Published in final edited form as:

J Health Care Poor Underserved. 2013 November ; 24(4): 1474–1485. doi:10.1353/hpu.2013.0154.

The Cultural Basis for Oral Health Practices among Somali Refugees Pre- and Post-Resettlement in Massachusetts

Ms. Jo Hunter Adams, MPH, MA,

Refugee and Immigrant Health Program, Massachusetts Department of Public Health and a PhD candidate at the University of Cape Town School of Public Health and Family Medicine (South Africa)

Ms. Samorga Young, BSc,

Refugee and Immigrant Health Program, Massachusetts Department of Public Health

Dr. Lance D. Laird, PhD,

Assistant Director of the Boston Healing Landscape Project and Assistant Professor of Family Medicine, Boston University School of Medicine

Dr. Paul L. Geltman, MD, MPH,

Medical Director of the Refugee and Immigrant Health Program, Massachusetts Department of Public Health and Assistant Professor of Pediatrics at the Harvard Medical School

Ms. Jennifer J. Cochran, MPH,

Director of the Refugee and Immigrant Health Program, Massachusetts Department of Public Health

Mr. Ahmed Hassan,

Refugee and Immigrant Health Program, Massachusetts Department of Public Health

Dr. Fadumo Egal, BDS,

Instructor of Health Policy and Health Services Research at the Boston University Goldman School of Dental Medicine

Dr. Michael K. Paasche-Orlow, MD, MPH, and

Associate Professor of Internal Medicine at the Boston University School of Medicine

Dr. Linda L. Barnes, PhD

Director of the Boston Healing Landscape Project and Professor of Family Medicine, Boston University School of Medicine

Abstract

Background—Oral health disparities related to socioeconomic status have been well described in the U.S., but oral health among refugee groups has not been well characterized. This article examines oral health among Somali refugees in Massachusetts.

Methods—Eighty-three (83) participants were purposively selected for an in-depth, open-ended interview related to oral health.

Results—Older individuals associated use of the stick brush with the Islamic practice of cleansing before prayer. When unable to find stick brushes in the U.S., many adopted the Western

toothbrush. Parents expressed concern that their children had adopted U.S. practices of brushing with a toothbrush only once or twice a day.

Conclusions/implications—Somali oral health practices have changed following arrival to the U.S., but the underlying model for oral health care remains rooted in Islam. By acknowledging the value of traditional practices, dentists may communicate the value of Western preventive and restorative dentistry, and recommend approaches to integrating the two.

Keywords

Oral health; Somalia; refugees; refugee health

Immigrants often originate from populations with disease patterns different from those at their destination.¹ The “healthy immigrant effect,” a phenomenon where newcomers on average have better health status or outcomes than their native-born counterparts, is well documented. Premigration experiences, such as differential risk exposures and health behaviors have been proposed to explain this effect. A key finding in the literature on immigrant health is that over time, immigrants approach the health risk profile of their host country, and in some cases have increased risk.^{2,3}

In the case of newly arrived refugees, this risk may be related to socioeconomic status, language, and cultural barriers. Exposure to almost all material, psychosocial, and behavioral risk factors related to poor health is influenced by socioeconomic status. This includes oral health; the burden of oral diseases and conditions is disproportionately borne by disadvantaged populations.^{4,5,6} In particular, immigrants and minority ethnic groups have often been designated as “whole populations at risk” for oral health deterioration primarily because of their generally adverse life circumstances.¹ Yet, within entire populations or even subgroups there remains significant heterogeneity in disease susceptibility and vulnerability to inadequate health care.

Given this juxtaposition of vulnerability (related to such factors as socioeconomic status, language, history of trauma) and resilience among refugees, this study was designed to advance understanding of Somali oral health and the factors influencing Somali oral health status. Somalis are one of largest refugee populations to have entered the U.S. in recent years. The civil war that began in 1991 has produced over a million refugees. Between 1992 and 2009, 84,746 Somali refugees have been resettled in the U.S.,⁷ including approximately 3,027 in Massachusetts (unpublished data, Massachusetts Department of Public Health). In addition to refugees formally resettled in Massachusetts during this period, many Somali families moved to Massachusetts from other states or with other kinds of visas. The oral health status of Somalis in the U.S. and the factors impacting this status are poorly understood. Past research into Somali oral health is mainly limited to gray literature that highlights the high value placed on oral health by Somalis, while presenting the new oral health risks associated with refined sugar in the country of resettlement.^{8,9}

This article draws on data from the qualitative arm of a broader mixed-methods study that employed an extensive questionnaire and clinical exam to identify factors associated with access to dental care, English language skills, and the current oral health status of Somali and Somali Bantu refugees in Massachusetts. The quantitative arm of the study found that, contrary to expectations based on findings among other newly-arrived refugee populations, Somalis generally had good oral health and oral health practices.¹⁰

Given the good oral health status found overall among Somalis arriving in the U.S. in the last 10 years, in this paper we explore this population’s self-reported oral health explanatory models and practices. Exploring how recently arrived Somali refugees understand, negotiate,

and make decisions around their personal oral health care practices may inform interventions among Somalis and other refugee populations, and provide a basis for communication between dental care providers and refugee patients.

Methods

Our mixed-methods study identified: 1) trends in the oral health care practices of migrant Somali adults from childhood through 10 or fewer years post-U.S. resettlement and 2) shifts in explanatory models related to the cause of oral disease and the maintenance of good oral health based on a participants' length of stay in the U.S.. The broader project from which we draw these data had two arms: a *quantitative arm* involving 439 Somali subjects in a cross-sectional survey of a convenience sample of Somali adults living in Massachusetts and a *qualitative arm* involving a representative 20% subset of the larger study. Participants were all 18 years and older and had arrived from overseas less than 10 years prior to enrollment. Eighty-three participants took part in an in-depth, open-ended interview. These research activities were approved and monitored by the Institutional Review Board of the Massachusetts Department of Public Health (MDPH).

Recruitment

To ensure that the overall sample for the quantitative arm would approximate the Massachusetts Somali refugee population, we extrapolated data pertaining to the age and gender of 2,653 Somali refugees who had arrived in the state from 1995 to 2009 to construct an expected age and gender profile for the population at the onset of the study in 2009 (Massachusetts Department of Public Health, unpublished data). Recruitment began with word-of-mouth outreach and flyers distributed through local Somali businesses, community centers, mosques, and personal contacts, and continued through snowball sampling. For the qualitative arm of the study, the two Somali research assistants (AH, FE) recruited 83 people from among the participants in the quantitative arm. On an ongoing basis, the study team reviewed demographic characteristics of both the quantitative (age, gender) and the qualitative subsample (age, gender, educational level, Somali vs. Somali Bantu ethnicity, level of spoken and written English) to ensure representativeness of the qualitative subset in these major categories. While the vast majority of Somali nationals are of Somali ethnicity, a minority are of Bantu ethnicity. The Bantu population, which typically lived in rural areas and had historically higher levels of poverty, are part of the overall Somali refugee population in the U.S. and the Somali community in Eastern Massachusetts. Consequently, the study sought to ensure that they were adequately represented among both the overall study sample and the qualitative subset about which this paper reports.

Both the total sample and the qualitative subset approximated the expected gender and age distribution of the state's larger Somali and Somali Bantu populations. For the total sample, among females, older adults (45–64 years of age) were somewhat over-represented while younger adults (25–44 years of age) were somewhat under-represented. Among males, older adolescents (18–24 years of age) were over-represented while younger adults (25–44 years of age) were under-represented. These patterns reflect the greater difficulty entailed in enrolling employed, young adults. This study will focus on the qualitative data collection and analysis as quantitative findings have been reported previously.¹⁰

Qualitative interviews

The first round in developing the qualitative guide questions included five broad areas that loosely corresponded to key topic areas in the quantitative survey. These topic areas were drawn from the Eraker health decision-making theoretical model, which describes contributory factors clustered as domains associated with individuals' health decision-

making and behaviors:¹¹ 1) prior social and/or clinical interactions with members of the dental profession; 2) oral health methods used in Somalia, pertinent changes following arrival in the U.S., and prior experience of visiting a dentist; 3) personal factors affecting decision making related to oral health; 4) patient preferences in relation to interactions with their dentists; and 5) degree of literacy, views on possible connections with oral health, and attitudes toward preventive care. Each of these areas contained a preliminary set of open-ended questions with related probes.

All questions were professionally translated into Somali and then reviewed by the Somali research assistants (AH, FE) for linguistic accuracy. The Somali research assistants then reviewed the same questions with one of the medical anthropologists (LLB) for cultural accuracy with all three team members making relevant modifications. For example, recognizing that many Somalis are multilingual, we revised the question “Can you read and write?” to “What languages do you read and write?” After adding these corrections, the research assistants added corresponding translations.

The final qualitative field guide included open-ended questions with related probes addressing: families’ personal oral health practices, their experiences with dental care; the role of health literacy; social support and cultural expectations in determining use of dental care in the past and in the U.S.; other types of health-related lifestyles; life stressors that might impact on health status; and attitudes about preventive oral health interventions. The qualitative interviewer (LLB) then practiced the questions with both research assistants, to test their effectiveness.

The probes to these questions underwent some modification over the course of interviewing all the participants, although the content did not change. Early in the process, we found that some questions needed clarification. Misunderstandings tended to arise with questions that seemed more general, rather than more personally directed. For example, the questions, “When you were growing up, what different things did you learn about the reasons that people have trouble with their teeth? With their gums? How did you learn these reasons?” tended to elicit vague answers, or a lack of response altogether. When we asked, instead, “When you were growing up, what did your parents tell you not to do or you would have problems with your teeth?” people had stories to tell. Such modifications were then incorporated into the questionnaire, with each version being dated in order to track the modifications.

The two medical anthropologists (one male [LL]; one female [LLB]; both European American) conducted all qualitative interviews with interpreter support from the two Somali research assistants (one male [AH]; one female [FE]). When interviewing women, we ensured that either the anthropologist or the RA was also a woman. These interviews were conducted in the same community centers as the quantitative interviews, and each participant also received a \$50 gift card on completion of the qualitative interview. A professional transcription service transcribed the English portion of each interview. A third Somali research assistant then checked each transcript against the recording for accuracy in the interpretation. In quoting from interviews, we preserved the English used by the interpreter, while deleting non-standard phrases (e.g., “um,” or “ah”) that were added by the interpreter but do not reflect the voice of the participant. In the results section, participants are quoted by de-identified participant (abbreviated as “P”) number.

Qualitative data analysis

To develop a codebook with which to analyze the qualitative data, four of the researchers (JHA, SY, LLB, and a Somali research assistant) independently read five of the same transcripts in depth and developed separate lists of themes. Themes were placed on cards,

sorted, and discussed to ascertain potential thematic clusters. Themes were organized into provisional hierarchies, with meta-themes and more subordinate themes, until consensus was achieved. Thematic hierarchy clusters were mapped onto the five original broad theorized areas, after which a systematized abbreviated code for categories and names for each theme was established.

To test the reliability of these codes, the same four researchers independently applied them to a second set of transcripts, compared the results, and adjusted the codes as needed until consensus was achieved. The analytic team then entered the codes with corresponding definitions into HyperResearch 2.4,¹² a qualitative data analysis software program, and tested the codes a final time for consistency. These measures were designed to maximize the representativeness and reliability of our qualitative findings and explore conceptual connections between the quantitative and qualitative data sets. The identification number assigned to a given participant permitted linkage of his or her dental exam findings, quantitative survey data, and qualitative responses and thus ensured solid data triangulation. Key results are presented relating to explanatory models provided by participants in relation to oral health problems as well as descriptions and discussions of oral health care services and personal oral hygiene methods practiced in Somalia, in the refugee camps, and following resettlement in the U.S.

Results

Explanatory models for oral health problems

Subjects traced the condition of their teeth to 1) oral health practices, 2) levels of sugar consumption, 3) consuming specific foods, 4) drug use, and 5) professional dental cleaning. In the first instance, most recalled learning from their parents or other family members to be attentive to their oral hygiene. Being careless in taking care of their teeth—especially not cleaning them multiple times each day—would result in decay, which was expressed most frequently as “pain” and “broken teeth.”

Several participants spoke of having learned about “germs” as a child:

The first time I [knew] about germs was when my mom ... [told me that] I have to take care of my teeth, I have to [brush after eating]; otherwise there's going to be something called germs and make me sick” (P. 324).

For some, the appropriate frequency for cleaning was morning and night, but for others it was five times a day, as part of the cleaning ritual required prior to Islamic prayer.

Second, most participants recalled learning that sugar would harm their teeth. In Somalia, “sugar” was associated with manufactured confections available in cities; fruits with concentrated natural sugars like dates often available in the countryside; and homemade candies, the most frequently cited being *halva*—a dense confection, typically made from sesame seeds and honey. Most participants also observed that following their arrival in the U.S., the ubiquitous presence of refined sugar in candy, a variety of foods, and soft drinks was deleterious for their teeth. Rarely, though, did anyone single out corn syrup as a potentially damaging ingredient; yet participants generally understood that food products containing corn syrup had refined sugar.

A third factor involved foods viewed as adversely increasing the sensitivity of one's teeth—unripe mangoes, for example, were described as hard and salty. As a 31-year-old Somali Bantu participant observed:

It's not good for your tooth if the mango's not ready to eat. If you try to eat it, first you sensitize your teeth. And finally it's going to be something damaging your tooth ... [T]here's no juice at the mango. It's hard to eat. When you eat it, it's not sweet. You feel like ... so sour and salty. And it's going to sensitize your tooth ... even the gum also; it's not good (P. 002).

Drinking cold beverages and chewing ice were also characterized as contributing to dental sensitivity, putting the teeth at greater risk for decay.

Some participants contrasted the quality of foods they remembered from Somalia with what they were eating in the U.S. Those who spoke about this factor retained vivid memories of the colors, textures, smells, and tastes of food grown and harvested or butchered locally in Somalia, sometimes by people they knew. Despite the known limitations of food resources in refugee camps in which most had lived, participants often said that little about their diet had changed while living in the refugee camps. In contrast, participants viewed food in the U.S. as having undergone some form of undefined "processing" that made its quality suspect. The term regularly used to express this suspicion was "frozen." Even fresh produce in American supermarkets was not considered "fresh" when compared with local produce or meat in Somalia, due to the time it takes to ship food to retail grocers, often over long distances. Few participants were familiar with organic food, but those who were often characterized it as too expensive for most Somalis. Thus, rather than feeling empowered to choose food that was "healthy" in the U.S., participants generally conveyed a sense of resignation over the unavailability of any food that would promote improvement in either their oral or general health.

Although we did not ask about drug use, a number of interviewees described how, during their years in the camps, some men turned to chewing the leaves of the *khat* plant as a stimulant to offset their boredom and the emotional impact of displacement. Because *khat* leaves are bitter, it is common to drink highly-sweetened tea or soda or to put a cube of sugar between the lower lip and gums while chewing. Some surmised that the drug-induced somnolence and distortion of time caused users of *khat* to forego cleaning their teeth. Similarly, many recognized that the frequent consumption of black tea with or without *khat* could leave the teeth stained and at a higher risk for decay due to the metabolism of the sugar in the tea or the sugar cube itself by cariogenic bacteria.

Participants occasionally described the cleanings they received at the dentist as being problematic. For example:

... [I was] also feeling sensitivity when they cleaned the teeth or something like that. [I have] experienced a sensitivity, to drink cold or hot after a deep cleaning to teeth, which [I] didn't have it before (P. 027, 44 year old Somali woman).

This participant attributed her pain to the dental instruments, especially those used to scrape the tooth's surface. Other participants echoed the sentiment that such cleaning could damage the teeth and leave them more sensitive, weak, and at risk.

Somali oral health care methods in transition

One major difference between oral health practices in the U.S. and in traditional Somali society is the Somali use of the *aday* (alternative designations: *ade*, *adhei*, *adega*, *muswaki*, *miswak*, *siwak*, stick brush, and chewing stick). The *aday* is widely used in Somalia and other parts of the Horn of Africa, as well as in the Middle East and South Asia. The stick is harvested from the tree, *Salvadora persica* L. (*Aday Tree*, *Roomay Tree*, *Arak*), which is plentiful in Somalia. In the Arab Middle East, the root is commonly used to brush teeth. Studies have found use of the *aday* to be effective in removing plaque. In addition, the *aday*

has been found to have an inhibitory effect on oral cariogenic *streptococci* and periodontal pathogens.^{13,14}

In Somalia

Aday: The use of the *aday* was the central feature of oral health care practices in Somalia that participants discussed. Rural inhabitants remembered having direct access to “forest” areas abutting their homestead, where they could easily harvest *aday* branches. An extensive network of street vendors, marketplaces, and stores supplied inexpensive chewing sticks to city dwellers. Although toothbrushes were commercially available in cities like Mogadishu, few participants reported using them. A few learned about them from relatives living in Western countries, from job settings, or from attending school overseas. Notably, however, only one participant reported choosing a toothbrush over the stick brush while in Somalia.

Subjects frequently voiced a mix of cultural pride and the conviction that the *aday* represents a time-tested method. As a 42-year-old male participant said:

First we try to use different kind of tree, but finally they realized this [*aday*] is the best and healthiest one. And they believe that if you use that kind of stickbrush, you never have—get a cavity. You get prevention. [P. 019].

This participant posited that a process of trial and error had led to the selection of a species with the greatest oral health benefits—in this case, the *Salvadora persica*. The argument, “this goes back to our ancestors” [P. 019] puts a part of the *aday*’s credibility in the perception of its efficacy by countless earlier generations. Others focused on the actual attributes of the stick itself and, in some cases, the roots:

The difference is the root. One have flavor, hotness—also good for your gum and the teeth. And ... it’s very soft. The other one with the trunk [branch], is dry—and a little bit bothers your gum when you doing the brushing ... [I] hear that there’s some [other] root they [use to] make some medicine, goes good for your teeth and the health of your gum. So that’s why [I] still have [use it], when [I] get up, when [I] praying, when [I] eat, all the time [P. 193, 65-year-old woman].

Participants’ descriptions of using both sticks and roots to care for “the gums, the tongue, the tooth, everything” [P. 023, 50-year-old man] meant that the *aday* functioned not only like a toothbrush, but also as a tooth pick, stimulant, tongue scraper, and mouthwash, providing full mouth care.

Interviewees generally reported having cleaned their teeth multiple times a day in Somalia. Most men said that they carried their *aday* in a shirt pocket; women sometimes tucked it into the side of their headscarf. It was common practice for people to clean their teeth when walking down the street. Men and women sometimes chewed an *aday* off and on throughout the day, somewhat like a toothpick. Many interviewees associated use of an *aday* with the ritual of ablution before their five daily prayers. “It’s a religious duty before you pray.... Prophet Muhammad used to do that ... before the salat” (P. 030, 48-year-old man). In fact, several saw this duty as part of a Muslim duty to take personal responsibility for one’s health: “God also says that, ‘you have to protect yourself, and I can help you. First you have to take steps that you can take care of yourself.’ You can also depend on God after that, but first step is on you” (P. 339, 22-year-old man).

Charcoal: While in Somalia, few interviewees remember ever having used toothpaste—known generically as “colgate.” Instead, fresh, crushed charcoal from wood used in cooking fires served as a widely used abrasive and tooth whitener. Participants referred to a “special

tree” whose charcoal had enhanced cleaning and whitening effects. Land use surveys have identified the species as *Acacia bussei*.¹⁵

Charcoal was used together with the *aday* “First, you chew the charcoal, and you leave it on top of your tooth, and you use your stick brush. And sometimes and you get the water, and you clean yourself after you’re done” [P. 085, 52-year-old woman]. As one person noted, “They don’t have no toothpaste over there. Once a while they used to use charcoal, not every day ... that’s only thing [I] remember people used” [P. 115, 28-year-old Somali Bantu woman]. Another person observed, “It’s making your teeth bright. It’s like, removing the stains. Yes, coffee and tea [stains]” [P. 065, 55-year-old Somali woman]. Moreover, when participants drew comparisons between charcoal and toothpaste, charcoal was clearly favored.

Charcoal use was less common than that of the stick brush, partly due to regional variations, and in some cases, generational differences. Charcoal also was only used if the person had an actual need to whiten their teeth beyond regular use of the *aday*. For example, “Because if you do [not] the smoke, and you’re not coffee drinker, and you’re not eating *khat*—you don’t need for the [charcoal]” [P.189, 18-year-old man].

Pain relief: Coarsely ground salt was routinely used to treat pain, either as a gargle in hot water, or by being placed directly on the site of decay or in a cavity, sometimes with crushed aspirin. Eugenol (oil of clove) or whole cloves were also commonly put on painful sites. Severe pain due to advanced decay generally resulted in the extraction of the tooth, either by a local practitioner if in the countryside or a dentist if in the city. As a result, most people associated visits to a dentist with extreme pain and extraction.

In refugee settings and in transit—According to participants, relatively little about oral health practices changed in refugee settings prior to resettlement. Most participants sought refuge in African countries bordering Somalia (such as Kenya and Ethiopia), with smaller numbers going to countries such as Egypt, Yemen, and Pakistan. The *aday* continued to be available in most of these settings; although in Egypt some noted greater availability of toothbrushes and toothpaste. While actual practices may not have changed much in the camps, the introduction to toothbrush and toothpaste very often began there as part of the cultural orientation to “U.S. standards for basic hygiene” provided to refugees overseas in preparation for their migration to the U.S.¹⁶

A small subgroup of participants reported having started to use toothbrushes before leaving for the U.S. For example, one had a father who had travelled widely as a merchant marine and brought toothbrushes, paste, and floss back to the family. Others started to use toothbrushes while in Yemen or England. Participants traveling as refugees from camps in Kenya, to the transit center in Nairobi, and then on to the U. S. reported being given toothbrushes during their two-day stay in Nairobi and told that they would use them in the U.S. Some reported toothbrushes and toothpaste being distributed on the plane to the U.S., with the message that because they were coming to America, “... they have to learn ... it’s like whole airplane that’s refugee people, so everybody get a toothpaste and toothbrush” [P. 119, 62-year-old man]. In these contexts and subsequently in the U.S., charcoal use progressively disappeared. Its disappearance is primarily attributed to the difficulty in obtaining the right kind.

Following resettlement in the U.S—Resettlement case managers in the U.S. usually supplied refugee apartments with toothbrushes and toothpaste to be used by the newly arriving refugee upon reaching Massachusetts. Although some new arrivals joined an existing Somali immigrant community that introduced them to local resources, other new

arrivals found themselves in relative isolation with little to no access to Muslim or Somali stores or traditional foods or supplies. They were left to make do with whatever was available for personal hygiene. For example, describing his first experience with toothpaste and a toothbrush, one man described bleeding gums, an itchy face, and difficulty not swallowing the paste, but, “It was just more, now we’re here, this is what we have to do” [P. 021, 25-year-old man].

Among qualitative participants, over half of the participants reported changing to using a toothbrush. Even so, most still reported a preference for the *aday* but felt it was often impractical in the U.S. Not quite half explained that they had stopped using the *aday* because it was difficult to find, or because the dried, packaged sticks available in the U.S. differed considerably from the fresh ones available in Somalia or Kenya. This included stick brushes available in the mosque. The availability of fresh stick brushes in Massachusetts depended on friends and family members bringing them back from trips to Kenya or Somalia, and then freezing them to maintain “freshness”. The 18 individuals in the qualitative sample who reported that they used the *aday* exclusively said they did so because they were accustomed to it, believed it to be more effective or better for their gums, or found the Western toothbrush uncomfortable. One participant said of the stick brush, “I don’t know, it’s just a cultural thing ... that we believe in” (P. 310, 26-year-old woman).

Those who began to use a toothbrush did not generally return to using a stick brush, even after learning where to find them. Similarly, generational differences in preference for the toothbrush or stick brush were apparent, as younger generations lost the cultural context of the stick brush. Two participants acknowledged that their children did not understand the use of the stick brush: “Yeah, even though, even [my] kids always tease [me] because they don’t know what [I’m] doing. And this is—they grew up here so they use only the [tooth]brush” [P. 110, 51-year-old woman].

Participants did not report using charcoal in Massachusetts. While a few preferred charcoal over toothpaste, this was a matter of personal preference rather than a sense that charcoal was necessarily better. As one person said, “We’re most comfortable with the things we know the best.” Twelve actually described combining toothpaste with the stick brush, merging Somali and U.S. oral health care habits. Some used both the stick brush and the toothbrush, but at different times of day: the toothbrush in the morning and evening, but an *aday* after coffee or meals out of the house. One person preferred to use the stick brush only during Ramadan, the annual month of dawn-to-dusk religious fasting in commemoration of the first revelations of the Qur’an. According to participants, abstaining from food and liquids during the day can cause bad breath; the stick brush is believed to freshen the breath without introducing liquid or paste to swallow, a breach of the fast. Another participant used a toothbrush only when traveling. Few participants described using floss. Indeed, many did not seem familiar with dental floss.

Discussion

The stick brush remains popular in regions of Africa (particularly in the East), the Middle East, and Asia in part because people find it effective and readily available. Its use traces back to Islamic teachings and is most prevalent in countries that have large Muslim populations.. In a region predominantly inhabited by Muslims, religious adherence often includes attention to oral health care and hygiene. Although historical use of the *aday* (dating to 7,000 years ago by the Babylonians) predates Islam, current use is deeply interwoven with longstanding Islamic jurisprudence (*fiqh*) in relation to hygiene.¹⁷ Multiple Qur’anic verses (e.g., Qu’ran 5:6) provide instruction related to ritual ablution, cleansing one’s body five times a day before prayer (*salat*). But the *Hadith*—sayings and guidance

attributed to the Prophet Muhammad—specify using the *aday* (*miswak* in Arabic). For example, the Prophet said, “[Miswak] is the purification for the mouth and a means of seeking Allah’s pleasures.” (Al-Bukhari 3, 31:154)¹⁸ and “Were it not that I might overburden the Believers I would have ordered them to use siwak (*miswak/aday*) at the time of every prayer” (Al-Bukhari 2, 13:12)¹⁸. Finally, to a large extent, Somali oral hygiene practices remain rooted in ideas of personal responsibility, which various participants also identified as part of being a practicing Muslim.

Despite this basis of attention to oral health in Islamic culture, Somali participants had a strong grounding in personal oral hygiene practices based on secular cultural practices and biologic efficacy as well. Many participants expressed a clear understanding of the adverse effects of sugar, staining by foods and drugs, and general failure to clean one’s teeth. It might therefore seem a natural step that these first-generation refugees would readily adopt oral health-care methods upon arriving in the U.S. In their case, however, the adoption of toothbrush and toothpaste cannot generally be construed as a voluntary form of acculturation, or as an expression of trying to be more “American,” but rather a choice made out of necessity. That is, given the relative isolation that many refugees experienced after first arrival, they felt little choice but to use the toothbrush introduced by their case worker. In contrast, younger refugees who may not have used the *aday* as routinely (if at all), the use of toothbrush and toothpaste represented a less conscious adoption of normative practices in the U.S. Moreover, although some participants described loss and longing related to switching from the stick brush to a Western toothbrush, they did not necessarily consider this change bad for their oral health. It did not change their underlying understanding of the need to care for and clean one’s teeth and gums. Rather, it represented one cultural loss symbolic of many.

The impact of intergenerational cultural differences and declining use of beneficial traditional practices such as the stick brush have important implications for the ongoing oral health status of the Somali and Somali Bantu communities that are slower to acculturate in the U.S. Over time, younger Somali and Somali Bantu refugees, as well as those born in the U.S. likely gravitate toward U.S. norms for personal hygiene and diet, with mixed consequences for oral health. For example, the decoupling of oral health from religious adherence in this younger generation as it consumes higher levels of refined sugar in soft drinks, candy, and other foods may correlate to reduced levels of personal oral hygiene and ultimately worse oral health outcomes. On the other hand, because dental care for children is more regularly covered by public insurance, this generation is also more likely to receive earlier initiation of professional dental care and become more familiar with practices like flossing and orthodontic care as compared to their adult family members.

A popular assumption is that only through the adoption of Western practices have Africans progressed.¹⁹ By extension, it is easy to jump to the conclusion that oral health practices in the U.S. are inherently superior to those used in Somalia. Yet, given the efficacy of the stick brush and an understanding of its frequent use in the context of Islamic prayer and hygiene practices, oral health professionals in the U.S. should consider incorporating the role of the stick brush and other traditional practices into oral health promotion for Somali patients and others with similar cultural or religious norms.

Effective cross-cultural health care practice often involves identifying a common objective, whether or not it stems from the same sources. In this case, oral health professionals in the U.S., along with their Somali and Somali Bantu patients, share an important and common communal asset: the positive valuation of oral hygiene, albeit based on different models and methods. Dialogue with religious and cultural authorities in the Somali community about traditional and religious practices could provide an opportunity for oral health professionals

to show their familiarity with the effectiveness of the *aday*. The very act of not trying to dissuade people from the use of the stick brush could create a gateway through which to introduce Somali refugees to concepts and procedures of professional preventative dental care that may be unfamiliar to them. Likewise, by emphasizing the integration of oral health practices common in the U.S. into Somali traditional and religious practices, oral health professionals can foster a dialogue that demonstrates a clear regard for the latter. By extension, they express a respect for Somali culture—a core element in authentic patient-centered care.

Acknowledgments

This study was funded by the National Institute of Dental and Craniofacial Research, grant number RO1-DE017716-01 (P.L. Geltman, Principal Investigator). We thank Bashir Muse for his assistance in checking the accuracy of the interpretation from Somali to English, in developing the codebook, and in coding some of the interviews.

Notes

1. Zini A, Vered Y, Sgan-Cohen H. Are immigrant populations aware about their oral health status? a study among immigrants from Ethiopia. *BMC Public Health*. 2009 Jun 26;9:205. [PubMed: 19558650]
2. Messias DK, Rubio M. Immigration and health. *Annu Rev Nurs Res*. 2004; 22:101–34. [PubMed: 15368770]
3. Garcia RI, Cadoret CA, Henshaw M. Multicultural issues in oral health. *Dent Clin North Am*. 2008 Apr; 52(2):319–32. [PubMed: 18329446]
4. Petersen PE. Oral health—general health interrelationships: health policy implications. *Inside Dentistry*. 2006; 2(1):1–5.
5. Petersen PE. Sociobehavioural risk factors in dental caries—international perspectives. *Community Dent Oral Epidemiol*. 2005 Aug; 33(4):274–9. [PubMed: 16008634]
6. Telford C, Coulter I, Murray L. Exploring socioeconomic disparities in self-reported oral health among adolescents in California. *J Am Dent Assoc*. 2011 Jan; 142(1):70–8. [PubMed: 21193770]
7. U.S. Department of Health and Human Services. Report to Congress FY2008. Washington, DC: U.S. Department of Health and Human Services; 2011.
8. Beveridge S. Oral health beliefs, traditions and practices in the somali culture. *Oral Health*. 2001; 2(1):1–5.
9. Banyule Community Health Service. Evaluation of a Somali oral health promotion project. Victoria, Australia: Victoria State Government Department of Human Services; 2001.
10. Geltman PL, Hunter Adams J, Cochran J, et al. The impact of functional health literacy and acculturation on the oral health status of Somali refugees living in Massachusetts. *Am J Public Health*. 2013 Aug; 103(8):1516–23. Epub 2013 Jan 17. [PubMed: 23327248]
11. Eraker SA, Kirscht JP, Becker MH. Understanding and improving patient compliance. *Ann Intern Med*. 1984 Feb; 100(2):258–68. [PubMed: 6362512]
12. Researchware. HyperResearch 2.8.3 Computer Software. Washington, DC: Researchware; 2013.
13. Darout IA, Albandar JM, Skaug N, et al. Salivary microbiota levels in relation to periodontal status, experience of caries and miswak use in Sudanese adults. *J Clin Periodontol*. 2002 May; 29(5):411–20. [PubMed: 12060423]
14. al-Otaibi M. The miswak (chewing stick) and oral health. *Studies on oral hygiene practices of urban Saudi Arabians*. *Swed Dent J Suppl*. 2004; 167(2):2–75. [PubMed: 15224592]
15. Oduori, S.; Vargas, R.; Alim, M. Land use characterization of the Juba and Shabelle Riverine Areas in Southern Somalia. Mogadishu, Somalia: Government of Somalia; 2007.
16. Cultural Orientation Resource Center. Cultural orientation programs and resources: overseas. Clay, NY: Cultural Orientation Resource Center; 2012.
17. Almas K, al-Lafi TR. The natural toothbrush. *World Health Forum*. 1995; 16(2):206–10. [PubMed: 7794468]

18. al-Bukhari, MiI; Khan, MM. Translation of Sahih Bukhari. Los Angeles, CA: University of Southern California; 2012.
19. Osunde ET Jr. Persisting and common stereotypes in u.s. students' knowledge of africa: a study of preservice social studies teachers. *Social Studies*. 1996; 3(1):119–24.