

Contemplating the Relevance and Efficacy of Miswak (*Salvadora Persica*) in Scientific Era: A Comprehensive Care from the Treasures of Tibbe Nabawi (Prophetic Medicine)

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ABSTRACT

Background: Miswak (*Salvadora persica*) was employed by the Babylonians 7000 years ago followed by the Greek, Romans, Egyptians and Islamic empires. Persistence of Miswak nowadays is especially of a spiritual character and is usually utilized in Muslim countries. The Messenger of Allah, Muhammed (PBUH), in several narrations in authentic religious scriptures emphasizes the importance of miswak. "Miswaak cleanses the mouth, sharpens eyesight, strengthens the gums, whitens the teeth, prevents cavity, facilitates digestion, restores the stomach to health, brings an end to the phlegm, and multiplies good deeds. An individual employing a miswak pleases Allah subhanahuta'ala and delights angels." (Abu Nu'aym) The miswak has numerous benefits, the lightest of which is that it dispels distress. Besides, it also slows the aging process.

Objective: To explore the various narrations of Prophet Muhammad (PBUH) in authentic scriptures about Miswak (*Salvadora persica*) and to rule out its efficacy on the basis of scientific studies.

Methods: Thorough literature review including Ahadith and various scientific studies including those conducted by World Health Organization related to Miswak to serve the objective.

Discussion: In numerous studies conducted by the World Health Organization, and other independent research groups, Miswak has been shown to contain variety of active anti-bacterial compounds that actively fight bacterial growth within the mouth. Many epidemiological studies revealed that it had strong anti-decay effects. Strong evidence from the available descriptive and experimental studies supports the view that it is often a potent oral hygiene tool. Antioxidant enzymes like peroxidase, catalase, and polyphenol oxidase present in Miswak are said to possess anti-carcinogenic properties. Additionally, the active ingredients present in Miswak have analgesic, or pain relieving properties that help affect inflammation and pain, especially within the gums.

Conclusion: It has numerous antibacterial qualities which makes it a perfect alternative to the modern day toothbrush. Its use as a preventive measure has been established via research. Vesicle based model protocells were regulated by the incorporated DNA length, and not the base pair sequence due to the presence of a supramolecular catalyst (lipo-deoxyribozyme) composed of DNA and lipophilic catalysts. The DNA length dependent dynamics of the self-reproducing GVs containing different length of DNA were examined by three independent experiments; Population analysis by flow cytometric measurements, counting of increased numbers of protocells and direct morphological observation of a single GV by confocal microscopy. These results may shed light on the information system in the prebiotic stage, when the central dogma was not established. Notably, recent reports have revealed the possible influence of DNA length on the activation of living cells through the complexation of DNA to an enzyme in non-sequential aggregation manner.

Keywords: Miswak (*Salvadora persica*); World Health Organization; Epidemiological studies; Ahadith

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COMMENTARY

Miswak may be a traditional chewing stick prepared from the roots, twigs, and stem of varied trees and has been used as a natural method for tooth cleaning in many parts of the planet for thousands of years. Miswak in Arabic means “tooth cleaning stick” [1]. It is usually made from Arak (*Salvadora persica*), a tree also referred to as “toothbrush tree” [2]. It represents a pencil shaped stick of certain plants, 15 cm-20 cm long with a diameter of 1 cm-1.5 cm, which are chewed on one end till they're formed into a brush [3,4]. Combining the functions of a toothbrush and toothpaste, Miswak's antibacterial properties have saved many an people from cases of dreadful cavity and worse across the centuries [3,4].

ISLAMIC PERSPECTIVE

Islam teaches the importance of cleanliness of the body, and basic oral hygiene is incorporated as a really significant religious practice [5,6]. The Messenger of Allah, Muhammed (SAW), in several narrations in authentic religious scriptures emphasizes the importance of miswak. “Miswak cleanses the mouth and pleases the Lord” [7]. Aa'ishah, the wife of the Prophet (SAW) said: When he entered his house, the primary thing he would do was to use the miswak” [8]. Hudayfahibn al-Yamaan, reported that when the Prophet (SAW) got up during the night, he would clean his mouth thoroughly with the miswak” [9,10].

CHEMICAL CONSTITUENTS

Many researchers have studied constituents of miswak and located it to contain quite ten different natural chemical compounds considered essential permanently oral and dental hygiene. They are, silica, tannin, resins, alkaloids (salvadorine), volatile oils (simgrins), sulfur, vitamin C, bicarbonate of soda, chlorides, calcium, benzyloisothiocyanate [11]. A study by Chawla reported that some sorts of chewing sticks like Neem (*Azadirachta indica*), *Salvadora persica* and *Acacia arabica* contain an inexpensive amount of fluoride [12]. and their corresponding protein creatinine ratio.

RESEARCHES ABOUT THE EFFICACY OF MISWAK

In multiple studies done by the WHO and other independent health organizations, it's been found that folks who used Miswak on a daily basis require much lesser care than those that used toothpastes and powders [13].

Research has established that regular use of Miswak features a therapeutic effect on gingival disease, and acts against multiple gum disease causing organisms like *Porphyromonas gingivalis*, *Aggregatibacter actinomycetem comitans* etcetera [14,15].

A recent study by Patel PV et al, has found that when used as an adjunct to regular toothbrushes, Miswak helped record a clear improvement in plaque score and gingival health [16].

Most of the studies discussing the efficacy of miswak and modern tooth brush have shown a superior or comparable effect of

miswak over the utilization of tooth brushes.

Many epidemiological studies revealed that *S. persica* miswak had strong anti-decay effects.

World Health Organization has recommended and encouraged the utilization of those sticks as a tool for oral hygiene in areas where their use is effective and customary. This recommendation is additionally according to the principles of the first Health Care Approach that specialise in prevention, community participation, and therefore the use of appropriate technology.

Miswak has benzyl isothiocyanate which may be a chemotherapeutic agent. Alongside that, it's various antioxidants which prevent our bodies from cancer.

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