



“Surveying Oral Health: A Comprehensive Analysis Of Disparity In Methods Of Tooth Brushing”

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	<i>Abstract</i>
	<p>Aim: This study aimed to explore variations in tooth brushing techniques, frequency, additional mouth rinses, and the usage of toothpaste, daatun, electric toothbrushes, and charcoal among individuals aged 15 and above.</p> <p>Objectives: The primary objective of this research was to identify and analyse patterns of oral hygiene practices across different age groups, investigating potential disparities in methods employed for maintaining oral health.</p> <p>Materials & Methods: A comprehensive questionnaire consisting of 10 questions was designed and administered through Google Forms to collect data on oral hygiene practices. Participants aged 15 and above were randomly sampled, ensuring a diverse representation. The questionnaire focused on aspects such as tooth brushing techniques, frequency, usage of additional oral care products, and preferred oral hygiene tools. Data collection was conducted through online responses.</p> <p>Results: The survey results, obtained through Google Forms, revealed intriguing disparities in oral hygiene practices across age groups. Variations were observed in the choice of tooth brushing techniques, frequency of brushing, and the use of additional products such as mouth rinses, daatun, electric toothbrushes, and charcoal-based oral care items.</p> <p>Conclusion: In conclusion, this study, utilizing Google Forms for data collection, highlighted diverse oral hygiene practices among individuals aged 15 and above. Recognizing these variations is crucial for tailoring oral health education programs and interventions to address the specific needs of different age groups. The findings underscore the importance of personalized oral care approaches to promote optimal oral health across the population.</p>
CC License CC-BY-NC-SA 4.0	Keywords: <i>Tooth brushing techniques, frequency, additional mouth rinses, and the usage of toothpaste.</i>

INTRODUCTION

Dental health is fundamental to overall well-being, with oral hygiene practices serving as a cornerstone in the prevention of various oral diseases.¹ This expansive survey endeavours to unravel the intricate tapestry of oral care methodologies, specifically scrutinizing disparities in tooth brushing techniques, frequencies, and the incorporation of supplementary oral care products across diverse demographic groups.³

The landscape of toothbrushes encompasses traditional manual and electric variations, each catering to distinct preferences. Beyond these, alternative tools such as daatun, a traditional chewing stick, and activated charcoal

have gained prominence, prompting an exploration into the cultural and individual factors influencing the adoption of these diverse oral care instruments.^{2,3}

In parallel, the choice of toothpaste represents a significant dimension of oral care practices.⁴ Fluoride toothpaste, renowned for its cavity-preventing properties, stands alongside herbal and natural formulations, reflecting a nuanced spectrum of preferences influenced by cultural, ecological, and health-conscious considerations.⁵

The study delves into the intricacies of brushing techniques, encompassing widely recognized methods such as the Bass technique, modified Bass technique, and the Stillman technique.⁶ The frequency of brushing, an essential aspect of oral care, will be analysed alongside these techniques to unveil patterns and preferences that contribute to the broader landscape of oral health practices.

Moreover, the survey explores the adoption of supplementary oral care practices, including variations in mouth rinse types and frequencies of use. Understanding the incorporation of these additional elements into daily oral care routines will provide nuanced insights into oral health practices that extend beyond traditional brushing.^{7,8}

In conclusion, this research endeavours to comprehensively investigate oral hygiene practices, dissecting the choices in toothbrushes, toothpaste formulations, and specific brushing techniques.⁹ By delving into the intricacies of oral care habits, the study aims to unravel patterns that contribute to oral health disparities, paving the way for targeted interventions and tailored oral health promotion strategies across diverse communities.^{9,10}

MATERIAL AND METHOD

Study Design and Population:

This research employed a cross-sectional study design to investigate the disparities in oral hygiene practices among individuals aged 15 and above. The study population was randomly sampled from diverse backgrounds to ensure representation across different age groups.

Questionnaire:

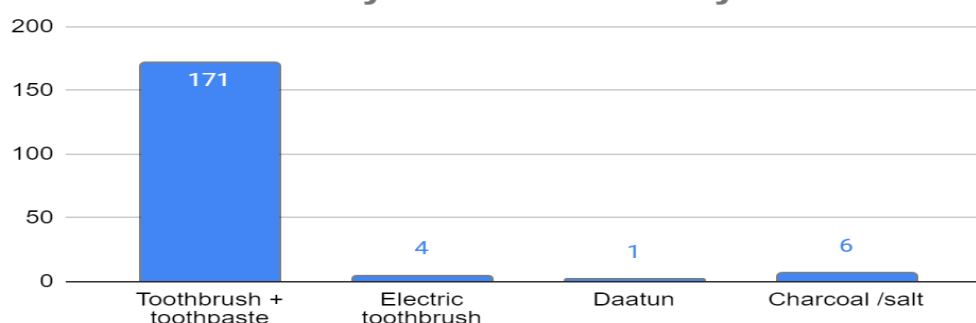
A comprehensive questionnaire comprising 10 questions was developed to collect data on various aspects of oral hygiene practices. The questionnaire was administered through Google Forms, facilitating efficient and standardized data collection. Questions covered topics such as tooth brushing techniques, frequency, use of additional oral care products (toothpaste, daatun, mouth rinses, etc.), and the preference for oral hygiene tools (electric toothbrushes, charcoal-based products, etc.).

Statistical Analysis:

Data obtained from the Google Forms responses were subjected to thorough statistical analysis. Descriptive statistics, including frequencies and percentages, were employed to summarize the demographic characteristics and key variables related to oral hygiene practices.

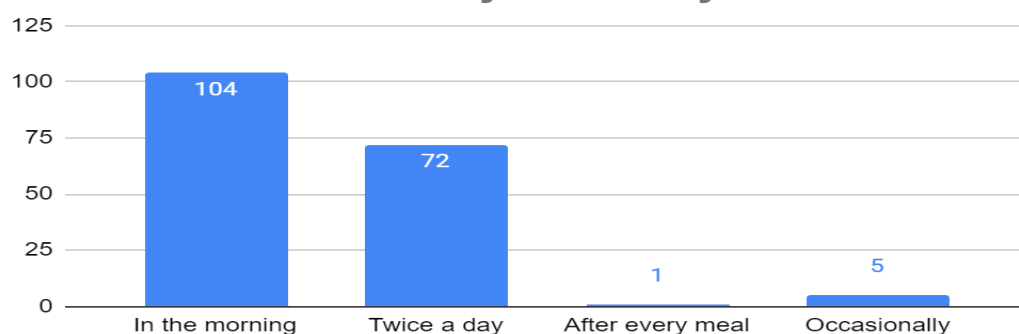
How do you like to brush your teeth?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
Charcoal /salt		2	2	2	6	3%
Daatun		1			1	1%
Electric toothbrush		4			4	2%
Toothbrush + toothpaste	62	76	22	10	170	94%
Grand Total	62	83	24	12	181	100%

Count of How do you like to brush your teeth?



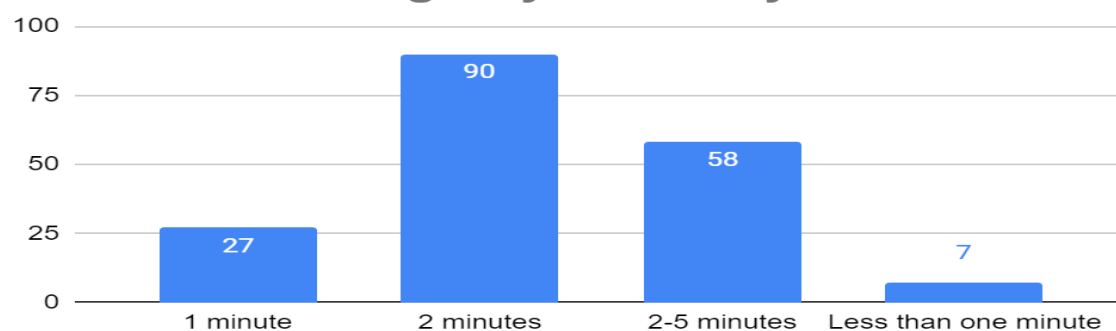
How often do you brush your teeth?	Age Group				Grand Total	%
	4	22-35	36-50	Above 50		
After every meal		1			1	1%
In the morning	36	48	13	7	104	57%
Occasionally		1	2	2	5	3%
Twice a day	26	33	9	3	71	39%
Grand Total	62	83	24	12	181	100%

Count of How often do you brush your teeth?



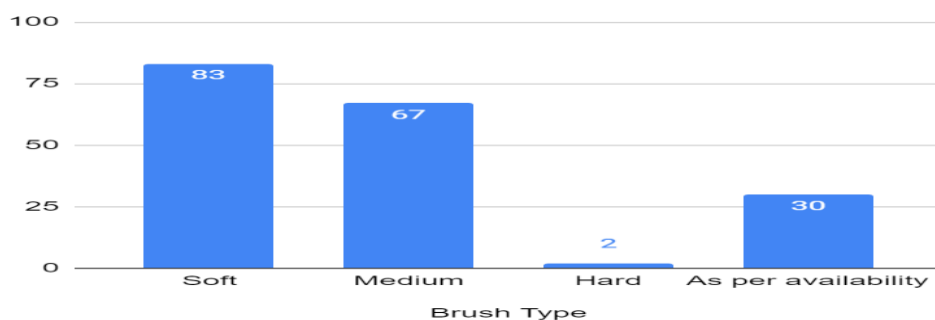
How long do you brush your teeth?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
1 minute	11	8	7	1	27	15%
2 minutes	26	48	9	6	89	49%
2-5 minutes	24	24	6	4	58	32%
Less than one minute	1	3	2	1	7	4%
Grand Total	62	83	24	12	181	100%

Count of How long do you brush your teeth?



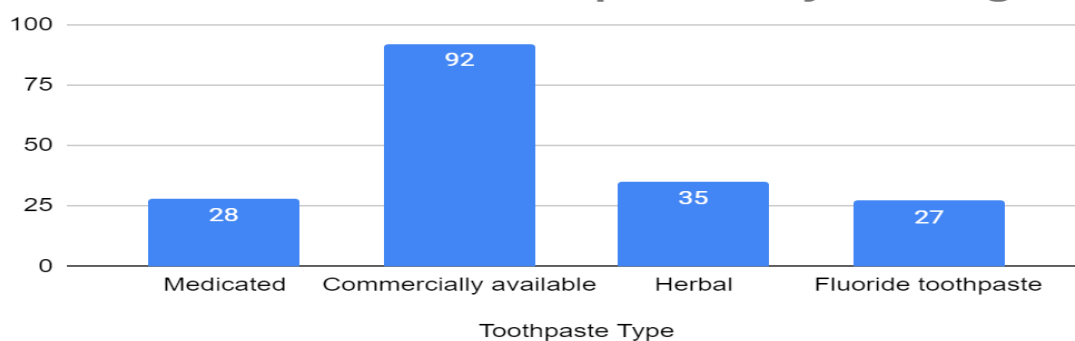
What type of brush do you use?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
As per availability	9	14	4	3	30	17%
Hard	1			1	2	1%
Medium	26	28	9	3	66	36%
Soft	26	41	11	5	83	46%
Grand Total	62	83	24	12	181	100%

Count of What type of brush do you use?



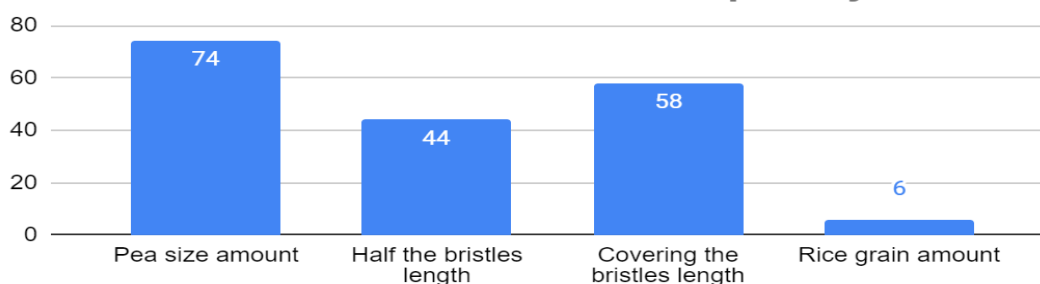
What kind of toothpaste are you using?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
Commercially available	39	43	4	5	91	50%
Fluoride toothpaste	11	13	2	1	27	15%
Herbal	9	13	10	3	35	19%
Medicated	3	14	8	3	28	15%
Grand Total	62	83	24	12	181	100%

Count of What kind of toothpaste are you using?



What is the amount of toothpaste you use?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
Covering the bristles length	23	23	6	6	58	32%
Half the bristles length	12	22	6	4	44	24%
Pea size amount	24	37	11	1	73	40%
Rice grain amount	3	1	1	1	6	3%
Grand Total	62	83	24	12	181	100%

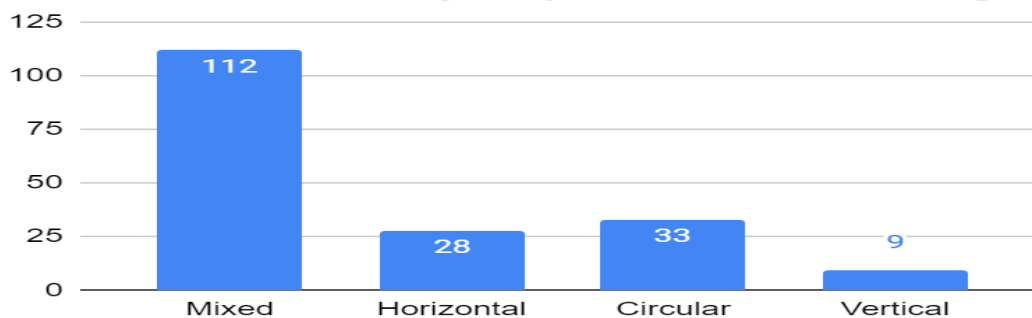
Count of What is the amount of toothpaste you use?



Count of What is the amount of toothpaste you use?

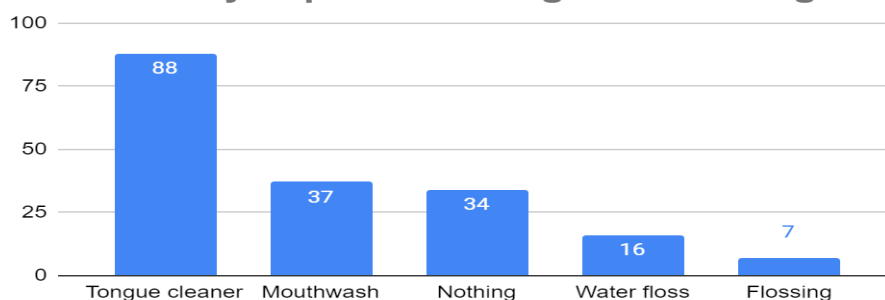
Which motion do you prefer for brushing?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
Circular	15	9	7	1	32	18%
Horizontal	7	14	2	5	28	15%
Mixed	37	55	14	6	112	62%
Vertical	3	5	1		9	5%
Grand Total	62	83	24	12	181	100%

Which motion do you prefer for brushing?



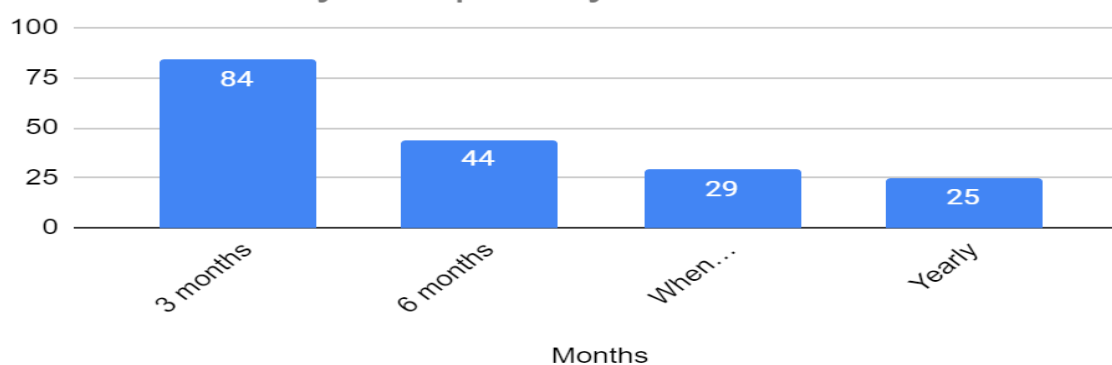
What all do you practice alongside brushing?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
Flossing	2	4		1	7	4%
Mouthwash	13	17	4	2	36	20%
Nothing	11	12	5	6	34	19%
Tongue cleaner	31	45	10	2	88	49%
Water floss	5	5	5	1	16	9%
Grand Total	62	83	24	12	181	100%

What all do you practice alongside brushing?



How often do you replace your toothbrush?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
3 months	26	40	10	7	83	46%
6 months	22	18	4		44	24%
When not left ideal for brushing (frayed toothbrush)	7	15	3	4	29	16%
Yearly	7	10	7	1	25	14%
Grand Total	62	83	24	12	181	100%

How often do you replace your toothbrush?



How often do you visit for dental check-up?	Age Group				Grand Total	%
	14-21	22-35	36-50	Above 50		
6 months	3	9	1	1	14	8%
Never	8	13		2	23	13%
Only when in discomfort	38	52	21	8	119	66%
Yearly	13	9	2	1	25	14%
Grand Total	62	83	24	12	181	100%

RESULTS

The study indicates a prevalent adherence to traditional oral care practices, with 94% favouring the Toothbrush + Toothpaste combination. Soft-bristle brushes (46%) and commercially available toothpaste (50%) are widely used. While most follow recommended brushing frequencies and durations, variations exist in additional practices and dental check-up frequencies.

DISCUSSION

The findings of this study illuminate significant disparities in oral hygiene practices among individuals aged 15 and above, providing valuable insights into diverse approaches to maintaining oral health¹. The use of a cross-sectional study design allowed for a snapshot of oral hygiene habits across different age groups, contributing to a comprehensive understanding of the variations observed.

The study revealed notable differences in tooth brushing techniques, frequency, and the utilization of additional oral care products. The choice of oral hygiene tools, including traditional methods such as daatun and modern alternatives like electric toothbrushes, showcased a wide spectrum of preferences among participants. Such diversity underscores the importance of recognizing individual preferences and habits when designing oral health interventions.²

The prevalence of specific practices, such as the use of charcoal-based oral care products, indicates a growing trend that merits attention in public health initiatives³. Charcoal, known for its adsorption properties, has gained popularity in oral care products; however, further research is warranted to evaluate its efficacy and potential side effects.

The utilization of Google Forms for data collection proved to be a practical and efficient approach, allowing for widespread dissemination of the questionnaire and facilitating a diverse participant pool. The online platform also minimized potential biases associated with face-to-face interviews. However, it is essential to acknowledge potential limitations, such as the reliance on self-reported data, which may introduce recall bias. Additionally, the study's cross-sectional nature limits the establishment of causal relationships, emphasizing the need for future longitudinal investigations.

The subgroup analyses conducted across different age groups revealed intriguing patterns in oral hygiene practices. Tailoring oral health education programs to specific age cohorts may enhance the effectiveness of

interventions. For instance, younger age groups may benefit from targeted initiatives promoting the use of modern tools like electric toothbrushes, while traditional methods may resonate more with older individuals.^{4,5}

The study's results carry implications for public health strategies aimed at promoting optimal oral health. Personalized approaches that consider individual preferences and habits are crucial in designing interventions that resonate with diverse populations.⁶ Future research could delve deeper into the factors influencing these oral hygiene practices, considering socio-economic, cultural, and educational influences to develop more nuanced interventions.⁷

In conclusion, this study sheds light on the dynamic landscape of oral hygiene practices, emphasizing the need for tailored interventions to address the diverse preferences observed among individuals aged 15 and above.^{8,9} The insights gained contribute to the ongoing discourse on effective oral health promotion, advocating for strategies that resonate with the unique needs of different demographic groups.¹⁰ It seems that among the population, dental anxiety may not influence regular dental visits because the expectation is that dentists are to be visited only when there is an urgent oral health problem.¹³

CONCLUSION

The study reveals a significant prevalence of conventional oral hygiene practices, with the majority favoring the use of toothbrushes alongside toothpaste. Traditional toothpaste formulations and soft-bristle brushes are commonly preferred. The study highlights diverse practices in terms of brushing duration, frequency, and additional oral care habits. While the majority follows recommended oral care practices, there are variations across age groups, emphasizing the need for targeted oral health education.^{7,8} Addressing the observed disparities can contribute to the development of tailored oral health interventions, fostering improved oral health outcomes within diverse communities.¹¹ The findings underscore the importance of considering individual preferences and habits in formulating comprehensive oral health strategies. Furthermore, claimed toothbrushing frequency and rinsing method used after brushing should be given due consideration as important factors in the design and analysis of caries clinical trials.¹⁴ Also, plaque still remains after brushing with toothbrush, which indicates that toothbrushing always must be supplemented with interdental aids and that the shape of brushes as well as the techniques used are of little importance.¹⁵

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