



A Review on the Sunnah of Miswak (*Salvadora Persica*) and Its Potentiality to Improve Oral Health

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Abstract

Miswak is the Arabic term for the twig of the *Salvadora persica*, a small tree (known as arak in Arabic) that grows in sandy areas and on rocky slopes, found predominantly in the Arabian Peninsula but also in Pakistan and India. Miswak is traditionally used by Muslims as an oral hygiene tool. It is mentioned in a number of ahadith and its use is strongly recommended by the Prophet Muhammad (s.a.w.). This paper reviews and analyses both Islamic and scientific literature relating to the efficacy of *Salvadora persica* in improving oral health. Qualitative method is applied in this study by limiting the review and analysis to only the authenticated ahadith texts and only scientific papers based on methodologically sound research. This study finds that the efficacy of *Salvadora persica* is attributable not only to its mechanical properties but also to its biological (i.e. antibacterial, antifungal and anti-plaque) properties, which help in preventing dental problems such as plaque and caries, as well as gum-related problems such periodontitis and gingivitis.

Keywords: oral hygienic tool, Islamic and scientific perspectives, mechanical properties, biological properties, antibacterial.

Abstrak

Salvadora persica atau dikenali sebagai 'miswak' dalam bahasa Arab digunakan oleh orang Muslim sejak beberapa dekad yang lalu sebagai alat kebersihan oral. Miswak disebut beberapa kali dalam Hadis dan disarankan oleh Nabi Muhammad s.a.w. Miswak ialah pokok kecil yang dikenali sebagai Arak dalam bahasa Arab yang dijumpai di tebing berbatu-batan dan daratan berpasir terutamanya di Pakistan, India dan Semenanjung Arab. Kertas ini bertujuan meninjau dan menganalisis potensi *Salvadora persica* dalam meningkatkan kesihatan oral berdasarkan perspektif Islam dan sains. Kaedah kualitatif telah digunakan dalam kajian ini dengan meninjau teks hadis yang autentik dan kaitannya dengan aplikasi miswak. Sehubungan itu, beberapa kajian saintifik tentang *Salvadora persica* juga dipaparkan. Kajian ini mendapati bahawa potensi *Salvadora persica* bukan saja berdasarkan ciri-ciri mekaniknya tetapi juga bergantung kepada ciri-ciri biologi seperti antibakteria, antikulat dan antiplak yang akan membantu mencegah masalah dental seperti plak, karies, penyakit periodontal dan gingivitis.

Kata kunci: Alat kesihatan oral, perspektif Islam dan sains, ciri-ciri mekanik, ciri-ciri biologi, antibakteria.

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Introduction

Oral hygiene is the practice of keeping the mouth and teeth clean and healthy. This practice aims to prevent oral diseases such as cavities, gingivitis, periodontal disease and bad breath. To maintain oral hygiene, there are various methods that can be implemented such as

brushing, flossing and gargling. Historically, people began to use oral cleaning tools when they realized that oral health is among the main attractions of one's appearance (Bos, G., 1993; Berita Harian, 2010). A number of societies, including Muslims, view *miswak* as the best teeth cleaning tool, as the edge of the wood will act as a brush, while the active ingredient in it will help in cleaning the mouth. 'Miswak' appliance is a traditional practice in the Arabian Peninsula and vast majority of Muslim community across the world.

The term '*miswak*' or '*siwak*' derives from Arabic word '*saka*' which mean to rub something or clean the teeth. According to 'Abd al-Karim Zaidan, the scholars used the term *miswak* to clarify the usage of a stick to clean the teeth and remove its waste ('Abd al-Karim Zaidan, 1997). Al-Sun'ani and Al-Nawawi also shared the same understanding of *miswak*. According to him *miswak* refers to the usage of a stick on the teeth to eliminate the yellowing effects of food residues stuck on the teeth (Al-Sun'ani, 1997, and al-Nawawi, 2001). In short, *miswak* is any part of the tree either twigs, branches or roots which is used to cleanse the teeth. Besides the discussion on the part of tree used as *miswak*, the characters of *miswak* including its ability to clean, its fibrous and being wet should be considered.

Miswak has various names as it is known as '*datan*' in India and Pakistan, '*miswaki*' in Tanzania, '*kayu sugi*' in Nusantara and '*miswak*' in Arabia. Generally, *miswak* is extracted from different plants that are utilized as *miswak* such as Neem (*Azadirachta indica*) which is widely used in India, the lime tree (*Citrus aurantifolia*) and the orange tree citrus (*Citrus sinensis*); occasionally used by the West African as chewing stick, the roots of *Senna* (*Cassia vennea*); used by African Negroes and the roots of Arak (*Salvadora persica*) that is normally used in the Middle East. Arak is the plant that was used by the Prophet Muhammad (s.a.w.). According to Muslim commentators of Prophetic narrations on *siwak*, cleaning sticks from *arak* tree are highly recommended as the most suitable tree for making the *miswak* stick.

(Ibn Qayyim al-Jauziyah, 2003 and Rispler-Chaim, V, 1992).

Today *miswak* popular as a teeth cleaning tool; this popularity has religious and spiritual flavor. Contemporary researches also show that *miswak* has high potential in refining oral health because it can help in inhibiting the growth of several oral bacteria and plaque formation (Sofrata, 2011, al-Bayaty, 2010, Poureslami, 2007, Cendrin, J, 2008 and Almas, K, 2004, 2001). Thus, the aim of this paper is to analyze what are the potentials *Salvadora persica* in improving oral health. Both Islamic and scientific perspectives on *miswak* would be presented. With great emphasis on its guidance in this matter, Prophetic *ahadith* on *miswak* would be reviewed. This result is expected to encourage Muslims to practice the *sunnah* with in depth knowledge and not by *taqlid*.

As this paper is a review paper, to understanding the topic from Islamic perspective, related *ahadith* from *Sahah al-Sittah* (*Collection from the Six Books of Ahadith*) and authentic books of *tafsir* (interpretations of the Qur'an) will be studied. The scientific perspective on *miswak* and its potential in improving oral health will also be studied. The paper is divided into three parts which are *miswak* in the perspective of *hadith* (Table 1 and Table 2) and *fiqh* and Muslim scholar's view (Table 3). The scientific perspective of *miswak* is discussed based on its effects and applications are clarified.

Miswak as oral health cleaning tool as stated in the Prophetic narrations

Hadith is the second authentic reference source after the Qur'an. There are number of *ahadith* of the Prophet (s.a.w) which encourages people to practice *siwak* in their daily life. According to these narrations, the Prophet (s.a.w.) gave keen interest to *siwak* as the oral cleaning tool. The following tables are comparative classifications of *ahadith* of *miswak* that are mentioned in the Six Authentic Books of *hadith* collections; there are some repeated *hadith* mentions in those books.

Table 1: The *ahadith* on *miswak* in Six Authentic Books of *Hadith*

No.	Name of <i>ahadith</i>	Book of <i>ahadith</i>	Total No. of <i>ahadith</i>
1	<i>Sahih al-Bukhariyi</i>	Book of Ablution, Book of <i>Jumaat</i> , Book of <i>Tahajjud</i> , Book of Prayer, Book of Five Compulsory (<i>Fardhu al-Khams</i>), Book of Fasting	18
2	<i>Sahih Muslim</i>	Book of Hygiene (<i>Taharah</i>), Chapter of <i>Siwak</i> , Book of Prayer, Book of <i>Juma'at</i> , Book of <i>Hajj</i> , Book of <i>Ru'yah</i>	18
3	<i>Sunan al-Tarmidhiyi</i>	Chapter of Hygiene (<i>Taharah</i>), Chapter of <i>Jumaat</i> , Chapter of Fasting, Chapter of Marriage (<i>al-Nikah</i>), Chapter of <i>Adab</i> ,	6
4	<i>Sunan Ibn Majah</i>	Chapter of Hygiene (<i>Taharah</i>), Chapter of <i>Fitrah</i> , Chapter of Prayer and <i>Juma'at</i> Prayer, Chapter of Fasting	12
5	<i>Sunan al-Nasa'iyi</i>	Book of Hygiene (<i>Taharah</i>), Chapter of <i>Siwak</i> , Book of <i>Juma'at</i> , Book of <i>Qiyam al-Lail</i> , Book of <i>Ziynah</i>	18
6	<i>Sunan Abu Da'ud</i>	Book of Hygiene (<i>Taharah</i>), Chapter of <i>Siwak</i> , Book of Prayer and <i>Qiyam al-Lail</i> , Book of Fasting, Book of Clothes, Book of Law.	20

Table 1 demonstrates the number of *ahadith* of *miswak* appliance mentioned by the Prophet (s.a.w.) as narrated in the collections of *Sahih al-Bukhariyi*, *Sahih Muslim*, *Sunan al-Tarmidhiyi*, *Sunan Nasa'iyi*, *Sunan Ibn Majah* and *Sunan Abu Daud*. Most of the *ahadith* on *miswak* in the books of *hadith* are stated in the chapters of Hygiene, except in books like *Sunan Nasaie*, *Sunan Abu Daud* and *Sahih Muslim*. These three books dedicated an independent chapter for *ahadith* on *miswak*. *Ahadith* on *miswak* can be classified into three subtopics which are the method of *miswak* application, recommended time for *miswak*, and the advantages of *miswak*.

Table 2: Three subtopics regarding *ahadith* of *miswak*

No.	Subtopics	No. of <i>ahadith</i>
1	Method of <i>miswak</i> application	“I came to the Prophet s.a.w. and I saw him carrying a <i>siwak</i> in his hand and cleaning his teeth, saying, “u’ u’, as if he was retching while the <i>siwak</i> was in his mouth” (<i>Sahih al-Bukhariyi</i> , Book of Ablution, <i>Hadith</i> No. 245 and <i>Sunan Abu Daud</i> , Book of Cleanliness, Chapter <i>Kaifa Yastaka</i> , <i>Hadith</i> No. 49)
2	Recommended time for <i>miswak</i>	“Whenever the Prophet s.a.w. got up at night, he used to clean his mouth with <i>siwak</i> .” (<i>Sahih Bukhari</i> , Book of Ablution, <i>Hadith</i> No. 246) “I asked Aisyah: what the Prophet did first when he entered his house, and she replied: He used <i>siwak</i> (first of all)” (<i>Sahih Muslim</i> , Book of Purification, Pertaining to tooth-stick, <i>Hadith</i> No. 488 & 489)
3	Advantage of <i>miswak</i>	“Ten are the acts according to <i>fitrah</i> ; clipping the mustache, letting the beard grow, using the <i>siwak</i> , snuffing up water in the nose, cutting the nails, washing the finger joints, plucking the hair under the armpits, shaving the pubes, and cleaning one’s private parts with water. The narrator said: I have forgotten the tenth, but it may have been rinsing the mouth.

		<p>(<i>Sahih Muslim, Book of Purification, Characteristics of Fitra, Hadith No. 502</i>)</p> <p>“The Prophet s.a.w. said, It (i.e siwak) is a purification for the mouth and it is a way of seeking Allah’s pleasures.”</p> <p>(<i>Sahih Bukhari, Book of Fasting, Chapter dry or green siwak for fasting person</i>).</p>
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The Prophetic narrations on *miswak* could also be categorized into three. The first category is those *ahadith* that exhibits how the Prophet (s.a.w) performed *miswak*. This category explains how the Prophet (s.a.w.) performed *miswak* application. The second category highlights the time to perform *miswak*; according to these *ahadith*, tooth brush (*miswak*) is not limited to any specific time. In fact the Prophet (s.a.w) encouraged to be done at anytime; during ablution, recitation of the Qur’an, meditation (*zikr*), *qiyamullail* (night time prayers); prior to prayer, entering mosque or house, on getting up from sleep and in interaction with people, are among the recommended (*sunnah*) occasions to perform *siwak*.

Miswak as Oral Health Tool: Fiqh Perspective

The Qur’an did not mention directly the commandment of *siwak* practice, however the general principle of hygiene has been strengthen in the Qur’an. The Qur’an states require Muslims to be clean (the Qur’an, 9:108). The role of *ahadith* is significant in explaining the details of hygienic lifestyle including the precision of oral cleanliness. Among the Prophetic narrations that recommend the culture of *miswak* is the following:

“But for my fear that it would be hard for my followers, I would have ordered them to clean their teeth with *siwak* on every performance of ablution”
 (*Sahih Bukhari, Hadith No. 887 & 7240, Sahih Muslim, Hadith No. 589*)

This *hadith* carries strong recommendation for *siwak* practice; nevertheless this *hadith* does not imply the compulsory obligation of *siwak* for Muslim. Though most of Muslim jurists, like Abu Zakariya and others, agreed that the *siwak* is strongly recommended (*sunnah muakkadah*) in Islam (Abu Zakariya, 1996; Husayn, 2004), however, there are those like Ibn Ishaq b. Qudamah Rahawayh and Dawud al-Tayalisiyi who held that *siwak* is a compulsory (*wajib*) practice (Ibn Qudamah, 1996; al-Daqar 1999). Ishaq bin Rahawayh refers to the word “**لَأْمُرْتَهُمْ**” (I would have ordered them) mentioned in the *hadith* as a connotation of obligatory (Al-Nawawi, 1996). Al-Baghawi holds also the same view as stated in his book *Sharh al-Sunnah* (Al-Baghawi, 1992).

In another *hadith*, Aishah (r.a.) narrates the following:

“The Prophet (s.a.w.) said, it (i.e *siwak*) is a purification for the mouth and it is a way of seeking Allah’s pleasures.” (*Sahih Bukhari, Book of Fasting, Chapter dry or green siwak for fasting person*).

This *hadith* expounds the importance of performing *siwak* in Islam; on the one hand, this *hadith* teaches that *siwak* (tooth brush) helps to clean the month, and it is the way to seek the pleasure of Allah, on the other hand. Furthermore, Huzaifah (r.a.) narrated that;

“Whenever the Prophet (s.a.w.) got up at night, he used to clean his mouth with *Siwak*”. (*Sahih Bukhari, Book of Ablution, Hadith No. 246 (a)*).

Both of the above mentioned *ahadith* have shown the priority that has been given by the Prophet (s.a.w.) to dental care. Though the mainstream of the Muslim jurists are on the view that *siwak* is strongly recommended practice in Islam, there are number of Muslim jurists who hold that *siwak* is, indeed, mandatory practice in Islam. Similarly, there is ongoing debate among Muslim jurists, on whether the use of *siwak* can be replaced with toothbrush or other tools to clean the teeth and mouth, however, still the usage of *siwak* has its own unique features.

Early Muslim Jurists and their Opinions on siwak

Among Muslim jurists who addressed *siwak* include, among others, Ibn Qayyim, Ibn al-Nafis, Ibn Hajar, Imam al-Nawawi. Their commentaries are highlighted in the following table.

Table 3: Commentaries of Muslim scholars regarding *miswak*

No.	Scholars	Commentaries
1	Ibn Qayyim	<i>Siwak</i> is favorable for many reasons, such as perfuming the breath, strengthening the gingival, clearing the phlegm and the sight and preventing cavities. It is also keep up the health of the stomach, help the digestion process, clears the voice, makes the speech eloquently, and encourages individual to recite the Qur'an, remember of Allah and pray. <i>Siwak</i> also fights the feeling of sleepiness and lethargy, pleases the Lord, gratifies the angels and boosts up the act of good deeds (Ibn Qayyim, 2003).
2	Ibn Nafis	By using <i>siwak</i> moderately, it will polish the teeth and strengthen its root, prevent cavities and improving the manner of laughing (Ibn Nafis, 1986).
3	Ibn Hajar Asqalani	Regarding technical aspect, Ibn Hajar said that the best route to brush the teeth is from the upper side to the down side of the teeth to prevent gum bleeding (Ibn Hajar, 1986).
4	Imam Nawawi	For Imam Nawawi, brushing from the right side of the mouth or horizontally is the best method of cleaning the teeth (Al-Nawawi, 1996, 2001).

Miswak as Oral Health Tool: Scientific Perspective

Along with the development of science and technology, the innovation in oral health care also grows from the use of wood to the invention of assortment of brush. The quality of brush is improved from time to time and range of materials is studied to produce a good feature of toothpaste. Scientific studies about *miswak* have been conducted by modern scientists, in which the positive effect of *miswak* is identified, which mainly due to its mechanical and biological outcome.

Mechanical Effect of *miswak*

Tooth brush is the most natural process to remove food remaining on teeth. Among many types of tooth brushes, *miswak* is identified as a useful tool to eliminate food residue on the teeth. The stick of *miswak* has mechanical functions same as toothbrush does; it can reach all parts of the month.

Biological Effect of *miswak*

On the biological side, *miswak* provides important chemicals that function as a toothpaste to the mouth during the tooth brush. Followings are some laboratory research findings about *miswak's* biological effects;

i. Active ingredient and chemical composition of *miswak*

The phytochemical studies of *miswak* has found that it contains almost 19 active ingredients that can help to promote healthy teeth and mouths of consumers. The three main components which are essential for oral care are chloride,1 calcium oxalate2 and fluoride;3 other chemical contents of *miswak* including Vitamin C,4 tannins,5 resins,6 alkaloids,7 trimethyamine,8 silica,9 and aromatic oils (essential oil).10 (Sofrata, A.H. 2010, Poureslami, H.R. *et al.* 2007 and Lafi and Ababneh, 1995).

ii. An antibacterial effect better than the use of toothbrush.

Studies have showed that *Salvadora persica* contains antibacterial substances against several types of cryogenic bacteria commonly found in the oral cavity. The active ingredients in *miswak* will help in preventing the formation and production of bacteria on the teeth and in the mouth. The effectiveness of an ideal antimicrobial agent is depends on its ability to kill microbes or bacteria and cause minimal toxic effects to the host cell. There are almost 500 types of microorganisms found in oral cavity and some will cause oral infections. This is where the significance of *miswak* comes about with the presence of gallic acid, alkaloid and benzyl-isothiocyanate that will act as antibacterial and antimicrobial substances by inhibiting

acid growth and production in oral cavity (Rajabalian *et al.*, 2009 and Khatak, 2010). According to Sofrata, A.H. (2010), *miswak* stick pieces with no extraction have a strong antibacterial effect against most of bacterial species and this is proved by the large inhibition zones (3.4 cm) of it compared to inhibition zone of aqueous extract of *miswak* (0.2 cm).

In this study al-Lafi and Ababneh (1995) on antibacterial activity of *Salvadora persica* against several types of aerobic and anaerobic bacteria, reported that *Salvadora persica* extracts have a drastic effect on the growth of *Staphylococcus aureus*. Al-Mas (2001) studied of seven different types of *Salvadora persica* taken from various part of Asia had shown that *Salvadora persica* found in Saudi Arabia and *Acacia arabica* from Pakistan have the antibacterial activity despite the fact that Peelu from Pakistan is not (Al-Mas, 2001).

Moreover, another study was carried out by Al-Mas and Al-Zeid focused on the comparison between the use of toothbrush and *miswak* to the presence of *Streptococcus mutans* and lactobacilli in saliva. The result of the study had shown a significant decrease in the number of *S.mutan* whereas there was no significant difference in the number of lactobacilli present in saliva. Thus, they have come to the conclusion that *miswak* extracts (50%) showed antimicrobial activity as the numbers of bacteria calculated were decreased especially the number of *S.mutans* (Al-Mas *et al.*, 2004).

iii. Stimulate the production of calcium and chloride in saliva.

A study conduct by Gazi *et al.* (1992) about the impact of *siwak* on the contents of saliva within a certain period had shown that *siwak* resulted in significant increases in calcium (22 times) and chloride (6 times) and reduction in phosphate and pH in salivary content. The saturation of calcium in the saliva prevents demineralization and promotes remineralization of tooth enamel while high concentrations of chloride will inhibit the formation of calculus (Khatak *et al.*, 2010). Therefore, the teeth will last longer, not easily decomposed and thus, become healthier. Another study has done by Sushil Kaur (2011) on the effect of chewing *miswak* on flow rate, pH, and levels of calcium phosphate, chloride and thiocyanate of whole saliva. The result has shown that the chewing of *miswak* will resulted in increases of mean flow rate of stimulated whole saliva in all groups compared to the chewing of cotton roll. This circumstance indirectly indicate that

plants used as chewing sticks may have the potential of releasing substances into saliva that could influence the state of oral health

iv. Antiplaque effect on teeth

Dental caries and periodontal diseases are among major oral problems. Most of these problems arise from the formation of dental plaque bacteria in one's mouth. Research done by Al-Bagieh (1997) and his science group shows extracts of *siwak* will inhibits the growth of some bacteria that can cause plaque, which is 13.63% more effective than placebo in controlling the growth of plaque.

In addition, a Sweden researcher who studied an antiplaque feature of the *siwak* has found that the level of Plaque Index for experienced users is 52%. This indicate that *miswak* give a significant effect in decreasing plaque formation on teeth. The proper method of handling of *miswak* also influences the antiplaque effect on user's teeth (Cendrin *et al.*, 2008). However, Batwa and his group of researcher in their study have argued that the effect of using either *miswak* or toothbrush is equivalent. This condition may be influenced by several factors such as method and duration of their usage and the way of their handling. (Batwa *et al.*, 2006). In general, majority of the studies in this matter revealed that *miswak* has the ability in decreasing the plaque formation which eventually leads to the diminishing of the risk of gingivitis and bleeding gums.

Other uses of Miswak

Besides being a tooth cleaning tool, *miswak* can also be used to enhance the health of the body; for instant, because of the presence of antimicrobial activity in it, *miswak* play important role in tongue cleaning. Moreover, it is also utilizable to overcome badly habits such as smoking and thumbs sucking and helps in the process of tooth development as well (Almas, K and Al Lafi, 1995). According to Sher, H. (2011) and his research group, *Salvadora persica* can be classified as a multipurpose plant and possesses several agro-pharmaceutical features. The *S.persica* root can be used to treat epilepsy, gonorrhea and skin disease, spleen troubles and stomach ulcer (Sanoqo *et al.*, 1999). Another study found that *S.persica* possess insect repellent and antiplasmodial actions which will benefit in treating malaria diseases (Ali *et al.*, 2002).

Analysis: *miswak* and Its Potential in Improving Oral Health

Oral health is integral to general well-being and relates to the quality of life that extends beyond the functions of craniofacial complex (Palombo, E.A., 2011). However oral health has been overlooked by some people. Mouth plays an important role not only for communication, but for eating, drinking and as an organ of digestion. Teeth are important in food breaking to the smaller structure to enhance the digestive process. Other than that, it also plays the vital role in the pronunciation of consonant letter, keeping the facial beauty and shape look of a person (Rahimah, 1987).

There are various types of toothbrushes in the modern markets; yet *miswak* is still relevant to our age and probably will be the same in the future. *Miswak* can help to prevent plaque formation and cavity by reducing the accumulation of food residue in mouth and not allow bacteria to attach to the teeth. Bacteria live and reproduce on the teeth and tongue and it takes almost 24 hours for it to attach to a tooth and develop plaque. As plaque is a fertile breeding ground for bacteria, thus brushing can help interfering and reducing formation of plaque on the teeth especially if it is done regularly (Edwards, 2008). Nearly every one of the dentist advice the public to brush the teeth minimally twice a day, but differently occur to the Prophet (s.a.w) as he advice the Muslim to brush the teeth five times a day, which is before every *solah* (pray) performed. The recommendation demonstrates the concern of the Prophet (s.a.w.) towards health care particularly in oral health.

If a plastic brush without chemical constituent can prevent cavity, similar effect goes to *miswak* except that it has bitter oil and active ingredients. The most important thing is *miswak* is a natural product and it does not have side effect if applied in a proper way. Al-Bayati (2008) refer to Salehi, P said that *miswak* itself is very useful in the prevention of tooth decay even if it is used without any other tooth cleaning tools. Most of the dentists nowadays promote the usage of toothbrush together with floss and mouthwash to remove bacteria; however some of the mouthwash has been reported to have a number of side effects such as brown discoloration of teeth and give a bitter taste (Al-Bayaty FH *et al*, 2010). This proved that *miswak* is still relevant up to the present world and Muslims are encouraged to implement *miswak* as their daily oral care.

Regarding the advantages of *miswak*, as mentioned in previous researches and studies, majority of the scholars

use the terms such as refreshing the mouth, teeth whitening and strengthening the tooth root in clarifying the action of *miswak* in maintaining oral health care. These dynamic actions can be proved by the presence of active or chemicals ingredients in the *siwak* stick naturally. The Prophet Muhammad s.a.w. also used *siwak* derived from *Salvadora persica* not from other wood available in Arab country. In the opinion of the author, the reason of this may be due to the advantages of *Salvadora persica* itself compared to other tree that is suitable to be applied as a *miswak*. However as noted earlier, there is no trouble of using others materials as a teeth cleaning tools, but *siwak* is one of the Prophet's recommendation which also beneficial to be followed by Muslims.

There are several claims saying that *miswak* can sharpen the brain or mind, increases fluency of speaks and tongue, reduces fatigue, dilutes mucus and phlegm and increase the appetite. The action is possible as because the whole tree of *Salvadora persica* can be used for medical or health purposes and all the benefit can be obtained by the practitioner if the usage method is accurately practiced (Akhtar J *et al*, 2011). Physiologically, teeth and mouth have several nerves that connected to the brain, thus their functions are interconnected and will affect each other. Yet, more research should be conducted to deeply explicate this matter.

In the authors' opinion, the nature of the modern toothbrush and *siwak* are alike and it is possible that the invention of modern toothbrush was the result of adaptation or observation of the *siwak* stick. The recommendation of *siwak* that revealed by Allah through His Prophet s.a.w. contain immense of reason and wisdom. Even the practicing of *siwak* itself as an oral health tool merely categorized as *sunnah muaakaddah* due to the Islamic law, but the attempt of cleaning the teeth and ensure the oral health care either by means of the modern toothbrush, floss or mouthwash also can be classified as a *sunnah* as looking to the objective or *maqasid syari'ah* (Islamic term) of the deed. However, the best way is to endeavor of what had exactly done by the Prophets.a.w. in those days.

Miswak is one of the Islamic heritages in oral health care. Historically, *miswak* has been used by Muslims and *Salvadora persica* is a plant that is often used as a *miswak*, which is also the plant species used by the Prophet s.a.w. The practice of *miswak* is still relevant and should be continuously implemented as the clinical studies and scientific researchers showed positive effects of it in oral health care. Besides, the World

Health Organization is also encouraging further research to be done since people recently tend to return to the application of natural sources that will leads to zero side effects.

Conclusion

Miswak is a natural toothbrush, and it is one of the best tooth brushing methods in oral healthcare. Apart from being valuable for the healthy body, *miswak* has some unique features such as being easy to use without requiring expertise, affordable and cost effective. However, the optimum effect of *miswak* will eventually depend on the method and techniques of practicing it.

REFERENCES

- 'Abd al-Karim Zaidan (1997). *Ensiklopedia Fiqh Wanita, Taharah dan Solat*. Bahrudin Fannani (terj.), j.1. Selangor: As-Syabab Media.
- 'Abd Allah bin Ahmad bin Muhammad Ibn Qudamah (1996). *Al-Mughni. Tahqiq: Dr. Muhammad Sharaf al Din Khattab dan Dr. Al-Sayyid Muhammad al-Sayyid*. J.1. Kaherah: Dar al-Hadith.
- 'Ala al-Din Ali bin Abi al-hazm al-Qurashi Ibn al-Nafis (1986). *Al-Mujaz fi at-tibb. Tahqiq: Abd al-karim al Azbawi*. Kaherah: Jumhuriyyah Misr al-Arabiyyah Wizarah al-Awqaf.
- Abdul Hamid Siddiqi. (1986). *Translation of Sahih Muslim*. New Delhi: Kitab Bhavan.
- Abu Muhammad al-Husayn bin Mas'ud al-Baghawi (1992). *Sharh al-Sunnah, tahqiq: Ali Muhammad Mu'awwad & adil Ahmad, Abd al-Mawjud*, Beirut: Dar al-Kutub al-Ilmiyyah.
- Abu Zakariya Yahya bin Sharf Al-Nawawi (1996). *Al Majmu' Sharh al-Muhadhdhab, tahqiq:Dr. Mahmud Matraji*, j.1. Beirut: Dar al-Fikr.
- Abu Zakariya Yahya bin Sharf al-Nawawi (2001). *Sahih Muslim bi Sharh al-Nawawi*. Tahqiq: 'Isam al Sababati, Hazim Muhammad dan 'Imad 'Amir. J.2. c.4. Kaherah: Dar al-Hadith. Ahmad bin Ali Ibn Hajar al-Asqalani. (1986). *Fath al Bari bi Sharh Sahih Bukhari*. ed. Muhammad Fu'ad 'Abd al-Baqi, Muhibb al-Din al-Khatib & Qusa Muhibb al-Din al-Khatib. Kaherah: Dar al-Rayyan al Turath.
- Ahmad Hasan. (2001). *English Translation with Explanatory notes*. New Delhi: Kitab Bhavan.
- Akhtar J, Siddique KM, Salma Bi and Mohd Mujeeb (2011). "A review on phytochemical and pharmacological investigations of *miswak* (*Salvadora persica* Linn)." *Journal of Pharmacy and Bioallied Sciences*. 3(1): 113-117.
- Al-Bagieh, N.H. dan Al-Mas, K. (1997). "In-Vitro antibacterial effects of aqueous and alcohol extracts of *Miswak* (Chewing sticks)." *Cairo Dental Journal*. 13 (2): 221-224.
- Al-Bayati FA and Sulaiman KD (2008). "In Vitro antimicrobial activity of *Salvadora persica* L. extracts against some isolated oral pathogens in Iraq." *Turk J Biol*. 32:57-62.
- Al-Bayaty, FH, Al-Koubaisi, AH, Ali, NAW and Abdulla, MA. (2010). "Effect of mouth wash extracted from *Salvadora persica* (*Miswak*) on dental plaque formation: A clinical trial." *Journal of Medicinal Plants Research*. 4(14):1446-1454.
- Ali H, Konig GM, Khalid SA, Wright AD, Kamingsky R (2002)." Evaluation of selected Sudanese medicinal plants for their in vitro activity against hemoflagellate, selected bacteria, HIV and tyrosine kinase inhibitory, and for cytotoxicity." *Journal Ethnopharmacology*. 3(3): 219-228.
- Almas, K and Al-Zied Z (2004). "The immediate antimicrobial effect of a toothbrush and *Miswak* on cariogenic bacteria: A clinical study." *Journal of Contemporary Dental Practise*. 5: 105-114.
- Al-Mas, K. (2001). "The Antimicrobial effects of seven Different Types of Asia Chewing Sticks." *Odonto Stomatologie Tropicale Journal*. 17-20.
- Batwa, M., Bergstrum, J., dan Batwa, S. (2006). "The effectiveness of chewing stick *miswak* on plaque removal." *Saudi Dental Journal*. 18 (3): 125-133.
- Bos, G. (1993). The *miswak*, an aspect of dental care in Islam. *Medical History*. 37: 68-79.
- Berita Harian. Evolusi pembersih gigi. 15 April 2010.
- Cendrin, J et al. Plaque Removal Efficacy and Learning Effect of a *Miswak*. Extract from www.kise/odont/cariologi_endodonti/t1/proc2003/1c2.pdf at 11 January 2008
- Edward, C. (2008). The Mouth. National Health Review, retrieved on 2 September 2009. extract from http://smiledesigncenter.us/ART_nationalhealthreview_anatomyofmouth
- Gazi, M. I., Davies, T. J., Al-Bagieh, N. and Cox, S. W. (1992), "The immediate- and medium-term effects of *Meswak* on the composition of mixed saliva". *Journal of Clinical Periodontology*. 19: 113-117
- Husayn Abd Allah (2004). *Al-Ali, Khisal al-Fitrah fi al Fiqh al-Islami dirasah muqaranah ma'a al Tibb al Hadith*. Kuwait: Dar al-Diya'
- Ibn Qayyim al-Jauziyah (2003). *Healing with the Medicine of the Prophet*. Jalal Abual Rub (trans.) Riyadh: Darussalam.

- Khatak. M, Khatak, S, Siddqui, AA, Vasudeva N, Aggarwal A and Aggarwal P. (2010). "Salvadora persica." *Pharmacognosy review*. 4(8): 209-214.
- Lafi T., & Ababneh, H. (1995). "The Effect of the extract of the miswak (chewing stick) used in Jordan and the Middle East on Oral Bacteria." *International Dental Journal*. 45: 218-222.
- Muhammad bin Ismail al-Amir al-Yamani al-Sun'ani (1997). *Subul al-Salam Sharh Bulugh al-Maram min Jama'a adillat al-Ahkam. Tahqiq: Khalil Ma'mun Shiha*. J.1. Beirut: Dar al-Ma'rifat.
- Muhammad Muhsin Khan. (1984). "The translation of the Meanings of Sahih al-Bukhari. Arabic English." "New Delhi: Kitab Bhavan.
- Muwaffiq al-Din Abd al-Latiff al-Baghdadi (1988). "Al Tibb min al-Kitab wa al-sunnah." Beirut: Dar al Ma'rifah.
- Poureslami, H.R., Makarem, A and Mojab, F. (2007). "Paraclinical Effects of Miswak Extract on Dental Plaque." *Dental Research Journal*. 4 (2): 106-110.
- Polombo, E.A. (2011). Traditional Medicinal Plant Eztracts and Natural Products with Activity against Oral Bacteria: Potential Application in the Prevention and Treatment of Oral Diseases. Evidence Based Complementary and Alternative Medicine.
- Rahimah A.Kadir (1987). *Kanak-kanak dan Penjagaan Gigi*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Rajabalian, S., Mohammadi, M. & Mozaffari, B. "Cytotoxicity evaluation of Persica mouthwash on cultured human and mouse cell lines in the presence and absence of fetal calf serum." 2009; 20(2):169-173.
- Rispler-Chaim, V. (1992). "The Siwak: A Medieval Islamic Contribution to Dental Care." *Journal of the Royal Asiatic Society*. 3 (2): 13-20.
- Sanoqo R, Monforte MT, Daquino A, Rossitto A, Maur DD, Galati EM (1999). "Antiulcer activity of *Salvadora persica* L.: structural modifications." *Phytomedicine*. 6(5): 363-366.
- Sher H, al-Yemeni MH and Wijaya L (2011). "Ethnobotanical and antibacterial potential of *Salvadora persica* L: A well known medicinal plant in Arab and Unani system of medicine". *Journal of Medicinal Plants Research*. 5(7): 1224-1229.
- Sofrata, A.H. (2010). *Salvadora persica (Miswak): An effective way of killing oral pathogens*. Sweden: Karolinska Institut.
- Soleh Abdul Aziz. (2000). *Kutub al-Sittah*. Dar al Salam: Arab Saudi
- Sushil Kaur d/o Sarban Singh (2001). The Effext of chewing meswak (*Salvadora persica*) on flow rate, pH, and levels of calcium phosphate, chloride and thiocyanate in mixed saliva.
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- 1 It helps to remove stains from teeth
 - 2 It helps prevent the formation of dental caries and remove stains from teeth.
 - 3 It is very effective in preventing the formation of dental caries because of its ability to dampen the enamel and reaches the potential formation of dental caries. It also has a barrier of damage or decay.
 - 4 It strengthens capillaries of the gums and prevents gum swelling and help to heal and repair tissue.
 - 5 It helps to heal swollen gums and have antimicrobial effects. Tannin or tannic acid is a chemical mixture of Gallic acid.
 - 6 Resins and tannins have astringent effect on mucous membrane and form a layer that protects the enamel surface from dental caries.
 - 7 Alkaloids of the *Salvadorini* in siwak have antibacterial effect as well.
 - 8 It is very effective in reducing the attachment of the tooth surface and reduces plaque accumulation in the mouth.
 - 9 Silica in siwak acts as an abrasive material to remove impurities to whiten the teeth.
 - 10 It gives freshness in the mouth and eliminates bad breath