



## Original Article



## Awareness and Practices Regarding Oral Hygiene Among School-Going Children in Swat

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## ABSTRACT

Oral health greatly affects the overall health and well-being of children. Dental problems are not the only diseases associated with poor oral hygiene because it is also associated with systemic diseases, including diabetes and cardiovascular diseases. **Objectives:** To determine the level of awareness and oral hygiene behaviors among school-going children in Swat, Khyber Pakhtunkhwa. **Methods:** A descriptive cross-sectional study was conducted from May 2025 to July 2025 in Government Primary School Shakaro Manglawar. Fifty students were selected via convenience sampling. Data were analyzed using SPSS version 25.0 using descriptive statistics. **Results:** The study results show that 66% of participants were male, and 60% were above 11 years. 66% brushed once daily, while 34% used a toothbrush and toothpaste. 26% visited the dentist, often only in pain. Half of the participants were unaware of tongue hygiene. **Conclusions:** Limited awareness and inconsistent hygiene practices were observed. School-based interventions are crucial to promote oral hygiene in rural children.

## INTRODUCTION

Medically, oral health is extremely vital to happiness and quality of life [1]. It affects the well-being and quality of life of every individual and is critical to overall health. The health of the mouth affects the oral functions and the social interactions of an individual and is closely connected with the overall health and the quality of life [2]. Moreover, failure to brush and floss teeth may lead to cavities, tooth decay, and gum disease. Most individuals in the world are affected by periodontal diseases (gingivitis and periodontitis) and caries (tooth decay), and health systems have to bear the huge burden of treatment. Low self-esteem, pain, difficulty talking and eating, and even losing

teeth and undergoing surgery can be the results of gum disease and decay [3]. In addition, dental caries is a widespread chronic infectious pediatric disease, as well as one of the preventable oral health complications. Dental caries is a serious global health issue that adversely affects the quality of life of children and is unbelievably widespread [4]. Additionally, worldwide, oral illnesses are a major public health concern. Oral diseases are becoming more common, especially among those from lower socioeconomic backgrounds. It has recently been acknowledged that several systemic disorders, including diabetes mellitus, bacterial pneumonia, cardiovascular



disease, and low birth weight, may be impacted by mouth infections, particularly periodontitis [5]. In this regard, poor oral hygiene habits, smoking, drinking alcohol, and eating improperly are all significant risk factors for an increase in several oral diseases. In addition to causing dental cavities and periodontitis, poor oral hygiene has been connected to diabetes, cancer, and heart disease [6]. Research consistently indicates that parental education plays a crucial role in shaping children's oral health behaviors and outcomes. Specifically, children whose parents have attained higher levels of education tend to experience significantly better health outcomes compared to those with less-educated parents [7]. Research has also demonstrated that by monitoring and assessing children's oral hygiene habits and practices, oral illnesses can be readily prevented by adopting appropriate preventative measures earlier [5]. However, this preventive potential is often hindered by a lack of basic awareness among children. In this regard, a study from Pakistan shows that both genders of our respondents lacked a fundamental understanding of oral hygiene [8]. In addition, a study from India shows that just 62.96% of people use brushes to brush their teeth [9]. Another study from Bangladesh shows that the children's understanding of oral hygiene practices and oral health is lacking [5]. Also, a study from Saudi Arabia shows that the majority of students knew enough about oral health, but they didn't practice good oral hygiene [10]. According to the results of Croatian university students who were tested, they had good oral health knowledge. In addition to this understanding, oral health is a basic requirement for good behavior, enabling people to take precautions for their general well-being [2]. Children in rural areas should be taught about oral hygiene in order to provide them with the necessary knowledge and abilities to maintain better oral hygiene. In light of the dearth of comprehensive oral health education initiatives and treatment facilities, among other obstacles to oral health, oral health education will be helpful in lowering mortality, morbidity, and their financial effects [5]. By increasing awareness and promoting healthy habits, the aim was to advance oral health [11]. However, there is a lack of data from rural areas like Swat, Pakistan, where socioeconomic and educational constraints may exacerbate the problem. Despite the well-established importance of oral hygiene for overall health, there is limited data on the awareness and practices of school-going children in rural regions like Swat, Pakistan. Most existing studies focus on urban populations or neighboring countries, leaving rural communities underrepresented. Socioeconomic constraints, low parental education, and lack of school-based oral health programs further exacerbate the problem. This gap highlights the need to assess oral hygiene behaviors specifically among rural schoolchildren

to inform targeted interventions. This study aims to fill this gap by assessing the awareness and practices of oral hygiene among schoolchildren in a rural district of Swat.

## METHODS

This study adopted a cross-sectional study design, which means data were collected at a single point in time. It was conducted in the Government Primary School, Shakaro Manglawar, Swat. Children between the ages of 9 and 14 who were enrolled in Government Primary School Shakaro Manglawar Swat, who participated in the study, and were present on the day of data collection. Children who were known to have cognitive or physical disabilities that would affect their capacity to react in a meaningful way were not included. The sample size for this study was determined based on feasibility and accessibility. Data were collected from a single class, and all students present during the data collection period were included. The study duration was three months from May to July 2025. This study employed a convenience sampling technique, selecting participants from a single government primary school in the Swat District. While this approach was practical and feasible within the available timeframe and resources, it may introduce sampling bias. Therefore, the findings cannot be generalized to all school-going children in Swat. To maintain ethical standards, formal permission from the school administration was requested in advance of data collection with Ref No (147/DCNS/25). As parents were not present during school hours, verbal assent was obtained from the students, and formal consent was taken from their class teacher. A standardized questionnaire was adopted from an earlier validated study [5], which was conducted in Bangladesh among school-going children. The questionnaire was originally prepared in English; however, each question was explained orally in Pashto to ensure clear understanding, rather than being formally translated. The questionnaire was adapted from Bhuiyan et al. which was originally validated among rural Bangladeshi schoolchildren, a population demographically and culturally similar to our study group [5]. While the original study did not report detailed psychometric properties, the tool was deemed appropriate for age and context. To ensure clarity, the questionnaire was reviewed by subject experts for cultural appropriateness and pilot tested with five students (excluded from the final analysis). Minor adjustments were made during the explanation in Pashto to enhance comprehension. The survey tool was divided into two sections: the first collected demographic information, including age and sex, and the second evaluated students' awareness of dental problems, brushing habits, and preventative measures. However, the validity and reliability of the tool were not reported in the original study. Despite this drawback, subject matter experts thoroughly examined the questionnaire to ensure

clarity. On scheduled days, the research team visited the school with prior approval from the administration. Students were gathered in a classroom setting where the objectives of the study were clearly explained in simple language. After obtaining consent from the class teacher and verbal assent from the students, the questionnaire was administered. Each question was read aloud, and its meaning was explained in Pashto to ensure clarity. Students then marked their responses on the provided forms. The process was conducted in a respectful and non-intimidating environment to encourage honest responses. The average time for completion was approximately 20–30 minutes per group. Due to the small sample size and descriptive nature of this study, formal reliability testing (e.g., Cronbach's alpha) was not conducted for the Pashto version. However, clarity and comprehension were ensured through expert review and pilot testing. We acknowledge this as a limitation and recommend internal consistency assessment in future larger-scale studies. After data collection, the responses were coded and entered into SPSS version 25.0 for analysis. The data were summarised in terms of descriptive statistics: frequency and percentage. It was a purely descriptive study that was not attempting to determine statistical relationships between awareness and practice. Because of time limitations and the narrowness of the project, no inferential analysis was done. Future studies should incorporate appropriate statistical tests to examine these relationships and better understand the factors driving healthy behavior.

## RESULTS

This study shows the result of demographic variables, in which ages between 9–11 are 40% and ages between 11–14 are 60%. Regarding gender, male are 66% and female are 34%. The education of the household parents was 74% no education, 16% at the primary level, and 10% at the secondary level. Out of the occupations of the parents, 6% were Agriculture, 80% were daily labor, 2% were Rickshaw/van pullers, and 12% were Business/shopkeepers (Table 1).

**Table 1:** Demographic Data of the Participants (n=50)

Variables	Frequency (%)
<b>Age</b>	
9–11	20 (40.0%)
11–14	30 (60.0%)
<b>Gender</b>	
Male	33 (66.0%)
Female	17 (34.0%)
<b>Education of the Household Parents</b>	
No Education	37 (74.0%)
Primary Level	8 (16.0%)
Secondary Level	5 (10.0%)

<b>Occupation of the Parents (Father)</b>	
Agriculture	3 (6.0%)
Daily Laborer	40 (80.0%)
Rickshaw/Van Puller	1 (2.0%)
Business/Shopkeepers	6 (12.0%)

Results show that brushing frequency once daily was 66%, twice daily was 22% and none was 12%. Using toothbrush and toothpaste, Toothpaste + Toothbrush are 34%, Toothpowder + Finger are 26% and Others (Salt Finger and Meshwak) are 40%. Types of toothpaste/powder used: 38% were Branded Toothpaste, 14% were Local toothpaste, 24% were Toothpowder, 18% were Coal, and 6% were Salt. Brushing time: 62% brush in the morning before the meal, 34% brush in the morning after the meal, and 4% Brush at night after the meal. When it comes to brushing techniques, 26% were Horizontal stroke, 22% were Vertical stroke, 6% were Circular, and 46% were Mixed. Rinsing of the mouth after eating: 60% of children are doing it, and 40% of children are not doing it. Toothbrush types include 20% Soft bristle brush, 22% Don't know, 14% Finger users, 18% Meshwak users, and 26% Medium or Hard brush users. Inter-dental cleaning 12% is Toothpick/ pick/stick, 64% Don't use, 10% is Dental floss/dental thread, 8% is Regular thread, and 6% was Others. How frequently do they replace their toothbrush 4% every month, 14% every 3 months, 16% every 6 months, 36% when broken, and 30% do not know how often to change it. Tongue cleaning/brushing: 20% of them do it, 30% do not, and 50% do not know. Clean their tongue using a standard toothbrush; 24% of them do, 66% do not, and 10% do not know. Do you go to the dentist to have your teeth checked? (If Yes) 26% of them visit the dentist, 70% of them don't visit, and 4% of them don't even know the dentist. If yes, then how often? 6% of them visit the dentist yearly, 36% of them visit the dentist when there is a problem, e.g., on pain/if any problem, and 58% of them never visit (Table 2).

**Table 2:** Awareness and Oral Hygiene Practices

Statements	Frequency (%)
<b>Frequency of Brushing</b>	
Once Daily	33 (66%)
Twice Daily	11 (22.0%)
None	6 (12.0%)
<b>Employing Toothpaste and Toothbrush</b>	
Toothpaste + Toothbrush	17 (34.0%)
Toothpowder + Finger	13 (26.0%)
Others (Salt + Finger and Meshwak)	20 (40.0%)
<b>Different Types of Toothpaste and Powder</b>	
Branded Toothpaste	19 (38.0%)
Local toothpaste	7 (14.0%)
Tooth powder	12 (24.0%)
Coal	9 (18.0%)

Salt	3(6.0%)
<b>Time of Brushing</b>	
Morning Before A Meal	31(62.0%)
Morning After A Meal	17(34.0%)
Night After A Meal	2(4.0%)
<b>Brushing Technique</b>	
Horizontal Stroke	13(26.0%)
Vertical Stroke	11(22.0%)
Circular	3(6.0%)
Mixed	23(46.0%)
<b>Washing Your Mouth After Eating</b>	
Yes	30(60%)
No	20(40%)
<b>Types of Toothbrushes</b>	
Soft Bristle Brush	10(20.0%)
Don't Know	11(22.0%)
Finger	7(14.0%)
Meshwak	9(18.0%)
Medium or Hard	13(26.0%)
<b>Cleaning Between Teeth</b>	
Toothpick/Stick Toothpick/Stick	6(12.0%)
Don't Use	32(64.0%)
Dental Floss/Dental Thread	5(10.0%)
Regular Thread	4(8.0%)
Others	3(6.0%)
<b>How Often Should the Toothbrush</b>	
Monthly	2(4.0%)
3 monthly	7(14.0%)
6 monthly	8(16.0%)
Change when broken	18(36.0%)
Not sure if it will change	15(30.0%)
<b>Brushing and Cleansing the Tongue</b>	
Yes	10(20.0%)
No	15(30.0%)
Don't know	25(50.0%)
<b>Uses A Common Toothbrush to Brush the Tongue</b>	
Yes	12(24.0%)
No	33(66.0%)
Don't know	5(10.0%)
<b>Do You Get Regular Dental Checkups at the Dentist?</b>	
Yes	13(26.0%)
No	35(70.0%)
Don't know	2(4.0%)
<b>If Yes, Then How Often?</b>	
Yearly	3(6.0%)
On Pain/If Any Problem	18(36.0%)
Never	29(58.0%)

## DISCUSSION

One of the most important guidelines for preserving dental health is practicing regular oral hygiene. The US Department of Health and Human Services says that no individual can be considered truly healthy until he or she is relieved of the weight of oral and craniofacial diseases and

health problems. The detrimental effects of poor oral health on day-to-day functioning include decreased chewing ability, restricted food choices, weight loss, gastrointestinal disorders, communication difficulties, low self-esteem, and general health issues [5]. Therefore, this study aims to assess the awareness and practice regarding oral hygiene among school-going children. The current findings show that ages between 9 and 11 are 40% and above 11 are 60%. A study conducted in Bangladesh reported that 68% of participants were 9–12 years old [5]. In the present study, 16% of household parents had a primary level of education, whereas a study in India reported 40% [12]. Current results show that there were 50 children in total (33 male, 17 female), while Mishra, reported 210 children (133 male, 77 female) in India [13]. Regarding brushing practices, 66% of our participants reported brushing once daily, whereas an Indian study found 52% [12]. In the present study, 38% of children used branded toothpaste, while in Nigeria, 92% reported using fluoride toothpaste [14]. Furthermore, 26% of children in our study had visited a dentist, which is comparable to the 20% reported in an earlier investigation in Nepal [15]. Notably, 36% of our participants reported visiting a dentist only when in pain, whereas a comparable study in Pakistan reported 20% [16]. Tongue cleaning was reported by 20% of our participants, while Mlenga *et al.* found 70.2% in Indian children [17]. In terms of brushing tools, 34% of our participants used a toothbrush and toothpaste, compared to 89.4% in a study from Punjab [18]. The most common brushing technique reported was horizontal strokes (26%), whereas Ibrahim *et al.* found 42.9% [19]. Our study highlights important aspects of oral hygiene practices among schoolchildren in Swat. This study found that 36% of participants replaced their toothbrush only when it broke, which is lower than the 47.2% reported by Ibrahim *et al.* in Omdurman, Sudan [19]. Only 20% of children used soft-bristle brushes, compared to 53.8% in Chandigarh, India [20]. Mouth rinsing after meals was practiced by 60% of participants, lower than the 87.6% reported by Priyanka *et al.* in India [21]. Interdental cleaning using toothpicks or sticks was reported by only 12% of children, markedly lower than the 62% observed in rural Bangladesh [5]. These findings indicate gaps in basic oral hygiene knowledge and practices, particularly in toothbrush maintenance, brushing tools, and interdental care. The use of convenience sampling from a single school limits the generalizability of our results. Future studies with larger, randomly selected samples are needed to provide more representative insights and guide effective school-based oral health interventions.

This study was limited by its small sample size and convenience sampling from a single school, which restricts

the generalizability of the findings. Additionally, reliance on self-reported practices may introduce response bias. Future research should include larger, randomly selected populations across multiple rural areas and consider objective clinical assessments. Such studies could guide the development of effective school-based oral health education and community awareness programs.

## CONCLUSIONS

Poor awareness and inconsistent oral hygiene practices were evident. Only a minority of students used toothbrushes correctly or visited dentists regularly. Schools should integrate regular oral health education. Moreover, the parents should be engaged through community awareness programs.

## Authors' Contribution

Conceptualization: HK, AB, SK

Methodology: HK, AB, SK, BR, MY, HU, MI, MW

Formal analysis: HK, AB, SK, MN

Writing and Drafting: HK, AB, SK, BR, MY, HU, MW, SMJ

Review and Editing: HK, AB, SK, BR, MY, HU, MW, SMJ, MN, MI

All authors approved the final manuscript and take responsibility for the integrity of the work.

## Conflicts of Interest

All the authors declare no conflict of interest.

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