

Siwak as a Prophetic and Evidence-Based Oral Hygiene Tool: A Qualitative Study among Islamic Scholars

Siwak Sebagai Alat Penjagaan Kesihatan Mulut Menurut Sunnah dan Berdasarkan Bukti: Satu
Kajian Kualitatif dalam Kalangan Sarjana Islam

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ABSTRACT

Oral hygiene care and practice, siwak, which adopts Prophet Muhammad's (Peace be upon Him, hereafter, PBUH) sunnah, remains unclear. As such, this study aims to explore and critically appraise the Prophetic practice of siwak according to Islamic literature, and in the light of current clinical evidence to clarify siwak as the oral hygiene practice prescribed by the Prophet (PBUH). Semi-structured one-to-one interviews were conducted among local contemporary Islamic scholars. The questions prepared were based on literature review and focused on toothcleaning practices of the Prophet (PBUH) as well as how the siwak was prepared and kept, as reported in documented narrations. Interview transcripts were analysed using thematic approach while content analysis of the referred narrations of hadith was made to provide a triangulation of the overall siwak use framework. The investigation revealed that horizontal tooth-brushing was highly recommended, and that al-Arak tree sticks are preferred to be 1) specifically prepared, 2) held steadily in the right hand, 3) used between two to five minutes depending on the goal, and 4) hygienically stored. It was also found that improper siwak practice may significantly suppress the clinical advantages. Thus, these findings substantiate future evidence-based guidelines on optimal oral hygiene care for siwak user based on authentic Islamic source.

Keywords: Oral health; siwak practice; religious beliefs; hadith; oral hygiene

ABSTRAK

Penjagaan dan amalan kesihatan mulut menggunakan siwak yang merupakan sunnah Nabi Muhammad SAW, masih tidak jelas. Oleh yang demikian, kajian ini menekankan penerokaan amalan bersiwak dan menilai secara kritis kesusteraan Islam serta mengambilkira pembuktian klinikal terkini bagi menjelaskan penjagaan kesihatan mulut sebagai mana dilakukan oleh Nabi Muhammad SAW. Temubual semi-struktur secara temu muka bersama sarjana Islam tempatan telah dijalankan. Soalan-soalan yang disediakan adalah berdasarkan kajian perpustakaan dan tertumpu kepada amalan pembersihan gigi oleh Nabi Muhammad SAW serta bagaimana siwak disediakan dan

disimpan, seperti yang dilaporkan dalam riwayat yang didokumenkan. Transkrip temubual dianalisis menggunakan pendekatan tematik manakala analisis kandungan riwayat hadis yang dirujuk dilakukan untuk memberikan triangulasi kerangka penggunaan siwak secara keseluruhan. Hasil kajian mendapati bahawa memberus gigi secara mendatar adalah sangat digalakkan, dan ranting pokok al-Arak lebih digemari untuk 1) disediakan secara spesifik, 2) dipegang dengan stabil di tangan kanan, 3) digunakan selama dua hingga lima minit bergantung pada tujuan penggunaannya, dan 4) disimpan dalam keadaan bersih. Ia juga didapati bahawa amalan bersiwak yang tidak betul boleh merencatkan kelebihan kesan klinikal dengan ketara. Oleh itu, penemuan ini akan menyokong penghasilan garis panduan yang berasaskan bukti kajian, berkaitan penjagaan kebersihan mulut yang optimum bagi pengguna siwak berdasarkan rujukan Islam daripada sumber sahih.

Kata kunci: Kesihatan mulut, amalan bersiwak; kepercayaan beragama; hadis; kebersihan mulut

INTRODUCTION

Historically, pre-Islamic communities used siwak or chewing sticks as oral hygiene aids (Khalid & Taha 1995). During the Islamic period, Prophet Muhammad (Peace be upon Him, hereafter, PBUH) favoured and recommended siwak for worship use. The practice involving siwak was subsequently adopted by the Prophet's (PBUH) companions and Muslims as part of religious duties (Bos 1993). It is the Prophet's practice that applicable to modern medicine particularly in maintaining oral hygiene (Khader et al. 2016; Muhammad Remy et al. 2021). As such, the significance of siwak in dental hygiene continues to be emphasised in Islam, symbolising purity alongside religious obedience (Owens & Sami 2016). In their efforts to convey Islamic teachings across the world, congregation tabligh (jamat tabligh) remained committed to the Prophetic practice of oral hygiene (Bos 1993; Metcalf 2003).

Siwak is prevalent for several important reasons. Firstly, siwak was used to demonstrate obedience to religious beliefs (Agbor & Azodo C 2013; Alayan et al. 2017; Atheer et al. 2018). Secondly, siwak was adopted as part of customary beliefs (Nacakgedigi 2020). Thirdly, personal discretion in the selection of oral hygiene is usually associated with affordability and professional recommendations (Laing et al. 2008). Next, siwak as low-cost oral hygiene care works effectively to control plaque, making it appropriate for low-income communities (Jorgen 2012). Because of its low price and easy availability, many Muslims in developing countries and rural areas used siwak (Carneiro et al. 2011; Cheema et al. 2017; Diouf et al. 2013; Ekowmenhenhen et al. 2019; Kalita et al. 2016; Odongo et al. 2011; Quadri et al. 2018).

Siwak has been recognised and encouraged by the World Health Organisation (WHO) to be used as an alternative device for mechanical plaque control. Regardless of the mechanisms, the WHO-sanctioned guidelines emphasise siwak toothbrushing method and practice as effective oral hygiene (World Health Organization 1987). In addition, clinical investigations revealed that siwak effectively removed plaque and reduced gingivitis although some users reported receding gums (gingival recession), a possible complication following inappropriate siwak applications. Nonetheless, the actual techniques of these practices are not thoroughly described in the literature (Haslinda et al. 2021).

The dramatic surge in reports concerning siwak as a Muslim practice reveals two significant gaps. Firstly, compliance with Prophet's siwak practice and toothbrushing techniques varied (Ahmad Zharif et al. 2020). Secondly, Muslims' knowledge about siwak method and practice as promoted by Prophet (PBUH) is generally limited despite siwak positive association with oral care (Fatin Nur Majdina et al. 2014). As such, hadith interpretation (Muslim textual source guiding source) that contains Prophet's (PBUH) narrations, actions, and deeds is pertinent to demonstrate critical knowledge (Ariffin 1995; Nur Syahadah & Mohd Akil 2016). To analyse hadith interpretation (istinbat hadith) is to encourage effective siwak community practice. Therefore, the extensive exploration of siwak method and practice as expressed by the Prophet (PBUH) from the perspective of contemporary Islamic scholars is presented. These scholars had undergone formal Islamic education on both textual and cultural interpretations of Islamic literature and their views are therefore more accurate than the layman's perspectives. By focusing on these scholars' perspectives, comprehensive guidelines on oral hygiene care might better be established.

METHODS

First, the university ethical committee approved the investigation (JEP-2021-567). Second, a qualitative approach was used by employing semi-structured individual interviews to gather participants’ views spontaneously (Siti Uzairiah 2016). Third, a purposeful sampling was used to specifically select qualified and locally recognised contemporary Islamic scholars who are experts in either the areas of *hadith*, *seerah*, *fiqh* and *usul fiqh* (Kristi et al. 2015). Following individual interview invitations and contacts, the participants were informed of the investigation through written information. Finally, consent was acquired before the interviews, scheduled based on participants’ convenience.

Microsoft Teams or Google Meet were used to set up interviews based on the participants’ discretion. Interviewers were dental professionals, who verbally declared no relationship with participants. Using interview protocols, the interviews which were conducted between August and October 2021 lasted anywhere between 60 to 100 minutes. The open-ended questions were prepared based on literature review concerning *siwak* applications (Table 1). We started the interview with a series of standard questions regarding demographics, background, and work experience. This was followed by an introduction question about the importance of *siwak* practice in oral hygiene care. Finally, the subsequent

questions focused on *siwak* methods and practices based on the scholars’ interpretation of relevant prophetic narrations (Daily hadith online n.d).

Interviews were transcribed immediately. The transcription was read by the participants to 1) verify accuracy, relevancy, and precision and 2) clarify missing points and additional insights (Hagens et al. 2009). Thematic analysis ensued concurrent with the data collection to ensure parallelism to the insights. Emergent issues that required further exploration in subsequent interviews were identified. At the same time, the investigators developed greater understanding of the entire research questions.

Specifically, thematic analysis was adopted firstly through transcript repeated readings and secondly, early impression notes. Thirdly, text segmentation and coding labels were carried out to draw parallelism to the research questions. Because a single text extracted data may be identified with multiple codes, and that codes could have been associated with more than one theme, the codes were cross checked. Previously generated codes were modified after the second transcript code streamlining. As such, the data analysis process continued until no new codes and themes were generated. Finally, potential patterns or connections between items that might have contributed to the theme were recorded. The systematic analytical process used Microsoft word and the data were transferred to computer software ATLAS. ti 9 (ATLAS.ti Scientific Software Development GmbH) for further analysis.

TABLE 1. Interview protocol

Introduction	Greeting The lead interviewer introduced each interviewer and thanked the interviewee for making time to participate in the interview.
Data confidentiality	Would like to inform that this session is recorded (audible and visually) to ensure that all information is obtained. The data will be made into reports, and which may be published, and the names of each participant will be kept confidential.
Introduction to research activity	This session aims to obtain information related to the practice of <i>siwak</i> from the perspective of contemporary Islamic scholar. You are suggested to state the source of evidence, whether from <i>hadith</i> or other references. You may be asked to demonstrate on the method of <i>siwak</i> practice.
Introductory question	Please introduce yourself, working experience and academic background.

continue

cont.

Interview questions		
Literature review	Specific objectives	Questions
Method and practice of siwak		
<p>Based on surveys and interviews: Despite the availability of conventional toothbrushes, some people prefer <i>siwak</i> because:</p> <p>a. Its low cost and easily available, <i>siwak</i> is consumed by most people in underdeveloped countries, particularly those living in rural areas (Carneiro et al. 2011; Cheema et al. 2017; Diouf et al. 2013; Ekowmenhenhen et al. 2019; Kalita et al. 2016; Odongo et al. 2011; Quadri et al. 2018).</p> <p>b. Religious beliefs accounted for a higher percentage of <i>siwak</i> preference (Agbor & Azodo 2013; Alayan et al. 2017; Atheer et al. 2018).</p> <p>c. They believed that <i>siwak</i> was more effective than toothbrushes or other devices at cleaning teeth (Agbor & Azodo 2013; Alayan et al. 2017).</p> <p>d. After brushing with <i>siwak</i>, they feel refreshed and have whiter teeth (Atheer et al. 2018).</p> <p>Based on clinical studies:</p> <p>a. Most of the studies had no detail on the technique or method of <i>siwak</i> use, grasping technique and preparation of chewing stick (Meshari et al. 2004; Bhambal et al. 2011; Dizaye & Zainab 2020; Aeeza et al. 2014; Punit Patel et al. 2012; Noha et al. 2021).</p> <p>b. <i>Siwak</i> was practiced at different frequencies and for different lengths of time, with the longest being five minutes (Hosam et al. 2017; Aeeza et al. 2014).</p> <p>c. The adjunctive application of <i>siwak</i> has emerged among global population (Atheer et al. 2018; Haliza et al. 2016; Fahd 2019; Dogar & Jaseem 2005; Faisal Awad 2020).</p>	<p>To investigate the views of contemporary Islamic scholars regarding <i>siwak</i> practice.</p> <p>To investigate the method of <i>siwak</i> practice from perspective of <i>hadith/fiqh/seerah</i>.</p>	<p>1. What are your views regarding the importance of <i>siwak</i> practice in oral hygiene care?</p> <p>Probing questions: Can you elaborate on that? What do you mean by that?</p> <p>1. How is the method of <i>siwak</i> practice from perspective of <i>hadith/fiqh</i>?</p> <p>2. What are the guidelines of <i>siwak</i> practice?</p> <p>3. How long should <i>siwak</i> be applied?</p> <p>4. What is the ideal frequency of <i>siwak</i> practice?</p> <p>5. What are the recommendations and cautions in <i>siwak</i> practice?</p> <p>Probing questions: Can you elaborate on that?</p> <p>Can you demonstrate.... What do you mean by that?</p>
Method and <i>siwak</i> practice according to the Prophet (PBUH)		
<p>Based on survey:</p> <p>a. Despite the fact that 94% of Malaysian were aware of the Prophet (pbuh) use of <i>siwak</i>, the Prophet's <i>siwak</i> practice was still unclear (Fatin Nur Majdina et al. 2015).</p> <p>b. Compliance with Prophet's <i>siwak</i> practice and toothbrushing techniques varied (Ahmad Zharif et al. 2020).</p>	<p>To investigate the method of <i>siwak</i> practice by Prophet Muhammad (PBUH).</p>	<p>1. How did the Prophet (PBUH) use <i>siwak</i>?</p> <p>2. How did the Prophet (PBUH) prepare <i>siwak</i> stick?</p> <p>3. How about the experience of the Prophet's (PBUH) companions, regarding <i>siwak</i> practice?</p> <p>Probing question: Can you elaborate more on that? Can you demonstrate.... What do you mean by that?</p>

RESULTS

Findings emphasising *siwak* are presented in the context of 1) preparation, 2) practices, and 3) methods. P1, P2, P3, P4 and P5 were used as pseudonyms to refer to the five participants:

SIWAK PREPARATION

1. What is the source of *siwak*?

Participants were unanimous in that the best source (*afdal*) of *siwak* is derived from Arak tree (*Salvadora persica*). Arak tree sticks are soft and suitable for *siwak*. Alternatively, *siwak* can be harvested from other non-poisonous trees. Participants (P1, P3 and P4) described olive (*zaitun*), dates (*tamar*), jujube (*bidara*), *Azadirachta indica* (*semambu*), peach, and berry trees as common sources of *siwak*. According to the narrations:

i) On the authority of Sahih Bukhari *Hadith*, it was indicated that the Prophet (PBUH) used date palm tree leaflets when he fell ill. During his last moments, Abdurrahman Abu Bakr, a companion, was requested by the Prophet (PBUH) to pick up date palm leaflets that were located nearby at the Prophet's critical time before his passing.

(Sahih Bukhari, 722) (P4).

ii) On the authority of Imam at-Tabarani, it was indicated in al-awsut that the Prophet's (PBUH) companion, Muaz bin Jabar, recommended that olive tree woods be used due to 1) its high quality, 2) olive trees being blessed trees (*barakah*), and 3) the previous prophets' practices. (P4).

Subsequently, fresh sticks reveal great amounts of ingredients and soft textures. Most of the participants elaborated the following descriptions:

"...the feelings of 'hot' or 'spicy' as we take a bite out of the rubber..." (P1)

"...tree twigs that are fresh are usually 'spicy'. In other words, al-Araak rubber tree twigs may feel as if there are sharp spines in our mouths..." (P2)

Participants believed that *siwak* is available in a variety of colours that indicate their freshness, but some might better be avoided:

"...commonly available tree twigs appear in light brown. Another commonly found colour is dark brown (hard texture), which may not accommodate the structure of the mouth." (P2)

"Not recommended to use extremely hard or dry *siwak* sticks..." (P1, P2)

"...extremely dry tree twigs could substantially damage our gums..." (P2)

Several trees' twigs are prohibited such as rihan or basil, pomegranate, sugarcane, and bamboo (P3 and P4). Pomegranate trees may cause illnesses due to their harmful toxic properties or constituents.

2. What is *siwak* ideal size?

Hadith does not specify standard *siwak* sizes and diameters. However, all participants agreed that *siwak* selection depended upon individual discretion and prioritised efficient grip and handle. P1, P3, and P4 agreed that the length should be about one hand's span, not shorter than four fingers wide; longer sticks were prohibited. Excessively long *siwak* might pose difficulty and contribute to waste. The participants highlighted:

"There are also indications that longer tree twigs may invite jinn or shaytan's whisper into Muslims' hearts, but these Islamic inflected indications or sayings are not well supported." (P3 and P4)

"As recommended by Islamic scholars, the length of *siwak* tool must be one hand's span, based on normal individuals' fingers..." (P4)

"Some Islamic scholars legitimise that *siwak* tree twig that measures beyond one hand's span in length is a detestable, offensive act of worship (*makrooh*)." (P3 and P4)

3. How are end brushes prepared for use?

Based on a *hadith* (P3) and fiqh expert (P4), it is not advisable (*makrooh*) to form *siwak* stick end brushes as two-sided brushes are considered inappropriate. Furthermore, P2 recommended that dried sticks be moistened before use. P1 and P2 highlighted that as quoted in Sahih al-Bukhari (890), the preparation of brush area at one end complied with Saiyidanatul Aisya's method; tree twigs are softened or trimmed, or one end of the stick is bitten or chewed to form brush-like softness. If the end brushes have worn out or if old brushes are being used, then the end parts are cut and prepared anew.

The *hadith* expert, P2, highlighted that the frequency to remove used tree twig parts depends upon the necessity, as the ideal frequency is not

determined. Specifically, the frequency of use relies on the degree of tree twig spiciness; the greater the taste of fresh rubber in *siwak* tree twigs, the more ideal or acceptable it is. Also, the greater the frequency of *siwak* use, the greater the frequency of used tree twig removal (P4). If the end brushes lose their function, then the end brushes are cut, and new parts of brush are prepared. Furthermore, no *hadith* is available to indicate if every day *siwak* stick chewing is required. As such, depending on one's opinions and experiences, the stick ends are cut to accord new sets of bristles (P1).

SIWAK PRACTICE

1. When is *siwak* used?

P3 reported that Prophet (PBUH) used *siwak* for specific purposes, frequently in the commencement of worships. As such, *siwak* practice is used:

i. for worships

It was narrated on the authority of Abdullah bin Abas that a *hadith* indicates that angels (*malaykat*) generally favour individuals who used *siwak* for oral hygiene. The Prophet (PBUH) practised *siwak* as he rose in the morning one-third of the night (approximately at 3 a.m. or 4 a.m.), opened the windows and cleaned after himself following urinating or defecating. Also, the Prophet (PBUH) cleaned his mouth by applying *siwak* and completed this step when his sputum/phlegm was released, as narrated by Abu Burda:

My father said, "I came to the Prophet (PBUH) and saw him carrying a *siwak* in his hand and cleansing his teeth, saying, 'Ukhh' Ukhh'," as if he was retching while the *siwak* was in his mouth." (Sahih al-Bukhari, 244)

At another level, *hadith* revealed that Prophet (PBUH) recited Qur'an and prayers during the night (*tahajjud*) having completed *siwak* routines. Also, *siwak* was applied 1) before *Fard* (compulsory) prayer, 2) during Qur'an recitation, and 3) routined remembrance or mentioning of Allah (*dhikr*).

ii. during ablution and upon prayer

P1 believed that there was a misconception concerning *siwak* upon prayers. Ideally, to dispense of *siwak* is to do so upon a mouth rinse (ablution). Toothbrushing removes debris and plaque attached to the tooth surface during rinsing (Sunan al-Nasa'i,

7). Subsequently, P2 and P3 believed that *siwak* was central during ablution or prayers commanded by the Prophet's (PBUH) *hadith*. P3 highlighted:

"If one has a valid ablution used to perform Magreeb prayers, the same wudu' can be used to apply *siwak* that is intended for Isha' prayers."

Therefore, this explanation might be useful to interpret the commandments, "during ablution" and "before every salat (prayer)."

iii. upon waking and before bed

It is a voluntary act of worship tradition (sunnah) to use *siwak* upon getting up from bed during some parts of the night (*qiyamulail*):

"According to Huzaifah bin Yaman R.A, when the Prophet (PBUH) rose from bed at night or the end of a third of the night, he brushed his teeth, implying that the Prophet had *siwak*". (al-Bukhārī 1987; al-Nasa'i 2015) (P2)

Another narration mentioned that the Prophet (PBUH) did not sleep but he placed *siwak* by his side. Ibn Shihaab said, "Humaid bin Abdur-Rahman bin 'Awf told me that a man among the companions of the Prophet (PBUH) saw the Prophet (PBUH) reached across his bed and looked for a *siwak*..." (al-Nasā'i 2015)

Participants interpreted this *hadith* as:

"...once the Prophet got up from his sleep or power naps (*qaylulah*) to perform the Fajr prayer, *siwak* was applied..." (P3).

"*Siwak* is also recommended before sleeping..." (P4)

iv. before Qur'an recitation

Siwak is recommended before Qur'an recitation (P1 and P2). According to a *hadith* nar-rated by Huzaifah bin Yaman R.A, the Prophet (PBUH) applied *siwak* and recited Quran (al-Bukhārī 1987; al-Nasa'i 2007). In another *hadith*:

a) The Prophet (PBUH) said, "Clean your mouths with *siwak* because it is one of the manners to recite the Qur'an". (Musnad Bazzar, 568) (P3)

b) Imam Bazzar (Rahimahullah) recorded the following narration:

Sayyiduna 'Ali (radiyallahu 'anhu) reported that the Prophet (PBUH) said:

“When a person uses a *miswak* and then stands up to offer salah, an Angel stands behind him and listens to his recital. The Angel then comes closer and places its mouth on this person’s mouth. Whatever this person recites then enters Angel’s stomach. So, purify your mouth [by using the *siwak*] when reciting Quran”. (Musnad Bazzar, 603) (P4).

P3 believes that the Quran is *kalamullah* (Allah’s words); to read these holy scriptures is to read them using cleaned teeth and mouths. P4 suggested *siwak* during reading, narrating *hadiths*, learning Islamic sciences, and reading books.

v. upon house entrance

The Prophet (PBUH) ensured that his family members met him with an odourless mouth. As Aisyah mentioned: the Prophet (PBUH) first applied *siwak* upon house entrance. Shuraih asked ‘Aishah:

“What would the Prophet (PBUH) do as soon as he entered the house?” She replied: “(He would use) *siwak*” (Abu Daud 2008; al-Nasa’i 2015). (P1, P2, P3 and P4)

vi. bad mouth odour and yellow teeth

P1, P2, and P4 viewed *siwak* as a voluntary act of worship (*sunnah*) particularly when one’s breath began to induce a bad odour. Prophets usually offer *zikr* prayer, begging for for-giveness from Allah. Guilty and embarrassment ensue if bad breath induced from onions permeates during prayers. Ibn ‘Umar narrated that during the holy battle of Khaibar the Prophet (PBUH) said:

“Whoever ate from these plants, garlic and red onions, they should not enter our mosque” (al-Bukhārī 1987). (P1)

vii. on Fridays

Siwak on Fridays is a voluntary act of worship tradition (*sunnah*). As reported by ‘Ab-dur-Rahman bin Abi Sa’eed through his father, the Prophet (PBUH) emphasised *siwak* on Fridays:

The Prophet (PBUH) said: “Ghusl should be performed on Friday by everyone who has reached the age of puberty and using *siwak*, and he should put on whatever he can using perfume” (al-Nasa’i 2015). (P2, P3, and P4)

viii. meeting guests

Participants (P1 and P3) believed that the Prophet (PBUH) applied *siwak* before meeting the guests.

ix. before death

The participants highlighted that the Prophet (PBUH) used *siwak* in his dying moments. It was narrated by his wife who prepared *siwak* and handed it to the Prophet (PBUH) to clean his mouth until he was invited by the Divine. This shows that he turned to God (Allah) with a clean mouth. As narrated by Aisha (r.a):

It was one of the favours of Allah towards me that the Prophet (PBUH) died in my house on the day of my turn while he was leaning against my chest and Allah made my saliva mix with his saliva at his death. ‘Abdur-Rahman entered upon me with a *siwak* in his hand and I was supporting (the back of) the Prophet (PBUH) (against my chest). I saw him looking at it (*siwak*) and I knew that he loved *siwak*, so I said (to him), “Shall I take it for you?” He nodded in agreement. So, I took it, and it was too stiff for him to use so, I said, “Shall I soften it for you?” He nodded his approval. So, I softened it and he cleaned his teeth with it. In front of him, there was a jug or a tin, (The sub-narrator, ‘Umar is in doubt as to which was right) containing water. He started dipping his hand in the water and rubbing his face with it, he said, “None has the right to be worshipped except Allah. Death has its agonies.” He then lifted his hands (towards the sky) and started saying, “With the highest companion,” till he died, and his hand dropped down. (Sahih al-Bukhari, 4449, 4438, 4450) (P1, P2, P3 and P4)

2. What parts of the mouth require cleaning?

Although some participants highlighted that the Prophet (PBUH) used *siwak* to clean his teeth and tongue against microbial plaque, P1 and P4 highlighted that brushing also included the palate and confirmed by P5. It was narrated on the authority of Abu Musa al-Ashari RA that:

“I came to Prophet Muhammad (PBUH), and I found that the *siwak* was used by the prophet. Prophet Muhammad (PBUH) did not only brush his teeth, but Prophet Muhammad (PBUH) also cleaned his tongue and upper palate.” (al-Nasa’i 2015) (P1)

P2 and P3 emphasised brushing that involved teeth and tongues:

“Prophet Muhammad (PBUH) said that tongue brushing must be done in such a way that the sputum, saliva, phlegm, or vomit is released. About this, some elaborations by esteemed Imams exist. For example, al-Imam al-Asqalani spoke in his lecture on Sahih Bukhari *hadith* in his kitab (book), Fathul Bari. He highlighted that *siwak* was used to clean the tongues” (P2).

“On the authority of Sunan Abu Dawud with a verified chain of transmission and Imam Ahmad’s Musnad religious books, it was indicated that Prophet Muhammad (PBUH) brushed his tongue until he knew his sputum/phlegm was released” (P3).

3. How long should *siwak* be applied?

While *siwak* application duration was unknown, individuals’ discretion was used:

“A quick brush is typically done within two minutes, but ideally, it should be completed within five minutes.” (P1)

“Greater food consumption or food residue may mean intense brushing. Lesser food consumption may require light cleansing” (P2)

“Between two to three minutes is quite ideal, based on what is thought was the practice of previous Islamic scholars and during Prophet Muhammad’s (PBUH) time” (P3)

P4 highlighted that it should be determined by the time taken to clean as opposed to complying with a specific duration:

“In general, *siwak* is used to prevent bad breath and eliminate debris from tooth and mouth surfaces. Therefore, the duration of applying *siwak* depends upon the excess odour and food contaminants. The lesser the odour or food contaminants, the lesser time it takes to complete *siwak* brushing” (P4)

4. How is *siwak* ideally stored following use?

P1 recommended that to store a *siwak* stick is to comply with public regular practice:

“The *khibrāh* or the experience of the Arabs should be followed when storing *siwak* sticks, and certain individuals utilise a container. Fill the container halfway with water and add a pinch of salt.”

The primary assistant who managed, administered, and assisted the use and maintenance of the Prophet’s (PBUH) *siwak* was Abdullah Bin Mas’ud who cleaned and preserved *siwak* tree twigs in pristine conditions. This suggests that *siwak* sticks need not be kept after use but cleaned before being stored. It was narrated on the authority of Abu Daud that after the Prophet’s (PBUH) *siwak* use, the Prophet would hand it to his wife, A’ishah, for cleaning. (Abu Daud 2008) (P1, P2)

P2 referred to the *siwak* practice of Islamic scholars: *siwak* sticks are placed where people usually place the pen, near the ear. It was narrated

on the authority of some *hadith* that the Prophet and his companions stored *siwak* sticks in their mouths. But no explicit *hadith* indicated the specific maintenance of *siwak*. P2 recommended *siwak* be washed, dried, and placed in an empty lidded container for hygiene. P3 also highlighted that *siwak* might better be placed vertically. Moreover, the Prophet (PBUH) always had *siwak* with him. The Prophet (PBUH) had a storage box or small box to store personal items for brushing, hair, and shaving. It is possible that the *siwak* was also placed in that box.

P4, too, highlighted that it is a voluntary act of worship (*sunnah*) to remove debris by removing food residues and contaminants on the end brush using al-Araak woods. The food residues and contaminants, if left untouched, may cause tooth decay, as seen in Islamic scholars’ research. *Siwak* is positioned on the left ear following the companions’ practices. However, P4 recommended that *siwak* storage should comply with current toothbrush practices and clean storage.

METHODS OF TOOTHBRUSHING

1. How is *siwak* held?

Participants collectively recommended that *siwak* be held using the right hand in the following conditions: 1) three middle fingers on top, 2) little finger under the stick, and 3) thumb placed under and near the end brush. Thus, stable handling ensures effective brushing.

2. How does one brush?

Firstly, rinse and soften the stick. After that, use the end brush that is cut afresh and replaced with new twigs or brushes. P4 recommended that one of the tips be moistened and that the moisture be sipped to prevent leprosy and skin patches. The saliva that is mixed with the tree twig’s natural properties should be released or coughed out because consumed saliva or sputum produced while brushing may invite jinn or shaytan’s whisper into Muslims’ hearts and trigger anxiety. All participants agreed that *siwak* begins on the right side because the Prophet (PBUH) prioritised the right-hand side. As stated in a *hadith*:

Narrated by Bukhari dan Muslim, Aisya (r.a) said:

“The Prophet (PBUH) likes to start from the right-hand side by wearing shoes, combing his hair, cleaning or washing, and in doing anything else.” (al-Bukhārī 1987) (P1, P3)

It was also narrated that Abu Musa Al-Ashari came to Prophet Muhammad (PBUH) while he held *siwak* in his right hand. All participants believed that Prophet (PBUH) held *siwak* horizontally. P1 quoted Imam Nawawi's method:

siwak which complied with Prophet's (PBUH) sunnah, should be held horizontally not vertically, as vertical use of holding *siwak* may cause bleeding or gum damage.

P4 recommended horizontal as opposed to vertical brushing:

Prophet (PBUH) said when you use *siwak*, you should brush horizontally (Da'if: Silsilah al-Aḥādīth al-Ḍa'īfah wal-Mawḍū'ah Mujarradah 'An al-Takhrīj, 172, *hadith* no. 865)

P1 described the sequence of brushing movement by forming a shape of the number eight (8):

"Start at the top right, pull forward, go down and continue to the left end, go up to the left end and move to the middle and go down and continue brushing to the right end"

Lastly, regular brushing might better be applied on tooth surfaces (occlusal). P4 recommended that longitudinal brushing (inside to outside) or 'zigzag' motion be used. P3 and P4 agreed on horizontal brushing that involved brushing on the surface of the inner (lingual) and outer (buccal/labial) teeth as detailed by the Islamic scholars. Horizontal brushing begins on the right side (posterior teeth) and continues through the middle of the teeth (anterior). The latter is from the left side (posterior teeth) to the middle of the teeth (anterior). That is, either cleaning the upper or lower teeth, toothbrushing should stop in the middle (anterior teeth).

However, P2 recommended that individuals' dental conditions be considered while making decisions concerning horizontal or vertical toothbrushing. P5 also agreed horizontal brushing, or otherwise, depends upon the teeth alignment and routine toothbrushing. However, P3 dismissed vertical brushing, citing it as a weak opinion (*marjuh*). Specifically, vertical brushing is not advisable (*makruh*) due to its potential to damage gums. P1 and P2 recommended gentle brushing to prevent traumatic teeth and gum injuries. P1 and P4 agreed on *siwak* inside-out brushing movement. A similar method was suggested for tongue brushing by all participants. One way to determine the effective use of *siwak* is when one coughs up mucus or phlegm:

"Prophet Muhammad (PBUH) said that tongue brushing must be done in such a way that the sputum, saliva, phlegm, or vomit is released, as narrated by Imam al-Baihaki and Imam at Tabarani..." (P3)

"The method of brushing the tongue is from inside out and not right to left, and this is clarified by al imam al-Asqalani in his lecture on the *hadith* of Bukhari in his book called Fathul Bari..." (P2)

DISCUSSION

Hadith refers to collections of the Prophet's (PBUH) narratives, deeds, and actions that generally guide Muslims in their worship as well as daily lives (Ariffin 1995). However, for maximum efficiency and safety with regards to *siwak* and oral hygiene, it is desirable that the *hadith* be accurately interpreted. Through this present study, it is acknowledged that the literature on the Prophet's (PBUH) *siwak* methods and practice was limited to few authentic *hadith* texts and narrative review (Fatin Nurmajdina et al. 2012). Moreover, this study bridges this gap by interviewing contemporary Islamic scholars to deliberate upon their interpretations of the aforementioned literature. The use of narrations (Daily hadith online n.d; sunnah.com n.d) and scientific literature triangulated the study and broaden the understanding of the research question.

The selection of appropriate *siwak* is central for safety and effective results. All participants recommended fresh *siwak* that benefits oral health and plaque control through high chemical amounts and soft textures. Although hard-bristled toothbrushes were clinically found to significantly remove plaque, more soft tissue trauma ensued (Zimmer et al. 2011). The selection of soft bristles was relatively safer (Ranzan et al. 2019) and effective to remove plaque and maintain gingival health (Ballini et al. 2021). The best source of *siwak* is Arak tree twigs used by the Prophet (PBUH) due to their softness when moistened. It was narrated by Abdullah bin Mas'ud (RA):

"I have cut for Prophet (PBUH) a toothbrush from the root of the Arak tree." (Pejabat Mufti Wilayah Persekutuan 2020)

Clinical studies acknowledged Arak tree (*Salvadora persica*) effectiveness in reducing plaque and maintaining good gingival health (Fara Azwin et al. 2021; Meshari et al. 2004; Dizaye & Zainab Yalman 2020; Abid et al.2020; Patel et al. 2012). *Siwak* chemical properties potentially inhibit plaque

formation and contain antibacterial action against selected oral bacteria (Reham et al. 2018; Chaurasia et al. 2013). P4 referred to the narration of al-Tabarani concerning the Prophet's (PBUH) olive-based *siwak* use (*Olea Europea*), provided that safe olive tree twigs are used. But the clinical investigations only employed *Salvadora persica* and *Azadirachta Indica* (neem trees) (Haslinda et al. 2021).

The *siwak* size, length, and diameter vary among *siwak* users (Mohamed et al. 2020). The end brushes are recommended on only one end of a stick. Used brush parts that are mechanically and chemically worn out are cut to prepare new end brushes. The cutting frequency is directly proportional to the frequency of use. Used brushes that are completely worn out are ineffective. So, splaying of the outer tufts beyond the toothbrush base could be used as an indicator for a change in brushes (Van Leeuwen et al. 2019). To ensure the maximal effect of its chemical properties, it is best to cut and prepare anew brush-end before every use (Reham et al. 2017). *Siwak* is used to brush teeth and tongue. However, *hadith* Sunan al-Nasa'i (3) states that Prophet (PBUH) used *siwak* until he wanted to vomit, an indication of palate brushing. *Siwak* is applied in common areas of bacteria colonization (Aas et al. 2005) since *siwak* reaches plaque on the oral structure surface (Marsh 2012). So, regular tongue brushing to remove the coating on tongue dorsum reduces oral malodour (Danser et al. 2003).

Toothbrushing is effective in maintaining oral health. The contemporary Islamic scholars recommended horizontal brushing technique, and the sequence of brushing starts with the right-hand side following the Prophet (PBUH). The basic horizontal movement bears resemblance to horizontal scrub tooth brushing techniques, Bass, and modified Bass techniques (Janakiram et al. 2018; Suhasini & Valiathan 2020). Approximately 66.7% of *siwak* users brushed vertically (Mohamed

et al. 1990) and more than half of Malaysian communities brushed vertically (56.8%) while only 27% brushed horizontally (Nor Haliza et al. 2016). Although horizontal brushing is the easiest to apply, it is significantly associated with gingival recession (Bergström & Lavstedt 1979; Heasman et al. 2015). Clinical observation revealed that *siwak* was associated with a higher incidence of gingival recession (Mohamed et al. 1991; Shetty et al. 2010) and clinical attachment loss (Ismail et al. 2000).

Two brushing patterns were revealed following the Prophet (PBUH) and Islamic scholars. However, a sequence that focused on the posterior teeth was recommended to align with plaque concentration in the quadrants (Sreenivasam & Prasad 2017). Ideally, toothbrushing removes plaques quickly without traumatising the tissue (Hagens et al. 2009; Lindhe et al. 2008). A minimum of twice, two-minute daily brushing is frequently recommended (Chapple et al. 2015). Meanwhile, *siwak* use is equated with Prophet's (PBUH) actions: at the start of everyday worship (Alayan et al. 2017; Nor Haliza et al. 2016; Ahmad Zharif et al. 2020). Extreme tooth brushing may cause soft tissue and hard tissue injuries such as gingival recession, abrasion, and toothwear (Wiegand & Schlueter 2014). Severe tooth surface loss on the cervical teeth is generally reported due to excessive *siwak* brushing (Karia & Kelleher. 2014; Saleh et al. 2017). Which may be prevented if *siwak* use restricts to maximum of five times per day (Reham et al. 2018). Variations in *siwak* handholding, brushing frequency, and storage techniques exist (Ahmad Zharif et al. 2020), but how *siwak* is stored as described by the participants bore resemblance to American Dental Association recommendations (Ankola et al. 2009; Barnett et al. 2014). Table 2 summarises and tabulates the theme of *siwak* method and practice from the perspective of contemporary Islamic scholars, employing narrations and scientific literature triangulation.

TABLE 2. Summary of method and practice of *siwak* from perspective of contemporary Islamic scholars and evidence-based literatures

Items	Perspective of contemporary Islamic scholars	Literatures
Preparation of <i>siwak</i> stick		
Source	The best source of <i>siwak</i> is from Arak tree (<i>Salvadora persica</i>)	<i>Siwak</i> from Arak tree (<i>Salvadora persica</i>) effective to reduce oral plaque and maintain gingival health (Meshari et al. 2004; Dizaye & Othman 2020; Patel et al. 2012). It contains chemical properties that potentially inhibit plaque formation and have an antibacterial action against selected oral bacteria (Reham et al. 2018; Chaurasia et al. 2013).

continue

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Texture	Soft brush-end	Selection on soft bristles was even safer (Ranzan et al. 2019) and effective to remove plaque and maintain gingival health (Ballini 2021).
Size (length and diameter)	The size of a <i>siwak</i> stick, concerning length and diameter of <i>siwak</i> used were depending on individual discretion.	This could explain by a survey discovered variation in <i>siwak</i> size among users in our communities (Ahmad Zharif et al. 2020).
Brush-end	Brush parts that have been used and lost mechanical and chemical function are to be cut to prepare new brush-end. The cutting frequency is directly proportional to the frequency of use.	This recommendation explained when toothbrushes with extreme wear were less effective than those with no or light wear. Therefore, splaying of the outer tufts beyond the base of the toothbrush is a condition that indicates it is time to change the brush and bristle splaying appears to be a more appropriate measure of brush replacement time (Van Leeuwen et al. 2019). To ensure the maximal effect of its chemical properties, it is best to cut and prepare anew brush-end before every use (Reham et al. 2017).
Method of <i>siwak</i> practice		
Holding the stick	<i>Siwak</i> stick holding method with 3 middle fingers above, little finger under the stick and, thumb under and near to the brush-end	From the observation (Haliza et al. 2014), the techniques of holding a <i>siwak</i> were comprises: i. five finger grasp (stick held in the palm) ii. three on upper side and two fingers on lower side (most common) However, pen-graps (55.6%) and thumb-grasp (41.7%) technique observed by Mohamed et al. (1990).
Toothbrushing technique	a) Collectively Islamic scholars recommended of horizontal brushing technique (P1, P3, P4) b) Both horizontal and vertical toothbrushing technique in <i>siwak</i> practice depending on the condition or alignment of the teeth (P2, P5)	The basic horizontal movement is also applied in horizontal scrub tooth brushing techniques and Bass technique (Suhasini and Valiathan 2020). Bass and Modified Bass technique are the most recommended techniques and more effective in the efficient plaque removal compared to the other toothbrushing techniques (Janakiram et al. 2018). The horizontal brushing technique is the common method of toothbrushing, and it is easiest to apply. But it is significantly associated with gingival recession (Bergström & Lavstedt 1979; Heasman et al. 2015). However, majority (66.7%) of users brush vertically (Mohamed et al. 1990), and similarly most of the users in our communities brushed vertically (56.8%) and only 27% brushed horizontally (Nor Haliza et al. 2016).
Sequence of toothbrushing	<ul style="list-style-type: none"> ● <i>Siwak</i> starts on the right. ● Sequence of toothbrushing forming shape of number “8”. ● Begins on the right side (posterior teeth) and continues till the middle of the teeth (anterior). Applied both outer (buccal/labial) and inner (lingual/palatal) tooth surfaces, either upper or lower. 	Most of the users start brushing on the upper right side (64.9%) and only 10.8% brushed in forming figure of number “8”. Furthermore, there were areas omitted upon brushing, particularly inner tooth surfaces (palatal/lingual) (Nor Haliza et al. 2016). The patterns of sequence in toothbrushing should facilitate effective toothbrushing.

continue

cont.

Tongue & palate cleaning	Toothbrushing extended to tongue and palate	The <i>siwak</i> use has covered oral surfaces that are the common sites for bacteria colonization (Aas et al. 2005). <i>Siwak</i> is effective in preventing oral and gum diseases since their ability to reach plaque on the surfaces of oral structures (Marsh 2012). Regular tongue brushing, with focused on removing the coating on the dorsum of the tongue, was effective in reducing oral malodour (Danser et al. 2003).
Frequency	At least 5 times daily	The universal recommendation of to brush twice a day and at least 2 minutes (Chapple et al. 2015; American Dental Association n.d). Extreme tooth brushing (high frequency and long duration) may cause soft tissue and hard tissue injury such as gingival recession, abrasion and toothwear (Wiegand & Nadine 2014). Generalised severe tooth surface loss on the cervical teeth of the user was the causal of excessive use of <i>siwak</i> (Karia & Kelleher 2014; Saleh et al. 2017). Which may be prevented if <i>siwak</i> use restricts to maximum of five times per day (Reham et al. 2018).
Duration	<ul style="list-style-type: none"> Participants believed that the time spent on <i>siwak</i> depends on individual discretion and the time required to achieve the objective of <i>siwak</i>. Within 2 to 5 minutes 	
Storage	<ul style="list-style-type: none"> The method to store a <i>siwak</i> stick is according to regular practice and suggested kept in a container halfway with water and add a pinch of salt. Wash, clean and excavate the brush-end to remove debris or food waste from the brush after <i>siwak</i> and dried it. Placed it in an empty lidded case or box. <i>Siwak</i> stick should be placed vertically 	<p>The storage methods for <i>siwak</i> as suggested by participants were in line with American Dental Association's recommendation (Ankola et al. 2009; Anon. 2006; American Dental Association 2019):</p> <ul style="list-style-type: none"> Rinse the toothbrush thoroughly after each use to remove any remaining paste and debris. Store toothbrushes in an upright position after use and allow them to air dry. <p>Dipped the brush in antiseptic solution prior to the storage was considered the best practice (Barnett et al. 2014).</p>

CONCLUSION

The Prophet's (PBUH) *siwak* methods and practice as expressed in this study were greatly influenced by hadith interpretation and consented propositions (*ijma'*). Inaccuracy and misinterpretation from unverified hadith and loosely explained prophetic practices may result in inappropriate handling or improper brushing technique that may cause receding gums. These findings on evidence-based guidelines that incorporate scientific and Islamic insights substantiate strong understanding and awareness of *siwak* use, encouraging better oral healthcare practices.

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AUTHORS' CONTRIBUTIONS

Haslinda Ramli: Conceptualisation-designed and conducted the study; methodology-data acquisition, data analysis, and interpretation; writing-drafted the original manuscript and edited the final version. Shahida Mohd Said: Provide co-supervision; methodology- involved in data acquisition and interpretation; writing-critically revised and edited the manuscript. Ahmad Munawar Ismail: Advisory on issues pertaining to this study and involved in

identifying the Islamic experts; writing-revised the content and the appropriate used of Islamic terms and references. Tuti Ningseh Mohd Dom: Provide main supervision; conceptualisation-designed the study; methodology- involved in data acquisition and interpretation; writing-critically revised and edited the manuscript. All authors have read and agreed to the published version of the manuscript.

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