	Yes	48	60.0
	No	32	40.0
Knowledge about dental caries causes	Adequate	34	42.5
	Inadequate	46	57.5
Regular dental check-up	Yes	18	22.5
	No	62	77.5
High sugar consumption	Yes	52	65.0
	No	28	35.0
Awareness of oral hygiene importance	Good	36	45.0
	Poor	44	55.0

The present cross-sectional study assessed oral health awareness and hygiene practices among 80 participants from rural populations attending Lahore General Hospital, Lahore. The socio-demographic

profile of the participants revealed a relatively higher proportion of males (57.5%) compared to females (42.5%). The majority of participants were within the age group of 31–45 years (35%), followed by 18–30 years (27.5%), 46–60 years (25%), and above 60 years (12.5%). This distribution indicated that the study population largely represented the economically active age group, which is typically more exposed to lifestyle-related risk factors affecting oral health.

Educational status showed that a considerable proportion of participants had limited formal education, with 22.5% being illiterate and 30% having only primary education. Only 20% had higher education, suggesting a general low literacy level in the study population. Regarding monthly income, nearly half of the participants (47.5%) belonged to the low-income group, while 37.5% were in the middle-income category and only 15% reported high income. These findings reflected the socioeconomic constraints commonly observed in rural populations, which may directly influence access to dental care and health-related knowledge.

In terms of oral hygiene practices, more than half of the participants (55%) reported brushing their teeth once daily, while only 32.5% brushed twice daily, which is considered the recommended standard. A small proportion (12.5%) had irregular brushing habits, indicating poor oral hygiene practices in a subset of the population. Although 60% of participants reported using fluoride toothpaste, a significant proportion (40%) still did not use fluoride-based products, potentially increasing their risk for dental caries and periodontal diseases.

Assessment of oral health knowledge showed that 57.5% of participants had inadequate knowledge regarding the causes of dental caries, while only 42.5% demonstrated adequate awareness. Similarly, awareness regarding the importance of oral hygiene was poor in 55% of participants, further highlighting the knowledge gap in rural communities. Regular dental check-ups were notably uncommon, with only 22.5% of participants reporting routine dental visits, whereas a large majority (77.5%) had never or rarely visited a dentist. This indicates a significant deficiency in preventive dental care practices.

Dietary habits also revealed concerning trends, as 65% of participants reported high sugar consumption, which is a well-established risk factor for dental caries and other oral health problems. Only 35% reported controlled sugar intake, suggesting poor dietary awareness in relation to oral health.

Overall, the results demonstrated that rural populations attending Lahore General Hospital had limited oral health awareness, inadequate hygiene practices, and poor utilization of preventive dental services. These findings emphasize the need for targeted oral health education programs, improved access to dental care services, and community-based interventions to enhance oral hygiene practices in rural communities.

DISCUSSION:

The present study assessed oral health awareness and hygiene practices among rural populations and highlighted several important findings regarding knowledge, attitudes, and daily oral care behaviors. The results demonstrated that although a considerable proportion of participants possessed basic awareness regarding oral hygiene, significant gaps still existed in understanding preventive dental care, the importance of regular dental visits, and the relationship between oral health and general health [10]. These findings reflected the continuing challenges faced by rural communities in achieving adequate oral healthcare awareness and access to dental services.

The study revealed that the majority of participants practiced tooth brushing regularly; however, the frequency and techniques of brushing varied considerably. Many participants brushed only once daily and lacked knowledge regarding proper brushing methods, use of fluoride toothpaste, and replacement of toothbrushes at appropriate intervals [11]. Similar findings had been reported in previous community-based studies conducted in developing countries, where limited education and lack of access to oral health information contributed to poor oral hygiene behaviors. The inadequate adoption of recommended oral hygiene practices in rural populations might have been influenced by socioeconomic barriers, lower literacy rates, and limited availability of dental healthcare facilities [12].

Another important finding of the study was the low frequency of routine dental checkups among participants. Most individuals visited dental clinics only when they experienced pain or severe dental problems. Preventive dental care was largely neglected, indicating poor awareness regarding early diagnosis and management of oral diseases. These findings were consistent with previous studies that reported symptomatic dental visits as the most common pattern among rural populations. Financial limitations, fear of dental procedures, transportation difficulties, and lack of nearby dental services might have contributed to reduced utilization of professional dental care [13].

The study also identified a noticeable association between educational status and oral health awareness. Participants with higher levels of education demonstrated better understanding of oral hygiene practices and showed more positive attitudes toward preventive dental care. Educated individuals were more likely to brush twice daily, use fluoridated toothpaste, and seek regular dental consultations. This observation supported earlier research indicating that education played a critical role in shaping health-related behaviors and improving awareness regarding disease prevention [14]. Increased literacy levels might have facilitated access to health information through schools, media, and healthcare campaigns.

Furthermore, the findings indicated that awareness regarding the harmful effects of tobacco consumption on oral health remained inadequate among some participants. A portion of the rural population continued to use tobacco products despite the known association with gum diseases, oral infections, and oral cancer. Limited public health education and insufficient anti-tobacco awareness campaigns in rural areas might have contributed to this issue. Strengthening community-based educational interventions could therefore help reduce harmful habits and promote healthier lifestyles [15].

The present study emphasized the need for targeted oral health promotion programs in rural communities. Community awareness campaigns, school-based dental education, and mobile dental health services could play an essential role in improving oral hygiene knowledge and practices. Healthcare authorities and policymakers should prioritize preventive oral healthcare strategies and increase accessibility to affordable dental services in underserved rural regions. Training community health workers to deliver oral health education might also enhance public understanding and encourage healthier behaviors [16].

Despite providing valuable insights, the study had certain limitations. The cross-sectional design only allowed assessment of associations and did not establish causality between awareness levels and oral hygiene practices. The study was conducted in a limited population, which might have affected the generalizability of the findings to other rural settings. Additionally, self-reported responses could have introduced recall bias and social desirability bias. Nevertheless, the study provided important baseline information regarding oral health awareness and hygiene practices among rural populations and highlighted areas requiring immediate public health attention.

CONCLUSION:

The present study concluded that oral health awareness and hygiene practices among the rural population had remained inadequate despite the growing availability of healthcare information. Many participants had demonstrated limited knowledge regarding the causes and prevention of common oral diseases, and irregular oral hygiene practices had been frequently observed. Brushing frequency, use of proper oral hygiene aids, and routine dental visits had been below recommended standards in a significant proportion of the study population. The findings also suggested that low educational status, limited access to dental care services, and lack of awareness programs had contributed to poor oral health practices in rural communities. However, participants who had received prior health education showed comparatively better oral hygiene behaviors. The study emphasized the need for community-based oral health education campaigns, improved accessibility to dental services, and preventive healthcare strategies to enhance oral health awareness and promote healthier hygiene practices among rural populations.

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