

KNOWLEDGE AND PRACTICES OF UNDER 10 YEARS SCHOOL CHILDREN REGARDING ORAL HYGIENE IN A RURAL COMMUNITY IN LAHORE

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(Received, 25th July 2023, Revised 04th September 2023, Published 12th October 2023)

Abstract: Oral health refers to the state of the mouth, teeth, and other structures in the mouth that enable people to perform essential functions, such as eating, breathing, and speaking. It also includes psychosocial dimensions, such as self-confidence, well-being, and the ability to socialize and work without pain, discomfort, and embarrassment. This cross-sectional study was conducted in the Malikpur community to assess the oral hygiene knowledge and practices of school-going children under 10. A structured, close-ended, and adopted questionnaire on 98 school children selected through a purposive sampling technique was used. The study revealed that 22% of the students needed to be made aware of the importance of changing toothbrushes, and 35% changed their toothbrushes only when they broke. Only 30% of the students rinsed their mouths after every meal, and a meager 20% knew about tongue cleaning. Based on the results, we conclude that while students in this community have sufficient knowledge about oral hygiene, their practices could be improved. Moreover, the low socio-economic status of their families also affects their oral hygiene practices.

Keywords: Oral Health, Knowledge, Practice, Children, Pakistan

Introduction

The importance of maintaining good oral health for overall well-being makes it a serious public health concern with wide-ranging social effects. Both manageable and unmanageable circumstances impact the health of the oral cavity. A key factor in advancing general health is good oral hygiene. A person's mouth and associated tissues must be healthy to eat, speak, and interact socially without experiencing pain, illness, or embarrassment. This state also adds to a person's overall well-being. Due to their widespread incidence and negative societal effects, oral illnesses seriously threaten public health. Oral health is crucial to obtaining and sustaining overall health, a fundamental need shared by all ethnic groups. It's believed that the mouth reflects the body. A vital component of overall health, oral health is the state of the mouth and surrounding tissues that allows someone to eat, speak, and interact socially without suffering from illness or humiliation and promotes overall well-being. Oral disorders can significantly impact children's activities at school, work, and home, resulting in a lower quality of life (Bhuiyan et al., 2020; Dakhili et al., 2014; Kuppuswamy et al., 2014). Nearly everyone experiences oral health problems at some point, making them a chronic concern for public health worldwide. A person with good oral health is free from tooth decay, tooth loss, periodontal diseases, oral and throat cancer, oral sores, birth deformities including cleft lip and palate, and other conditions that affect the mouth and face. The quality of life can be negatively impacted by poor oral health, which substantially impacts general health, well-being, education, and the development of children and their families. Chronic oral infections can cause low birth weight and early deliveries and raise the risk of conditions like

diabetes, stroke, and respiratory illnesses (Lian et al., 2010; Togoo et al., 2012). Oral hygiene practices, knowledge, attitudes, and status in rural South Indian schools.

Early childhood caries (ECC) and severe ECC are two terms used to describe dental decay in children under six (S-ECC). The terms "rampant caries," "baby bottle teeth decay," and "nursing caries" have all been used in the past to refer to this problem, which is connected to incorrect bottle feeding. Today, any caries in children younger than 6 years old is referred to as "early childhood caries." Any sign of smooth surface caries in kids under three is considered severe early childhood caries. One or more cavities, missing (from caries), or filled surfaces in primary maxillary teeth, or a decaying, missing, or filled surface with a score of 4 at age 3 years, 5 at age 4 years, or 6 at age 5 years, are considered to be signs of dental deterioration in children ages 3-5 (Adanero et al., 2022; Chuang et al., 2022; Tang et al., 2014).

The traditions, knowledge, and beliefs of a child's family, their social surroundings, and physical health all impact their overall well-being. Dental caries and periodontal disorders are among today's most common health problems. In Asian nations, dental caries affects between 60% and 90% of school-aged children, according to the World Oral Health Report 2003. The World Health Organization (WHO) advises encouraging oral health awareness in schools to encourage knowledge, attitudes, and behaviors linked to oral health issues to lessen the burden of oral diseases on the world's population. Before developing and implementing such initiatives, an assessment of the existing state of public awareness of oral health is necessary (Chuang et al., 2022; Ibiyemi et al., 2022; Mishra et al.,

[Citation Akram, S., Patras, A., Naz, T., Firdos, U., Zafar, S., Zafar, M. (2023). Knowledge and practices of under 10 years school children regarding oral hygiene in a rural community in lahore. *Biol. Clin. Sci. Res. J.*, 2023: 449. doi: <https://doi.org/10.54112/bcsrj.v2023i1.449>]

2018). (Apurva Mishra, Ramesh Kumar Pandey, Heena Chopra, and Varuni Arora 2018)

Good dental health is essential for one's general health and well-being. It enables people to converse, eat, and mingle without feeling uncomfortable, ashamed, or suffering from an active illness. Dental caries and periodontal disease are the most prevalent oral conditions, and both frequently start in childhood. With most adults and 90 percent of schoolchildren worldwide having experienced caries, oral illnesses offer a serious public health threat. The highest incidence of caries is found in Asian and Latin American nations, which may be caused by various causes, including poor dental health knowledge and excessive ingestion of refined carbohydrates. Children with poor dental health are 12 times more likely than those with good oral health to experience days with limited activities. Over 50 million school hours are missed each year due to oral health issues, impacting children's academic achievement and future success (Chuang et al., 2022; Mishra et al., 2018; Priya et al., 2013).

Most studies have focused on how parental or primary caregiver attitudes and beliefs affect children's risk of developing early childhood caries (ECC). Less research has, however, been done to evaluate the attitudes and practices of schoolteachers concerning students' oral health. The majority of ECC studies also neglect to consider aspects peculiar to a certain system with its own sociological and environmental characteristics, such as cultural, environmental, and individual-level factors. To effectively address the issue of ECC, it is crucial to pay more attention to family relationships and behaviors (Chuang et al., 2022; Kuppaswamy et al., 2014).

Methodology

The study was conducted using a quantitative descriptive cross-sectional design. The research occurred in a randomly selected private school in the Malikpur community of Lahore. The study population consisted of school-going children under 10 years of age from the Malikpur community. The data was collected using a purposive sampling technique, with male and female children aged 10 years included in the study and children above 10 years, those who were physically or mentally disabled, or not attending school excluded. The data was collected using an adapted closed-ended questionnaire related to the subjects' knowledge and practice of oral hygiene, based on Al-Amin Bhuiyan's 2020 study. Descriptive statistics were obtained, and frequency distribution and percentage were calculated. The data was analyzed using the Statistical Package for Social Science version 23. To collect the data, all subjects were given a translated questionnaire in Urdu, their local language. The questionnaire included items designed to evaluate the knowledge and awareness of young school children regarding oral health and oral health practices.

Results

The demographic characteristics of 100 participants in which majority of the children are between the age of 8-10 years (49%), in which 52% male and 48% are females and about (59%) of students study in class Montessori, the occupation of (62%) children father was labor, almost (89%) children mother occupation was housewife,

education level of (47%) children father and (52%) mother are illiterate, socio-economic status of (45%) participants from lower middle class (Table, Figure 1).

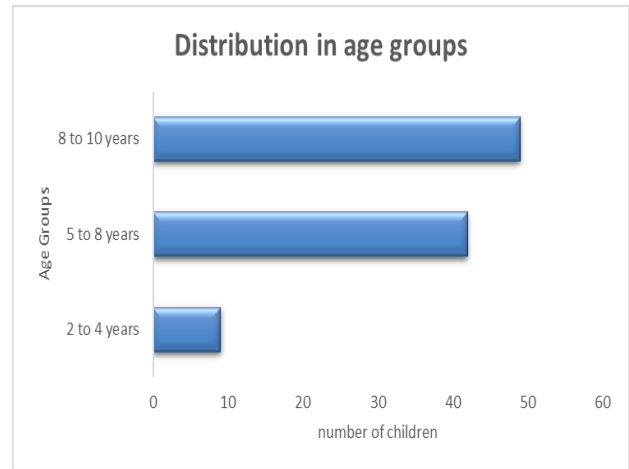


Figure 1: Distribution of children in different age groups

Table 1: Demographic characteristics of children under 10 years regarding Oral Hygiene in a Rural Community in Lahore (N=100).

Age	Frequency	Percentage
2-4	9	9
5-7	42	42
8-10	49	49
Gender		
Male	52	52
Female	48	48
Class		
Preschooler	31	31
Montessori	59	59
Primary level	10	10
Occupation of Father		
Agriculture	32	32
Daily labor	62	62
Own business	6	6
Occupation of Mother		
Housewife	89	89
Job	11	11
Education of Father		
No education	48	48
Primary level	37	37
Secondary level	15	15
Education of Mother		
No education	53	53
Primary level	35	35
Secondary level	12	12
Socio-Economic Status of Family		
Poor	20	20.0
Lower middle class	45	45.0
Middle class	35	35.0

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In a rural community in Lahore, this table portrays the knowledge and oral hygiene practices of school-going children under 10 years (N=100). The data indicates that most of these children know the importance of mouth rinsing after meals (91%), and a significant proportion also clean their tongues with toothbrushes (64%). However, there is some uncertainty about the type of toothbrush used (19%) and limited use of interdental cleaning methods (12%). Notably, while 35% of children change their toothbrushes when they break, a significant portion (22%) is unsure about the recommended toothbrush replacement frequency. Furthermore, dental visits are infrequent, with only 17% reporting visiting a dentist, primarily when experiencing pain or dental issues (82%). These findings suggest a need for improved education and awareness campaigns regarding regular oral hygiene practices and dental check-ups in this rural community to enhance overall oral health among children (Table 2).

Table 2: Knowledge of school-going children under 10 years regarding Oral Hygiene in a Rural Community in Lahore (N=100).

Mouth Rinsing After Meal	Frequency	Percentage
Yes	91	91
No	9	9
Tongue cleaning by toothbrush		
Yes	64	64
No	31	31
Don't know	5	5
Types of Toothbrush		
Soft bristle brush	59	59
Don't know	19	19
Finger	7	7
Medium or hard	15	15
Inter Dental cleaning		
Toothpick and tooth stick	12	12
Don't use	75	75
Others	13	13
Change of Toothbrush		
Monthly	25	25
3 months	12	12
6 months	6	6
Change when broken	35	35
Don't know about changing	22	22
Visit to Dentist		
Yes	17	17
No	70	70
Don't know	13	13
How often?		
Per year	2	2
On pain / if any problem	16	16
Never	82	82

It is observed that (81%) of children use toothbrushes and toothpaste, (49%) brush twice a day, the majority of children (81%) brush in the morning before a meal, and about (47%) use mixed brushing technique, in which (70%) use local toothpaste, and (74%) do tongue cleaning. The provided table offers a comprehensive view of the oral hygiene practices among school-going children under 10

years of age in a rural community in Lahore. This data is crucial in assessing the oral health habits and awareness levels among this specific demographic group.

In terms of using oral hygiene tools, it's evident that most of these young students (81%) incorporate toothpaste in conjunction with a toothbrush as a part of their oral hygiene regimen. In contrast, a smaller proportion employs alternative methods, with 6% utilizing charcoal and their finger, 8% opting for the traditional meshwork, and 5% relying solely on toothpaste. This underlines the prevalence of toothpaste and toothbrushes as the primary tools for maintaining oral hygiene among these children.

Regarding the frequency of brushing, nearly half of the participants (49%) adhere to brushing their teeth twice daily, signifying a commendable commitment to regular oral care. Additionally, 44% report brushing once daily, while 7% follow the less common habit of brushing after each meal. This data highlights a noteworthy portion of the children who maintain consistent daily brushing routines, indicating a degree of oral hygiene consciousness.

Table 3: Practice of school-going children under 10 years regarding Oral Hygiene in a Rural Community of Lahore (N=100).

Use of Toothbrush and Toothpaste	Frequency	Percentage
Charcoal + finger	6	6
Toothpaste	5	5
Meshwak	8	8
Toothpaste + toothbrush	81	81
Bushing Frequency		
Once daily	44	44
Twice daily	49	49
After every meal	7	7
Brushing Time		
Brushing in the morning before a meal	81	81
Brushing in the morning after a meal	12	12
Brushing at night after a meal	7	7
Brushing Technique		
Horizontal stroke	39	39
Circular/vertical stroke	14	14
Mixed	47	47
Type of Toothpaste		
Branded toothpaste	15	15
Local toothpaste	70	70
Tooth powder	5	5
Salt	7	7
Others	3	3
Tongue Cleaning		
Yes	74	74
No	24	24
Don't know	2	2

The timing of brushing routines is also of significance. Most children (81%) align with recommended guidelines by brushing their teeth in the morning before meals. A smaller fraction (12%) conduct their oral hygiene regimen in the

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morning post-meal, while a modest 7% choose nighttime brushing after dinner. The adherence to brushing in the morning before meals demonstrates an understanding of optimal oral care practices.

Analysis of brushing techniques showcases that a mixed brushing technique is prevalent (47%), followed by horizontal strokes (39%) and circular/vertical strokes (14%). Adopting a mixed technique suggests some variability in brushing practices; however, a substantial proportion employs horizontal strokes, a technique aligned with oral hygiene recommendations.

In toothpaste choices, a notable observation is that most children (70%) opt for locally available toothpaste products, whereas 15% prefer branded toothpaste. Smaller segments of the cohort use toothpaste (5%), salt (7%), or other alternatives (3%). This data reflects the prominence of locally accessible toothpaste options, possibly influenced by considerations of affordability and accessibility.

Lastly, the table examines the practice of tongue cleaning among these young students. A significant proportion (74%) incorporate tongue cleaning into their oral hygiene routines, highlighting an awareness of the significance of tongue cleaning for overall oral health. A smaller fraction (24%) does not engage in this practice, while 2% express uncertainty. This underscores the presence of awareness regarding the importance of tongue cleaning in maintaining oral hygiene (Table 3).

Discussion

This cross-sectional study was conducted in a rural community in Lahore, Pakistan, to ascertain the relationship between oral hygiene knowledge and behaviors among school-going children under ten. Regarding how people clean their teeth, tooth brushing was the most common technique among the research population. This result is consistent with research from earlier (Mani et al., 2010; Priya et al., 2013).

Most of the schoolchildren in this study used a toothbrush and toothpaste to clean their teeth. Most kids used to clean their teeth every day, usually in the morning before breakfast. Additionally, kids use the mixed-brushing approach. There was a paucity of knowledge regarding dental floss and interdental brushing. To properly remove microbiological plaque, the American Dental Association (ADA) advised people to brush their teeth twice a day and use floss or other interdental cleaners once a day. In this survey, 22% of the students were unaware that toothbrushes should be changed. And when the brush broke, there was a 35% shift. The American Dental Association (ADA) suggests changing your toothbrush every three to four months since the bristles can damage the delicate tissues and structures around your mouth (Akinyamoju et al., 2018; Mani et al., 2010).

Only 30% of the students rinsed their mouths after meals, and only 20% were aware of tongue cleaning. Additionally, it was clear from the socio-demographic characteristics of the community that the families had low literacy and financial stability rates.

The research's limitations are being assessed based on children's self-reported data. Measurement inaccuracies owing to incorrect question interpretation and mistakes in memory are possible. This study addresses oral hygiene, not

other tooth issues like dental decay. Because the study was carried out in a small rural community, conclusions can only be applied to some rural Pakistani populations.

Conclusion

The results of this study help us to conclude that students of this community have enough knowledge about their oral hygiene, but their practices are limited according to their knowledge. Moreover, the low socio-economic status of their families also influences their oral hygiene practices.

Declarations

Data Availability statement

All data generated or analyzed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned.

Consent for publication

Approved

Funding

Not applicable

Conflict of interest

The authors declared the absence of a conflict of interest.

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