Arabic Calligraphy, Nafis Salaam, meaning Breath of Peace

NAFIS SALAAM
(BREATH OF PEACE)

Where There's Smoke: Patterns of Tobacco Use among NYC Muslims

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Nafis Salaam is a Partnership between
Muslim Consultative Network &
Islamic Medical Association of North America

Funded By American Legacy Foundation

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EXECUTIVE SUMMARY

Based in New York City (NYC), Nafis Salaam (NS) is an innovative smoking prevention and cessation program for Muslims developed by Muslim Consultative Network (MCN) in partnership with Islamic Medical Association of North America (IMANA). With funding from American Legacy Foundation, NS launched in early 2009 and breaks new ground in exploring tobacco use behaviors among Muslims and their understanding of religious prohibitions against smoking. NS also developed faith-based approaches to educate young adult Muslims about the risks of tobacco use.

Noting a limited amount of previous data, NS conducted a community survey (n=408) to understand the prevalence of tobacco use and cessation knowledge among cross-sections of a diverse community of over 600,000 Muslim New Yorkers. The survey also assesses the impact of age, ethnic affiliation, religious interpretation and other variables on tobacco use and related knowledge and beliefs. Outreach staff administered surveys in a variety of settings, including mosques, Muslim cultural and social celebrations, as well as events organized by particular immigrant groups. Since the program focused on reaching specific communities, including Turkish, Arab, and Bangladeshi, special effort was made to collect surveys within these groups, as well as to vary age and gender of participants.

Key survey findings include:

- Tobacco use is a complex behavior among Muslim communities, including cigarette smoking, shisha/hookah, as well as pan/gutka. These behaviors vary significantly by age, with younger segments more likely to engage in shisha use, and older segments more likely to smoke cigarettes.
- Women's rate of shisha use is about the same as men's cigarette smoking (19.5% and 15.3%, respectively) relating new norms of women's socialization and reflecting the marketing of this social trend.
- A significantly large number are at serious risk of respiratory illness through current exposure to second-hand smoke. More than half of the survey sample reports family members who smoke (55%) and 65% are either occasionally or often around friends who smoke.
- A majority of Muslim New Yorkers were familiar with the nicotine patch (64%) and quitting during Ramadan, the fasting month (44%). But far fewer knew about the other methods, including the NY State Smokers Quit Line (27%), one-on-one counseling (27%) or the use of prescribed anti-depressants (17%). Knowledge of cessation resources differs for smokers versus non-smokers, by ethnicity, gender, and whether someone is foreign-born.
- Most participants believed that Islam "forbids or dislikes" smoking and an overwhelming majority expressed interest for mosque-based programs such as support groups for smoking cessation.

Findings suggest important pathways for future studies. In addition, they demonstrate a need for ongoing smoking prevention and cessation education for New York Muslims, as well as targeting specific age, gender, and ethnic segments. In addition, faith-based messaging and religious venues can enhance reach and impact of education initiatives.

ACKNOWLEDGEMENTS

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Muslim Consultative Network
The Muslim Consultative Network (MCN) is a nonprofit network of New York area based Muslim American organizations and individuals, working to strengthen and unify our community for love of God and to serve the needs of Humanity. MCN aims to enhance communication within and between diverse communities; to support advocacy projects of coalition members and our allies; and to develop and coordinate existing social service, interfaith, and social justice programs consistent with Islamic values and principles. For more information see: www.mcnny.org

Islamic Medical Association of North America
The mission of IMANA is to provide a forum and resource for Muslim physicians and other health care professionals, to promote a greater awareness of Islamic medical ethics and values among Muslims and the community-at-large, to provide humanitarian and medical relief, and to be an advocate in health care policy. For more information see: www.imana.org

American Legacy Foundation
The American Legacy Foundation is dedicated to building a world where young people reject tobacco and anyone can quit. The Foundation develops programs that address the health effects of tobacco use, and seeks to help all young people reject tobacco, and give everyone access to tobacco prevention and cessation services. It focuses on vulnerable populations – youth, low-income Americans, the less educated, and racial, ethnic and cultural minorities – and works through grants, technical assistance and training, partnerships, youth activism, and counter-marketing and grassroots marketing campaigns. For more information see www.legacyforhealth.org

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INTRODUCTION

A NYC-based initiative, Nafis Salaam (NS), which translates as “Breath of Peace” in Turkish, Arabic, Persian and Urdu, is pleased to release *Where There’s Smoke: Patterns of Tobacco Use among NYC Muslims*. Offering the first in-depth examination of tobacco use among Muslims living in the NYC area, this report provides an overview on NS programming, survey development and implementation, selected findings, and key recommendations. We hope the report will be used to assist the development of future educational programs and research regarding smoking prevention and cessation among Muslims in the United States.

Tobacco use is an important concern for Muslims globally and in the United States (US). Rates between 1% and 57.5% have been reported across South Asian, Arab, and African countries with large Muslim populations and in diaspora communities living in Europe (Ghouri, Atcha, and Sheikh, 2006; Knishkowi and Amitai, 2005; Nierkens, et Al, 2005; Bush, et Al, 2003). Religious beliefs and guidelines can enhance smoking cessation programs (Islam and Al-Khateeb, 1995; Ghouri, Atcha, and Sheikh, 2006). For instance, a recent London program, targeting Muslim Bangladeshis with high rates of cigarette use and tobacco chewing, successfully developed partnerships with mosques to reach Muslims through culturally specific messages (Goddard and Rahman, 2009). During the month of Ramadan (the month of fasting), Muslims stop cigarette use during the daylight hours of the fast, and this can potentially lead to quitting cigarettes altogether (White, et Al, 2006). Ramadan has been included as an opportunity to educate Bangladeshi and Pakistani Muslims in London about smoking cessation (Desai and Dudhwala, 2006) to take advantage of the momentum provided by religious prohibitions regarding smoking during the fast.

A few studies have examined tobacco use within the US, specifically among Arab adolescents and college students (Kulwicki and Rice, 2003; Islam and Johnson, 2003). However, there remains a dearth of data regarding tobacco use of Muslims as a community of diverse ethnic groups. Given the many countries from which Muslims immigrate to the United States and the presence of indigenous American Muslims, including African American, Latino and Caucasian Muslims, both research and programs can benefit from widening the lens to focus on the broader religious community inclusive of multiple ethnicities and to use religious teachings, enhancing health education across ethnic and linguistic boundaries.

Emerging from this broader public health context, NS is a NY-based program, and the first of its kind in the US to collect data about tobacco use among Muslims living in the United States. As a city of 36% foreign-born residents (NYC Planning, 2004) and home to more than 600,000 Muslims (Beshkin, 2001), New York provides access to diverse Muslims speaking numerous languages connected through their common religious affiliation. The goals of NS are two-fold: to document the prevalence of tobacco use among Muslims and to educate Muslims about smoking prevention and cessation. NS is based on a premise that smoking cessation initiatives will have greater reach and impact using linguistically appropriate and culturally sensitive messages.

PROGRAM OVERVIEW

In early 2009, Nafis Salaam (NS) was created as a partnership between Muslim Consultative Network (MCN) and Islamic Medical Association of North America (IMANA), with funding from the American Legacy Foundation. MCN is a network of New York area Muslim social service providers and advocates; IMANA is a national network of Muslim physicians and medical professionals. While MCN was responsible for the program and community survey, IMANA provided fiscal sponsorship for the funding.

Nafis Salaam, translated as Breath of Peace, reflects its faith-based underpinning, and draws upon an Islamic principle of avoiding harm to the physical body and spirit. Both Nafis and Salaam are religiously significant terms that are based in the Qur'an, the most sacred text for Muslims. "Nafis" relates to nouns meaning "breath," "self" and "soul" in a variety of languages including Arabic, Turkish, and Urdu. "Salaam" can mean both "peace" and "healthy" depending on how it is used. The program's logic model emphasizes faith-based messaging and religious motivators that can help form intention to quit as well as speed up attempts to quit.

Over a period of 10 months, NS disseminated existing English language brochures developed by the New York City (NYC) smoking cessation campaign and the American Cancer Society. As a complement to existing material, program staff also developed faith-based messages using religious symbols, references to passages from the Qur'an and religious injunctions to care for the self. These included workshops, YouTube videos featuring community artists and key religious spokespersons, website postings, and printed materials which were distributed at community venues. Over the course of the program, more than 15,000 flyers were distributed, and staff conducted a total of 10 workshops at mosques, social service agencies, community conferences and Muslim schools. The program culminated in a Healthy Ramadan campaign to take advantage of religious injunctions against smoking during the fast. During this month (which fell in August and September), materials were distributed at various iftar events (breaking of the fast), religious leaders were educated about the program and with their support, workshops conducted at four diverse mosques. Details about the above educational activities are described in the end of year progress report (Carroll, 2009b).

Preliminary observations and interviews with key community stakeholders regarding tobacco use suggested that specific sub-groups within the Muslim community are more likely to smoke, such as Turks, Arabs, and Bangladeshis. Therefore, program messages were disseminated in Turkish, Arabic, Bengali, and English, via ethnic media. Postcards and flyers were translated into additional languages, including Russian, Urdu, Twi, Farsi, Bosnian, Albanian, and French.

In addition to education initiatives, NS designed and implemented a survey on tobacco use with a non-random sample of NY area Muslims. The survey sought to answer the following questions: 1) what proportions of Muslims currently smoke and use shisha or pan? 2) Are NYC Muslims aware of commonly known cessation resources, of quitting during Ramadan or the potential of religious leaders or mosque-based programs to assist in quitting? Do they have preferences about cessation resources? 3) What are their beliefs about religious guidelines on smoking, knowledge about smoking related mortality, and the harmfulness of shisha or pan? 4) How are age, gender, ethnic background, and foreign birth related to behavior, knowledge and religious interpretation and finally, 5) In addition to demographic predictors of tobacco use, what else can we learn about cigarette smokers' intention to quit, knowledge and beliefs about smoking and their shisha use?

Where There's Smoke: Patterns of Tobacco Use among NYC Muslims presents survey findings and implications for health education initiatives. This report presents methodology used, including measures, sampling, and characteristics of survey participants and results of the data gathered. Information is available on prevalence of tobacco use, knowledge and beliefs among participants, followed by a discussion on key findings and recommendations for future programs and research.

SURVEY METHODS

Survey Design

To design the NS Survey, existing tobacco use studies, data were reviewed and advice sought from Legacy evaluation consultants. The New York City Department of Mental Health and Hygiene (DOHMH) Community Health Survey (CHS), based on the National Behavior Risk Factor Surveillance System (BRFSS) provided wording for many tobacco use and cessation questions (DOHMH, 2007a). These include general health of respondent, age at first smoking, cessation aids, frequency of being around people who smoke at home and at work, how many times they tried to quit in the past 12 months, methods they have used to quit, who advised them to quit, and intention to quit. The Stages of Change model provided the wording for a question on current smoking behavior (Diclemente et Al, 1991).

Survey questions were tailored where appropriate. For example, the question on family members incorporated extended family, and whether smoking family members live in the United States or overseas. Religion-based supports for smoking cessation included quitting during Ramadan, imam's support, and a Ramadan qutba. Ramadan, the fasting month, is a time in which smoking is greatly curtailed due to requirements of the fast. Many people also initiate quitting during Ramadan, and either maintain or return to smoking at their regular pace after Ramadan (White et Al, 2006). The survey also asked about whether participants had heard of getting cessation support from the imam, or Muslim clergy. The third type of religious resource measured was a qutba, or sermon focused on smoking cessation, that would be delivered at Friday prayers during Ramadan; attending Friday prayers at a mosque and listening to the sermon are considered obligatory for Muslim men.

Because water pipe, or shisha, was known to be practiced among several communities included in the study, such as Arabs and South Asians (WHO, 2005; Knishkowi and Amitai, 2005), the survey assessed rates of shisha use and perceptions of its harmfulness. In addition, the survey asked about use use of pan (a leaf in which tobacco and betel nut are wrapped) and gutka (a mixture of tobacco, betel nut, fennel and spices), both of which were found among South Asian communities in general and Bangladeshi New Yorkers in particular (Changrani, et Al, 2006).

As a way to pretest the instrument, NS program staff then administered the survey to key stakeholders in the community, such as social service providers, community advocates and imams (clergy) (n=21). Program staff also conducted in-depth interviews with each stakeholder to obtain feedback about survey development, program implementation, and message design. Findings of the community stakeholder survey have been reported elsewhere (Carroll, 2009a) and were used to develop messages. The community survey was edited using stakeholder feedback, followed by outreach and data collection. While no institutional board reviewed the survey, the survey was voluntary, and no incentives were offered to complete it. In addition, both paper and online surveys were anonymous and confidential, and respondents were assured that individuals would not be identified in reporting the results.

Data Collection and Target Population

Over a period of 9 months, diverse outreach workers collected surveys from a sample of 408 NY area Muslims. Although participation was voluntary and the sample is not randomly selected, the NS program sought to gather data from specific ethnic communities and vary age and gender of respondents. Questionnaires were administered in a many locations, including over 15 mosques, 7 Muslim student associations at colleges, large and small community meetings, sports events, cultural celebrations, cafes, and Muslim community street fairs; surveys were also completed at locations where educational workshops occurred (n=342). In addition, the survey was delivered online (n=56). The survey did not screen for religious background, but assumed that participants at the various locations where the survey was administered were Muslim.

Because the survey also does not screen for age, a small proportion of participants completed the questionnaire at workshops that program staff delivered at two Muslim high schools (n=27). While parental consent for each participant was not obtained, officials from the schools accepted it for administration. As a way to inform schools, community leaders and decision makers about this age group, the Report includes their answers in the data display, with a recommendation that additional research conducted with minors follow more stringent youth assent and parental consent guidelines.

Data collection proceeded through the first few months (through June) with a lengthier survey that included questions about general health, stress, co-workers smoking, and why people initiated smoking (n=197). As a way to ease respondent burden, in the next few months (July to December), program staff shortened the survey and removed the aforementioned questions (n=211). To assist with program planning, the first round of the survey asked which cessation resources respondents would like to have. When the survey was shortened in the second round, this set of questions was substituted with one question about whether mosques should initiate smoking cessation activities, perceptions of shisha as a gateway to cigarette smoking, and perceived prevalence of tobacco use among youth. Both versions of the survey are included in an appendix, as well as links to the online surveys. Most questions appeared on both surveys, but since a few only appeared on one or the other version of the survey, the Report incorporates references to sample sizes as appropriate. Unless specifically noted, the proportions are based on a sample of 408 participants of the two surveys combined.

Analysis

A research assistant entered the survey data into SPSS 11.5 (Statistical Package for the Social Sciences). Cross-tabulations with chi-square tests of significance were used to determine the relationship between demographic predictors and behavior, knowledge, and belief outcomes. Logistic regression was used to determine whether family members' smoking, knowledge or beliefs were significantly associated with behavior, after controlling for demographic characteristics.

Ethnicity categories reflect the program focus on several national groupings, including Bangladeshi, Arab and Turkish. All Arabic speakers were combined into "Arab." African Americans were kept distinct from Africans, in order to check for differences between immigrant and indigenous groups. Other categories included: Pakistani, Caribbean/West Indian, White or European, Latino/Hispanic, and Other Asian (which includes East Asians and Asian Indians).

These categories were created using self-identified ethnicity data in combination with place of birth, language, and location of data collection.[1]

RESULTS

Demographics

The sample is 55% male and 45% female. Adolescents (less than 18 years old) and young adults (18 to 30 years old) made up 77% of the sample; 6.6% under age 18; 31.4% are 18-25 years old; 22.8% are 26-30 years old; 18.5% are 31-40; 8.6% are 41-50; and 7.4% are over 51 years old.

A majority of respondents (70%) live in three boroughs of NYC, Brooklyn (26%), Queens (22.1%), and Manhattan (15.2%); a few are from Bronx (1.7%) and Staten Island (5.6%). Since some surveys were collected at large conferences or sporting events that served the East Coast or wider NY area, about a fifth of the sample (19%) is from outside the five boroughs, including NY area suburbs, New Jersey, and Connecticut; and 41 respondents (10%) did not provide a response on their borough.

Across respondents, a total of 31 languages were spoken (Table 1), with 63% speaking four main languages: Arabic (21.3%), Turkish (16.4%), Urdu (16.4%), Bengali/Bangla (9.3%). As mentioned earlier, NS aimed to reach Bangladeshi, Turkish, and Arab segments of the community, and thus these language groups are represented in larger proportions. However, the program sought to gather data from other cultural groups to allow for comparison, thereby increasing the diversity of languages represented in the sample.

[1] While all respondents were asked about their ethnicity, the format was changed in the second round of the survey from multiple-choice answer into an open-ended question. As a result, there were many ethnicities named in addition to the conventional categories used in large surveys.
To simplify analysis, a new measure of ethnicity was created using data about place of birth, language, and self-reported ethnicity. Respondents who left ethnicity, country of birth, or language blank (n=57) had to be omitted from analyses focused on ethnicity; in some cases, respondents provided language data only, but it could not be assumed that knowledge of a language meant that someone necessarily was of a given ethnicity, particularly in the case of Spanish, which many people may have studied as part of their education in the US.

Table1: Languages Spoken By Respondents

	#	% of Total (n=408)	Language	#	% of Total (n=408)	Language	#	% of Total
Arabic	87	21.3	Tamil	4	1.0	Hebrew	2	.5
Turkish	67	16.4	Mandarin	4	1.0	Creole	2	.5
Urdu	67	16.4	Farsi	4	1.0	Indonesian	2	.5
Bangla/Bengali	38	9.3	German	3	.7	Macedonian	1	.2
Spanish	36	8.8	Gujarati	3	.7	Albanian	1	.2
French	30	7.4	Marathi	3	.7	Georgian	1	.2
Hindi	19	4.7	Malay	3	.7	Telugu	1	.2
Russian	15	3.7	Japanese	2	.5	Kannada	1	.2
Punjabi	15	3.7	Uzbek	2	.5			
Bosnian	11	2.7	Swahili	2	.5			
Azeri	9	2.2	Azerbaijani	2	.5			

Nearly two thirds of the sample reported being born outside the US (68%), comparable to rates of foreign born among the US Muslim community nationally (Pew Research Center, 2007).

The ethnic breakdown of respondents is as follows: Caribbean (n=15), Arab (n=72), African American (n=29), Bangladeshi (n=41), Pakistani (n=39), White/European (n=24), Other Asians (n=70) and Turkish (n=61).

Prevalence of Tobacco Use

In response to a question about tobacco use, 75% of NY area surveyed Muslims report they have never smoked while nearly 25% reported some prior tobacco use. Current smoking was reported by about 12.8%, 8.8% quit more than 6 months ago, and 3.5% quit within the last six months. While the NS sampling is not random, and therefore not representative of the NY Muslim community, sample smoking rates were compared to overall NYC rates. The 2006 CHS conducted by the DOHMH found the overall smoking rate for all New Yorkers to be 17.5% (DOHMH, 2007b). Using the 2006 and 2007 sample from the CHS, DOHMH also conducted special analysis for this project and determined that 17.3% of respondents who are from Muslim majority countries (defined as >75% Muslim) were current smokers (CI=13.3, 22.2) (DOHMH, 2009). While the NS estimate falls outside the lower limit of the confidence interval in a more representative sample, it is nonetheless close to the estimate.

Across the total sample, nearly 55% reported family members who smoke, and nearly 60% reported being around friends who smoke occasionally or often. Among those who reported family members who smoke (n=176), 53.5% said these family members live in the United States (US), 34.3% outside the US, and 12.1% live both in the US and abroad. Almost half said they were occasionally or often around smokers at work (46.5% of first round respondents only, n=187).

A small proportion of the overall sample reported pan/gutka use (2.9%, n=408), and 7.8% reported having friends who occasionally use pan/gutka (n=182, first survey round only). Of those who answered the question about perceived harm of pan/gutka in the first round (n=167), 87.4% perceive it as somewhat or very harmful.

Compared to cigarette smoking and pan/gutka, rates of shisha/hookah were higher among respondents, with nearly a quarter reporting use (22.4%). Nearly a half (47.3%) reported being around friends who use shisha occasionally or most of the time (n=185, survey's first round sample). At the same time, a large proportion (72%) considered shisha to be somewhat or very harmful.

Age

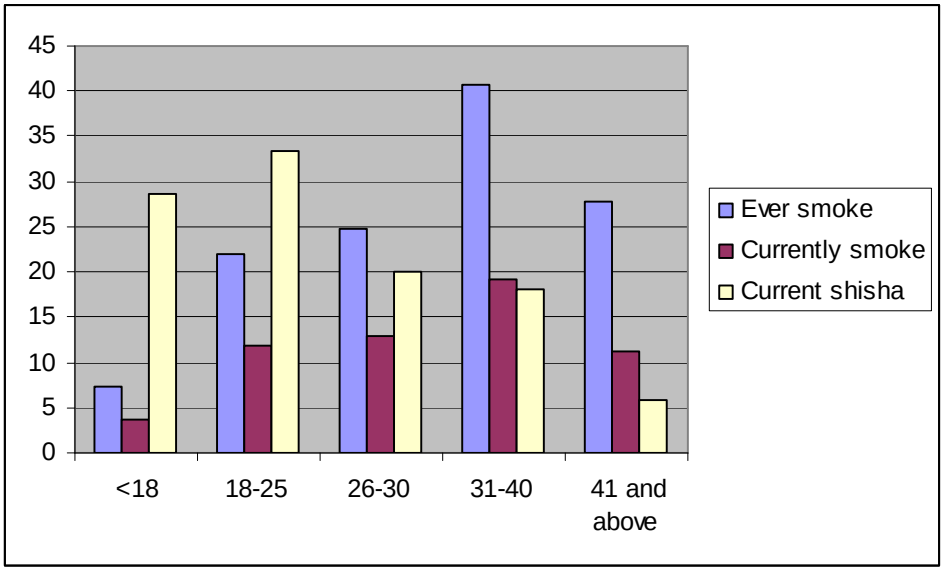
Cigarette smoking varies by age among NS participants (Table 2). Adolescents under 18 years report the lowest rates of current or prior smoking; one reported having quit, and another reported current smoking. In both categories of self-identified current smokers and prior smokers (i.e. those who have smoked at all in the past), the 31-40 age group reported the highest rate (19.2%) of cigarette smoking. Across all ages, including adolescents, shisha use is generally more common than cigarette smoking, although 31-40 year olds are likely to report current cigarette smoking and shisha in nearly equal proportions (Figure 1). Additionally, for this group, prior cigarette smoking tops shisha use.

Table 2. Tobacco Use By Age (%)

	<18 (n=27)	**18-25 (n=126)**	**26-30 (n=92)**	**31-40 (n=73)**	**41 and over (n=63)**	**Chi-sq, p**
Never smoked	92.6	79.4	76.1	61.6	74.6	20.96, .05*
Quit > 6 mos.	3.7	3.9	10.9	15.1	4.8	
Quit < 6 mos.	--	4.8	--	4.1	9.5	
Currently smoke	3.7	11.9	13	19.2	11.1	
Any prior smoking (quit +current)	7.4	21.9	24.7	40.8	27.7	*14.71, .005*
Current Shisha	28.6	33.3	20.0	18.0	5.9	*13.72, .008*
Current pan	--	4.5 (n=111)	1.3 (n=80)	4.9 (n=61)	5.9 (n=34)	3.15, .533*

***Note: chi-square statistic unstable due to cells with fewer than expected counts.*

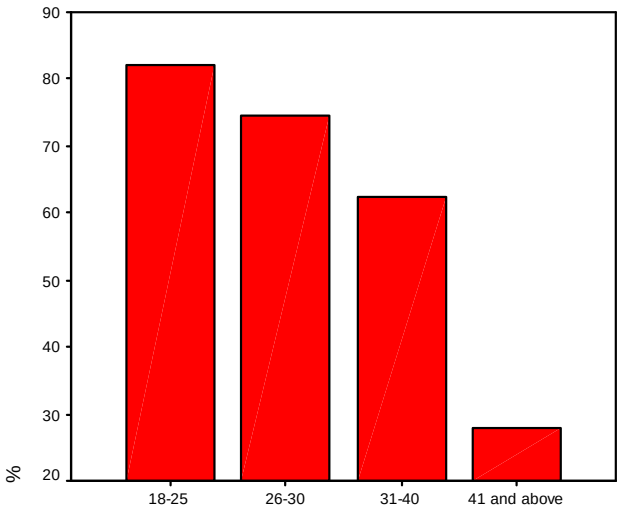
Figure 1. Cigarette Smoking Versus Shisha Use by Age (%)



There are no significant differences by age in rates of family smoking; across all ages, the rates are similar to the overall sample (55% for family). Rates of friends smoking varied somewhat by age. A substantial proportion of adolescents reported they are occasionally or often around friends who smoke (44%); however, this rate was lower than the average rate across all respondents (60% for the overall sample, chi-square=8.63, p=.07).

In addition to self-reported use, the survey also asked about *perceptions of prevalence*—whether respondents thought "more young people of Muslim background were taking up some form of tobacco use." Individuals under the age of 40 agree with this perception in larger numbers than older participants (see Figure 2). Since the question was only asked in the second round, a small number of adolescents answered (n=3) and none agreed with the perception, so they are excluded from the graphical display.

Figure 2. Perception that Young Muslims Are Taking Up Tobacco, by Age (%)



Gender

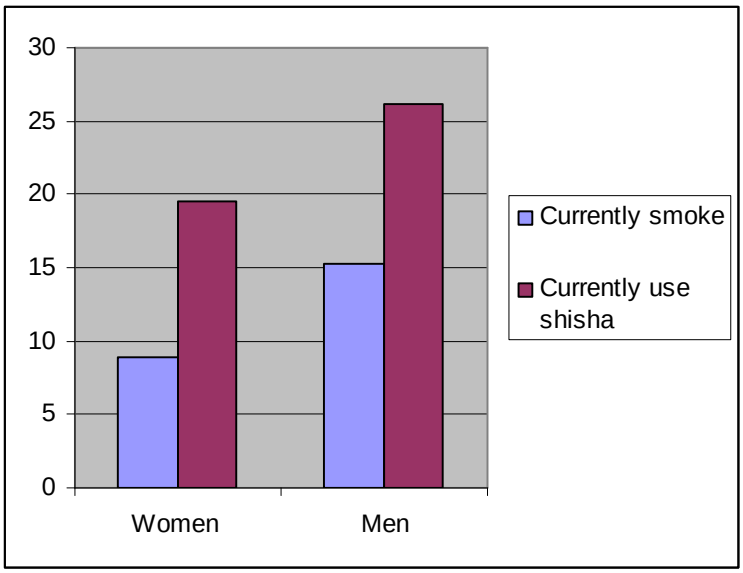
When compared to men, almost half the proportion of women currently smokes (15.3% of men versus 8.9% of women), and men also have double the rate of any prior smoking than women (Table 3).

Table 3. Tobacco Use by Gender (%)

	Men (n=215)	**Women (n=180)**	**Chi-sq, p**
Never smoked	68.4	82.8	*15.18, .02*
Quit > 6 mos.	11.2	6.7	
Quit < 6 mos.	5.1	1.7	
Currently smoke	15.3	8.9	
Any prior smoking (quit +current)	35.5	18.1	*12.06, .001*
Current Shisha	26.1 (n=157)	19.5 (n=159)	2.15; .34
Current pan	6.4 (n=157)	1.3 (n=159)	*5.65; .02*

However, women's rates of shisha are similar to men's rates (Table 3). Also noteworthy is that women's rates of shisha use are nearly double their rate of cigarette smoking (see Figure 3) and slightly higher than men's rate of cigarette smoking (19.5% versus 15.3%). Gender differences also arise when it comes to pan/gutka use, with male participants reporting higher rates of use than women.

Figure 3. Smoking and Shisha/Hookah by Gender (%)



Consistent with the gender differences in smoking behavior as reported in Table 3, women reported more exposure to second-hand smoke through family members (Table 4). When asked about which family members smoked, across all participants, male family members were mentioned more often than women. Family members mentioned most frequently include brothers (25%), fathers (23.9%), and uncles (22.7%); less frequently mentioned were mothers (9.7%), cousins (8%) and aunts (7.4%).

Exposure to friends' smoking is high among men (72.4%) and women (55.7%), but significantly higher for men than women.

Table 4. Family and Friends Smoke by Gender (%)

	Men (n)	**Women (n)**	**Chi-sq, p**
Family Member Smokes	53.6 (207)	57.6 (102)	*5.54; .06*
Friends- Occasionally+Often	72.4 (199)	55.7 (176)	*11.36; .003*

Ethnicity

As mentioned, preliminary observations and community stakeholder interviews had suggested that cigarette smoking would be higher for some groups. These observations were not confirmed for current cigarette smoking; differences between groups for any prior cigarette smoking were of marginal statistical significance (p=.09) (Table 5). Arabs, Turks, and Caribbeans/West Indians reported higher rates of prior smoking than other groups.

Bangladeshis in the sample had lower rates of past smoking compared to Arabs and Turks (Table 5).

Table 5: Tobacco Use by Ethnicity (%)

	Never smoked	Quit > 6 mos.	Quit < 6 mos.	Currently Smoke	Any prior smoking (quit +current)	Current shisha/ hookah	Current pan/ gutka
Caribbean/West Indian (n=14)	71.4	7.1	--	21.4	35.7	--- (n=15)	-- (n=15)
African American (n=29)	69.0	17.2	3.4	10.3	31.0	14.3 (n=21)	-- (n=21)
Arab (n=68)	66.2	10.3	2.9	20.6	39.7	33.3 (n=39)	12.8 (n=39)
Bangladeshi (n=41)	82.9	7.3	2.4	7.3	17.1	20.0 (n=35)	2.9 (n=35)
Pakistani (n=38)	81.6	10.5	2.6	5.3	21.1	20.0 (n=35)	2.9 (n=35)
White/European (n=24)	75	16.7	8.3	--	25.0	29.2 (n=24)	-- (n=24)
Other Asian (n=69)	81.2	7.3	2.9	8.7	22.9	20.3 (n=64)	-- (n=64)
Turkish (n=61)	62.3	8.2	6.6	23.0	37.7	29.5 (n=61)	3.3 (n=61)
Chi-square, p				25.8, .21	12.20, .09	10.28, 17	16.45, p=.02*

***Note: chi-square statistic unstable due to cells with fewer than expected counts.*

Across all ethnicities except Caribbean/West Indian, the rates of current shisha use were greater than for current cigarette smoking. However, shisha use itself does not vary significantly by ethnicity.[2]

Although earlier work had found pan/gutka use in South Asian and Bangladeshi communities in New York (Changrani, et Al, 2005), the NS sample revealed its use among Arab and Turkish participants as well as Bangladeshi and Pakistani participants. Further investigation of pan/gutka among friends (n=170, first round survey only) showed participants of all ethnic groups reported friends who used pan/gutka occasionally or most of the time, though Bangladeshis, Pakistanis and Arabs reported higher rate of friend use (53.4%, 46.7%, and 37.5%).

Table 6 shows how exposure to second-hand smoke varies by ethnic group. African Americans reported the highest rates of family members smoking, with Turks close behind (72.4% and 67.8%, respectively). Pakistanis and Arabs were similar in proportions of family members who smoke (54% and 56%, respectively). Bangladeshis reported family members smoking in slightly smaller proportions than Turkish and Pakistani respondents (47.5%). Turkish respondents

[2] Nearly half of Turkish respondents in the first round of the survey said their friends smoked shisha occasionally or most of the time (n=50), much higher than other groups, including Arabs (n=7 in the first round); however, while the numbers of Arabs and Turks changes in the final sample, this question was discontinued in the second round, so additional analysis was not possible.

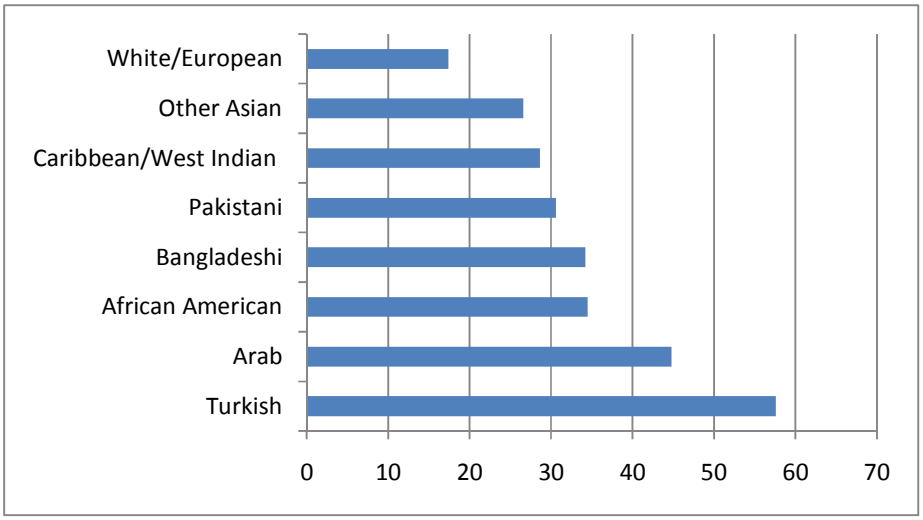
reported the highest proportion of smoker friends, while African Americans had the lowest rate of exposure to friends' smoking.

Table 6. Family and Friends Smoke by Ethnicity (%)

	Family Member Smokes	Friends Smoke	% Reporting Both Family and Friends
Caribbean/West Indian	35.7 (n=14)	64.3 (n=14)	28.6 (n=14)
African American	72.4 (n=29)	44.8 (n=29)	34.5 (n=29)
Arab	56.9 (n=65)	68.9 (n=61)	44.8 (n=58)
Bangladeshi	47.5 (n=40)	69.2 (n=39)	34.2 (n=38)
Pakistani	54.1 (n=37)	51.4 (n=37)	30.6 (n=36)
White/European	41.7 (n=24)	56.5 (n=23)	17.4 (n=23)
Other Asian	53.6 (n=69)	55.4 (n=65)	26.6 (n=64)
Turkish	67.8 (n=59)	83.6 (n=61)	57.6 (n=59)
Chi-square, p	*12.26, .09*	*21.07, .004*	*25.5, .03*

Figure 4 displays the proportions of those who had double exposure to second-hand smoke, from *both* family members who smoke and friends who occasionally or often smoke. Arab and Turkish community members had the highest exposure to second-hand smoke from the two sources combined, and the difference between groups is statistically significant (Table 6, last column).

Figure 4. Both Friends and Family Members Smoke by Ethnicity (%)



It is likely that NS under-estimated the rates of smoking, particularly for South Asians. For instance, previous research among Turkish groups in Europe has found higher rates of cigarette smoking than in the NS study (63% in the Netherlands according to Nierkens, et Al, 2005, versus 23% for the New York area). Studies of Bangladeshi communities in the UK have also found higher rates of cigarette smoking than in the NS survey results (49% of Bangladeshi men, and 28% for Pakistani men, White et Al, 2006).

However, it is also possible that rates for these ethnic communities living in the US are indeed lower than their counterparts in Europe. The rate of cigarette smoking in New York (17.5%) is

somewhat lower than the 2005 overall rate for England of 24% (ONS, 2005), and the rate for Netherlands (33% of men and 27% of men, Nierkens et Al, 2005). This overall lower rate could also mean lower rates for diaspora communities in the US compared to those in Europe.

Comparison of NS survey rates within ethnic groups to DOHMH estimates for various neighborhoods show that the rates of use among Arab and Turkish NS participants (21% and 23%) are similar to DOHMH estimates for neighborhoods with high concentrations of Turks and Arabs. The Bay Ridge section of Brooklyn, Macdonald Ave in Brooklyn, and Astoria, Queens report similar rates (21%, 19% and 21% respectively) (DOHMH, 2006). However, in neighborhoods with high concentrations of South Asians, Kensington Park, Woodside, and Coney Island, the rates are between 16% and 23% (DOHMH, 2006). The Bangladeshi and Pakistani sub-groups in the NS sample, in contrast, reported lower rates of current cigarette smoking (7.3% and 5.3%, respectively).

Foreign Birth

Comparing US born to foreign-born, place of birth is not a significant predictor of cigarette smoking or current shisha use (Table 7). There are also no significant differences in family or friends smoking by foreign birth.

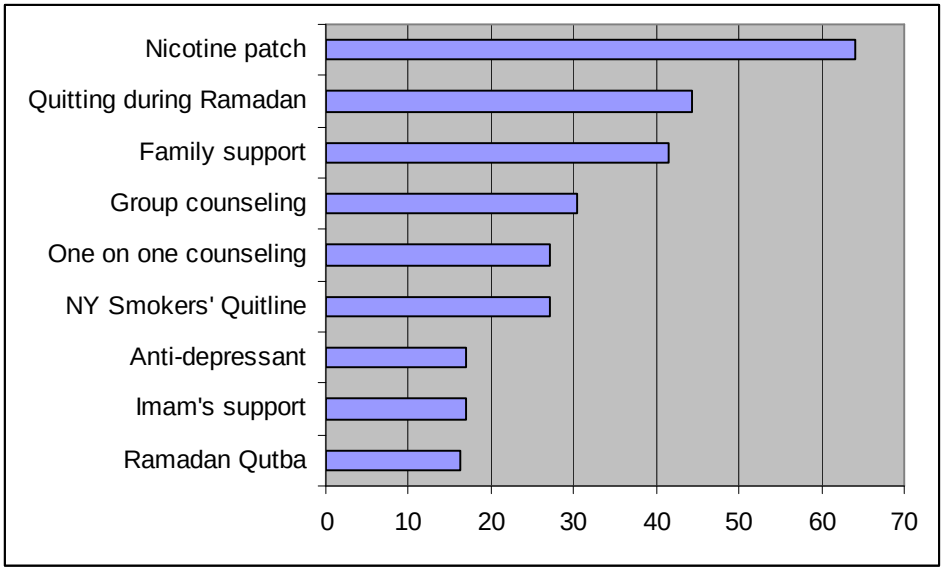
Table 7. Tobacco Use by Place of Birth

	US (n=123)	Outside US (n=259)	Chi-sq, p
Never smoked	78.0	74.5	1.75; .627
Quit > 6 mos.	9.8	8.5	
Quit < 6 mos.	3.3	3.5	
Currently smoke	8.9	13.5	
Any prior smoking (quit +current)	22.0	25.5	.61, .44
Current Shisha	24.5 (n=102)	20.4 (n=206)	.68; .41
Family Member Smokes	61 (n=123)	51.8 (n=249)	2.79; .095
Friends- Occasionally+Often	60.2 (n=118)	67.5 (n=246)	1.88; .17

Familiarity with Cessation Resources

Figure 5 presents the proportions of participants who have heard of various smoking cessation methods. While the majority of respondents (64%) know about the nicotine patch, many identified quitting during Ramadan (44%) and family support (41%) as additional cessation resources. Comparatively, individuals were less aware of NY Smokers' Quitline, a toll-free telephone number established by New York State to offer counseling and quitting information. Group counseling and one-on-one counseling with a health professional were not familiar to most people. A few reported hearing about an imam's assistance or a Ramadan qutba, a sermon that encourages quitting and healthy behavior.

Figure 5. Familiarity with Cessation Resources (% Who Have Heard of Each Method)



In addition to their familiarity with resources, participants also asked about what types of resources they would like to have. Table 8 captures responses about preferred resources to aid smokers in their cessation attempts. Of the two surveys used, the first version asked about several types of smoking cessation resources individuals would like to see made available to them. In the second version, they were asked only about whether they would like to see mosque-based support groups. Among those who answered, a remarkably high number expressed a wish to see more mosque-based support for "quitters" (89.2%). A third of the respondents indicated they want information on quitting (36%). About a third also wanted Islamic guidelines about quitting (34.7%) and more information about the dangers of hookah or pan (29%).

Table 8. Types of Cessation Resources Desired (%)

Mosques should develop programs such as support groups for quitters	89.2
Information on quitting smoking for you/someone	36.5
Islamic rulings (fatwas) on this subject	34.7
More information on dangers of Hookah or Paan	29.0
Videos or internet sites about this subject	25.6
Quit smoking information translated into other languages	23.3
Referrals to support groups or counseling to help quit	22.7

Note: Row 1, n=139, second round of survey; Rows 2-7, n=176, first round.

Age

Responses on knowledge of smoking cessation resources for various methods did not vary significantly by age; across age categories, responses are similar to the average for the overall sample as shown in Figure 5). However, some age differences emerged when participants were asked which resources they would like to have (Table 9). Participants between 26-30 years old and over 41 requested information on quitting in significantly larger numbers than other age groups. They also expressed preference for videos or internet sites and translated

materials more often when compared to other age groups. Mosque based programs were preferred equally by all age groups. Responses to the question about mosques offering programs (first row) have a different sample size since this question was only asked for the second round.

Table 9. Cessation Resources Preferred by Age (%)

Method	**<18** (n=19)	**18-25** (n=64)	**26-30** (n=31)	**31-40** (n=33)	**41 and above** (n=24)	**Chi-sq, p**
Information on quitting smoking for you/someone	36.8	25.0	54.8	30.3	58.3	*13.43, .009*
Islamic rulings (fatwas) on this subject	36.8	32.8	38.7	45.5	20.8	3.35, .50
More information on dangers of Hookah or Paan	26.3	32.8	29.0	24.2	33.3	1.31, .86
Videos or internet sites about this subject	21.1	20.3	41.9	18.2	37.5	*8.28, .07*
Quit smoking information translated into other languages	21.1	18.8	32.3	15.2	41.7	*9.11, .06*
Referrals to support groups or counseling to help quit	21.1	17.2	35.5	21.2	25.0	4.26, .37
Mosques should develop programs such as support groups for quitters, 2nd round only	100 (n=3)	93.3 (n=45)	85.1 (n=47)	87.5 (n=24)	88.9 (n=18)	2.02, .73

Gender

Women and men had significantly different levels of familiarity on five out of nine types of cessation resources (Table 10). Women and men were equal in terms of their awareness of the NY Smokers' Quitline, use of anti-depressants, family support and quitting during Ramadan. However, women were more familiar than men with the nicotine patch and individual and group counseling, but less familiar with religious resources including imam's support and Ramadan Qutba (sermon).

Table 10. Familiarity with Cessation Resources, by Gender (%)

	Men (n=170)	Women (n=177)	Chi-square, p
NY Smokers' Quitline	28.2	34.5	1.56, .21
Nicotine patch	68.2	80.8	*7.22, .007*
Anti-depressant	17.6	22.0	1.05, .31
One on one counseling	24.1	39.0	*8.85, .003*
Family support	45.9	50.8	.86, .35
Group counseling	28.1	41.8	*7.21, .007*
Ramadan Qutba	24.3	13.0	*7.28, .007*
Imam's support	25.3	14.1	*6.87, .009*
Quitting during Ramadan	55.3	48.6	1.56, .21

There were no differences by gender on preferences for smoking cessation resources. Both expressed strong preference for mosque-based programs (95.8% of women and 82.4% of men), but women expressed this preference at a higher rate (chi-square= 6.50, p=.01).

Ethnicity

Knowledge of various quitting methods varies within and across ethnicity groups (Table 11). No one group is highly familiar with all methods of quitting, and some quitting methods are more familiar to certain groups. Knowledge of conventional methods such as the NY State smoker's quitline and the nicotine patch were significantly different across groups. Arabs, Turks, and Other Asians were least familiar with the Quitline. Bangladeshis were less familiar with the nicotine patch, while Caribbeans and African Americans were most familiar with the patch. The latter two groups were also significantly more familiar with group counseling than other groups. It is unclear why these differences may arise. Religion-based methods of quitting do not vary by ethnicity in the sample; among these methods, quitting during Ramadan is most familiar to all respondents, but relying on an imam for support and listening to a Ramadan qutba were less familiar.

Table 11. Familiarity with Cessation Resources, by Ethnicity (%)

	Caribbean (n=14)	African American (n=28)	Arab (n=47)	Bangladeshi (n=37)	Pakistani (n=35)	White/ European (n=23)	Other Asian (n=65)	Turkish (n=61)
NY Smokers' Quitline*	57.1	53.6	17.0	40.5	31.4	34.8	18.0	18.0
Nicotine patch*	92.9	96.4	78.7	59.5	82.9	60.9	75.4	75.4
Anti-depressant	14.3	28.6	19.1	18.9	20.0	26.1	18.0	18.0
One on one counseling	42.9	35.7	27.7	27.0	31.4	34.8	32.8	32.8
Family support	50.0	53.6	40.4	40.5	57.1	65.2	3.7	37.7
Group counseling*	64.3	57.1	31.3 (n=48)	29.7	25.7	30.4	29.5	29.5
Ramadan Qutba	7.1	25.0	25.5	32.4	14.3	17.4	14.8 (n=64)	14.8
Imam's support	14.3	25.0	25.5	32.4	11.4	13.0	14.8	14.8
Quitting during Ramadan	28.6	50.0	59.6	54.1	65.7	56.5	52.5	52.5

*p<.05

Since the survey asked about which cessation resources were preferred only on the first round, and there were much fewer Arabs and Bangladeshis in the first round of data collection, data about preferred cessation resources are not reported here as analysis yielded unstable significance tests for ethnic differences.

Foreign Birth

Familiarity with cessation resources is significantly related to place of birth. US-born Muslims are more familiar with general methods and foreign born Muslims are more aware of faith-based methods (Table 12). However, there were no significant differences by place of birth on preferences for cessation resources.

Table 12. Familiarity with Cessation Resources, by Place of Birth (%)

Quit Method	US Born (n=116)	Foreign Born (n=222)	Chi-square, p
NY Smokers' Quitline	41.4	25.7	*8.77, .003*
Nicotine patch	90.5	68.0	*20.9, .000*
Anti-depressant	26.7	16.7	*4.79, .03*
One on one counseling	40.5	27.0	*6.41, .01*
Family support	53.4	45.9	1.72, .19
Group counseling	41.4	32.3	2.76, .10
Ramadan Qutba	18.1	19.9	.16, .69
Imam's support	19.0	20.0	.08, .77
Quitting during Ramadan	55.2	50.0	.82,.37

Knowledge of Harm and Beliefs

The NS survey also assessed individual knowledge of US rates of mortality due to cigarette smoking as well as beliefs about religious prohibitions. When asked about number of deaths, a majority of respondents were either unsure of the number of deaths (40%) or underestimated to be 300,000 or less (22.6%). Only one third of the sample answered the question correctly (over 400,000 per year).

When asked about Islam's prohibition of smoking, most respondents believed that smoking is either religiously forbidden (29.2%) or disliked (42.9%). Only 18.4% were unsure about the Islamic view of smoking and about 5.1% said they thought it was "*neither* forbidden *nor* disliked," meaning that they did not think Islam had any strong opposition to smoking.

A large proportion of NS survey participants believed shisha/hookah to be somewhat or very harmful (72%), and 87.4% thought pan was somewhat or very harmful.

In response to a question about whether shisha is a gateway to tobacco (asked in the second round of the survey), of the 121 people who answered the question, 61% thought it somewhat or definitely encouraged cigarette smoking.

Age

There were no significant differences by age in knowledge of mortality rates associated with smoking, perceived religious prohibitions about smoking, the harmfulness of shisha or shisha as a gateway (Table 13).

Table 13: Knowledge of Harm & Beliefs by Age (%)

Cigarette Smoking	**<18 (n)**	**18-25 (n)**	**26-30 (n)**	**31-40 (n)**	**41 and above (n)**	**Chi-sq, p**
Knowledge: 400,000+deaths/yr	44.0 (25)	36.8 (125)	37.8 (90)	27.4 (73)	32.2 (59)	3.43, .49
Islam forbids or dislikes smoking	64.0 (25)	76.2 (126)	80.9 (89)	70.8 (72)	77.4 (62)	4.21, .38
Shisha						
Very or somewhat harmful	85.0 (20)	87.5 (120)	85.4 (82)	85.5 (62)	88.4 (43)	.42, .98
Leads to cigarette smoking	100 (1)	63.6 (44)	56.8 (44)	66.7 (21)	50.0 (10)	1.88, .76

Gender

Women and men did not differ in their knowledge of mortality rates associated with smoking or in their perception that Islam dislikes or forbids smoking (Table 14). They also perceive shisha as harmful in equal proportions. However, they are significantly less likely to believe that shisa leads to smoking (70% of men, versus 53% of women).

Table 14. Knowledge of Harm & Beliefs by Gender

Cigarette Smoking	**Men (n)**	**Women (n)**	**Chi-sq, p**
Knowledge: 400,000+deaths/yr	34 (206)	34.1 (179)	2.94; .23
Islam forbids or dislikes smoking	76.3 (207)	74.3 (179)	.21; .899
Shisha			
Very or somewhat harmful	86.7 (173)	87 (162)	.46; .79
Leads to cigarette smoking	70.2 (57)	53.1(64)	3.69, .05

Ethnicity

Table 15 describes knowledge about smoking related deaths and perceptions that Islam dislikes or forbids smoking, both of which are also different by ethnicity. In all of the groups, fewer than 50% knew the correct number of deaths due to smoking. However, Pakistanis were more likely to answer the question correctly (47.4%) than Arabs (39.1%), Turks (29.5%), and Bangladeshis (20%). All groups were equally likely to perceive shisha use as somewhat or very harmful. The perception that shisha leads to cigarette smoking differs only slightly across groups, as Turkish respondents agreed with this statement in high proportion (80%), while Arabs and Pakistanis tending to agree a little less (56% and 55%, respectively). Bangladeshis were least likely to agree with this statement (37.5%).

Table 15. Knowledge of Harm and Beliefs, By Ethnicity (%)

	Cigarette Smoking		*Shisha*	
	Knowledge: 400,000+ deaths/yr	Islam forbids/ dislikes smoking	Very or somewhat harmful	Leads to cigarette smoking
Caribbean/West Indian	64.3 (n=14)	57.1 (n=14)	100 (n=8)	100 (n=2)
Arab	39.1 (n=64)	84.6 (n=65)	90.9 (n=56)	56.5 (n=23)
African American	40.7 (n=27)	58.6 (n=29)	90.9 (n=22)	66.7 (n=9)
Bangladeshi	20.0 (n=40)	90.0 (n=40)	92.5 (n=40)	37.5 (n=16)
Pakistani	47.4 (n=38)	83.8 (n=37)	85.7 (n=35)	52.4 (n=21)
White/European	29.2 (n=30)	66.7 (n=24)	75.0 (n=24)	66.7 (n=6)
Other Asian	43.5 (n=69)	71.6 (n=67)	87.5 (n=64)	83.3 (n=24)
Turkish	29.5 (n=61)	76.7 (n=60)	84.2 (n=57)	80.0 (n=10)
Chi-square (sig)	*14.72 (.04)*	*17.77 (.02)*	6.06 (.53)	*12.66 (.08)*

Foreign Birth

Foreign born participants were significantly less likely than US born participants to identify the correct rates of mortality due to smoking. However, foreign born and US born participants were not different in their perception about religious prohibitions, that shisha is harmful or that it leads to smoking (Table 16).

Table 16: Knowledge & Beliefs About Religious Prohibition by Place of Birth (%)

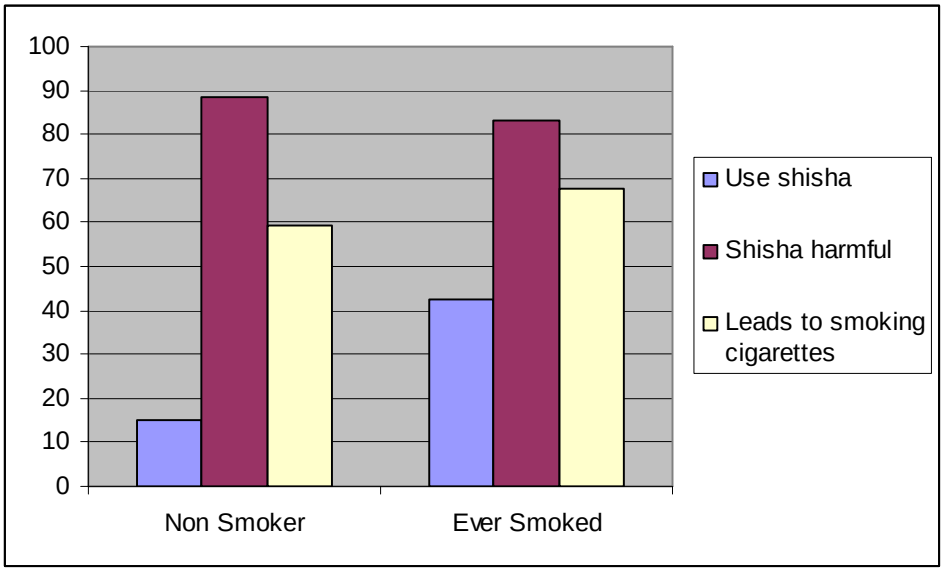
	USA (n)	Outside the US (n)	Chi-square, p
Cigarette Smoking			
Knowledge: 400,000+deaths/yr	42.9% (119)	31.1% (254)	*4.93; .026*
Islam forbids or dislikes smoking	75.8% (120)	75.9% (253)	.00; .99
Shisha			
Very or somewhat harmful	88 (108)	86.2 (217)	.20; .65
Leads to cigarette smoking	58.2 (55)	64.6 (65)	.52, .47

Additional Characteristics of Muslim Smokers

As expected, those who have a family member who smokes were more likely to smoke (15.5%) versus those who did not have a family member who smokes (8.6%) [chi-square=4.25, p=.04]. Similarly, those who believed Islam forbids or dislikes smoking were more likely to be non-smokers [chi-square=5.54, p=.02]. Smokers and non-smokers did not statistically differ in their knowledge of the number of deaths due to cigarette smoking (14.9% of smokers answered the question correctly versus 11.4% of non-smokers).

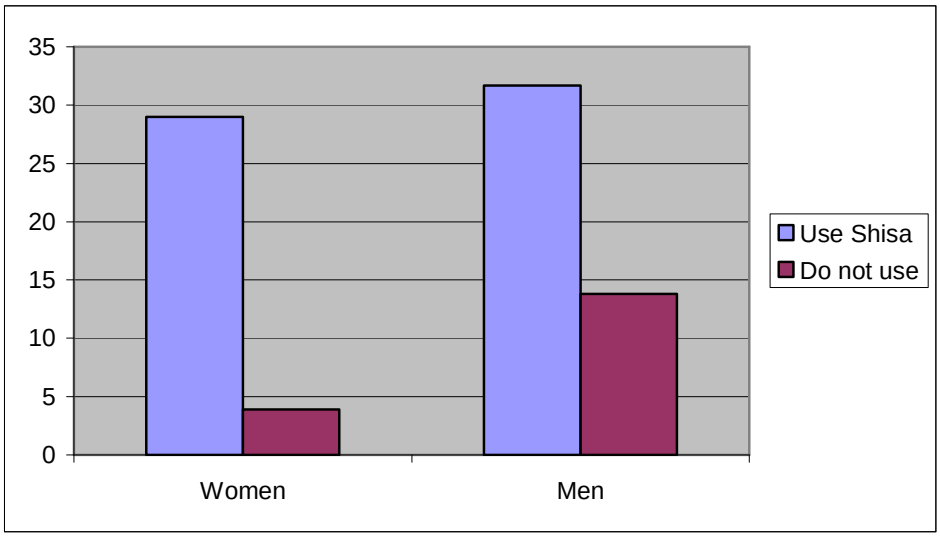
Current cigarette smoking is related significantly to shisha use, with prior smokers having more than double the rates of shisha use than non-smokers (Figure 6). Never smokers reported low rates of shisha (15%), compared to those who quit more than six months ago (24%), those who quit less than 6 months ago (54.5%) and those who currently smoke (52.3%) (Chi-square=36.2, p<.001). On the other hand, smokers and non-smokers have equally high rates of agreement that shisha is harmful and that it leads to cigarette smoking.

Figure 6. Use and Perceptions of Shisha by Current Cigarette Smoking (%)



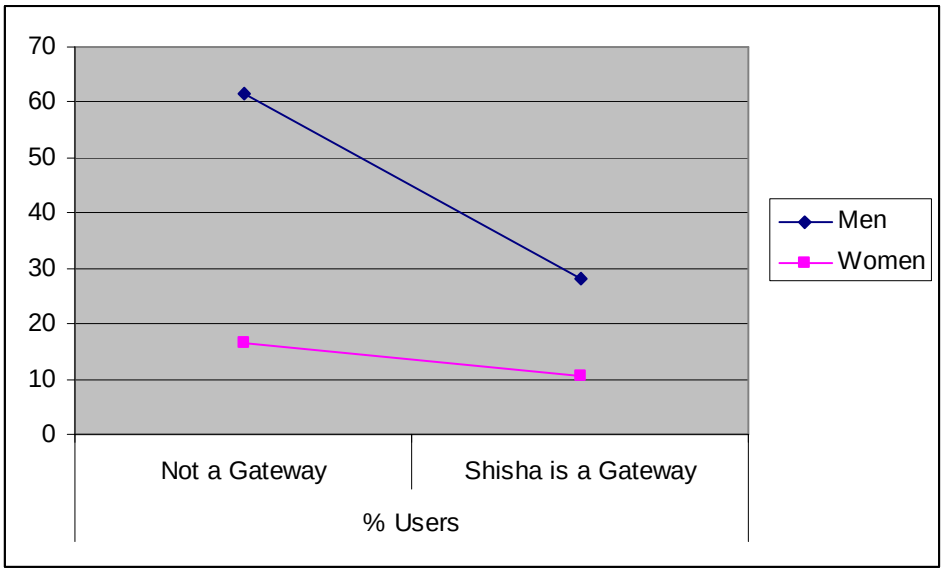
Since both shisha and cigarette smoking differ by gender, the analysis also examined how the relationship of cigarette smoking and shisha use vary by gender (Figure 7). Women and men who smoke shisha are likely to smoke cigarettes at nearly equal rates (29% for women shisha users and 31.7% of men shisha users smoke cigarettes). However, women who use shisha are nearly 7 times more likely to smoke cigarettes than those do not use shisha. For men rates of cigarette smoking increase by almost 3-fold if they are shisha users.

Figure 7. Cigarette Smoking by Shisha Use by Gender (%)



Yet, in spite of the stronger relationship between cigarette smoking and shisha use for women than for men, and as noted earlier, women were significantly less likely to agree that shisha use is a gateway to cigarette smoking. In addition, the association between this belief and behavior is different and weaker for women versus men (Figure 8). Assuming that belief leads to behavior, men who agree that shisha encourages cigarette smoking are half as likely to use it (28.2%) than men who do not believe it is a gateway (61.5%) (chi-square=4.67, p=.02)- for women, the rate of shisha use does not vary significantly by whether they agree it leads to cigarette smoking (chi-square=.39, p=.53) (n=102 men and women who answered the gateway question in the second round survey). Among women, those who believe it encourages smoking report nearly the same rates of shisha use (10.7%) as those who do not agree (16.7%).

Figure 8. Shisha Use by Shisha is a Gateway (% Using by Gender)



Current smokers differ from non-smokers in their knowledge of cessation resources. Current smokers in the sample were significantly *less* likely to say they had heard about using individual

counseling from a health professional or quit smoking counselor (16.7%) versus those who were not current smokers (34.1%) [chi-square=5.82, p=.02].

Current smokers were also significantly *less* aware of family member support as a resource for quitting (29.2% versus 59.3% of those who don't smoke) [chi-square=8.14, p=.004]. They were also less likely to report having heard of group counseling (22.9% versus 37.3% of those who don't smoke) [chi-square=3.75, p=.05].

Among current smokers who answered about intention to quit (n=48) 20.8% said they intended to quit within the next 30 days, and 52.1% said they intended to quit within the next 6 months; 22% said they had no intention to quit any time soon.[3]

When asked about what resources they preferred, current smokers expressed preference for information to help them or someone quit at higher rates than non-smokers (Table 17). However, they preferred religious rulings on smoking at much lower rates than non-smokers (15.4% versus 38%). In addition, although both smokers and non-smokers expressed strong preference for mosque based programs, smokers tended to express this preference at somewhat lower rates than non-smokers.

Table 17. Cessation Resources Preferred Among Smokers (%)

Method	Non-smokers (n=150)	Smokers (n=26)	Chi-sq, p
Information on quitting smoking for you/someone	33.6	53.8	3.94, .05
Islamic rulings (fatwas) on this subject	38.0	15.4	5.00, .02
More information on dangers of Hookah or Paan	31.3	15.4	2.74, .10
Videos or internet sites about this subject	24.7	30.8	.43, .51
Quit smoking information translated into other languages	23.3	23.1	.001, .97
Referrals to support groups or counseling to help quit	20.7	34.6	2.45, .12
Mosques should develop programs such as support groups for quitters (asked Round 2 only)	90.6 (127)	75.0 (12)	2.75, .10

DISCUSSION

[3] The question about intention to quit may have been confusing for some, as a few respondents (n=6) stated their positive intentions to quit even though they replied they were not currently smoking on a previous question. Also, 7 people who said they never smoked checked off that they had no intention of quitting any time soon. For the purpose of data analysis, we used only cases where smoking was self-reported in response to the question about current smoking. The patterns in the data suggest we need to work on clarifying the question or measuring both behavior and intention through different wording. More specifically, it may be that someone who initiated quitting several months ago is not yet in the maintenance phase, so that they would answer intention questions as if they are a current smoker, even though they have checked off that they quit recently on another question.

The NS survey found patterns in tobacco use, cessation related knowledge and beliefs that merit additional investigation and programmatic attention. First, tobacco use among Muslim communities incorporates cigarette smoking, shisha/hookah, and pan/gutka. It is quite possible that in a globalized world, and in a diverse city like New York where Muslims of various ethnicities meet each other, alternative forms of tobacco that have historically been associated with one cultural community, such as pan/gutka, would also make their way into new cultural groups, just as cigarette smoking has crossed international borders and ethnic groups. Thus, in order to understand tobacco use, it is important that research and programs incorporate not only cigarette smoking, but shisha/hookah and pan. Future studies can ask participants about the order of initiation between various forms of tobacco in order to learn more about their gateway function.

The data also reveal some noteworthy age and gender differences in prevalence. Among individuals under the age of 40, there is a greater perception that younger people are taking up tobacco use, and the patterns of actual tobacco use by age confirm this perception. As noted, Figure 1 reveals almost an inverse relationship between age and cigarette smoking versus age and shisha use. Shisha use is high at younger ages, peaks in ages 18-25 then declines across age categories, while the reverse is true for cigarette smoking, which peaks for the 31-40 year olds. The proportions for shisha use among younger groups (33% among 18-25 years old and 29% among less than 18 years old) are similar to a study of Arab-American adolescents, 14–18 years of age, which reported that as many as 27% had smoked tobacco using a waterpipe and that waterpipe use increased with age from 23% at 14 years of age to 40% at 18 years of age (Rice et al., 2006, as cited in Noonan & Kulbok, 2008). Age differences in cigarette smoking and shisha/hookah suggest an opportunity for segmentation and targeted smoking prevention and cessation activities.

It is also striking that shisha use among women is as high as cigarette smoking among men, and that shisha users of both genders smoke cigarettes at nearly the same rate (29% for women and 31.7% for men). While it is unclear whether shisha leads to cigarette smoking or vice-versa, women are less likely than men to believe that it is a gateway to cigarette smoking (Table 14). Moreover, a belief about how shisha operates as a gateway to encourage cigarette smoking does not serve to deter shisha use among women, while it does serve that function among men. It is possible that the social acceptability of shisha for women prevents them from agreeing with the statement that it leads to cigarette smoking, which has stronger cultural taboos.

In addition to self-reported tobacco use, second-hand smoke affects Muslims of all ages, across genders and ethnicities. The adverse effects of second-hand smoke have been documented in numerous studies, and it is well-known that second-hand smoke carries with it risks of lung cancer, increases rates of respiratory illnesses such as pneumonia and bronchitis particularly in children, and exacerbates asthma; (EPA, 1994). According to a recent NY Times article, 56.7 percent of all non-smokers living in NYC have elevated levels of the nicotine metabolite cotinine, a metabolized form of nicotine that that is found in smokers (Rabin, 2009). The NS survey participants would test positively for this chemical at similar rates to NYC non-smokers since they reported high rates of exposure to second-hand smoke through family (55%), friends (60%), and work colleagues (46.5%).

Separately and in addition to risks associated with second-hand smoke, those with family members who smoke themselves reported higher rates of cigarette smoking. There was also some indication that exposure to second-hand smoke from family members combined with friends is a greater risk for Turkish and Arab communities than others. Clearly, addressing

second-hand smoke exposure among New York Muslims should be an important concern due to the health risks posed as well as the imitative nature of cigarette smoking.

In spite of the high rates of second-hand smoke, the substantial rates of tobacco use in its various forms, and high rates of secondary exposure, knowledge about mortality rates due to cigarette smoke is low, as only a third of the sample knew that cigarette smoking is associated with more than 400,000 deaths per year. This knowledge varies significantly by ethnicity and foreign birth- US born Muslims answered the question correctly in higher proportion than foreign born Muslims, suggesting additional education and outreach is needed for newer immigrants. In addition, while many people agreed that shisha use is somewhat or very harmful (72%), they need additional information about specific harms- nearly a third of the sample requested such information in the first round of the survey. These findings correspond to earlier research, conducted abroad, which found that Arab youth view hookah (or shisha) as less addictive than tobacco and are less familiar with its health risks (Asafar, 2005 as cited in Noonan & Kulbok, 2009). A third of the participants requested information about the specific harms of hookah/shisha, which can include lung and esophageal cancer, respiratory illnesses and infectious diseases from pipe sharing (Knishkowy and Amitai, 2005).

In addition, knowledge of smoking cessation resources available to the community through public and private health care institutions also appears lower than desirable. The most well-known resource is the nicotine patch, yet a third of the sample said they were unfamiliar with it. Participants were familiar with family support (41%) at higher rates than group counseling (30%), the NY Smokers' Quitline, individual counseling (27%) or prescribed anti-depressants (17%). Knowledge of these conventional resources varies across ethnic groups, foreign birth, and gender and even by cigarette smoking behavior. US born Muslims are much more familiar with resources made available through health care programs, and this difference as well as the difference across ethnic groups could arise from language barriers or lack of familiarity with health care systems; Shah & Pharaon (2008) in their study of Arab immigrants in New York found that language was a significant barrier in accessing health care and participants in their study wanted more translated materials.

Compared to non-smokers, cigarette smokers lack more information about individual counseling from a health professional or cessation counselor, family member support, and group counseling. Women were also much more likely than men to know about these methods, the reasons for which are not clear. One possibility is that women with more years of education may have completed the survey, compared to male participants. However, the survey did not measure education, so it was not possible to analyze its relationship to knowledge or behavior outcomes.

The NS survey shows also that religion and religious institutions have potential to enhance smoking cessation initiatives that target Muslim communities. Comparatively, although the majority of the sample did not have accurate knowledge about tobacco-related mortality, two-thirds thought smoking was disliked or forbidden in Islam. Interestingly, this perception varies by ethnicity, with Arabs, Bangladeshis, Pakistanis, Other Asians, and Turkish respondents agreeing at higher rates than Caribbean/West Indian and African American respondents. It is possible that the differences reflect the NS program activities and outreach within these communities. It is also possible that international events impact awareness: various countries in the Eastern Mediterranean region and South Asia have issued religious edicts about smoking (Gavlak, 2008), and Indonesia and Turkey issued laws in 2009 about smoking in public places (Reuters, 2009). Egypt and Pakistan also received $3 million in funds from the Bloomberg Foundation to address tobacco use, and Egypt had issued a religious edict against tobacco use as early as 2000 (Gavlak, 2008).

Does belief about Islamic injunctions actually correlate with behavior? In the NS survey, those who believe that Islam forbids or dislikes smoking reported smoking at significantly lower rates than those who did not share this belief. In addition, a large percent of the overall sample reported hearing about quitting during Ramadan, in contrast to the lower levels of knowledge about mainstream cessation resources. However, compared to quitting during Ramadan, people were less familiar with Imam's support (16.9%) and Ramadan sermon (16.5%) suggesting these strategies need further development and promotion within mosques and through social services.

When asked about what types of cessation resources they would like to have, a large majority wanted to see more mosque-based programs (89%), including women and younger segments of the sample. Smokers surprisingly expressed preference for mosque-based programs at nearly equal rates as non-smokers (75% and 91%, respectively). However, non-smokers were twice as likely as smokers to say they wanted Islamic rulings (fatwa) on tobacco use (38% versus 15.4%). Thus, while the NS survey findings point to the utility of a religious framework in smoking cessation, they also suggest that different types of religious guidance would be effective with different segments. For example, Neirkens et Al, 2005 suggest that imam's support could be more effective for male cigarette smokers, as the imam has less reach with females, or females have less access to the imam and the mosque. In addition, while non-smokers could find a religious edict an effective message to *prevent* smoking, it might not translate into an effective motivator to quit. Mosque-based support initiatives will clearly have a challenge to communicate a nuanced faith-based message that educates community members about religious guidelines cigarette smoking.

RECOMMENDATIONS

Future Research

Seen as factors in smoking cessation and prevention, religiosity, religious authority, religious interpretation, and religious identity interact in complex ways with other social and psychological factors, especially in a community as diverse as the largely immigrant Muslim American community in New York. To further help inform interventions and health education messaging to at-risk sectors of the Muslim community, deeper and more specific explorations of faith-based thinking and behavior should be implemented with quantitative and qualitative explorations of Hookah use by youth; second hand smoking and smoking among specific ethnic groupings; and the possible effect of post 9/11 stress among other considerable stresses of city life.

The current study made an effort to include major Muslim ethnicities in order to be broadly representative of New York Muslim community and at the same time to focus on the target demographic of young adults. However, to be more generalizable, future studies should weight analysis in order to provide estimates with a known degree of sampling error, which is the key for any sample survey that purports to be representative of a larger population.

Health Education Programs

Age and gender segmentation, as well as continuing targeted programs to reach certain ethnic and linguistic communities are important for future smoking cessation initiatives with New York area Muslims. In addition, those who are already smoking would benefit from education about

one-on-one counseling from a health professional, group counseling, and the role of family support. Partnerships with hospitals or city agencies could help the underserved with access to and distribution of nicotine patches, which should be made available through mosques in tandem with workshops and during Ramadan campaigns.

In addition to addressing tobacco use, community members will benefit from a culturally tailored program focused on second-hand smoke. Such initiatives include adapting teaching about how to discuss smoking with family members or friends (such as suggestions found on this website, http://www.dosomething.org/actnow/actionguide/tips-how-talk-friends-and-family-about-their-smoking-habit), as well as culturally competent education about the dangers of second-hand smoke and suggestions for how to avoidits effects. Programs should take advantage of opportunities to generate more normative pressure to quit smoking through family members and friends.

The fact that many people seemed aware of quitting during Ramadan, but less aware of imam's support and Ramadan qutbas, combined with the finding that a significant majority would like mosque-based education suggests that with preparation mosques would provide a good venue (albeit not the only venue) for education about second-hand smoke and help talking with family members and friends about smoking. Through increased involvement with young community participants and more sophisticated web-based strategies, Nafis Salaam plans to take advantage of Ramadan's focus on self-discipline and quitting. by developing specific messages for smokers about seeking help from professionals and family members, and messages about second hand smoke for wider community. In addition, in partnership with religious leaders and health professionals the program will expand its faith based community mobilization by emphasizing more deeply the context of overall health --avoiding harm to the body and spirit -- will to include avoiding harm to others, another core principle underlying Islamic law.

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APPENDIX 1A: PRE-JUNE SURVEY

Online survey available at http://www.surveymonkey.com/s/YKQ5RFX

NAFIS SALAAM: BREATH OF PEACE
CONFIDENTIAL AND ANONYMOUS SURVEY ON SMOKING

Assalaamu'Alaykum. Islamic Medical Association of North America and Muslim Consultative Network request a few minutes of your time to complete the following community health survey (10-15 min). Please be assured that your answers are anonymous and confidential. We will not identify any individuals in our reporting. Your answers will help us improve our service to the Muslim community, insha Allah.

Gender: ☐ Female ☐ Male **What is your age:** _____ **Born in USA:** ☐ Yes ☐ No If no, where were you born? _____	Number of years in the US _____ Language(s) you speak besides English: _____
What is your ethnicity/race: ☐ African ☐ African American ☐ Arab ☐ Caribbean ☐ Eastern European ☐ East Asian ☐ South Asian ☐ Other_____	**Are you currently employed?** ☐ Yes ☐ No **What is your occupation?** _____
Who else lives with you at home? : Number of Children____ Number of adults (including you)_____ **Borough you live in:** ☐ Bronx ☐Brooklyn ☐Manhattan ☐Queens ☐Staten Island ☐ Not in 5 boroughs **Home Zipcode**:_____	

1. **Would you say that in general, your health is Excellent, Very Good, Good, Fair or Poor (check off):**

☐Excellent ☐Very Good ☐Good ☐Fair ☐Poor

2. **After 9/11, do you think that emotional stress levels have increased**

For you personally ☐ No, about the same as before 9/11
☐ Increased a little
☐ quite a lot

For most Muslims in USA ☐ No, about the same as before 9/11
☐ Increased a little
☐ quite a lot

3. **Approximately how many Americans of all backgrounds do you think die of smoking related illnesses each year?**

☐ 100,000 ☐ 200,000 ☐ 300,000 ☐ 400,000 ☐ 500,000 ☐ I don't know

4. **Do you currently smoke cigarettes?**

☐ Yes, I currently smoke cigarettes
☐ No, I quit smoking cigarettes within the last 6 months
☐ No, I quit smoking cigarettes more than 6 months ago
☐ No, I never smoked

5. **Does someone in your extended family currently smoke cigarettes?**

☐ Yes ☐ No
If yes, who_____
If yes, where do they live? ☐ In the US☐ In other countries ☐ Both in the US and other countries

6. **How often are you around people who smoke cigarettes in your home (including visitors)?**

☐ Most of the time ☐ Occasionally ☐ Never

7. **How often are you around people who smoke at your workplace?**

☐ Most of the time ☐ Occasionally ☐ Never

8. **Which of the following methods to quit smoking have you heard of?**
(*check all you have heard of)*

☐ NY Smokers Quitline- their number is (888) 609-6292
☐ A nicotine patch, nicotine gum, or a nicotine inhaler
☐ An anti-depressant drug prescribed to you by a physician, like Zyban
☐ Group counselling
☐ One-on-one counselling from health professional or quit smoking counselor
☐ Family member support
☐ Imam's support
☐ Quitting during Ramadan
☐ Ramadan qutba (sermon)

9. Do you personally believe that smoking is forbidden in Islam?

☐ Haraam (forbidden) ☐ Makruh (disliked) ☐ Not haraam or makruh ☐ Don't know/Not sure

10. How often are you around friends who smoke cigarettes?

☐ Most of the time ☐ Occasionally ☐ Never

11. Do you currently (*check off all that apply)*

☐ Yes, I chew pan or gutka (tobacco) ☐ Yes, I smoke shisha or hookah ☐ Neither

12. How often are you around friends or family who smoke shisha or hookah?

☐ Most of the time ☐ Occasionally ☐ Never

13. How harmful do you personally believe shisha or hookah is for a person's health?

☐ Very harmful ☐ Not very harmful ☐ Somewhat harmful ☐ Not harmful at all

14. How often are you around friends or family who chew pan or gutka?

☐ Most of the time ☐ Occasionally ☐ Never

15. How harmful do you personally believe chewing pan or gutka is for a person's health?

☐ Very harmful ☐ Not very harmful ☐ Somewhat harmful ☐ Not harmful at all

16. Do you mind if others smoke around you?

☐ No, it doesn't bother me
☐ Yes, it bothers me….. Why? (select all that apply)
☐ It affects my breathing ☐ It gets in my eyes
☐ Unpleasant smell ☐ Bad for my health
☐ Other reason_____

17. Are you seriously thinking of quitting smoking?

☐ Never smoked and intend not to start
☐ I quit smoking and intend to keep it that way
☐ Yes, I intend to quit within the next 6 months
☐ Yes, I intend to quit within the next 30 days
☐ No, I am not thinking of quitting any time soon

18. Would you like to have:

a) Information on quitting smoking for you/someone you know	☐ Yes	☐ No
b) Referrals to support groups or counselling to help quit	☐ Yes	☐ No
c) More information on dangers of Hookah or Paan	☐ Yes	☐ No
d) Quit smoking information translated into other languages	☐ Yes	☐ No
e) Videos or internet sites about this subject	☐ Yes	☐ No
f) Islamic rulings (fatwas) on this subject	☐ Yes	☐ No

FINAL SECTION NOTE: IF YOU CURRENTLY SMOKE, PLEASE ANSWER THE REMAINING QUESTIONS SO WE CAN BETTER ASSIST YOU AND THE COMMUNITY

19. How old were you when you first started smoking regularly?

☐ 1 - 9 yrs ☐ 13 - 17 yrs ☐ 23 years or older
☐ 10 - 12 yrs ☐ 18 - 22 yrs ☐ Over 30

20. Why did you first start smoking? (*select all that apply)*

☐ To appear older ☐ To appear "cool" ☐ Curiosity ☐ Appear tough/macho
☐ Be accepted/fit in ☐ Rebellion ☐ Just felt like it ☐ Copy friends/family
☐ Loneliness ☐ To feel grown up ☐ Out of boredom ☐ Stress
☐ Some other reason….what?_____

21. Do you continue to smoke mostly because (*select all that apply)*

☐ enjoy it ☐ became a habit ☐ need with coffee ☐ boredom ☐ friends or family do too
☐ to keep hands busy ☐ advertising ☐Other(what)_____

22. How many cigarettes on average do you smoke per day? _____ per day

23. During the past 12 months, who has advised you to quit smoking? (*select all that apply)*

☐ no one ☐ doctor ☐ nurse ☐ dentist
☐ family member ☐ social worker ☐ imam ☐ online information
☐ friend ☐ group counselling ☐ Other _____

24. During the past 12 months, how many times have you quit smoking for at least 24 hours? ____times

25. If you have tried to quit in the past, which aids did you use to help you quit? (*select all that apply)*

☐ A nicotine patch, nicotine gum, or a nicotine inhaler
☐ A telephone Quitline
☐ An anti-depressant drug prescribed to you by a physician, like Zyban
☐ Group counseling
☐ One-on-one counseling from a medical or social work professional
☐ Family member's support
☐ Imam's support
☐ All on my own, cold turkey
☐ During Ramadan
☐ Engaging in sports or physical activities
☐ Other (what) _____

COMMENTS:_____

THANK YOU!

APPENDIX 1B: POST-JUNE SURVEY

Online surveys available at http://www.surveymonkey.com/s/ZRCKF5B

NAFIS SALAAM: BREATH OF PEACE
CONFIDENTIAL AND ANONYMOUS SURVEY ON SMOKING

Assalaamu'Alaykum. Islamic Medical Association of North America and Muslim Consultative Network request a few minutes of your time to complete the following community health survey (10-15 min). Please be assured that your answers are anonymous and confidential. We will not identify any individuals in our reporting. Your answers will help us improve our service to the Muslim community, insha Allah.

Gender: ☐ Female ☐ Male **What is your age:** _____ **Born in USA:** ☐ Yes ☐ No If no, where were you born? _____	Number of years in the US _____ Language(s) you speak besides English: _____
What is your ethnicity/race: _____	
Borough you live in: ☐ Bronx ☐Brooklyn ☐Manhattan ☐Queens ☐Staten Island ☐ Not in 5 boroughs **Home Zipcode**:_____	

1. **Do you currently smoke cigarettes?**

   ☐ Yes, I currently smoke cigarettes
   ☐ No, I quit smoking cigarettes within the last 6 months
   ☐ No, I quit smoking cigarettes more than 6 months ago
   ☐ No, I never smoked

2. **Does someone in your extended family currently smoke cigarettes?**
   ☐ Yes ☐ No

If yes, who_____

If yes, where do they live? ☐ In the US☐ In other countries ☐ Both in the US and other countries

3. Approximately how many Americans of all backgrounds do you think die of smoking related illnesses each year?

☐ 100,000 ☐ 200,000 ☐ 300,000 ☐ 400,000 ☐ 500,000 ☐ I don't know

4. Do you personally believe that smoking is forbidden in Islam?

☐ Haraam (forbidden) ☐ Makruh (disliked) ☐ Not haraam or makruh ☐ Don't know/Not sure

5. How often are you around friends who smoke cigarettes?

☐ Most of the time ☐ Occasionally ☐ Never

6. Do you currently (*check off all that apply)*

☐ Yes, I chew pan or gutka (tobacco) ☐ Yes, I smoke shisha or hookah

7. How harmful do you personally believe shisha or hookah is for a person's health?

☐ Very harmful ☐ Not very harmful ☐ Somewhat harmful ☐ Not harmful at all

8. Are you seriously thinking of quitting smoking?

☐ Never smoked and intend not to start
☐ Yes, I intend to quit within the next 6 months
☐ I quit smoking and intend to keep it that way
☐ No, I am not thinking of quitting any time soon
☐ Yes, I intend to quit within the next 30 days

9. Which of the following methods to quit smoking have you heard of? (*check all you have heard of)*

☐ NY Smokers Quitline- their number is (888) 609-6292
☐ A nicotine patch, nicotine gum, or a nicotine inhaler
☐ An anti-depressant drug prescribed to you by a physician, like Zyban
☐ Group counselling
☐ One-on-one counselling from health professional or quit smoking counselor
☐ Family member support
☐ Imam's support
☐ Quitting during Ramadan
☐ Ramadan qutba (sermon)

BONUS QUESTIONS:

10) Do you think Shisha/Hookah tends to encourage smoking cigarettes?

☐No ☐Somewhat ☐Definitely ☐No opinion

11) Do you think more young people of Muslim background are taking up some form of tobacco use?

☐No ☐Somewhat ☐Definitely ☐No opinion

12) Would you like to see mosques develop programs such as support groups for quitters?

☐No ☐Somewhat ☐Definitely ☐No opinion