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Amherst

## **Mental Health Burden and Attitudes and Intention to Seek Mental Health Services in Saudi Women Living in the United States**

Item Type	Dissertation (Open Access)
Authors	Almutairi, Wjdan A.
DOI	<a href="https://doi.org/10.7275/32943549">10.7275/32943549</a>
Download date	2026-03-06 14:52:22
Link to Item	<a href="https://hdl.handle.net/20.500.14394/19085">https://hdl.handle.net/20.500.14394/19085</a>

Mental Health Burden and Attitudes and Intention to Seek Mental Health Services in  
Saudi Women Living in the United States

A Dissertation Presented

by

WJDAN A. ALMUTAIRI

Submitted to the Graduate School of the  
University of Massachusetts Amherst in partial fulfillment  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

February 2023

College of Nursing

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## DEDICATION

I would like to dedicate this dissertation to my beloved father, Amer, my main source of support who always believed in me, for his prayers and wisdom not only during my Ph.D. journey but throughout my whole life. To my beloved mother, Norah, who equipped me with her prayers, encouragement, and support. To my brothers and sisters, Fahad, Faisal, Renad, Abdulaziz, Rifal, Adeem, and Jana, who impatiently waited for me to return home. To my sister, Ashwaq, who is also doing a Ph.D. in a different part of the world (Australia), and we have supported each other along the journey.

I also dedicate this dissertation to my beautiful little daughters—Norah & Joanna—who shared the U.S. journey with me. Their unconditional love, beautiful smiles, and patience motivated me during stressful moments. Also, to my husband, Haitham, for his constant support and the beautiful memories we made during our U.S. journey.

## ACKNOWLEDGMENTS

I thank Almighty Allah for all the blessings in my life and this Ph.D. journey. No effort has been made, and no quest is concluded except by His grace. Alhamdulillah.

I would like to express my sincere gratitude and most profound appreciation to my advisor, Dr. Memnun Seven. Thank you for your constant support, encouragement, and guidance throughout my Ph.D. studies: for the enormous knowledge and pearls of wisdom you have shared with me in class, and for your help with my dissertation work. I am grateful for your motivation, support, and patience that kept me going throughout the dissertation process.

I am also thankful to Dr. Kalpana Poudel-Tandukar and Dr. Nicole Vankim for accepting my invitation without hesitation and agreeing to be committee members. Your great ideas and insights enriched this dissertation. Thank you for your time and effort.

I want to extend my thanks to the College of Nursing's faculty members and staff for everything you have given me. Special thanks go to Dr. Allison Vorderstrasse, Dean, and Dr. Rachel Walker, Ph.D. program director, for their endless support of me during my studies. I also thank my fellow students. This has been an unforgettable journey we have made together at the University of Massachusetts Amherst, College of Nursing.

I express my sincere gratitude to the Saudi Government, the Saudi Arabian Cultural Mission (SACM), and the King Saud bin Abdulaziz University for Health Science (KSAU-HS) for supporting me throughout my graduate studies journey in the U.S.

## ABSTRACT

### MENTAL HEALTH BURDEN AND ATTITUDES AND INTENTION TO SEEK MENTAL HEALTH SERVICES IN SAUDI WOMEN LIVING IN THE UNITED STATES

FEBRUARY 2023

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**Background:** The number of Saudi nationals immigrating to the U.S. continues to increase. Saudi women immigrants may be at increased risk for mental health disorders, including depression and anxiety, due to immigration-related stressors such as language difficulties, family separation, and cultural adjustment.

**Purpose:** The purpose of this study was to measure anxiety and depression levels in Saudi women living in the U.S. and to assess factors affecting their intention to seek mental health services in the U.S.

**Methods:** A descriptive cross-sectional design was employed, using online self-reported surveys. The study included a convenience sample of 160 Saudi women living in the U.S. Data was collected through social media and Saudi Arabian support groups from September 2021 to March 2022.

**Results:** Depression and anxiety rates were 41.9% and 33.8%, respectively. Women whose time spent in the U.S. was longer and those who came for work or seeking treatment had a higher intention to seek mental health services. Saudi women with low

mistrust of mental health staff and services in the U.S. strongly intended to seek mental health services. Anxious women reported lower intention to seek mental health services.

Conclusion: This study found a high prevalence of depression (41.9%) and anxiety (33.8%) among Saudi women in the U.S. The level of depression was not related to the Saudi women's intention to seek mental health services, while the anxiety level was negatively correlated with the Saudi women's intention to seek mental health services.

These findings show the need for further research and interventions to design and evaluate strategies to improve the mental health of Saudi immigrants living in the U.S.

Keywords: Saudi women, anxiety, depression, immigrants.

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# CHAPTER 1

## INTRODUCTION

### **1.1. Mental Health Disorders**

Mental health disorders, including anxiety and depression, continue to be a significant public health concern in the United States. Mental health disorders such as depression are the third most common cause of hospitalization among individuals between the ages of 18 and 44 (Centers for Disease Control and Prevention [CDC], 2018). Mental health disorders affect around 50% of all Americans at some point in their lifetime (CDC, 2018). People with severe mental disorders have a lifespan that is approximately 25 years shorter than that of others (CDC, 2018). In 2019, the number of adults aged 18 or older with some type of mental health disorder, ranging from no impairment to severe impairment, was 51.5 million, representing 20.6% of the total U.S. adult population (Substance Abuse and Mental Health Services Administration [SAMHSA], 2020). This statistic represents a marked increase from 2008, when the figure was 39.8 million, representing 17.7% of U.S. adults (SAMHSA, 2020). Anxiety (Goodwin et al., 2020) and depression (Brody et al., 2018) are among most common mental health problems increasing among adult Americans, with a rate of 6.68% in 2018 and 8.1% respectively.

A number of variables are associated with an increased rate of mental health disorders among U.S. adults; these include gender (Lipari, 2019; Pratt & Brody, 2014; Wittayanukorn et al., 2014), age (Lipari, 2019), income level and access to health insurance (Pratt & Brody, 2014; Weissman et al., 2015), and physical health (Li et al., 2008; Weissman et al., 2015). The prevalence of mental health disorders is higher in

females than males for most mental health disorders, including depression (Brody et al., 2018; Pratt & Brody, 2014; Wittayanukorn et al., 2014), posttraumatic stress disorders (PTSD; Mitchell et al., 2012), and serious psychological distress (SPD; Lipari, 2019; Weissman et al., 2015); the main exception to this gender imbalance is suicide, the rate of which is four times higher in males than females (Kegler, 2017). Prevalence of mental health disorders was high (29.4%) in younger adults from 18–25 years old and was lowest (14.1%) in people older than 50 years (Lipari, 2019). Poverty and low income are associated with high rates of depression (Pratt & Brody, 2014) and SPD (Weissman et al., 2015). Physical health is also associated with mental health (Li et al., 2008; Weissman et al., 2015). High BMI correlates with higher rates of depression and anxiety (Zhao et al., 2009). Those with chronic diseases such as diabetes had a 20% higher prevalence of lifetime diagnosis of anxiety disorders than those without diabetes (Li et al., 2008). Adults with SPD are more likely to be uninsured (Weissman et al., 2015) and to have conditions such as chronic obstructive pulmonary disease, heart disease, and diabetes compared to adults without SPD (Weissman et al., 2015). Despite the high prevalence of mental health disorders among U.S. adults, only 44.8% received inpatient and outpatient treatment, or have been prescribed medications (Lipari, 2019).

## **1.2. Mental Health of the Immigrant Population**

According to the World Migration Report 2020 (International Organization for Migration, 2019), the number of international migrants is estimated at 272 million. The migration process and resettlement in a new country are associated with increased stressors such as language difficulties, income stressors, and healthcare challenges, which can cause or exacerbate mental health disorders in immigrant populations (Derr, 2016).

The prevalence of mental health disorders is established earlier in research to be low among immigrants, but recent studies have shown increased rates of mental disorders in immigrants reaching similar general population rates (Alegría et al., 2017; Kirmayer et al., 2011). Depression and anxiety are among the common mental health disorders affecting immigrant populations (Foo et al., 2018; Pampati et al., 2018).

Studies on mental health among immigrants have reported factors that predispose immigrants to a higher risk for mental health disorders, including poverty and/or difficult living conditions (Dennis et al., 2017; Ganann et al., 2016; Ratcliff et al., 2015), educational level (Foo et al., 2018), employment status (Foo et al., 2018), length of residency (Foo et al., 2018), and communication difficulties due to language and cultural differences (Kirmayer et al., 2011). Lack of social support is another important factor affecting immigrants' mental health (Bromand et al., 2012; Dennis et al., 2017; Ganann et al., 2016; Ratcliff et al., 2015). Although treatment effectively alleviates mental health distress and improves outcomes, immigrants around the world are much less likely to seek mental health services than nonimmigrants (Derr, 2016; Whitley et al., 2017).

### **1.3. Mental Health of Immigrant Population in the U.S.**

The U.S. has been the primary destination for international immigrants since 1970 (*World Migration Report*, 2019). The number of immigrants in the U.S. increased from fewer than 12 million in 1970 to 50.7 million in 2019 (*World Migration Report*, 2019). In 2018, the regions of origin for immigrant populations residing in the U.S. consisted of Asia (28%), Mexico (25%), Latin America (25%), Europe, Canada, and other North American locales (13%), and 9% were immigrants from other regions (Budiman, 2020). The increasing number of immigrants has implications for the nation's overall health;

many studies have examined the mental health and general well-being of immigrants in the U.S. (Alegría et al., 2017; Derr, 2016). Previous studies have established that immigrants, especially first-generation immigrants, demonstrate better mental health than U.S. born population (Alegría et al., 2017). However, recent studies reported immigrants had a high prevalence of mental health disorders, including depression and anxiety (Aoe et al., 2016; Berthold et al., 2014; Koh, 2018), PTSD (Aoe et al., 2016; Berthold et al., 2014), and suicide ideation (Aoe et al., 2016).

The prevalence of mental health disorders among the U.S. immigrant population varies by nationality, gender, and age at immigration (Breslau et al., 2009; Derr, 2016). Immigrants from Mexico, Eastern Europe, Africa, and the Caribbean who immigrated during childhood have similar rates of mental health disorders to their U.S.-born counterparts, while those who immigrated after childhood had a lower rate (Breslau et al., 2009). Among the U.S.'s immigrant population, women had a higher risk for mental health disorders than men (Aoe et al., 2016). In addition, having low social support is linked to an increased risk for mental health disorders in immigrants (Aoe et al., 2016; Koh, 2018). Previous mental health disorders (Aoe et al., 2016) and poor physical health (Berthold et al., 2014) also affect immigrants' mental health status.

Although, with the lengthened duration since immigration to the U.S., the immigrants have similar mental health risk expectations to the U.S.-born people (Alegría et al., 2017), the percent of immigrants seeking mental health services is consistently lower than people born in the U.S. (Derr, 2016). A study on Latinos and Asians found that immigrants were 40% less likely than U.S.-born people to utilize mental health services (Lee & Matejkowski, 2012). A recent study on Ethiopian immigrants and

refugees reported a low rate of mental health utilization, and a higher percentage of immigrants seek non-healthcare mental health services, including those provided by religious leaders, traditional healers, and family (Ayele et al., 2020). Language and transportation challenges are among the barriers that limited immigrants' access to mental health services (Berthold et al., 2014).

#### **1.4. Mental Health in Saudi Arabia**

##### **1.4.1. Mental Health System in Saudi Arabia**

The Kingdom of Saudi Arabia is a country located in the Arabian gulf (Unified National Platform, 2021). Of the total population, 56.8% are men and 43.2% are women (General Authority for Statistics, 2021). The Ministry of Health (MOH) is the primary provider of public mental health services in Saudi Arabia (Carlisle, 2018; Qureshi et al., 2013). The mental health services in Saudi Arabia are organized based on regions. Each region has a mental health hospital that provides primary outpatient, inpatient, and emergency services (Qureshi et al., 2013). There are approximately 94 public outpatient mental health facilities under the MOH umbrella (Qureshi et al., 2013). Of these, twenty facilities are dedicated solely to women and children and are located in pediatric and maternity specialized hospitals. There are three one-day-treatment facilities in Saudi Arabia that serve acute and chronic mental health patients (Qureshi et al., 2013). These facilities' goals are to minimize hospital admission, to optimize independent living skills and rehabilitation, and to support the recovery process (Qureshi et al., 2013). Patients with severe mental health problems can be admitted into a mental health hospital, community-based psychiatric inpatient facilities, community-based residential units, and forensic and other residential facilities (Qureshi et al., 2013).

#### **1.4.2. Mental Health Disorders in Saudi Arabia**

The epidemiology of mental health disorders among the Saudi population is limited to two sources: the global burden of diseases (GBD) managed by the Institute of Health Metrics at the University of Washington (Memish et al., 2014), and an assortment of studies with samples from different settings. Some studies have been conducted in hospital settings (Abumadani & Rahim, 2002; Al-Khathami & Ogbeide, 2002; Chaleby, 1986, 1988; Qureshi et al., 2001) and primary healthcare settings (Aldabal et al., 2015; Al-Qadhi et al., 2014); others have targeted different populations such as visitors to faith healers (Alosaimi et al., 2015) and student populations, including, primary school students, adolescents, high school, and undergraduate students (Aboalshamat et al., 2015; Al Gelban, 2009; Al-Sughayr & Ferwana, 2012; Raheel, 2015). Mental health disorders in Saudi Arabia are often underdiagnosed, and patients often present only with somatic symptoms when seeking healthcare services (Al Gelban, 2009; Al-Faris et al., 1997; Becker et al., 2002; Koenig et al., 2013). Almost one-fifth of primary care clinic patients present with a mental health problem (Al-Khathami & Ogbeide, 2002). The majority of outpatient mental health diagnoses are neurotic (36%) or mood disorders (35%; Qureshi et al., 2013), while most of the inpatients have schizophrenia (50%), substance use disorders (20%), and mood disorders (20%; Qureshi et al., 2013). People may also consider seeking treatment for their mental health-related problems from traditional healers based on their religion and beliefs (Alosaimi et al., 2015; Koenig et al., 2013).

In 2010, Saudi Arabia launched the Saudi National Mental Health Survey (SNMHS) in collaboration with Harvard University's World Mental Health (WMH) Survey Initiative, which has been conducted in 33 countries. The SNMHS aims to

understand the prevalence of mental health problems and their burden in the Saudi community, and to determine the individuals who are most at-risk and the best strategies to increase the utilization of mental health services in Saudi Arabia (AlTwaijri et al., 2019).

According to the 2020 SNMHS, 34% of Saudis meet the criteria of any mental health disorders sometimes in their lives, 9% of Saudi women and 3% of Saudi men are diagnosed with depression in their lifetime, and 1% of Saudi males are diagnosed with anxiety in their lifetime and 3% of Saudi women diagnosed with anxiety in their lifetime (AlTwaijri et al., 2019). The percent of depression and anxiety can be higher in some subgroups, such as 49.9% of patients in the primary care centers exhibited depressive symptoms (Al-Qadhi et al., 2014), and 34.9% and 14.7% of females students reported anxiety and depression, respectively (Ibrahim et al., 2013). Also, the prevalence of depression and anxiety among pregnant women is 26.8%, and 23.6%, respectively (Alqahtani et al., 2018). Moreover, underdiagnosis of mental health disorders is very common among the Saudi population due to underutilization of mental health services (AlTwaijri et al., 2019) and high use of traditional healer to treat mental health problems. A recent study reported that only 13.6% of Saudis sought any type of treatment for any mental health disorder (AlTwaijri et al., 2019). Most Saudis, especially women, rely more on the traditional healer or therapist, and depression and anxiety are among the most reported complaints of faith healer visitors (Alosaimi et al., 2015). Mental health disorders appear to affect more educated Saudis (Al-Qadhi et al., 2014; AlTwaijri et al., 2019), which is important because most of the Saudi people live abroad in countries such as the U.S. to pursue their education (Norris, 2014), making the U.S. the top destination

for education among Saudis during the academic year of 2019-2020 (Institute of International Education, 2020). These findings may reflect the high utilization of mental health services that come with increased education and/or attitudinal changes toward seeking mental health services as a result of living in more diverse communities in the U.S.

### **1.4.3. Mental Health of Saudi Women**

In Saudi Arabia, women are more likely to report mental health problems than are men (Al-Khathami & Ogbeide, 2002; Asal & Abdel-Fattah, 2007). As a result, mental health disorders may appear to be higher among women (Koenig et al., 2014). Among Saudi females, the three most common mental health conditions across a lifetime are separation anxiety disorder (13.0%), major depressive disorder (8.9%), and social phobia (7.0%; AlTwaijri et al., 2019). Women were more likely to suffer from depression and generalized anxiety disorder than men (AlTwaijri et al., 2020). According to SNMHS, the occurrence of depression and generalized anxiety disorder conditions across a lifetime in women is 9%, 3% comparing to men 3%, 1%, respectively (AlTwaijri et al., 2019). Depression is among the leading causes of disability among Saudi women, with increased risk among highly educated women (AlTwaijri et al., 2019; Al-Qadhi et al., 2014). Women with psychiatric symptoms often first opt for religious healers for treatment, and mental health professionals are consulted only after individuals have considered seeking help from religious healers or if consulting with religious healers was not successful (Koenig et al., 2013).

### **1.5. Saudi Population in the U.S.**

The number of Saudi nationals living in the U.S. has increased drastically over the years. In 2015, 96,783 Saudis were living in the U.S. (United States Census Bureau, 2015). Saudi immigration to the U.S. began in the 1940s, and the first Saudis in the U.S. came as ambassadors and staff to the Saudi Arabian Embassy in Washington, D.C. (Norris, 2014; Saudi Ministry of Education, 2018). Since the 1940s, the number of Saudi citizens living in the U.S. has increased, mostly due to Saudi men seeking further education or training, who typically bring along their families (Norris, 2014). In 2011, the U.S. Census Bureau's American Community Survey estimated that the number of immigrants with Saudi nationality living in the United States was 48,000, half of whom were studying at universities (Norris, 2014). Currently, there are 71,478 students in the U.S. (Saudi Ministry of Education, 2018). Saudis also come to the U.S. with their families since the government provides monthly allowance and tuition money to the students and their families accompanying them to the U.S. (Norris, 2014). The Saudi immigrant's population lives in 45 of the 50 United States, with a larger number living in Washington, D.C., and California. A considerable number of Saudis live in Colorado, Florida, Pennsylvania, Texas, and Virginia (Norris, 2014). Despite the increasing number of Saudis immigrating to the U.S. for various reasons, only a few Saudis end up permanently residing in the U.S. The wealth of Saudi Arabia, the preference to live within Islamic society, and the lack of motivation to leave Saudi Arabia are among the reasons few Saudis choose to permanently immigrate to the U.S. (Norris, 2014).

## **1.6. Significance and Aims of the Study**

The number of immigrants around the world has been increasing for the past decades. Immigrant is an umbrella term, not defined under international laws, reflecting the common lay understanding of a person who moves away from his or her place of usual residence, whether within a country or across an international border, temporarily or permanently, and for a variety of reasons (IOM, 2019). The immigration process is associated with stressors, including family separation, cultural and language barriers, and settling and adjusting to the new environment, all of which may initiate or exacerbate mental health disorders (Derr, 2016). Although the research has shown that the prevalence of mental health disorders is generally lower in immigrants than in natives, especially among first-generation immigrants, this has changed upon examining many factors, including nationality, gender, and socioeconomic status (Alegria et al., 2017; Breslau et al., 2007).

Studies have examined the prevalence of different mental health disorders, including depression and anxiety, among immigrants from the Middle East. These studies have mainly focused on conflict or war zone such as Syria or Iraq, and most of those people are immigrating to other countries to settle in permanently. Although Saudi Arabia is a Middle Eastern country, it does not fit the profile of other Middle East countries from which people emigrate due to war or conflict (Norris, 2014). However, the Saudi population in the U.S. generally immigrates to access higher education, gain work experience, or seek advanced healthcare, and they tend to return to their home country (Norris, 2014). Thus, paying particular attention to Saudi immigrants with unique cultural circumstances is essential.

Moreover, mental health disorders are a public health concern in Saudi Arabia, and it is important to understand the extent of the mental health problems among those who immigrate from Saudi Arabia to the U.S. According to the Saudi National Mental Health Survey (SNMHS), up to 34% of the population, in general, are diagnosed with mental health conditions sometimes in their lives (AlTwaijri et al., 2019). Saudi females have a higher prevalence of mental health disorders than their male counterparts (AlTwaijri et al., 2019). Across lifetime separation anxiety disorders among Saudi females reached 13%, followed by 8.9% of depressive disorders. Mental health disorders are common among younger and more educated Saudis (AlTwaijri et al., 2019), and the prevalence of mental health disorders among Saudis up to 34 years of age reached 40%. The utilization of mental health services in Saudi Arabia is low; only 4.5% seek mental health facilities, and 7.2% seek mental health services from general medical practice (AlTwaijri et al., 2019). Moreover, the dropout from treatment, as early as after two visits, is very high (42%) among Saudis (Alangari et al., 2022). These numbers can be worse among Saudi immigrants, and Saudi women in the U.S. might be at increased risk for mental health disorders considering the immigration process and stressors. Immigration is a very stressful experience that can trigger or worsen mental health disorders. Also, settling in a new country and navigating through a new healthcare system that is very different from that of their home country can be challenging for immigrants considering many barriers such as language, transportation, and housing difficulties.

Although depression and anxiety among Saudi women are prevalent, and they have unique cultural and religious circumstances affecting their mental health, mental health problems among Saudi women in the U.S. have not been examined. As the number

of immigrant women from Saudi Arabia increases in the U.S., it is important to understand the scope of this problem and factors affecting these immigrants' attitudes toward seeking mental health services at times of necessity and their intention to seek mental health services in the U.S. This will help in the development of tailored strategies to prevent and improve utilization of health services for mental health disorders, specifically depression and anxiety. Understanding the levels of depression and anxiety of Saudi women and their attitudes toward seeking mental health services can have implications both in the U.S., and Saudi Arabia. Findings from this study can improve the understanding of depression and anxiety risks among this population, guiding the interventions on promoting mental health disorders awareness and screening among Saudi women living in the U.S. This study's findings can also guide efforts to promote education on mental health associated risks and minimize barriers to seeking mental health services in the U.S. and in Saudi Arabia.

The purpose of this study was to measure anxiety and depression levels in Saudi women living in the U.S. and to assess factors affecting Saudi women's intention to seek mental health services in the U.S.

The research questions of this dissertation were the following:

What are the levels of anxiety and depression among Saudi women living in the U.S.?

1. What is the relationship between attitudes toward seeking mental health services and intention to seek mental health services?
2. What is the relationship between mistrust in mental health staff and services and intention to seek mental health services?

3. What is the relationship between depression and anxiety level and intention to seek mental health services?
4. What is the relationship between immigration-related characteristics and intention to seek mental health services?

### **1.7. Theoretical Framework**

The theory of planned behavior (TPB) is used to predict an individuals' intention to engage in a behavior at a specific time and place (Ajzen, 1991). The TPB was developed by Icek Ajzen and is a descendant of the theory of reasoned action (RA) that aims to explore the relationship between individual attitudes and actions (Ajzen,1991). In the TPB, the perceived behavioral control is added to the model because of the idea that behavior is not completely voluntary and cannot always be controlled (Arafat & Mohamed Ibrahim, 2018). It has been widely applied in health-related behaviors, including help-seeking behaviors (Bohon et al., 2016; Mak & Davis, 2014).

This theory argues three types of considerations that guide an individual's actions: behavioral beliefs, normative beliefs, and control beliefs (Figure1). *The behavioral beliefs* result in a favorable or unfavorable attitude toward the behavior and guides the consideration of positive or negative outcomes. Despite the idea that individuals may hold many behavioral beliefs to any behavior, only a relatively small number are readily accessible at a given moment. These accessible beliefs, in combination with the subjective value of the expected outcome, are assumed to determine the prevailing attitudes toward the behavior. The attitudes toward the behavior are related to the degree to which performance of the behavior is positively or negatively valued. Behavioral attitudes can be affective attitudes or instrumental attitudes. The affective attitude is

expressed by how much the individual believes the behavior to be enjoyable.

Instrumental attitude refers to whether the behavior is believed to be beneficial or harmful.

The second predictor of human behavior in the TPB is *normative beliefs*. The normative beliefs relate to the support received from referent individuals such as spouses, family, or friends. It is assumed that normative beliefs combined with the individual's motivation to comply with different referents determine the prevailing subjective norms. The subjective norm is the perceived social pressure to engage or not to engage in a behavior.

*The control beliefs*, the final predictor of human behavior in the TPB are related to the perceived presence of factors that may facilitate or impede a behavior's performance. The control beliefs determine the prevailing perceived behavioral control, which is the individual perception of the person's ability to perform a given behavior. The extent to which individuals are capable and confident in their abilities to do the desired behavior plays a central role in their intention and actual behavioral outcomes. It can be linked to the perception that an individual has the capabilities to overcome the challenges or barriers to doing the desired behavior.

According to the TPB, background factors, whether individual or social, may influence the beliefs that people hold. These background factors are expected to indirectly influence the individual intention and behaviors based on their effects on the theory's determinants (Ajzen, 2011). In this dissertation, by using the TPB, the aim is to assess Saudi women's intention to seek mental health services and the affecting factors framed by the TPB including background factors, sociodemographic factors (age,

employment, education, health insurance coverage), and immigration-related factors (length of time in the U.S. and reason for being in the U.S.). The TPB (i.e., attitudes, subjective norms, and perceived behavioral control) is used to develop and operate our variables measuring the attitudes toward seeking mental health services and intention to seek mental health services. In this study, the attitudinal factor is deemed important, and the variables that positively or negatively affect the help-seeking attitudes were treated as predictors of the likelihood of mental health services utilization.

### **1.8. Structure of the Dissertation**

This dissertation is divided into five chapters, as follows:

Chapter 1 is an introduction that provides a general framework of the overall purpose of the dissertation and background information related to the purpose.

Chapter 2 is a scoping review of the literature to summarize studies relating to the mental health of Middle Eastern immigrants in the U.S., which includes the Saudi population. The scoping review targets studies of all immigrants from the Middle East due to a lack of research specific to Saudi women's mental health in the U.S.

Chapter 3 is dedicated to the methodology of the primary research for the dissertation. The aims and objectives were described with the study approach and design and statistical methods used.

Chapter 4 provides the results of the study based on the data collected.

Chapter 5 is the conclusion of the overall dissertation; it integrates the findings from the scoping review and the primary research of the dissertation.

## CHAPTER 2

### SCOPING REVIEW

#### **2.1. Introduction**

Mental health is defined as effective daily functioning characterized by productive activities and healthy relationships in work, school, or caregiving and the ability to adapt and cope with change (American Psychiatric Association [APA], 2018). Mental disorders include all diagnosable mental disorders, including a significant change in thinking, emotion, or behavior. They also include distress or difficulties functioning in the family, work, or social activities (APA, 2018). While mental disorders have a significant physical, social, and economic impact, they can also lead to disability and death (James et al., 2018). Several mental health disorders, such as depression and bipolar disorder, affect more women than men or affect women differently (Office on Women’s Health, 2019). In 2019, more than 1 in 5 women in the U.S. had a mental health disorder, such as depression or anxiety (Office on Women’s Health, 2019).

Migration is connected to increased risk for mental health disorders. According to the World Migration Report 2020, the number of international migrants is estimated at 272 million (*World Migration Report*, 2019). Migration is a complex process involving individuals, families, and/or groups of families (Bhugra, 2004), and most people leave their country of residence hoping for a better life, whether they seek education, marriage, or better employment opportunities. Some migrate to avoid political or religious prosecution or to escape war zones. The migration process is stressful, and immigrants face many social, political, environmental, and economic stressors that make them vulnerable to developing mental health problems (Pampati et al., 2018). Immigrants are

exposed to these stressors premigration, during migration, and postmigration period. Premigration factors include war or political conflict, economic hardship, educational or occupational status, religion, or gender persecution (Kirmayer et al., 2011). During migration, stressors can be related to the route and duration, the uncertainty of the migration outcomes, and the exposure to violence and hard living (Kirmayer et al., 2011). After settling in the new country, immigrants can face postmigration stressors such as length of stay, low income, language, country of origin, employment, and attitudes toward healthcare (Farr et al., 2016; Hausmann-Stabile & Guarnaccia, 2015; Lin et al., 2020). Despite the stressful migration process, some immigrants may exhibit better health outcomes, including better mental health outcomes known as the “immigrant paradox” (Alegría et al., 2008, 2017).

Worldwide, women and girls represent around 48% of overall immigrants (*Global Migration Data Portal*, 2019). Currently, unprecedented numbers of people are migrating to the U.S., and women represent about 52% of immigrants residing in the U.S. (United Nations, 2019). International migration is a multilayered issue that has implications for the mental health of migrants, specifically for women (*World Migration Report*, 2021). For a short or long period, the migration process predisposes women to a higher risk of developing mental health disorders than non-migrant women (Alegría et al., 2017; Fellmeth et al., 2017). The incidence of mental health disorders of women is higher among immigrant women than native-born women (Collins et al., 2011). Mental health conditions affect women's overall family relations, social lives, and the ability to function at school or work (SAMHSA, 2012). Poor mental health is also associated with substance use and can increase women's risk for future chronic conditions such as diabetes and

heart disease (Lin et al., 2020). Furthermore, poor mental health among women of reproductive age can cause adverse reproductive outcomes, including decreased fertility and poor pregnancy outcomes; it can also lead to impaired maternal functioning and to problems bonding with their children (Farr et al., 2016; Hausmann-Stabile & Guarnaccia, 2015; Lin et al., 2020).

Although there are common difficulties that most immigrants face, such as adjusting to a new environment and loss of a similar sociocultural environment, the process of migration is constantly changing, and the effects of the social, political, environmental, and economic stressors on diverse migrant groups are different. The diversity of the immigrant population creates unique challenges, and the specific needs that different immigrant populations face also vary (Hausmann-Stabile & Guarnaccia, 2015). As a result, there is a growing interest in understanding how the various factors associated with migration processes influence the mental health outcomes of specific groups of immigrants, such as Middle Eastern immigrant women (*World Migration Report*, 2019).

Middle Eastern immigrants are among the population that started migrating to the U.S. in the early 1800s, escaping political situations and looking for better economic opportunities (Cumoletti & Batalova, 2018). In 2019, the number of Middle Eastern immigrants in the U.S. reached 1.2 million, representing around 3% of the U.S.-born population of 44.9 million (Harjanto & Batalova, 2022). Existing studies show that Middle Eastern immigrants experience greater mental health illnesses than native-born people and immigrants from different countries (Bulut & Brewster, 2021; Shafeek Amin & Driver, 2019). Reviews that synthesize evidence on the mental health status of Middle

Eastern immigrants in the U.S. are lacking and insufficient. This review expanded to assess mental health disorders among Middle Eastern immigrants in general due to no previous research having been published on the mental health of Saudi immigrant women living in the U.S. or any other countries. Therefore, this review aimed to reveal and describe up-to-date knowledge on the prevalence of mental health disorders and the associated factors among Middle Eastern immigrant women living in the U.S.

The scoping review was published in early 2022 (Almutairi et al., 2022) prior to completion of the dissertation study.

## **2.2. Methods**

### **2.2.1. Inclusion and Exclusion Criteria**

This review used both quantitative and qualitative research designs. Peer-reviewed journal articles were included if they were original research articles written in English, included the Middle Eastern immigrant population living in the U.S., and focused on any mental health conditions. No mental health disorders were excluded. Review articles, dissertations, and studies conducted in refugee camps and those involving severely traumatized or tortured participants were excluded due to the compounding risk of trauma and severe psychiatric conditions.

### **2.2.2. Search Strategies**

This scoping review followed the recommendations outlined by the Joanna Briggs Institute (Peters et al., 2020) and reported findings using the elements provided in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-Scr; Tricco et al., 2018). PRISMA-Scr guides the readers to a greater understanding of the main concepts, terminology, and essential items to report

for a scoping review. It provides reporting guidance to reviews that answer broader questions and map available evidence, and it helps the readers assess the strengths and weaknesses by providing the structure of the reviews and allows replication of the review methods (Tricco et al., 2018). To identify potentially relevant articles, the databases, including PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), American Psychological Association's Psych INFO, and Web of Science, were searched by an experienced librarian with the primary investigator during September 2021. The publication dates were restricted to 2000–2021 to ensure including recent studies in the review while capturing the changing nature of focus on mental health in the immigrant health literature. Using this set of databases allowed us to identify articles highlighting the prevalence of mental health conditions and the associated risk factors among Middle Eastern immigrant women in the U.S. The search terms in all databases were (nonimmigrant OR immigrant OR refugee OR newcomers OR temporary OR foreign-born OR foreign OR abroad OR visa OR internationality) AND (mental health OR mental problems OR mental illness OR mental health condition OR depression OR Anxiety) AND (woman OR female).

### **2.2.3. Study Selection**

The initial search from all databases yielded 9,632 results. The literature search results were imported and screened using Rayyan QCRI (<https://rayyan.qcri.org>). Duplicate records (2,919 articles) were removed, resulting in 6,713 articles. An initial title scan was conducted and resulted in excluding 6,642 articles. The most common reasons for excluding studies at this stage were study sample including immigrants not in the U.S. or immigrants not from the Middle East, not including women in the sample, or

recruitment from refugee camps. An abstract scanning was conducted for the remaining 78 articles, resulting in 35 articles that were read as full text. The full texts of 35 articles were reviewed by the two researchers (WA and MS) using the same inclusion and exclusion criteria, resulting in a final sample of 22 articles. The search process results are depicted in the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram (Figure 2.1).

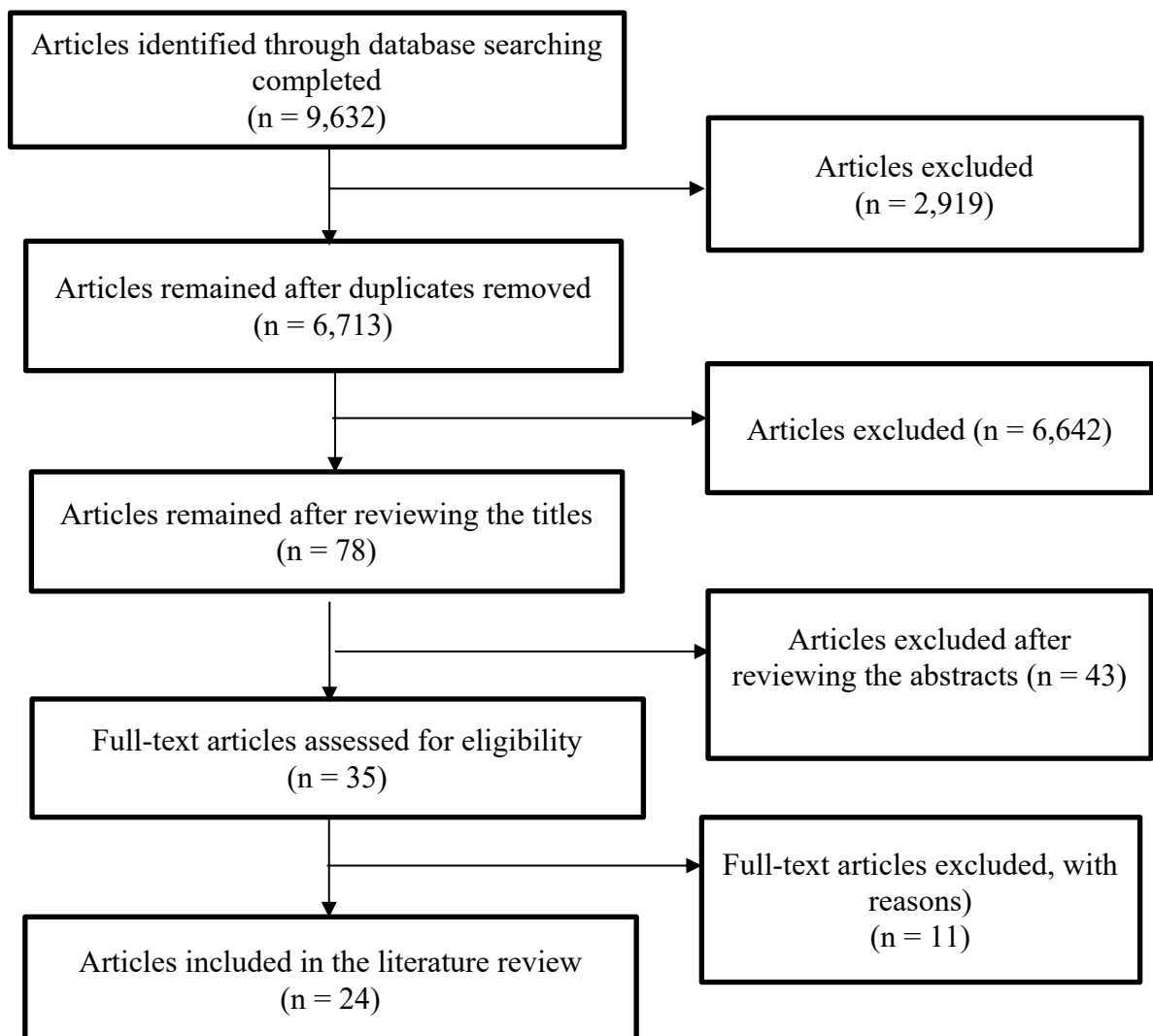


Figure 2.1: PRISMA flow diagram of selecting studies.

#### **2.2.4. Data Extraction**

Data were extracted from the eligible 24 articles using a table developed by the author based on the chart's key information suggested by the Joanna Briggs Institute (Peters et al., 2020). The information included in the table are authors, year of publication, the study's title, the purpose of the study, the study type, and the outcome measurements used. Sample characteristics were also extracted, including sample size, gender, and the country of origin, if reported in the articles (Table 2.1 and Table 2.2 [see Appendix A]).

#### **2.2.5. Risk of Bias Assessment**

As this was a scoping review, no risk of bias assessment was conducted, which is consistent with the Joanna Briggs Institute Scoping Review Methods Manual (Peters et al., 2020) and scoping reviews on health-related topics (Tricco et al., 2016).

### **2.3. Results**

#### **2.3.1. Overview of the Studies**

We included 24 studies published from 2000 to 2021 focusing on the mental health status of Middle Eastern immigrants living in the U.S. The sample of the studies were Iraqi immigrants in three studies (12.5%), Syrian in two studies (8.33%), and Somalian in two studies (8.33%). The rest of the studies (70.83%) were conducted with immigrants from multiple Middle Eastern countries, including Yemen, Lebanon, Jordan, Kuwait, Egypt, Saudi Arabia, Palestine, and United Arab Emirates. Six studies (25%) were conducted with immigrants from non-specified Middle Eastern countries. Nine studies (37.50%) had samples that were exclusively women, whereas the rest of the 15 studies (62.50%) included both men and women.

Twenty-two (91.66%) of the studies in this review used a quantitative design, and two studies (8.33%) used a mixed-method design (Baird et al., 2020; Piwowarczyk et al., 2014). Of the quantitative studies, three used longitudinal data, and three used national health surveys.

Of the studies included in this review, 22 (91.66%) examined the prevalence of mental health problems, 19 studies (79.16%) examined the factors associated with mental health disorders, and four studies (16.66%) examined the attitudes toward seeking mental healthcare. Thirteen studies (54.16%) examined mental health in general or multiple mental health conditions in the same study. Some studies focused on specific mental health conditions such as depression (33.33%,  $n = 8$ ; Arfken et al., 2018; Jamil et al., 2007; Javanbakht et al., 2019; Kamimura et al., 2018; Kroll et al., 2011; M'zah et al., 2019; Piwowarczyk et al., 2014; Taylor et al., 2014); anxiety (16.66%,  $n = 4$ ; Javanbakht et al., 2019; M'zah et al., 2019; Piwowarczyk et al., 2014; Taylor et al., 2014); PTSD (29.16%,  $n = 7$ ; Arfken et al., 2018; Jamil et al., 2007; Javanbakht et al., 2019; Kulwicki & Ballout, 2015; M'zah et al., 2019; Norris & Aroian, 2008; Taylor et al., 2014); psychoses (4.16%,  $n = 1$ ; Kroll et al., 2011); perinatal mental disorder (12.50%,  $n = 3$ ; Alhasanat et al., 2017; Alhasanat-Khalil et al., 2018, 2019); severe psychological disorders (8.33%,  $n = 2$ ; Albqoor et al., 2020; Shafeek Amin & Driver, 2019); and suicide (4.16%,  $n = 1$ ; El-Sayed et al., 2011).

A wide variety of tools was used to measure mental health status in the studies (Table 2.1). The measurement tools used most often were the Refugee Health Screener (RHS-15; 16.66%,  $n = 4$ ), the Hopkins Symptom Checklist-25 (HSCL-25; 20.83%,  $n = 5$ ), and the Posttraumatic Stress Diagnostic Scale (PDS), the PTSD Checklist Civilian

version (PCL-C), the PTSD-8 (20.83%, n = 5). Other tools were the Kessler Psychological Distress Scale (K6)/(K10; 16.66%, n = 4), Edinburgh Postnatal Depression Scale-EPDS, the Postpartum Depression Predictors Inventory (PDPI; 12.50%, n = 3), the Center for Epidemiological Depression Scale (CES-D; 8.33%, n = 2), the Patient Health Questionnaire (PHQ-9; 4.16%, n = 1), the Generalized Anxiety Disorder (GAD-4) scale (4.16%, n = 1), the 36-item Short Form Survey Instrument (SF-36; 4.16%, n = 1), the Behavioral Risk Factor Surveillance System Survey (4.16%, n = 1). Two studies did not report using a measurement tool (8.33%). Only one study (4.16%) used interviews/focus groups.

Table 2.1: Descriptive characteristics of studies included in the scoping review.

		N	%
Participants' country of origin	Iraq	3	12.50
	Syria	2	8.33
	Somalia	2	8.33
	Other Middle Eastern Countries/not specified	17	70.83
Study design	Quantitative	22	91.66
	Mixed	2	8.33
Sample	Women only	9	37.50
	Women and men	15	62.50
Outcome measurements*	Depression	8	33.33
	Anxiety	3	12.50
	Posttraumatic stress disorders	7	29.16
	Psychoses	1	4.16
	Perinatal mental disorders	3	12.50
	Serious psychological disorders	2	8.33
	Suicide	1	4.16
	Mental health in general	13	54.16
Main focus of the	Prevalence of mental health disorders	22	91.66

measurement**	Risk Factors of mental health disorders	19	79.16
	Attitudes toward seeking mental health services	4	16.66
Mental health tools used	Hopkins Symptom Checklist 25 items (HSCL-25)	5	20.83
	Kessler Psychological Distress Scale (K6)/(K10)	4	16.66
	Refugee Health Screener (RHS-15)	4	16.66
	Patient Health Questionnaire (PHQ-9)	1	4.16
	Generalized Anxiety Disorder (GAD-4) scale	1	4.16
	Center for Epidemiological Depression Scale (CES-D)	2	8.33
	Edinburgh Postnatal Depression Scale-EPDS/ The Postpartum Depression Predictors Inventory (PDPI)	3	12.50
	Posttraumatic Stress Diagnostic Scale (PDS)/the PTSD Checklist Civilian version (PCL-C)/the PTSD-8	5	20.83
	The 36-item Short Form Survey Instrument (SF-36)	1	4.16
	Behavioral Risk Factor Surveillance System Survey	1	4.16
	Interviews/Focus groups	1	4.16
	Not reported/not specified	2	8.33
Publication date	2007–2010	2	8.33
	2011–2014	5	20.83
	2015–2018	9	37.5
	2019–2021	8	33.33

(\*), (\*\*) percentages were more than 100% due to studies that represented more than one measurement focus or outcome.

### 2.3.2. Prevalence of Mental Health Disorders

In this review, 22 studies (91.66%) reported a prevalence of mental health disorders among Middle Eastern immigrants. These studies focused on mental health disorders, including depression and anxiety disorders, psychosis, PTSD, perinatal mental disorders, severe psychological distress, and suicide.

The prevalence of depression was included in eight studies (33.33%). It was reported as 44% for Syrian refugees in Atlanta (M'zah et al., 2019), as 47.7% among another sample of Syrian refugees in the U.S. (Javanbakht et al., 2019), 55.9% for recent Iraqi refugees in southeast Michigan (Arfken et al., 2018), 58% for Iraqi immigrant women (Taylor et al., 2014). Also, a high level of depression was found among Iraqi refugees, with more than one third of the Iraqi refugee women (34.3%) diagnosed with a depressive disorder alone and 17% diagnosed with PTSD and a depressive disorder, bipolar disorder, schizophrenia (Jamil et al., 2007). Among Somali women, depression prevalence was reported as 31.17%, 17.59%, and 9.56% for those younger than 30, between 30 and 50 years old, and older than 50 years, respectively (Kroll et al., 2011). On the other hand, Kamimura et al. (2018) reported low levels of depression among women who immigrated from Muslim countries (Somalia, Sudan, and Iraq). Two studies reported the prevalence of anxiety (12.5%, n = 3). They reported a prevalence as high as 60% among Iraqi refugees (Taylor et al., 2014) and Syrian refugees (M'zah et al., 2019). Javanbakht et al. (2019) reported that 40.3% of Syrian refugees had possible anxiety.

The prevalence of PTSD was reported in seven studies (29.16%). Jamil et al. (2007) reported that of Iraqi refugees seeking or already receiving outpatient services or treatment, only 11.4% received a PTSD diagnosis alone, and 17.1% received PTSD diagnoses with other mental health diagnoses such as depression, bipolar, and schizophrenia. Kulwicki and Ballout (2015) reported that 17.6 %, 20.3%, and 24.2 of the Arab American women experienced PTSD symptoms such as disturbing images, bad dreams or nightmares, and re-experiencing the traumatic event once in a while, respectively. A similar prevalence, 34% and 32.4% of PTSD for Iraqi women and Arab

refugees, respectively, was reported by Taylor et al. (2014) and Arfken et al. (2018). Among Syrian refugees, M'zah et al. (2019) reported a PTSD symptom prevalence of 84%, and Javanbakht et al. (2019) reported a possible PTSD diagnosis of 32.2% of the sample. Norris and Aroian (2008) found that, among Arab immigrant women, symptoms related to re-experiencing traumatic events were generally reported more frequently than avoidance and arousal symptoms. More than two thirds of the sample reported re-experiencing symptoms of intrusive images and emotional upset when reminded of the trauma, with about two thirds reporting three or more re-experiencing symptoms (Norris & Aroian, 2008).

One study (4.16%) focusing on the prevalence of psychosis reported that psychosis rates in Somali refugees were 32.5%, 11.11%, and 4.41% for women aged 30 years or younger, aged 31–50 and older than 50 years old, respectively (Kroll et al., 2011). Perinatal mental disorders including perinatal depression, perinatal anxiety, and postpartum depression were examined in three studies (12.50%). Of Arabic immigrant women in Michigan, 17% reported feeling depressed during pregnancy, 32% reported antenatal anxiety, and 25.2% reported postpartum depressive symptoms (Alhasanat-Khalil et al., 2018, 2019). Similarly, among Arabic immigrant women, 36% were considered at high risk for postpartum depression (Alhasanat et al., 2017). Two studies reported a prevalence of severe psychological distress (SPD; 8.33%). SPD refers to mental health problems that cause moderate-to-severe impairment in social or occupational functioning (Albqoor et al., 2020; Shafeek Amin & Driver, 2019). Both studies reported a similar rate (5.10% and 6.72%) of severe psychological distress among Middle Eastern immigrants (Albqoor et al., 2020; Shafeek Amin & Driver, 2019). Lastly,

one study reported the overall suicide rate was 4.86 in 100,000 among Arab American females (El-Sayed et al., 2011)

More than half of the studies (54.16%,  $n = 13$ ) focused on general mental health status among immigrants. Samari (2016) found that two-thirds of Arab Americans are considered a medium risk for psychological disorders. Bulut and Brewster (2021) reported that the average level of psychological distress among Middle Eastern women is 3.584, which is significantly higher than the average levels of native-born White women (2.871). Among a large sample of Middle Eastern female immigrants, 31.1% screened positive for mental health and emotional distress (Mahmood et al., 2020). Among newly arrived refugee women, 53.8% of Iraqi refugees scored positive for mental health disorders (Johnson-Agbakwu et al., 2014). Sixty percent of Syrian refugees reported psychological distress (M'zah et al., 2019). Similarly, Piwowarczyk et al. (2014) indicated that few Somali women reported any days of sadness, and 24% of the sample reported that they did not know or were unsure how many days they felt sad in the past month. Piwowarczyk et al. (2014) reported that 23.6% of the Somali women did not know or were unsure how many days they felt worried. Baird et al. (2020) reported that 40% of their participants, including Syrian and Iraqi women, indicated the need for follow-up mental health screening.

### **2.3.3. Factors Associated With Mental Health Disorders**

Of the articles in this review, 79.16%, ( $n = 19$ ) reported the factors associated with mental health disorders among Middle Eastern immigrants. These factors were related to sociodemographics such as gender (37.50%,  $n = 9$ ); age (16.66%,  $n = 4$ ); education level and employment, and country of origin (27.27%,  $n = 6$ ); immigration-

related factors, such as immigration type (13.63%, n = 3); the location, and duration of time spent in the U.S. (27.27%, n = 6); and the reason for immigration (4.16%, n = 1). Other factors such as previous mental health disorders, physical health, and the last visit to a healthcare provider (22.72%, n = 5) were reported as factors that affect mental health status. Gender was reported (37.50%, n = 9) as a risk factor for mental health disorders such as depression (Baird et al. 2020; Jamil et al., 2007; Javanbakht et al., 2019; Kroll et al., 2011); anxiety (Javanbakht et al., 2019); psychological distress and mental health disorders in general (Albqoor et al., 2020; Bulut & Brewster, 2021, Mahmood et al., 2020); SPD (Shafeek Amin & Driver (2019). However, Middle Eastern immigrant women had a lower rate of psychoses and suicide than their male counterparts (El-Sayed et al., 2011; Kroll et al., 2011). Age was included (16.66%, n = 4) as a factor associated with mental health disorders among Middle Eastern immigrants. Kroll et al. (2011); and Mahmood et al. (2020) reported that mental health disorders are higher among the younger population. Mahmood et al. (2020) reported that participants under 60 years of age had significantly higher odds of screening positive for emotional distress. Psychosis is also shown to be higher among the younger immigrant population. The prevalence of psychoses among Somali women was 32.5%, but this percentage decreased to 4.4% for women in the 50-years-or-older age group (Kroll et al., 2011). On the other hand, Bulut and Brewster (2021) reported that psychological distress increases with age until early midlife. Also, the risk of suicide increased as the women aged. The suicide rate for Arabic women aged 20–24 and 25–44 was 1.33 in 100,000 and 5.84 in 100,000, respectively, compared to women aged 65 years or more who have a higher suicide rate (6.31 in 100,000; El-Sayed et al., 2011).

Education and employment levels were included in six (25%) of the studies. A higher level of education was reported as a factor that increases the risk for mental health disorders, such as anxiety and depression (Pampati et al., 2018), antepartum, and postpartum depression symptoms (Alhasanat-Khalil et al., 2018, 2019). In contrast, Bulut and Brewster (2021) reported that increased levels of educational attainment are associated with lower distress levels. Regarding employment and income, Bulut and Brewster (2021) found that higher household income and homeownership are associated with lower distress levels. Whereas Aroian et al. (2017) found in a sample of married Arab women that, while women's employment was not associated with depression, their husband's employment status was significantly associated with increased risk of the women's depression. Women with retired, disabled, or unemployed husbands not looking for work were, on average, more depressed than other women (Aroian et al., 2017). Kamimura et al. (2018) also reported that women's full-time employment was related to higher levels of depression.

The location and duration of time spent in the U.S. were examined in six studies (25%) included in this review. Among Iraqi refugees, depression was associated with the time spent in the U.S., indicating that longer time spent in the U.S. was associated with a higher risk of developing mental health disorders (Taylor et al., 2014). Similarly, Middle Eastern women with 10 years or more duration in the U.S. have significantly higher odds of reporting serious psychological distress than US-born White women (Shafeek Amin & Driver, 2019). On the other hand, Baird et al. (2020) reported that the duration of residence in the U.S. did not significantly affect the mental health risk in newly arrived refugees. Alhasanat et al. (2017) and Alhasanat-Khalil et al. (2019) found that Middle

Eastern immigrant duration in the U.S. was not significantly related to postpartum depression. Also, Aroian et al. (2017) reported that the length of time the women spent in the U.S. was not significantly associated with depression. The location where the immigrant women resettled or chose as their residence affects their risk of developing mental health disorders. For example, El-Sayed et al. (2011) examined Arab suicide rates stratified by a residence inside or outside Wayne County, Michigan; the suicide rate among Arab American females was 4.36 per 100,000 per year. Outside Wayne County, the suicide rates for the same population were 5.43 per 100,000 per year.

Country of origin as a risk factor was included in six (25%) studies of this scoping review. Aroian et al. (2017) concluded that women's country of origin is significantly associated with depression. Polcher and Calloway (2016) and Taylor et al. (2014) reported that Iraqi participants have the highest positive scores for mental health disorders than participants from Bhutan, Iraq, Somalia, Congo, Sudan, Burma, Iran, Eritrea. Similarly, Mahmood et al. (2020) reported that of immigrant women who screened positive for mental health disorders, 36.4% were from Iraq, and 43.9% were from Syria. Furthermore, in a sample of newly arrived refugees, 53.8% of those who screened positive for mental disorders were Iraqi, and 11.5% were Somali (Johnson-Agbakwu et al., 2014). In contrast, Samari (2016) reported no differences between psychological distress and country of origin.

One study (4.16%) investigated the relationship between mental health disorders and reasons for immigration. Pampati et al. (2018) reported that those escaping political violence and religious persecution had the highest level of depression and anxiety. In contrast, those immigrating for educational and economic opportunities had the lowest

level of depression and anxiety (Pampati et al., 2018). Immigrants or refugees reporting immigrating for familial reasons had average scores for both depression and anxiety (Pampati et al., 2018). Three studies (12.50%) examined immigrants such as refugees, asylees, those on special immigrant visas. Pampati et al. (2018) found that depression scores were higher among refugees than either immigrants or U.S.-born Arab Americans, but no significant difference was found in the anxiety scores. In general, the prevalence of mental health disorders was higher among those holding special immigrant visas than asylees (Arfken et al., 2018; Mahmood et al., 2020).

Seven studies (29.16%) examined other factors associated with the mental health of Middle Eastern immigrants, including regular annual physical exams and chronic health problems such as obesity, diabetes, and hypertension. Kamimura et al. (2018) and Albqoor et al. (2020) reported that having had a physical exam or having contacted a mental health provider within the past year was associated with higher levels of depression and serious psychological distress. Taylor et al. (2014) reported that Middle Eastern immigrants with medical conditions such as hypertension, diabetes, or obesity are more likely to report depression. Albqoor et al. (2020) found that obesity significantly increased the odds of reporting mental health disorders by 2.38 compared to those with normal BMI. Also, Middle Eastern women who reported antenatal anxiety and depression were more likely to report postpartum depression (Alhasanat-Khalil et al., 2018). Kamimura et al. (2018) found that reporting good physical health was associated with depression. In contrast, both Taylor et al. (2014) and Bulut and Brewster (2021) found that higher levels of depression and psychological distress, respectively, were reported by those who rated their health as fair or poor. Similarly, Javanbakht et al.

(2019) reported that Syrian refugees who reported their health as fair or poor were more likely to have possible PTSD (48.7%) than those who rated their health as better (27.0%), and they were more likely to have depression (73.3%) than those who rated their health as better (40.0%). A lower level of social support was also negatively correlated with postpartum depression symptoms (Alhasanat-Khalil et al., 2018), or mental health status (Aroian et al., 2017).

#### **2.3.4. Attitudes Toward Seeking Mental Health Services**

The four studies (16.66%) focusing on the Middle Eastern utilization of mental health services reported low utilization among Middle Eastern immigrants in the U.S. (Johnson-Agbakwu et al., 2014; Piwowarczyk et al., 2014). In a study of Somali women in the greater Boston area, 89% of them never sought treatment from a mental health professional, and 28.9% said they would not seek mental health services if they were very depressed (Piwowarczyk et al., 2014). In a sample of newly arrived refugees, only 30.8% of those who scored positive for mental health disorders were actively receiving mental health services, and 19.2% had mental health appointments scheduled (Johnson-Agbakwu et al., 2014). In a newly arrived refugee sample that was offered follow-up for mental healthcare, 23% did not attend their follow-up appointment (Polcher & Calloway, 2016). Of those who attended their appointment, 50% agreed to the treatment plan, according to the chart review (Polcher & Calloway, 2016). In a sample of Syrian refugees in Atlanta, only seven refugees, 28% reported the need to talk to healthcare providers about psychological concerns; five (60%) went to mental healthcare providers and thought it was helpful (M'zah et al., 2019).

Two studies (8.33%) focused on barriers to receiving professional mental health services (Johnson-Agbakwu et al., 2014; Piwowarczyk et al., 2014). It was reported that immigrants often seek social support and traditional ways to cope with stressors rather than professional help (Piwowarczyk et al., 2014). Negative attitudes toward medication, stigma, and the desire not to disclose private information to physicians are significant barriers to utilizing mental health services. Immigrant women also reported a lack of understanding of Western mental health services, and their mental health needs affected their attitude toward mental health services (Piwowarczyk et al., 2014). Johnson-Agbakwu et al. (2014) also reported that 50% of refugees newly arrived from countries including Iraq, Somalia, Sudan, and other Middle Eastern countries did not use any mental healthcare services due to lack of insurance (53.8%) and service being declined (46.2%).

#### **2.4. Discussion**

This review aimed to map out the literature on the prevalence of mental health disorders among Middle Eastern immigrant women living in the U.S. and the factors affecting their mental health status. We included 24 studies that focused mostly on Middle Eastern immigrants from Iraq, Somalia, and Syria.

Most of the studies reported high rates of mental health disorders among the Middle Eastern immigrants with multiple, rather than single, mental health disorders (Jamil et al., 2007; Javanbakht et al., 2019; M'zah et al., 2019). The prevalence of mental health disorders of Middle Eastern immigrants in the U.S. (27–50%) is generally higher than that of the U.S. population (19.86%; Mahmood et al., 2020; Reinert et al., 2021; Taylor et al., 2014). Findings from this review are not consistent with the “immigrant

paradox” for most mental health illnesses except suicide and psychosis where Middle Eastern immigrants reported lower rates than the U.S.-born population (El-Sayed et al., 2011; Kroll et al., 2011). Depression rates in this review ranged between 58% and 9% (Arfken et al., 2018; Jamil et al., 2007; Kroll et al., 2011; M’zah et al., 2019; Taylor et al., 2014), and anxiety disorders ranged between 40% and 60%; both were highly prevalent in Middle Eastern immigrants (M’zah et al., 2019; Taylor et al., 2014). These findings are higher among Middle Eastern immigrants than immigrants from other races/ethnicities, such as Latinos (Alegría et al., 2008) and Asian-Americans (Alegría et al., 2017). Prevalence of PTSD was as high as 84%, especially among immigrants from conflict zone areas such as Syria and Iraq (Arfken et al., 2018; Jamil et al., 2007; M’zah et al., 2019; Taylor et al., 2014). In a limited number of studies examining psychosis and suicide, the prevalence was lower than native-born, consistent with the “immigrant paradox.” These findings are compatible with the literature that the U.S.-born reported the highest prevalence of suicide over Asians, Latinos, non-Latino Blacks, and non-Latino Whites (Alegría et al., 2017). Few studies reported perinatal mental health disorders among Middle Eastern women as high as 36%, and all the studies were conducted in the same region (Alhasanat et al., 2017; Alhasanat-Khalil et al., 2018, 2019). These findings on the prevalence of mental health illnesses are important, showing the need for strategic focus on mental health among those who immigrate to the U.S. from Middle Eastern countries.

In the studies that examined the factors affecting the mental health of Middle Eastern immigrants in the U.S., the most reported factor was gender. Although mental health disorders among immigrant women with Middle Eastern ethnicity varied among

studies, being a female was positively correlated with a higher risk than men for most mental health disorders such as depression (Baird et al., 2020). However, in psychoses and suicide, men reported higher rates than females (El-Sayed et al., 2011; Kroll et al., 2011). The effect of age also varied depending on the mental health conditions. The younger Middle Eastern population can be at increased risk for mental health illness in general (Mahmood et al., 2020), or specific illnesses such as psychoses (Kroll et al., 2011), and at low risk for conditions like suicide (El-Sayed et al., 2011), in comparison with the older Middle Eastern population. More studies are needed to understand the pattern and to assess the risk factors of mental health disorders among different age groups of Middle Eastern women.

The effect of educational attainment and employment status on mental health disorders varied in this review. Some studies reported that highly educated Middle Eastern immigrant women are more likely to report mental health disorders (Alhasanat-Khalil et al., 2018, 2019), while other studies found that higher education is associated with a lower risk of mental health disorders (Bulut & Brewster, 2021). Also, employment status was associated with increased risk for mental health disorders such as depression (Kamimura et al., 2018), while other studies found that only the husband's education and employment status are associated with women's risk for mental health disorders (Aroian et al., 2017). These findings varied based on the type of mental health disorders and the sample characteristics. It is important to assess these factors and their association with mental health disorders to guide interventions to improve assessment and interventions in future studies. Among factors affecting the mental health of Middle Eastern immigrants in this review is the country of origin, particularly those from countries affected by war or

conflict in the Middle East, were at risk for a higher prevalence of mental health disorders. In this review, Iraqi immigrant women reported a higher rate of mental health disorders (53.8%) compared to other immigrants from the Middle East such as Somalia, Sudan, and Iran (Johnson-Agbakwu et al., 2014; Polcher & Calloway, 2016; Taylor et al., 2014). Also, the type of visa that may show the circumstances surrounding migration experience was reported among the factors that predispose Middle Eastern immigrants to a higher risk of mental health disorders. Those holding special immigrant visas, which refers to visas given upon arrival due to past services for the U.S. government or military in the immigrants' home countries (Arfken et al., 2018; Mahmood et al., 2020), and refugees (Pampati et al., 2018) have reported a higher rate of mental health disorders compared to other Middle Eastern people in the U.S. such as immigrants or the U.S.-born Middle Eastern population. Because most of the studies in this review were conducted on Middle Eastern people from Iraq (12.5%) and mostly with Middle Easterners holding special immigrant visas or refugees from Iraq (Arfken et al., 2018; Mahmood et al., 2020), more studies are needed to assess the mental health disorders in immigrants from other countries in the Middle East.

In this review, few studies examined the Middle Eastern immigrants' attitudes toward seeking mental health services. The percentage of women who never sought mental health services was as high as 89% (Piwowarczyk et al., 2014), and who declined services was 28.9% (Piwowarczyk et al., 2014). Of the women seeking mental health services, 30.8% received support, and 19.2% had scheduled mental health appointments (Johnson-Agbakwu et al., 2014). Although few studies examined the barriers to seeking mental health services, findings among women from Middle Eastern immigrants were

compatible with immigrants from different races/ethnicities. These barriers include personal, social, and healthcare delivery barriers. In this review, personal barriers reported were negative attitudes toward medication, declining services, seeking social support rather than professional help, and the desire not to disclose private information to physicians (Piwowarczyk et al., 2014). These barriers were reported by other immigrants in the U.S., such as Chinese immigrants (Li, 2020) and Hispanics (Callister et al., 2011). Although stigma is extensively studied as an obstacle to seeking mental health services, only one study examined this barrier (Piwowarczyk et al., 2014). Consequences of long-lasting mental health problems can be varied from premature death to impaired quality of life; therefore, it is very important to focus on strategies to improve mental health service seeking and utilization through eliminating barriers such as stigma, access to care, and other factors.

## **2.5. Limitations**

Some limitations exist in this scoping review. Although a wide range of possible search terms was used, some studies may have been missed due to the selected search terms and the limited time for the search.

## **2.6. Recommendation**

This review presented the high rates of mental health disorders among Middle Eastern immigrants and how their risk is complex and associated with various factors that affect the prevalence of mental disorders. The review also showed that despite the high rates of mental disorders among Middle Eastern immigrants, their utilization of mental health services is low. A wide range of personal, social, and healthcare delivery barriers

hinder mental health service utilization among this population (Biggerstaff & Skomra, 2020).

Healthcare professionals, including nurses, have a professional and ethical responsibility to advocate and provide care for vulnerable populations, including immigrants, who are considered one of the most vulnerable populations in the U.S. (Biggerstaff & Skomra, 2020). Mental health nurses can design specific strategies to increase the awareness of mental health disorders, improve the tailored care for immigrant populations, and minimize the barriers to seeking mental health services. Nurses can advocate and work through mitigating inequalities at the community and systems levels that prevent utilization of mental health services among immigrant populations. Furthermore, findings from this review can be used to design and implement educational strategies and interventions for mental health nursing practice to improve nurses' understanding of mental health risks and barriers among Middle Eastern women in the U.S.

### **2.7. Implications for Research**

Findings from this review showed a lack of research on mental health disorders among immigrants from the Middle East living in the U.S. Most of the studies were conducted on immigrants from conflict or war zones. Despite the increasing numbers, studies on immigrants from other Middle Eastern countries to the U.S. are almost nonexistent. Depression and anxiety were among the most studied mental health disorders, and a few studies focused on other disorders such as psychosis and suicide. Moreover, few studies examined factors associated with the utilization of mental health disorders or attitudes toward seeking mental health services. These findings warrant

further studies examining broader mental health outcomes (i.e., psychosis, suicide) and factors associated with increased risk for mental health disorders among immigrants from Middle Eastern countries living in the U.S. Moreover, studies focusing on attitudes toward seeking mental health services and utilization of these services are also needed to develop strategies to improve mental health and utilization of mental health services.

The Middle East represents a large geographical region with diverse cultures, languages, and religions. It is crucial to focus on studying mental health disorders among immigrants from different Middle Eastern countries and their attitudes toward seeking mental health services. This will help identify risk and protective factors that can prevent and detect mental health problems as early as possible to provide necessary healthcare services.

## CHAPTER 3

### RESEARCH METHODOLOGY

#### **3.1. Study Purpose**

The purpose of this study was to measure anxiety and depression levels in Saudi women living in the U.S. and factors affecting their intention to seek mental health services in the U.S. This chapter describes the study design, aims, sample and settings, and data collection and analysis.

#### **3.2. Study Design**

A descriptive cross-sectional design was used. The sample consisted of Saudi women aged 18 or older living in the U.S.

#### **3.3. Primary Study Aims, Questions, and Hypotheses**

The specific aims of this dissertation study were the following:

**Aim 1:** Measure anxiety and depression levels among Saudi women living in the U.S.

**Aim 2:** Examine the relationship between factors, including depression and anxiety levels, mistrust in mental health staff and services, attitudes toward seeking mental health services, immigration-related factors (duration of time in the U.S., reason for being in the U.S.) and intention to seek mental health services among Saudi women in the U.S.

**A2Qa.** What is the relationship between depression and anxiety level and intention to seek mental health services?

**H1a:** High depression and anxiety levels will be positively related to an increase in Saudi women's intention to seek mental health services.

**A2Qb.** What is the relationship between mistrust in mental health staff and services and intention to seek mental health services?

**H1b:** Low mistrust in mental health staff and services will be positively related to an increase in Saudi women’s intention to seek mental health services.

**A2Qc.** What is the relationship between attitudes toward seeking mental health services and intention to seek mental health services?

**H1c:** Positive attitudes toward seeking mental health services will be positively related to an increase in Saudi women’s intention to seek mental health services.

**A2Qd.** What is the relationship between immigration-related characteristics and intention to seek mental health services?

**H1d:** Longer duration of time spent in the U.S. will be positively related to an increase in Saudi women’s intention to seek mental health services.

See Figure 3.1 below, which presents the study’s variables.

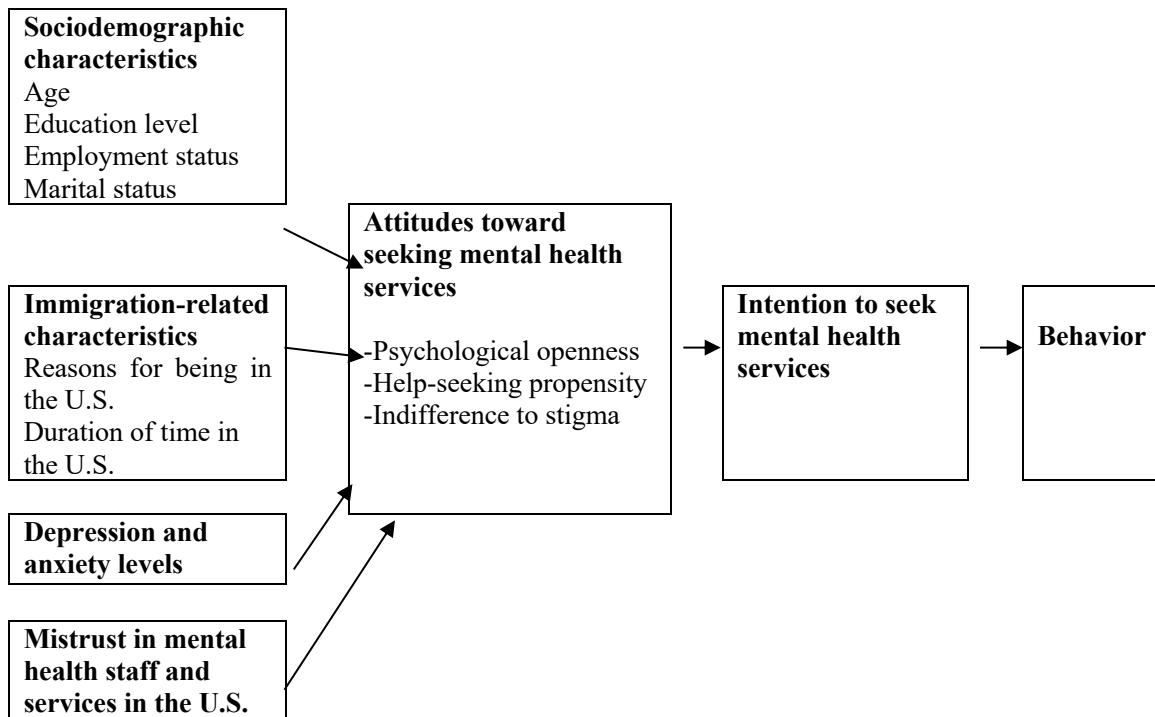


Figure 3.1: Relationship among the study variables based on the theory of planned behavior.

### **3.4. Operational Definitions**

#### **3.4.1. Dependent Variable**

**Intention to seek mental health services** is a numerical quantification of the degree to which a person reports having the intention to seek help from a mental health professional. It was assessed by the 3-item Mental Help-Seeking Intention Scale (MHSIS). It was operationalized as a continuous variable where a higher score indicates a greater intention to seek help.

#### **3.4.2. Independent Variables**

The independent variables were categorized into four categories: Immigration-related characteristics, depression and anxiety levels, attitudes toward seeking mental health services, and mistrust in mental health staff and services in the U.S.

- **Immigration-related characteristics** include reasons for immigration to the U.S. and duration of time in the U.S. Since Saudi women immigrate to the U.S. for a variety of reasons, participants' responses for a reason for being in the U.S. include education, companion of a family member, permanent residence, seeking advanced medical treatment, or other reasons. Duration of time in the U.S. was operationalized as a continuous variable calculated using the date since moving to the U.S.
- **Depression and anxiety levels** were operationalized as symptoms of anxiety and depression experienced by the participants over the last month. The responses were dichotomized to either depressed or not depressed and either anxious or not anxious. These levels were measured by using the Hopkins Symptom Checklist-25 (HSCL-25).

- **Attitudes toward seeking mental health services** refers to the level a participant has regarding favorable and unfavorable responses toward seeking mental health services (Mackenzie et al., 2004). It was measured by the Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS), which has three subdimensions: psychological openness, help-seeking propensity, and indifference to stigma (Mackenzie et al., 2004). Three variables were used as predictors: psychological openness, help-seeking propensity, and indifference to stigma. All three variables were operationalized as continuous variables, and higher scores from the three subscales indicate positive attitudes toward seeking mental health services.
- **Mistrust in mental health staff and services in the U.S.:** The mistrust refers to the extent to which Saudi women in the U.S. do not trust mental health staff and services. The mistrust in mental health staff and services was measured using a single item: “As a Saudi woman, generally, you can trust mental health staff and services. Explain what affects your trust of mental health staff and services in the U.S.” The participants had four options ranging from strongly agree to strongly disagree. Participants' responses were dichotomized with the first two options as low trust and the latter two as high trust.

### 3.4.3. Covariates

- In addition to the variables already presented, sociodemographic characteristics that include the woman’s age, education level, health insurance coverage, employment status, and marital status were controlled as identified covariates

concerning women's intention to seek mental health services. The sociodemographic characteristics were operationalized as follows:

- Age was calculated with participant's year of birth as a continuous variable presented in years.
- Education was operationalized as either a college graduate or not a college graduate.
- Health insurance coverage was dichotomized to either insured or not (due to multicollinearity, it was not used in multivariate analysis).
- Employment status was dichotomized as either employed or not employed.
- Marital status was operationalized as either married or single/divorced/widowed.

### **3.5. Sampling and Settings**

To achieve the study's aims, the study sample included women who were (a) of Saudi nationality, whether first- or second-generation immigrants, (b) aged 18 years or older, and (c) living in the U.S. for more than 1 year. Saudi women across the U.S. who came to the U.S. for reasons (e.g., employment, education, medical treatment, accompanying a family member, permanent immigration, or other reasons). Also included were those who had lived in the U.S. for at least 1 year while they had the time to adjust to the new culture and familiarize themselves with the healthcare system. The exclusion criteria were Saudi women in the U.S. with a short-term or visitor visa.

Based on an *a priori* power analysis in G\*power using a small-to-medium effect size ( $f^2=.085$ ) at an alpha level of 0.05 with the desired power of .80, 100 participants

were needed. To account for attrition, a minimum of 120 participants were planned to be recruited for the study. After the data collection, a sensitivity power analysis was done to assess the study's minimum detectable effect size. A total of 160 women were included in the study sample.

### **3.6. Data Collection**

Two main strategies were used to collect data. The first strategy was through Saudi organizations (e.g., Saudis in Boston, Saudis in the U.S.) dedicated to supporting the Saudi people in the U.S. Also, participants were recruited via social media sites. Data were collected online through a self-reported survey. The potential participants were sent a link to the online survey through Qualtrics. Once they had clicked on the link, the participants went through the online consent form and inclusion and exclusion criteria. If the participant clicked on the (agree) button, it indicated that the participant was at least 18 years old, had read the consent form, and agreed to participate in this research study.

### **3.7. Instruments and Procedures**

The study was announced via a flier (Appendix B) and an email to community contacts (Appendix C).

The survey (Appendix D) had three sections and a total of 60 questions. The first section consisted of 24 questions about sociodemographic and immigration-related characteristics; the second section assessed the attitude toward seeking mental health services using the 24-item Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS), the participant's intention to seek mental health services using the Mental Help-Seeking Intention Scale (MHSIS), and mistrust in mental health staff and services, using Single-item to measure mistrust in mental health staff and services; lastly,

the third section assessed the participant's mental health status using the Hopkins Symptom Checklist-25 (HSCL-25). (See Appendix D for all instruments.)

Sociodemographics/immigration-related characteristics. Sociodemographics included age, education level, occupational status, health insurance coverage, household income, chronic diseases, medication use, marital status, number of children, and obstetrical history. In addition, data related to mental health was collected, such as whether the participant was ever diagnosed with mental health disorders or ever received mental health services. Immigration-related characteristics included visa type, reasons for being in the U.S., zip code (rural/urban), years of residency in the U.S., and whether they had a family member living with them in the U.S.

The Hopkins Symptom Checklist-25 (HSCL-25) was used to measure anxiety and depression symptoms. It consists of two subscales: the first 10-item subscale relates to anxiety, while the second 15-item subscale relates to depression. Each item is scored on a Likert scale from 1 (not at all) to 4 (extremely). Higher scores indicate worse mental functioning. Three total scores are calculated: the total score (average of all 25 items), the anxiety score (average of the ten anxiety items), and the depression score (average of the 15 depression items). The cutoff score is 1.75 for the total score and each of the two subscores (Winokur et al., 1984). A cutoff score of 1.75 or more has been used widely to identify anxiety and depression in studies among refugees in other countries (Hollifield et al., 2002). The HSCL-25 score was categorized into two groups using the average item cutoff score of 1.75: anxious (1.75 or more) and not anxious (below 1.75). The HSCL-25 has been translated and validated into several languages, including Arabic (Al-Turkait et al., 2011; Fares et al., 2019; Mahfoud et al., 2013). The scale has internal consistency

(Cronbach  $\alpha$ ) of .91 for all the 25 items and internal consistency (Cronbach  $\alpha$ ) of .85 and .86 for the anxiety and depression subscale, respectively (Al-Turkait et al., 2011). The Cronbach  $\alpha$  in this study was .95 for all 25 items, and .89, .94 for the anxiety and depression subscales, respectively.

The Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS) was used to measure social-cognitive factors of the TPB (e.g., attitudes, subjective norms, and perceived behavioral control) to seek mental health services. The IASMHS consists of three internally consistent subscales: psychological openness, help-seeking propensity, and indifference to stigma (Mackenzie et al. 2004). Psychological openness assesses the participant's openness to acknowledging psychological problems. The help-seeking propensity measures the participant's willingness and ability to seek help. Indifference to stigma assesses the participant's concern for how people in their lives would react to help-seeking behaviors. This scale contains items measuring the three components (e.g., attitude, subjective norms, perceived behavioral control) of Ajzen's (1991) TPB. Ajzen's three components correspond to Mackenzie et al. (2004) the subscales of psychological openness, indifference to stigma, and help-seeking propensity, respectively. The IASMHS is a 24-item scale that asks participants to choose one response on a 5-point Likert scale (0 = disagree to 4 = agree). The overall score ranges from (0 to 96), where higher scores represent a higher intention to seek mental help. The overall measure has strong internal consistency reliability coefficients and demonstrates good convergent validity (Mackenzie et al., 2004, 2006). The Cronbach  $\alpha$  for this study is .82.

*The Mental Help Seeking Intention Scale (MHSIS)* was used to assess the Saudi women's intention to seek mental health services. MHSIS is a 3-item instrument

designed to measure a participant's intention to seek help from a mental health professional if they have a mental health concern (Hammer & Spiker, 2018). To calculate the mean score, the scores for all three items were added and then divided by three. The resulting mean score ranges from a minimum of 1 to a maximum of 7. The mean score cannot be calculated if a participant has a missing response on the MHSIS scale. A higher score indicates a greater intention to seek help. The measure has predictive validity of nearly 70% for future help-seeking behavior among community adults with mental health concerns (Hammer & Spiker, 2018). The scale has reported an internal consistency score of .87 in a sample of community adults with mental health concerns (Hammer & Spiker, 2018), and .93 and .89 for Canadian college students and parents, respectively (Digal & Gagnon, 2020). Among a sample of U.S. adults from different races, the scale had had Cronbach  $\alpha$  of .95 (Hammer et al., 2019). The Cronbach  $\alpha$  in this study is .91.

*Single-item to measure mistrust in mental health staff and services* The mistrust refers to the extent to which Saudi women in the U.S. do not trust mental health providers and services. The mistrust in healthcare providers was measured using a single item: "Generally, you can trust mental health staff and services." adopted from a measure previously in studies on social capital (Lindstrom, 2008) and ethnicity and mental health services mistrust (Henderson et al., 2014). The participants had four-category ordinal responses ranging from strongly disagree to strongly agree. Participants' responses were dichotomized as the first two options as disagree (high mistrust) and the latter two options as agree (low mistrust). Some modification was made to the question to make it

more appropriate for the study aim, and a space to explain their answers if needed, as follows: “As a Saudi woman, generally you can trust mental health staff and services in the U.S.” and “please explain what affects your trust in mental health staff and services in the U.S.”

Table 3.1: Variables measured for study aims.

		Measures	Instruments
Dependent variables	Intention to seek mental health services	Numerical quantification of the degree to which a person reports having the intention to seek help from a mental health professional.	Mental Help-Seeking Intention Scale (MHSIS)
Covariates	Sociodemographic factors	Age, education level, employment status, health insurance, and marital status	Sociodemographic characteristics
	Measure social-cognitive factors of the TPB	Attitudes, subjective norms, and perceived behavioral control	Attitudes Toward Seeking Mental Health Services (IASMHS)
Independent variables	Mental health status	-Depressed/not depressed -Anxious/not anxious	Hopkins Symptom Checklist-25 (HSCL-25)
	Immigration-related characteristics	Duration of time in the U.S., reason for immigration	Immigration-related characteristics
	Mistrust in mental health staff and services in the U.S.	High mistrust/low mistrust	Single-item to measure mistrust

The SAMHSA National Helpline (1-800-662-HELP (4357), 800-487-4889) was provided in the consent and at the end of the survey in the event that a participant finds that some questions or aspects of the study trigger distress. No compensation was provided for participation in the study.

### **3.8. Data Storage**

Data were stored on the primary investigator's computer dedicated to this study. No identifiable information was collected in this study.

### **3.9. Data Analysis**

IBM SPSS statistics V27 and Stata 17 were used to analyze the data in this study. The data distribution was evaluated for normality, with outliers identified. Kurtosis and skewness were examined. Sociodemographic characteristics were analyzed as co-varieties. Descriptive statistics were used to describe the sample characteristics. Means, standard deviations, and ranges were used to describe all continuous variables such as age, duration of time in the U.S., number of children, and attitude toward seeking mental health services scores. Frequencies and percentages were used to describe all categorical variables such as education level, employment status, marital status, obstetrical history, chronic diseases, medication use, the reason for being in the U.S., visa type, zip code (rural vs. urban), and whom they live with (alone, with family, friends, or other). Before testing study hypotheses, variables were examined for accuracy of data entry, missing data, and whether the variables satisfied the assumptions of statistical analyses.

A correlational procedure was conducted to describe associations of the zero-order correlation coefficients and their statistical significance for dependent and independent variables. Correlations (Spearman rho) were conducted to assess the relationship between immigration-related factors (duration of time in the U.S.), attitudes toward seeking mental health services (psychological openness, help-seeking propensity, and indifference to stigma), and participants' intention to seek mental health services. Mann-Whitney tests were conducted to evaluate the relationship between dichotomous

nominal level variables (e.g., mental health status, mistrust in mental health staff and services, education level, health insurance, and marital status) and participants' intention to seek mental health services. Kruskal Wallis tests were conducted to assess the relationship between employment status, reasons for being in the U.S., and participants' intention to seek mental health services.

In multivariate analysis, two models were used to assess the total effect of the independent variables on the dependent variable (Saudi women's intention to seek mental health services) without assessing the effect of the mediator variable (attitudes toward seeking mental health services). The first model included anxiety level, including immigration-related factors (duration of time in the U.S., reason for being in the U.S.), and mistrust in mental health staff and services to assess the total effect of these variables on the dependent variable (intention to seek mental health services). The second model included the depression level, including immigration-related factors (duration of time in the U.S., reason for being in the U.S.), and mistrust in mental health staff and services to assess the total effect of these variables on the dependent variable (intention to seek mental health services).

As independent variables, depression and anxiety levels were not used together to build a model for their effect on women's intention to seek mental health services to avoid overloading the model for this small sample size. Each mental health disorder including anxiety and depression was assessed in separate models where each model had all other independent variables, including sociodemographic variables, immigration-related variables, and mistrust. Due to multicollinearity, health insurance status was also not used in the models.

Then, two structural equation models were conducted to assess the relationship among the study variables based on the TPB. Anxiety was used as an independent variable in the first model with other variables. The dependent variable (Saudi women's intention to seek mental health services) was assessed on various combinations of factors, including sociodemographic characteristics (age, education level, health insurance coverage, employment status, and marital status), immigration-related factors (duration of time in the U.S., reason for being in the U.S.), anxiety level, mistrust in mental health staff and services, and the mediator factor (attitudes toward seeking mental health services). Depression was used as an independent variable with other variables in the second model. The dependent variable (Saudi women's intention to seek mental health services) was assessed on various combinations of background factors, including sociodemographic characteristics (age, education level, health insurance coverage, employment status, and marital status), immigration-related factors (duration of time in the U.S., reason for being in the U.S.), depression level, mistrust in mental health staff and services, and the mediator factor (attitudes toward seeking mental health services).

Cronbach's alpha was computed to assess the internal consistency reliability of the HSCL-25, MHSIS, and IASMHS scales.

### **3.10. Ethical Considerations**

The study protocol approval was obtained from the University of Massachusetts institutional review board (IRB). The participants were informed of the study's purpose before accessing the survey. All participants were informed that participation was voluntary. Before completing the survey (Appendix D) and, after reading the online consent form (Appendix E), the participants were required to click an icon that read "I

understand the purpose of this study and give my consent to participate." No personal or identifying information was collected. All participants were given contact information for the University of Massachusetts IRB and the principal investigator (Appendix F).

## CHAPTER 4

### RESULTS

#### **4.1. Introduction**

This chapter presents the results of the data collected in this study. Results are reported in the three categories designed to achieve the study aims.

1. Descriptive characteristics of the participants (i.e., age, education level, employment status, marital status, income, health insurance, health history, and the partner education and employment status if applicable), immigration-related factors (i.e., reasons for being in the U.S., type of visa, duration of time in the U.S., and family members in the U.S.), depression and anxiety levels of participants, mistrust in mental health staff and services, attitudes toward seeking mental health services, and intention to seek mental health services.

2. Bivariate comparisons of independent variables (descriptive characteristics of the participants, immigration-related factors, depression and anxiety levels, mistrust in mental health staff and services, attitudes toward seeking mental health services) and the dependent variable (intention to seek mental health services).

3. Multivariate analyses of mediating effect of attitudes toward seeking mental health services on the factors affecting intention to seek mental health services, such as depression and anxiety levels, immigration-related factors (duration of time in the U.S., reason for being in the U.S.), and mistrust in mental health staff and services in the U.S.

#### **4.2. Descriptive Characteristics of the Participants**

The study sample included 160 Saudi women living in the U.S. The mean age of the participants was  $31.68 \pm 5.28$  (range: 22–49). The majority (70.0%,  $n = 112$ ) were

married, and the mean number of children was  $2.09 \pm 1.13$  (range: 1–6). Most of the study participants (83.1%,  $n = 133$ ) had college or higher education. Of the participants, 25% ( $n = 40$ ) were not employed, and 35.6% ( $n = 57$ ) were not employed but were students. The majority of the participants' partners (60%,  $n = 96$ ) were college graduates and above, and (31.9%,  $n = 51$ ) were employed. Most of the participants (63.7%,  $n = 102$ ) reported sufficient income, whereas 31.9% ( $n = 51$ ) reported insufficient income. Of the participants, 88.8 % ( $n = 142$ ) had health insurance, and most of them (70.6%,  $n = 113$ ) had health insurance through the Saudi government. All participants reported living in urban areas. Participants' sociodemographic characteristics are presented in Table 4.1.

Table 4.1: Demographic characteristics of participants. ( $n = 160$ )

	n (%)
Age Mean $\pm$ SD, (min-max)	31.68 $\pm$ 5.28 (22–49)
18–30	58 (46.4)
31–40	59 (47.2)
41–50	8 (6.4)
Marital status	
Single/divorced/widowed	48 (30.0)
Married	112 (70.0)
Education level	
Not college graduate	27 (16.9)
College graduate and above	133 (83.1)
Education level of partner*	
Not college graduate	31(19.6)
College graduate and above	96 (60.0)
Missing	33 (20.6)
Employment status	
Employed	34 (21.3)
Employed and student	28 (17.5)
Not employed	40 (25.0)
Not employed/student	57 (35.6)
Employment status of partner	
Employed	51 (31.9)
Employed and student	22 (13.8)
Not employed	20 (12.5)
Not employed/student	26 (16.3)
Other (retired)	6 (3.8)
Number of children Mean $\pm$ SD, (min-max)	2.09 $\pm$ 1.13, (1–6)
Income	
Sufficient	102 (63.7)

Insufficient	51 (31.9)
Other (fluctuating)	3 (1.9)
Health insurance	
No	17 (10.6)
Yes *	142 (88.8)
- Private health insurance	14 (8.8)
- Health insurance through employer	17 (10.6)
- Health insurance provided through the Saudi government	113 (70.6)

\*Partner could be divorced (112 reported being married, but 127 reported on education level of the partner, and 125 reported on partner employment status).

Of the participants, 6.9 % (n = 11) reported having chronic diseases, and 12.5% (n = 20) of the participants reported using medications. A small portion of the participants (9.4%, n = 15) were pregnant, and 1.9% (n = 3) were in menopause. Of the participants, 18.8% (n = 30) had been diagnosed with mental health problems, including anxiety, depression, attention-deficit/hyperactivity disorder (ADHD), postpartum depression, and eating disorders. A small portion (5.6%, n = 9) of participants reported using mental health services in Saudi Arabia, whereas 20% (n = 32) reported using mental health services in the U.S. The participants' health history is presented in Table 4.2.

Table 4.2: Health history of participants. (n =160)

	n (%)
Chronic diseases	
Yes	11 (6.9)
No	144 (90.0)
Prefer not to say	1 (0.6)
Current pregnancy	
Yes	15 (9.4)
No	140 (87.5)
Current menopause	
Yes	3 (1.9)
No	129 (80.6)
I don't know	21 (13.1)
Use of medications	
Yes	20 (12.5)
No	132 (82.5)
Prefer not to say	6 (3.8)
Ever been diagnosed with mental health problems*	
Yes *	30 (18.8)

No	124 (77.5)
Prefer not to say	5 (3.1)
Mental health services ever used in Saudi Arabia	
Yes	9 (5.6)
No	146 (91.3)
Prefer not to say	4 (2.5)
Mental health services ever used in the U.S.	
Yes	32 (20.0)
No	123 (76.9)
Prefer not to say	4 (2.5)

\*Depression, anxiety, ADHD.

The mean duration of time in the U.S. was  $5.47 \pm 2.87$  (range: 1–15 years). The majority of the participants (66.9%,  $n = 107$ ) held nonimmigrant visas, and 6.3% ( $n = 10$ ) had a U.S. passport. Most of the participants (88.8%,  $n = 142$ ) came to the U.S. to study. Most (82.5%,  $n = 132$ ) reported that this was their first time living abroad, and more than half (53.8%,  $n = 86$ ) had a family member living in the U.S. The majority of the participants (63.7%,  $n = 102$ ) lived with their husbands. Participants' immigration-related characteristics are presented in Table 4.3.

Table 4.3: Immigration characteristics of participants. ( $n = 160$ )

	n (%)
Type of visa	
Immigrant visa	19 (11.9)
Nonimmigrant's visa (e.g., student visa)	107 (66.9)
Has a U.S. passport	10 (6.3)
Prefer not to say	20 (12.5)
Reason for being in the U.S.	
Study	142 (88.8)
Accompanying a family member	10 (6.3)
Other (Work, Seeking advanced treatment, or any other reason)	8 (5.0)
Duration of time in the U.S. Mean $\pm$ SD, (min-max)	5.47 $\pm$ 2.87 (1–15)
Is it the first time abroad?	
Yes (mean $\pm$ SD; 4.4 $\pm$ 2.6 years)	132 (82.5)
No	26 (16.3)
Family member in the U.S.	
Yes	74 (46.3)
No	86 (53.8)
Living with	
Alone	24 (15.0)
Husband	102 (63.7)
Family (e.g., sister, brother, mother, father, kids)	26 (16.3)
Roommate	8 (5.0)

Table 4.4 shows participants' mental health status (e.g., depression and anxiety scores), attitudes toward seeking mental health services, mistrust in mental health staff and services in the U.S., and intention to seek mental health services. The mean score of the depression subscale of the Hopkins Symptom Checklist-25 was  $1.96 \pm 0.75$ . A total of 41.9% ( $n = 67$ ) of the participants were depressed, and 43.8% ( $n = 70$ ) were not depressed. The mean score of the anxiety subscale of the Hopkins Symptom Checklist-25 was  $1.76 \pm 0.64$ . Of the participants, 33.8% ( $n = 54$ ) had anxiety. The mean score of the attitudes toward seeking mental health services was  $45.38 \pm 14.20$ . The majority (86.3%,  $n = 138$ ) reported low mistrust in mental health staff and services in the U.S. The mean score of the Mental Help Seeking Intention Scale was  $5.63 \pm 1.48$  (Table 4.4).

Table 4.4: Participants' anxiety and depression levels, attitudes toward seeking mental health services, mistrust in mental health staff and services in the U.S., and intention to seek mental health services. ( $n = 160$ )

	Mean $\pm$ SD, (min-max)	n (%)
Hopkins Symptom Checklist-25 (HSCL-25) – Depression subscale	$1.96 \pm 0.75$ (1–4)	
Depressed ( $\geq 1.75$ )		67 (41.9)
Not depressed ( $< 1.75$ )		70 (43.8)
Missing		23 (14.4)
Anxiety subscale	$1.76 \pm 0.64$ (1–3.8)	
Anxious ( $\geq 1.75$ )		54 (33.8)
Not anxious ( $< 1.75$ )		93 (58.1)
Missing		13 (8.1)
Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS)	$45.38 \pm 14.20$ (0–96)	
Psychological openness	$17.49 \pm 5.94$ (0–32)	
Help-seeking propensity	$15.79 \pm 5.23$ (0–32)	
Indifference to stigma	$12.75 \pm 5.10$ (0–32)	
Single-item to measure mistrust in mental health staff and services in the U.S.		
High mistrust		20 (12.5)
Low mistrust		138 (86.3)
Mental Help-Seeking Intention Scale (MHSIS)	$5.63 \pm 1.48$ (1-7)	

### **4.3. Bivariate Comparisons**

Table 4.5 shows the relationship between the participants' sociodemographics (e.g., age, education level, employment status, health insurance, and marital status) and the intention to seek mental health services. There was no correlation between the participants' age and their intention to seek mental health services ( $r = -.019, p > 0.05$ ). Also, there was no statistically significant relationship between participants' education level ( $Z = -1.279, p > 0.05$ ), employment status ( $p > 0.05$ ), marital status ( $Z = -0.965, p > 0.05$ ), health insurance ( $Z = -1.055, p > 0.05$ ), and the participants' intention to seek mental health services.

Table 4.5: The relationship between participants' sociodemographics and the intention to seek mental health services.

	Intention to seek (MHSIS)		
	Mean $\pm$ SD	Statistic Value*	p value
Age (years)*		-.019	.833
Education level**		-1.279	.201
Not college graduate	5.39 $\pm$ 1.36		
College graduate	5.67 $\pm$ 1.51		
Employment status***		5.723	.126
Employed	5.59 (1.66)		
Employed and student	5.83 (1.53)		
Not employed	6.01 (1.06)		
Not employed/student	5.26 (1.56)		
Marital status**		-0.965	.334
Single/divorced/widowed	5.47 (1.57)		
Married	5.69 (1.45)		
Health insurance**		-1.055	.291
No	5.18 (1.83)		
Yes	5.67 (1.44)		

Note. MHSIS = Mental Help-Seeking Intention Scale.

\*Spearman rho Correlation, \*\*Mann Whitney, \*\*\*Kruskal Wallis

There was a statistically significant positive relationship between the duration of time in the U.S. and participants' intention to seek mental health services ( $r = .269, p < 0.05$ ). When the duration of time in the U.S. increased, the intention to seek mental

health services increased. The more time the participants spent in the U.S., the more their intention to seek mental health services increased. Also, there was a statistically significant relationship between the reasons participants moved to the U.S. and their intention to seek mental health services ( $p < 0.05$ ). Those who came into the U.S. to work or seek advanced healthcare reported higher intention to seek mental health services than those who came to study or accompany a family member (Table 4.6).

Table 4.6: The relationship between participants' immigration-related factors (duration of time in the U.S., reason for being in the U.S.) and the intention to seek mental health services. (n = 160)

	Intention to seek (MHSIS)		
	Mean $\pm$ SD	Statistic Value	p value
Reason for being in the U.S.*		7.531	<b>.023</b>
- Study	5.63 (1.50)		
- Accompanying a family member	4.83 (1.39)		
- Other (work, seeking advanced treatment, or any other reason)	6.62 (.51)		
Duration of time in the U.S.**		.269	<b>.002</b>

Note. MHSIS = Mental Help-Seeking Intention Scale.

\* Kruskal Wallis \*\* Spearman rho Correlation

Table 4.7a shows the relationships between anxiety and depression, attitudes toward seeking mental health services, mistrust in mental health staff and services in the U.S., and intention to seek mental health services. There was no statistically significant difference between depression (depressed and not depressed status) and participants' intention to seek mental health services ( $Z = -1.910$ ,  $p > 0.05$ ), but depression level was correlated with participants' intention to seek mental health services ( $r = -.219$ ,  $P < 0.05$ ) (Table 4.7b). There was a statistically significant difference between anxiety status (e.g., anxious, and not anxious) and participants' intention to seek mental health services ( $Z =$

-2.044,  $p < 0.05$ ). Participants' anxiety level is negatively correlated with their intention to seek mental health services ( $r = -.192$ ,  $p < 0.05$ ; Table 4.7b). There was no statistically significant relationship between attitude toward seeking mental health services and participants' intention to seek mental health services ( $r = -.253$ ,  $p > 0.05$ ), nor the subdimensions of the attitude toward seeking mental health services scale except for the indifference to stigma subscale ( $r = -.246$ ,  $p < 0.05$ ). Mistrust in mental health staff and services in the U.S. has a statistically significant relationship with the participants' intention to seek mental health services ( $Z = -2.460$ ,  $p < 0.05$ ).

Table 4.7a: Relationships between participants' intention to seek mental health services and anxiety and depression, attitudes toward seeking mental health services and mistrust in mental health staff and services in the U.S.

	Intention to seek (MHSIS)		
	Mean $\pm$ SD	Statistic Value	p value
Depression *		-1.910	.056
Depressed	5.31 (1.64)		
Not depressed	5.85 (1.31)		
Anxiety *		-2.044	<b>.041</b>
Anxious	5.33 (1.56)		
Not anxious	5.86 (1.39)		
Attitudes Toward Seeking Mental Health Services **		-.253	.058
Psychological openness		-.146	.239
Help-seeking propensity		-.123	.321
Indifference to stigma		-.246	.050
Mistrust *		-2.460	<b>.014</b>
High mistrust	4.98 (1.40)		
Low mistrust	5.72 (1.48)		

Note. MHSIS = Mental Help-Seeking Intention Scale.

\*Mann Whitney, \*\* Spearman rho Correlation

Table 4.7b. Correlation between participants' intention to seek mental health services and anxiety and depression levels.

	Intention to seek (MHSIS)	
	r	p value
Depression	-.219	<b>.010</b>
Anxiety	-.192	<b>.020</b>

Note. MHSIS = Mental Help-Seeking Intention Scale.

#### **4.4. Multivariate of the Factors Affecting Intention to Seek Mental Health Services**

Two models assessed the total effect of the independent variables on the dependent variable (Saudi women's intention to seek mental health services) without assessing the effect of the mediator variable (attitudes toward seeking mental health services). Overall, participants who spent more time in the U.S. and those who were not employed but were students had higher intention to seek mental health services in both models (Tables 4.8 and 4.9).

The model in which anxiety was used as an independent variable with other variables was significant (Table 4.8), and there was a statistically significant effect of the anxiety level on Saudi women's intention to seek mental health services ( $p < 0.05$ ), so the analysis proceeded, and the structural equation model was performed to assess the effect of the mediator variable (attitudes toward seeking mental health services). However, the second model, in which depression level was used as an independent variable, was not statistically significant (Table 4.9), and there was no statistically significant effect of depression level on Saudi women's intention to seek mental health services ( $p > 0.05$ ), but the multivariate analysis was also completed to discover relationship among the variables. The additional analysis was performed and presented.

Table 4.8: Total effect of anxiety, mistrust, immigration-related factors on intention to seek mental health services.

	Coefficient	std. err.	p value
Participant's age	-.022	.029	0.459
Marital status	.143	.246	0.559
Education level	.040	.341	0.906
Employed participants	-.435	.344	0.205
Employed and student participants	-.143	.376	0.704
Student participants	-.741	.301	<b>0.014</b>
Duration of time in the U.S.	.100	.047	<b>0.033</b>
Reason for being in the U.S.	.184	.250	0.462
Mistrust in mental health staff and services	.578	.340	0.089
Anxiety	-.484	.247	<b>0.050</b>

Table 4.9: Total effect of depression, mistrust, immigration-related factors on the intention to seek mental health services.

	Coefficient	std. err.	p value
Participant's age	-.017	.029	0.564
Marital status	.077	.252	0.758
Education level	.120	.342	0.725
Employed participants	-.493	.349	0.157
Employed and student participants	-.186	.381	0.624
Student participants	-.701	.300	<b>0.020</b>
Duration of time in the U.S.	.094	.047	<b>0.046</b>
Reason for being in the U.S.	.217	.250	0.386
Mistrust in mental health staff and services	.573	.341	0.093
Depression	-.449	.247	0.069

#### 4.4.1. The Structural Equation Model Using Anxiety Level as an Independent

##### Variable

The variables entered in the structural equation model were participants' age, marital status, education level, employment status, the reason for being in the U.S., duration of time in the U.S., mistrust in mental health staff and services, and anxiety level. The attitudes toward seeking mental health services were entered as a mediator in the model. In the direct effect assessment of the independent variables (anxiety, mistrust, immigration-related factors) on the mediator (attitudes toward seeking mental health

services), there was no statistically significant relationship between any of the independent variables and the mediator variable (Table 4.10a).

In the direct assessment of the independent variables (anxiety, mistrust, immigration-related factors) and the mediator (attitudes) on the dependent variable (intention to seek mental health services), only duration of time in the U.S. and those who were students only were significant ( $p < 0.05$ ). Participants who spent more time in the U.S. and those who were students only had higher intentions to seek mental health services (Table 4.10b).

When assessing the indirect effect of the anxiety, mistrust, immigration-related factors (independent variables) and attitudes (the mediator) on the intention to seek mental health services (dependent variable), none of the variables was statistically significant. Although there was a total significant effect of duration of time in the U.S., being a student, and anxiety level on the intention to seek mental health services, when entering the attitudes toward seeking mental health services as a mediator, these variables were not statistically significant (Table 4.11). The structural equation model using anxiety level as an independent variable is presented in Figure 4.1.

Table 4.10a: Direct effect of anxiety, mistrust, immigration-related factors on attitudes toward seeking mental health services.

	Coefficient	std. err.	p value
Participants age	.184	.555	0.740
Marital status	2.50	4.16	0.549
Education level	-8.90	6.84	0.193
Employed participants	.876	6.24	0.888
Employed and student participants	-6.25	5.51	0.256
Student participants	.982	5.11	0.848
Duration of time in the U.S.	-.450	.959	0.639
Reason for being in the U.S.	-.494	3.81	0.897
Mistrust in mental health staff and services	-7.15	6.33	0.259
Anxiety	2.27	4.10	0.579

Table 4.10b: Direct effect of anxiety, mistrust, immigration-related factors, and the attitudes on intention to seek mental health services.

	Coefficient	std. err.	p value
Attitudes toward seeking mental health services	-.007	.016	0.668
Participants age	-.021	.029	0.473
Marital status	.161	.248	0.517
Education level	-.021	.374	0.953
Employed participants	-.432	.345	0.211
Employed and student participants	-.185	.391	0.636
Student participants	-.733	.302	<b>0.015</b>
Duration of time in the U.S.	.097	.047	<b>0.040</b>
Reason for being in the U.S.	.182	.251	0.468
Mistrust in mental health staff and services	.525	.361	0.146
Anxiety	-.466	.249	0.062

Table 4.11: Indirect effect of anxiety, mistrust, immigration-related factors, and attitudes on intention to seek mental health services.

	Coefficient	std. err.	p value
Participant age	-.001	.004	0.774
Marital status	-.018	.045	0.689
Education level	.064	.155	0.679
Employed participants	-.006	.049	0.897
Employed and student participants	.045	.110	0.683
Student participants	-.007	.042	0.867
Duration of time in the U.S.	.003	.008	0.709
Reason for being in the U.S.	.003	.029	0.902
Mistrust in mental health staff and services	.051	.127	0.684
Anxiety	-.016	.043	0.707

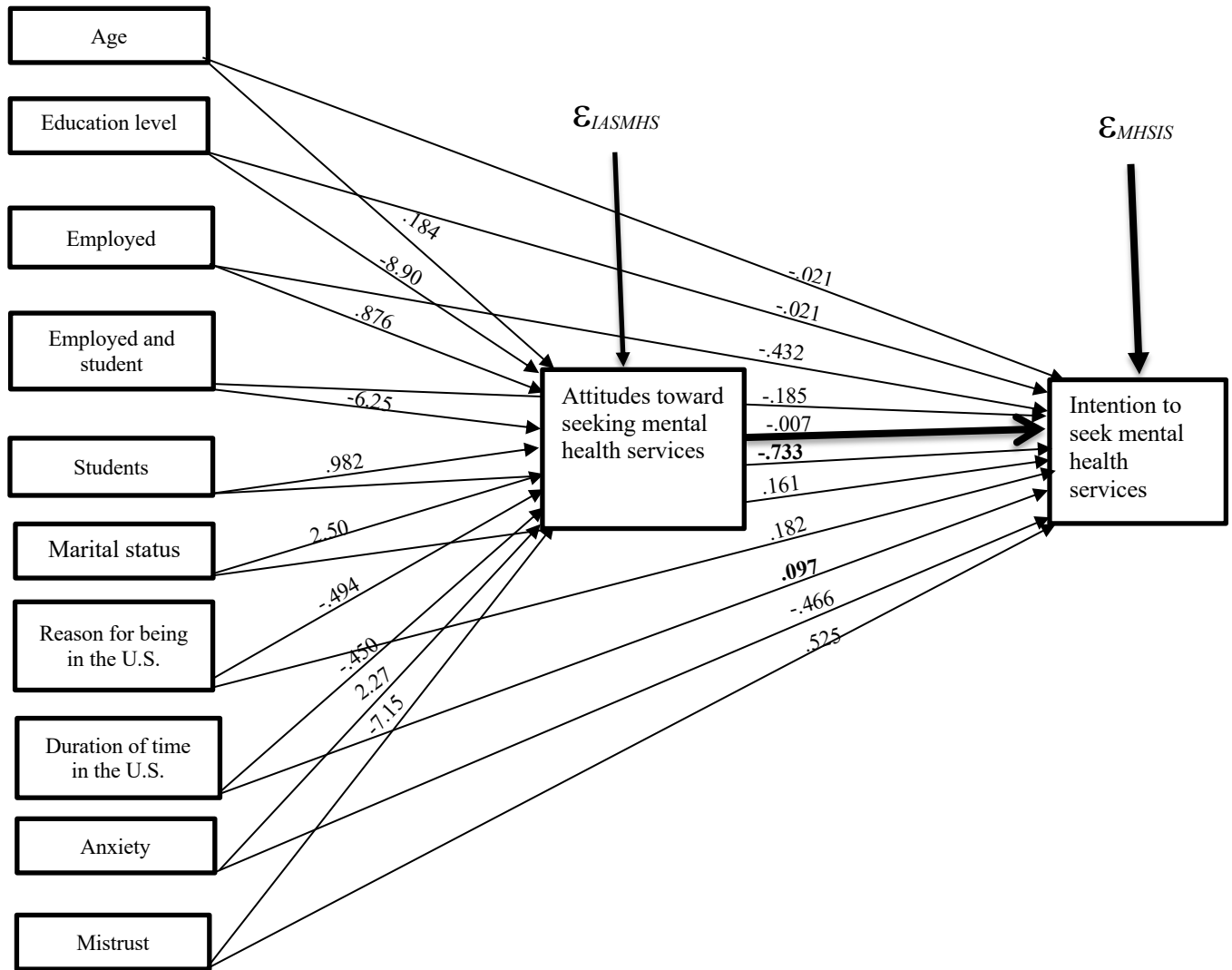


Figure 4.1: The structural equation model using anxiety level as an independent variable.

#### 4.4.2. The Structural Equation Model Using Depression Level as an Independent Variable

There was no total effect of depression on the intention to seek mental health services. Although the significance level of the relationship between depression and the intention to seek mental health services was borderline, it was not statistically significant (see Table 4.9). The variables entered in the structural equation model were the

participant's age, marital status, education level, employment status, the reason for being in the U.S., duration of time in the U.S., mistrust in mental health staff and services, and depression level. The attitude toward seeking mental health services was entered into the model as a mediator variable. In the direct effect assessment of the depression, mistrust, immigration-related factors (independent variables) on the attitudes toward seeking mental health services (mediator), there was no statistically significant relationship between any of the independent variables and the mediator variable (Table 4.12a).

In the direct assessment of the depression, mistrust, immigration-related factors (independent variables), and the attitudes toward seeking mental health services (mediator) on the intention to seek mental health services (dependent variable), only duration of time in the U.S. and those who were students only were significant ( $p < 0.05$ ). Similar to the model where anxiety was used as an independent variable, participants with longer time living in the U.S. and being a student had higher intention to seek mental health services. (Table 4.12b). When assessing the indirect effect of the independent variables (depression, mistrust, immigration-related factors) and the mediator (attitudes) on the dependent variable (intention to seek mental health services), none of the variables were statistically significant (Table 4.13).

Table 4.12a: Direct effect of depression, mistrust, immigration-related factors on attitudes toward seeking mental health services.

	Coefficient	std. err.	p value
Participant's age	.185	.518	0.720
Marital status	4.75	4.37	0.278
Education level	-9.62	6.59	0.144
Employed participants	2.80	6.37	0.660
Employed and student participants	-5.97	5.307	0.260
Student participants	.844	4.93	0.864
Duration of time in the U.S.	-.487	.890	0.584
Reason for being in the U.S.	-.811	3.77	0.830
Mistrust in mental health staff and services	-7.60	6.173	0.218
Depression	6.52	4.215	0.121

Table 4.12b: Direct effect of depression, mistrust, immigration-related factors, and attitudes on intention to seek mental health services.

	Coefficient	std. err.	p value
Attitudes toward seeking mental health services	-.002	.017	0.894
Participant's age	-.017	.029	0.561
Marital status	.081	.265	0.760
Education level	.102	.381	0.789
Employed participants	-.500	.353	0.157
Employed and student participants	-.199	.394	0.614
Student participants	-.699	.300	<b>0.020</b>
Duration of time in the U.S.	.094	.048	<b>0.050</b>
Reason for being in the U.S.	.215	.250	0.389
Mistrust in mental health staff and services	.549	.364	0.131
Depression	-.450	.271	0.097

Table 4.13: Indirect effect of depression, mistrust, immigration-related factors, and attitudes on intention to seek mental health services.

	Coefficient	std. err.	p value
Participant's age	-.000	.003	0.897
Marital status	-.010	.079	0.891
Education level	.022	.166	0.894
Employed participants	-.006	.051	0.901
Employed and student participants	.013	.103	0.895
Student participants	-.001	.019	0.920
Duration of time in the U.S.	.001	.008	0.892
Reason for being in the U.S.	.001	.016	0.911
Mistrust in mental health staff and services	.017	.131	0.894
Depression	-.014	.111	0.893

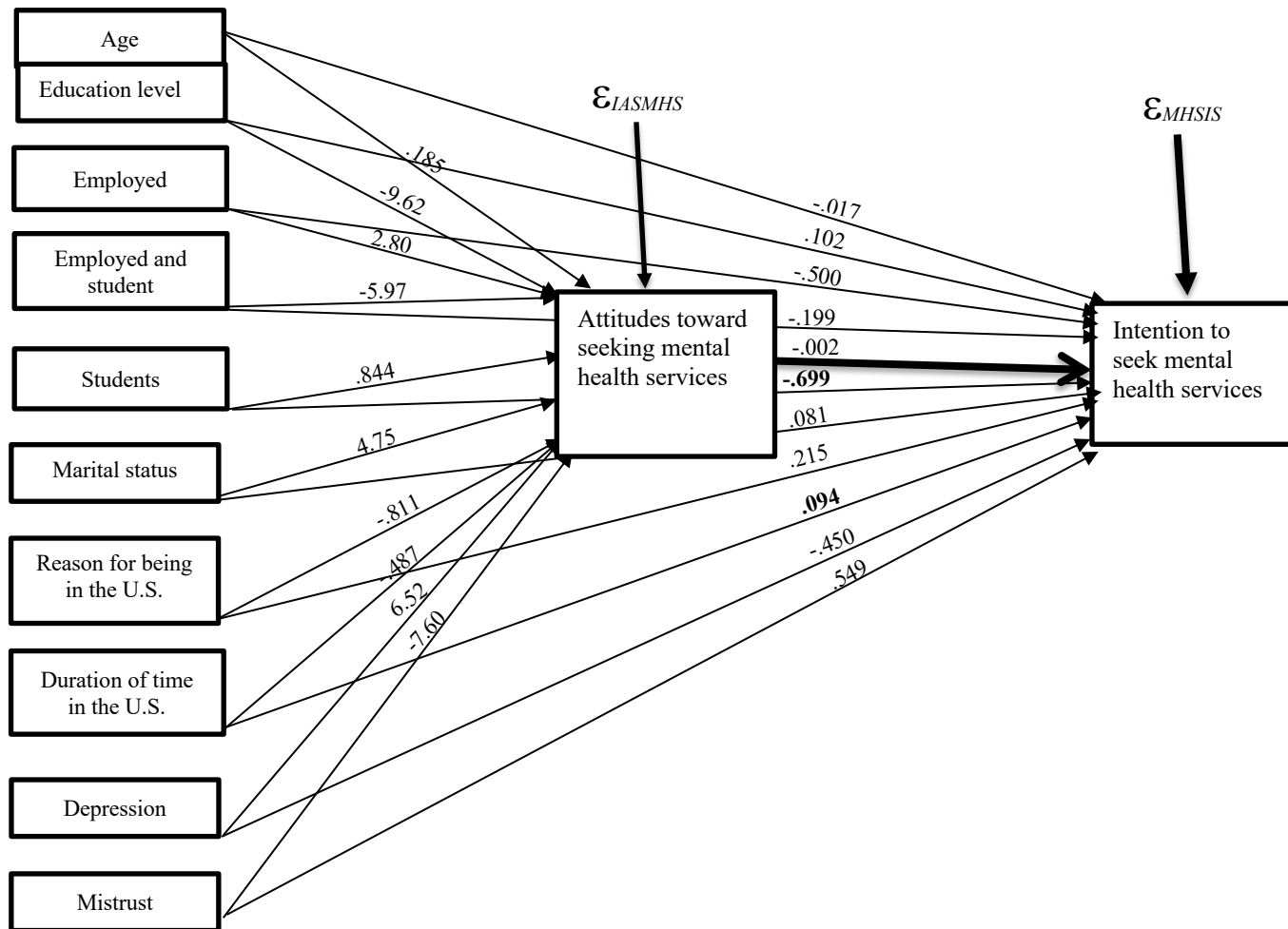


Figure 4.2: The structural equation model using depression level as an independent variable.

As a summary of the analyses, this study found a high prevalence of depression (41.9%) and anxiety (33.8%) among Saudi women in the U.S. The level of depression was not related to the Saudi women’s intention to seek mental health services ( $p>0.05$ ), while the anxiety level was negatively correlated with the Saudi women’s intention to seek mental health services. Mistrust in mental health staff and services in the U.S. was

also negatively correlated with the Saudi women's intention to seek mental health services. There was no relationship between the Saudi women's attitudes toward seeking mental health services and their intentions ( $p>0.05$ ). Lastly, the Saudi women with longer duration of time spent in the U.S. and those who came to the U.S. for work or seeking advanced treatment had higher intention to seek mental health services ( $p>0.05$ ).

## CHAPTER 5

### DISCUSSION

#### **5.1. Introduction**

This chapter discusses the study findings with the literature. The discussion addresses the primary findings answering the research questions, compares them with the literature, and provides implications, recommendations, and conclusions.

A total of 160 Saudi women living in the U.S. participated in this study. Most of the participants were married and highly educated and were in the U.S. for an average of 5 years. The vast majority reported sufficient income and health insurance through the Saudi Arabian government. Most of the participants were in the U.S. to study, which might be because participants were recruited through Saudi student organizations for the Saudi Arabian Cultural Mission.

#### **5.2. Anxiety and Depression Levels Among Saudi Women Living in the U.S.**

The prevalence of anxiety among Saudi women living in the U.S. was 33.8%. The anxiety level of Middle Easterners in the U.S., such as Syrians and Iraqis, was reported as high at 60% (M'zah et al., 2019; Taylor et al., 2014;) and at 40.3% (Javanbakht et al., 2019). Among other immigrants, 15.8% was reported for anxiety disorder among Puerto Ricans (Szaflarski et al., 2017), 20.7% was the anxiety prevalence of Chinese students in the U.S. (Lin et al., 2022), and 13.8% anxiety disorders among foreign-born Caribbean women (Jones et al., 2020). Although the anxiety rate among Saudi women in this study appeared to be lower compared to other Middle Eastern immigrants in the U.S., it appears to be higher when compared to other immigrants. The prevalence of anxiety among Saudi women in the U.S. also appeared to be higher when compared to the anxiety level

(7.91%) among U.S.-born women (Goodwin et al., 2020), despite the general belief that immigrants have better mental health than those born in the U.S. (Szaflarski et al., 2017). In Saudi Arabia, only 3% of women are diagnosed with generalized anxiety disorder sometime in their life (AlTwaijri et al., 2019), and up to 13% of Saudi women have separation anxiety disorders (AlTwaijri et al., 2019). Anxiety rates were higher in Saudi women living in the U.S. than those in their home county.

The prevalence of depression among Saudi women in the U.S. was 41.9%. In other studies, 44% and 47.7% of the Syrian population reported depression (Javanbakht et al., 2019; M'zah et al., 2019), 55.9% and 58% among the Iraqi population (Arfken et al., 2018; Taylor et al., 2014), and up to 31.17% among the Somali population (Kroll et al., 2011). The depression rate among Saudi women living in the U.S. is comparable to the depression level among other Middle Easterners in the U.S. This study's findings align with other studies that reported increased levels of depression in general among the Arab population in the U.S. (Abuelezam et al., 2018; Suleiman et al., 2021). A recent study by Okonji et al. (2021) reported a slightly larger percentage of depression among the general immigrant population (8%) compared to the U.S.-born population (6.7%). However, a systemic review by Foo et al. (2018) estimated an overall average rate of depression of 14.8% among different groups of immigrants in the studies conducted in the U.S. A high depression rate of 35.3% was observed among Brazilian immigrants in the U.S. (Lazar-Neto et al., 2018), 24.5% among Chinese Students in the U.S. (Lin et al., 2022), and elevated symptoms of depression (16.8% for mild depression and 8.8% for severe depression) were also reported among African immigrants in the U.S. (Nmezi et al., 2022).

Overall, the prevalence of anxiety and depression among Saudi women in the U.S. appears to be comparable to other Middle Eastern women but higher when compared to immigrants from other parts of the world. Findings from the study are not consistent with the concept of the “immigrant paradox” where immigrants exhibit better mental health outcomes (Alegria et al., 2008, 2017). These findings require in-depth investigations to understand the mental health status of Saudi women living in the U.S., who exhibit higher trends of depression and anxiety than other immigrants and U.S.-born populations.

### **5.3. Mistrust of Mental Health Staff and Services of Saudi Women in the U.S.**

In this study, most Saudi women (86.3%) reported low mistrust of mental health staff and services in the U.S. Similarly, other immigrants in the U.S. (e.g., Dominican women in New York City) reported low mistrust (Abraído-Lanza et al., 2011). However, other studies with Middle Eastern immigrants reported the issue of lack of understanding and mistrust of Western mental health services as a barrier to seeking mental health services and that, rather than professional help, they often seek social support and traditional ways to cope with stressors (Johnson-Agbakwu et al., 2014; Piwowarczyk et al., 2014). Also, Amri and Bemak (2013) reported that Muslim immigrants are reluctant to seek mental health services in the U.S. and may question the providers’ intention because of the belief that American providers cannot understand their cultural and religious context that conflicts with their own beliefs. Mistrust in healthcare staff and services is known to impact patient satisfaction and is a significant barrier to health services utilization (Abraído-Lanza et al., 2011; Amri & Bemak, 2013; López-Cevallos et al., 2014). Low mistrust in mental health services was reported by Saudi women in this

study, underscoring that only 20% of Saudi women sought mental health services in the U.S. It is important to study how mistrust affects mental help-seeking among Saudi women in the U.S. and to examine other factors that could affect their mistrust such as the preference of a certain gender, race, satisfaction with services provided, and treatment regimen.

#### **5.4. Saudi Women's Attitudes Toward Seeking Mental Health Services**

Attitudes represent a significant factor in seeking mental health services. Saudi women in the U.S. reported moderate attitudes (45.3 out of 96) toward seeking mental health services. The Saudi women in the U.S. had a moderate attitude toward seeking mental health services in different dimensions: psychological openness and help-seeking propensity except for indifference to stigma. Psychological openness shows the participant's openness to acknowledging psychological problems, Saudi women had moderate openness (17.4 out of 32). Moreover, Saudi women had moderate (15.7 out of 32) help-seeking propensity showing the participant's willingness and ability to seek help. The mean overall attitudes score of Saudi women in the U.S. was lower than those found among African Americans (57.9 out of 96), suggesting high positive attitudes toward seeking mental health services (Mesidor & Sly, 2014). African Americans and Ghanaian Americans also reported higher levels on the attitudes scale (Ampadu, 2016; Mesidor & Sly, 2014). Among Middle Eastern women in the U.S., there is low utilization of mental health services (Johnson-Agbakwu et al., 2014; Piwowarczyk et al., 2014) and low acknowledgment of mental health problems (Piwowarczyk et al., 2014). In a study of Somali women in the U.S., 28.9% of women said that they would not seek mental health services if they were very depressed, and they would seek social support and traditional

ways to cope with stressors rather than professional help (Piwowarczyk et al., 2014). Also, among a sample of Syrian refugees in Atlanta, only 28% reported the need to talk to healthcare providers about their psychological concerns (M'zah et al., 2019). These findings suggest that Saudi women in the U.S. have average attitudes toward seeking mental health services, but their attitudes are less positive when compared to other immigrants' attitudes (Ampadu, 2016; Mesidor & Sly, 2014). The Saudi women in this study were open to acknowledging their mental health problems, but they felt too stigmatized to seek mental health services. Research has shown that positive attitudes toward seeking mental health services contribute to help-seeking behaviors (Ajzen & Fishbein, 1980; Ampadu, 2016; Nam et al., 2010). Therefore, it is crucial to find strategies to improve attitudes toward mental health services among immigrants.

Indifference to stigma assesses a participant's concern for how people in their lives would react to help-seeking behaviors. In this study, the women had low indifference to stigma (12.7 out of 32) for, showing that Saudi women are concerned about how people in their lives would react when they seek mental health services. Research is lacking that examines this concept among the Middle Eastern population in the U.S. The studies of Piwowarczyk et al. (2014) and Johnson-Agbakwu et al. (2014) revealed issues of stigma, negative attitudes toward medication, refusing to discuss private information with physicians, and declining service as barriers to seeking mental health services. In this study, the percentage of Saudi women who sought mental health services in the U.S. (20%) is higher than in Saudi Arabia (5.6%). Stigma may play a role in women's decision to seek mental health services in the U.S. rather than in their home country, as women might feel less cultural stigma about seeking mental health services

elsewhere than in their home country close to their families and friends. Stigma is one of the critical barriers affecting attitudes toward seeking mental health services and is a common barrier reported by nearly every immigrant group (Fendian, 2021). The problem is worse among immigrants from other countries where stigma is heightened (Fendian, 2021), and Saudi Arabia is one of them (Alattar et al., 2021). Many studies conducted in Saudi Arabia showed that stigmatization has become entrenched and is one of the main barriers to seeking mental health services (Alattar et al., 2021; Sewilam et al., 2015). Further research may examine the mental health stigma, and the factors affecting stigma and mental health service utilization among Saudi women in the U.S.

### **5.5. Factors Affecting Saudi Women's Intention to Seek Mental Health Services**

Saudi women in the U.S. reported a great intention (5.6 out of 7) to seek mental health services in the U.S. In the literature, few studies have examined mental health services use among immigrants from the Middle East, and these studies reported very low utilization rates; up to 89% never sought mental health services, and 28.9% would decline services even if they were very depressed (Johnson-Agbakwu et al., 2014; Piwowarczyk et al., 2014). Other studies reported higher rates among Syrian refugees; out of 28% who reported the need to talk about their psychological concerns, 60% sought mental health services (M'zah et al., 2019). Previous studies among other immigrants from Asia, Latin America, and Africa showed that they usually utilize mental health services at a lower rate compared to nonimmigrants (Derr, 2016). A study among Asian and Latinos in the U.S. found that only 6% have ever received mental healthcare (Lee & Matejkowski, 2012). Although the anxiety and depression rates were moderately high, only 20% of Saudi women utilized mental health services in the U.S., and their use of

mental health services was higher than those using mental health services in Saudi Arabia (5.6%). Besides the stigma, the Saudi women's greater intention to seek mental health services might also be due to the fact that most of the sample were students with healthcare insurance provided by the Saudi Arabian Cultural Mission.

In this study, as the participants' level of anxiety increased, their intention to seek mental health services decreased, with a significantly lower intention among those who were anxious. Although the level of intention to seek mental health services increased with an increased level of depressive symptoms, the intention to seek mental health services was not significantly different between those who were depressed and those who were not. These findings show that Saudi women who have anxiety and/or depressive symptoms are less likely to seek mental services in the U.S. Some studies reported that the presence of a psychiatric disorder such as depression is a strong predictor of mental health service use among Latinos and Asian Americans (Cabassa & Zayas, 2007; Kim & Lee, 2022; Lee & Matejkowski, 2012). Among nonimmigrants, it has been found that the severity of depression is positively related to help-seeking intentions (Magaard et al., 2017). Although studies found that anxiety, similar to depression, is positively related to help-seeking behaviors (Katz et al., 1998; Kim & Lee, 2022; Magaard et al., 2017), anxiety in this study was negatively related to Saudi women's intention to seek mental health services.

In this study, Saudi women with low mistrust of mental health staff and services tended to seek mental health services more often. Mistrust is reported as a barrier to utilization of mental health services among Muslim immigrants in general (Amri & Bemak, 2013; Inayat, 2007). Similarly, a study among Filipinos in the U.S. reported that

higher levels of cultural mistrust are related to a lower likelihood of seeking professional psychological help (David, 2010). As the issue of mistrust is increasing in the U.S. (Samson, 2016), it becomes important to implement interventions to reduce mistrust that will improve utilization of mental health services. One of the important steps to minimize mistrust especially among immigrants is accepting and providing a culturally responsive service (Amri & Bemak, 2013). This study shows that mistrust is related to Saudi women's intention to seek mental health services, further research is needed to examine how the mistrust affects the Saudi women's intention and what the root causes of mistrust are among these people.

Saudi women's attitudes toward seeking mental health services were not related to their intention to seek mental health services. This finding is similar to findings by Mesidor and Sly (2014) that African American attitudes toward seeking mental health services were not related to their intentions to seek mental health services. In contrast to findings from a study among Latino immigrants in the U.S. reported that their attitude was positively related to their intention to seek mental health services (Cabassa & Zayas, 2007). Also, a study among Ghanaian Americans (Ampadu, 2016) reported that attitudes were strongly associated with help-seeking intentions. However, the indifference to stigma subscale of the IASMHS scale was negatively correlated with the intention to seek mental health services in the U.S. Indifference to stigma is the person's concern with how people in their lives would react to their seeking mental help (Munson et al., 2009). This finding shows that participants who have a high concern about how other people in their lives react to their seeking mental health services are less likely to seek mental health services. This finding may suggest that although general attitudes toward seeking mental

health services in the U.S. among Saudi women are not related to their intention to seek mental health services, the stigma persists, which make them reluctant to use of mental health services due to the fear of stigmatization. This finding suggests that programs that target mental illness services use among Saudi women should focus on minimizing stigma and promoting positive attitudes toward seeking mental help.

These study findings showed that a longer duration of time spent in the U.S. is positively related to an increase in Saudi women's intention to seek mental health services. Also, the reason for immigration affects the intention to seek mental health services in the U.S. Those who came to the U.S. for seeking advanced treatment or work had a higher intention to seek mental health services. The findings from this study are similar to the literature that, as the time spent in the U.S. increases, the risk for mental health disorders also increases (Shafeek Amin & Driver, 2019; Taylor et al., 2014). In contrast, some studies found that the length of residency in the U.S. did not predict mental health services use (Lee & Matejkowski, 2012).

### **5.6. Limitations and Strengths**

Several limitations to this study should be noted: First, the recruitment strategy through Saudi organizations may result in a sample that does not represent Saudi women in the U.S. Our recruitment strategy may have resulted in a biased sample of highly educated women with health insurance and financial stability. Second, we were only able to recruit a small sample size, and some surveys had missing data due to the nature of this sensitive topic. Third, the survey was presented only in English due to the unavailability of all instruments in Arabic, thus preventing those Saudi women who do not speak or understand English from participating in the survey.

Despite these limitations, this study has several strengths that should be noted. First, this is the first study that examined the mental health of Saudi women in the U.S. The Saudi population in the U.S. has increased and is still increasing, and the process of adjusting to a new country with a different culture may predispose them to increased risk for depression and anxiety and affect their intention toward seeking mental health services. Second, this study used a theory-based approach to assess Saudi women's intention to seek mental health services and the affecting factors framed by the theory of planned behavior. Using the TPB to develop and operate our variables measuring the attitudes toward seeking mental health services provided us with more comprehensive understanding of factors affecting intention to seek mental health services in this understudied population.

### **5.7. Implications for Practice**

This research found high rates of depression (41.9%) and anxiety (33.8%) among Saudi women living in the U.S. Although their intention to seek mental health services was high, their utilization of mental health services is considered low (20%). Although mistrust in mental health staff and services was found low, anxiety and depression levels, immigration-related factors, and sociodemographic characteristics were found to be factors affecting their intention to seek mental health services. In addition to these factors, not overall attitudes, but stigma around the use of mental health services appears to be important to improve utilization of mental health services. Findings from this study can help develop strategies and programs to educate women about mental health risks and minimize the barriers to seeking mental health services.

Immigrants are considered one of the most vulnerable populations in the U.S., and nurses have a professional and ethical responsibility to advocate and provide care for vulnerable populations (Biggerstaff & Skomra, 2020). Nurses can design specific strategies to increase the awareness of mental health disorders such as depression and anxiety, improve the tailored care for the immigrant population, and minimize the barriers to seeking mental health services. Nurses also can advocate and work through mitigating inequalities at the community and systems levels preventing utilization of mental health services among immigrant populations. Furthermore, findings from this study can be used to design and implement educational strategies and interventions that can improve nurses' understanding of mental health risks and barriers among Saudi women in the U.S. These findings are also important to Saudi nursing to increase awareness of the higher risk for depression and anxiety among those women who live in the U.S. and design strategies to improve mental healthcare to augment utilization of mental health services when needed.

### **5.8. Recommendations for Research**

This research established that high rates of depression and anxiety exist among Saudi women living in the U.S. Future research needs to examine factors affecting their mental health, challenges related to their immigration status to prevent and mitigate their risk for mental health problems. Stigma, mistrust, anxiety level, and immigration-related factors including duration of time and reason for being in the U.S. are factors that need to be further investigated to better understand areas to improve Saudi women's utilization of mental health services. This study examined the rates of depression and anxiety only, future research may investigate the rates of other mental health disorders and how their

previous treatment experience, if any, affects their intention to seek mental health services. Also, future research may examine how mistrust in mental health staff and services affects the intention to seek mental health services. Also, research should investigate other factors that could influence their intentions, including preference of certain gender, race, satisfaction with services provided and treatment regimen.

### **5.9. Conclusion**

This study measured anxiety and depression levels in Saudi women living in the U.S. and factors affecting their intention to seek mental health services in the U.S. using the theory of planned behavior, the attitudes toward seeking mental health services were used to assess the total effect of anxiety and depression levels, mistrust of mental health staff and services, immigration-related factors, and sociodemographic characteristics on Saudi women's intention to seek mental health services. Depression and anxiety rates, similar to other Middle Eastern women, were found high among Saudi women in the U.S. The rates were higher than Saudi women living in their home country. Although Saudi women in the U.S. reported a greater intention to seek mental health services and low mistrust of mental health staff and services, few have sought mental health services in the U.S. There was a statistically significant effect of anxiety level on Saudi women's intention to seek but this relationship becomes insignificant when assessing for the mediating effect of attitudes toward seeking mental health services. Participants who spent more time in the U.S. and those who were students had higher intentions to seek mental health services.

## APPENDIX A

### SCOPING REVIEW MATRIX

Table 2.2: Sample characteristics and main findings of the articles included in the scoping review.

Author, Title, Journal	Purpose	Type of study	Sample	Measures	Results
El-Sayed, A. M., Tracy, M., Scarborough, P., & Galea, S. (2011). <b>Suicide among Arab-Americans.</b> <i>PLoS One</i> , 6(2), e14704.	To explore suicide rates and their determinants among AAs in Michigan, the state with the largest Arab Americans in the U.S.	Quantitative descriptive study	All death records of people in the state of Michigan from 1990 to 2007 including 15,941 Women from Arabic ethnicities	- Death rates due to suicide among individuals aged ten years and older in Michigan between 1990 and 2007 from the death records of the Michigan Department of Community Health. The International Classification of Diseases (ICD) codes are used to determine deaths caused by intentional self-harm (suicide) or unaccounted injury.	-Suicide rate was lower among both males and females Arab American than both males and females non-ethnic White. Among AAs, overall rates of suicide were lower among both males (12.43 in 100,000) and females (4.86 in 100,000) than among non-ethnic White males (25.27 in 100,000) and females (6.42 in 100,000).  - Relative risk of suicide among females was 0.76. Similar relative risks were found across all age groups, except among elderly women, where AA women had 32% higher risk of suicide than their White counterparts.
Aroian, K., Uddin, N., & Bilbas, H. (2017). <b>A longitudinal study</b>	To explore the trajectory of depression in married Arab	Quantitative longitudinal data to test an explanatory	388 Married Arab women	- Demographic and migration questionnaire	The independent variables that were found to be significantly associated with Time 3 Depression were the woman's country of origin, immigration status, age, education,

<p><b>of stress, social support, and depression in married Arab immigrant women. <i>Health Care for Women International</i>, 38(2), 100–117.</b></p>	<p>immigrant women</p>	<p>model for the women's depression</p>	<ul style="list-style-type: none"> <li>- The Demands of Immigration Scale (DIS)</li> <li>- The Daily Hassles Scale (DHS)</li> <li>- The Multidimensional Scale of Perceived Social Support (MSPSS)</li> <li>- Multidimensional Scale of Perceived Social Support for Arabic Women (MSPSS-AW)</li> <li>- The Center for Epidemiological Depression Scale (CES-D)</li> </ul> <p>The women provided three panels of data approximately 18 months apart.</p> <p>IV: Depression at Time 1, Socio-demographic variables from Time 3, The rate of change in the stress and social support</p>	<p>ability to read English, ability to speak English, change in immigration demands, change in friend support, and her husband's education, and employment status.</p> <p>Not significantly associated with Time 3</p> <p>Depression were the women's employment status, length of time in the U.S., number of children, change in total support, change in husband support, change in family support, and change in daily hassles.</p> <p>These findings suggest that women with increased friend support and ability to read English were, on average, less depressed at Time 3. Women with increased immigration demands and daily hassles and women with retired or disabled or unemployed husbands who are not looking for work were, on average, more depressed than other women, given the same values for other independent variables.</p>
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				<p>variables between Times 1, 2, and 3. DV: Depression at Time 3.</p>	
<p>Kaminura, A., Pye, M., Sin, K., Nourian, M. M., Assasnik, N., Stoddard, M., &amp; Frost, C. J. (2018). <b>Health and well-being of women migrating from predominantly Muslim countries to the U.S.</b></p>	<p>To examine the health and well-being of women migrating from predominantly Muslim countries to the U.S.</p>	<p>Quantitative Cross-sectional study.</p>	<p>102 women; (1) migrating from predominantly Muslim countries such as Somalia, Sudan, and Iraq; (2) ages 18 or older; and (3) who spoke English or Arabic.</p>	<p>- The Patient Health Questionnaire (PHQ-9)  - The 36-item Short Form Survey Instrument (SF-36)</p>	<p>The average PHQ-9 score (for depression) was 4.04 (SD=5.96), which suggests overall low levels of depression.  Having had a physical health exam in the past year was associated with higher levels of depression. Having resided in a refugee camp was associated with lower levels of depression.  Full-time employment and good physical health that is usually related to lower levels of depression were related to higher levels of depression among the participants of this study</p>
<p>Alhasanat-Khalil, D., Fry-McComish, J., Dayton, C., Benkert, R., Yarandi, H., &amp; Giurgescu, C. (2018). <b>Acculturative stress and lack of social support predict</b></p>	<p>To examine the relationships among acculturative stress, social support, and postpartum depression (PPD) symptoms among U.S.</p>	<p>Quantitative cross-sectional study.</p>	<p>115 U.S. immigrant women.  Inclusion criteria were: (a) 18–45 years old, (b) had a live birth, (c) were 1–12 months postpartum, (d)</p>	<p>- Multi-Dimensional Acculturative Stress Inventory (MASI)  - The Multidimensional Scale of Perceived</p>	<p>Nineteen women (17%) reported experiencing depression during pregnancy, and thirty-seven women (32%) reported experiencing prenatal anxiety.  Twenty-nine women (25.2%) experienced symptoms consistent with PPD, as evaluated by EPDS scores of 10.  Women who completed more years of education and reported antenatal anxiety and</p>

<p><b>postpartum depression among U.S. immigrant women of Arabic descent.</b> <i>Archives of Psychiatric Nursing, 32(4), 530–535.</i></p>	<p>immigrant women of Arabic descent; and examine if social support moderates the associations between acculturative stress and PPD symptoms.</p>		<p>were born and grew up outside of the U.S. and came to the U.S. after the age of 14, and (e) spoke and read either Arabic or English language.</p>	<p>Social Support (MSPSS)  - The Edinburgh Postnatal Depression Scale (EPDS)</p>	<p>feeling depressed during pregnancy reported more PPD symptoms  Acculturative stress was positively correlated with PPD symptoms. Social support was negatively correlated with PPD symptoms  higher levels of acculturative stress were related to higher levels of PPD symptoms  Lower levels of social support were related to higher levels of PPD symptoms.</p>
<p>Artken, C. L., Alsaud, M., Mischel, E. F., Haddad, L., Sonderman, S., Lister, J. J., &amp; Javanbakht, A. (2018). <b>Recent Iraqi refugees: Association between ethnic identification and psychological distress.</b> <i>Journal of Muslim Mental Health, 12(2), 1–12.</i></p>	<p>To report on recently arrived U.S. Iraqi refugees in southeast Michigan screened for PTSD, depression, and anxiety, and explored the hypothesis that symptoms of possible psychological distress would be higher among Arab (presumed to be Muslim) Iraqi refugees than Chaldean</p>	<p>Quantitative cross-sectional study.</p>	<p>104 adult Iraqi refugees (59.6% were female).</p>	<p>- Demographics, self-reported English proficiency, substance use, and past medical and mental history. - The PTSD Checklist Civilian version (PCL-C) - the Hopkins Symptom Checklist 25 items (HSCL-25)</p>	<p>Arab refugees as a group had elevated possible anxiety diagnosis (54.5%), PTSD diagnosis (32.4%), and depression diagnosis (55.9%) compared to possible anxiety diagnosis (27.8%), PTSD diagnosis (11.1%), and depression diagnosis (33.3%) in Chaldean refugees</p>

	(Christian) Iraqi refugees.				
ShafEEK Amin, N., & Driver, N. (2019). <b>Sex differences, duration of stay in the United States, and serious psychological distress: The case of Middle Eastern immigrants in the United States.</b> <i>Family &amp; Community Health: The Journal of Health Promotion &amp; Maintenance</i> , 42(2), 90–103.	To examine the association between duration of stay in the United States and serious psychological distress (SPD) among Middle Eastern (ME) immigrants and tests whether this association differs by sex.	Quantitative descriptive study  Data source: Pooled data from the 2002-2012 NHIS	157,921 overall participants  893 Overall Middle Eastern participants, 402 were women  157,028 overall U.S. born Whites, 86,140 were women	Kessler (K6) scale assesses Serious psychological distress, which refers to mental health problems severe enough to cause moderate-to-serious impairment in social, occupational, or school functioning and require treatment.	ME immigrants have higher odds of SPD than US-born Whites. Also, a longer duration of stay in the United States of ME immigrants is associated with higher odds of reporting SPD than US-born Whites.  Women in both groups are significantly more likely to report SPD than their male counterparts.  Middle Eastern female immigrants report a significantly higher percent of SPD (6.72%) than US-born White females (4%).  Regarding the duration of stay in the United States and SPD, ME immigrants who have resided in the United States for 10+ years have 80% higher odds of reporting SPD compared with US-born Whites. Middle Eastern females with 10+ years duration have significantly higher odds of reporting SPD than US-born White women.
Mahmood, A. A., Shah, D. D., Michlig, G. J., Hughes, M. E., & Bass, J. K. (2020). <b>Assessing predictors of emotional distress</b>	To fill knowledge gaps about migration experiences and distress levels of SIV (special immigrant visa) holders.	Quantitative Cross-sectional study-  Data source: Maryland Immigrant	4385 participants Female 46.6 (2042)	- Demographics include immigrant type, sex, age, and interpreter type.  -The Refugee Health Screener (RHS-15)	Twenty-seven percent of the total study population screened positive on the RHS-15.  Prevalence of positive screenings by immigrant type was the highest among SIV holders, and lowest among asylees  Higher mean scores were

<p>by immigrant type: An exploration of adult refugees, asylees, and SIV holders in Maryland. <i>Journal of Immigrant and Minority Health</i>, 1, 50.</p>		<p>and Refugee Information System (MIRIS) database</p>	<p>refugees, asylees, or SIV holders, and with a complete mental health screening were included in the analytic sample</p>	<p>screening result (positive or negative)</p>	<p>observed for women in each immigrant group relative to men, with the highest scores among SIV women</p> <p>31.1% of females screened positive for mental health and emotional distress. Of those who screened positive, 36.4% were women from Iraq, and 43.9% were women from Syria</p> <p>There are significant differences between individuals screening positive versus negative, by humanitarian immigrant type, age category, gender, country of origin, and language interpretation type</p> <p>There are significantly lower odds of screening positive on the RHS-15 among asylees and significantly higher odds among SIV holders, as compared to refugees. Women, individuals under 60 years of age, and individuals screened with any type of language interpretation also had significantly higher odds of screening positive.</p> <p>Women have 1.32 higher odds of screening positive. than men.</p>
<p>Baird, M. B., Cates, R., Bott, M. J., &amp; Buller, C. (2020). <i>Assessing the mental health of refugees using the Refugee Health Screener-15.</i></p>	<p>To investigate the following research questions among refugees relocated to Kansas City, Kansas: (a)</p>	<p>Mixed methods Quantitative a retrospective analysis of Refugee Health Screener (RHS-15)</p>	<p>Total of 89 Participants, 48 of them were females. Qualitative: Two DNP providers</p>	<p><b>Quantitative Methods:</b> - Survey Refugee Health Screener-15 (RHS-15)</p>	<p><b>Quantitative data:</b> The most commonly reported mental health symptoms included the following: too much thinking or too many thoughts; muscle, bone, or joint pain; and crying easily.</p>

<p><i>Western Journal of Nursing Research</i>, 42(11), 910–917.</p>	<p>What mental health symptoms did newly arrived refugees report? (b), Were there any associations between refugees' demographics (language of survey, time in the United States, age, and gender) and their mental health symptoms, and (c) What were the experiences and opinions of the healthcare providers who administered the RHS-15 to newly arrived refugees?</p>	<p>Qualitative interviews with two providers who administered the surveys were conducted to clarify and amplify the survey responses</p>	<p>twice to gain their perceptions and opinions regarding the administration of the RHS-15 surveys.</p>	<p><b>Qualitative methods:</b> - <b>Interview</b> Interview the two DNP providers twice to gain their perceptions and opinions regarding the administration of the RHS-15 surveys. Each of these interviews was transcribed verbatim.</p>	<p>Thirty-seven refugee surveys (40%) indicated the need for follow-up mental health screening.  A significant small positive correlation between the female gender and the depression subscale of mental health symptoms was found.  The specific symptoms that were significantly positively correlated in females included: feeling helpless; suddenly scared for no reason; nervousness or shakiness inside; and greater reports of muscle, bone, and joint pains.  There was a non-significant difference for Total RHS score means for the time in the United States (&lt;2 weeks after arrival or ≥2 weeks after arrival).</p>
<p>Albqoor, M. A., Chen, J. L., Weiss, S., Waters, C., &amp; Choi, J. W. (2020). <b>Serious psychological distress: A</b></p>	<p>To examine rates of serious psychological distress (SPD) and its associated factors among</p>	<p>Quantitative descriptive study  Data source: collected from the NHIS,</p>	<p>1,246 Middle Eastern immigrants (47.21% are females) and 232,392 US-born, non-</p>	<p>- Kessler-6 psychological distress scale to measure the rates of serious psychological distress (SPD).</p>	<p>In the 2001–2005 years, the rate of SPD was 5.23% for Middle Eastern immigrants and 3.39% for US-born non-Hispanic Whites. The rate went up to 5.99% in the Middle Eastern group from 2006 to 2010 but dropped to 3.29% in US-born non-Hispanic Whites. From 2011 to 2015, the rate dropped to 4.32% in the</p>

<p><b>national study of Middle Eastern immigrants.</b> <i>Journal of Psychiatric and Mental Health Nursing</i>, 10.1111/jpm.12646.</p>	<p>Middle Eastern immigrants in the United States, compared with US-born, non-Hispanic Whites.</p>	<p>which is one of the largest annual health surveys of non-institutionalized populations in the United States</p>	<p>Hispanic Whites (52.10% females)</p>	<p>-The demographic characteristics: age, education, marital and employment status (self and husband), and a number of children. - Migration characteristics included age at immigration, country of origin, refugee camp</p>	<p>Middle Eastern group, increasing to 3.60% in US-born non-Hispanic Whites.  For the combined 15 years, the rate of SPD among Middle Eastern immigrants was significantly higher than in US-born non-Hispanic Whites 5.10% and 3.43%, respectively.  Middle Eastern immigrant women had 3.18 significantly higher odds of reporting SPD compared with Middle Eastern immigrant men  Obesity was associated with 2.38 significantly higher odds of reporting SPD compared with normal BMI  Having contacted a mental healthcare provider during the last year had 6.13 significantly higher odds of reporting SPD</p>
<p>Norris, A. E., &amp; Aroian, K. J. (2008). <b>Avoidance symptoms and assessment of posttraumatic stress disorder in Arab immigrant women.</b> <i>Journal of Traumatic Stress</i>, 21(5), 471–478.</p>	<p>To investigate whether the DSM-IV criterion C (reporting a minimum of three out of seven avoidance symptoms) is overly conservative in a sample of Arab immigrant women.</p>	<p>Quantitative descriptive study</p>	<p>546 Arabic women</p>	<p>-The demographic characteristics: age, education, marital and employment status (self and husband), and a number of children. - Migration characteristics included age at immigration, country of origin, refugee camp</p>	<p>Avoidance symptoms were reported least frequently except for one avoidance symptom (trying not to think, talk, or have feelings about the traumatic event) that was reported by 285 of the women.  Reexperiencing symptoms were generally reported more frequently than avoidance and arousal symptoms. More than two thirds of the sample reported reexperiencing symptoms of intrusive images and emotional upset when reminded of the trauma, with about two thirds reporting three or more reexperiencing symptoms.</p>

			<p>experience, time in transit, refugee status at immigration, and time in the United States.</p> <p>-The Posttraumatic Diagnostic Scale includes 17 PTSD symptom items that assess Criteria B (reexperiencing symptoms), C (avoidance symptoms), and D (arousal symptoms).</p>	<p>A more significant proportion of the sample met the DSM-IV reexperiencing (82%) and arousal (62%) symptom criteria (Criterion B and D, respectively). In contrast, less than half (43%) of the sample met Criterion C for endorsing a minimum of three avoidance symptoms. Only 40% met all three diagnostic criteria for symptoms. Smaller sample subgroups met both the reexperiencing and arousal criteria but reported only two (10%) or one avoidance symptom (10%).</p>
<p>Kroll, J., Yusuf, A. I., &amp; Fujiwara, K. (2011). <b>Psychoses, PTSD, and depression in Somali refugees in Minnesota. <i>Social Psychiatry and Epidemiology</i>, 46(6), 481–493.</b></p>	<p>To investigate the major patterns of psychiatric disorders in this outpatient population and compare these findings with a cohort of non-Somali patients (N = 3,009) seen at the same outpatient clinic from 2007–2009.</p>	<p>Quantitative longitudinal design</p>	<p>All Somali patients (N = 600: 321 women; 279 men) above age 18 assessed in the Mental Health section of the Community-University Health Care Clinic (CUHCC) between January 2001 and</p>	<p><b>Within Somali cohort:</b> Comparing men and women patients aged 30 years or younger, 80% of the men had psychotic disorders compared with 32.5% of the women. Similarly, men 31–50 years of age have significantly higher rates of psychoses than women aged 31–50 years. There are no significant differences in rates of psychoses between men and women aged 51 years and above.</p> <p>With respect to the diagnostic category ‘Depression/PTSD’, Somali women had higher rates than men in the age groups 30 years and below and 31–50 years. For ages 50</p>

<p>Polcher, K., &amp; Calloway, S. (2016). <b>Addressing the need for mental health screening of newly resettled refugees: A pilot project.</b> <i>Journal of Primary Care &amp; Community Health, 7</i>(3), 199–203.</p>	<p>To initiate early mental health screening for newly resettled adult refugees was implemented at a community health center in Fargo, North Dakota.</p>	<p>Quantitative descriptive study- Pilot study</p>	<p>October 2009. The control group consisted of all non-Somali patients age 18 and older (N = 3,009; males = 1,342, females = 1,667) seen by Mental Health from October 2007 to October 2009.</p>	<p>- The Refugee Health Screener-15 (RHS-15).</p>	<p>years and above, there was no significant difference between men and women.</p> <p><b>Comparing Somali cohorts with non-Somali cohorts</b></p> <p>Somali women of ages 18–30 years had higher rate (32.5%) of psychoses than non-Somali women (8.0%) in the same age range, but the direction is again reversed in the age group 50 years, where the non-Somali women have higher rates (16.5%) than the Somali women (4.4%). For the combined PTSD/depression category, rates are higher for all Somali versus non-Somali age and gender groups.</p> <p>Individuals who screened positive ranged in age from 18 to &gt;51 years with the majority being female. Of those who screen positive, 30 were females (59%). The highest percentage of positive screens was from Iraq.</p> <p>Overall RHS-15 scores for refugees from Iraq were significantly higher than the other groups. The mean scores for the questionnaire section were 31.04 points for refugees from Iraq (n = 25) compared with a mean score of 15 for all other refugees (n = 26). The mean distress thermometer rating was 5.24 points for Iraqi refugees compared with 2.85 points for all other groups.</p> <p>Refugees who screened positive were offered follow-up with a primary care provider,</p>
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<p>Piwowarczyk, L., Bishop, H., Yusuf, A., Mudyimba, F., &amp; Raj, A. (2014). <b>Congolese and Somali beliefs about mental health services.</b> <i>The Journal of Nervous and Mental Disease</i>, 202(3), 209–216.</p>	<p>To examine both concepts of mental illness and attitudes and beliefs about treatment and potential barriers to accessing mental health services.</p>	<p>Mixed methods Data source: study data were obtained from the African Women's UJAMBO Good Health Project</p>	<p><b>Qualitative Methods:</b> A series of six focus groups (n = 30) were conducted with the Somali and Congolese participants. the women's groups were divided by the following ages: 18 to 25 (two groups), 26 to 35 (two groups), and 36 years or older (two groups) to ensure comfort among peers.</p>	<p><b>Qualitative Methods:</b> Focus groups analyzed using the grounded theory approach <b>Quantitative Methods:</b> Relevant sections of the Behavioral Risk Factor Surveillance System Survey.</p>	<p>76.5% (39) agreed to follow up. A chart review was conducted to track follow-up data. This revealed that 23% (9/39) of patients did not attend the follow-up appointment, although specific barriers to follow-up were not addressed at the time of review. Of the 30 who did keep their appointment, 50% agreed to treatment for their psychological distress. <b>Quantitative findings: Mental Health Concerns</b> Few women reported any days of sadness, and 24% of the sample reported that they did not know or were unsure how many days they felt sad in the past month. Similarly, few women reported any days of worry, whereas 23.6% reported that they did not know or were unsure of how many days they felt worried. However, for the women who did report sadness, the mean number of sad days was 11.42 (SD,10.38). For those reporting worries, the mean number of worried days was 13.09 (SD, 11.12). <b>Utilization of Mental Health Services and Attitudes Toward Utilization of Mental Health Services</b> Most of the women (88.7%) had never sought help from a mental health professional, and roughly 42% were unsure whether they would seek help if they felt very depressed. Approximately one third of the women indicated that they would not seek help from a mental health professional if they ever</p>
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			<p><b>Quantitative methods:</b> surveys (n = 296) were administered by the community-based organization (CBO) staff to female members of the Somali and Congolese community living in Greater Boston.</p>		<p>experienced depression. In addition, 28.4% of the women strongly agreed that treatment could help those with mental illness leads normal lives, whereas 32.1% agreed slightly.</p> <p><b>Qualitative findings:</b>  Barriers to Receiving Professional Mental Health Services (Focus Groups):</p> <ol style="list-style-type: none"> <li>Turning to family or friends for support rather than acquiring formal services</li> <li>Utilizing traditional ways of healing in coping with stress and depression</li> <li>Turning to religion</li> <li>Western mental health services and mental health needs from a western perspective are not understood</li> <li>Negative attitudes toward medication</li> <li>Desire not to disclose private information to strangers</li> </ol> <p>Stigma related to mental illness</p>
<p>Taylor, E. M., Yanni, E. A., Pezzi, C., Guterbock, M., Rothney, E., Harton, E., Montour, J., Elias, C., &amp; Burke, H. (2014). <b>Physical and mental health status of Iraqi refugees resettled in the United States.</b> <i>Journal of</i></p>	<p>To assess their physical and mental health status and healthcare access and utilization following the initial 8-month, post-arrival period.</p>	<p>Quantitative descriptive study</p>	<p>(N = 366)  144 of the participants were females (40%)  Iraqi men and women 18 years of age and older who arrived in the United States as refugees,</p>	<p>- The household questionnaire was developed by the CDC project team and included questions related to socio-demographic characteristics, health status, healthcare utilization, chronic and infectious</p>	<p>The prevalence of emotional distress, anxiety, and depression was approximately 50% of participants.  31% were at risk for post-traumatic stress disorder. Iraqi refugees in this evaluation reported a high prevalence of chronic conditions and mental health symptoms despite relatively high access to healthcare.</p> <p>Relationships between demographic and health characteristics and reported depression. Age, time in the United States, marital status,</p>

<p><i>Immigrant and Minority Health, 16(6), 1130–1137.</i></p>			<p>asylees, or on special immigrant visas (SIV) were recruited for the survey. Participants had to have been living in the United States between 8 and 36 months.</p>	<p>disease history, and smoking status.</p> <ul style="list-style-type: none"> <li>- The Hopkins Symptom Checklist (HSCL-25)</li> </ul>	<p>employment status, physical health rating, and having one of the most commonly reported health conditions (hypertension, overweight/obese, or diabetes) were independently associated with reported depression. In the adjusted model, longer time in the United States, rating one’s health as fair or poor, and having one of the most commonly reported health conditions remained statistically significant and were associated with an increased likelihood of reported depression.</p>
<p>Mzah, S., Lopes Cardozo, B., &amp; Evans, D. P. (2019). <b>Mental health status and service assessment for adult Syrian refugees resettled in metropolitan Atlanta: A cross-sectional survey.</b> <i>Journal of Immigrant and Minority Health, 21(5), 1019–1025.</i></p>	<p>To assess the mental status of the resettled Syrian refugee population and available mental healthcare services in Metropolitan Atlanta.</p>	<p>Quantitative A Cross-Sectional Survey  Data source: (database of “Georgians for Syria”, a community organization supporting Syrian refugees in Atlanta)</p>	<p>Syrian refugees aged 18 years old and older who resettled between March 2011 and March 2017 in Metropolitan Atlanta were eligible for inclusion. Among the list of 40, a total of <b>25 Syrian refugees</b> were included in the sample.</p>	<p>Survey instruments consisted of 90 items</p> <ul style="list-style-type: none"> <li>- Socio-demographic component and a mental health services assessment developed by the study team.</li> <li>- The Hopkins Symptoms Checklist 25 (HSCL 25).</li> <li>- The traumatic events list, PTSD-8</li> </ul>	<p>60% of the participants reported anxiety symptoms, 44% depression symptoms, and 60% psychological distress.</p> <p>21 participants experienced at least one item from each of the PTSD symptom clusters. This means that 84% of the study group presented symptoms of PTSD. Only four participants had a negative score for the three PTSD items. These findings show overlaps between depression, anxiety, and PTSD.</p> <p>Only seven participants (28%) reported having felt the need to talk with a health provider about psychological discomfort. Only five went to see a mental health professional. Of those who saw a health professional, most (60%) thought the visit to be beneficial.</p>

<p>Samari, G. (2016). <b>Cross-border ties and Arab American mental health.</b> <i>Social Science &amp; Medicine</i> (1982), 155, 93–101.</p>	<p>to examine differences in mental health–psychological distress and happiness among several immigrant generations of Arab Americans. It also seeks to investigate whether cross-border ties are protective for mental health, and if cross-border ties interact with nativity to influence psychological distress and happiness.</p>	<p>Quantitative cross-sectional (SDA)</p> <p>Data source: The 2003 Detroit Arab American Study (DAAS), a representative sample of Arab Americans living in the Detroit metropolitan area.</p>	<p>1016 participants, 460 were females</p> <p>The sampling frame included all adults who self-identified as of Arab or Chaldean descent who resided in the Detroit metropolitan area from July through November of 2003.</p>	<p>- The post migration trauma events scale.</p> <p>- The Kessler Psychological Distress Scale (K10).</p> <p>- Respondents' self-reported happiness.</p> <p>- Media consumption is a continuous measure based on 6 items.</p> <p>- Social ties is a continuous measure based on 6 items.</p> <p>- Community organizations are based on four items that assess respondents' participation in community organizations with connections to the Arab world.</p> <p>- Nativity is based on the birthplace of</p>	<p>There are no differences in psychological distress by nativity. Two-thirds of Arab Americans are considered a medium risk (scores between 16 and 29), and the average psychological distress scores for all generations are between 18 and 20.</p>
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<p>Kulwicki, A., &amp; Ballout, S. (2015). <b>Post-Traumatic stress disorder (PTSD) in Arab American refugee and recent immigrant women.</b> <i>Journal of Cultural Diversity</i>; 22(1), 9–14.</p>	<p>To examine the experience of PTSD in Arab American women.</p>	<p>Cross-sectional, descriptive study</p> <p>Data source: domestic violence in Arab American women, a secondary analysis was used to assess PTSD in Arab American women.</p>	<p>312 Arab American women</p>	<p>respondents and their parents.</p> <p>The Posttraumatic Stress Diagnostic Scale (PDS)</p>	<p>During the traumatic event, the women reported that they felt helpless (79.8%) and terrified (84.6%) where 10.4% experienced physical injury and 40.4% witnessed someone else being physically injured.</p> <p>The posttraumatic symptoms included a series of problems, such as having upsetting images about the event almost always (17.6%). Also, the women have had bad dreams or nightmares (20.3%) and relived the traumatic event (24.2%) once in a while. Around 13.7% relived the traumatic event and 13.2% had trouble sleeping almost always. Therefore, they experienced emotional upset when reminded of the event almost always (15.5%). Also, they exhibited a physical reaction (10.5%) when reminded therefore, they almost always tried not to talk about it (22%). Also, 25.8% felt irritable and angry once in a while, 14.9% had trouble concentrating, and 15.7% were easily startled.</p>
<p>Jamil, H., Farrag, M., Hakim-Larson, J., Kafaji, T., Abdulkhaleq, H., &amp; Hammad, A. (2007). <b>Mental health symptoms in Iraqi refugees: posttraumatic stress disorder,</b></p>	<p>To better understand the extent and the severity of the problems experienced by the Iraqi refugee</p>	<p>Quantitative descriptive study</p>	<p>116 adult Iraqi immigrants (46 male, 70 female) who were seeking or already receiving outpatient services (n = 87)</p>	<p>- The Hopkins Symptom Checklist-25</p> <p>- Posttraumatic stress diagnostic measure with the DSM-IV (for 17 participants)</p>	<p>Less than one-fifth of the women (11.4%) received a single diagnosis of PTSD. In contrast, more than one-third of the women (34.3%) and only 2 of the men (4.3%) were diagnosed with a depressive disorder with no comorbid condition noted.</p> <p>Although these symptoms were high for both men and women for both anxiety and depression, the average depression rating for</p>

<p><b>anxiety, and depression.</b> <i>Journal of Cultural Diversity, 14</i>(1), 19–25.</p>			<p>or treatment in a partial hospitalization program (n = 29).</p>	<p>Posttraumatic Stress Diagnostic Scale (PDS) (for 99 participants)</p>	<p>women (M = 3.51, SD = 3.7) was slightly higher than for men (M = 3.35, SD = .49).</p>
<p>Johnson-Agbakwu, C. E., Allen, J., Nizigiyimana, J. F., Ramirez, G., &amp; Hollifield, M. (2014). <b>Mental health screening among newly arrived refugees seeking routine obstetric and gynecologic care.</b> <i>Psychological Services, 11</i>(4), 470–476.</p>	<p>To presents preliminary findings of the process of implementation of the RHS-15 and rates of probable mental disorders among newly arrived refugee women receiving routine obstetric and gynecologic care.</p>	<p>Quantitative cross-sectional study</p>	<p>112 women from Iraq, Burma, Somalia, Sudan, Other Africa, and Other Middle East/Asia. Between April and October of 2012, women over the age of 18 receiving routine women's healthcare</p>	<p>- Refugee Health Screener-15 (RHS-15)</p>	<p>Twenty-six (23.2%) scored positive on the RHS-15, of which 14 (53.8%) were Iraqi; and three (11.5%) were Somali. Among these 26 women, eight (30.8%) are actively receiving mental health services, and five (19.2%) have appointments scheduled. However, 13 (50%) are not enrolled in any mental healthcare due to either declining services (46.2%), or a lack of insurance (53.8%).</p>
<p>Alhasanat-Khalil, D., Giurgescu, C., Benkert, R., Fry-McComish, J., Misra, D. P., &amp; Yarandi, H. (2019). <b>Acculturation and postpartum depression among immigrant women of Arabic descent.</b></p>	<p>To examine the relationship between acculturation and PPD symptoms among U.S. immigrant women of Arabic descent.</p>	<p>Quantitative cross-sectional study</p>	<p>115 postpartum immigrant women of Arabic descent.</p>	<p>- measures of acculturation [attraction to Arabic culture (AArC), attraction to American culture (AAmC), marginalization]</p> <p>- Edinburgh Postnatal</p>	<p>25% of women (n = 29) had EPDS scores ≥ 10 that represent PPD symptoms. Women with higher marginalization reported more PPD symptoms. None of the acculturation factors correlated with PPD symptoms after adjustment for maternal sociodemographic and health characteristics. Higher education, lower gestational age at birth, and antenatal anxiety were correlated with PPD symptoms.</p>

<p><i>Journal of Immigrant and Minority Health, 21(6), 1208–1216.</i></p>				<p>Depression Scale-EPPDS between 1 and 12 months postpartum.</p>	
<p>Pampathi, S., Alattar, Z., Cordoba, E., Tariq, M., &amp; Mendes de Leon, C. (2018). <b>Mental health outcomes among Arab refugees, immigrants, and U.S. born Arab Americans in southeast Michigan: a cross-sectional study.</b> <i>BMC Psychiatry, 18(1), 379.</i></p>	<p>To measure depression and anxiety levels among Arabs in Southeast Michigan and determine whether these levels differ by resident status: refugee, immigrant, or U.S. born.</p>	<p>Quantitative cross-sectional study</p>	<p>Convenience sample of 275 adults who self-identify as Arab living in Southeast Michigan. 170 (61.8%) are females</p>	<p>Self-administered questionnaires. - The Center for Epidemiologic Studies Depression Short Form (CES-D-SF) - 4 items from the Generalized Anxiety Disorder (GAD-4) scale. Resident status: was ascertained based on 3 questions: “What country were you born in?”, “Do you have legal refugee status?”, and “If you were not born in the United States, in what year did you first enter the United States</p>	<p><b>Depression and Anxiety:</b> All three resident groups exhibited high mean levels of depression and anxiety. Refugees reported higher levels of depression and anxiety than either immigrants or U.S. born Arab Americans. After adjustment for sociodemographic, differences between U.S. born Arab Americans and refugees were statistically significant for depression, but not for anxiety. Refugees had significantly higher depression scores and anxiety scores than immigrants.</p> <p><b>Reasons for immigration:</b> Those reporting political violence and religious persecution had the highest levels of depression and anxiety. This was particularly the case if these were the only reasons they listed for immigration to the U.S.</p> <p>In contrast, those reporting educational opportunity or economic opportunity, especially as the sole reason for immigration, had the lowest levels of depression and anxiety.</p> <p>Immigrants and refugees reporting family reasons for coming to the U.S. had average</p>

<p>Alhasanat, D., Fry-McComish, J., &amp; Yarandi, H. N. (2017). <b>Risk for postpartum depression among immigrant Arabic women in the United States: A feasibility study.</b> <i>Journal of Midwifery and Women's Health, 4</i>, 470.</p>	<p>to determine, among immigrant women of Arabic descent living in Dearborn, Michigan, the proportion of women at risk for PPD and to describe risk factors for PPD. In addition, we wanted to assess the practicality of implementing a larger proposed research study that will examine</p>	<p>Quantitative cross-sectional descriptive design.</p>	<p>Fifty women were recruited from the Arab Community Center for Economic and Social Services at the Women, Infants, and Children (WIC) program office in Dearborn, Michigan. Inclusion criteria were immigrant or refugee women of Arabic descent, aged 18 to 45 years, who have been in the United</p>	<p>to live?"</p> <p>- Demographic data Include maternal, pregnancy, and infant characteristics, and ethnicity and immigration status</p> <p>- The Edinburgh Postpartum Depression Scale (EPDS)</p> <p>- The Postpartum Depression Predictors Inventory (PDDI)-Revised</p>	<p>levels of depression and anxiety in this sample.</p> <p>Only educational attainment was significantly associated with depression scores, such that higher education was associated with lower depressive scores. Of the other covariates, only educational attainment was significantly associated with anxiety scores, such that higher education was associated with lower anxiety scores.</p> <p>On the PDPI-R, 46% (n = 23) of study participants reported high risk of PPD. On the EPDS, the recommended cut point for PPD is 10 or higher. Based on EPDS scores, 36% (n = 18) of study participants were considered at high risk for PPD. The EPDS total scores ranged from 0 to 23, with a mean (SD) of 8.72 (5.66).</p> <p>The PDPI-R measures risk based on risk factors; all 50 women reported that they had high self-esteem, were married, had low socioeconomic status, and were satisfied in their marriage. The most frequently reported risk factors were antenatal anxiety (50%), life stress related to financial problems (48%), and maternity blues (42%). About one third of women reported a lack of support from friends (34%) or life stress related to a death in the family (34%) or serious illness in the family (32%).</p>
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	predictors of PPD in the same population		States for ten years or less. In addition, women were one to 6 months postpartum following a normal vaginal birth without complications and the birth of a full-term healthy neonate	-PTSD Checklist Civilian version (PCL-C) DSM-IV version. -The Hopkins Symptom Checklist 25 items (HSCL-25). Demographics, medical history and self-rated general health (dichotomized for analysis similar to national estimates of fair and poor versus better)	Almost a third of the sample had possible PTSD (32.2%) with no gender difference. Many refugees had possible anxiety (40.3%) or depression (47.7%) with women more likely than men to have possible anxiety (52.7% versus 29.7%) or depression (58.5 vs. 38.3%). 39.3% of the sample had two or more of the 3 possible diagnoses. Reflecting that comorbidity, the symptom severity scores were highly correlated with the lowest correlation between PCL and anxiety score ( $r = .70$ ). People who rated their health as fair or poor were more likely than those who
Javanbakt, A., Amirsadi, A., Abu Suhaban, H., Alsaad, M. I., Alobaidi, Z., Rawi, Z., & Arfken, C. L. (2019). Prevalence of possible mental disorders in Syrian refugees resettling in the United States screened at primary care. <i>Journal of Immigrant and Minority Health</i> , 21(3), 664–667.	-Added brief mental health screening for three common psychiatric consequences of exposure to stress and trauma (PTSD, anxiety, and depression). -Examined if the prevalence estimates were associated with previous mental illness	Cross-sectional study	A total of 157 Syrian adult refugees were recruited 47.1%, n=74 women, mean age 36.08		

	and other information collected at screening that could assist in targeting interventions.				rated their health better to have possible PTSD (48.7 vs. 27.0%) or depression (73.3 vs. 40.0%).
Bulut, E., & Brewster, K. L. (2021). Psychological distress in middle eastern immigrants to the United States: A challenge to the healthy migrant model? <i>Social Science &amp; Medicine</i> (1982), 274, 113765.	Assess the mental health of Middle Eastern immigrants, both overall and by gender. Compare Middle Eastern immigrants mental health advantage relative to native-born Whites that has been documented for the Hispanic and Asian immigrants.	Cross-sectional Study Data source: National health survey (NHIS) 2007-2018	265,699 respondents, including 1,295 immigrants from the Middle East, and a total of 144,210 females and 121,489 males.	<p><b>Dependent Variable:</b> -Kessler-6 (K6) (DV)</p> <p><b>Independent variable:</b> -Region, gender, period</p> <p><b>Control variables:</b> -Demographic and family variables (age, marital status, presence of children) -Economic and material sources -Acculturation (interview language, citizenship status) -Health and health insurance</p>	<p>The average level of psychological distress in Middle Eastern women (3.584) is significantly higher than the average levels for both native-born White women (2.871), and other immigrant women in the U.S.</p> <p>Distress increases with age until early midlife (37.8 = -0.01332/ (2 × - 0.00017)), after which point it decreases.</p> <p>Citizens demonstrate greater distress, on average, than non-citizens, and those who speak English at home score lower than those who do not.</p> <p>Higher levels of educational attainment are associated with lower distress levels, on average, as are higher levels of household income and homeownership. Persons who were not employed for pay at interview, particularly those who were</p>

						<p>unemployed, are characterized by greater distress.</p> <p>Persons with good, very good, or excellent physical health average almost one standard deviation lower on the K6 index than those with fair or poor health, and those who have some form of health insurance average about one-quarter of a standard unit lower than those who do not.</p> <p>Middle Eastern women are characterized by a higher level of psychological distress than their native-born White counterparts and women from other immigrant groups, as well as Middle Eastern men.</p>
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## APPENDIX B

### STUDY FLIER

## **We are seeking participants for a research study**

“Mental health burden and attitudes and intention to seek mental health services in Saudi women living in the United States”

### **What is this study about?**

The purpose of this research study is to measure anxiety and depression levels in Saudi women living in the U.S. and to assess factors affecting Saudi women’s intention to seek mental health services in the U.S.

### **We would like to hear from you if you are:**

- Saudi nationality
- Women
- Aged 18 years or older,
- Living in the US for at least a year
- Holding immigrants or nonimmigrant visas.

### **How do you take part?**

You can take part in the study by completing online survey.

The survey may take up to 25 minutes to complete.

**If you would like to participate in this study, please use the link below.**

To complete survey in English,

[https://umassamherst.co1.qualtrics.com/jfe/form/SV\\_86zSmaK6ceeM2Ts](https://umassamherst.co1.qualtrics.com/jfe/form/SV_86zSmaK6ceeM2Ts)

This study was approved by UMass IRB #2789

If you have questions or want to learn more about the study, please contact **Wjdan Almutairi**

Phone: + 1 9144398015 E-mail: [walmutairi@umass.edu](mailto:walmutairi@umass.edu)

Location: UMass Amherst College of Nursing

We appreciate your time and contributions to this study.

## APPENDIX C

### EMAIL TO COMMUNITY CONTACTS

Dear .....

We are conducting a research study titled “**Mental health burden and attitudes and intention to seek mental health services in Saudi women living in the United States**”. This study has been approved by the University of Massachusetts IRB (2789). As volunteer group serving Saudis in the U.S., we are asking that you share information about this study with Saudi women in your community who may be interested in participating.

The purpose of this study is to measure anxiety and depression levels in Saudi women living in the U.S. and to assess factors affecting Saudi women’s intention to seek mental health services in the U.S. Eligible participants will be Saudi nationality women, aged 18 years or older, who are living in the US for at least a year whether they are immigrants or hold a nonimmigrant visa.

The study consists of an online survey that may take up to 25 minutes. Survey questions will cover topics such as sociodemographic status, mental health status, and attitudes and intention to seek mental healthcare.

Interested individuals can access the survey here in English:  
[https://umassamherst.co1.qualtrics.com/jfe/form/SV\\_86zSmaK6ceeM2Ts](https://umassamherst.co1.qualtrics.com/jfe/form/SV_86zSmaK6ceeM2Ts)

If there are any questions, please contact the study team at [walmutairi@umass.edu](mailto:walmutairi@umass.edu).

Thank you for your time.

Sincerely,

Wjdan Almutairi, MSN, RN, BSN, Principal Investigator  
UMass Amherst College of Nursing

## APPENDIX D

### SURVEY

#### SCREENING QUESTIONS

- 1- Are you a Saudi Arabian nationality?
  - Yes
  - No
- 2- Are you a female, 18 year or old?
  - Yes
  - No
- 3- How long have you been in the USA?
  - Less than one year
  - One year or more

#### Section 1: Sociodemographics /Immigration-related characteristics

1. What is your year of birth?
2. What is your marital status?
  - Single/never married
  - Married
  - Divorced
  - Widowed
3. What is the highest level of school you have completed or the highest degree you have received?
  - Less than High school
  - High-school graduate (12 years)
  - Some college, technical school, or an associate degree
  - College graduate and Above
4. If applicable, what is the highest level of school your partner has completed or the highest degree your partner has received?
  - Less than high-school
  - High-school graduate (12 years)
  - Some college, technical school, or an associate degree
  - College graduate and Above
5. What is your occupational status?
  - Employed
  - Employed and Full-time student/ Part time student
  - Self-employed

- Not Employed
  - Not Employed, looking for work
  - Not Employed, Full-time student/ Part time student
  - Other:
6. If applicable, what is the occupational status of your partner?
- Employed
  - Employed and Full-time student/ Part time student
  - Self-employed
  - Not Employed
  - Not Employed, looking for work
  - Not Employed, Full-time student/ Part time student
  - Other:
7. Perceived family income level
- Sufficient
  - Insufficient
  - Other .....
8. Do you have health insurance?
- No
  - Yes
    - Private health insurance
    - Health insurance through employer
    - Health insurance provided through the Saudi government
    - Other. Please indicate:
9. Do you have family member living in the U.S.?
- No
  - Yes
10. Who do you live with?
- Alone
  - Husband
  - Family (e.g., sister, brother, mother, father)
  - Roommate
  - Other:
11. What is the Zip code of your address in the U.S.?
12. If applicable, are you currently pregnant?
- No

- Yes / If yes: how many weeks of pregnancy?\_
  - I don't know
13. If applicable, are you in menopause?
- Yes
  - No
  - I don't know
14. If applicable, how many children do you have?
15. If applicable, what is the birthdate of the last child?  
(month)/ (day)/ (year).
16. Do you have any chronic diseases?
- None
  - Yes. Please indicate:
  - Prefer not to say
17. Do you currently use any medication regularly?
- None
  - Yes. Please indicate:
  - Prefer not to say
18. What type of visa do you have?
- Immigrant visa
  - Nonimmigrant's visa
  - I have a U.S. passport
  - Prefer not to say
19. Reason for being in the US?
- Immigrant
  - Work
  - Study
  - Accompanying a family member
  - Seeking advanced treatment
  - Other:
20. When do you move to the U.S.? (month) / (Year)
21. Is it the first time living aboard?
- No
  - Yes. If yes which country and for how long  
(Country)/ (how long)
22. Have you ever been diagnosed with mental health disorders (e.g., depression, anxiety)?
- No

- Yes. Please indicate:
- Prefer not to say

23. Do you currently or ever receive mental health services in Saudi Arabia?

- No
- Yes
- Prefer not to say

24. Do you currently or ever receive mental health services in the U.S.?

- No
- Yes
- Prefer not to say

## ATTITUDES TOWARD SEEKING MENTAL HEALTH SERVICES (IASMHS)

The term professional refers to individuals who have been trained to deal with mental health problems (e.g., psychologists, psychiatrists, social workers, and family physicians). The term psychological problems refer to reasons one might visit a professional. Similar terms include mental health concerns, emotional problems, mental troubles, and personal difficulties. For each item, indicate whether you disagree (0), somewhat disagree (1), are undecided (2), somewhat agree (3), or agree (4):

	<b>Disagree</b>				
<b>Agree</b>					
1. There are certain problems which should not be discussed outside of one's immediate family.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
2. I would have a very good idea of what to do and who to talk to if I decided to seek professional help for psychological problems.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
3. I would not want my significant other (spouse, partner, etc.) to know if I were suffering from psychological problems	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
4. Keeping one's mind on a job is a good solution for avoiding personal worries and concerns.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
5. If good friends asked my advice about a psychological problem, I might recommend that they see a professional.	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
6. Having been mentally ill carries with it a burden of shame.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
7. It is probably best not to know everything about oneself.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
8. If I were experiencing a serious psychological problem at this point in my life, I would be confident that I could find relief in psychotherapy.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

9. People should work out their own problems; getting professional help should be a last resort.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
10. If I were to experience psychological problems, I could get professional help if I wanted to.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
11. Important people in my life would think less of me if they were to find out that I was experiencing psychological problems.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
12. Psychological problems, like many things, tend to work out by themselves.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
13. it would be relatively easy for me to find the time to see a professional for psychological problems.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
14. There are experiences in my life I would not discuss with anyone	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
15. I would want to get professional help if I were worried or upset for a long period of time.	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
16. I would be uncomfortable seeking professional help for psychological problems because people in my social or business circles might find out about it. ...	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
17. Having been diagnosed with a mental disorder is a blot on a person's life.	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
18. There is something admirable in the attitude of people who are willing to cope with their conflicts and fears without resorting to professional help. ....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
19. If I believed I were having a mental breakdown; my first inclination would be to get professional attention.....	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>



If I had a mental health concern, I would try to seek help from a mental health professional.

1       2       3       4       5       6       7

Definitely false

Definitely true

If I had a mental health concern, I would plan to seek help from a mental health professional.

1       2       3       4       5       6       7

Strongly disagree

Strongly agree

**MISTRUST IN MENTAL HEALTH STAFF AND SERVICES**

1-As a Saudi woman, generally you can trust mental health staff and services in the U.S.

strongly disagree       Disagree       Agree       strongly agree.

and please explain what affects your trust in mental health staff and services in the U.S.

**HOPKINS SYMPTOM CHECKLIST-25 (HSCL-25)**

**Instructions:**

Listed below are symptoms or problems that people sometimes have. Please read each one carefully and described how much the symptoms bothered you or distressed you in the last week, including today. Place a check in the appropriate column.

No.	Part I: Anxiety Symptoms	Not at all	A little	Quite a bit	Extremely
1	Suddenly scared for no reason				
2	Feeling fearful				
3	Faintness, dizziness, or weakness				

4	Nervousness or shakiness inside				
5	Heart bounding or racing				
6	Trembling				
7	Feeling tense or keyed up				
8	Headache				
9	Spell of terror or panic				
10	Feeling restless or can't sit still				

No.	Part I: Depression Symptoms	Not at all	A little	Quite a bit	Extremely
11	Feeling low in energy, slowed down				
12	Blaming yourself for things				
13	Crying easily				
14	Loss of sexual interest or pleasure				
15	Poor appetite				
16	Difficulty falling asleep or staying asleep				
17	Feeling hopeless about the future				
18	Feeling blue				
19	Feeling lonely				
20	Thought of ending your life				
21	Feeling of being trapped or caught				
22	Worry too much about things				
23	Feeling no interest in things				
24	Feeling everything is an effort				
25	Feeling of worthlessness				

## APPENDIX E

### ONLINE SURVEY CONSENT FORM

You are being invited to participate in a research study titled *Mental health burden and attitudes and intention to seek mental health services in Saudi women living in the United States*. This study is being done by PhD candidate Wjdan Almutairi from the University of Massachusetts Amherst. You were selected to participate in this study because you are Saudi women living in the U.S.

#### **Why are we doing this research study?**

The purpose of this research study is to measure anxiety and depression levels in Saudi women living in the U.S. and to assess factors affecting Saudi women's intention to seek mental health services in the U.S.

#### **Who can participate in this research study?**

This study is intended to all Saudi nationality women, aged 18 years or older, who are living in the US for at least a year whether are immigrants or hold a nonimmigrant visa. The exclusion criteria are those who hold a visitor visa or those who lived in the US for less than a year.

#### **What will I be asked to do and how much time will it take?**

If you agree to take part in this study, you will be asked to complete an online survey. This survey will take about 25 minutes to complete, and it will include information about sociodemographic status, mental health status, and attitudes and intention to seek mental healthcare. You may skip any questions that you prefer not to answer. Your responses are voluntary and will be kept confidential. No identifying information (e.g., name, email address, phone) will be collected. and no individuals will be identifiable in any reports, presentations, or publications of the results. The survey has been formatted to work well on a computer, tablet, and phone. If you are interrupted and need to stop, you may click on your survey link again and pick up right where you left off.

#### **Will being in this research study help me in any way?**

You may not directly benefit from this research; however, we hope that your participation in the study may enhance the advancement of knowledge about the mental health of Saudi women living in the US and the factors associated with their intention to seek mental health services.

#### **What are my risks of being in this research study?**

We believe there are minimal risks associated with this research study; however, a risk of breach of confidentiality always exists and we have taken the steps to minimize this risk as outlined in a section below. If you feel you would like assistance, please contact SAMHSA's National Helpline 1-800-662-HELP (4357), 800-487-4889. The National Helpline provides 24-hour free and confidential referrals and information about mental

and/or substance use disorders, prevention, treatment, and recovery. In the case of an emergency please call 911.”

**How will my personal information be protected?**

To the best of our ability your answers in this study will remain confidential. We will minimize any risks by *not collecting any identifiable information*. The survey data will be saved in a computer dedicated for this study and will be shared with the research team only through UMASS encrypted email.

**Will I be given any money or other compensation for being in this research study?**

No money or other compensation will be provided for participation.

**What happens if I say yes, but I change my mind later?**

You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time. You may also skip any question that you don’t want to answer. There are no penalties or consequences of any kind if you decide that you do not want to participate.

**Who can I talk to if I have questions?**

As researchers we are not qualified to provide counseling services and we will not be following up with you after this study. If you feel upset after completing the study or find that some questions or aspects of the study triggered distress, talking with a qualified clinician may help. If you feel you would like assistance, please contact SAMHSA’s National Helpline 1-800-662-HELP (4357), 800-487-4889. The National Helpline provides 24-hour free and confidential referrals and information about mental and/or substance use disorders, prevention, treatment, and recovery. In the case of an emergency please call 911.”

If you have questions about this project or if you have a research-related problem, you may contact the researcher(s), **Wjdan Almutairi** at 1-914-439-8015. You may also contact **Dr. Memnun Seven**, faculty sponsor, at mseven@umass.edu. If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

By clicking “I agree” below you are indicating that you are at least 18 years old, have read this consent form and agree to participate in this research study. You are free to skip any question that you choose.

Please print a copy of this page for your records.

I Agree

I Do Not Agree

## APPENDIX F

### DEBRIEFING FORM FOR PARTICIPATION IN A RESEARCH STUDY

University of Massachusetts Amherst

Thank you for your participation in our study! Your participation is greatly appreciated.

#### **Purpose of the Study:**

We previously informed you that the purpose of the study was to measure anxiety and depression levels in Saudi women living in the U.S. and to assess factors affecting their intention to seek mental health services in the U.S. The goal of our research is to improve the understanding of depression and anxiety risks among this population, to guide interventions on promoting mental health disorders awareness, screen, and minimize barriers to seeking mental health services among Saudi women living in the U.S.

We realize that some of the questions asked may have provoked strong emotional reactions. As researchers, we do not provide mental health services and we will not be following up with you after the study. However, we want to provide every participant in this study with a comprehensive and accurate list of clinical resources that are available, should you decide you need assistance at any time. Please see information pertaining to national resources at the end of this form.

#### **Confidentiality:**

Your participation is voluntary, and no confidential and identifiable data will be collected. You do not have to be in this study if you do not want to. If you agree to be in the study, but later change your mind, you may drop out at any time.

Please do not disclose research procedures and/or hypotheses to anyone who might participate in this study in the future as this could affect the results of the study.

#### **Final Report:**

If you would like to receive a copy of the final report of this study (or a summary of the findings) when it is completed, please feel free to contact us at [Walmutairi@umass.edu](mailto:Walmutairi@umass.edu).

#### **Useful Contact Information:**

If you have any questions or concerns regarding this study, its purpose or procedures, or if you have a research-related problem, please feel free to contact the researcher(s), **Wjdan Almutairi** at 1-914-439-8015. You may also contact **Dr. Memnun**

**Seven**, faculty sponsor, at [mseven@umass.edu](mailto:mseven@umass.edu). If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or [humansubjects@ora.umass.edu](mailto:humansubjects@ora.umass.edu).

If you feel upset after having completed the study or find that some questions or aspects of the study triggered distress, talking with a qualified clinician may help. If you feel you would like assistance, please contact SAMHSA's National Helpline 1-800-662-HELP (4357), 800-487-4889. The National Helpline provides 24-hour free and confidential referrals and information about mental and/or substance use disorders, prevention, treatment, and recovery. You can also use this link to locate mental health services near to you <http://store.samhsa.gov/mhlocator>. In the case of an emergency please call 911.

Further Reading(s):

If you would like to learn more about *Mental health burden and attitudes and intention to seek mental health services in Saudi women living in the United States*, please see the following references:

Albqoor, M. A., Chen, J.-L., Weiss, S., Waters, C., & Choi, J.-W. (2020). Serious psychological distress: A national study of Middle Eastern immigrants. *Journal of Psychiatric and Mental Health Nursing*. Edswss. <https://doi.org/10.1111/jpm.12646>

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**\*\*\*Please keep a copy of this form for your future reference. Once again, thank you for your participation in this study!\*\*\***

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