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Exploration of the Link Between Migration and Acculturation Related-Stress, Attachment Style, and Psychological Distress in Arab Immigrants, Refugees, and Asylees

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Exploration of the Link Between Migration and Acculturation Related-Stress,

Attachment Style, and Psychological Distress in Arab Immigrants,

Refugees, and Asylees

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CERTIFICATE OF APPROVAL

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This is to certify that the Clinical Research Project of

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Dedication

This research is dedicated to every Arab born to the diaspora trying to find their way

home

Acknowledgements

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Abstract

The migration process is fraught with experiences of ethnic discrimination and has been linked to heightened levels of psychological and acculturative stress. Interestingly, earlier research revealed a higher prevalence of insecure attachment in migrant compared to non-migrant populations. Attachment style may be influenced by sociocultural and sociopolitical forces and the associated prejudice and discrimination experienced by a particular migrant population. The current study was conducted to explore whether higher levels of sociocultural adversity were associated with increased psychological distress and attachment insecurity and to test attachment as a mediator between sociocultural adversity and psychological distress. Using a cross-sectional design, a survey was conducted with 93 foreign-born adult Arabs who immigrated to the United States or Canada between the age of 5 and 17. Results showed ethnic discrimination and acculturative stress to be predictors of psychological distress. The study revealed ethnic discrimination and acculturative stress to be predictors of insecure attachment orientation and insecure attachment to be a predictor of psychological distress. Furthermore, a mediation model revealed that attachment orientation mediates the relationship between acculturative stress and psychological distress. This research fills a gap in the existing literature and provides clinicians with a rationale for screening for attachment style when working with the Arab immigrant population in the United States and Canada.

Introduction

Research has shown people who experience major life changes and transitions may be at a higher risk of psychological symptoms and experience overall decreased well-being (Bakker et al., 2004; Dovidio & Esses, 2001). One of the most significant transitions a person or family can make is migration, which has been linked to heightened levels of psychological distress and even trauma (Arredondo-Dowd, 1981; Foster, 2001; Levenbach & Lewak, 1995; Marlin, 1994; Szaflarski & Bauldry, 2019; van Ecke, 2005). Much of the existing literature has contained a focus on the link between a migrant's acculturation strategy and psychological distress (Ahmed et al., 2011; Berry, 2003; Berry & Kim, 1988; Farver et al., 2007). However, less empirical research exists on the relationship between sociocultural adversity (i.e., acculturation stress and perceived racism) and distress and the role of attachment in the acculturation process (van Ecke, 2005).

An emerging body of research has shown child and adult attachment styles to be associated with or predictors of psychological distress in various migrant populations (Bakker et al., 2004, Madjlessi, 2016; Polek et al., 2010; van Ecke, 2005; van Ecke et al., 2005; Wang & Mallinckrodt, 2006). In addition, some research indicates migrants are more likely than non-migrants to present with an insecure attachment secondary to trauma during the migration and cultural transitioning process (Bodnar, 2004; van Ecke, 2005). Attachment style may be influenced by sociocultural and sociopolitical forces and the associated prejudice and discrimination experienced by a particular migrant population. Though Arabs have been migrating to the United States and Canada since the 1800s, the sociocultural and political climates over the past 30 years have created a

hostile environment for Arabs that is littered with racism, prejudice, and discrimination. In past research, sociocultural adversity, composed of acculturative stress and perceived discrimination, has been found to be a predictor of psychological distress among Arab American adolescents (Ahmed et al., 2011). Acculturative stress is understood as the psychological impact of transitioning from the culture of origin and adapting to the host culture (Berry, 2006).

The present study was designed to examine the relationship between sociocultural adversity and attachment style and to test attachment style as a mediator between sociocultural adversity and psychological distress.

Literature Review

Migration

Immigrants, Refugees, and Asylees

Migrant groups have existed since the beginning of time. Though the literature and media have used the term migrant for immigrant or refugee interchangeably, "migrant" is an umbrella term referring to people who leave their country of origin and move to another country either voluntarily or involuntarily (United Nations High Commissioner for Refugees [UNHCR], 2016). The term "immigrant" is associated with voluntary migration whereas the terms "refugee" and "asylee" refer to people who have been involuntarily displaced from their country of origin (Immigration and Nationality Act of 1952). According to U.S. immigration law, immigrants are individuals who leave their country of origin voluntarily and lawfully enter the United States in search of better opportunities related to education, employment, or adventure (Immigration and Nationality Act of 1952). However, individuals who have been involuntarily displaced from their country of origin through forced migration are typically categorized as refugees or asylees.

According to the UNHCR and the United States Refugee Act of 1980, refugees are forcibly displaced from their country of origin because of war, genocide, persecution, or natural or human made disaster. Prior to entering the United States or another host country, these individuals are given a legal designation of "refugee." Similarly, asylees are also displaced from or flee their country of origin for similar reasons as refugees, only they do not have legal designation prior to entering the host country. Instead, they typically escape their country of origin and enter the United States or another host

country without documentation or expired documentation and have to apply for protection or asylum after entering the host country (UNHCR, 2016).

The migration process is divided into three stages of pre-migration, migration or the transit stage, and post-migration. Each stage is associated with specific risks and exposures that have been linked to mental health outcomes (Kirmayer, 2011). The pre-migration stage refers to the time before migrants leave their country of origin. It is not uncommon for migrants to be exposed to political unrest, war, violence, or other disasters in this stage (Kirmayer, 2011). The next stage is the actual migration or transit stage. This stage is associated with potential exposure to harsh living conditions (e.g., refugee camps, asylee detention centers), exploitation, disruption of family and community networks, interethnic conflict, disease, and uncertainty (Kirmayer, 2011). Post-migration is the final stage of the migration trajectory and refers to the relocation of migrants to their host country. Migrants may experience culture shock, discrimination, changes in social status, cultural and ethnic identity disturbances, intergenerational conflict, language barriers, and other day-to-day hassles. Through each of these stages of the migration process, migrants are exposed to various traumatic experiences and psychological distress that affect their mental health and overall acculturation.

Migration and Psychological Distress

Researchers agree the migration process can be stressful independent of whether the migration is voluntary or forced because of the ongoing grief and loss, as well as the cumulative impact of multiple migration-related stressors (Arredondo-Dowd, 1981; Foster, 2001; Levenbach & Lewak, 1995; Marlin, 1994; van Ecke, 2005). Immigrants, refugees, and asylees face a unique set of stressors before, during, and after their

migration to the host country, and, as a result, are at a higher risk of developing mental

health problems (Arredondo-Dowd, 1981; Kirmayer, 2011; van Ecke, 2005). Migration-

related stressors include the loss of homeland and social network, feeling unwelcomed in

the host country, adapting to a new culture, and acculturative stress in the post-migration

stage (Berry, 2006). In addition, people who have been forcibly displaced have a higher

risk of exposure to traumatic events prior to entering the host country, including poor

living conditions, persecution, exploitation, violence, genocide, rape, torture, and natural

disasters, as well as experience more acculturative stress in the post-migration stage

(Kirmayer, 2011).

　　　　Acculturative stress refers to the psychological impact of transitioning and

adapting to a new culture and is caused by inter-cultural contact (Berry, 2006). It refers to

the psychological distress experienced in the process of navigating the day-to-day hassles

of adapting to a new culture and language while negotiating one's native and host cultural

identities (Berry, 2006). To understand acculturative stress in the social and cultural

context, it is important to also take into account migrants' experience of racism

perpetuated by the citizens and systems of the host country (Ahmed et al., 2011; Awad,

2010; Moradi & Hasan, 2004; Szaflarski & Bauldry, 2019). One common method of

measuring migrants' experience of racism is through assessing *perceived racism*, which

is the degree to which migrants feel discriminated against because of their racial or ethnic

identity. The perceived racism construct is defined as an ethnic minority's subjective

interpretation of an event or experience as negative, oppressive, or unfair based solely on

ethnic or racial background (Clark et al., 1999). The literature indicates there is a strong

link between perceived racism and psychological distress (Ahmed et al., 2011; Pieterse et

al., 2012). Given the ubiquity and impact of racial discrimination or perceived discrimination on migrant populations, it is imperative to incorporate these concepts into the conceptualization of migration-related stress. Further, *sociocultural stress* refers to the interplay of the psychological impact of the cultural transitioning process (acculturative stress) and the psychological distress experienced as a result of racial discrimination or perceived racism, providing a more complete view of the specific cultural challenges faced by migrants living in a host country (Ahmed et al., 2011).

Furthermore, research indicates the acculturation strategy a migrant adopts is linked to varying levels of acculturative stress. Berry (1997, 2006) proposed a bi-dimensional acculturation model based on intercultural contact; namely, the extent to which individuals and groups seek to maintain their heritage culture and identity, as well as seek to have interactions with people of other cultures in the larger plural society. When these two dimensions are crossed, four acculturation strategies are presented: assimilation, separation, integration, and marginalization. *Assimilation* exists when individuals do not wish to maintain their heritage culture and seek to become fully involved with the larger society. *Separation* exists when ethnic people place a value on holding on to their original culture, and at the same time, wish to avoid interaction with the dominant culture. *Integration* exists when individuals wish to maintain their heritage culture and also aspire to be fully engaged in the life of the larger society. *Marginalization*, an exact opposite of integration, reflects minimal interest in either heritage cultural maintenance or connection with dominant culture. Integration and assimilation are associated with less psychological distress, followed by separation.

Marginalization is associated with the highest level of psychological distress (Berry, 1997, 2006).

Arab Migration

Arab immigrant and refugee migration patterns have garnered much attention in the past 2 decades as a result of the war and unrest in Arab countries. For example, according to the UNHCR's 2015 mid-year trends, there are 3.88 million refugees worldwide from the Syrian Arab Republic alone, with estimates increasing given the escalating war, genocide, and persecution in Syria. The American Community Survey (ACS) conducted by the U.S. Census Bureau (2014) revealed there are an estimated two million Arabs residing in the United States, with a rapid increase of 51% since 2000. The Arab American Institute Foundation (2014) estimated nearly 3.7 million Arabs reside in the United States claiming ties to over 22 countries and various religious backgrounds. There are several explanations for this discrepancy in estimates, including the absence of a classification category on the U.S. Census ACS form for Arabs to identify their race or ethnicity, a lack of inclusion of all 22 Arab countries on the ACS, and migrants either not completing the ACS or not including their ethnic or racial identity for fear of revealing their ethnic identity and a threat of deportation. Despite this discrepancy, there is a significant and ever-growing Arab population in the United States, as there is a longstanding history of Arab migration to North America that has occurred through several distinct waves.

History

Arabs have long been migrating to the United States and Canada. The early 20th century marked the first wave of Arab immigrants, made up of predominately Lebanese

and Syrians who hoped to return to their homeland after economic conditions improved. In the late 1940s to the 1960s, the second wave of Arabs immigrating to the United States were predominately Palestinian and Egyptian and were motivated by escaping the Israeli invasion and seeking economic and educational opportunities. The period between the late 1960s and the early 2000s marked the third wave of Arab migration of almost 800,000 people, which was over 10 times that of the second wave. The third wave of Arab migration was motivated by the displacement of immigrants and war refugees from Lebanon, Palestine, and Iraq (Ajrouch, 1999; Semaan, 2014). Despite the significant number of Arabs who reside in the United States and the growing number of forcibly displaced Arabs worldwide, little research has been conducted on Arabs when compared to other ethnic minority and migrant populations, particularly in terms of their specific experiences of prejudice, discrimination, and overall psychological distress as migrants in the United States (Awad, 2010; Beitin et al., 2010).

Prejudice and Discrimination

The social, cultural, and political climate in the United States over the past 30 years has created a hostile environment for Arabs that is littered with racism, prejudice, and discrimination. Although negative depictions of Arabs in the media pre-date the 9/11 tragedy, discrimination and hate crimes against Arabs have been on the rise as a result of the wrongful association of the Arab population with terrorism and the more recent hateful political rhetoric and acts banning immigration and refugees from select Muslim and Arabic-speaking countries (Akram, 2002; Arab American Institute Foundation, 2017; Shammas, 2017). In a time when forced displacement of Arabs is at an all-time high because of the war and violence in the Middle East, with the majority of Arabs migrating

to the United States experiencing an increase in the already existing discrimination and prejudice against Arabs in the United States, it is critical to increase the understanding of this oppressed population and their experience as migrants in the United States.

Psychological Distress

Research indicates there are strong links between discrimination, acculturative stress, and psychological distress among Arab migrants (Ahmed et al., 2011; Awad, 2010; Moradi & Hasan, 2004; Szaflarski & Bauldry, 2019). For example, results of a study of Arab American adolescents showed perceived racism and acculturative stress to be highly correlated with psychological distress (Ahmed et al., 2011). Another study of Arab American adults showed there was a strong relationship between perceived discrimination and psychological distress with personal control as a partial mediator (Moradi & Hasan, 2004). Specifically, the research indicated perceived discriminatory events were correlated with lower levels of perceived control over one's life, which, in turn, led to psychological distress. Muslim Arabs experience higher levels of discrimination and psychological distress than do non-Muslim Arabs (Awad, 2010; Rousseau et al., 2011). Research also indicates there has been an increase in perceived racism and psychological distress in the Arab immigrant community since 9/11. In a cross-sectional comparative study of two samples of recent Arab immigrants, one recruited in 1998 and the other in 2007, a higher level of discrimination was found among Arab immigrants in 2007 as compared to Arab immigrants in 1998 (Rousseau et al., 2011). Research also indicated a higher level of perceived discrimination and psychological distress in Muslim Arabs than non-Muslim Arabs overall (Rousseau et al., 2011; Semaan, 2014). Specifically, Awad (2010) corroborated the finding that Muslim

Arabs perceived more discrimination than Christian Arabs. Of note, Muslim Arabs have

reported a higher degree of immersion in their ethnic society and less immersion in the

host or dominant society; though a protective factor, immersion is also a contributing

factor to the increased experience of discrimination, as measured by perceived

discrimination (Awad, 2010). The magnitude of psychological distress in the Arab

migrant population was further illuminated in a meta-analysis by Porter and Haslam

(2005) examining mental health outcomes among refugees, asylees, and internally

displaced persons. The meta-analysis included a global sample of published studies from

1959 to 2002 examining refugee groups and at least one non-refugee comparison group.

The study results indicated the presence of higher levels of poor mental health outcomes

in refugee populations versus non-refugee residents of their respective regions (Porter &

Haslam, 2005). In addition, research indicates there is a relationship between

psychological distress in the overall migrant population and child and adult attachment

styles (Bakker et al., 2004; Madjlessi, 2016; Polek et al., 2010; van Ecke, 2005; van Ecke

et al., 2005; Wang & Mallinckrodt, 2006).

Attachment Theory

Child Attachment

According to Bowlby (1973), human beings have an evolutionary drive to

maintain closeness to familiar people and environments. Humans also like to explore

leaving their familiar people and environment if they know they have a secure home base

to which to return. A tenet within attachment theory is that people develop their

attachment style based on the nature of their interactions with their early caregivers

(Bowlby, 1980). Typically, a child who has a consistent and loving caregiver develops a

secure attachment style. In other words, the child develops a secure base to which they trust they can return. However, childhood experiences of loss, separation, or inconsistency in relationships yield the development of an insecure attachment style. This can manifest in avoiding closeness altogether or developing anxiety upon the prospect of separation. In turn, the nature of a person's attachment style dictates their attachment representation. An *attachment representation* is defined as the state of mind a person has regarding attachment, which acts as a schema through which emotions and behaviors in relationships are experienced.

Research indicates attachment style can predict the way people relate to others as well as the nature of their coping mechanisms (Bowlby, 1969, 1973, 1980). This can be seen in previous literature regarding immigrants' acculturation stress and coping. Research has shown immigrants with secure attachment styles are more able to access comforting mental representations of attachment figures and have an increased sense of security, which can buffer against acculturative stress (Hofstra et al., 2005; Hong et al., 2013). Meanwhile, immigrants with an insecure attachment style may struggle in adapting to the new environment and seeking help when encountering acculturation difficulties (Wang & Mallinckrodt, 2006).

Adult Attachment

Researchers agree that attachment can be defined as a two-factor construct, namely secure or insecure attachment (Baldwin et al., 1996; Collins & Read, 1990; Fraley & Waller, 1998). Researchers have come to understand attachment style to be formed by early caregiving relationships and to be a relatively stable construct that withstands normal levels of loss and separation, including divorce or the loss of a loved

one (Bowlby, 1969, 1973, 1980). Ainsworth's (Ainsworth et al., 1971; Ainsworth et al., 1978) findings of the strange situation provided the first empirical evidence for Bowlby's attachment theory and indicated attachment styles were the result of the nature of early interactions of an infant with their mother. Though researchers agree that there are two overarching categories of attachment styles (i.e., secure, and insecure), the conceptualization of types of insecure attachment styles varies. Ainsworth (Ainsworth & Bell, 1970) identified three attachment styles, two of which are insecure: secure, insecure/avoidant, and insecure/ambivalent (anxious). A fourth insecure attachment style known as disorganized was later identified (Main & Solomon, 1990).

Bartholomew and Horowitz (1991) developed a bi-dimensional model of attachment orientations in adulthood. According to the model, attachment patterns are organized around two distinct continuous dimensions of attachment anxiety and attachment avoidance. Individuals who are high on attachment avoidance and low on attachment anxiety fit Ainsworth and Bowlby's (1991) avoidant attachment category, individuals who are high on the anxiety dimension and low on avoidance fit Ainsworth's anxious attachment classification, individuals who are low on both dimensions fit Ainsworth's secure attachment category, and individuals who have high anxiety and avoidance scores fit Main and Solomon's (1990) disorganized attachment classification (Lavy et al., 2012).

Additional research has also indicated attachment behavior and emotion may be further influenced by any number of relationships and representations that can be experienced beyond the early childhood years (Smith et al., 1999). An individual may have several representations of various types of relationships with varying levels of

power (Higgins, 1996). For example, a child who may have been securely attached to a primary caregiver can experience later significant life events, dramatic shifts in cultural and environmental structures, and relational experiences that can alter their attachment style. Similarly, other research has shown some people may be especially prone to changes in attachment style caused by adverse experiences or influences early in life, and unstable vulnerability factors may also lead to a change in attachment. These factors include a family or personal history of psychopathology, personality disturbance, or the lack of an intact family of origin (Cozzarelli et al., 2003; Davila et al., 1997; Davila & Sargent, 2003).

Bowlby (1969) maintained that the working models of attachment should remain open to change in response to personal and interpersonal circumstances. A recent longitudinal study tracking longitudinal changes in attachment style over a 59-year period revealed that not only did attachment anxiety and avoidance decline with age, but being in a relationship was a predictor of lower levels of anxiety and avoidance across adulthood (Chopik et al., 2019). Research indicates attachment style discontinuity or ruptures can occur following negative life events or circumstances. Mikulincer and Shaver (2007) identified "destabilizing forces" as forces that can move an individual from their early working model over the life span secondary to powerful and significant experiences that cause them to revise their internal working model.

The process of immigration is fraught with powerful and significant losses, separation, and uncertainty and has the capacity to rupture a secure attachment (Bodnar, 2004; van Ecke, 2005). The migration process is associated with changes that occur simultaneously, including acculturative stress, feeling unwelcomed in the host country,

loss of the homeland, and discrimination (Aranda, 2008). One notable change is acculturative stress and the mental and emotional destabilization of the attachment object or caregiver. One's early attachment status may have been characterized by security and consistency, but the emigrating parent or caregiver may not be able to provide the same security and consistency due to their own negotiation of their acculturation strategies, adaptation, and the potential acculturation gap between them and their child. Similarly, the change in a child/young adult's cultural and physical environment further threatens a once consistent understanding of the world and their relationship to that world. Therefore, not only is the attachment object or caregiver destabilized by migration and acculturation stress, the child or young adult's environment and culture attachment representations are also destabilized given the change in unspoken rules and expectations (Dovidio & Esses, 2001). In addition, the magnitude of the culture gap between native and host countries may play a role in destabilization (Farver et al., 2007; Rasmi et al., 2015). For example, Christian Arabs find adaptation to Western culture much easier than do Muslim Arabs because Christian Arabs' religion overlaps with the dominant Western religion (Amer & Hovey, 2005, 2007; Awad, 2010).

Attachment and Psychological Distress Among Migrants

Attachment theory has been used as a framework that can help clinicians understand the immigrant experience as it relates to adaptation and coping with change and loss in the migration process. Adult attachment style has been found to be strongly related to migrants' psychological and sociocultural adjustment as well as psychological distress (Bakker et al., 2004; van Ecke et al., 2005; Wang & Mallinckrodt, 2006). A study of a large sample of first-generation migrants in the Netherlands revealed adult

attachment style to be a better predictor of psychological and sociocultural adjustment than Big Five personality dimensions (Bakker et al., 2004). Specifically, an ambivalent attachment style (also referred to as unresolved attachment or disorganized attachment) was significantly negatively associated with psychological adjustment whereas a dismissive attachment style was mildly negatively associated with sociocultural adjustment (Bakker et al., 2004).

Other studies have shown adult attachment style to be a stronger predictor of psychological distress than acculturation strategies, demographic factors, or the Big Five personality dimensions among immigrants (Bakker et al., 2004; Polek et al., 2010). Studies of Iranian immigrants in the United States also indicated attachment style is more predictive of psychological distress than a person's degree of acculturation. Both attachment and acculturation significantly predict psychological distress (Madjlessi, 2016). A study of Chinese and Taiwanese international students living in the United States showed insecure attachment style (as measured by the Experiences in Close Relationships [ECR] scale) to be a significant predictor of psychological distress and sociocultural adjustment (Wang & Mallinckrodt, 2006). Specifically, the research showed attachment anxiety was significantly negatively associated with acculturation to U.S. culture, though attachment avoidance was not. However, both attachment anxiety and avoidance were significantly correlated with psychological distress and sociocultural difficulties.

Other researchers have explored the relationship between adult attachment styles (i.e., secure, preoccupied, fearful, dismissing) and acculturation strategies (i.e., integration, assimilation, separation, marginalization) with immigrant groups of various

backgrounds, including Hispanic, Indian, Dominican, and Haitian. Research has shown a secure attachment style is associated with integration, a preoccupied attachment style with assimilation, a fearful attachment style with separation, and a dismissing attachment style with marginalization (Belizaire & Fuertes, 2011; Van Oudenhoven & Hofstra, 2006). A statistical meta-analysis of 325 studies of acculturation/enculturation strategies and mental health outcomes revealed the integration acculturation strategy had the best mental health outcomes, followed by the assimilation and separation acculturation strategies. Meanwhile, the marginalization acculturation strategy had the worst mental health outcomes (Yoon et al., 2013).

Moreover, research has indicted there is a higher prevalence of insecure attachment in immigrant groups when compared to non-immigrant groups. A study of adult Dutch and Belgian immigrants living in California showed immigrants were far more likely to exhibit an unresolved attachment style (type of insecure attachment; van Ecke et al., 2005). Given the aforementioned findings, understanding the role of attachment orientation in the migration process and its potentially mediating role in the level of psychological distress has emerged as a crucial inquiry and was the focus of the present study. Not only was this study designed to fill a gap in the existing literature, it was intended to provide clinicians with a rationale to screen for attachment style when working with the Arab immigrant population in the United States.

Specific Aims and Hypotheses

Migration is considered to be one of the most significant transitions a person or family can make and has been linked to heightened levels of psychological distress (Arredondo-Dowd, 1981; Dovidio & Esses, 2001; Foster, 2001; Levenbach & Lewak,

1995; Marlin, 1994; van Ecke, 2005). Research indicates there is a link between acculturation strategy, perceived racism, and psychological distress (Ahmed et al., 2011; Berry, 2003; Berry & Kim, 1988; Farver et al., 2007). Additional research also revealed correlations between attachment style and psychological distress in various migrant populations (Bakker et al., 2004; Madjlessi, 2016; Polek et al., 2010; van Ecke et al., 2005; Wang & Mallinckrodt, 2006) and a higher prevalence of insecure attachment in migrants than in non-migrants (Abouguendia & Noels, 2001; Bodnar, 2004; Escobar et al., 2000; van Ecke, 2005). Attachment style may be influenced by sociocultural and political forces and the associated prejudice and discrimination experienced by a particular migrant population (Bodnar, 2004; van Ecke, 2005).

Attachment style in the Arab immigrant population has not been explored in the psychological research thus far. Research has established a relationship between adult attachment security and its impact on a person's well-being in terms of interpersonal and social functioning. In the general migrant population, a higher prevalence of insecure attachment emerges, which has been linked to higher levels of psychological distress (Abouguendia & Noels, 2001; Bodnar, 2004; Escobar et al., 2000; van Ecke, 2005). In turn, a further understanding of the role of attachment style and its relationship to psychological distress in the Arab immigrant population is critical. This study involved examining the relationship between sociocultural adversity and adult attachment in foreign-born Arab migrant adults who migrated to the United States or Canada after 5 years of age in an effort to understand adult attachment, which may differ from childhood attachment. The rationale for using the 5 years of age and above cutoff was rooted in research indicating child attachment style is most affected in the first 5 years of life

(Bowlby, 1969). This research was designed to explore the impact of sociocultural adversity on adult attachment and not child attachment; thus, the researcher recruited adult participants who had immigrated after the critical period for child attachment had ended. As previously mentioned, though a large body of research has identified child attachment to be a stable construct over time, some research has identified instances in which child attachment may differ from the subsequent adult attachment orientation (Bodnar, 2004; van Ecke, 2005).

Earlier researchers conceptualized sociocultural adversity as a combination of acculturative stress and perceived racism and found it to be highly correlated with psychological distress in the Arab migrant population (Ahmed et al., 2011). For this study, sociocultural adversity was therefore operationalized as social, attitudinal, environmental, and familial stress related to the acculturation process and was expanded to include perceived racism. Adult attachment was conceptualized as an adult's experience in close relationships and operationalized as the degree of anxious or avoidant attachment characteristics. Secure attachment was characterized by low levels of anxious and avoidant attachment characteristics. It was hypothesized that a higher level of sociocultural adversity would be associated with higher levels of psychological distress and an insecure attachment style. It was further hypothesized that attachment style would mediate the relationship between sociocultural adversity and psychological distress.

Methods

Design

This study was guided by a cross-sectional design. Participants were administered questionnaires to assess the independent and dependent variables (measured by the K6, ECR, PEDQ, and SAFE) and analyses at one timepoint.

Participants

The minimum number of participants based on the power analyses for multiple regression with two predictors needed to achieve a medium ES at Power = .80 for α = .05 (Cohen, 2016) was 84. However, the desired number was 120 in order to account for missing data. Inclusion criteria required participants to be adults age 18 or older who were foreign-born Arab migrants (immigrants, refugees, and asylees) from one of the 22 Arab-speaking countries, and to have entered the United States or Canada at school age (5–17 years old) with at least one adult family member. Exclusion criteria for participants included the inability to speak or write in the English language as all assessments were conducted in English. Also, participants were excluded if they endorsed having severe mental health problems, namely psychotic disorders and severe intellectual disabilities.

Measures

Background Questionnaire

The background questionnaire was used to gather information about age at immigration, immigration status, number of family members with whom they immigrated, number of family members with whom they were living, country or countries of origin, religious affiliation, gender, relationship status, sexual orientation, student status, employment status, income, state of residence, and severe mental health

problems. Severe mental health problems were assessed with a question asking whether

the participant had been diagnosed with a severe mental disability or thought disorder.

Experiences in Close Relationships Questionnaire (ECR)

The ECR (Brennan et al., 1998) was used to assess adult attachment orientations.

The questionnaire is composed of 36 questions in which participants rate the extent to

which each item describes them in close relationships using a 7-point scale ranging from

1 (*not at all*) to 7 (*very much*). The total range of possible scores on the total measure is

36–252. The overall scale total is used as a continuous variable with low scores

indicating an overall secure attachment and high scores indicating an overall insecure

attachment. Furthermore, the questionnaire includes two 18-item subscales, one

measuring attachment anxiety (e.g., "I worry about being abandoned") and the other

measuring attachment avoidance (e.g., "I prefer not to show a relationship partner how I

feel deep down"). The scale has been validated in the Arab-Israeli population with

satisfactory Cronbach's alphas for the two attachment subscales (18 attachment anxiety

items .84 and 18 attachment avoidance items .74; Lavy et al., 2012). The Cronbach's

alpha of the sample in the current study was .95.

The Perceived Ethnic Discrimination Questionnaire (PEDQ)

The PEDQ (Contrada et al., 2001) was designed to assess experiences of ethnic

discrimination among college students. It is a 17-item measure in which participants rate

each item on a scale ranging from 1 (*never*) to 7 (*very often*) with a possible range of total

scores from 17 to 119. Participants rated the frequency of perceived ethnic

discrimination. The questionnaire began with the statement, "Because of your

ethnicity…" and was followed by questions describing exposure to some form of

mistreatment (e.g., "How often have you been subjected to offensive ethnic comments

aimed directly at you, spoken either in your presence or behind your back?" and "How

often has it been implied or suggested that because of your ethnicity you must be violent

or dangerous?"). Higher scores on the scale indicate higher levels of perceived racism.

Previous studies yielded an internal consistency with a Cronbach's alpha ranging from

.87 to .88 (Brondolo et al., 2005). Awad (2010) assessed the internal consistency of the

PEDQ among 177 individuals of Arab or Middle Eastern descent and reported a

Cronbach's alpha coefficient of .96. The Cronbach's alpha of the sample in the current

study was .94.

The Societal, Attitudinal, Environmental, and Familial Acculturative Stress Scale

(SAFE)

The SAFE (Padilla et al., 1986) measures acculturative stress. Amer and Hovey

(2007) revised the scale to a 24-item measure that asks participants to rate each item on a

scale ranging from 0 (*does not apply*) to 5 (*extremely stressful*) with a possible range of

total scores from 0 to 120 with higher scores representing higher levels of stress.

Participants rate their perceived level of stress associated with presented statements or

scenarios. The content of the scenarios or statements are made up attitudes toward the

participants' social and environmental experiences (e.g., "I don't feel at home" or "it

bothers me that I have an accent"). The scale has been validated in Arab immigrant and

refugee populations (Amer & Hovey, 2007) and has good internal consistency with a

Cronbach's alpha of .93 (Mena et al., 1987; Padilla et al., 1986). The Cronbach's alpha of

the sample in the current study was .93.

Kessler's Psychological Distress Scale (K6)

The K6 (Bessaha, 2017) is a two-factor (depression and anxiety) 6-item version of Kessler's scale assessing mental health symptoms experienced in the last 30 days. It measures the emotional, cognitive, and behavioral manifestations of stress. Convergent validity was assessed with the Generalized Anxiety Disorder (GAD-7) and Somatic Symptoms Scale (SSS-8), and the K6 was highly correlated with both measures (Easton et al., 2017). Items include "feeling nervous," "hopeless," and "restless or fidgety." Participants rate each item on a 5-point Likert-type scale ranging from 1 (*none of the time*) to 5 (*all of the time*) with a range of possible total scores of 6–30. The K6 has been validated in the Arab population and was found to have a good reliability with a Cronbach's alpha coefficient of .81 (Easton et al., 2017). The Cronbach's alpha of the sample in the current study was .86.

Procedures

Participants were initially recruited through two Arab organizations, namely the Arab Community Center for Economic and Social Services (ACCESS) and the Arab American Heritage Council (AAHC). ACCESS is the largest Arab American community nonprofit in the United States with 11 locations and more than 120 programs serving the metro Detroit area with a focus on helping Arab immigrants adapt to living in the United States. The second organization, the AAHC, partners with diverse community leaders, businesses, and organizations, all sharing a common desire to meet the critical needs of the Flint, Michigan, community through immigration and citizenship counseling and health and human services. See Appendix A for study announcement and letter used to reach out to community leaders. Participants were recruited through the ACCESS

Research Recruitment webpage, which is linked to over 100,000 Arabs living in the United States. The research liaison at ACCESS posted the study's recruitment link to the Research Recruitment webpage and social media outlets. AAHC also posted the link to its social media outlets. Permission was received from both organizations for the above recruitment processes. Upon clicking the survey link, potential participants were presented with the introduction of the study and eligibility criteria. The research description stated the goal was to investigate the association between leaving one's country of origin, relationships, and distress. Participants were then provided a screening questionnaire to ensure they entered the country at school age (5–17 years of age), had partial or full ethnicity of one of the 22 Arabic-speaking countries, entered the United States or Canada with at least one adult, and did not have a severe mental illness or intellectual disability. If potential participants met all eligibility criteria, they were presented with the consent form where they consented to participating in the study by ticking the "I Agree" box and then were asked to proceed to the questionnaires. However, after a 2-month period of recruitment via the ACCESS and AAHC websites and social media outlets, no participants had completed the study. See Appendix B for screening and background questionnaire. See Appendix C for informed consent form.

Therefore, the researcher initiated a second round of recruitment via Facebook, Instagram, and Twitter. According to the American Psychological Association (2016), "Facebook in research generally produces robust results and can be as easy as posting an advertisement on Facebook or adding a 'Log in with Facebook' button to an online survey" (p. 72). Participants were recruited via Facebook, Instagram, and Twitter using the snowball sampling method, which invites virtual friends to participate in the study as

well as to repost the study to provide access to their friends. Advantages of this method include reaching a large audience, reaching those who would not participate in the face-to face survey method, as well as a low cost. Disadvantages to this method may be that social media users would beget more users who are similar to each other, although it is argued that the diversity of potential participants on social media may guard against this occurrence.

The researcher used the same screening processes for the social media recruitment as described above. Once participants met the criteria for eligibility and consented to participate, they were presented with the five measures in the following order in an effort to build rapport and minimize distress: a background questionnaire, K6, PEDQ, ECR, and SAFE. The survey concluded with a list of mental health resources for refugees, immigrants, and asylees as well as contact information for the researcher in case they had questions about the study.

Statistical Analysis

Data analysis was conducted using SPSS. Prior to analysis, data were checked for to ensure they were loaded accurately in the survey platform. Data were also reviewed for outliers and missing items. Descriptive statistics and frequency distributions were generated and examined to ensure all data fell within the expected range of scores. Means and standard deviations were calculated for each of the continuous independent and dependent variables. Distributions were examined for normality and skewness and kurtosis were assessed. If a variable was not normally distributed, a decision was made whether to transform the variable. Decisions regarding outliers were made at that point as well. A zero-order correlation matrix was conducted on the independent and dependent

variables to gain insight into how the variables were correlated with each other. A table was provided of descriptive statistics of sample demographics. Correlations among demographic variables and major study variables were examined using Pearson correlation coefficient tests or independent samples t tests depending on the nature of the demographic variable. Based on these analyses, decisions were made about the need to include demographic variables as covariates or moderators in the main statistical analyses.

To test this study's hypotheses, a series of multiple regression analyses was conducted. The first hypothesis stated high level of sociocultural adversity would be correlated with high levels of attachment insecurity. Using a multiple regression, the total score of the ECR (attachment security) was regressed on the total score of the SAFE (acculturative stress) and the PEDQ (sociocultural adversity).

The second hypothesis stated attachment style would mediate the relationship between sociocultural adversity and psychological distress. This question was assessed using the mediation analysis (see Figure 1) as delineated by Baron and Kenny (1986). The first analysis was a multiple regression, in which the total score of the ECR (DV = attachment security) was regressed on the total score of the SAFE (IV = acculturative stress) and the PEDQ (IV = sociocultural adversity). The second analysis consisted of a multiple regression analysis in which the total score of the K6 (psychological distress) was regressed on the total score of the SAFE (acculturative stress) and the PEDQ (sociocultural adversity). The third statistical analysis was a multiple regression analysis in which the total score of the K6 (psychological distress) was regressed on the total score of the SAFE and the PEDQ (sociocultural adversity) while covarying for the total

score of the ECR (attachment security). Complete mediation occurs if the relationship between the independent variable and the dependent variable is no longer significant when the mediator is introduced as a predictor. Preacher and Hayes's (2004) *bootstrapping* macro was used to test mediation through linear combinations of indirect effects.

Figure 1

Mediation Model
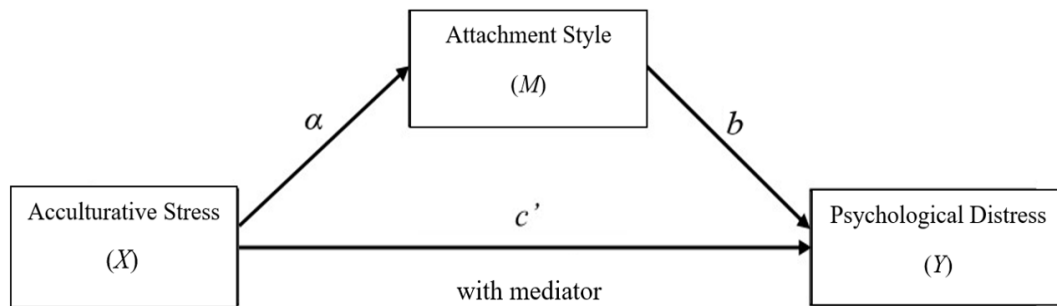
Note. The independent variable (sociocultural adversity) was hypothesized to have an indirect effect on the dependent variable (psychological distress) through the mediation.

Results

Participant Demographics

A total of 190 participants started the eligibility questionnaire and 122 completed the eligibility questionnaire. Criteria used to select participants for inclusion in the study were as follows: (a) foreign-born Arab migrants residing in the United States or Canada, including immigrants, refugees, and asylees; (b) entered the United States or Canada between the age of 5 and 17 years old; (c) had at least one adult family member from one of the 22 Arab-speaking countries; (d) were currently adults age 18 or older; and (e) did not endorse severe mental health problems, specifically psychotic disorders or severe intellectual disabilities. A total of 106 participants met eligibility, signed the informed consent, and completed the demographic questionnaire. However, 13 participants discontinued the survey after the completion of the demographic questionnaire and did not provide any data for any of the main study variables via the K6, ECR, PEDQ, or SAFE. These 13 individuals were excluded from the main analyses. Nevertheless, an analysis of differences in participant demographics between those who completed the main study variables and measures and those who did not was conducted. Overall, the excluded group comprised 97 cases, including participants who did not participate past the demographic questionnaire. Therefore, the final N was 93 participants. This study used the Survey Hero platform, which captures additional participants and potential participant data including the number of views the survey received and relative survey participation data. Of note, Survey Hero participation statistics revealed an overall participation rate of 13.6% and a completion rate of 52.2%, indicating the survey was viewed by 2,689 individuals, while 376 individuals participated in any form, which

included answering one or more question related to eligibility or beyond. Known participation demographics characteristics of the sample, after removal of the excluded participants, are summarized in the Table 1.

There were 41 female participants (44.1%) and 52 male participants (55.9%) in the study. Participants were 18 years old and older with a mean age of 32.6 years and a standard deviation of 9.6 years. Participants were asked to report their country of origin, with 48 participants (51.6%) from Syria, 13 participants (14%) from Egypt, seven participants (7.5%) from Jordan, seven participants (7.5%) from Palestine, six participants (6.5%) from Lebanon, and another six participants (6.5%) from Iraq. Furthermore, two participants (2.2%) were from UAE, two participants (2.2%) from Saudi Arabia, one participant (1.1%) from Qatar, and one participant (1.1%) from Libya.

Regarding religion, 80 participants (86%) identified as Muslim, eight participants (8.6%) identified as Christian, two participants (2.2%) identified as agnostic, and two participants (2.2%) identified as atheist. Zero participants identified as Jewish, and one participant did not provide a religious affiliation. Participants were asked to report their employment status. Sixty-seven participants (72%) reported being employed and 26 participants (28%) reported being unemployed. Participants were also asked to report their student status. Twenty-nine participants (31.2%) reported being a student and 64 participants (68.8) reported not being a student. Participants were asked to report their sexual orientation. Eighty-five participants (94.1%) identified as heterosexual, six participants (6.5%) identified as bisexual or queer, and two participants (2.2%) identified as homosexual. Regarding relationship status, 30 participants (32.3%) stated they were single, nine participants (9.7%) reported being engaged, 46 participants (49.5%) reported

being married, and eight participants reported being in a domestic partnership. Zero

participants reported being divorced. Table 1 shows the number of participant responses

in each of the groups of the discrete demographic variables. Table 2 shows the means,

standard deviations, and ranges for continuous variables.

Table 1

General Demographic Characteristics of Participants (N=93)

Demographic	*N*	Percent
Gender		
Female	41	44.1%
Male	52	55..9%
Religion		
Christian	8	8.6%
Muslim	80	86%
Jewish	0	0%
Atheist	2	2.2%
Agnostic	2	2.2%
Relationship status		
Single	30	32.3%
Engaged	9	9.7%
Married	46	49.5%
Divorced	0	0.0%
Domestic partnership	8	8.6%
Sexual orientation		
Heterosexual	85	91.4%
Homosexual	2	2.2%
Bisexual/Queer	6	6.5%
Student status		
Student	29	31.2%
Not a student	64	68.8%
Employment status		
Employed	67	72%
Unemployed	26	28%
Refugee	3	3.2%
Asylee	2	2.2%
Immigration status		

Demographic	*N*	Percent
Legal immigrant	76	81.7%
Visa holder	12	12.9%
State or province of residence		
Arizona	2	2.2%
California	3	3.2%
Connecticut	1	1.1%
Delaware	1	1.1%
Florida	14	15.1%
Georgia	2	2.2%
Illinois	9	9.6%
Louisiana	1	1.1%
Michigan	11	11.8%
Massachusetts	12	12.9%
New Jersey	3	3.2%
New York	3	3.2%
Ohio	2	2.2%
North Carolina	1	1.1%
Texas	2	2.2%
Virginia	2	2.2%
Washington	1	1.1%
Wisconsin	1	1.1%
Alberta	1	1.1%
Ontario	19	20.4%
Quebec	2	2.2%
Country of origin		
Syria	48	51.6%
Lebanon	6	6.5%
Palestine	7	7.5%
Egypt	13	14.0%
Jordan	7	7.5%
Iraq	6	6.5%
Qatar	1	1.1%
UAE	2	2.2%
Libya	1	1.1%
Saudi Arabia	2	2.2%
Country of residence		
United States	71	67.3%
Canada	22	23.7%

Note. One participant did not provide a religious affiliation

Table 2

Descriptive Statistics for Continuous Demographic Variables

	M	*SD*	Range
Current age	32.66	9.66	18 – 60
Age at immigration	12.13	4.81	5 – 17
Number of adult family members with whom you live (including spouse)	1.81	1.51	0 – 7
Number of adult family members with whom you immigrated	2.34	1.59	1 – 8

A zero-order correlation matrix was conducted on the independent and dependent variables to gain insight into how the variables were correlated with each other. Descriptive statistics and correlations are summarized in Table 3 and Table 4.

Table 3

Descriptive Statistics of Main Dependent and Independent Variables

	M	*SD*	*N*
K6	13.83	4.74	93
PEDQ	36.32	18.65	93
ECR	104.86	41.24	93
SAFE	45.29	21.05	93

Note. K6 = Kessler Psychological Distress 6-Item Scale; PEDQ = Perceived Ethnic Discrimination Questionnaire; ECR = Experiences in Close Relationships Questionnaire; SAFE = Societal, Attitudinal, Environmental, and Familial Acculturative Stress Scale.

Table 4

Summary of Zero-Order Intercorrelations of Independent and Dependent Test Variable

Scores

Measure	1	2	3	4
1. Kessler 6	--			
2. PEDQ	.33**	--		
3. ECR	.43**	.41**	--	
4. SAFE	.38**	.49**	.39**	--

Note. K6 = Kessler Psychological Distress 6-Item Scale; PEDQ = Perceived Ethnic Discrimination Questionnaire; ECR = Experiences in Close Relationships Questionnaire; SAFE = Societal, Attitudinal, Environmental, and Familial Acculturative Stress Scale.
** $p < 0.01$.

Overall, psychological distress was positively correlated with insecure attachment ($r = .43$, $p < .001$), ethnic discrimination ($r = .33$, $p = .001$), and acculturative stress ($r = .38$, $p < .001$). Ethnic discrimination was positively correlated with insecure attachment ($r = .41$, $p < .001$) and acculturative stress ($r = .49$, $p < .001$). Attachment security was positively correlated with acculturative stress ($r = .39$, $p < .001$).

Recoding of Demographic Variables

To address the issue of very small numbers in some of the categorical demographic variable groups and provide an analysis of differences in study variables based on groups of reasonable sizes, the relationship, sexual orientation, religion, and income status demographic variables were recoded. The relationship status variable was recoded into two groups of single ($n = 30$) and partnered ($n = 63$), where the partnered category included participants who indicated being married, engaged, in a relationship, or in a domestic partnership. The sexual orientation variable was recoded into two groups of heterosexual ($n = 85$) and LGBTQ ($n = 8$), where the LGBTQ category included participants who identified as homosexual (gay or lesbian), bisexual, or queer. The

religion variable was recoded into two groups of religious ($n = 88$) and non-religious ($n =$ 5). Income level was recoded into two groups of under \$74,999 ($n = 44$) and over \$75,000 ($n = 49$).

Analyses of Demographic Variables With Hypothesis Variables

Correlations between demographic variables (i.e., current age, age at migration, gender, sexual orientation, relationships status, employment status, student status, relationship status, religion, income) and major study variables (i.e., K6, ECR, PEDQ, or SAFE) were examined using Pearson's r coefficient test or independent samples t tests depending on the nature of the demographic variable. The demographic variables that emerged with a statistically significant correlation to the main testing variables included age, age at immigration, number of family members with whom participants immigrated, number of family members with whom participants lived (including spouses), gender, sexual orientation, relationship status, student status, and income. Though any demographic variable that was strongly correlated to this study's independent and dependent variables was considered as a moderator in the main analysis, no covariates or moderators were used because of their lack of significance on the mediation model.

Significant continuous demographic and main study variable Pearson correlations are summarized in Table 5. Significant discrete demographic and main study variable independent t test correlations are summarized in Table 6.

Table 5

Bivariate Correlations for All Continuous Demographic Variables and Hypothesis

Variables Measures

	1	2	3	4	5	6	7
1. K6	-						
2. PEDQ	.329**	-					
3. ECR	.427**	.412**	-				
4. SAFE	.383**	.488**	.394**	-			
5. Current age	-.351**	-0.166	-.275**	-0.155	-		
6. Age at Immigration	-0.125	-0.061	-.246*	0.094	0.171	-	
7. Number of adult family members with whom you immigrated	0.132	.219*	0.085	-0.002	-0.042	-0.118	-
8. Number of adult family members with whom you live (including spouse)	0.044	.249*	-0.013	0.055	0.026	-0.044	.543**

Note. K6 = Kessler Psychological Distress 6-Item Scale; PEDQ = Perceived Ethnic Discrimination
Questionnaire; ECR = Experiences in Close Relationships Questionnaire; SAFE = Societal, Attitudinal,
Environmental, and Familial Acculturative Stress Scale.
** $p < 0.01$. * $p < 0.05$.

Table 6

Independent t Test Scores for Discrete Demographic Variables and Study Variables

	t Test for Equality Scores				
	Gender	Sexual orientation	Relationship status	Student status	Income
K6	-2.74**	-3.21**	1.01	1.97*	2.70**
PEDQ	2.58*	-1.09	1.00	2.50**	3.13**
ECR	0.224	-2.95**	3.12**	1.39	3.48**
SAFE	-0.985	-2.17*	0.01	2.08*	2.57*

Note. K6 = Kessler Psychological Distress 6-Item Scale; PEDQ = Perceived Ethnic Discrimination
Questionnaire; ECR = Experiences in Close Relationships Questionnaire; SAFE = Societal, Attitudinal,
Environmental, and Familial Acculturative Stress Scale.
** $p < 0.01$. * $p < 0.05$.

The significant intercorrelations between demographic variables and main study variables were as follows. Age was negatively correlated with psychological distress ($r = -.35$, $p = .001$) and attachment security ($r = -.28$, $p = .008$). Age at immigration was negatively correlated with attachment security ($r = -.25$, $p = .017$). The number of family members with whom an individual immigrated was positively related to ethnic discrimination ($r = .22$, $p = .035$). The number of family members with whom an individual lived, including spouse, was positively correlated with the experience of ethnic discrimination ($r = .25$, $p = .016$). Men scored significantly higher on psychological distress ($M = 14.98$, $SD = 4.44$) than did women ($M = 12.37$, $SD = 4.74$), t (91) = -2.74, $p = .007$. Meanwhile, women scored significantly higher on ethnic discrimination ($M = 41.78$, $SD = 20.45$) than did men ($M = 32.02$, $SD = 16.02$), t (91) = 2.58, $p = .011$.

Regarding sexual orientation, LGBTQ identifying participants scored significantly higher on psychological distress ($M = 18.75$, $SD = 3.49$) when compared to heterosexual identifying participants ($M = 13.36$, $SD = 4.58$), t (91) = -3.22, $p = .002$; significantly higher on attachment insecurity ($M = 144.34$, $SD = 38.87$) when compared to heterosexual identifying participants ($M = 101.14$, $SD = 39.68$), t (8,85) = -2.94, $p = .004$; as well as significantly higher on acculturative stress ($M = 60.45$, $SD = 14.29$) when compared to heterosexual identifying participants ($M = 43.86$, $SD = 21.07$), t (95) = -2.17, $p = .03$. Furthermore, single participants scored significantly higher on attachment insecurity ($M = 123.49$, $SD = 39.02$) than did those who were partnered ($M = 96.023$, $SD = 39.87$), t (90) = 3.12, $p = .002$.

Regarding student status, student participants scored significantly higher on psychological distress ($M = 15.24$, $SD = 5.33$) when compared to non-students (M

=13.19, $SD = 4.33$), $t(91) = 1.97$, $p = .05$; significantly higher on ethnic discrimination ($M = 43.30$, $SD = 22.47$) when compared to non-students ($M = 33.16$, $SD = 15.85$), $t(91) = 1.97$, $p = .052$; as well as significantly higher on acculturative stress ($M = 51.91$, $SD = 23.81$) when compared to non-students ($M = 42.29$, $SD = 19.12$), $t(91) = 2.08$, $p = .04$. Interestingly, there was a statistically significant difference between the high earning and lower earning groups on all four study variables. Participants who reported earning $74,999 and below scored higher on psychological distress ($M = 15.18$, $SD = 4.97$) than did those earning $75,000 and higher ($M = 12.61$, $SD = 4.21$), $t(91) = 2.7$, $p = 0.008$; higher on ethnic discrimination ($M = 42.58$, $SD = 22.17$) than did the higher earning group ($M = 30.69$, $SD = 12.57$), $t(91) = 3.13$, $p = 0.003$; higher on attachment insecurity ($M = 119.70$, $SD = 37.13$) than did the high income group ($M = 91.54$, $SD = 40.53$), $t(91) = 3.48$, $p = 0.001$; and higher on acculturative stress ($M = 51.12$, $SD = 23.47$) than did the high income group ($M = 40.06$, $SD = 17.21$), $t(91) = 2.57$, $p = 0.012$.

Main Analyses and Hypothesis Tests

To test this study's hypotheses, a series of multiple regression analyses was conducted.

Hypothesis 1

The first hypothesis stated high level of sociocultural adversity (IV), as measured by the SAFE and PEDQ, would be associated with a high level of insecure attachment style (DV). This hypothesis was tested using a multiple regression analysis in which attachment security, measured by the total score of the ECR, was the outcome variable and sociocultural adversity, measured by the total score of the SAFE and the PEDQ, was the main predictor. The regression equation result was statistically significant, $F(2, 90) =$

12.59, $p < .001$. The adjusted R^2 for this equation was .20, meaning higher sociocultural adversity (as measured by scores on the SAFE and PEDQ) was associated with a higher level of insecure attachment. An examination of the standardized beta coefficients and significance tests showed sociocultural adversity (SAFE, $t = 2.37$, $p = .02$; PEDQ, $t = 2.70$, $p = .008$) was in fact a significant predictor of attachment security.

Hypothesis 2

Hypothesis 2 stated attachment security, measured by the ECR, would mediate the relationship between sociocultural adversity (SAFE and PEDQ) and psychological distress (K6). Greater attachment security was expected to increase the strength of the predictive relationship between sociocultural adversity and psychological distress. A mediation analysis was planned following Baron and Kenny's (1986) model, which indicates the independent variable must significantly influence the dependent variable in the first regression equation. Also, the independent variable must significantly influence the mediator in the second regression equation. Last, the mediator must significantly influence the dependent variable in the third equation. Complete mediation is present when the independent variable no longer influences the dependent variable after the mediator has been controlled and all of the above conditions are met. Partial mediation occurs when the independent variable's influence on the dependent variable is reduced after the mediator is controlled. This question was assessed using the mediation analysis (see Figure 2) as delineated by Baron and Kenny.

Figure 2

Proposed Mediation Model
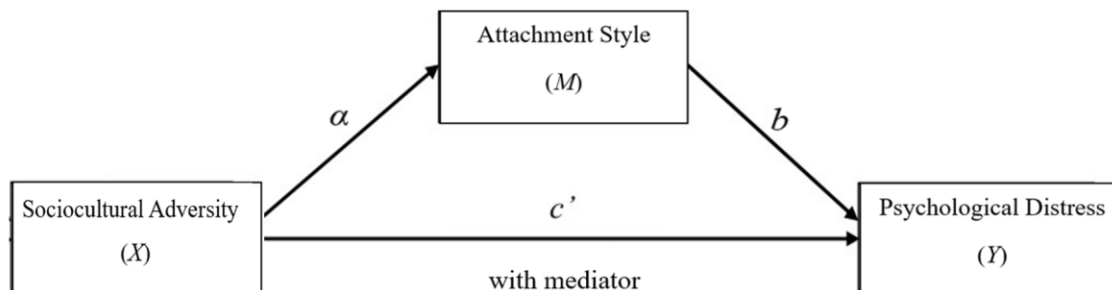
Note. The independent variable (sociocultural adversity) was hypothesized to have an indirect effect on the dependent variable (psychological distress) through the mediation.

To test the hypothesis that attachment security would mediate the relationship between sociocultural adversity and psychological distress, the researcher used the Preacher and Hayes (2004) PROCESS macro, as can be seen in Figure 3. Sociocultural adversity was a significant predictor of attachment security (x to M). Individuals with higher acculturative stress reported higher attachment insecurity ($a = .50$, $p < .019$) and individuals experiencing more ethnic discrimination also reported more attachment insecurity ($a = .64$, $p < .008$), which was subsequently related to more psychological distress ($b = .03$, $p < .001$). A 95% bias-corrected confidence interval based on 5,000 bootstrap samples indicated the indirect effect ($ab = .13$) was entirely above zero (0.05 to 0.25), which indicates a successful mediation. However, the path from the criterion variable (x to y) sociocultural adversity, a construct made up of unique independent variables (PEDQ and SAFE), was not a significant predictor of psychological distress with a non-significant direct effect ($c' = .03$, *ns*) and non-significant total effect (c = .05, *ns*). However, the independent variable, acculturative stress (SAFE), was found to be a significant predictor of psychological distress, $a = .07$, $p = .009$; the PEDQ $a = 05$, *ns*,

was not. Therefore, the full mediation model was not conducted using both independent

variables. Rather, acculturative stress only was used to test the mediation model.

Figure 3

Mediating Effect of Attachment Security (ECR) in the Relationship Between Sociocultural

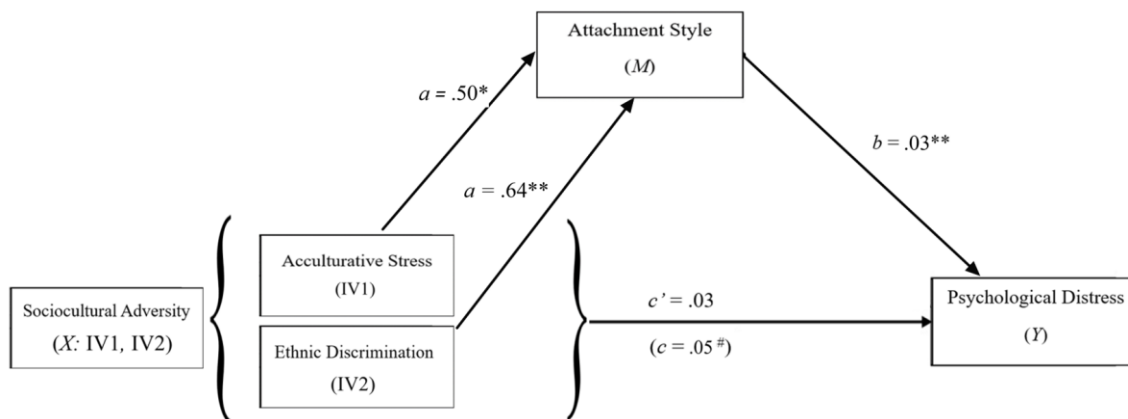*Adversity (SAFE and PEDQ) and Psychological Distress (K6)*

Note. The independent variable (sociocultural adversity) was hypothesized to have an indirect effect on the dependent variable (psychological distress) through the mediator.
*p < .05, **p < .01, # p < .001; All presented effects are unstandardized; a is effect of sociocultural adversity (measured by two IV: acculturative stress and ethnic discrimination) and on attachment security, b is effect of attachment security on psychological distress; c' is direct effect of acculturative stress on psychological distress; c is total effect of acculturative stress on psychological distress. See Appendix D for mediation model outputs.

In light of the significant relationship of the acculturative stress (SAFE) variable,

the full mediation model was conducted using the SAFE independent variable only.

Results from a simple mediation analysis indicated acculturative stress (SAFE) was

indirectly related to psychological distress (K6) through its relationship with attachment

security (ECR). First, as can be seen in Figure 4, individuals with higher acculturative

stress reported higher attachment insecurity ($a = .77$, $p < .001$), which was subsequently

related to more psychological distress ($b = .04$, $p < .001$). A 95% bias-corrected

confidence interval based on 5,000 bootstrap samples indicated the indirect effect ($ab =$

.03) was entirely above zero (0.01 to 0.05), which indicates a successful mediation.

Therefore, results of the simple mediation support that attachment style mediated the relationship between acculturative stress and psychological distress (see Figure 4).

Figure 4

Mediating Effect of Attachment Security (ECR) in the Relationship Between Acculturative Stress (SAFE) and Psychological Distress (K6)
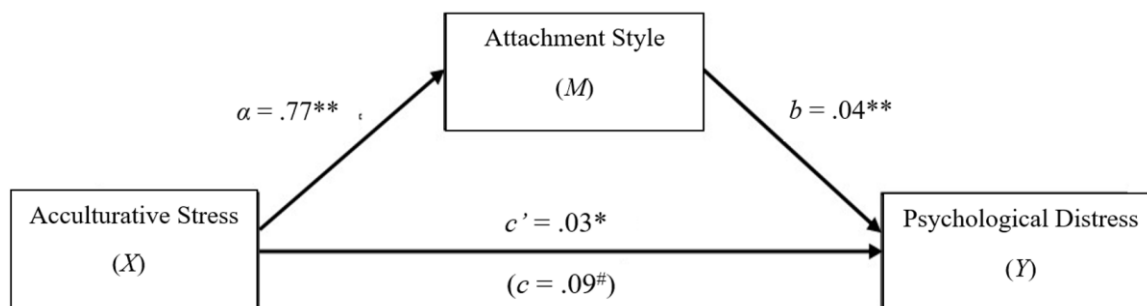
Note. *$p < .05$, **$p < .01$, # $p < .001$; All presented effects are unstandardized; *a* is effect of acculturative on attachment security, b is effect of attachment security on psychological distress; *c'* is direct effect of acculturative stress on psychological distress; *c* is total effect of acculturative stress on psychological distress. See Appendix D for mediation model outputs.

Results Summary

The first hypothesis stated sociocultural adversity would be associated with attachment insecurity. Supporting previous studies regarding acculturative stress and ethnic discrimination and attachment insecurity (Bakker et al., 2004; van Ecke et al., 2005; Wang & Mallinckrodt, 2006), sociocultural adversity—as measured by ethnic discrimination and acculturative stress—was found to have a significant, positive correlation with attachment insecurity. The second hypothesis stated attachment security would mediate the relationship between sociocultural adversity and psychological distress. Results indicated attachment mediated the relationship between acculturative stress and psychological distress. However, this was not true for the full sociocultural adversity construct, which consisted of both acculturative stress and ethnic

discrimination. The mediation model revealed the acculturative stress variable was significantly associated with psychological distress with attachment as the mediator; however, ethnic discrimination was not. Consistent with the existing literature, both ethnic discrimination (Ahmed et al., 2011; Pieterse et al., 2012) and acculturative stress (Berry, 2003; Berry & Kim, 1988; Farver et al., 2007) were independently correlated with psychological distress when examined separate of the mediation model. However, a multiple regression analysis of ethnic discrimination and acculturative stress showed ethnic discrimination was no longer significant in predicting psychological distress. Last, consistent with the existing research (Madjlessi, 2016), attachment insecurity also emerged as a significant predictor of psychological distress.

Discussion

Prior to this study, the social, cultural, and political adversity present within a person's migration process and their relationships with attachment security had yet to be examined in the Arab migrant population in the United States. Many Arab migrants have been fleeing their country of origin because of political unrest, war, and persecution only to find themselves met with discrimination and hostility in the United States and Canada (Rousseau et al., 2011; Semaan, 2014). The current research was the first to this researcher's knowledge to examine the relationship between sociocultural adversity and adult attachment style in the Arab migrant population. Results showed sociocultural adversity, as measured by ethnic discrimination and acculturative stress, had a significant, positive correlation with attachment insecurity, which is consistent with the existing research (Bakker et al., 2004; van Ecke et al., 2005; Wang & Mallinckrodt, 2006). This research also tested attachment style as a mediator between sociocultural adversity and psychological distress with results revealing attachment style only mediated the relationship between acculturative stress and psychological distress, whereas ethnic discrimination did not, thus not the full sociocultural adversity construct. Last, attachment insecurity, ethnic discrimination, and acculturative stress were linked to increased psychological distress, which is consistent with the existing literature (Ahmed et al., 2011; Berry, 2003; Berry & Kim, 1988; Farver et al., 2007; Madjlessi, 2016; Pieterse et al., 2012).

Results endorsed a significant relationship between sociocultural adversity and an insecure attachment orientation, which is also consistent with attachment theory and past research (Mikulincer & Shaver, 2007; Polek et al., 2008). Attachment theory maintains

that an individual's attachment resolution predicts the way they perceive themselves, others, and the world as well as their ability to initiate and maintain relationships (Mikulincer & Shaver, 2007). In fact, secure attachment has been linked to positive psychological and sociocultural adjustment among immigrants (Polek et al., 2008), as well as an improved capacity for dealing with the new cultural environments. It is positively associated with integration acculturation strategy, with increased reports of contact and identification with the host and heritage cultures (Ferenczi & Marshall, 2013). Sociocultural adversity and adjustment are fraught with negotiating relational processes related to a migrant's heritage and host culture and their people, as well as making sense of experiences of discrimination. In turn, it is not surprising that attachment security was found to be associated with sociocultural adjustment in the current study. This study's finding is consistent with the existing literature. Van Oudenhoven and Hofstra (2006) found a link between sociocultural adjustment and attachment orientation, revealing those with an insecure attachment orientation exhibited fewer adaptive acculturation strategies. In another study, van Ecke and colleagues (2005) identified a higher prevalence of insecure attachment in immigrant groups when compared to non-immigrant groups, which is the research that spurred this researcher's curiosity regarding the connection between sociocultural adversity and attachment. Bakker and colleagues (2004) identified attachment style as a predictor of sociocultural adjustment. Wang and Mallinckrodt (2006) found attachment anxiety was significantly negatively associated with acculturation to U.S. culture.

A second hypothesis was that attachment orientation would mediate the relationship between sociocultural adversity and psychological distress. Sociocultural

adversity was conceptualized as a combination of the level of acculturative stress a

migrant experiences as well as the experiences of ethnic discrimination. The mediation

model revealed attachment orientation did mediate the relationship, but only between

acculturative stress and psychological distress, and not ethnic discrimination. This finding

is interesting. On the one hand, it is not what was predicted in this study. Meanwhile, it

does not necessarily go against the prediction. One way to understand the finding is to

examine the nature of the mediating factor (attachment style) and its relationship to the

independent variables from a theoretical perspective. Attachment style is fundamentally

rooted in a relational process that begins with the dynamics between a child and their

early primary caregiver and is later re-enacted within key adult relationships, including

those with romantic partners and authority figures in the workplace and other settings

(Mikulincer & Shaver, 2007). Furthermore, attachment style has been found to influence

an individual's psychological and sociocultural adaptation as well as a psychologically

positive acculturation strategy in immigrants (Ferenczi & Marshall, 2013; Polek et al.,

2008). One possible explanation is that the ethnic discrimination experience is not rooted

in a bilateral relational process. Rather, ethnic discrimination is something that happens

to an individual by the dominant culture's system and people, so it is not significantly

affected by a migrant's attachment style. In contrast, acculturation is rooted in a relational

process the individual embarks upon by interacting and negotiating relationships with the

heritage and host culture and people. From this perspective, it would follow that

attachment style would mediate the relationship between acculturative stress and

psychological distress but not ethnic discrimination, which is inconsistent with the

existing research. Existing research highlights the importance of integrating ethnic

discrimination with acculturative stress as it relates to psychological distress and has shown sociocultural adversity (ethnic discrimination and acculturative stress) to be positively correlated with psychological distress (Ahmed et al., 2011). Independent from the mediation model, sociocultural adversity as a construct also failed to replicate the model. The findings in this study indicated a relationship between sociocultural adversity and psychological distress, revealing ethnic discrimination to not be significant in a multiple regression analysis on psychological distress. However, consistent with research are the strong correlations between ethnic discrimination, acculturative stress, and psychological distress independently.

Furthermore, this study identified a number of significant relationships between study demographics and main study variables. For one, older age was associated with lower psychological distress. Some research indicates individuals who have lived in the United States for 10 years or more scored higher on the happiness scale (Padela & Heisler, 2010). Furthermore, an alternate explanation may be that given the research indicating insecure attachment declines with age (Chopik et al., 2019), it may follow that so does psychological distress given that insecure attachment has been consistently linked with psychological distress. Moreover, results of this study showed that as age at immigration decreased, attachment insecurity increased, meaning those who immigrated at a younger age reported higher attachment insecurity, and thus they reported more difficulty with sociocultural adaptation. Older youth may experience greater difficulty adapting to the Western mainstream culture especially in light of the acculturation gap and conflict that ensue as parents wish for their children to maintain the values and beliefs of their county and culture of origin (Hakim-Larson et al., 2007), which is not

consistent with the age trend found in the current study. Perhaps this finding can be better understood by examining the limited range of age at immigration included in this study (5 to 17 years old). Though the literature indicates younger age at immigration is linked to improved adaptation to U.S. culture, the small age range explored in the current study accounts for micro changes in age at immigration trends. The existing literature maintains that Arabs who immigrated to the United States at a younger age and spent less time visiting their country of origin reported higher adaptation to U.S. culture (Faragallah et al., 1997). However, one explanation that makes sense is that children who moved here closer to the age of 5 may have experienced more attachment disruption because of the proximity to the 1 to 5 years of age range, which has been identified by Bowlby (1979) as critical phase of child attachment style formation. There are other factors that play into the variability in Arab migrant experiences, especially the pre-migration, migration, and post-migration experiences. Experiences can differ dramatically based on the conditions of the country from which they are migrating; the level of war and political unrest; attachment ruptures due to not migrating with the original family unit; traumatic events during the migration process; entering the country as a visa holder, refugee, or asylee; and experiences in refugee camps and associated experiences of trauma. In fact, according to Nicholson (1997), pre-migration and post-migration trauma account for the majority of the variance in psychotic disorders.

Regarding relationship status, findings showed individuals who identified as single were more likely to experience attachment insecurity than did those who were partnered, which is also consistent with the literature (Adamczyk & Luyckx, 2015; Chopik et al., 2019). One study showed people with higher scores on the attachment

anxiety dimension had a higher chance of being single (Adamczyk & Luyckx, 2015).

Research indicates a high level of attachment insecurity, specifically anxiety about being

abandoned or unloved, contributes most to young adults' likelihood to be single; people

with lower levels of anxiety regarding being rejected or unloved exhibit a higher

probability of being in a committed relationship (Collins & Read, 1990). An alternate

explanation, from a longitudinal perspective, is that people who are partnered exhibit an

increase in attachment security over time (Chopik et al., 2019). Current findings support

that individuals who immigrated with more family members experienced more ethnic

discrimination compared to those who immigrated with fewer family members. From an

acculturation strategy perspective, research indicates those who assimilate and identify

more with the host culture experience less ethnic discrimination (Berry, 2006), which

could explain the current finding. Adolescents who immigrated with fewer adult

individuals may also have had less of an acculturation gap and subsequent conflict with

parents, and thus were less exposed to pressure and pleas to maintain traditional heritage

customs and beliefs, all of which act as barriers to assimilation. From a trauma theory

perspective, an alternate explanation may be that migrants who are currently living with

more family members may have increased exposure to ethnic discrimination given their

personal experiences with ethnic discrimination and also bearing witness to those of their

family members (Briere & Scott, 2006). However, some inconsistency remains with other

literature showing those who have more contact with people from their same ethnic group

report less ethnic discrimination (Kim, 1999).

 The current study revealed key gender differences, namely, that men were more

likely to experience psychological distress than were women; meanwhile, women were

more likely to experience ethnic discrimination than were men. Past research has

revealed gender to be a moderator of psychological distress and shown men experience

higher levels of psychological distress (Assari & Lankarani, 2017). Specifically, higher

ethnic discrimination has been associated with higher psychological distress among men

but not women Arab Americans (Assari & Lankarani, 2017). Research indicates women

do not experience the same psychological distress from ethnic discrimination because

they have coping mechanisms that help them alleviate the distress, such as discussing

their thoughts and feelings with others through social support (Mensch et al., 2003). Arab

men, on the other hand, are less likely to share their emotions, more likely to internalize

their emotional problems, and do not seek social support to the same extent as do women

(Mensch et al., 2003). Therefore, it is not surprising than men reported more

psychological distress than did women. Furthermore, this study revealed women

experienced more ethnic discrimination than did men, which is consistent with some of

the literature indicating Muslim Arab women who adhere to their religious traditional

clothing and Hijab experience more ethnic discrimination than do men (Awad, 2010; D.

Cole & Ahmadi, 2003; Ghaffarian, 1998). In fact, a study by D. Cole and Ahmadi (2003)

revealed Muslim women reported experiencing prejudice and discrimination and

consequently chose to remove the hijab after 9/11. Meanwhile, studies have shown many

Arab women who abandoned the traditions of their country of origin (e.g., employed

outside of the house, adapted clothing to mainstream Western styles) experienced less

ethnic discrimination (Amer & Hovey, 2007; Naff, 1994).

  Another key demographic difference that emerged related to sexual orientation.

This study showed individuals who identified their sexual orientation as LGBTQ

experienced more psychological distress and insecure attachment orientation. These findings are consistent with literature that attributed increased psychological distress to minority stress, rejection, and discrimination (Kelleher, 2009; Mustanski et al., 2010). However, the finding that LGBTQ identifying Arab migrants have more insecure attachment orientation can be explained by examining the difference between Western and Arab cultural considerations regarding marriage, gender roles, sex and sexuality, and the role of shame. Western mainstream culture and research indicate attachment security in gay and lesbian populations has been consistently linked to sexual orientation disclosure to parents at a young age and the subsequent maintenance of healthy relationships, parental acceptance, and support after said disclosure (Carnelley et al., 2011; Elizur & Mintzer, 2003; Ridge & Feeney, 1998). Meanwhile, attachment insecurity is associated with higher degrees of internalized shame and a nonintegrated sense of identity (Brown & Trevethan, 2010; Wells & Hansen, 2003).

However, in the Arabic culture, discussing sex with anyone other than a spouse is considered taboo (Abudabbeh, 2005) and premarital sex is unacceptable (Ajrouch, 1999; Al-Krenawi & Jackson, 2014). In fact, sex is almost never talked about between Arab parents and children, and dating, premarital sex, and extramarital sex are considered behaviors that bring shame to the individual and the family (Ikizler & Szymanski, 2014). Moreover, marriage with traditional gender roles is a major component of the maintenance of Arabic immediate and extended family structures. In fact, Arabic couples may find themselves staying in unhappy marriages to uphold the family unity and honor (Ikizler & Szymanski, 2014). Given the aforementioned aspects of the Arab culture, LGBTQ identifying Arabs, unlike individuals from Western mainstream, are shamed;

their exploration of sexual identity prohibited; and any divergence from the traditional heteronormative, patriarchal family model is viewed as a dishonor (Abudabbeh, 2005; Ikizler & Szymanski, 2014). Secure attachment in LGBTQ individuals is predicated on early disclosure of an alternative sexual orientation to parents, subsequent parental support, maintenance of a healthy relationship post disclosure, and low levels of internalized shame, all of which is not possible given the Arab cultural context. Thus, it is not surprising that LGBTQ identifying Arabs emerged as having an insecure attachment orientation. In general, Arab LGBTQ individuals are not afforded a cultural context within which they can explore their sexual identity development and discuss or disclose their sexual orientation, while subsequently maintaining a positive relationship with their parents. Arab LGBTQ people are often shamed, which is likely internalized. In turn, the Arab LGBTQ population does not have the cultural luxury to meet and cultivate what research has indicated as predictors of maintaining a secure attachment style.

Worth noting is that participants who identified as LGBTQ did not experience more acculturative stress or ethnic discrimination. In general, research has maintained that having multiple minority identities (e.g., sexual orientation, race, ethnicity) has a multiplicative impact on psychological distress and mental health disorders included in mainstream Western culture and the Arab culture (E. R. Cole, 2009; Sutter & Perrin, 2016; Zakalik & Wei, 2006).

Arab LGBTQ identifying individuals endorsing more psychological distress and insecure attachment, but not more acculturative stress and ethnic discrimination, may be explained by prior literature on microaggression in the LGBTQ people of color population. Balsam and colleagues (2011) identified types of microaggressions among

LGBTQ people of color, including microinvalidation (diminishing the importance of race by White LGBT people) and microinsults (exoticizing/objectifying LGBTQ people of color). Therefore, an explanation for LGBTQ identifying Arabs not endorsing ethnic discrimination or acculturative stress may be an outcome of internalizing the oppression of ethic/racial invisibility and exoticization, thereby endorsing heightened psychological distress without the awareness of an appropriate source attribution.

Also, students appeared to experience more psychological and acculturative stress as well as ethnic discrimination than did non-students, which is consistent with literature comparing the experience Caucasian and non-Caucasian college students (Suarez-Balcazar et al., 2003). In fact, Arab and Muslim American students have been noted to experience significantly more ethnic discrimination when compared to students of other ethnic groups (D. Cole & Ahmadi, 2016; Shammas, 2017).

Last, Arab individuals who earned over $75,000 a year appeared to experience less psychological distress, attachment insecurity, ethnic discrimination, and acculturative stress. Consistent with past research (Seng et al., 2012), Arabs reporting a higher level of education also reported a higher income and ability to assimilate to mainstream culture than those with less income and were less likely to participate in ethnic practices as they demonstrated a higher rate of assimilation to the dominant culture. Those with higher income and education appear to better assimilate to mainstream culture. Studies have shown assimilation to the mainstream culture aids in mitigating experiences with ethnic discrimination, acculturative stress, and psychological distress (Amer & Hovey, 2007; Padela & Heisler, 2010). Furthermore, additional research has shown lower income is

associated with insecure attachment orientation, which is consistent with the current findings related to attachment insecurity (Rawatlal et al., 2015).

Clinical Implications

This study fills a gap in the existing Arab American literature and expands the understanding of the instrumental role of attachment style in the nature of an individual's experience of acculturation, as well as its mediational role between acculturative stress and psychological distress. Further, the study results provide clinicians with a rationale to screen for attachment style when working with the Arab immigrant population in the United States and Canada. Clinicians working with this population may benefit from focusing on interventions geared toward modulating the cognitive, affective, and relational schemas associated with attachment insecurity. In turn, clinicians can support the Arab migrant, refugee, and asylee population in improving their psychological and sociocultural adjustment, as well as decreasing their levels of psychological distress associated with the acculturation process. This research indicates there are benefits to attachment screening and focusing on treatment modalities that enhance felt security in order to improve the manner in which migrants relate to their host and heritage culture, thereby increasing the use of social support, which has been shown to decrease psychological distress (Bowlby, 1982; Oppedal & Roysamb, 2004). Last, clinicians can be more sensitive and informed when dealing with this population in the clinical setting. The therapeutic alliance is a major component of the therapeutic process and is rooted in the relationship. Therefore, being aware of the attachment style of the client can inform the manner in which the clinician interacts with the client.

Limitations

Though an observational cross-sectional research design was employed given its efficiency in resource and time and allowing researchers to examine relationships among variables, a weakness of this design is the inability to conclude directionality and causation of variables. An additional weakness is the absence of understanding from a timeline perspective. A longitudinal study would illuminate the changes, if any, in attachment style at different points of the migration process. In addition, this study did not capture finer differences in attachment styles. Specifically, the researcher in the current study only examined the secure versus insecure attachment orientations and did not further analyze the diverse types of insecure attachment, which include anxious, avoidant, and disorganized attachment subcategories (Ainsworth, 2014; Ainsworth et al., 1978; Main & Solomon, 1990).

Regarding threats to external validity, there are several limitations and implications for bias in the current study. One limitation of the study is that the design did not enable the researcher to take into consideration the heterogeneity of the Arab population. There are over 22 Arabic-speaking countries with their own cultural and religious backgrounds (Arab American Institute Foundation, 2014), which this study did not capture. Another limitation of this study relates to the recruitment method and the various differences in the characteristics and demographics of the Arab participants. Using online research through social media can exclude participants otherwise reached through face-to-face research. Research indicates internet recruitment of Arab Americans is biased toward reaching those who are more highly educated and possibly those who are more oriented to the U.S. culture (Amer & Hovey, 2012). Administering the measures in

English only excluded non-English speaking Arabs, which especially affected the ability to reach Arab asylees and refugees. Another important limitation of recruitment is that the snowball approach may have reached people who identified more as Arab and may have been more attached to Arab culture.

Additionally, given the hostile social, cultural, and political climate and associated prejudice and discrimination, Arabs may have been concerned about identifying themselves as such and experienced fear, which may have decreased participation in the surveys as well as introduced bias related to presenting in an overly positive light (Barry, 2001; Benstead, 2018). In fact, a 2-month period of recruitment via ACCESS and AAHC websites yielded no participation in the study. In the first month, the ACCESS had not posted the survey to its social media page, which was discovered in a follow-up call by the researcher to inquire about the lack of study participants. However, in the following month, ACCESS did post the study successfully to its social media outlets as well as distributed the study via its member email list; however, neither recruitment effort yielded any participants. In turn, participant recruitment procedures were revised to the disseminate the study on personal social media in which snowball sampling was used to obtain participation in the study. Snowball sampling is a non-probability sampling method in which research participants recruit other participants for the study. This sampling method can act as a limitation as it was not possible to use a sampling frame of all Arab Americans from which to draw a random sample.

Because of the lack of response to the original recruitment methods and subsequent successful participation through the snowballing method, it is possible that participants were more comfortable participating in the study when it was shared by and

recommended by friends and family. In fact, research indicates issues of mistrust in the recruitment of Arab participants have to be addressed and it has been agreed upon that the use of trusted insiders is critical for increased participation (Aroian et al., 2009). It is not surprising especially when taken in the context of the current sociopolitical climate and anti-Arab sentiment. Arabs are afraid of outing their ethnic identity in a time when the sociopolitical climate is rampant with ethnic discrimination, hate crimes against Arabs, and oppressive systemic policies (Akram, 2002). Furthermore, an examination of default Survey Hero statistics revealed a substantially low overall participation rate of 13.6%, indicating that of the 2,689 unique individuals who opened the survey, only 367 answered one or more survey questions related to eligibility or beyond. This is somewhat consistent with existing data regarding internet recruitment in this population. Research revealed a participation rate of 8.75%, which is slightly lower than the current study statistics (Barry, 2001). Research indicates researchers who were present in the community where the study was located obtained 87% participation rates secondary to the use of personal contact and being physically present (Jaber, 2003).

Future Directions

Future research direction includes considering a longitudinal study to gain empirical evidence of attachment style change over the migration process and exploring whether attachment style in the Arab population also becomes more secure over time with partnered individuals. Another interesting area of future inquiry would be to gain a better understanding of the role of age, time spent in the country, and psychological distress. Results of this study showed older age was associated with lower psychological distress, and the existing literature supports that Arabs who have lived in the United

States for 10 years or more scored higher on the happiness scale (Padela & Heisler, 2010). An interesting future direction would be to study whether age, after controlling for effects of time in country, still has the same correlation with psychological distress. Furthermore, expanding and diversifying the recruitment methods can assist in reaching a less biased sample of the Arab population in the United States and Canada. Administering the questionnaires in both English and Arabic, as well as in person and on the internet, would allow the research to reach more participants, thus diversifying the sample. Research has indicated face-to-face research tends to reach participants with lower socioeconomic and educational status, whereas the internet tends to be more biased toward reaching more educated and acculturated participants (Amer & Hovey, 2007).

Conclusion

The current research was the first to examine the relationship between sociocultural adversity and adult attachment style in the Arab migrant population and results showed sociocultural adversity—as measured by ethnic discrimination and acculturative stress—to have a significant, positive correlation with attachment insecurity, which is consistent with the existing research (Bakker et al., 2004; van Ecke et al., 2005; Wang & Mallinckrodt, 2006). This research also tested attachment style as a mediator between sociocultural adversity and psychological distress, with results revealing attachment style only mediated the relationship between acculturative stress and psychological distress, whereas ethnic discrimination did not, thus not the full sociocultural adversity construct. One way to understand the finding is that attachment style is fundamentally rooted in a relational process (Mikulincer & Shaver, 2007). Meanwhile, ethnic discrimination is something that happens to an individual by the

dominant culture's system and people and is not influenced by a migrant's attachment style. Last, attachment insecurity, ethnic discrimination, and acculturative stress were linked to increased psychological distress, which is consistent with the existing literature (Ahmed et al., 2011; Berry, 2003, Berry & Kim, 1988; Farver et al., 2007; Pieterse et al., 2012). This research fills a gap in the existing literature and provides clinicians with a rationale for screening for attachment style when working with the Arab immigrant population in the United States and Canada.

A cross-sectional design was used in the study to survey 93 foreign-born adult Arabs who immigrated to the United States or Canada between the ages of 5 and 17 years old. The cross-sectional design posed a limitation in that it did not allow for conclusions to be made about directionality and causation of variables. The study was disseminated through social media and the researcher used snowball sampling, a non-probability sampling method in which research participants recruit other participants for the study, which introduced another limitation in terms of sampling bias. Furthermore, online research limits the scope of participant reach and excludes participants who might otherwise be reached through face-to-face research. In the case of the Arab American population, online research is biased toward reaching those who are more highly educated and possibly more oriented to the U.S. culture (Kahan & Al-Tamimi, 2009). Last, using English only measures excluded non-English speaking Arabs, especially Arab asylees and refugees. Nevertheless, future research directions include considering a longitudinal design, expanding participant recruitment methods to include face-to-face in addition to online channels, and including an Arabic version of the measures to reach Arab only speaking participants.

References

Abouguendia, M., & Noels, K. A. (2001). General and acculturation-related daily hassles and psychological adjustment in first- and second-generation South Asian immigrants to Canada. *International Journal of Psychology*, *36*(3), 163–173. https://doi.org/10.1080/00207590042000137

Abudabbeh, N. (2005). Arab families: An overview. In M. McGoldrick, J. Giordano, & N. Garcia-Preto (Eds.), *Ethnicity and family therapy* (pp. 423–436). The Guilford Press.

Adamczyk, K., & Luyckx, K. (2015). An investigation of the linkage between relationship status (single vs. partnered), identity dimensions and self-construals in a sample of Polish young adults. *Polish Psychological Bulletin*, *46*(4), 616–623. https://doi.org/10.1515/ppb-2015-0068

Ahmed, S., Kia-Keating, M., & Tsai, K. (2011). A structural model of racial discrimination, acculturative stress, and cultural resources among Arab American adolescents. *American Journal of Community Psychology*, *48*(3-4), 181–192. https://doi.org/10.1007/s10464-011-9424-3

Ainsworth, M. D. S. (2014). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press.

Ainsworth, M. D. S., & Bell, S. M. (1970). Attachment, exploration, and separation: Illustrated by the behavior of one-year-olds in a strange situation. *Child Development*, *41*(1), 49–67. https://doi.org/10.2307/1127388

Ainsworth, M. D. S., Bell, S. M., & Stayton, D. J. (1971). Individual differences in strange-situation behavior of one-year-olds. In H. R. Schaffer (Ed.), *The origins of human social relations* (pp. 17–58). Academic Press.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Erlbaum.

Ainsworth, M. D. S., & Bowlby, J. (1991). An ethological approach to personality development. *American Psychologist*, *46*(4), 333–341. https://doi.org/10.1037/0003-066X.46.4.333

Ajrouch, K. J. (1999). Family and ethnic identity in an Arab American community. In M. Suleiman (Ed.), *Arabs in America: Building a new future* (pp. 129–139). Temple University Press.

Akram, S. M. (2002). The aftermath of September 11, 2001: The targeting of Arabs and Muslims in America. *Arab Studies Quarterly*, *24*(2/3), 61–119. http://www.jstor.org/stable/41858412

Al-Krenawi, A., & Jackson, S. O. (2014). Arab American marriage: Culture, tradition, religion, and the social worker. *Journal of Human Behavior in the Social Environment*, *24*(2), 115–137. https://doi.org/10.1080/10911359.2014.848679

Amer, M., & Hovey, J. (2005). Examination of the impact of acculturation, stress, and religiosity on mental health variables for second-generation Arab Americans. *Ethnicity and Disease*, *15* (1), 111–112. https://www.jhoveyphd.com/uploads/1/2/7/2/127269752/amer___hovey_2005.pdf

Amer, M., & Hovey, J. (2007). Socio-demographic differences in acculturation and mental health for a sample of 2nd generation/early immigrant Arab Americans.

Journal of Immigrant and Minority Health, *9*(4), 335–347.

https://doi.org/10.1007/s10903-007-9045-y

Amer, M. A., & Hovey, J. D. (2012). Anxiety and depression in a post-September 11

sample of Arabs in the USA. *Sociology Psychiatry and Psychiatric Epidemiology*,

47, 409–418. https://doi.org/10.1007/s00127-011-0341-4

American Psychological Association. (2016). *Facebook as a research tool*.

https://www.apa.org/education/ce/facebook-research.pdf

Arab American Institute Foundation. (2014). *National Arab American demographic

profile*. http://www.aaiusa.org/demographics

Arab American Institute Foundation. (2017). *Hate crimes issue brief*.

http://www.aaiusa.org/aai_issue_brief_hate_crimes#_ftn2

Aranda, M. (2008). Relationship between religious involvement and psychological well-

being: a social justice perspective. *Health & Social Work*, *33*(1), 9–21.

https://doi.org/10.1093/hsw/33.1.9

Aroian, K., Hough, E. S., Templin, T. N., Kulwicki, A., Ramaswamy, V., & Katz, A.

(2009). A model of mother-child adjustment in Arab Muslim immigrants to the

US. *Social Science & Medicine*, *69*(9), 1377–1386.

https://doi.org/10.1016/j.socscimed.2009.08.027

Arredondo-Dowd, P. M. (1981). Personal loss and grief as a result of immigration.

Personnel & Guidance Journal, *59*(6), 376. https://doi.org/10.1002/j.2164-

4918.1981.tb00573.x

Assari, S., & Lankarani, M. (2017). Discrimination and psychological distress: Gender differences among Arab Americans. *Frontiers in Psychiatry*, *8*, 23. https://doi.org/10.3389/fpsyt.2017.00023

Awad, G. (2010). The impact of acculturation and religious identification on perceived discrimination for Arab/Middle Eastern Americans. *Cultural Diversity and Ethnic Minority Psychology*, *16*(1), 59–67. https://doi.org/10.1037/a0016675

Bakker, W., van Oudenhoven, J. P., & van Der Zee, K. I. (2004). Attachment styles, personality, and Dutch emigrants' intercultural adjustment. *European Journal of Personality*, *18*(5), 387–404. https://doi.org/10.1002/per.515

Baldwin, M., Keelan, J., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social-cognitive conceptualization of attachment working models: Availability and accessibility effects. *Journal of Personality and Social Psychology*, *71*(1), 94–109. https://doi.org/10.1037//0022-3514.71.1.94

Balsam, K., Molina, Y., Beadnell, B., Simoni, J., & Walters, K. (2011). Measuring multiple minority stress: The LGBT People of Color Microaggressions Scale. *Cultural Diversity and Ethnic Minority Psychology*, *17*(2), 163–174. https://doi.org/10.1037/a0023244

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173–1182. https://doi.org/10.1037//0022-3514.51.6.1173

Barry, D. T. (2001). Assessing culture via the internet: Methods and techniques for

    psychological research. *Cyberpsychology & Behavior*, *4*(1), 17–21.

    https://doi.org/10.1089/10949310151088334

Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A

    test of a four-category model. *Journal of Personality and Social Psychology*,

    61(2), 226–244. https://doi.org/10.1037/0022-3514.61.2.226

Beitin, B. K., Allen, K. R., & Bekheet, M. (2010). A critical analysis of Western

    perspectives on families of Arab descent. *Journal of Family Issues*, *31*(2), 211–

    233. https://doi.org/10.1177/0192513X09345480

Belizaire, L. S., & Fuertes, J. N. (2011). Attachment, coping, acculturative stress, and

    quality of life among Haitian immigrants. *Journal of Counseling & Development*,

    89(1), 89–97. https://doi.org/10.1002/j.1556-6678.2011.tb00064.x

Benstead, L. (2018). Survey research in the Arab world: Challenges and opportunities.

    Political Science & Politics, *51*(3), 535–542.

    https://doi.org/10.1017/S1049096518000112

Berry, J. W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An

    International Review*, *46*(1), 5–34. https://doi.org/10.1111/j.1464-

    0597.1997.tb01087.x

Berry, J. W. (2003). Conceptual approaches to acculturation. In K. Chun, P. Balls-

    Organista, & G. Martin (Eds.), *Acculturation: Advances in theory, measurement,

    and applied research* (pp. 17–37). American Psychological Association Press.

    https://doi.org/10.1037/10472-004

Berry, J. W. (2006). Acculturative stress. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of multicultural perspectives on stress and coping* (pp. 287–298). Springer. https://doi.org/10.1007/0-387-26238-5_12

Berry, J. W., & Kim, U. (1988). Acculturation and mental health. In P. R. Dasen, J. W. Berry, & N. Sartorius (Eds.), *Cross-cultural research and methodology series, Vol. 10. Health and cross-cultural psychology: Toward applications* (pp. 207–236). Sage.

Bessaha, M. L. (2017). Factor structure of the Kessler Psychological Distress Scale (K6) among emerging adults. *Research on Social Work Practice*, *27*(5), 616–624. https://doi.org/10.1177/1049731515594425

Bodnar, S. (2004). Remember where you come from: Dissociative process in multicultural individuals. *Psychoanalytic Dialogues*, *14*(5), 581–603. https://doi.org/10.1080/10481880409353128

Bowlby, J. (1969). *Attachment and loss, Vol. 1. Attachment*. Basic Books.

Bowlby, J. (1973). *Attachment and loss, Vol. 2. Separation: Anxiety and anger*. Basic Books.

Bowlby, J. (1979). *The making and breaking of affectional bonds*. Routledge.

Bowlby, J. (1980). *Attachment and loss, Vol. 3. Loss: Sadness and depression*. Basic Books.

Bowlby, J. (1982). *Attachment and loss: Vol. 1. Attachment*. Hogarth Press.

Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Roles (Eds.), *Attachment theory and close relationships* (pp. 46–76). Guilford.

Briere, J., & Scott, C. (2006). *Principles of trauma therapy: A Guide to symptoms, evaluation, and treatment*. Ringgold.

Brondolo, E., Kelly, K. P., Coakley, V., Gordon, T., Thomson, S., Levy, E., Cassells, A., Tobin, J. N., Sweeny, M., & Contrada, R. J. (2005). The Perceived Ethnic Discrimination Questionnaire: Development and preliminary validation of a community version. *Journal of Applied Social Psychology*, *35*(2), 335–365. https://doi.org/10.1111/j.1559-1816.2005.tb02124.x

Brown, J., & Trevethan, R. (2010). Shame, internalized homophobia, identity formation, attachment style, and the connection to relationship status in gay men. *American Journal of Men's Health*, *4*(3), 267–276. https://doi.org/10.1177/1557988309342002

Carnelley, K. B., Hepper, E. G., Hicks, C., & Turner, W. (2011). Perceived parental reactions to coming out, attachment, and romantic relationship views. *Attachment & Human Development*, *13*(3), 217–236. https://doi.org/10.1080/14616734.2011.563828

Chopik, W. J., Edelstein, R. S., & Grimm, K. J. (2019). Longitudinal changes in attachment orientation over a 59-year period. *Journal of Personality and Social Psychology*, *116*(4), 805–816. https://doi.org/10.1037/pspp0000167

Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist*, *54*(10), 805–816. https://doi.org/10.1037/0003-066X.54.10.805

Cohen, J. (2016). A power primer. In A. E. Kazdin (Ed.), *Methodological issues and strategies in clinical research* (4th ed., pp. 279–284). American Psychological Association. https://doi.org/10.1037/14805-018

Cole, D., & Ahmadi, S. (2003). Perspectives and experiences of Muslim women who veil on college campuses. *Journal of College Student Development*, *44*(1), 47–66. https://doi.org/10.1353/csd.2003.0002

Cole, D., & Ahmadi, S. (2016). Reconsidering campus diversity: An examination of Muslim students' experiences. *The Journal of Higher Education*, *81*(2), 121–139. https://doi.org/10.1080/00221546.2010.11779045

Cole, E. R. (2009). Intersectionality and research in psychology. *American Psychologist*, *64*(3), 170–180. https://doi.org/10.1037/a0014564

Collins, N. L., & Read, S. J. (1990). Adult attachment, working models and relationship quality in dating couples. *Journal of Personality*, *58*(4), 644–663. https://doi.org/10.1037/0022-3514.58.4.644

Contrada, R. J., Ashmore, R. D., Gary, M. L., Coups, E., Egeth, J. D., Sewell, A., & Chasse, V. (2001). Measures of ethnicity-related stress: Psychometric properties, ethnic group differences, and associations with well-being. *Journal of Applied Social Psychology*, *31*(9), 1775–1820. https://doi.org/10.1111/j.1559-1816.2001.tb00205.x

Cozzarelli, C., Karafa, J. A., Collins, N. L., & Tagler, M. J. (2003). Stability and change in adult attachment styles: Associations with personal vulnerabilities, life events and global construals of self and others. *Journal of Social and Clinical Psychology*, *22*(3), 315–346. https://doi.org/10.1521/jscp.22.3.315.22888

Davila, J., Burge, D., & Hammen, C. (1997). Why does attachment style change? *Journal of Personality and Social Psychology*, *73*(4), 826–838. https://doi.org/10.1037/0022-3514.73.4.826

Davila, J., & Sargent, E. (2003). The meaning of life (events) predicts changes in attachment security. *Personality and Social Psychology Bulletin*, *29*(11), 1383–1395. https://doi.org/10.1177/0146167203256374

Dovidio, J. F., & Esses, V. M. (2001). Immigrants and immigration: Advancing the psychological perspective. *Journal of Social Issues*, *57*(3), 375. https://doi.org/10.1111/0022-4537.00219

Easton, S., Safadi, N., Wang, Y., & Hasson, R. (2017). The Kessler Psychological Distress Scale: Translation and validation of an Arabic version. *Health and Quality of Life Outcomes*, *15*(1), 215–217. https://doi.org/10.1186/s12955-017-0783-9

Elizur, Y., & Mintzer, A. (2003). Gay males' intimate relationship quality: The roles of attachment security, gay identity, social support, and income. *Personal Relationships*, *10*(3), 411–435. https://doi.org/10.1111/1475-6811.00057

Escobar, J. L., Nervi, C. H., & Gara, M. A. (2000). Immigration and mental health: Mexican Americans in the United States. *Harvard Review of Psychiatry*, *8*(2), 64–72. https://doi.org/10.5093/in2012a27

Faragallah, M. H., Schumm, W. R., & Webb, F. (1997). Acculturation of Arab-American immigrants: An exploratory study. *Journal of Comparative Family Studies*, *28*(3), 182–203. https://www.jstor.org/stable/41603515

Farver, J. M., Yiyuan, X., Bhadha, B., Narang, S., & Lieber, E. (2007). Ethnic identity, acculturation, parenting beliefs, and adolescent adjustment: A comparison of Asian Indian and European American families. *Merrill-Palmer Quarterly*, *53*(2), 184–215. https://doi.org/10.1353/mpq.2007.0010

Ferenczi, N., & Marshall, T. (2013). Exploring attachment to the "homeland" and its association with heritage culture identification. *PloS One*, *8*(1), e53872. https://doi.org/10.1371/journal.pone.0053872

Foster, R. P. (2001). When immigration is trauma: Guidelines for the individual and family clinician. *American Journal of Orthopsychiatry*, *71*(2), 153–170. https://doi.org/10.1037/0002-9432.71.2.153

Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77–114). Guilford Press.

Ghaffarian, S. (1998). The acculturation of Iranian immigrants in the United States and the implications for mental health. *The Journal of Social Psychology*, *138*(5), 645–654. https://doi.org/10.1080/00224549809600419

Hakim-Larson, J., Kamoo, R., Nassar-McMillan, S., & Porcerelli, J. (2007). Counseling Arab and Chaldean American families. *Journal of Mental Health Counseling*, *29*(4), 301–321. https://doi.org/10.17744/mehc.29.4.u5468716955w1023

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133–168). The Guilford Press.

Hofstra, J., van Oudenhoven, J. P., & Bunk, B. P. (2005). Attachment styles and majority members' attitudes towards adaptation strategies of immigrants. *International Journal of Intercultural Relations*, *29*(5), 601–619. https://doi.org/10.1016/j.ijintrel.2005.05.009

Hong, Y., Fang, Y., Yang, Y., & Phua, D. Y. (2013). Cultural attachment: A new theory and method to understand cross-cultural competence. *Journal of Cross-Cultural Psychology*, *44*(6), 1024–1044. https://doi.org/10.1177/0022022113480039

Ikizler, A. S., & Szymanski, D. M. (2014). A qualitative study of Middle Eastern/Arab American sexual minority identity development. *Journal of LGBT Issues in Counseling*, *8*(2), 206–241. https://doi.org/10.1080/15538605.2014.897295

Immigration and Nationality Act of 1952. https://www.uscis.gov/laws-and-policy/legislation/immigration-and-nationality-act

Jaber, L. A. (2003). Barriers and strategies for research in Arab Americans. *Diabetes Care*, *26*(2), 514–515. https://doi.org/10.2337/diacare.26.2.514

Kahan, D., & Al-Tamimi, A. (2009). Strategies for recruiting Middle Eastern-American young adults for physical activity research: A case of snowballs and salaam. *Journal of Immigrant and Minority Health*, *11*, 380–390. https://doi.org/10.1007/s10903-008-9117-7

Kelleher, C. (2009). Minority stress and health: Implications for lesbian, gay, bisexual, transgender, and questioning (LGBTQ) young people. *Counselling Psychology Quarterly*, *22*(4), 373–379. https://doi.org/10.1080/09515070903334995

Kim, O. (1999). Mediation effect of social support between ethnic attachment and loneliness in older Korean immigrants. *Research in Nursing and Health*, *22*, 169–

175. https://doi.org/10.1002/(SICI)1098-240X(199904)22: 2169::AID-NUR8
3.0.CO;2-F

Kirmayer, L. J. (2011). Multicultural medicine and the politics of recognition. *Journal of Medicine & Philosophy*, *36*(4), 410–423. https://doi.org/10.1093/jmp/jhr024

Lavy, S., Azaiza, F., & Mikulincer, M. (2012). Attachment patterns of Arabs and Jews in Israel: Are we really so different? *Israel Journal of Psychiatry and Related Issues*, *49*(3), 184–193.

Levenbach, D., & Lewak, B. (1995). Immigration: Going home or going to pieces. *Contemporary Family Therapy: An International Journal*, *17*(4), 379–394. https://doi.org/10.1007/BF02249352

Madjlessi, F. (2016). *Attachment and acculturation: Predictors of psychological distress and satisfaction with life in Iranian immigrants* (Publication No. 10149705) [Doctoral dissertation, Alliant International University]. ProQuest Dissertations & Theses.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth strange situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years* (pp. 121–160). University of Chicago Press.

Marlin, O. (1994). Special issues in the analytic treatment of immigrants and refugees. *Issues in Psychoanalytic Psychology*, *16*(1), 7–16. http://psycnet.apa.org/record/1995-18482-001

Mena, F., Padilla, A., & Maldonado, M. (1987). Acculturative stress and specific coping strategies among immigrant and later generation college students. *Hispanic*

Journal of Behavioral Sciences, *9*(2), 207–225.

https://doi.org/10.1177/07399863870092006

Mensch, B. S., Ibrahim, B. L., Lee, S. M., & el-Gibaly, O. (2003). Gender-role attitudes

among Egyptian adolescents. *Studies in Family Planning*, *34*(1), 8–18.

https://doi.org/10.1111/j.1728-4465.2003.00008.x

Mikulincer, M., & Shaver, P. (2007). *Attachment in adulthood: Structure, dynamics, and*

change. Guilford Press.

Moradi, B., & Hasan, N. T. (2004). Arab American persons' reported experiences of

discrimination and mental health: The mediating role of personal control. *Journal*

of Counseling Psychology, *51*(4), 418–428. https://doi.org/10.1037/0022-

0167.51.4.418

Mustanski, B., Garofalo, R., & Emerson, E. (2010). Mental health disorders,

psychological distress, and suicidality in a diverse sample of lesbian, gay,

bisexual, and transgender youths. *American Journal of Public Health*, *100*(12),

2426–2432. https://doi.org/10.2105/ajph.2009.178319

Naff, A. (1994). The early Arab immigrant experience. In E. McCarus (Ed.), *The*

development of Arab-American identity (pp. 23–35). The University of Michigan

Press.

Nicholson, B. L. (1997). The influence of pre-emigration and postemigration stressors on

mental health: A study of Southeast Asian refugees. *Social Work Research*, *21*(1),

19–31. https://doi.org/10.1093/swr/21.1.19

Oppedal, B., & Roysamb, E. (2004). Mental health, life stress and social support among

young Norwegian adolescents with immigrant and host national background.

Scandinavian Journal of Psychology, *45*(2), 131–144.

https://doi.org/10.1111/j.1467-9450.2004.00388.x

Padela, A. I., & Heisler, M. (2010). The association of perceived abuse and

discrimination after September 11, 2001, with psychological distress, level of

happiness, and health status among Arab Americans. *American Journal of Public

Health*, *100*(2), 284–291. https://doi.org/10.2105/AJPH.2009.164954

Padilla, A. M., Alvarez, M., & Lindholm, K. J. (1986). Generational status and

personality factors as predictors of stress in students. *Hispanic Journal of

Behavioral Sciences*, *8*, 275–288. https://doi.org/10.1177/07399863860083006

Pieterse, A. L., Todd, N. R., Neville, H. A., & Carter, R. T. (2012). Perceived racism and

mental health among Black American adults: A meta-analytic review. *Journal of

Counseling Psychology*, *59*(1), 1–9. https://doi.org/10.1037/a0026208

Polek, E., van Oudenhoven, J. P., & ten Berge, J. F. (2008). Attachment styles and

demographic factors as predictors of sociocultural and psychological adjustment

of Eastern European immigrants in the Netherlands. *International Journal of

Psychology*, *43*(5), 919–928. https://doi.org/10.1080/00207590701484835

Polek, E., Wöhrle, J., & van Oudenhoven, J. P. (2010). The role of attachment styles,

perceived discrimination, and cultural distance in adjustment of German and

Eastern European immigrants in the Netherlands. *Cross-Cultural Research*, *44*(1),

60–88. https://doi.org/10.1177/1069397109352779

Porter, M., & Haslam, N. (2005). Predisplacement and postdisplacement factors

associated with mental health of refugees and internally displaced persons: A

meta-analysis. *JAMA*, *294*(5), 602–612. https://doi.org/10.1001/jama.294.5.602

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*(4), 717–731. https://doi.org/10.3758/bf03206553

Rasmi, S., Chuang, S. S., & Hennig, K. (2015). The acculturation gap-distress model: Extensions and application to Arab Canadian families. *Cultural Diversity and Ethnic Minority Psychology*, *21*(4), 630–642. https://doi.org/10.1037/cdp0000014

Rawatlal, N., Pillay, B. J., & Kliewer, W. (2015). Socioeconomic status, family-related variables, and caregiver–adolescent attachment. *South African Journal of Psychology*, *45*(4), 551–563. https://doi.org/10.1177/0081246315588906

Ridge, S., & Feeney, J. (1998). Relationship history and relationship attitudes in gay males and lesbians: Attachment style and gender differences. *Australasian Psychiatry*, *32*(6), 848–859. https://doi.org/10.3109/00048679809073875

Rousseau, C., Hassan, G., Moreau, N., & Thombs, B. (2011). Perceived discrimination and its association with psychological distress among newly arrived immigrants before and after September 11, 2001. *American Journal of Public Health*, *101*(5), 909–915. https://doi.org/10.2105/AJPH.2009.173062

Semaan, G. (2014). Arab-Americans: Stereotypes, conflict, history, cultural identity and post 9/11. *Intercultural Communication Studies*, *28*(2), 17–32. https://web.uri.edu/iaics/files/Gaby-Semaan.pdf

Seng, J. S., Lopez, W. D., Sperlich, M., Hamama, L., & Reed Meldrum, C. D. (2012). Marginalized identities, discrimination burden, and mental health: Empirical exploration of an interpersonal-level approach to modeling intersectionality.

Social Science & Medicine, *75*(12), 2437–2445.

https://doi.org/10.1016/j.socscimed.2012.09.023

Shammas, D. (2017). Underreporting discrimination among Arab American and Muslim

American community college students: Using focus groups to unravel the

ambiguities within the survey data. *Journal of Mixed Methods Research*, *11*(1),

99–123. https://doi.org/10.1177/1558689815599467

Smith, E. R., Coats, S., & Walling, D. (1999). Overlapping mental representations of self,

in-group, and partner: Further response time evidence and a connectionist model.

Personality and Social Psychology Bulletin, *25*(7), 873–882.

https://doi.org/10.1177/0146167299025007009

Suarez-Balcazar, Y., Orellana-Damacela, L., Portillo, N., Rowan, J., & Andrews-Guillen,

C. (2003). Experiences of differential treatment among college students of color.

The Journal of Higher Education, *74*(4), 428–444.

https://doi.org/10.1080/00221546.2003.11780855

Sutter, M., & Perrin, P. B. (2016). Discrimination, mental health, and suicidal ideation

among LGBTQ people of color. *Journal of Counseling Psychology*, *63*(1), 98–

105. https://doi.org/10.1037/cou0000126

Szaflarski, M., & Bauldry, S. (2019). The effects of perceived discrimination on

immigrant and refugee physical and mental health. *Advances in Medical

Sociology*, *19*, 173–204. https://doi.org/10.1108/S1057-629020190000019009

United Nations High Commissioner for Refugees. (2015). *Global trends: Forced

displacement in 2015*. https://www.unhcr.org/statistics/unhcrstats

/576408cd7/unhcr-global-trends-2015.html

United Nations High Commissioner for Refugees. (2016). *UNHCR viewpoint: 'Refugee'*
or 'migrant' – Which is right? https://www.unhcr.org/news/latest/2016/7
/55df0e556/unhcr-viewpoint-refugee-migrant-right.html

United States Refugee Act of 1980, Pub. L. 96-212. https://www.gpo.gov/fdsys/pkg
/STATUTE-94/pdf/STATUTE-94-Pg102.pdf

U.S. Census Bureau. (2011). *Selected housing characteristics, 2010-2011 American*
Community Survey 1-year estimates. https://www.census.gov/programs-
surveys/acs/technical-documentation/table-and-geography-changes/2010/1-
year.html

U.S. Census Bureau. (2014). *American Community Survey: 2010—2014 ACS 5-year data*
profile. https://www.census.gov/acs/www/data/data-tables-and-tools/data-
profiles/2014/

van Ecke, Y. (2005). Immigration from an attachment perspective. *Social Behavior and*
Personality: An International Journal, *33*(5), 467–476.
https://doi.org/10.2224/sbp.2005.33.5.467

van Ecke, Y., Chope, R. C., & Emmelkamp, P. G. (2005). Immigrants and attachment
status: Research findings with Dutch and Belgian immigrants in California. *Social*
Behavior & Personality: An International Journal, *33*(7), 657–673.
https://doi.org/10.2224/sbp.2005.33.7.657

Van Oudenhoven, J. P., & Hofstra, J. (2006). Personal reactions to 'strange' situations:
Attachment styles and acculturation attitudes of immigrants and majority
members. *International Journal of Intercultural Relations*, *30*(6), 783–798.
https://doi.org/10.1016/j.ijintrel.2006.05.005

Wang, C. D., & Mallinckrodt, B. (2006). Acculturation, attachment, and psychosocial adjustment of Chinese/Taiwanese international students. *Journal of Counseling Psychology*, *53*(4), 422–433. https://doi.org/10.1037/0022-0167.53.4.422

Wells, B. G., & Hansen, N. D. (2003). Lesbian shame: Its relationship to identity integration and attachment. *Journal of Homosexuality*, *45*(1), 93–110. https://doi.org/10.1300/J082v45n01_05

Yoon, E., Chang, C.-T., Kim, S., Clawson, A., Cleary, S. E., Hansen, M., Bruner, J. P., Chan, T. K., & Gomes, A. M. (2013). A meta-analysis of acculturation/enculturation and mental health. *Journal of Counseling Psychology*, *60*(1), 15–30. https://doi.org/10.1037/a0030652

Zakalik, R., & Wei, M. (2006). Adult attachment, perceived discrimination based on sexual orientation, and depression in gay males: Examining the mediation and moderation effects. *Journal of Counseling Psychology*, *53*(3), 302–313. https://doi.org/10.1037/0022-0167.53.3.302

Appendix A: Measures

Screening Questionnaire

1. Are you an adult age 18 or older? (Y/N)

2. Are you a foreign-born Arab immigrant, refugee, asylee, or visa holder? (Y/N)

3. Did you move to the U.S. or Canada with at least one adult family member? (Y/N)

4. Are you able to read and write in the English Language? (Y/N)

5. Have you been diagnosed with a severe intellectual disability or psychosis (Y/N)?

Experiences in Close Relationships Questionnaire

Perceived Ethnic Discrimination Questionnaire

Societal, Attitudinal, Environmental and Familial Acculturative Scale

Kessler-6 Psychological Distress Scale

Background Questionnaire

1. Current age (in years): _____

2. Age at immigration to the U.S. or Canada (in years): _____

3. Immigration status

   a. Legal immigrant

   b. Refugee

   c. Asylee

   d. Prefer not to answer

4. Number of adult family members with whom you immigrated: _____

5. Number of adult family members with whom you live (including spouses): _____

6. Country of Origin: _____

7. Religion:

   a. Christian

   b. Muslim

   c. Jewish

   d. Other, specify: _____

8. Gender

   a. Female

   b. Male

    c. Other, specify: _____

9. Sexual Orientation

    a. Heterosexual

    b. Homosexual (Gay or Lesbian)

    c. Bisexual or Queer

    d. Other, specify: _____

10. Relationship Status

    a. Single

    b. Engaged

    c. Married

    d. Divorced

    e. Widowed

    f. Domestic Partnership

    g. Other (explain): _____

11. Employment Status

    a. Employed

    b. Unemployed

12. Current Student Status

    a. Student

    b. Not a student

13. Your Annual Household Income (In Dollars):

    a. less than 10,000

    b. 10,000 – 19,999

    c. 20,000 – 24,999

    d. 25,000 – 49,999

    e. 50,000 – 74,999

    f. 75,000 – 99,999

    g. over 100,000

14. State or Providence of residence: _____

Appendix B: Informed Consent

Arab Migrant Attitudes and Reactions to Life situations and Event
Consent Form

I have been asked by Hayat Nadar, a doctoral student from Illinois School of Professional Psychology at National Louis University, Chicago, to participate in her Clinical Research Project (CRP) about the association between leaving one's country of origin, relationships, and distress.

I have been asked to participate because I identify as an Arab who has migrated to the U.S. or Canada after the age of five years old. It is estimated that a total of 120 people will participate in this study.

If I agree to be in this study, I will be asked to complete questionnaires including questions about my demographic information, my attitudes about my personal relationships and experiences, as well as my perception of stress associated with various experiences. This study will take approximately 20-30 minutes to complete.

There is minimal risk to my participation in this study. Potential risks that may occur with this study are feelings of mild to moderate discomfort or distress resulting from being asked to answer questions of a private nature including attitudes and reactions to various life situations and events. There are no personal benefits to my participation in this study. Results of this study will provide valuable information aimed at improving the wellbeing of Arab migrants in the U.S. and Canada and providing possible areas of growth and exploration.

All responses are treated as anonymous, and in no case will responses from individual participants be identified. Data will be pooled and published in aggregate only. I understand this study is anonymous and is done by completing an online survey utilizing Survey Hero. I am also aware that the study will be run from a "secure" https server and encrypted. My name will not be identified or associated with my responses to the questionnaire. The data will be downloaded from the survey website using a password protected account and accessed by researcher anonymously when completed in the form of a code. My IP address will not be recorded, and the IP address tracking will be disabled in order to protect my anonymity. The records of this study will be kept private. No words linking my identity to this study will be included in any sort of report that

might be published. The data will be stored securely at the researcher's home and only Hayat Nadar and her supervisor, Dr. Sandra Zakowski will have access to records. I understand that I will not be compensated for this study. I understand that my participation is strictly voluntary. My decision regarding my participation will not affect my current or future relations with Illinois School of Profession al Psychology at National Louis University, Chicago. If I decide to participate, I am free to refuse to answer any of the questions that make me uncomfortable. I can withdraw at any time without any penalty. I understand that I am able to obtain a summary of the study results by contacting the lead researcher Hayat Nadar and the study's Chair, Sandra G. Zakowski, Ph.D. at szakowski@nl.edu, Illinois School of Professional Psychology at National Louis University, Chicago, 122 S. Michigan Ave, Chicago, IL 60603, with any questions about this study

I understand this research has been reviewed and Certified by the Institutional Review Board at National Louis University. For research related questions or issues regarding participant's rights, I can contact the Institute Board through the IRB Chair, Shaunti Knauth, Ph.D., at (312) 261-3526, shaunti.knauth@nl.edu, at National Louis University, Chicago, 122 S. Michigan Ave, Chicago, IL 60603.

I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction and I voluntarily agree to participate in this study. By completing the online survey, I consent to participate in this study.

I am 18 years of age or older, understand the statements above, and freely consent to participate in the study. I will click on the "I Agree" button to begin the study. It is encouraged to print a copy of this informed consent form for their records.

I Agree ☐

Appendix C: Announcements and Letters

*Arab Migrant Attitudes and Reactions to Life situations and Event*s

Sample Recruitment Letter

Dear Potential Participant,

My name is Hayat Nadar and I am a graduate student in the Clinical Psychology program at the Illinois School of Professional Psychology at National Louis University-Chicago. I would like to invite you to participate in my doctoral clinical research project under the mentorship of Dr. Sandra G. Zakowski.

I am interested in expanding our knowledge of Arab migrant experiences in leaving their country of origin, moving to the United States or Canada and associations among various factors including migration, relationships, and associated stress.

If you decide to participate in this study you will be asked to take a brief survey including questions about your demographic information, I will be asked to complete questionnaires including questions about my demographic information, my attitudes about my personal relationships and experiences, as well as my perception of stress associated with various experiences. This study will take approximately 20-30 minutes to complete. Your participation is completely voluntary and confidential. This study has been approved by the National Louis University Institutional Review Board.

To participate you must be:

- Over the age of 18

- Arab descent

- Migrated to the United States or Canada at school age (between 5 and 17 years of age).

- Entered the United States or Canada with at least one adult family member.

If you choose to participate please click the link for more information and to complete the survey at: https://surveyhero.com/c/a30f52a9

I am fully aware that you may have had a number of opportunities to participate in online research projects. Therefore, I want to thank you in advance for considering and, hopefully, for participating in my study.

Sincerely,

Hayat Nadar, M.A.

Arab Migrant Attitudes and Reactions to Life situations and Events

Sample Recruitment to Community Leader

Dear Esteemed Community Leader,

My name is Hayat Nadar and I am a graduate student in the Clinical Psychology program at the Illinois School of Professional Psychology at National Louis University-Chicago. I am seeking your help in recruiting Arab immigrants, refugees and asylees living in the United States or Canada to participate in my doctoral clinical research project under the mentorship of Dr. Sandra G. Zakowski.

I am interested in expanding our knowledge of the experiences of Arab Migrants in leaving their country of origin, moving to the United States or Canada and associations among various factors including migration, relationships, and associated stress. If potential recruits decide to participate in this study, they will be asked to take a survey including questions about demographic information, attitudes about personal relationships and experiences, as well as perception of stress associated with various experiences. This study will take approximately 20-30 minutes to complete.

Participation is completely voluntary and confidential. This study has been approved by the National Louis University Institutional Review Board.

To participate you must be:

- Over the age of 18

- Arab descent

- Migrated to the United States or Canada at school age (between 5 and 17 years of age).

- Entered the United States or Canada with at least one adult family member.

If you choose to assist in recruitment, please feel free to send the following internet survey link through your list servers and/or social media page.

https://surveyhero.com/c/a30f52a9

If you have any comments, questions, or concerns please feel free to contact me.

Sincerely,

Hayat Nadar, M.A.

Appendix D: SPSS Preacher and Hayes PROCESS Macro Outputs

OUTPUT #1: Sociocultural Adversity Construct

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.5
****************

        Written by Andrew F. Hayes, Ph.D.      www.afhayes.com
   Documentation available in Hayes (2018). www.guilford.com/p/hayes3

*************************************************************************
***
Model  : 4
    Y  : KS6T
    X  : PDQT
    M  : ATT_T

Covariates:
 SAFET

Sample
Size:  93

*************************************************************************
***
OUTCOME VARIABLE:
 ATT_T

Model Summary
         R       R-sq        MSE          F        df1        df2
p
     .4676      .2187   1358.5980    12.5932     2.0000    90.0000
.0000

Model
           coeff         se          t          p        LLCI
ULCI
constant   59.2203     9.9284     5.9647      .0000     39.4957
78.9449
PDQT         .6372      .2361     2.6988      .0083      .1681
1.1062
SAFET        .4968      .2092     2.3743      .0197      .0811
.9125

*************************************************************************
***
OUTCOME VARIABLE:
 KS6T

Model Summary
         R       R-sq        MSE          F        df1        df2
p
     .4939      .2440     17.5266     9.5737     3.0000    89.0000
.0000
```

```
Model
                coeff        se          t          p         LLCI
ULCI
constant     7.0867     1.3320      5.3202      .0000      4.4400
9.7334
PDQT          .0251      .0279       .9002      .3705 NS   -.0303
.0805
ATT_T         .0346      .0120      2.8873      .0049       .0108
.0584
SAFET         .0487      .0245      1.9872      .0500 SIG    .0000
.0974


************************** TOTAL EFFECT MODEL
***************************
OUTCOME VARIABLE:
 KS6T

Model Summary
         R        R-sq        MSE          F         df1        df2
p
      .4161       .1732    18.9552      9.4243      2.0000     90.0000
.0002

Model
                coeff        se          t          p         LLCI
ULCI
constant     9.1338     1.1727      7.7885      .0000      6.8039
11.4636
PDQT          .0471      .0279      1.6898      .0945      -.0083
.1025
SAFET         .0659      .0247      2.6646      .0091       .0168
.1150
```

(Hayat Note: Here we can see: Attachment did not mediate the relationship between sociocultural adversity (as a construct made up of the two IV) and psychological distress.

However, now because the SAFE (acculturative stress) is significant…a new mediation test is run with SAFE as an IV in the mediation model. See Output # 2)

```
************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
**************

Total effect of X on Y
     Effect         se          t          p         LLCI        ULCI
c_ps       c_cs
      .0471      .0279      1.6898      .0945      -.0083       .1025
.0100      .1856

Direct effect of X on Y
     Effect         se          t          p         LLCI        ULCI
c'_ps      c'_cs
      .0251      .0279       .9002      .3705      -.0303       .0805
.0053      .0988

Indirect effect(s) of X on Y:
```

```
          Effect      BootSE    BootLLCI    BootULCI
ATT_T       .0220       .0105      .0053       .0464


Partially standardized indirect effect(s) of X on Y:
          Effect      BootSE    BootLLCI    BootULCI
ATT_T       .0047       .0022      .0012       .0098

Completely standardized indirect effect(s) of X on Y:
          Effect      BootSE    BootLLCI    BootULCI
ATT_T       .0868       .0403      .0206       .1790




*********************** ANALYSIS NOTES AND ERRORS
************************


Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000
------ END MATRIX ----
```

OUTPUT #2: Acculturative Stress Variable

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.5
*****************


          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3


************************************************************************
***
Model  : 4
    Y  : KS6T
    X  : SAFET
    M  : ATT_T

Sample
Size:  93


************************************************************************
***
OUTCOME VARIABLE:
 ATT_T

Model Summary
          R        R-sq       MSE          F         df1         df2
p
      .3942       .1554   1452.4119    16.7463      1.0000     91.0000
.0001


Model
```

```
              coeff        se          t          p        LLCI
ULCI
constant    69.8710      9.4197     7.4175      .0000     51.1598
88.5821
SAFET         .7726       .1888     4.0922      .0001      .3976
1.1476


**********************************************************************
***
OUTCOME VARIABLE:
 KS6T

Model Summary
         R        R-sq        MSE          F        df1        df2
p
     .4869      .2371    17.4896    13.9849     2.0000    90.0000
.0000


Model
              coeff        se          t          p        LLCI
ULCI
constant     7.3002      1.3094     5.5752      .0000      4.6988
9.9015
SAFET         .0573       .0225     2.5404      .0128      .0125
.1021
ATT_T         .0375       .0115     3.2613      .0016      .0147
.0604


************************* TOTAL EFFECT MODEL
**************************
OUTCOME VARIABLE:
 KS6T

Model Summary
         R        R-sq        MSE          F        df1        df2
p
     .3833      .1469    19.3417    15.6737     1.0000    91.0000
.0001


Model
              coeff        se          t          p        LLCI
ULCI
constant     9.9215      1.0870     9.1272      .0000      7.7622
12.0807
SAFET         .0863       .0218     3.9590      .0001      .0430
.1295


************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
**************

Total effect of X on Y
    Effect         se          t          p        LLCI        ULCI
c_ps       c_cs
     .0863       .0218     3.9590      .0001      .0430       .1295
.0182       .3833

Direct effect of X on Y
```

```
        Effect        se         t         p       LLCI       ULCI
c'_ps      c'_cs
       .0573        .0225    2.5404     .0128      .0125      .1021
.0121      .2545


Indirect effect(s) of X on Y:
         Effect     BootSE   BootLLCI   BootULCI
ATT_T     .0290      .0114      .0103      .0551

Partially standardized indirect effect(s) of X on Y:
         Effect     BootSE   BootLLCI   BootULCI
ATT_T     .0061      .0023      .0023      .0114

Completely standardized indirect effect(s) of X on Y:
         Effect     BootSE   BootLLCI   BootULCI
ATT_T     .1288      .0496      .0456      .2395

********************** ANALYSIS NOTES AND ERRORS
***********************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000

------ END MATRIX -----
```

OUTPUT # 3: Ethnic Discrimination Variable

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 3.5
*****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3


************************************************************************
***
Model  : 4
    Y  : KS6T
    X  : PDQT
    M  : ATT_T

Sample
Size:  93


************************************************************************
***
OUTCOME VARIABLE:
 ATT_T

Model Summary
```

```
            R         R-sq       MSE          F          df1        df2
p
      .4120       .1697   1427.8306    18.6012     1.0000     91.0000
.0000


Model
              coeff        se          t          p         LLCI
ULCI
constant     71.7789     8.6136     8.3332      .0000     54.6691
88.8887
PDQT           .9109      .2112     4.3129      .0000      .4914
1.3305


Standardized coefficients
         coeff
PDQT      .4120
```

****
***
OUTCOME VARIABLE:
 KS6T

Model Summary
```
          R         R-sq       MSE          F          df1        df2
p
      .4587       .2104    18.1008     11.9931     2.0000     90.0000
.0000


Model
              coeff        se          t          p         LLCI
ULCI
constant      7.9028     1.2878     6.1369      .0000      5.3444
10.4611
PDQT           .0467      .0261     1.7879      .0772     -.0052
.0985
ATT_T          .0403      .0118     3.4181      .0009      .0169
.0638


Standardized coefficients
         coeff
PDQT      .1838
ATT_T     .3514
```

************************** TOTAL EFFECT MODEL
****
OUTCOME VARIABLE:
 KS6T

Model Summary
```
          R         R-sq       MSE          F          df1        df2
p
      .3285       .1079    20.2259     11.0102     1.0000     91.0000
.0013


Model
              coeff        se          t          p         LLCI
ULCI
```

```
constant    10.7986     1.0252     10.5334       .0000      8.7622
12.8350
PDQT           .0834      .0251      3.3182       .0013       .0335
.1333


Standardized coefficients
         coeff
PDQT       .3285

************** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
**************


Total effect of X on Y
     Effect         se          t          p         LLCI        ULCI
c_ps        c_cs
      .0834      .0251      3.3182       .0013       .0335       .1333
.0176       .3285


Direct effect of X on Y
     Effect         se          t          p         LLCI        ULCI
c'_ps       c'_cs
      .0467      .0261      1.7879       .0772      -.0052       .0985
.0099       .1838


Indirect effect(s) of X on Y:
         Effect     BootSE    BootLLCI    BootULCI
ATT_T     .0368      .0135       .0140       .0665


Partially standardized indirect effect(s) of X on Y:
         Effect     BootSE    BootLLCI    BootULCI
ATT_T     .0078      .0027       .0031       .0138


Completely standardized indirect effect(s) of X on Y:
         Effect     BootSE    BootLLCI    BootULCI
ATT_T     .1447      .0515       .0537       .2571


********************** ANALYSIS NOTES AND ERRORS
**********************


Level of confidence for all confidence intervals in output:
  95.0000


Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000


------ END MATRIX -----
```