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Philadelphia Arab-American and Arab Immigrant Health Needs Assessment

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ABSTRACT

A health needs assessment was conducted on behalf of the Arab American Development Corporation to determine the health needs and behaviors that influence the health of Arab and Arab-Americans in Philadelphia, Pennsylvania. Data were collected with purposeful sampling using two methods: a health assessment survey and focus groups with key informants from the Arab and Arab-American community to contextualize the survey data. Seventy-six adult respondents completed the survey. The major problems identified were: limited access to health care due to uninsured or underinsured; potential language barriers within the health care system as many respondents spoke only Arabic in the home; overweight and obesity; cardiovascular disease and diabetes; risk of residential lead exposure; and symptoms of stress and depression. Iraqi refugees were at additional risk of mental health problems related to experiencing or observing torture in Iraq.

INTRODUCTION

Over 9% of Philadelphia, Pennsylvania's population consists of recent immigrants; among comparable American cities, Philadelphia has the fastest growing immigrant population. Included in Philadelphia's growing immigrant population are Arab immigrants and refugees ^[1]. Accurate data regarding Arab immigrants is difficult to ascertain because there are not ethnic identifiers for Arab ancestry on health or census records ^[2]. There are differing opinions regarding the exact number of Arab immigrants in the Philadelphia area. According to the U.S. Census Bureau, there are 2,568 households claiming Arab ancestry in Philadelphia ^[3]. The Arab American Development Corporation, a social service agency serving the Arab community of Philadelphia and surrounding counties, reports there are an estimated 30,000 – 50,000 Arab-Americans living in the greater Philadelphia region ^[4]. The number of Arabs in Philadelphia is rising as Philadelphia continues to serve as a host city for Iraqi and Syrian refugees who are coming to the U.S. as a result of conflict in their home countries. This paper places Philadelphia, Pennsylvania's Arab community health needs in context of the existing literature, provides the findings of the needs assessment and offers recommendations to promote the health of Philadelphia's Arab community.

REVIEW OF THE LITERATURE

Immigrant groups of all nationalities experience the American health care system differently than their American-born counterparts. Immigrants are less likely to have health insurance, report fewer health problems, and spend less money on health care than the American-born population ^[5]. Compared to their American-born counterparts, immigrants make fewer health care provider visits ^[6]. Lower health care utilization has been attributed to immigrants being younger and healthier than the general American population; some immigrants, however, tend to avoid seeking health care for reasons of discrimination, fear of alerting the authorities if they are undocumented, and challenges maneuvering through the U.S. health system ^[7,8]. This is also true for Arab immigrants who have identified the complexity of the U.S. health care system and the difference between the U.S. system and their home countries' health care services as a reason for not using health services ^[9].

Unlike immigrants who legally enter the U.S. by choice, refugees arrive because they are at risk of persecution related to their race, religion, or political and group affiliations [10,11]. Iraqi refugees to the U.S. have higher health care utilization than Arab immigrants [12]. This difference in health care utilization between immigrants and refugees is attributed to compulsory physical examinations of refugees at the time of entry to the U.S., access to a short-term federal refugee health insurance program, and higher utilization of physical health and mental health services of Iraqi refugees in the U.S. [12]. Language and lack of access to interpreters have also created barriers to health care for refugees who come to the U.S. with a variety of physical and mental health problems [8,13-15]. Additionally, Arab Americans have reported language barriers within the health care system as well as health care providers not being sensitive to their cultural needs and practices [9,13]. Moreover, physical disabilities and mental health problems may not be addressed in the Arab American community because these issues are frequently not discussed outside of the family [9].

Arab-Muslim immigrant women living in the U.S. have reported greater lifetime trauma than other female immigrant groups and often present with symptoms of depression [16]. Furthermore, 63% of Arab-Muslim immigrant women reported increased discrimination following September 11, 2001 attacks on the U.S. Discrimination was reported as name-calling, rough handling, and being treated rudely or unfairly [16]. Iraqi refugees have come to the U.S. following traumas of war including witnessing torture and killing or personally being tortured [14,17]. Iraqi refugees who have resettled in Western countries were found to experience post-traumatic stress disorder (PTSD) (8% - 37.2%) and depression (28.3% - 75%) at rates higher than other populations in the U.S. of 3.6% and 8.6% respectively [18].

Acculturation is the process of cultural learning that results from sustained emersion within another culture and can lead to changes in behavior, attitudes and values [19]. Acculturation has been found to influence health behaviors and immigrant health [20-22]. Arab immigrants tend not to acculturate as readily and maintain their cultural identity and practices [23]. This lack of acculturation to U.S. has been associated with diabetes in Arab immigrant men, reports of poor physical well-being, and increased risk of mental health problems [24-26]. Although Arab-Americans have higher education than other ethnic minorities, they were found to have higher age-adjusted mortality risk than non-Arab and non-Hispanic Whites due to earlier onset of chronic diseases in the Arab-American adults associated with dietary and physical activity habits [27]. Lower acculturation to the U.S. has been found to be associated with impaired glucose tolerance and diabetes, less health promoting behaviors, and poor mental health among Arab Americans [24,25].

The Arab Cultural Community Center of San Francisco, California conducted a comprehensive health needs assessment of the Arab community. The sample was primarily Muslim (76%) with 30% of the respondents reporting chronic diseases such as heart disease, diabetes or hypertension [13]. Additionally, 35% of the women reported some type of abuse (verbal, emotional, threats, economic, physical, or sexual). Diabetes was also identified in 41% of the Arab-American community in Dearborn, Michigan [24]. More than half of the Arab Americans surveyed in Brooklyn, New York lived below the federal poverty level, 30% reported not having health insurance, 42% of the men smoked cigarettes, and 58% selected their health care provider based on language considerations, such as the availability of interpreters or language of provider [2].

Tobacco use in Arab countries has been identified as among the highest in the world, with rates of tobacco use reported as high as 77% among males and 35% among females [28-29]. Arab Americans tend to continue to use tobacco outside of their homelands as well. Additionally, hookah smoking is prevalent among Middle Eastern immigrants [30]. Environmental risk factors such as substandard housing and poor indoor air quality have been associated with asthma among Arab immigrants [31]. Poor housing quality can also place occupants at risk of lead exposure and asthmagens such as roaches.

An Arab American health survey in Genesee County, Michigan revealed that the majority of respondents did not receive annual flu shots (67.6%) or participate in routine cancer screening such as mammography (of the 46% of the women who responded 59.1% had undergone mammography), colorectal screening (73.8% never did a home stool occult blood test), and skin examinations (65.6% never had routine skin examination by a physician [32]. Those surveyed were found to have high prevalence of overweight (46%) and obesity (25.5%). Arab men in New York City reported not seeking health services due to fear of attracting the attention of immigration authorities, which could lead to deportation.

Those individuals who came to the U.S. as refugees have different experiences than those who come voluntarily [33]. Approximately 28,000 Iraqi refugees have resettled in the US between October 2007 and September 2009 [15]. A review of 4,923 health records of recently arriving Iraqi refugees over one year of age revealed that 14.1% had latent tuberculosis infection, 15.2% were hypertensive, 24.6% were obese, 7.1% of children under 5 years old were severely malnourished, and 29.6% of women of childbearing age were anemic [15]. Iraqi refugees who sought mental health treatment had PTSD (54.3% of the men and 11.4% of the women) and more than 80% of those seeking mental health treatments had symptoms of anxiety and depression [14]. Iraqi refugees have come to the U.S. following traumas of war including witnessing torture and killing or being tortured themselves [14,17].

Public Health Management Corporation in Philadelphia conducts a biannual survey of Philadelphia and surrounding counties. The health data of the Muslim population in two known Arab communities of Philadelphia indicate that 22.2% of adult Muslims report hypertension, 19.9% report diabetes, 19.9% are obese, 57.9% report excellent or very good health, 19.9% identified the cost as a barrier to health care, and 19.9% are covered by Medicaid [34]. Although data can be identified based on

religion, including Muslim, telephone surveys are conducted in English and Spanish only, therefore, a significant portion of Arabic immigrants could have been excluded from the survey.

To date, there is no health assessment that addresses the health needs of Philadelphia’s Arab community and gathers the health data in English and Arabic. This health needs assessment was conducted on behalf of the Arab American Development Corporation to determine major health problems, health practices, health risks, and gaps in services for greater Philadelphia’s Arab community.

RESEARCH METHODS

Data were collected with purposeful sampling using a mixed-method approach of a health assessment survey and focus groups with key informants from the Arab and Arab-American community. Focus groups were conducted to contextualize the participants’ survey responses. The Philadelphia Arab and Arab-American Household Health Needs Assessment surveys were distributed between August 2009 and February 2010 at Arab social, cultural (Arab health fair), and religious (Iftar celebrations, following Friday prayer) events as well as at a local grocery store that serves the Arab immigrant community. Bilingual, Arabic and English speakers, who were trained by the primary investigator in obtaining consent, explaining the purpose of the study, and answering potential participants’ questions, distributed the survey.

The survey was adapted from the 79-item health survey of San Francisco’s Arab and Arab-American community [13]. The Philadelphia Arab and Arab-American Household Health Needs Assessment survey was condensed to 41 questions and included questions about family members to address health in the context of the family, the primary social unit in Arab culture, and to capture health needs of the wider community and the needs of the Arab youth. The survey also included a question regarding the age of housing, because lead exposure is an environmental hazard present in many homes in Philadelphia. The final survey was evaluated by members of the Arab immigrant community for cultural appropriateness and clarity of the questions. The health survey was approved by the leaders within the Philadelphia Arab American Development Corporation and piloted with three Arab Americans. The survey was developed in English, then translated to Arabic and back translated to English. Any discrepancy in the back-translated survey was reviewed and adjusted by the primary investigator and a bilingual community leader. The English and Arabic versions of the Philadelphia Arab and Arab-American Household Health Needs Assessment surveys can be found at <http://www.arabamericancdc.org/health.html>.

Survey data were analyzed using SPSS (version 19) statistical software package. Body mass index (BMI) was calculated for survey respondents and their household members using the Centers for Disease Control and Prevention National Body mass index (BMI) calculator for adult and children [35]. Children’s ages, not their birth dates, were collected as part of the survey. Children’s birth dates were entered as January 1 and the birth year associated with the child’s reported age. For example a 16 year old would have been entered as 01-01-1993.

Three focus groups were made-up of key informants within Philadelphia’s Arab community. The focus groups were conducted after the survey data was collected. The first focus group was five female community leaders; the second focus group included four male leaders, and the third consisted of fourteen recent female Iraqi refugees (See **Table 1** for demographic data regarding all focus group members). Finding a time to meet with the male community leaders was extremely difficult because of work schedules and family commitments. The focus group questions were open-end related to health access and health needs within participants’ families and community (See **Table 2** for sample focus group questions).

Table 1: Focus Group Demographic Data.

Length of Time in U.S.	Country of Birth (# participants)	Mean Ages in years (age range)
1 month – 6 months	Iraq female (8)	44.63 ± 17.33 (22-70)
7 months – 12 months	Iraq female (4)	54.25 ± 14.66 (38-64)
13 months – 5 years	Iraq female (2)	44 ± 1.44 (43-45)
6 years – 19 years	none	
20 years or more	U.S. female (3), Iran female (2), Iraq male (1) Israel male (1), Kuwait male (1) Syria male (1)	37.88 ± 12.9 (23-60)

The focus groups were conducted to provide greater insight into factors that influence health that may not have been fully described in the surveys. The first female focus group and the male focus group interviews were conducted in English. The Iraqi women’s focus group was conducted in Arabic. Translation occurred during the Iraqi women’s focus group by the investigator asking questions in English and an interpreter, fluent in Arabic and English, translating the questions into Arabic for the Iraqi women. The women’s responses were then interpreted back to English for the investigator. All focus groups were audio recorded and verbatim transcripts were generated by the primary investigator (PI). Transcripts were read repeatedly and analyzed within the context of the survey data. A leader within Philadelphia’s Arab community confirmed the findings of the survey and focus group data. Focus group content analysis included identifying manifest and latent content [36-37]. Manifest (what is evident in the data) analysis was supported by returning to the survey data while analyzing the transcripts. Latent (hidden meanings)

analysis occurred when the PI transcribed the verbatim transcripts. The PI listened repeatedly to audio recordings, read the transcripts repeatedly, and reflected on the meaning of participants' statements. Meanings were confirmed with a leader within Philadelphia's Arab community. This study had IRB approval from the PI's university.

Table 2: Focus Group Questions.

Are fresh fruit and vegetables available in your community food market?
Are there clinics and health care providers' offices in your community?
Are there cultural or religious practices that support health in your community? If so, what are they? How do these practices influence health?
Are there cultural or religious practices that may cause health problems in your community? If so, what are they? How do these practices influence health?
Do you or members of the community have concerns about the following?
<ul style="list-style-type: none"> • Access to health care • Child rearing • Caring for sick or disabled family members • Care of the elderly
What do you see as the greatest health problems in your community? (group was asked rank greatest to least problem)
What do you see as the greatest barrier to good health in your community?
What do you see as the greatest factors that support health in your community?
Is there anything else that you would like to share that can inform us about the health of the Arab and Arab-American community in Philadelphia?

FINDINGS

The Sample

The survey was completed by 76 adult respondents (See **Table 3**). Their ages ranged from 18-73 (mean age: 38.38 years, ± 11.44). There were four surveys completed by teen respondents (one 16 year old, and three 17 year olds), they were discarded as accuracy could not be confirmed, nor could parental permission to provide family health information be obtained. Many respondents did not answer every question, but omitted from 1-3 questions on average. Most of the respondents were Muslims (70 Muslims, 6 Christians). Thirty-three surveys were completed in Arabic; forty-three were in English. Half reported (50.7%) reported being U.S. citizens and other half (49.3%) reported that they were not U.S. citizens. Of the non-U.S. citizen group 29.9% identified as permanent residents. The respondents provided health information of 186 household members including 103 children under 18 years old. Focus group data is provided in quotation marks with the survey findings to further explain the survey data in relation to the Arab community. Fifty-five respondents completed the question regarding members of their households and the average household size was 4.3 persons. Most households (78%) consisted of married couples with children. The range of number of children within a household was one-five children, with three children per family as the most common family size (35%). Most of the households (64%) had at least one child who was school aged (5-17 years old). There were three households that reported multiple generations living together with parents, children and a grandparent or grandparents.

Determinants of Health

Respondents' length of time in the U.S. ranged from a few days (for recently arriving Iraqi refugees) to 35 years with the mean length of time living in the U.S. of 9.36 years (sd ± 9.76). Sixty-five per cent of the households spoke only Arabic in the home and 31.9% spoke both English and Arabic. Language preference at home has been used as a proxy measure of acculturation with preference to native language indicating a stronger association with native cultural practices and behaviors [38]. However, only 20.9% listened to Arabic only television and radio, with 44.8% listening to both English and Arabic, and 34.3% English only television and radio. Additionally 43% of the respondents completed the Arabic version of the survey. Despite the fact that Arabic was the main language spoken at home and a high preference for the Arabic version of the survey, less than half of the respondents (n=30) reported participating in traditional cultural practices such as wearing a charm to avoid the evil eye and shaving a baby's head in the early days of life.

Most of the respondents were highly educated with 71% completing some college or higher degree. Thirty-six percent of respondents were employed full-time, 10% part-time, and 29% were not employed, but actively looking for work. Of those employed (full and part-time employment), 46% of the respondents were employed in skilled (22%) or professional (26%) settings. The majority of respondents (80%) reported annual household incomes below \$50,000. As a point of reference, the median annual family income at the time of data collection in Philadelphia was \$36,959 [41].

Forty-nine percent of the respondents reported that in the past 12 months there were times when they or a member of their household did not have health insurance coverage. Additionally, there were 23 households (or 31.9%) relying on state health insurance plans such as Medicaid and Children's Health Insurance Plan (CHIP), which cover basic illness care and limited preventive care. The adult respondents who reported having a personal health care provider such as a physician were 41.8% and 39.45% reported that either they or a member of their household needed to see a doctor but did not do so because of the cost of care. Although, 62.5% of the respondents reported that they had visited a doctor within the past 12 months.

Table 3. Demographic Information of Survey Respondents

		Number	Percentage
Gender		76	
	Male	30	39.5
	Female	40	52.6
	No Answer	6	7.9
Religion		76	
	Muslim	70	92.1
	Christian	6	7.9
Nation of birth		71	
	Algeria	2	2.8
	Comoros	1	1.4
	Egypt	8	11.3
	Iraq	18	25.4
	Jordan	2	2.8
	Kuwait	2	2.8
	Lebanon	3	4.2
	Libya	2	2.8
	Morocco	8	11.3
	Palestine	13	18.3
	Saudi Arabia	1	1.4
	Syria	2	2.8
	Tunisia	2	2.8
USA	7	9.9	
Language Spoken at Home (n = 69)			
	Arabic	45	65.2
	Arabic & English	22	31.9
	English	3	4.3
Language Preference in Media (television) (n=67)			
	Arabic	14	
	Arabic & English	30	
	English	23	
Ages of Children (n=94)			
	0-5	34	
	06-Nov	32	
	Dec-17	28	

In 1978 lead was banned from paint and identifying houses built before 1978 is a marker in establishing residential lead risk. Twenty-one (28%) of the respondents reported that their homes were built before 1978 and 39 (52%) did not know when their homes were built, which potentially puts 79% of those surveyed at risk of residential lead exposure. Zip codes were also included to further examine the age of homes compared to U.S. census data. Analysis indicated that at least 89% of the housing units in the five most represented zip codes in the study were built after 1978 (see **Chart 1**). Furthermore, the survey data reveal that 45% of the homes had children age five or younger.

Chart 1: Residential Lead Exposure Risk by Zip Codes

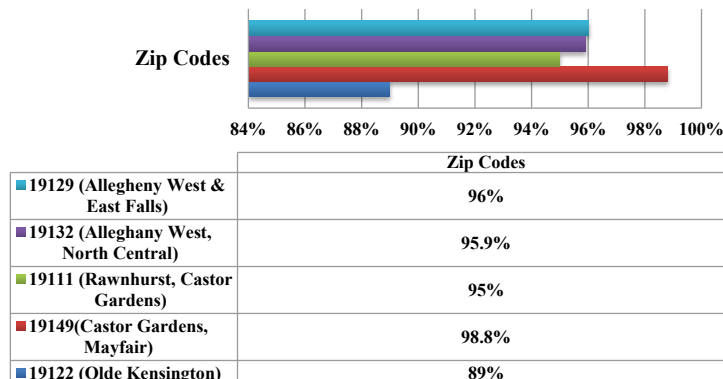


Chart 1. Residential Lead Exposure risk by Zip codes.

Body mass index (BMI) was calculated from self-reported height and weight for 115 adult respondents, one person (0.9%) was underweight (BMI below 18.5), 37 (32.2%) were normal weight (BMI 18.5-24.9), 40 (34.7%) were overweight and 37 (32.2%) obese. Thus, 66.9% of the adult population surveyed was overweight or obese. Children's BMIs were also calculated and 16 (25.4%) of the children were underweight, 24 (38.9%) normal weight, 17 (27%) overweight, and 6 (10%) obese. Combining BMI from data from adults and children 56% of those sampled were overweight (32%) or obese (24%) (see **Chart 2**). Additionally, a focus group participant highlighted the importance of rice in the Arab diet, "if I don't eat rice, I haven't eaten anything no matter what."

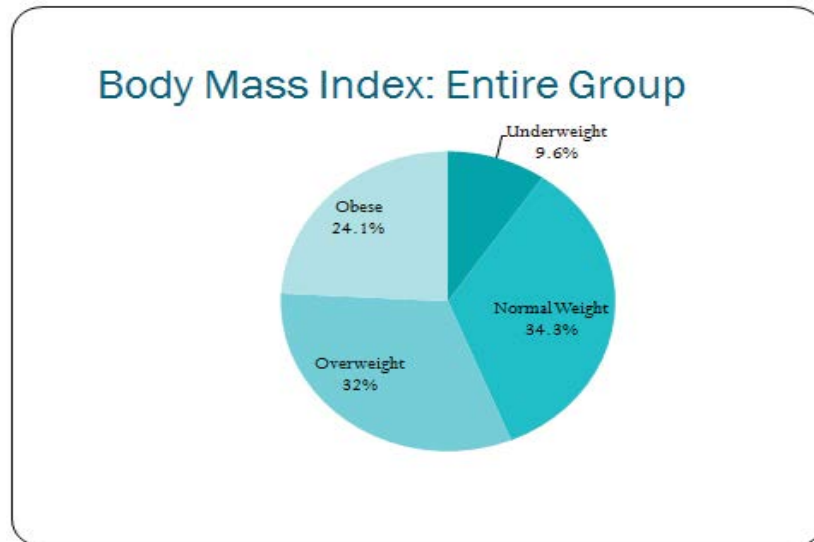


Chart 2. Weight Status According to BMI of Entire Group (Adults & Children).

Physical Health Status

In ranking their own health status 63.7% of the respondents reported their health to be excellent to good and 36.3% reported fair health to poor health. Fifty-five participants responded to the questions regarding the people living in their household and their health status. Ten children were identified as having health problems that ranged from asthma, dental carries, vision problems, joint and leg pain, to tiredness. The most common health problems for adults were cardiovascular in nature (n=24; 16.1 % of reporting adult population) such as hypertension, high cholesterol, and heart disease; musculoskeletal problems (n=14; 9.4% of reporting adult population), and diabetes (n=12; 8.1% of reporting adult population).

Eight of the fourteen individuals reporting musculoskeletal conditions were Iraqi adults who had disorders such as arthritis, pain in extremities or joints, and back pain. During the focus group, Iraqi women identified that "a lot of Iraqis are born with disabilities" and there were "many uncommon problems after the war" because of "the chemicals women inhaled while they are pregnant." A female leader in the Arab community shared that some Iraqis were victims of torture in Iraq before coming to the U.S.

Psycho-Social Health

Psychosocial-emotional status was determined by asking about sleep patterns and somatic symptoms (headaches, loss of sleep, nightmares, and upset stomach) that were not attributed to a physical cause by a healthcare provider and feelings of depression or hopelessness. Fifty-seven percent of the households had at least one person reporting somatic symptoms and 46% had at least one person reporting feeling depressed, sad, hopeless or worthless. When considering both of these survey items together, 64% of the households surveyed had at least one person with either somatic symptoms or feelings of depression (See **Chart 3**). The responses were examined by nationality and there was no evidence of one group having greater mental health needs than another. An Iraqi case worker shared during a focus group that some Iraqis are "survivors of torture or trafficking, they rarely have time to deal with it (psychosocial impacts), they have too much other stuff to get settled here." Of the 66 participants who responded to the survey, 60.6% reported that either they or someone in their family experienced discrimination. Discrimination was described as being told to go back home (to their home country), women being singled out for wearing the hijab, being called a terrorist, mistreatment by the police, or underrepresentation of Arabs in public roles (like police force) in Philadelphia.

Health Behaviors

Respondents identified their participation in health promoting behaviors. The most frequently selected behaviors were eating fruit and vegetables (n=55), meditation and prayer (n=45), wearing seat belts (n=41), getting adequate sleep (n=31), getting vaccinations (n=29), and exercising regularly (n=29). When asked to identify the most important thing to maintain their health, the respondents answered regular exercise (n=28), eating fruit and vegetables (n=18), getting adequate sleep (n=13), meditation and prayer (n=13), and driving safely and wearing seat belts (n=12). When queried about areas of greatest concern, respondents reported that chronic disease conditions in themselves and their family members, lack of health insurance and the inability to participate in health promoting activities were the most frequent issue of concern.

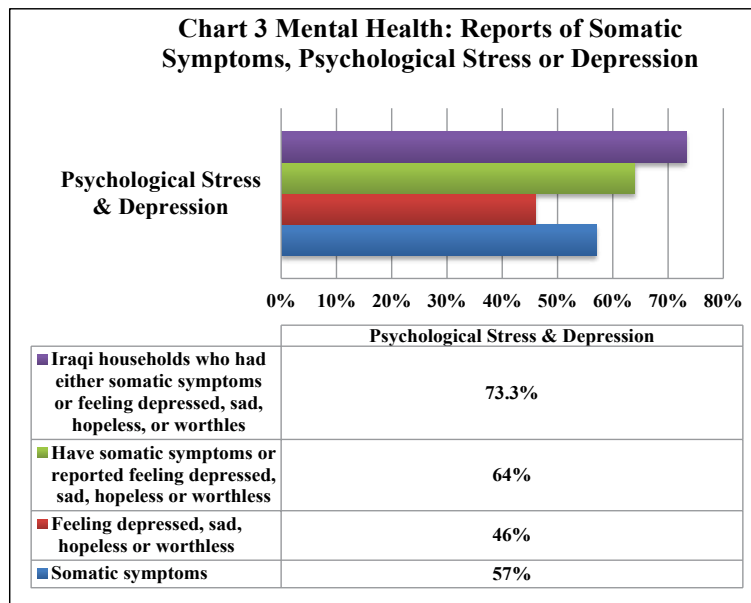


Chart 3. Mental Health: Reports of Somatic Symptoms, Psychological Stress or Depression.

DISCUSSION AND RECOMMENDATIONS

As the term implies, a health needs assessment is problem oriented and its purpose is to determine the health-related needs of a particular community. The major problems identified in this assessment were limited access to health care due to being uninsured or underinsured; potential language barriers within the health care system with many respondents speaking only Arabic in the home; high prevalence of overweight and obesity, CVD, and diabetes; risk of residential lead exposure; and symptoms of stress and depression.

Forty-nine percent of the respondents in this assessment reported they or a household member did not have health insurance coverage in the past year and 39.45% reported that there were times that they did not visit a health care provider when indicated because of the cost of care. At the time of data collection, 15.5% of Americans were estimated to be uninsured, this population has a higher rate of no or limited health insurance than the national average ^[39]. The issue of health insurance and health care access is a national health crisis and has recently been addressed with the Patient Protection and Affordable Care Act of 2010 (ACA). The ACA includes insurance coverage for naturalized citizens and legally admitted immigrants (lawfully present), which includes asylees and refugees ^[40]. Efforts should be made to inform Arab immigrants and refugees of their options regarding health insurance under ACA and providing assistance in health plan enrollment.

In 65% of the households only Arabic is spoken in the home; 43% of the respondents preferred to complete the Arabic version of the survey. In contrast, 91.3% of Americans identified themselves as being fluent in English ^[41]. Challenges of Arab immigrants maneuvering through the complexities of the U.S. health system are amplified when providers may not be sensitive to cultural needs and practices and when patients are not fluent in English ^(8,9,13). Sarsour and colleagues reported that 58% of Arab immigrants selected their health provider based on language services ⁽²⁾. The U.S. health care system is further complicated for immigrants and refugees by language barriers and limited access to interpreters ^(8,12). Identifying local health care providers that speak Arabic or offer Arabic interpreter services may be a valuable first step to improve health care access. Furthermore, assuring that federal regulations as they relate to language assess are upheld could reduce barriers to health care. For example, Title VI of the Civil Rights Act of 1964 establishes that there is not discrimination against individuals with limited English proficiency; thus, language services such as written and verbal translations must be offered to immigrant and refugees who are not fluent in English ^[42]. In addition, the ACA has a “plain language” requirement regarding health plans ^[43]. Therefore subscribers, including non-English speakers, must be able to understand the language of insurance plans.

Nearly 67% of the adults in this assessment were overweight or obese, placing them at risk of a host of chronic diseases, including CVD and diabetes. High rates of overweight and obesity have been identified in other Arab immigrant populations ^[44]. Furthermore, earlier onset of chronic diseases, such as CVD and diabetes in Arab-American adults, has been associated with dietary and physical activity habits of Arab Americans and low acculturation to the U.S. has been associated with high prevalence of chronic disease ^[45]. In this study, a high preference for speaking Arabic in the home (65% of households) was used as a proxy to measure acculturation. The preferences for Arabic language could indicate a high association with Arab culture. Also, a participant noted the importance of rice in the diet, highlighting Arab dietary preferences of the group. Additionally, participants identified their concern of developing CVD and diabetes associated with overweight and obesity; but they also identified getting exercise, eating fruit and vegetables, and prayer and meditation as health promoting activities. Steps should be taken to capitalize on the community’s knowledge of healthy behaviors and their identification of their health risks. Engaging the community in issues

that they have identified as a concern by targeting diet and activity within this population could have an impact on weight with subsequent reduction of risk or delay in onset of CVD and diabetes. As acculturation has been noted to have impacts on chronic disease, newly arriving immigrants and refugees should be assisted in acculturation to the U.S. while maintaining health protective cultural and religious behaviors such as the avoidance of alcohol and keeping skin covered with modest dress. Additionally, a community approach to weight reduction that enhances social support, utilizes a family-centered approach, and offers culturally appropriate exercise facilities and opportunities for outdoor physical activities could capitalize on existing cultural cohesion of the Arab community to mobilize the community in weight management and reduction of chronic disease ^[46].

Seventy-nine per cent of the households surveyed were potentially at risk of residential lead exposure. This finding is even more critical because 45% of the households surveyed had children five years old or younger. According to the Center for Disease Control and Prevention, children under five years old, immigrants, refugees, and members of ethnic minority groups are among the populations at greatest risk for residential lead exposure ^[47]. Thus, this population is at risk of residential lead exposure due to aging housing stock, childhood, and immigrant and refugee status. Interventions should include education about the risk; the importance of screening and addressing exposed children, and assistance to families in carrying out methods of household lead remediation.

Sixty-four percent of the households included in the survey reported that at least one person experienced either somatic mental health symptoms or feelings of depression. Thus, mental health assessment and services must be included to address acculturative stress of immigration, past trauma or other mental health problems. Specifically, the Iraqi refugee population should be evaluated for PTSD and prolonged grief disorder related to previous torture and experiences of war ^[48]. Twenty-four percent of Iraq refugees in Utah reported that they either personally experienced torture or observed another person being tortured; 31% had a close relative who experienced torture in Iraq ^[47]. The effects of torture and war could have negative consequences on the Iraqi refugees' mental health and may be related to the musculoskeletal problems that were found in this assessment. Although there was no indication that one subgroup had greater risk of mental health problems than another, there was information regarding the Iraqis being exposed to torture while living in Iraq. Given other reports regarding the mental health needs of Iraqi refugees in the U.S., further mental health screening and evaluation for the Iraqis are indicated ^[14,17,18]. This is especially true as the Iraqis have had some time to settle in the U.S. as a focus group participant shared that early in their resettlement to the U.S. the refugees were working to adjust to life in the U.S. for themselves and their families and they were not yet able to deal with the psychological toll of war.

A barrier to addressing mental health issues is the stigma within the Arab and Muslim communities regarding mental health problems ^[49]. Including mental health assessment as part of a physical examination can reduce the stigma related to mental health problems and its care into a holistic practice of immigrant care. Offering same-gender therapist, including a family approach to care, and using a cultural liaison if needed could improve receptiveness to mental health treatments within the Arab community ^[50]. Additionally, offering education about screening, the potential impacts of mental health issues and treatment options at an Arab cultural center or Masjid (mosque) can be a step to normalizing mental health as an aspect of holistic health for the individual, family, and community.

Limitations

There were limitations to this assessment. First, the findings are specific to Philadelphia and not generalizable to other Arab communities in the U.S. Second, the community members provided self-reported information; therefore, the data are subject to accuracy of memory and social desirability. Social desirability is especially a concern in a collectivistic culture, such as the Arab culture. It is important to note that in a group that strongly disapproves of alcohol and recreational drug use, five respondents reported recreational drug use (alcohol, marijuana, and painkillers); this is a possible indication that the respondents were being transparent and providing accurate information. Third, this assessment was a small sample size with consideration of the total Arab-American and Arab immigrant population in Philadelphia.

CONCLUSION

Many findings of this assessment have been noted in other Arab immigrant populations in the U.S. Arab immigrants have gaps in health care access, language barriers within the health care system, have a high rate of overweight and obesity, a high prevalence of chronic diseases, such as CVD and diabetes, and have mental health problems within the population ^[9,12-14]. This assessment also identified the increased risk of residential lead exposure and mental health needs specific to the Iraqi refugees in Philadelphia.

Steps toward future health programs and research of Arab immigrants and refugees should include developing health programs and advocacy that address the needs for this population and analyzing program effectiveness related to health outcomes. Arab immigrant advocacy could include improved health care access that includes addressing language barriers and meeting physical and mental health needs as well as addressing residential lead risk. Testing effective programs and methods to improve health of Arab immigrants and Arab Americans that relies on the Social Ecological Model of Prevention could lead to the development of a body of evidence to strengthen immigrant and minority communities ^[35]. The Social Ecological Model

could address the complexity of factors related to individual health behaviors and barriers to health within context of culture (individual level), family (interpersonal); health care systems and policies (organizational level); available resources (community level); and public policy on the local, state and federal level (policy level) that influences health care access, weight reduction and management, chronic disease and mental health screening, treatment and management; and residential lead exposures.

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