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Research Article

**BENEFICIAL EFFECTS OF MISWAK VERSUS TOOTHPASTE  
AMONG LOCAL POPULATION OF PAKISTAN****Dr. Waiza Batool<sup>1</sup>, Dr. Muhammad Yaseen Khan<sup>2</sup>, Dr. Fatima Yousaf<sup>3</sup>**<sup>1</sup>Jinnah Post Graduate Medical Centre, Karachi, <sup>2</sup>Rural Health Centre Haveli Sheikh Raju, District Jhang, <sup>3</sup>Ex-House Officer Allied Hospital Faisalabad.**Article Received:** November 2020 **Accepted:** December 2020 **Published:** January 2021**Abstract:**

**Introduction:** An old but time-tested proverb "If the eyes are a window to the soul, then the mouth is the doorway to the body" reflects the importance of oral health.

**Objectives:** The main objective of the study is to analyse the beneficial effects of miswak versus toothpaste among local population of Pakistan.

**Material and methods:** This cross sectional study was conducted in Jinnah Post Graduate Medical Centre, Karachi during June 2019 to January 2020. The data was collected for the comparison analysis of miswak and tooth paste for oral hygiene practice.

**Results:** The components evaluated in all the study were used to explain the dental hygiene: recognition and practices among the studied community. Though, direct contrast of the study findings in one study to those in another has not been strived as the methods used were not exactly the same. Data collection place was done sample wise.

**Conclusion:** It is concluded that miswak alone is more beneficial than toothbrushes and toothpaste/mouthwash. Besides removing plaque, calculus, and debris it also provides the remedy to anti-sensitize the teeth.

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**INTRODUCTION:**

An old but time-tested proverb “If the eyes are a window to the soul, then the mouth is the doorway to the body” reflects the importance of oral health. Even the evidences from the early civilizations like the Babylonian, Assyrian, and Sumerian suggest an interest in cleanliness of the mouth. Medical books of ancient India, Susruta Samhita and Charaka Samhita, have also stressed on oral hygiene and brushing teeth with herbal sticks [1].

Teeth-cleaning sticks, commonly known as Miswak or Siwak, are popular oral hygiene aids in India, Pakistan, most of the Arabian countries, and several African countries whereas toothbrushes with nylon bristles are the most common oral hygiene aid in most of the developed countries [2]. Because of free availability, unique chemical composition and religious beliefs, the use of miswak and other herbal products are increasing at an exponential rate in both developing and developed countries. The World Health Organization (WHO) has also recommended and encouraged the use of miswak as an effective tool for oral hygiene [3].

The evolution of the modern toothbrush may be traced to chewing sticks that were used by Babylonians as early as 3500 BC, and to toothpicks that were chewed onto help clean the teeth and mouth and were discussed in ancient Greek and Roman literatures [4]. Chewing sticks are prepared from a variety of plant species and are customarily used for cleaning teeth in Asia, Africa, South America, and the Middle East. Western travelers and explorers described the use of chewing sticks by men and women in the Sahara region and Sudan [5]. The inhabitants of these regions would clean their teeth diligently whenever they had a chance to sit down for social gatherings. The exact history of using an aid to clean teeth cannot be estimated, but literature supports toothbrush use up to 7,000 years ago during the Babylonian period [6]. The chewing stick (twig/tooth stick) as a tool for home oral cleanliness acts to clean the tooth, removing plaque, calculus, and debris as well as freshening breath. It is also assumed to be a precursor to today's manual and power toothbrushes. The Chinese invented today's style of manual toothbrush, using hog hairs as bristles and bamboo or bone as the handle [7].

**Objectives:**

The main objective of the study is to analyse the beneficial effects of miswak versus toothpaste among local population of Pakistan.

**MATERIAL AND METHODS:**

This cross sectional study was conducted in Jinnah Post Graduate Medical Centre, Karachi during June 2019 to January 2020. The data was collected for the comparison analysis of miswak and tooth paste for oral hygiene practice. The data gathered from the study members were associated to the school going children, dental hygiene recognition and practices. The observation were entirely on the presence of plaque, calculus, gingival bleeding, and tooth-cleaning devices, all of which were put in record individually to consider the state of each condition. Additionally, while the observation was community-based that included both males and females. The data was collected into two groups, one was Miswak group and 2<sup>nd</sup> was tooth paste group. Three different types of toothpaste were used in this study. The solutions were 0.05% sodium fluoride (NaF) mouthwash (**Oral-B, Germany**), **Aquafresh®** Extra Fresh Daily Mouthwash Fresh Mint and **Sensodyne** Long Lasting Sensitivity Care Mouth Wash. Distilled water (DW) was used as control group. The wire in each group were immersed in their respective solutions and incubated at 37°C for 1.5 h. This time was equivalent to 3 months of one 1-minute daily application of these toothpaste. After this time, all the specimens were removed from the solutions and rinsed with water.

**Statistical analysis:**

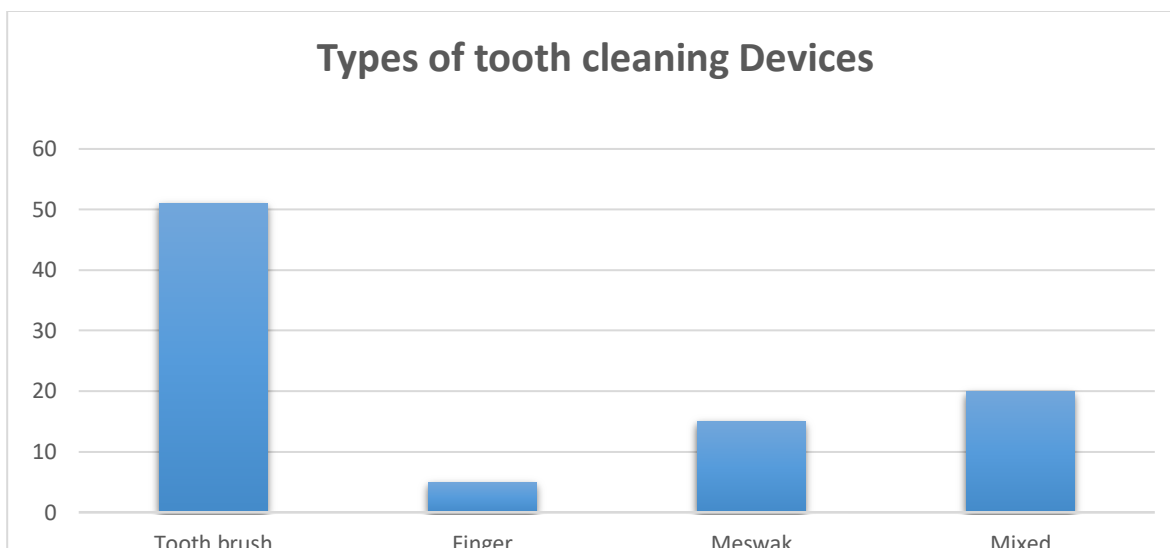
The data was collected and analysed using SPSS version 19. All the values were expressed in mean and standard deviation.

**RESULTS:**

The components evaluated in all the study were used to explain the dental hygiene: recognition and practices among the studied community. Though, direct contrast of the study findings in one study to those in another has not been strived as the methods used were not exactly the same. Data collection place was done sample wise.

**Tooth-cleaning Devices and Tooth brushing**

**Method:** in the tooth cleaning devices, tooth brushes (plastic or wooden) were more commonly used 51.00% (n= 138). In rural areas, the traditional and old method of tooth cleaning i.e. chewing stick (miswak) was used 15.86% (n=4). Vertical brushing strokes (2.00%) were reported to a very less extent instead the main method of tooth brushing was horizontal strokes (98.00%). In the rural community, the use of dental floss was very less (15.00%) as compared to use of dental toothpicks (80.00%).



**Figure 3.** Types of tooth cleaning devices used by the respondents.

**Frequency of Tooth Cleaning:** 80% of the studied population did brush once a day (n=196). Those who brushed twice a day in the study is 22.71% (n=62) [44]. Those who brushed thrice per day in the study is 4.18% (n=12) (Table 1).

Materials used for Brushing	Frequency	Percentage
Tooth paste	145	54.33%
Tooth powder	72	26.40%
Coal/ash	10	3.44%
mixed	42	15.81%
total	269	100.0

**Table 1.** Distribution of the respondents by frequency of tooth brushing.0

**Table 2.** A comparison between different toothpaste and Miswak groups in NiTi wires

Tooth paste	Comparison	corrosion percentage		Number of holes	
		Mean Difference(I-J)	Sig. (p-value)	Mean Difference(I-J)	Sig. (p-value)
Oral B	Aqua fresh	0.78	0.82	-3.100	0.586
	Sensodyne	-0.16	0.99	0.0000	1.000
	DW	1.70	0.29	0.0000	1.00
Aqua fresh	Oral B	-0.78	0.82	3.1000	0.586
	Sensodyne	-0.95	0.72	3.10	0.58
	DW	0.91	0.74	3.10	0.58
Sensodyne	Oral B	0.16	0.99	0.00	1.00
	Aqua fresh	0.95	0.72	-3.10	0.58
	DW	1.87	0.25	0.00	1.00

**DISCUSSION:**

For maintenance of a better dental cleanliness, age is the most important factor as with increasing age children become more aware towards importance of tooth care and oral hygiene. Gender has no influence on oral hygiene practices [8]. Children use different techniques to clean their teeth for example, use of tooth paste, mouthwashes, tooth powders or charcoal sometimes. Media, advertisements, teachers and parents can play an important role in making children aware about important factors to maintain oral hygiene [9]. Oral cleanliness awareness and eating patterns were inversely linked with the school grade. The importance of psyche of health status, specifically in initial schooling years, may require to be improved further as those with more positive thoughts were observed to have more good dental hygiene practices, and lower debris and calculus aggregation [10].

**CONCLUSION:**

It is concluded that miswak alone is more beneficial than toothbrushes and toothpaste/mouthwash. Besides removing plaque, calculus, and debris it also provides the remedy to anti-sensitize the teeth.

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