Physical and Mental Health of First Generation Afghan Refugees Living in Southern Alameda County, SF Bay Area

By

Najim Mohammad Mohammady

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Committee in Charge:

Joan Bloom
Carl Stempel
Jess Ghannam
Susan Ivey
Maureen Lahiff

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A poem about exile written by my grandfather, Mohammad Taher Hatef
(Pen Name: Hatef, meaning sound from the unseen)

"An Unbound Kingdom"

Abridged, entitled and translated by Omid Sanjideh

When I search for flowers, springtime in my country comes to mind.
Scenes of blood splattered on its arable land comes to mind.

The only beautiful jewel inside a shell to see,
My country of Afghanistan inside of central Asia comes to mind.

All that I see here in exile, appear either similar or different,
From each the wretched and incomplete story of my country comes to mind.

The nightingale sings intoxicating songs in the meadow,
The wailing cries of my home comes to mind.

When a tune strikes the lyre in the corner of my heart,
Nothing can silence the Dari or Lugerian composer that comes to mind.

I enlist forgetfulness to throw the load of grief behind me,
But my heart makes sure that it again comes to mind.

Refusal to talk about it brings me to the precipice of time,
As soon as I utter *Vatan*, my heaven and paradise comes to mind.

I, Hatef [the sound from the unseen], became an unbound kingdom,
So sayeth the poet, Bidel, "Any dot, chosen from amongst my poetry, is what comes to mind".

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Paper 1

Introduction

The United Nations High Commissioner for Refugees (UNHCR) reports that at the end of 2009, 43.3 million people worldwide were forcibly displaced due to conflict and persecution. Of these 43.3 million, 15.2 million were officially recognized as refugees.[1] Refugees often have experienced traumatic events while they were in their home countries, during their "flight," and also during resettlement in their host countries. By definition, refugees are at an increased risk for psychiatric disorders due to trauma exposure, forced migration, and resettlement difficulty.[2]

According to a recent meta-analysis of studies involving 7000 refugees, refugees that resettled in western countries are about 10 times more likely to have Post Traumatic Stress Disorder (PTSD) than the age-matched general American population.[3] Furthermore, multiple studies have shown that trauma exposure, PTSD, and depression are associated to poor physical health status.[4-8]

Afghanistan has been the leading country of origin for refugees over the past 30 years due to the Soviet invasion of 1979, civil unrest, the Taliban regime, and the US occupation. In a recent 2010 UNCHR report, 2.9 million Afghans live in 71 host countries and 6.4 million Afghans have sought international protection during peak years of conflict. Outside Pakistan and Iran, the US contains one of the largest Afghan diasporas, with estimates suggesting up to 100,000 to 300,000 persons of Afghan descent are living in the US.[9, 10]

According to the American Community Survey 3-Year Estimates, California has the largest U.S. Afghan population, estimated at 34,000 individuals.[11] However, the census data may not reflect the actual numbers of Afghans living in California due to low participation in the census for a number of reasons, such as language, or may be underreported due to identifying by ethnicity rather than country of origin. Estimates gathered from community leaders by Lipson, Askaryar, and Omidian suggest that the San Francisco Bay Area alone is home to 40,000 Afghans, making the region the largest Afghan community in the US.[12] Although a large number of Afghans live in the SF Bay area, there have been very few studies characterizing the health status of Afghans, and essentially none attempting to understand the relationship between mental and physical health in Afghan refugees living in the United States.

This paper has the following goals: (1) to define refugees and briefly summarize refugee theory, (2) discuss the health status of refugees with a focus on mental health, (3) explain post traumatic stress disorder, (4) review Afghanistan's history of conflict, (5) summarize the current literature on Afghan refugee health, and (6) discuss concerns associated with specific measures of mental health in refugee populations.

Defining Refugees

A refugee, as defined by the United Nations 1951 refugee convention, is an individual who,

> owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality, and is unable to, or owing to such fear, is unwilling to avail himself of the protection of that country.[13]

This convention established the legal definition of a refugee and tied basic human rights to the title. This definition has a clear notion of persecution that will ensue if the individual is to return to their country of origin. In addition, the definition relies on identifying people on an individual basis and granting them refugee status, which is not always easy in conflict situations.

Refugees are displaced by force, whether the force driving their departure was physical or political. Due to the political environment in Africa and the exodus of large numbers of people, The Organization of African Unity (OAU) extended the UN's definition of refugees in 1969 to include factors beyond identifying individual persecution for refugee status. The OAU's Convention Governing the Specific Aspects of Refugee Problems in Africa defines a refugee as,

> every person who, owing to external aggression, occupation, foreign domination or events seriously disturbing public order in either part or the whole of his country of origin or nationality, is compelled to leave his place of habitual residence in order to seek refuge in another place outside his country of origin or nationality.[14]

This definition allows for the inclusion of people who flee due to external aggression, international intervention, and civil war. It also takes away the need to identify individual motives for refugee status and makes it possible to give refugee rights to people affected by violence-induced mass exodus.[15] Refugee experiences are often multidimensional and can be described in stages. Keller and Randhawa describe these stages as: perception of a threat, the decision to flee, the period of extreme danger and flight, reaching safety, camp behavior, resettlement or repatriation. In addition, resettlement involves adjustment and acculturation and the individual behavior changes caused by their refugee experience.[16]

Additionally, Kunz identifies two kinetic types of refugees in refugee theory. The first is called anticipatory refugee movement. These individuals identify danger early on and "anticipate" departure. They have time to get their things in order, usually move with the whole family, have the appropriate resources and make arrangements for the move in advance. These people tend to be more educated and financially capable. The second type of kinetics is referred to as acute refugee movement. These individuals do not have time to prepare and may move in a moment's notice. They are pushed by war, political crisis, and fear of immediate danger. Their goal is to get to safety and decisions are not

carefully thought through. Acute movement refugees ultimately will have to seek asylum, return to their country of origin, or resettle to a distant land.[17]

There is an important distinction between forced migration and voluntary immigration. Voluntary migrants are attracted to a land of opportunity and have time to consider and make arrangements for their new lives, whereas refugees flee due to danger.[18] Voluntary migrants may also be referred to as economic migrants. Economic migrants leave their homes, legally or illegally, mainly for economic pursuits. They seek better financial opportunities or often want to help their families back home. The World Bank estimates that about 215 million migrants sent $325 billion in remittances to developing countries in 2010.[19]

Although refugees may belong to a cohort, ideologies prior to displacement, and host country variables contribute to a refugee's success. Kunz classifies refugees into three identification categories. The first, majority-identified, are individuals that believe the majority of their counterparts share a similar ideology regarding the circumstances that led them to be refugees. These people identify with the nation they are from but not necessarily with the nation's government. The second category is referred to as events-alienated. These individuals may feel ambivalent to their counterparts due to events preceding the refugee situation or due to existing discrimination. They are less likely to want to return to their country of origin. The third type of classification is called self-alienated. They have no desire to identify with the nation of origin.[20]

It is important to consider that the refugee experience is multi-factorial, and it involves experiences during times of conflict in countries of origin, during the escape or "flight" from persecution, and while resettling in a new host country.

Refugees and Mental Health

Refugee groups have endured political persecution and violence. Refugees also experience loss of culture and family, and many resettlement difficulties. In general, refugees have poor mental health which may be manifested as post-traumatic stress disorder (PTSD), depression, anxiety, psychosis, or dissociation.[21] A systematic review and meta-analysis of 145 studies of refugees and other conflict-affected persons from 40 countries reported an overall weighted prevalence rate for PTSD of 30.6% and for depression, 30.8 %.[22]

The experiences of trauma and resettlement have led certain groups to have lower overall health status and poor mental health. In particular, the experience of South East Asian refugees has been well documented. Mollica et al. report high levels of traumatic events and torture experienced during war, during escape, and in refugee camps among Vietnamese, Cambodian, and Hmong/Laotian refugees. Some of these experiences include lack of food or water, ill health, lack of shelter, imprisonment, war injury, torture, sexual abuse, social isolation, being near death, being lost or kidnapped, or witnessing murder or torture. The major psychiatric disorders present in all three groups were major affective disorder (including depression) (71%) and post-traumatic stress disorder

(50%).[23] Similarly, Kinzie et al. found that 71% met the criteria for PTSD among Vietnamese, Cambodian, Laotian, and Mien refugees.[24]

The trauma experienced by refugees has long-lasting implications. For example, Cambodians still have alarming rates of depression (52%) and PTSD (62%), even 20 years after resettling in the United States.[25] Vaage et al. conducted a prospective study of Vietnamese refugees living in Norway, and they found high levels of PTSD in the Vietnamese compared to the Norwegian general population. However, they found a decrease in self-reported psychological distress compared to earlier reports.[26] In a study of Vietnamese refugees resettled in Australia, Steel et al. report low levels of mental disorders. However, individuals exposed to multiple traumas had higher rates of mental disorders.[27]

In addition to having poor mental health status, the physical health status of refugees is also poor. For example, Cambodian refugees report much lower health status than the general population and other Asian immigrants when matched by age, gender, and income.[28]

Psychiatric problems in other refugee groups have also been well documented.
In a study by Weine et al., Bosnian refugees who resettled to the United States were assessed for PTSD and reassessed again a year later. The researchers found a high rate of PTSD even after one year of resettlement.[29] A survey conducted between 1997 and 1999 among survivors of war or mass violence from Algeria, Cambodia, Ethiopia, and Gaza show rates of PTSD ranging from 17.8% to 37.4%.[30] High rates of exposure to trauma, including torture, and high rates of mental disorders, including depression and PTSD, have also been documented in Iraqi refugees.[31, 32] A study of adolescents living in the Gaza strip showed alarming rates of PTSD (68.9%), depression (40%) and anxiety (95%).[33] Vinck and Pham found that individuals in the Central African Republic had high levels of traumatic events and that exposure to violence and self-reported health status were associated with poor mental health outcomes.[34]

Posttraumatic Stress Disorder

The American Psychiatric Association (APA) first classified PTSD in 1980 in the Diagnostic Statistical Manual-III (current version DSM-IV). PTSD falls under the umbrella of anxiety disorders and is considered a syndrome of biopyschological processes that involve the brain, nervous and hormonal systems, psychological systems of memory, cognition, motivation, perception and behaviors all influenced by trauma.[35]

According to the DSM-IV there are specific diagnostic criteria for PTSD including: A) exposure to a traumatic event and response, B) re-experiencing the traumatic event, C) persistent avoidance of stimuli associated with the trauma and numbing, D) hyperarousability, E) duration of B thru D is more than one month, and F) clinically significant distress or impairment in social, occupational or other areas of functioning.[36]

The key attribute of PTSD is that an individual must be exposed to trauma. However, the trauma is broadly defined. The traumatic event may involve direct personal experience, witnessing an event that affects another person, or learning about a traumatic event experienced by a family member or close friend. Traumatic events are characterized by actual or threatened death, serious injury, or threats to physical integrity. Some examples of such traumatic events involve military combat, violent personal assault, being kidnapped, being taken hostage, terrorist attacks, torture, incarceration as a prisoner of war, natural or manmade disasters, severe automobile accidents, or being diagnosed with a life-threatening disease.

Traumatic events may be viewed as stressors that elicit a reaction such as intense fear, helplessness, or horror. Another key feature of PTSD is that the individual re-experiences the traumatic event. The re-experiencing typically involves recurrent and intrusive recollections of the event or recurrent distressing dreams during which the event is replayed. Some individuals may also relive the event in the moment in response to a stimulus that triggers an aspect of the traumatic event.

Stimuli related to the trauma are actively avoided. This includes avoiding activities, situations or people that remind an individual of the event. Individuals may also develop a phenomenon referred to as "psychic numbing" in which individuals do not respond to the external world and lose interest in previously enjoyed activities. They also have reduced ability to feel emotions and an inability to see a bright future.

Individuals may also develop increased arousal that was not present before the trauma exposure. This may include difficulty falling or staying asleep, hypervigilance, and an exaggerated startle response, irritability, outbursts of anger, or difficulty concentrating on or completing tasks.

PTSD does not exist in a vacuum and having PTSD puts individuals at risk for additional mental disorders. For example, individuals with PTSD often describe painful and guilty feelings about having survived while their counterparts who experienced the trauma did not survive. The avoidance that ensues may lead to difficulties with interpersonal relationships, marital conflict, divorce, and loss of a job. PTSD is associated with an increased risk of other psychiatric conditions such as major depressive disorder, somatization disorder, and substance-abuse related disorders.[35]

Increased levels of PTSD may be seen in special populations such as recent immigrants that come from places of social unrest and civil conflict. Trauma may alter identity and belief systems such as religion.[37] In addition much research on PTSD has been focused on its effect on physical health. PTSD, as a biopyschological process, not only encompasses the mental trauma experienced but it also has a physical component, such as the release of neurohormones which activate the "fight or flight" response. PTSD also elicits a physiological stress response that leads to sensitization of the hypothalamic pituitary axis.[8, 38]

In understanding how PTSD relates to physical health it is important to consider a model that addresses trauma exposure and physical health outcomes. Schnurr and Green propose that psychological trauma itself does not lead to poor physical health outcomes but a psychiatric disturbance (i.e. PTSD) may be mediating effects on physical health. For example, psychological trauma results in a set of behavioral and psychological changes that exceed the individual's ability to adaptively cope with his/her environment in a manner that promotes good physical health. This model states that trauma exposure is necessary for PTSD to develop, and PTSD is a mediator between trauma exposure and physical health outcomes.[7, 8] The changes that accompany PTSD are also considered to contribute to allostatic load. Allostasis refers to the body's response to stressors in which homeostasis is not achieved. Allostatic load and the inability to maintain homeostasis results in poorer health status.[39]

There are many studies that have demonstrated that trauma exposure is related to poor physical health. Many studies have utilized data on war veterans, showing that those with PTSD have higher rates of cardiac, respiratory, nervous, and digestive system diseases than veterans without PTSD.[40] Additionally, studies that have looked at both PTSD and trauma exposure have shown that PTSD mediates the relationship between trauma exposure and physical health. For example, Boscarino and Chang have shown that combat veterans with PTSD have higher abnormal leukocyte and lymphocyte levels as well as electrocardiogram abnormalities indicating coronary heart disease.[41, 42] A recent study by Boscarino found that veterans with PTSD have higher levels of inflammatory markers, indicating that PTSD may put one at risk for autoimmune disease.[43] Health studies of individuals with PTSD show they tend to report more symptoms, illnesses, and impairment compared to those without PTSD.[5] In addition, research suggests that PTSD has a negative impact on the individual's perception of physical health.[44]

Data also suggest that individuals with PTSD have higher rates of utilization of health care services for physical morbidity. Deykin et al. found that high users of health services were almost twice as likely to meet the diagnostic criteria for PTSD.[45]

Map of Afghanistan from "A History of Afghanistan" [46]

Afghanistan's History of Conflict

Afghanistan is situated at the crossroads of the great civilizations and empires of the Middle East, Central Asia, and the Indian subcontinent. Historically, it has been an interest of world powers due to its strategic location.[47] Afghanistan has been invaded by Darius III of the Persian Empire, Alexander the Great of the Macedonians, and Genghis Khan of the Mongols. Afghanistan also sat strategically in the middle of the fight for power for Central Asia between the United Kingdom and Russia and was invaded by British India during the Great Game.[48] Afghanistan is in the heart of Asia and served as a passageway of the Silk route. This geographic location, along with numerous external forces, has shaped its culture and people. Arab Muslims brought Islam to Afghanistan in the 7th century. Multiple ethnic groups exist throughout Afghanistan, reflecting its rich history. These groups include Pashtuns, Tajiks, Uzbeks, Hazaras, Aimak, Turkmen, Baloch, and others.

From 1901 through 1973, Afghanistan's government was a monarchy. In 1973, the monarchy collapsed when Mohammed Zahir Shah was overthrown by his brother in-law, Daud Khan, in a coup undertaken by young military officers trained in the Soviet Union. Daud Khan declared a republic and became the first president of Afghanistan. In 1978, he was overthrown and killed by the People's Democratic Party of Afghanistan (PDPA), a communist party composed of two rival factions that joined forces for the April takeover known as the Saur Revolution. In December of 1979, the Soviets, worried about destabilization of the PDPA, made the decision to send troops into Afghanistan.[47-49] The Soviets withdrew in 1989 due to opposition by the Mujahideen, Pakistani-based resistance groups, and the United States. The communist party in Afghanistan officially

fell in 1992, which led to a period of factional fighting and Mujahideen rule from 1992-1996.

The mass exodus of refugees from Afghanistan did not officially begin until the Soviet Invasion of 1979. Thousands of refugees flowed into Pakistan, Iran, and India. According to a study by Sliwinski, roughly 1/3 of the 15-16 million Afghan population fled the country and 9% of the population or 1.25 million were killed from 1978 through 1987.[50] Khalidi estimates the number killed as a consequence of war to be closer to 877,000.[51] Of those who were not killed and ultimately became refugees, many experienced violence, persecution and torture. In their book, *A Nation is Dying*, Laber and Rubin documented war crimes and human rights violations through interviews in Afghan refugee camps in Pakistan, interviews of Soviets, and non-Afghan testimonials inside Afghanistan. Their report highlights crimes against civilians, torture and killings of prisoners of war, and repression in the cities including house searches, detention, imprisonment, and suppression of civil liberties. An exhaustive account of their findings is beyond the scope of this paper. One account by Anwar, a former office worker from Kabul who was interviewed in Chicago on April 15, 1984, describes house searches and arrests

> My neighbors, everyone was afraid in their homes. They were putting two locks instead of one, and they were afraid that tonight maybe Russians will take me. Usually we could hear kids crying from all neighborhoods, especially when it was dark at night, and we could hear them more clearly. Then the following day we learned that a neighbor was taken from his house.[47]

Razia, a student at Kabul University was arrested and taken to Sedarat prision in 1981 and was imprisoned for one year. She describes witnessing torture,

> I saw many people tortured, and I was tortured myself. Electricity, standing in cold water, keeping you from sleeping, beating, these are very normal things. They made a man stand on a board with nails coming out and beat him with chains or cables. They hung a man by the legs from the ceiling. All the men were tortured…for women they would keep them from sleeping or make them stand in cold water, then add a chemical, and after a half hour the skin would start to come off their feet…[47]

Factional fighting from 1992 to 1996 ended with the rise of the Taliban regime but had already created a massive flight of refugees into Pakistan and Iran, estimated at 3 million into Pakistan and 2 million into Iran by 1996.

In 1996, the Taliban marched into Kabul, the capital of Afghanistan, and took control of the majority of the country. The Taliban have been known for their numerous human rights violations and in particular, injustices against women. These violations included denying the right to work, attend school, the requirement for women to wear a burqua in public and be accompanied by a man, as well as public displays of violence. Men also were victims of the Taliban. Men were forced to grow beards, wear traditional garments,

and punished if they did not pray publicly five times a day. In addition, all forms of entertainment from movies and music to books were destroyed and banned.[52, 53]

During the period of the Taliban, access to health care was severely limited, especially for women, due to a lack of female doctors and barriers to access, such as the inability to travel without the presence of a male relative. According to a Physicians for Human Rights study of 200 Afghan women in refugee camps who reported on life under Taliban rule, 71% reported that their physical health deteriorated and 53% described being denied medical care during times of serious illness.[54] Suppression by the Taliban also resulted in declining mental health. Amowitz et al. found very high levels of depression among women in Taliban-controlled areas (73-83%) compared to those in non-Talban controlled areas (28%). Additionally, the majority of women living in Taliban-controlled areas had higher levels of suicidal ideation compared to a minority of women in the non-Taliban areas.[55]

In late 2001, an international coalition led by the United States defeated the Taliban, and shortly after, a new democratic government was in place, with Hamid Karzai as the president. This led to a huge repatriation campaign of 5 million Afghans. Yet, the wave of repatriation slowed due to instability in Afghanistan and millions of refugees still live outside of Afghanistan or in internal displacement camps.[56]

Studies on Health of Afghans Living Outside the US

There have been a multitude of studies assessing the health status of Afghans living in refugee camps and those who have repatriated from Iran and Pakistan. There have also been a few studies of the Afghan diaspora living in European nations regarding health of Afghans.

A meta-analysis by Nasir et al found that 66% of the proportion of war injuries in Afghan refugees were caused by explosives including landmines and shrapnel.[57] Physical injury is not uncommon among Afghan refugees and unfortunately Afghan children fall victim to the estimated 10 million landmines in the country. Not only do the landmines create physical injury such as amputations, but they also affect psychological health, leading to psychiatric problems such as posttraumatic stress disorder, depression, and anxiety.[58] According to the World Health Organization, life expectancy for Afghans at birth is 42 and 43 years for males and females respectively. Afghanistan also has one of the highest infant mortality rates of any country, 257 per 1,0000 children will not live to be 5 years old.[59]

Over 30 years of war, displacement and suppression has resulted in the high prevalence of mental health symptoms in Afghanistan. Scholte et al. found that a significant portion of Afghans (43.7%) surveyed in eastern Afghanistan (N=1011) reported 8 to 10 traumatic events and 14.1% experienced 11 or more events. Over half the sample reported symptoms of depression and 20% reported symptoms of PTSD.[60] Similarly, Cardozo et al found that 62% of Afghans (N=799) experienced at least 4 trauma events in the past 10 years. The prevalence of depressive symptoms was 68% and anxiety symptoms 72%,

with disabled individuals having slightly higher prevalence. Prevalence of PTSD symptoms was high at 42%.[61]

Rasekh et al. surveyed Afghan women who lived in Kabul prior to the rise of the Taliban regarding their physical and mental health. She found that a majority of the women reported decline in physical and mental health status, and limited access to health care. Forty-two percent of the women met the criteria for PTSD and 97% for major depression.[62]

Studies on Afghans conducted outside of Afghanistan, Pakistan or Iran also report significant levels of psychological distress. A study out of the Netherlands reports that Afghan refugees and asylum seeker respondents had a high risk for PTSD and depression/anxiety.[63]

Interestingly, Waziri was interested in the types of depressive symptoms Afghans manifested in 1973, prior to the Soviet invasion and subsequent wars. He interviewed patients at the only psychiatric hospital in Afghanistan and found that symptoms of depressed mood, loss of appetite, sleep and libido were similar to the incidence of similar symptoms in depressed patients of Western cultures such as the United States.[64]

Summary of Current Literature on the Health of Afghans in the United States

A search for published literature on of Afghan health within the United States returned very few results. Many studies have focused on Afghan women and the elderly, and only one community assessment of Afghan health was identified. Lipson, Omidian, and Paul (1995) surveyed 196 Afghan families living in the SF Bay Area in order to assess health concerns and health education needs. Through self-report, they found that mental health problems, stress related to past refugee trauma and loss, occupational and economic problems, and culture conflict were of most concern. Although 63% of the families reported at least one member with significant stress, only 17% reported utilizing mental health services. Open-ended responses characterized stress as: sleep disturbances, memory problems, headaches, constant worry, flashbacks of bad memories, depression, dizziness, and anger. Physical health problems consisted of heart disease, diabetes, and dental problems.[9] In an earlier qualitative study of 29 Afghan refugees, Lipson describes health problems that accompany migration in Afghans, including potential mental health problems such as posttraumatic stress disorder. Several participants in her study reported recurrent nightmares, and becoming easily upset by noises such as backfiring cars.[65]

The Health Opinion Survey is a measure of general health in response to temporary stressors, and it provides a self-reported measure of neurotic or psychosomatic symptoms in the general population.[66] Afghans' mean score on the Health Opinion Survey was 35.6, which is in the highly stressed range.[65] McCaw and Delay reported on 59 new Afghan refugees at the Refugee Screening Clinic at San Francisco General Hospital in 1985. They found the following medical conditions reported based on physical examination: dental caries (41%), dermatologic disorders (39%), intestinal parasites

(36%), gastrointestinal disorders (23%) and musculoskeletal pain (12%).[67] According to Lipson's key informants, the primary problem of Afghan patients who have been in the area longer are depression and psychosomatic symptoms such as: headaches, and musculoskeletal problems such as joint pain and back pain.[65]

Malekzai et al. utilized a modified version of the Clinician-Administered PTSD Scale (CAPS-1) and found that 50% of those interviewed (N=30) met the criteria for PTSD in a sample of Afghan refugees from the San Francisco Bay Area.[68] Iqbal administered the Brief Symptom Index for depression and somatization to Afghan women in the San Francisco Bay area and found that they had a high level of depression and that depression and somatization were highly correlated. Women in her study expressed their depression through somatization.[69]

Problems with Measuring PTSD in Refugee Groups

Symptoms of traumatic stress in populations affected by political violence have been well documented (as described above). The most common measure of assessing traumatic stress in refugees has been the diagnostic criteria associated with PTSD. The overwhelming evidence suggests that the prevalence of PTSD is significant across many diverse cultures and that these cultures share a set of highly intercorrelated symptoms of distress due to traumatic experiences[70]. Although the PTSD model is a valuable tool in identifying distress, it is important to note some of the limitations regarding utilizing the PTSD symptom clusters and screening tools in refugee groups.

PTSD is a Western psychiatric diagnosis and was developed to describe the psychological distress seen in Vietnam veterans. The diagnostic criteria for PTSD has been extended to other groups such as refugees, that have experienced similar traumatic events, even though the majority of refugees come from non-Western war-torn populations. Yet, PTSD has been accepted as a biomedical model, which represents a universal human response to traumatic events. Although many studies have documented that PTSD symptoms are evident in multiple cultural groups, it is important to consider that PTSD may not be the best model for one particular culture or refugee experience. Local idioms, language, and customs are important in the discussion of PTSD symptomology. For example, Afghans (in Afghanistan) are more likely to describe war distress in terms of *jigar khun*, *asabi*, and *fishar-e-bala*. The term *jigar khun* or "liver bleeding" is a term used by Afghans when describing sadness. *Asabi* is a term used to describe feeling nervous or highly stressed. *Fishar-e-bala* or "high pressure" may be used by Afghans to describe high blood pressure or an internal state of emotional pressure and agitation.[71] All three terms share features of PTSD symptoms but they do not necessarily equate with PTSD symptoms in the traditional sense. Often Western researchers think that PTSD is the main problem affecting a war-torn population. This is not always the case, there may be more important factors leading to traumatic symptoms such as: extreme poverty, substance abuse, loss of social networks, spousal abuse, loss of rituals, or loss of property and status.

It is also important to note that there are many varying instruments to measure PTSD and distress. For example, Hollifield et al. identified 125 different instruments used to assess refugee trauma and health status. Of the 125 different instruments, only 12 were developed specifically in a refugee sample. They argue that instruments used in refugee research may be improved via qualitative in-depth interviews and focus groups to better develop culturally informed quantitative measures.[72]

Two screening instruments used frequently in the literature include the Harvard Trauma Questionnaire (HTQ) and the Hopkin's Symptom Checklist-25 (HSC). The THQ was developed by Richard Mollica and associates, and includes traumatic experiences and symptoms. It includes 17 items or "stressors" experienced by refugees such as torture, rape, murder, and lack of food or water. There are also 30 items that represent symptoms, which include symptoms that fall into the DSM-IV criteria for PTSD as well as other symptoms. The HTQ has been adapted and used in multiple languages and currently there are 6 versions including, Vietnamese, Cambodian, Laotian, Japanese, Croatian, and Bosnian.[73]

The HSC is a symptom inventory, which measures symptoms of anxiety and depression. It consists of 25 items, of which 10 items measure anxiety symptoms and the remaining 15 measure depressive symptoms. The scale has been used in several populations to show severe emotional distress of unspecified diagnosis and major depression as defined by the DSM-IV.[73] One of the problems with utilizing such screening tools is that they need to be administered by trained mental health professionals and are not useful in self-report studies.

Brewin conducted a systematic review of screening instruments for adults at risk with PTSD. He reviewed 13 screening instruments and found that the mean diagnostic efficiency was 86.5%. He concluded that brief, screening instruments with fewer items do just as well as more complicated screening tools.[74]

The study described below uses the Trauma Screening Questionnaire (TSQ). The TSQ is a brief measure consisting of 10 re-experiencing and arousal items that have been modified from the PTSD Symptom Scale to a yes/no format. Previous research has demonstrated that it has excellent performance relative to other PTSD screening instruments (Brewin, 2005). The cut-off for testing positive for PTSD is 6 or more symptoms, which yields high levels of sensitivity (0.86) and specificity (0.93) for detecting PTSD as defined by the DSM-IV.[75]

In addition to the TSQ, the study also uses the Talbieh Distress Inventory (TBDI) to assess psychological distress. The TBDI is a 24-item self-reported questionnaire to measure psychological distress and includes items from the Psychiatric Epidemiology Research Interview Demoralization Scale (PERI-D) and the Brief Symptom Inventory (BSI), a short form of the Symptom Checklist-90. In immigrant populations of Jerusalem, Tel-Aviv, and Beer-Sheva, the TBDI has been shown to correlate highly with the PERI-D and the BSI.[76-78]

The study described below is part of a large community survey known as the Afghan Community Health Survey (2007-2008) that was designed to assess needs, functioning, and stressors across many domains.[79] Therefore brevity was an important factor in the selection of the scales. The two screening tools (TSQ and TBDI) were chosen not only because they are relatively brief, but also because of their efficiency and reliability. For example, Brewin reports an efficiency defined as the percentage of cases correctly classified as having or not having PTSD of 90% when using a cutoff of 6 or more recurring PTSD symptoms in the TSQ. Similar levels of screening performance were found despite differences across samples in the type of trauma, prevalence of PTSD, and the amount of time passed since the trauma first occurred.[75] The TBDI was chosen because it addresses a variety of stressors and was tested in the diverse immigrant communities of Israel. In addition the TBDI demonstrated good reliability, ranging in Chronbach's α of 0.60 to 0.89.[78]

Research Questions

With rare exceptions, the preceding studies of Afghans in the United States were mostly done in the late 1980's or early 1990's. Since then, studies assessing mental and physical health in the Afghan community have been essentially nonexistent. The earlier studies uncovered the high incidence of distress, potential PTSD, and psychosomatic symptoms. Yet, there seems to be a gap between research and development of needed services. An informal survey of the SF Bay area community only identified 2 language-competent mental health service providers and no community-based model to provide mental health interventions.

Due to the large Afghan refugee community in the San Francisco Bay area, the history of violence and persecution experienced by Afghan refugees, the extraordinary data pointing toward detrimental health due to anxiety disorders such as PTSD, and the limited data on both physical and mental health status of Afghan refugees in the United States, it is important to better understand Afghans in order to develop needed services and provide better services to Afghan refugees.

The following research proposes to answer the following questions:

1. What are the current health problems in the 1st generation Afghan community in the San Francisco Bay Area?
2. What is the prevalence of PTSD (based on the TSQ screening tool)?
3. What is the prevalence of Depression (based on the TBDI screening tool)?
4. Are there differences in prevalence of PTSD and Depression based on decade of arrival?
5. Is PTSD associated with poor physical health outcomes or measures of somatization?
6. Is Depression or anxiety associated with poor physical health outcomes or measures of somatization?

Paper 2

Introduction

Refugees are at an increased risk for psychiatric disorders due to trauma exposure, forced migration, and resettlement difficulty. Studies on refugee mental health have found high prevalence of poor mental health such as Post-Traumatic Stress Disorder (PTSD), depression and anxiety.[3, 21, 22] In addition, multiple studies have shown that trauma exposure, PTSD, and depression are related to negative physical health outcomes most commonly poor physical functioning, cardiovascular, gastrointestinal, and pulmonary disease, and increased physician diagnosed illnesses.[4-8] Afghanistan has been the leading country of origin for refugees over the past 30 years due to the Soviet invasion of 1979, civil unrest, the Taliban regime, and the US occupation, with 2.9 million Afghans living in 71 host countries.[1] Outside of Pakistan and Iran, the US contains one of the largest Afghan Diasporas, with estimates ranging from 76,000 - 100,000 Afghan refugees live in the US.[9, 11] Data from the American Community Survey suggest there are roughly 20,000 Afghans living the Bay area and estimates gathered from community leaders Lipson, Askaryar, and Omidian suggest that the San Francisco Bay Area alone is home to 40,000 Afghans, making the region the largest Afghan community in the US.[12] Very few Afghans immigrated to the US prior to the Soviet invasion of 1979, therefore most 1st generation Afghans living in the US are refugees. Although a large number of Afghans live in the SF Bay area, there have been very few studies characterizing the health status of Afghans, and essentially none attempting to understand the relationship between mental and physical health in Afghan refugees living in the United States.

The purpose of this paper is to describe the prevalence and association of psychiatric symptoms and self-reported health status of first generation, adult Afghan refugees living in the San Francisco Bay area. Specifically, the following questions will be addressed:

- What are the current health problems in the 1st generation Afghan community in the San Francisco Bay Area?
- What is the prevalence of PTSD?
- What is the prevalence of depression?
- Are there differences in prevalence of PTSD and depression based on decade of arrival?
- Is PTSD associated with poor physical health outcomes or measures of somatization?
- Is depression or anxiety associated with poor physical health outcomes or measures of somatization?

Methods

The most recent community assessment of Afghan's living in the Bay Area was conducted in 1995. Lipson, Omidian, and Paul surveyed 196 Afghan families living in the SF Bay Area in order to assess health concerns and health education needs. Through self-report, they found that mental health problems, stress related to past refugee trauma and loss, occupational and economic problems, and culture conflict were of most concern. Although 63% of the families reported at least one member with significant stress, only 17% reported utilizing mental health services. Open-ended responses characterized stress as: sleep disturbances, memory problems, headaches, constant worry, flashbacks of bad memories, depression, dizziness, and anger. Physical health problems consisted of heart disease, diabetes, and dental problems.[9]

There has not been any follow-up study since 1995 and no study including mental health scales to identify or study psychiatric symptomology.

Data Source

This research uses a de-identified dataset collected through the Afghan Community Health Survey 2007-2008 (ACHS), a cross-sectional community health study conducted by Professor Carl Stempel at the California State University, East Bay (CSUEB). Funded by the California Endowment and Alameda County's Department of Behavioral Health Care, the ACHS had as its primary purpose to identify the mental health, medical, and medical translation needs in the Bay Area Afghan community. Questions covered a wide range of topics, from social support networks and cardiovascular health to migration history and mental health status.

The Institutional Review Board (IRB) at CSUEB approved the original data collection. The UC Berkeley Committee for Protection of Human Subjects (CPHS) identified this study as not human subjects research, as it uses de-identified secondary data, and a review was not needed by CPHS. An addition to the Cal State East Bay IRB was made to include the present researcher Najim Mohammady on the original study as key personnel.

Design & Data Collection

The ACHS sample consists of 264 first generation Afghans living in Alameda, San Francisco, and Contra Costa counties in California.

The original study used a convenience sample, and was performed in partnership with community-based organizations. Participants were recruited from the following organizations: Afghan and International Refugees Support Services, Afghan Cultural Society, Afghan Senior Group, Afghan Elderly Association, Afghan Coalition's Afghan Health Partnership Program, Ibrahim Khalilulah Islamic Center (Fremont, CA), and Masjid Muhajireen (a mosque in Hayward, CA).

Study eligibility was limited to adults (individuals who were 18 years of age or older), and first generation Afghans who were born in Afghanistan or to refugee parents in Pakistan or Iran. Those participants meeting eligibility criteria were referred to the

CSUEB Project Director, who explained the study procedures and provided an appointment for the interview. All participants gave informed consent in writing to participate in the study.

The survey items were translated into Dari and also transliterated and back translated to English to check the translation. The interviews lasted roughly 90 minutes and were administered in a private setting (community organization or respondent's home) by trained, language competent interviewers using a computer assisted personal interview system (Survey Systems).

Participants

Individuals who were born in the US or who immigrated to the US prior to 1979 were not included in the sample. Three individuals who were born outside of Afghanistan but immigrated to the US were also considered first generation to the US and were included. In addition, individuals younger than 18 years old were not included. This brought the sample size for the secondary data analysis down to 258.

Variables

The study survey included information about demographic variables, physical health, migration history, and several mental health screeners. Three outcome variables were identified for the current secondary analysis: self-reported overall physical health, number of chronic illnesses, and somatization. The three outcome variables were coded as binary to use in logistic regression models.

Independent variables in the study included: gender, ethnic background, age, age of arrival in the US, English proficiency, educational attainment in the US and Afghanistan, decade of arrival, number of years living in the US, household income, employment status, resettlement difficulty, and marital status.

Self-reported health status has become an important tool in epidemiological research to assess health status. The Afghan Community Health Survey (ACHS) asked the following question, "In general would you say your health is…Excellent, Very good, Good, Fair, or Poor?" Several studies have demonstrated that risk for increased morbidity of respondents who rate their health poor are significantly higher than those who report good or excellent health.[80] For the purposes of this analysis, the responses were dichotomized into two categories: "good" and "poor" health. Good included excellent, very good, and good selections. Poor included fair and poor selections.

A list of chronic conditions was compiled which included the following: hypertension, heart disease, stroke, high cholesterol, stomach or digestive problems, ulcers, hepatitis, liver disease, diabetes, thyroid disease, kidney disease, post-traumatic stress disorder (PTSD), depression, anxiety, schizophrenia, epilepsy, other psychological problems, asthma, lung disease, arthritis, bone pain, HIV, sexually transmitted infections, tuberculosis, cancer, skin disorders, or eye problems. A sum score was calculated by summing the number of diagnoses indicated by a respondent. Then the score was split into three categories, either zero diagnoses, one diagnosis, or greater than 1 diagnosis.

For logistic models, chronic diagnosis was in 2 categories: no chronic illness, or one or more chronic illnesses reported.

Chronic illnesses were also grouped into larger diagnosis categories based on their medical domain. The following categories were generated: cardiovascular (hypertension, heart disease, stroke, high cholesterol), gastrointestinal (stomach or digestive problems, ulcers, hepatitis, liver disease), endocrine (diabetes, thyroid disease, kidney disease), neuropsychological (PTSD, depression, anxiety, schizophrenia, epilepsy, other psychological problems), pulmonary (asthma, lung disease), musculoskeletal (arthritis, bone pain), infectious (HIV, sexually transmitted infections, tuberculosis), and other (cancer, skin disorders, eye problems).

Mental health was measured by the following: Trauma Screening Questionnaire (TSQ)[75] for post-traumatic stress disorder (PTSD) symptomology and the Talbieh Distress Inventory (TBDI)[78] for psychological distress including sub-scales on depression and anxiety. Somatization was measured with the question, "*Do you have chronic pains like headaches and chest pain that doctors have not been able to diagnose?"*

The Trauma Screening Questionnaire (TSQ), a brief measure consisting of 10 re-experiencing and arousal items that have been modified from the Post-traumatic Stress Disorder Symptom Scale to a yes/no format inquires about PTSD symptomology in the past week. Previous research has demonstrated that it has excellent performance relative to other PTSD screening instruments. The cut-off for testing positive for PTSD is 6 or more symptoms, which yields high levels of sensitivity and specificity for detecting PTSD as defined by the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV).[74, 75] A score of 6 or more placed individuals in the PTSD group while less than 6 placed individuals in the no PTSD group.

The Talbieh Distress Inventory (TBDI) scale was developed as a more convenient 24-item self-reported questionnaire to measure psychological distress and includes items from the Psychiatric Epidemiology Research Interview Demoralization Scale (PERI-D) and the Brief Symptom Inventory (BSI, a short form of the Symptom Checklist-90). In immigrant populations of Jerusalem, Tel-Aviv, and Beer-Sheva, it has been shown to correlate highly with the PERI-D and BSI.[76, 77]

There are 6 subscales within the TBDI: Obsessiveness, Hostility, Sensitiveness, Depression, Anxiety, and Paranoid Ideation. This study looked specifically at anxiety and depression sub-scales due to the heavy use of depression and anxiety scales in the literature. In addition an overall TBDI index score was used to assess psychological distress. The TBDI asked subjects to answer the question, *"How much discomfort that problem has caused you during the past month?*" in relation to feelings of being lonely, blue, fearful, restless, worthless and guilty, inferior to others, having difficulty concentrating and other symptoms. The responses were scored on a four-point scale (0-4), with higher scores indicating a greater intensity of distress and severity of symptoms (questions and other details can be found in the appendix under Table F). A mean index score out of 24 items was calculated. An established cutoff of 2 or greater was used to identify individuals who suffer from marked psychological discomfort that significantly affects their daily functioning at most times over at last 2 weeks. To analyze symptoms

of anxiety and depression, the TBDI subscales were used. The depression subscale consisted of 7 items and the anxiety subscale consisted of 3 items. A mean score was calculated for each subscale and cutoffs from the literature were used to identify individuals with symptoms of depression or anxiety. The established cutoff score for depression is 1.4 or greater and for anxiety a score of 1.5 or greater establishes symptoms. Individuals scoring lower than these thresholds were considered to be asymptomatic.[76]

Somatization is a psychiatric diagnosis for patients who persistently complain of physical symptoms that have no identifiable physical origin. There are specific criteria that must be met for a diagnosis but in general, somatization is identified by undiagnosed physical complaints. In refugee groups, somatization may play an important factor in physical health outcomes.[81] The above question was coded into two categories: yes and no. Respondents who answered yes were considered to have psychosomatic symptoms.

Analysis

Bivariate analyses were conducted to assess associations between each independent variable and each of the three outcome variables. All variables that were significantly associated with the outcome variables in bivariate analyses ($p<0.05$) were entered into logistic regression models to assess which were independently associated with each outcome. Knowledge of the Afghan culture and the community indicates that associations differ by gender when looking at the outcomes and exposures, so I used cross products to test for effect modification. Pearson's chi square and two-sided t-tests between gender and the independent and dependent variables are used. The initial assumption was correct, that gender acted as an effect modifier; and therefore, I stratified by gender in the logistic regression models.

Logistic regression is used for prediction of the probability of occurrence of an event by fitting data to a logistic function. It utilizes predictor variables that are either categorical or continuous. The odds ratio was used as a measure of association for our binary outcomes. The odds is the ratio of the probability that the event of interest occurs to the probability that it does not. An odds ratio is the ratio of odds of an event occurring in one group to the odds of it occurring in another group. Odds ratios are used to see how strongly a given variable may be associated with the outcome of interest compared to other variables.[82] If it turns out that a group of subjects defined by a category of an explanatory variable are all yes or no in the binary outcome, the log odds cannot be calculated, this phenomenon is known as complete separation.[83] For example, this occurred in the somatization logistic regression models and the categories were adjusted accordingly (see results, somatization, below).

Data analyses were performed with STATA version 10.1.[84]

Results

Sample Characteristics

A detailed account of demographics (Table 1) follows because several demographic variables are significantly associated with mental and physical health. The number of valid responses varied from item to item; frequencies can be found in the appropriate tables below. The sample consists of 258 first generation Afghans who were 18 years old or older. A little over half the survey respondents were female.

Sixty-five percent lived in the Tri City area (Fremont, Newark, Union City) at the time of the survey, reflecting the area as the hub of the Afghan community in the SF Bay Area. Twenty-one and 5 percent, respectively, lived in the city of Hayward and Alameda. The rest of the sample lived throughout the Bay Area.

Respondents ranged in age from 18 to 84 years, with a mean of 49 years (SD = 15.6). Almost ¾ of the sample were married, and 15% widowed. Among the widowers, 92% were women.

Most of the sample had some education in Afghanistan, but a little under half had no education in the US. Over a third of the sample spoke little or no English. The sample was highly under-employed, 105 (41.5%) reported unemployment, and 42 (16.6%) reported disability. Sixty-eight percent of respondents reported an annual household income of less than $20,000. The sample was distributed well with regards to the decade of arrival to the US, with 35.9%, 28.5%, and 35.6% arriving in the 1980s, 1990s, and 2000s, respectively. Due to the three different waves of migration, the sample is representative of the Afghan refugee experience over that time frame. Approximately 14.7% had no health insurance. The majority of those with health insurance had public health insurance. Of those with health insurance, 82.2% had public health insurance and 18.2% had private health insurance (Table 1).

Table 1. Demographics of respondents, total sample n=258

Characteristic	**# of respondents: n, (%)**
Country of Origin	
Afghanistan	254, (98.5%)
Other (Pakistan or Iran)	4, (1.5%)
Ethnicity	
Tajik	144, (55.8%)
Pashtun	88, (34.1%)
Other	26, (10.1%)
Gender	
Male	126, (48.8%)
Female	132, (51.2%)
Mean Age (SD)	48.9, (15.6)
Marital Status	
Never married	27, (10.6%)
Married	180, (70.6%)
Divorced / Separated	10, (3.9%)
Widowed	38, (14.9%)
City Residing In	
Tri City (Fremont, Newark, Union City)	167, (64.7%)
Hayward	55, (21.3%)
Other	36, (14.0%)
Education Level in US	
None	116, (45.3%)
Grade-Middle	6, (2.3%)
High School / GED	58, (22.7%)
Continued Table 1, Demographics)	
College or higher	33, (12.9%)
Other (ESL, technical)	43, (16.8%)
Education Level in Afghanistan	
None	33, (13.3%)
Grade-Middle School	63, (25.4%)
High School	88, (35.5%)
College or higher	60, (24.2%)
Other	4, (1.6%)
Employment Status	
Full-Time	54, (21.3%)
Part-time	42, (16.6%)
Unemployed*	105, (41.5%)
Disabled	42, (16.6%)
Student	10, (4.0%)

Demographics continued on next page

Household income ($USD)			
0-10,000			64, (29.6%)
10,000-20,000			82, (38.0%)
20,000-50,000			43, (19.9%)
>50,000			27, (12.5%)
Mean # of years in US (SD)			14.4, (7.9)
Mean age at arrival to US (SD)			34.3, (14.6)
Decade of arrival to the US			
1980's			92, (35.9%)
1990's			73, (28.5%)
2000's			91, (35.6%)
Health Insurance			
Public			175, (82.2%)
Private			38, (17.8%)
English Proficiency	Total sample	Male	Female
Speak little or none	91, (35.3%)	31, (24.6%)	60, (45.5%)
Read little or none	103, (40.0%)	39, (31.0%)	64, (48.5%)
Write little or none	113, (43.8%)	43, (34.1%)	70, (53.0%)

**Includes homemakers*

Health Maintenance & Health-Related Behaviors

The majority of respondents report that they either greatly limit or somewhat limit eating saturated fat products (78.7%). The consumption of salt and salty foods was similar. Eighty-three people (32.8%) report not limiting their salt intake. Seventy-three percent either somewhat or greatly limit eating sugars, compared to 27.3% who do not limit their sugar intake. Most, 74.0%, try to eat whole grains instead of white. Sixty-one percent never or rarely eat fast food, whereas 39.0% eat it occasionally or more often. The majority of respondents (71.7%) showed a strong interest, and 7.5% showed some interest, in learning more about nutrition and a healthy diet. Regarding health-related behaviors, smoking was reported by 8.4% of the sample, and males made up 92% of the smoking cases. The sample was roughly equal in getting some type of exercise. However, a smaller percentage (34.6%) of a subset of the sample reported at least 150 minutes of physical activity per week (Data not shown, Appendix Table A).

Health screening was low in both men and women. Seventy-three percent of men aged 18-35 had never had a testicular exam, 51.7% of men aged 50 or older had never had a prostate exam, and 68.3% had never had a colon cancer screening (Appendix Table B). Among women whose age made these screenings appropriate, 32.6% never had a pap smear, 10.7% never had a mammogram, and 68.3% never had colon cancer screening (Appendix Table C). Women's reproductive health characteristics can be found in Appendix Table D.

Physical Health

The mean number of diagnoses of the respondents was 1.8 (SD = 1.9). Forty-six percent of the sample had 2 or more medical diagnoses, 18.6% had one medical diagnosis, and 35.7% had none. Of those who reported 2 or more chronic illnesses, 65.3% were women, and 34.7% men. The majority of diagnoses fell into the following diagnostic categories: cardiovascular (40.7%), endocrine (23.3%), gastrointestinal (15.1 %), depression (37.2%), anxiety (14.3%), and PTSD (7.0%). A total of 332 chronic diagnoses were reported of which 31% comprised of neuropsychological (Table 2).

Table 2. Physical Health Characteristics

Overall Self Reported Health	**N, (%)**		
Poor—Fair	115, (45.6%)		
Good—Excellent	137, (54.4%)		
Category	**N diagnoses**	**% Of respondents**	**Diagnoses**
Mean # of diagnoses (SD)	1.8, (1.9)	--	--
Zero diagnoses	92	35.7%	--
One diagnosis	48	18.6%	--
Two or more diagnoses	118	45.7%	--
Cardiovascular	105	40.7%	Hypertension, heart disease, stroke, high cholesterol,
Gastrointestinal	39	15.1%	Stomach or digestive problems, ulcers, hepatitis, liver disease
Endocrine	60	23.3%	Diabetes, thyroid disease, kidney disease
Neuropsychological	104	40.3%	PTSD, depression, anxiety, schizophrenia, epilepsy, other psychological problems
Depression	96	37.2%	
Anxiety	37	14.3%	
PTSD	18	7.0%	
Pulmonary	9	3.5%	Asthma, lung disease
Musculoskeletal	7	2.7%	Arthritis, bone pain
Infectious	2	1.0%	HIV, sexually transmitted infections, tuberculosis
Other	6	2.3%	Cancer, skin disorder, eye problems

Mental Health

Roughly 43% of the sample was positive for PTSD on the Trauma Screening Questionnaire (TSQ). In addition about ¼ met the criteria for significant psychological distress, based on the Talbieh Distress Inventory. Thirty-eight percent and 43% of participants met anxiety and depression subscale cutoffs respectively. Somatization was reported by 34.1% of participants (Table 3).

Women had higher frequencies of mental health symptomology in all categories: PTSD 67.3% vs. 32.7%; psychological distress 67.2 vs. 32.8%; anxiety 66.3% vs. 33.7%; depression 69.4% vs. 30.6%; somatization 70.9% vs. 29.1% compared to men (Table 3).

There were no significant associations between decade of arrival and mental health outcomes.

Table 3. Mental Health

Characteristic	**Total n, (%)**	**Male (n, %)**	**Female (n, %)**	**P value**
Trauma Screening Questionnaire PTSD Scale				
At PTSD cutoff (>=6 items) n=110	110, (42.6%)	36, (32.7%)	74, (67.3%)	<0.001
Talbieh Distress Inventory (TBDI)				
Psychological distress (cutoff >2)	58, (22.5%)	19, (32.8%)	39, (67.2%)	0.005
At Anxiety cutoff	98, (38.0%)	33, (33.7%)	65, (66.3%)	<0.001
At Depression cutoff	111, (43.0%)	34, (30.6%)	77, (69.4%)	<0.001
Somatic like symptoms (somatization) n=252	86, (34.1%)	25, (29.1%)	61, (70.9%)	<0.001

Overall Self-Reported Health

Approximately 46% of the sample reported overall self-reported health as poor/fair and a little over half (54.4%) reported health as good/excellent. Of the respondents who rated their health of poor/fair, 63.5% were women and 36.5% were men.

After adjusting for number of chronic diagnoses, English proficiency, and age, women meeting the screening criteria for a variety of mental health disorders had increased odds of reporting poor/fair health: PTSD OR 3.0 (95% CI 1.1-8.4); distress OR 3.4 (95% CI 1.1-10.6); depression OR 3.5 (95% CI 1.3-9.2); and anxiety OR 4.7 (95% CI 1.7-9.2). For men, the odds ratios are PTSD OR 2.2 (95% CI 0.73-6.7); distress OR 7.0 (95% CI 1.5-32.7); depression OR 2.4 (95% CI 0.72-7.8); anxiety OR 2.2 (95% CI 0.65-7.3) (Table 4).

Table 4. Age, English Proficiency and # of chronic illness adjusted Self-Reported Health Odds Ratios by Mental Health

Self-Reported Health (Poor/fair)	Odds Ratio	95% Confidence Interval	P-value
At or above PTSD cutoff			
Male	2.2	[0.73-6.7]	0.160
Female	3.0	[1.1 – 8.4]	0.035
At or above distress cutoff			
Male	7.0	[1.5-32.7]	0.014
Female	3.4	[1.1-10.6]	0.035
At or above depression cutoff			
Male	2.4	[0.72-7.8]	0.151
Female	3.5	[1.3-9.2]	0.013
At or above anxiety cutoff			
Male	2.2	[0.65-7.3]	0.206
Female	4.7	[1.7-12.9]	0.003

Individuals with two or more chronic illnesses had higher odds of reporting their health as poor/fair (Table 5).

Table 5. Age, English Proficiency-adjusted Self-Reported Health Odds Ratios by Number of Diagnoses

One diagnosis (vs. zero)	**Odds Ratio**	**95% Confidence Interval**	**p-value**
Male	2.5	[0.61-9.9]	0.21
Female	1.5	[0.36 – 5.9]	0.59
Two or more diagnoses (vs. zero)			
Male	11.6	[3.2 -41.2]	<0.001
Female	9.3	[1.4-19.5]	<0.001
Two or more vs. one diagnoses			
Male	4.7	[1.3-16.6]	0.016
Female	6.3	[1.6-18.8]	0.002

Chronic Illnesses

All women over 55 years old had at least one chronic illness. For better comparability we only looked at men under age 55 when we stratified by gender.

In logistic regression analysis adjusting for age, women with the following psychiatric symptomology had higher odds of having chronic illness compared to men (men are the reference category): PTSD, OR 16.8 (95% CI 5.0-56.2; $p < 0.001$); distress OR 4.2 (95% CI 1.1-16.2; $p = 0.041$); depression OR 7.9 (95% CI 2.9-21.6; $p < 0.001$); and anxiety OR 4.9 (95% CI 1.7-14.4; $p = 0.004$); somatization OR 11.2 (95% CI 3.6-35.0; $p < 0.001$). Men had the following odds ratios: PTSD, OR 3.7 (95% CI 1.2-11.4; $p = 0.022$); distress

OR 2.4 (95% CI 0.70-8.2; p = 0.163); depression OR 2.3 (95% CI 0.77-7.1; p = 0.132); and anxiety OR 1.3 (95% CI 0.44-3.8; p = 0.632) (Table 6).

The confidence intervals were wide due to sample size limitations and stratification by gender.

Table 6. Age-Adjusted Odds of Having Chronic Illness

Chronic Illness	Odds Ratio	95% Confidence Interval	P-value
At or above PTSD cutoff			
Male	3.7	[1.2-11.4]	0.002
Female	16.8	[5.0 – 56.2]	<0.001
At or above distress cutoff			
Male	2.4	[0.70-8.2]	0.163
Female	4.2	[1.1-16.2]	0.041
At or above depression cutoff			
Male	2.3	[0.77-7.1]	0.132
Female	7.9	[2.9-21.6]	<0.001
At or above anxiety cutoff			
Male	1.3	[0.44-3.8]	0.632
Female	4.9	[1.7-14.4]	0.004

Somatization

In the age adjusted, gender-stratified logistic regression models the phenomenon of complete separation was found for men. Therefore to make our men's model comparable to the women's model, we decided to combine the lower age ranges into one age range, 18-35, in both men and women. Then we ran our models stratified by gender and got the following results.

Women had the following odds of somatization: PTSD, OR 4.3 (95% CI 1.9-9.9; p = 0.001); distress OR 4.0 (95% CI 1.7-9.7; p = 0.002); depression OR 4.4 (95% CI 2.0-9.9; p < 0.001); and anxiety OR 4.4 (95% CI 1.9-10.1; p = 0.001).

Men had the following odds ratios: PTSD, OR 1.7 (95% CI 0.65-4.5; p =0.279); distress OR 2.1 (95% CI 0.61-7.5; p = 0.237); depression OR 3.2 (95% CI 1.1-9.4; p = 0.034); and anxiety OR 4.0 (95% CI 1.4-11.7; p = 0.011) (Table 7).

Table 7 Age-Adjusted Odds of Reporting Somatization

Report Somatization	Odds Ratio	95% Confidence Interval	P-value
At or above PTSD cutoff			
Male	1.7	[0.65-4.5]	0.279
Female	4.3	[1.9 – 9.9]	0.001
At or above distress cutoff			
Male	2.1	[0.61-7.5]	0.237
Female	4.0	[1.7-9.7]	0.002
At or above depression cutoff			
Male	3.2	[1.1-9.4]	0.034
Female	4.4	[2.0-9.9]	<0.001
At or above anxiety cutoff			
Male	4.0	[1.4-11.7]	0.011
Female	4.4	[1.9-10.1]	0.001

Discussion

This paper provides evidence that first generation Afghan refugees living in the San Francisco Bay Area have high levels of psychiatric symptoms that increase their risk for poor health. This finding is not new, and studies of similar displaced groups in the United States have shown poor physical and mental health outcomes. Cambodians, for example, have very high rates of depression (52%) and PTSD (62%).[25] Additionally, Cambodians report lower health status than does the general population.[28] Prior research with Afghan refugees has also suggested many psychological problems in the Afghan refugee community.[9, 63, 65] This study provides a more detailed account of the mental and physical health of the Afghan refugee community in the San Francisco Bay area.

Forty-six percent of the study sample reported their health as poor/fair compared to only 19% of the general California adult population.[85] This suggests that Afghan refugees are a special group needing targeted interventions to improve their health status. Although not a direct comparison, Afghan refugees appear to have higher frequencies of depressive symptoms and psychological distress when compared to the general California population. For example, according to CHIS 2007 survey data[85], approximately 9.2% of the population reported feeling depressed in the past 30 days either "all of, most of, or some of the time," while 43% of the study sample tested positive for depression on the depression subscale (see Appendix for TBDI depression subscale). Roughly 8 percent of the California adult population reported experiencing serious psychological distress in the past year compared to 23% of the study sample that tested positive for high psychological distress. Although these comparisons are qualitative; they suggest that Afghan refugees are worse off than the overall adult California population.

Overall self-reported health has been used widely in epidemiologic studies (i.e., California Health Interview Survey, National Health Interview Survey) as a predictor of morbidity and mortality. Idler et al. examined 27 US and international community studies suggesting that overall self-rated health is an independent predictor of mortality in nearly all of the studies, even after the inclusion of numerous specific health status indicators and other relevant covariates known to predict mortality.[80] Research also

suggests that deaths due to certain chronic illnesses are strongly associated with poor self-reported health.[86] There is also new research suggesting that individuals who rate their health as poor have increased levels of inflammatory markers such as cytokines, IL-B, TNF-a, & IL6, which are associated withe chronic disease.[87]

The strikingly high depression prevalence (43%) in the study is concerning; depression and cardiovascular disease have been strongly associated, and depression may be related to poorer cardiovascular disease outcomes.[4] Additionally a high number of respondents in the present study, 43%, met the criteria for PTSD on the TSQ screening tool. Furthermore, 29.8% of the sample met the criteria for both depression and PTSD. Research suggests that individuals with PTSD and depression are more likely to report more severe depression, lower social support, and more frequent outpatient health visits.[88] PTSD alone has been linked to poor health outcomes in a multitude of studies.[8, 40, 41, 43, 44]

This study has several limitations that should be considered when interpreting its results. Participants were recruited using two distinct methods. Sampling was a convenience sample. Participants were randomly recruited from community-based organizations; however, Professor Carl Stempel deliberately recruited from other areas in order to cast a wider net and get a better representation of migration patterns, ethnicities, and gender. This was also done because this population is a unique group and recruitment was difficult. General health status was measured using overall self-reported health and self report of chronic illness, as such, subjective reports could vary widely by respondent. This study could have been improved by utilizing participants' medical records or medication lists as evidence of chronic illness status. The sample size (n=258) is small, and after gender stratification the power of the logistic regression models is reduced. There were no significant associations between decade of arrival and the outcome measures used in the current study. One limitation is that the migration year was available but the individual's living situation prior to arrival was unavailable; individuals may have left Afghanistan in the 80s, spent time in a refugee camp, and then immigrated to the US in the 90s. Thus decade of arrival may not fully reflect the steps of any individual's migration pathway or stressors. Therefore, the generalizability of the study is limited. In addition, this sample was taken from the San Francisco Bay Area that is a distinct community with social support such as Afghan food markets and community services, which may not be available in other smaller Afghan refugee communities in the United States. If social support decreases psychiatric symptoms then this study is likely to underrepresent the experience of Afghans living in areas without social support. Nevertheless the findings have important implications for the health of Afghan refugees living in the SF Bay Area and for the direction of future studies.

A discussion on measuring PTSD in refugee groups is warranted. PTSD is a Western psychiatric diagnosis and was developed to describe psychological distress seen in Vietnam veterans.[35] The diagnostic criteria for PTSD has been extended to other groups such as refugees, that have experienced similar traumatic events, even though the majority of refugees come from non-Western war-torn populations. PTSD has been accepted as a biomedical model, which represents a universal human response to traumatic events. It is important to consider that PTSD may not be the most appropriate

model for one particular culture or refugee experience. Local idioms, language, and customs are important in the discussion of PTSD for Afghan refugees because Afghan's are more likely to describe war distress in terms of *jigar khun*, *asabi*, and *fishar-e-bala*. The term *jigar khun* or *liver bleeding* is a term used by Afghans when describing sadness. *Asabi* is a term used to describe feeling nervous or highly stressed. *Fishar-e-bala* or "high pressure" may be used by Afghans to describe high blood pressure or an internal state of emotional pressure and agitation.[71] All three terms share features of PTSD symptoms but they do not necessarily equate with PTSD symptoms in the traditional sense.

Often Western researchers believe that PTSD is the main problem affecting a war-torn population. This is not always the case. There may be more important factors leading to traumatic symptoms such as: extreme poverty, substance abuse, loss of social networks, spousal abuse, loss of rituals, or loss of property. Over one third of the study sample reported somatization-like symptoms, which may represent psychiatric symptomology in this particular group more accurately, therefore the tools presently available to assess psychiatric symptoms may not be the most accurate. The screening tools are not diagnostic and are based on self-report. Further studies should seek to develop screening tools that are culturally sensitive for Afghan refugees in the United States.

Almost all the participants in the study were Muslims (n=253). The effects of spirituality and religion on mental and physical health have been widely studied and studies suggest that religion is important in coping with psychological and physical stress.[89, 90] The present analysis did not take into account the role of religiosity and spirituality when looking at health outcomes. From knowledge of the community, religious beliefs are important in the way individuals interpret their health. In a study of religious activities in the effectiveness of coping with depression, Loewenthal et al. found that Muslims believed more strongly than other groups in the efficacy of religious coping methods for depression, were most likely to say they would use religious coping behavior, and were least likely to say they would seek social support or professional help for depression.[91] Further study is needed to explore the relationship of religious practices and beliefs and health outcomes for Afghan refugees living in the United States.

As suspected, gender was an important variable and many gender interactions were detected. Women had a higher frequency of psychiatric symptoms in all categories, suggesting that women express psychiatric symptoms more readily in this community (i.e., somatization). Studies have found that women in general report more bodily distress and more numerous, more intense, and more frequent somatic symptoms than men.[92] Research also suggests that Asian refugee and immigrant women have high rates of somatization, which are strongly associated with decreased resources, low income, and low English proficiency.[93] Women in the present study had lower English proficiency scores than men and also had less years of education in the United States. Afghan women may have fewer resources to cope with stress and less opportunities to seek and receive care. These factors need to be further explored in contributing to the worse health outcomes for women.

One interesting finding is that men with high psychological distress had higher odds (7.0 vs. 3.4) of reporting their health as poor/fair than women. Afghan culture is traditionally

patriarchal and the man heads the family unit. Men experience additional resettlement stressors that may not be expressed. For example, men have reported reversal of roles, in which they have lost power or status (i.e., a medical doctor is now a cab driver, or wives become breadwinners). In addition, given the Afghan culture emphasizes modesty for women, men may experience mixed feelings about how their wives and daughters dress, or women's social activities and how they are perceived by other Afghan families both in the United States and abroad. Many families also send remittances to families in Afghanistan that increase the financial needs of the family in the US, and often men work multiple jobs. About half (51%) of the sample sent remittances to family members living abroad, and of those who send remittances almost half (49%) report that doing so causes economic hardship for their families in the Bay Area. If these social forces were strong, we would expect men to have higher or similar levels of distress as women, however this was not the case. The gender difference may be due to women more readily expressing psychiatric symptoms (as described above) or a masking of men's symptoms due to social concerns (i.e. humiliation). To further explore gender differences a study should incorporate measures that assess loss of status and social stressors in men more robustly. A qualitative study of Afghan men has not been conducted, and to better investigate the types of stressors and coping mechanisms men encounter, such a study should be undertaken.

Conclusion

The Afghan Health Community Survey consisting of 258 structured interviews of first generation Afghan refugees living in the San Francisco Bay Area was conducted between 2007-2008. The overall self-reported health of this population was significantly lower than the overall California adult general population. In addition, the prevalence of psychiatric symptoms was found to be high in the study population. The findings provide evidence that Afghan refugees have high prevalence of psychiatric symptomology, which put them at an increased risk for worse health outcomes. Further research is needed to provide culturally competent psychiatric measuring tools and explore gender differences in psychiatric symptomology. Finally, this research further validates prior research from the 1990's that psychiatric illness is high in the community. Although earlier studies suggested high rates of psychiatric symptoms a full spectrum of culturally competent services have not been developed and targeted health interventions are still needed to improve the health of the Afghan community.

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Appendix

Table A. Health Related Behaviors: Diet, Exercise, and Smoking

Diet	**Greatly Limit (n, %)**	**Somewhat Limit (n, %)**	**Don't limit (n, %)**
Saturated fat /animal fat	125, (49.4%)	74, (29.3%)	54, (21.3%)
Salt	93, (36.8%)	77, (30.4%)	83, (32.8%)
Sugar / corn syrup	103, (40.7%)	81, (32.0%)	69, (27.3%)
	Yes	**No**	--
Eat wheat, whole grains, brown rice, instead of whites	188, (74.0%)	66, (26.0%)	
	Never / rarely	**Occasionally (<1x per week)**	**2 or more times per week**
Eat fast food	155, (61.0%)	76, (29.9%)	23, (9.1%)
	Yes	***No***	
Smoking[1] *N=254*	24, (8.4%)	230, (90.6%)	
Exercise N=258	134 (51.9%)	124 (48.1%)	
150 mins. per week N=133*	46, (34.6%)	87, (65.4%)	

*(Response rate was low, could be under-reported)

Table B. Men's Health Screening and Prevention

Men's Health Screening	**Yes** n, % in past year	**Yes** n,% not in past year	**Never** n, %
Testicular exam (men aged 18-35)	2, (9.1%)	3, (13.6%)	16, (72.7%)
Prostate exam (men aged ≥50)	24, (40.0%)	5, (8.3%)	31, (51.7%)
Colon cancer screening (men aged ≥50)	13, (21.7%)	6, (10.0%)	41, (68.3%)

[1] Smoking may be under reported, it is a taboo subject in the community especially for women, 92% of the self-reported smokers were men

Table C. Women's Health Screening

Women's Health Screening	**Yes** n, % *in past year*	**Yes** *not in past year*	**Never**
Physical Breast Exam by health professional N=129	83, (64.3%)	20(15.5%)	26 (20.2%)
Pap Smear (women aged >= 21) N=128	64, (50.0%)	22, (17.2%)	42, (32.8%)
Mammogram (women aged >= 40) N= 84/85	59, (70.2%)	16, (19.1%)	9, (10.7%)
Colon cancer screening (women aged >= 50) N=60	16, (26.7%)	3, (5.0%)	41, (68.3%)
	Once a month	**At least every 2-12 months**	**Never**
Self Exam of breast	38, (29.7%)	35, (19.5%)	65, (50.8%)

Table D. Women's Reproductive Health

Characteristic	**# of respondents: n, (%)**
Gender of OBGYN (n=67)	
Male	5, (7.5%)
Female	62, (92.5%)
Mean number of pregnancies (SD) N=110	5.2 (2.9)
Mean number of live births (SD) N=110	4.3 (2.4)
Sought Prenatal Care (n=107)	
At some point in pregnancy	60, (56.1%)
Did not seek any prenatal care	47, (43.9%)
Breastfeeding	
Breastfed all or some children	99, (90.8%)
Did not breastfeed	10, (9.2%)

Table E. Trauma Screening Questionnaire (TSQ)

Trauma Screening Questionnaire (TSQ)

Please consider the following reactions, which sometimes occur after a traumatic event. This questionnaire is concerned with your personal reactions to the traumatic event, which happened to you. Please indicate (Yes/No) whether or not you have experienced any of the following at least twice in the past week.

1. Upsetting thoughts or memories about the event that have come into your mind against your will
2. Upsetting dreams about the event
3. Acting or feeling as though the event were happening again
4. Feeling upset by reminders of the event
5. Bodily reactions (such as fast heartbeat, stomach churning, sweatiness, dizziness) when reminded of the event
6. Difficulty falling or staying asleep
7. Irritability or outbursts of anger
8. Difficulty concentrating
9. Heightened awareness of potential dangers to yourself and others
10. Being jumpy or being startled at something unexpected

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Table F. Talbieh Distress Inventory (TBDI)

Talbieh Distress Inventory (TBDI) Instructions given: Below is a list of problems and complaints that people sometimes have. Read each one carefully, and select one of the numbered choices that best describe HOW MUCH DISCOMFORT THAT PROBLEM HAS CAUSED YOU DURING THE PAST MONTH INCLUDING TODAY. Place that number on the line to the right of the problems. Please do not skip any items, and print your number clearly.

Items from the BSI *Choice for questions: 0--Not at all; 1--A little bit; 2--Moderately; 3~Quite a bit; 4~Extremely*	BSI Item #
1. Trouble remembering things	5
2. Feeling easily annoyed or irritated	6
3. Pains in heart or chest	7
4. Feeling that most people cannot be trusted	10
5. Temper outbursts that you could not control	13
6. Feeling lonely even when you are with people	14
7. Your feelings being easily hurt	20
8. Feeling that people are unfriendly or dislike you	21
9. Difficulty making decisions	27
10. Getting into frequent arguments	46
11. Others not giving you proper credit for your achievements	48
12. Feelings of worthlessness	50
13. Feelings of guilt	53

TBDI scale continued on next page

Items from the PERI-D	PERI-D Item #
For the following items, these choices are given: 4---Very often; 3~fairly often; 2--sometimes; 1---almost never; 0~never.	
14. During the past month, how often have you had attacks of sudden fear or panic?	3
15. During the past month, how often have you been bothered by feelings of sadness or depression--feeling blue?	5
16. During the past month, how often have you been bothered by nervousness, being fidgety or tense?	6
17. During the past month, how often have you felt useless?	9
18. During the past month, how often have you felt anxious?	11
19. During the past month, how often have you felt that nothing turns out for you the way you want it to, would you say....	14
20. During the past month, how often have you felt completely hopeless about everything, would you say....	15
21. During the past month, how often have you felt completely helpless?	17
22. During the past month, how often have you had times when you couldn't help wondering if anything was worthwhile any more?	18
23. During the past month, how often have you had trouble concentrating or keeping your mind on what you were doing?	22
24. In general, how satisfied have you been with yourself during the last year?: 0~Very satisfied; 1--somewhat satisfied; 3---somewhat dissatisfied; 4~very dissatisfied.	26

Scales	Items
Obsessiveness	1,9,23
Hostility	2,5,10
Sensitivity	7,8,12,13
Depression	15,17,19,20,21,22,24
Anxiety	14,16,18
Paranoid Ideation	4,6,11

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