# DO FAMILY AND RELIGIOUS SUPPORT MODERATE THE RELATIONSHIP BETWEEN DISCRIMINATION AND HEALTH OUTCOMES AMONG MIDDLE EASTERN AND NORTH AFRICAN AMERICANS?

by

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ABSTRACT

PEDRAM RASTEGAR. Do Family and Religious Support Moderate the Relationship between Discrimination and Health Outcomes among Middle Eastern and North African Americans? (Under the direction of DR. AMY H. PETERMAN)

Discrimination is a salient and chronic stressor for many minoritized racial and ethnic groups and has numerous consequences for both mental and physical health. However, less research has focused on how discrimination affects Middle Eastern and North African Americans (MENAA). While limited, research shows that among MENAA, discrimination is associated with higher rates of depression and anxiety symptoms, as well as poor self-rated health. Among racial and ethnic minorities, it has been demonstrated that cultural resources can help individuals cope with discrimination. Within MENAA culture, family and religion are important cultural resources that individuals utilize for social support and to cope with stressors such as discrimination. Further, research has demonstrated that religious and family support can buffer the effects of discrimination across racial and ethnic groups. However, it has yet to be determined if these cultural resources will have the same positive impact among MENAAs. Thus, the focus of this study is to examine the moderating role of family and religious support between discrimination and depression, anxiety, and self-rated health among MENAAs. This study recruited 126 MENAA adults from across the US through Prolific. Participants completed surveys on experiences of discrimination across their lifetime, family and religious support, and health outcomes. Results found that discrimination predicted more depression and anxiety, whereas family support predicted less depression and anxiety. Both family support and religious support amplified the effects of discrimination on depression. Results indicate future research is needed on the

impact of cultural resources on the discrimination and health pathway within the MENAA population.

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# CHAPTER 1: INTRODUCTION

## 1.1 Biopsychosocial Model of Racism

Discrimination is a salient chronic stressor for many minoritized racial and ethnic groups and has numerous consequences for both physical and mental health (Carter et al., 2017; Clark et al., 1999; Vines et al., 2017; Williams et al., 2019). Poor health outcomes associated with discrimination can be explained by the biopsychosocial model (Clark et al., 1999). The biopsychosocial model broadly examines the interaction of biological, psychological, and social contexts on health (Lehman et al., 2017). This model states that environmental stressors that are chronic such as discrimination can lead to an over activation of the stress response (Clark et al., 1999). This can disrupt physiological and psychological systems which can then lead to poor health outcomes (Clark et al., 1999; Williams et al., 2019).

It is important to understand and illuminate the effects of racism and discrimination on ethnic and minoritized groups as this may help facilitate targeted treatments and interventions for these at-risk groups, as well as inform systemic changes to decrease the ongoing oppression and marginalization. While the effects of discrimination on minoritized ethnic groups such as African Americans and Latinx communities have been well documented, less research has focused on how discrimination affects individuals of Middle Eastern and North African descent.

Middle Eastern and Northern Africans Americans (MENAA) are broadly defined as individuals from countries such as: “Algeria, Bahrain, Comoros Islands, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia”, as well as “Turkey and Armenia”

(Awad et al., 2019; page 76-77). Some literature have included other countries, but typically MENAA individuals are descended from people who live in these are countries in Northern parts of Africa to some southwestern parts of Asia (Awad et al., 2019). While some MENA individuals were forcefully migrated to the United States alongside the slave trade in the 1500s, many individuals came starting in the 1880s looking for improved economic opportunities (Nassar-McMillan et al., 2014). After World War II, there was a large portion of MENAAs who immigrated to the US seeking refuge (Nassar-McMillan et al., 2014). Further after 1960 and going into the 90s, many MENAAs continued to migrate to the US for better economic opportunities and to seek refuge from political tension and violence such as from the Gulf War (Nassar-McMillan et al., 2014; Samhan, 2014).

While there is considerable heterogeneity across these countries, some reasoning behind grouping these countries together is due to a wide range of shared culture including importance of religions (Amer & Kayyali, 2016; Awad et al., 2022; Awad et al., 2019). Further, the countries share many of the same values such as a collectivist mentality, strong family values, and the importance of honor. (Amer & Awad, 2016; Awad et al., 2022; Harb, 2016; Nassar-McMillan et al., 2014).

This population has grown significantly in the past two decades with estimates of Arab Americans at around nearly 4 million, with the larger MENAA population likely much higher (Arab American Institute, 2021). Despite the large population of MENAAs, little research has paid attention to this group. One of the primary reasons is that the US government does not recognize them as their own racial and ethnic group, as typically government census forms classify MENAA as White (Tehranian, 2008). Therefore, there

has been little attention overall to the health of MENAAs. Additionally, when research has focused on MENAA, it has typically been on a subsample such as Arab Americans. Moving forward all research on Middle Eastern Americans, Arab Americans, or MENA Americans reviewed in this paper will just be noted as MENAA for ease of research synthesis. Lastly, despite the lack of visibility and attention, research has shown that MENAAs face similar stressors to other racial and ethnic minoritized groups, such as discrimination (Awad, 2010).

It is also important to note that not everyone exposed to discrimination develops poor health outcomes. The biopsychosocial model states that the social context in which the individual is nested will play a role in the development of health outcomes (Lehman et al., 2017). For example, an individual's family can provide them with social support which can influence health outcomes (Raffaelli et al., 2013). Overall, there is an abundance of literature that demonstrates that social support is generally linked to better mental and physical health (Harandi et al., 2017; Uchino et al., 2018).

One reason may be that social support helps give individuals a sense of belonging and improves self-esteem (Li et al., 2018; Liu et al., 2020). Further, social support also promotes positive health behaviors such as eating more fruits and vegetables (Debnam et al., 2012). The process of social support directly improving health, regardless of the presence of stress, is known as a main effect. While the main effect of social support is generally important, some literature has expressed that social support may be particularly crucial when experiencing stress (Cohen & Wills, 1985; Guilaran et al., 2018), such as exposure to discrimination.

The stress buffering hypothesis (Cohen & Wills, 1985) proposed that social support can moderate, or buffer, the negative impact of stressors on health outcomes. This can occur in at least two ways. First, social support can reduce/buffer the stress associated with stressors such as discrimination (Vines et al., 2017). In this case, social support reduces the initial appraisal of stress and therefore prevents the development of negative health outcomes that could be associated with the stressor (Cohen & Wills, 1985). The second way is that social support can intercede after an individual has perceived stress (Cohen & Wills, 1985; Raffaelli et al., 2013). In this case, social support will buffer the negative psychological and physiological effects of the stress by a wide variety of mechanisms, including reducing the reaction to the stressor, facilitating reappraisal of the situation, and providing information such as a solution to the stressor (Cohen & Wills, 1985). While many studies have examined how social support directly reduces negative health outcomes, it may be more beneficial to examine social support as a moderator within the stress buffering hypothesis (Cohen & Wills, 1985) in minoritized populations that are exposed to the ongoing stress of discrimination. Thus, the focus of this study is to examine the moderating role of family and religious support between discrimination and health outcomes among MENAAs.

### 1.2 Discrimination

Discrimination is a significant stressor in the lives of many MENAAs (Awad et al., 2022). Discrimination can be broadly defined as unfair treatment due to membership in a specific group such as an individual's ethnicity (Contrada et al., 2001; Vines et al., 2017). MENAA have always experienced forms of discrimination in the United States with some studies reporting discrimination from the early 1900s (Naber, 2000). For

example, studies in the 1970s documented negative public opinions about MENAAs (Lipset & Schneider, 1977).

Unfortunately, discrimination towards MENAAs increased significantly post 9/11 with the rise of Islamophobia. Reports have identified that within the first few weeks after 9/11, over 700 violent acts were conducted against MENAAs or those who were perceived as MENAA (Ibish, 2003). Studies reporting data from the Federal Bureau of Investigation have described a nearly 1600% increase of anti-Islamic hate crimes in 2001, while other studies estimated about 1500 reported hate crimes among MENAAs (Byers & Jones, 2007; Disha et al., 2011). Further, another study identified that among MENAAs in Detroit, Michigan, 25% reported experiences or had someone in their household experience discrimination which included verbal and physical abuse (Padela & Heisler, 2010).

In addition to violence and hate crimes, MENAA are exposed to other types of discrimination including offensive comments and being racially profiled (Awad, 2010; Ibish, 2003). For example, there were reports of over 800 cases of discrimination against MENAAs in the workplace after 9/11 (Ibish, 2003). Another study asked participants to rate their feelings of prejudice towards MENAAs and other racial and ethnic minorities (Bushman & Bonacci, 2004). These researchers then sent out a “lost email” where someone with a MENAA name was awarded a scholarship. These researchers found that if the participant had high amounts of prejudice, they were less likely to return the “lost email”. Lastly, they found that participants rated their prejudiced feelings toward MENAAs as higher than those toward other racial and ethnic groups (Bushman & Bonacci, 2004).

These trends of discrimination are seen in the experiences and attitudes of MENAAs. For example, Moradi and Hasan (2004) asked MENAA participants about their experiences with discrimination. Over half of the participants endorsed being discriminated against solely due to their race/ethnicity by a stranger. Additionally, nearly half of the sample were called a racist name within the last year (Moradi & Hasan, 2004). Similar trends were discovered in MENAA college students. One qualitative study interviewed 68 Muslim college students which included MENAA in New York following the attack on 9/11/ (Peek, 2003). Compared to their college campus in which they felt safe, an overwhelming majority of these students did not feel safe in New York. In particular, these students reported fear of going into public transportations such as subways (Peek, 2003). Another qualitative study that interviewed 25 MENAA college students found that almost all of them reported being labeled a terrorist (Modir & Kia-Keating, 2018). Further, these students expressed being discriminated against by peers such as friends making discriminatory comments (Modir & Kia-Keating, 2018). Lastly, another study found that roughly half of MENAAs expressed that individuals hinted they were dangerous due to their ethnicity and the majority of the sample (77%) reported experiencing offensive comments (Awad, 2010).

Additionally, MENAAs face institutional discrimination from governmental laws and policies, such as the Patriot Act and the Muslim Ban (Awad et al., 2019). The Patriot Act gave the government free rights to conduct surveillance on any individual that could be considered a terrorist, and this would often target MENAAs (Audi, 2008; Awad et al., 2019). The Muslim Ban in 2017 targeted countries in the MENA region and did not allow

citizens from these countries to enter the US (Collingwood et al., 2018). The Muslim Ban also detained many MENAA residents (Walters et al., 2017; Yuhas & Sidahmed, 2017).

It is clear that discrimination against MENAAs can take a variety of forms, including verbal and physical abuse as well as targeted laws and policies. Considered to be a chronic stressor, discrimination in all forms can have serious, negative repercussions for health outcomes (Ahmed et al., 2007; Grollman, 2012; Padela & Heisler, 2010; Sawyer et al., 2012; Vines et al., 2017). One reason posited is that discrimination can be appraised as a highly stressful event (Clark et al., 1999; Williams et al., 2019). Since discrimination can be chronic, this can then lead to an overactivation of the physiological and psychological stress response (Clark et al., 1999; Pascoe & Smart Richman, 2009), which overtime can lead to poor health outcomes (Clark et al., 1999; Pascoe & Smart Richman, 2009; Williams et al., 2019). It has been well documented that virtually all forms of discrimination are associated with higher levels of internalizing symptoms such as depression and anxiety among many different minoritized racial and ethnic groups including African Americans, Asian Americans, Latinx Americans (Bennett et al., 2020; Gaylord-Harden & Cunningham, 2009; Gee et al., 2007). Further, discrimination is associated with a variety of poor physical health outcomes (Carter et al., 2019; Williams et al., 2019). These effects have been replicated in several longitudinal studies and documented in meta-analyses (Luo et al., 2012; Pascoe & Smart Richman, 2009; Schmitt et al., 2014).

Research on the effects of discrimination among MENAA is limited; however, there is still strong evidence that discrimination leads to poorer health outcomes in this population. For example, one study identified that discrimination, which included verbal

and physical abuse, was associated with poorer self-rated health, less happiness, and higher distress which included symptoms of depression and anxiety among MENAA (Padela & Heisler, 2010). Further, other studies provided evidence that discrimination is associated with psychological distress including depression and anxiety, as well as poor self-rated health (Ahmed et al., 2011; Ikizler & Szymanski, 2018; Kader et al., 2019). Lastly, discrimination predicted poor self-esteem among MENAAs (Atari & Han, 2018). Overall, discrimination is a relevant and pervasive stressor for MENAA and is associated with many negative mental and physical health outcomes.

### 1.3 Cultural Resources

Clearly, discrimination is pervasive, and salient for MENAAs but not everyone exposed to discrimination develops poor health outcomes. This leads to the question: how can MENAAs cope or overcome these stressors? Reports suggests that the social context of an individual can help to influence health outcomes (Lehman et al., 2017). For members of minoritized racial and ethnic groups , the use of cultural resources within the individual's social context can serve as a protective factor for race related stressors (Ellison et al., 2017; Finch & Vega, 2003). Utilization of cultural resources may be important methods of coping as research shows low rates of seeking mental health services in a sample of MENAA Muslims (Aloud & Rathur, 2009).

One cultural resource important to MENAAs is the family. MENAA culture is collectivist, and the family plays a large role in the individual's life (Awad et al., 2022; Modir & Kia-Keating, 2018; Nassar-McMillan et al., 2014). Research has shown that MENAAs are highly connected to their families and go to their families for support (Ikizler & Szymanski, 2018; Modir & Kia-Keating, 2018).

In addition to the family, MENAA culture puts strong emphasis on religion so this may be another important cultural resource (Amer & Kayyali, 2016; Awad et al., 2022). One qualitative study found that some MENAA college students turned to religious and cultural organizations after experiencing stressors such as discrimination (Modir & Kia-Keating, 2018). Further, qualitative studies have found that some MENAA utilize cultural resources such as religion as a treatment for mental illness (Mechammil et al., 2019). In addition, a sample of imams (Muslim religious leaders) reported an increased need to counsel Muslim congregants which included MENAAs due to discrimination after 9/11 (Ali et al., 2005).

Clearly, the family and religion are important cultural resources among MENAA. Further, these cultural resources can offer social support which can promote health and protect from the effects of stressors such as discrimination among racial and ethnic groups (Finch & Vega, 2003; Wei et al., 2010). Therefore, it is important to understand how family and religion can affect health and potentially buffer the harmful effects of discrimination among MENAA.

### *1.4 Family Support*

One way the family can be used as a resource is through family support which is broadly defined as the perceived support derived from the family (Ramaswamy et al., 2009). MENAAs are highly connected to their family and value the family input greatly (Ikizler & Szymanski, 2018; Nassar-McMillan et al., 2014). While family support is usually grouped together with other forms of social support such as peers or community members, it may be particularly important to examine family support independent of other forms of social support in this population. This is due to research showing

MENAAs typically report more family support over other forms of social support and therefore family support may be more valued comparatively within the culture (Aroian et al., 2010; Ramaswamy et al., 2009). While limited, there is evidence that family support is related to positive health outcomes such as less internalizing behavior problems and depressive symptoms among MENAAs (Abu-Ras & Abu-Bader, 2009; Ramaswamy et al., 2009).

**Family Support as a Moderator.** While some research has shown the direct effects of family support among MENAAs, it may be more beneficial to examine family support as a moderator as noted in the stress buffering hypothesis (Cohen & Wills, 1985). This is in part because perceived family support can reduce or buffer the effects of stress (Raffaelli et al., 2013; Wei et al., 2010).

Unfortunately, very few studies have examined the moderating role of family support among MENAAs. One study examined the moderating role of family connectedness which has items of family support and found that family connectedness buffered the effects of discrimination on psychological distress among MENAAs (Ikizler & Szymanski, 2018). While there are items reflecting family support on the family connectedness measure, it also assesses other aspects such family obligation. Therefore, this does not fully capture the perceived support from the family as an individual can be connected by their obligations to their family without perceiving emotional support from them. Additionally, one study examined the moderating role of social connectedness between the relationship of discrimination and post-traumatic cognitions in a sample of displaced Muslims that included MENAs (Sheikh et al., 2021). In this study, social connectedness was defined with elements of social support such as a perception of being

understood by people. This study found that social connectedness buffered the effects of discrimination on post-traumatic cognitions. While this study highlights the importance of social support, the social connectedness measure does not specify which people participants feel close to. Therefore, we cannot determine the specific moderating role of family support from this study. Similarly, another study found that social support, which included family support, buffered the effects of discrimination on psychological well-being (life satisfaction and positive and negative affect) among Middle Eastern immigrants in Australia (Hashemi et al., 2020). Further, as noted by studies mentioned previously, MENAAs may prefer to utilize family support over other forms of social support and there could be differences in the moderating role of social support if they had examined forms of social support separately. Lastly, the experiences of discrimination that MENAAs face may be different in the US than in Australia. To our knowledge, no study has examined family support as a moderator of discrimination among MENAAs.

While little research has been conducted on the moderating effects of family support on discrimination among MENAAs, the buffering role of family support has been identified in other racial and ethnic communities. For example, studies on South Asians and Asian Americans more broadly found that family support buffered the effects of discrimination on depression (Tummala-Narra et al., 2012; Wei et al., 2010). Another study found that African American adolescents who had supportive and nurturing-involved parents had fewer depressive symptoms and conduct problems when exposed to discrimination (Brody et al., 2006).

### *1.5 Religion and Religious Support*

In addition to the family, religion is another important factor in the lives of MENAAs (Amer & Kayyali, 2016; Awad et al., 2022). Research has long shown that having religion in one's life is associated with positive outcomes such as more happiness, less depression, and better self-rated quality of life (Ahmed et al., 2011; Roth et al., 2016; Sahraian et al., 2013). Further, the positive benefits of religious involvement have been identified across different religions (Mitchell & Weatherly, 2000; Pirutinsky et al., 2011; Sahraian et al., 2013).

One reason religion may be related to positive outcomes is that religious involvement can offer a sense of community and a support system (Page et al., 2020). Being involved with religion may allow individuals to be around those who share their values (Morton et al., 2017). This could explain why reviews have documented that religious involvement broadly is linked to improved self-esteem and life satisfaction (Page et al., 2020). Similar to other forms of social support, it can promote healthy life choices such as eating more fruits and vegetables (Debnam et al., 2012). The perceived support from religion is complex as it can derive from members of the religious community, religious leaders, or be perceived support from a religious deity (God or Allah; Bjorck & Maslim, 2011). Studies have shown that one reason various measurements of religion are related to better health outcomes (e.g., less hopelessness, depression, suicidal behaviors, and heavy drinking) may be due to increases in religious support (Holt et al., 2018; Hovey et al., 2014). This is in part because religious support has been found to mediate the relationship between various religious measures and health outcomes (Holt et al., 2018; Hovey et al., 2014). Further, studies have shown that

religious support such as perceived support from God is independently related to health outcomes (e.g., less depression and higher life satisfaction) while controlling for general social support (Bjorck & Maslim, 2011). Therefore, when attempting to study religion, it may be important to capture religious support. For the purpose of this study, the concept is broadly defined as any perceived support derived from a religious deity, leaders, or the larger religious community (Bjorck & Maslim, 2011).

Despite the importance of religious support, there have been methodological issues in its measurement. Typically, when researchers want to capture religious support, attendance to religious activities has been used as a proxy measure (Bjorck & Kim, 2009). However, we along with other authors, argue that religious attendance is a separate measure (Hope et al., 2017), which does not fully capture the perceived support that an individual will gain from religion. It is feasible that an individual may attend a religious service without perceiving support from the service or from the community in attendance. Further, many studies do not capture the different forms of religious support, such as support from God, as individuals can potentially perceive support from God without attending a religious service. Studies have shown that religious support and general social support mediate the relationship between religious attendance and health outcomes across multiple minoritized racial and ethnic groups (Ai et al., 2013; Van Olphen et al., 2003).

Little research has examined the association between religious support and health outcomes among MENAAs. One study identified that religious support was associated with less internalizing symptoms (e.g., depressive and anxiety), and externalizing symptoms (e.g., fighting) among MENAA adolescents (Ahmed et al., 2011).

Additionally, in a study of Muslim women that included MENAAs, religious support was associated with less depression and higher life satisfaction (Bjorck & Maslim, 2011). Similar findings were observed in a separate study among Israeli Jewish adults (Lazar & Bjorck, 2008).

Despite the limited research among MENAAs, religious support is consistently linked with positive outcomes among other ethnic and racial groups. For example, one study found that among Korean Americans, religious support was related to better life satisfaction and less depression (Yi & Bjorck, 2014). In a sample of Latinos in California, religious support was related to better self-rated physical health (Finch & Vega, 2003). In some studies, such as one with a sample of African Americans, religious support was a stronger predictor of positive outcomes such as increases in moderate physical activity compared to general social support (Debnam et al., 2012).

**Religious Support as a Moderator.** While there is evidence of the positive direct effects of religious support, it may be more beneficial to examine religious support as a moderator in the same manner discussed as family support. This is in part because religious support may help individuals express their feelings and learn to cope with, or respond to, discrimination (Ellison et al., 2017). This could then negate or buffer the effects of stress (Cohen & Wills, 1985). Unfortunately, little attention has been paid to this possible role of religious support among MENAAs.

To our knowledge, religious support has been partially examined as a moderator in only two studies that focused on MENAA participants. First, Ahmed et al (2011) incorporated religious support as one part of a cultural resource measures, finding that sociocultural resources did not moderate the relationship between cultural adversity

(discrimination and acculturative stress) and psychological distress among MENAA adolescents. A separate analysis of religious support only was not reported. Since religious support was not examined separately, it is difficult to know the moderating effects separate from the overall measure.

Additionally, another study examined the moderating role of religious support in the relationship between discrimination, acculturative stress, and health outcomes (e.g., depression and anxiety) in a sample of Muslims that included MENAA (Tineo et al., 2021). This study found that acculturative stress mediated the relationship between discrimination and both depression and anxiety. Further, they found that religious support moderated the relationship between discrimination and depression directly as well as indirectly through acculturative stress. Religious support buffered the effects of discrimination on depression in the direct path. However, when this relationship was mediated through acculturative stress, religious support amplified the indirect effects of discrimination on depression through acculturative stress. This study also found that religious support did not moderate the direct relationship between discrimination and anxiety. Although, they found that religious support amplified the effects of discrimination on anxiety via acculturative stress (Tineo et al., 2021). While this study shows preliminary evidence of the moderating role of religious support, these researchers focused on exclusively Muslims and did not focus on MENAAs. These results may not reflect MENAAs more broadly. Therefore, it is important to examine the moderating role of religious support in a broader MENAA sample.

While there have not been many studies utilizing religious support among MENAAs, a few studies that have examined various other religious measures as a

moderator of discrimination with mixed results. One study identified that among MENAA Muslims, high amounts of religiosity, or one's engagement in practices and beliefs, increased exposure to discrimination. Further, high levels of religiosity also amplified the effects of discrimination on psychological distress in the overall sample of MENAAs. (Ikizler & Szymanski, 2018). One possible explanation for this is that for MENAA Muslims, visible forms of practicing religion could potentially put them at risk for increased discrimination. Further, the authors suggest, it is possible that MENAA may question their religious identity due to increased discrimination perceived from religion. This may make it difficult to use religiosity as a coping resource (Ikizler & Szymanski, 2018). It is also important to note that, religiosity does not capture religious support as individuals can practice and have beliefs in the religion without perceiving emotional support from the religion. Alternatively, one study found that religious resources (e.g., religious service attendance, importance of God and importance of religious practices) buffered the effects of discrimination on psychological distress in sample of MENAA Muslims but not MENAA Christians (Shah, 2019). These researchers posit that the use of religion is more salient for marginalized populations (Muslims as opposed to Christians within the US). They state that for marginalized populations, religion and religious services may play a more prominent role in the coping process compared to non-marginalized populations. Another possible explanation is that Muslim MENAAs may seek out religious leaders more for support as one study found that imams regularly act as a therapist for religious community members (Ali et al., 2005). However, as previously mentioned, attendance of religious services does not capture religious support as it is

possible for individuals to attend a religious service without perceiving support from the service.

Overall, the literature of the buffering role of religion is mixed among MENAAs. Since researchers posit that that one pathway from religion to health is through religious support, it may be more important to understand religious support when examining the buffering role of religion among MENAAs. Therefore, we cannot conclude the moderating role of religious support on discrimination among MENAAs from these studies.

While studies examining the moderating role of religious support is limited among MENAAs, there is evidence that religious support buffers the relationship between discrimination and health outcomes across other racial and ethnic groups (Ellison et al., 2017). For example, one study found that religious support buffered the effects of discrimination on depression in a sample of African American mothers (Odom et al., 2010). Similarly, another study found that among Latino adults, religious support buffered the effects of discrimination on self-rated physical health; that is, at high amounts of religious support the relationship between discrimination and physical health was weaker (Finch & Vega, 2003). Further, another study examined multiple religious measures including religious attendance, religious support, and frequency of prayers as moderators of discrimination on life satisfaction and depressive symptoms among African American adults (Ellison et al., 2017). They found that only religious support buffered the effects of discrimination in so far as that at high religious support, the relationship between discrimination and depression and life satisfaction was attenuated (Ellison et al., 2017). This speaks to the argument that religion is associated with better

health outcomes due to the social support derived from religion and that religious attendance is a separate construct from religious support. Lastly, another study confirmed the moderating role of religious support as a sample of African Americans had higher levels of general anxiety symptoms when exposed to discrimination if they had low levels of religious support (Graham & Roemer, 2012).

### 1.6 Research Aims

In summary, family and religious support are consistently linked with better health outcomes, including fewer symptoms of depression and anxiety, and better self-rated physical health across various racial and ethnic groups, including MENAAs. In addition to consistent direct effects of family and religious support, there is evidence that both family and religious support can moderate the relationship between discrimination and health outcomes across other racial and ethnic groups. Despite this research, it is yet to be demonstrated that family and religious support can moderate the effects of discrimination among MENAAs. Thus, the focus of this study is to examine whether family and religious support buffer the effects of discrimination on depression and anxiety symptoms, as well as self-rated physical health, among MENAAs. In order to examine these questions, this study will investigate the follow hypotheses:

H1: Family support will buffer the effects of discrimination on depression and anxiety symptoms such that the relationship will be weaker at high levels of family support.

H2: Family support will buffer the effects of discrimination on self-rated physical health such that the relationship will be weaker at high levels of family support

H3: Religious support will buffer the effects of discrimination on depression and anxiety symptoms such that the relationship will be weaker at high levels of religious support.

H4: Religious support will buffer the effects of discrimination on self-rated physical health such that the relationship will be weaker at high levels of religious support

# Chapter 2: METHODS

## 2.1 Participant Characteristics

This sample includes 126 MENAA adults. This sample size was desired in order to be comparable with previous studies that had a similar design (Ikizler & Szymanski, 2018). The mean age of the sample was 26.72 (*SD* = 8.23) and the majority identified as women (61.9%). Most reported being second generation (69.8%) and identified as heterosexual (69.0%). In terms of country of origin, 14.21% reported Palestine, 13.11% reported Lebanon, 11.48% reported Iran, and 9.29% reported Egypt. In terms of race in addition to identifying as MENA, 43 (31.16%) identified as White or European American, 7 (5.07%) identified as Black or African American or Afro Caribbean, and 3 (2.17%) identified as Hispanic, Latino, or Spanish origin. Regarding religious identity, 44 (34.9%) identified as Muslim, 30 (23.8%) identified as Christian, and 37 (29.4%) identified as non-religious. In terms of education, virtually the entire sample 125 (99.2 %) had their high school diploma and 49 (38.9 %) had a bachelor's degree. Over half of the participants 72 (57.1%) were single and never married. Full participant characteristics are reported in Table 1.

**Table 1.** *Participant Characteristics*

| | M | SD |
|---|---|---|
| Age (n=126) | 26.72 | 8.23 |
| | N | % |
| Gender Identity (n=126) | | |
| Woman | 78 | 61.9 |
| Man | 37 | 29.4 |
| Trans Man | 2 | 1.6 |
| Gender Fluid | 1 | 0.8 |
| Non-Binary | 8 | 6.3 |
| Race and Ethnicity (n=126) ** | | |
| I only identify as MENAA | 74 | 53.62 |
| White or European American | 43 | 31.2 |

| | | |
|---|---|---|
| Black or African American or Afro Caribbean | 7 | 5.1 |
| Hispanic, Latino/a or Spanish Origin | 3 | 2.2 |
| East Asian or East Asian American | 1 | 0.7 |
| Native Hawaiian or Other Pacific Islander | 1 | 0.7 |
| South Asian or South Asian American | 1 | 0.7 |
| Other | 7 | 5.1 |
| Prefer not to answer | 1 | 0.7 |
| Country of Origin (n=126) ** | | |
| Palestine | 26 | 14.21 |
| Lebanon | 24 | 13.11 |
| Iran | 21 | 11.48 |
| Egypt | 17 | 9.29 |
| Syria | 15 | 8.20 |
| Iraq | 10 | 5.46 |
| Morocco | 9 | 4.92 |
| Turkey | 9 | 4.92 |
| Armenia | 8 | 4.37 |
| Jordan | 8 | 4.37 |
| Libya | 4 | 2.19 |
| Israel | 4 | 2.19 |
| Other | 17 | 9.29 |
| Religion | | |
| Muslim | 44 | 34.9 |
| Christian | 30 | 23.8 |
| Non-religious | 37 | 29.4 |
| Jewish | 4 | 3.2 |
| Other | 5 | 4.0 |
| Generational Status (n=126) | | |
| 1st Generation | 17 | 13.5 |
| 2nd Generation | 88 | 69.8 |

**Table 1.** *Participant Characteristics* (continued)

| | | |
|---|---|---|
| 3rd Generation | 11 | 8.7 |
| 4th Generation | 9 | 7.1 |
| Temporary Resident | 1 | 0.8 |
| Education (n=126) | | |
| Less than High school | 1 | 0.8 |
| High school not currently in college or tech school | 14 | 11.1 |
| High school, currently enrolled in college/tech school | 30 | 23.8 |
| Associates degree | 17 | 13.5 |
| Bachelor's degree not currently enrolled in graduate school | 34 | 27.0 |

| | | |
|---|---|---|
| Bachelor's degree currently enrolled in graduate school | 15 | 11.9 |
| Master's degree | 11 | 8.7 |
| Terminal degree | 4 | 3.2 |
| Marital Status (n=126) | | |
| Single (never married) | 72 | 57.1 |
| Married | 23 | 18.3 |
| In a relationship | 29 | 23.0 |
| Divorced | 2 | 1.6 |
| Sexual Orientation (n=126) | | |
| Exclusively heterosexual | 87 | 69.8 |
| Mostly heterosexual, only incidentally homosexual | 8 | 6.3 |
| Equally heterosexual and homosexual | 8 | 6.3 |
| Mostly homosexual, only incidentally heterosexual | 5 | 4.0 |
| Exclusively homosexual | 5 | 4.0 |
| Pansexual | 2 | 1.6 |
| Queer | 7 | 5.6 |
| Asexual | 1 | 0.8 |
| Prefer not to disclose | 3 | 2.4 |
| Annual Income (n=126) | | |
| Less than 10,000 | 14 | 11.1 |
| 10,000 – 14,999 | 3 | 2.4 |
| 15,000 – 19,999 | 5 | 4.0 |
| 20,000 – 24,999 | 13 | 10.3 |
| 25,000 – 29,999 | 2 | 1.6 |
| 30,000 – 39,999 | 15 | 11.9 |
| 40,000 – 49,999 | 8 | 6.3 |
| 50,000 – 74,999 | 24 | 19.0 |
| 75,000 – 99,999 | 13 | 10.3 |
| 100,000 – 149,999 | 16 | 12.7 |
| Greater than 150,000 | 8 | 6.3 |
| Prefer not to answer | 5 | 4.0 |

**Adds up to higher N than sample as participants could choose more than one response

## 2.2 Procedures

Participants were recruited through Prolific, a research software. Research has shown this software to have high data quality (Peer et al., 2022). The eligibility criteria of this study were being over the age of 18, identifying as MENA descent, having the ability

to read English, and living in the US. We utilized Prolific's ethnicity category to recruit MENAAs. Prolific has an ethnicity category titled Middle Eastern but not Middle Eastern and North African. Since we were worried this could potentially exclude individuals that identify with North African origins, we recruited participants in multiple steps. First, we created a question asking individuals if they identify as MENA. We sent this question to Prolific participants of various ethnic backgrounds. We did this in multiple steps as first we sent this question to a broad range of ethnicities including White/Caucasian, Middle Eastern, Black African American, African, Mixed, Other. In this first batch out of 259 who responded, only 17 identified as MENA. Since very few identified as MENA, we then reduced the various ethnicities to Middle Eastern, African, and Mixed. In the next batch, out of 41, only an additional 15 identified as MENA. One trend we noticed was that many individuals who identified as MENA who were of North African origin also identified as Middle Eastern on the Prolific ethnicity question. Due to this trend, our low number of MENA identification, as well as some research that showed that individuals with North African origins such as Algeria, Egypt, Sudan, and Somalia do identify as Arab or Middle Eastern in previous studies (Awad, 2010; Modir & Kia-Keating, 2018), we then targeted an additional 183 individuals on Prolific who identified as Middle Eastern. To maintain consistency, we still asked these individuals if they identified as MENA. All individuals who identified as MENA were invited to complete the larger survey of study variables. Altogether, 203 participants identified as MENA and were invited to complete the larger survey. All participants invited to the larger survey were asked the eligibility criteria of identifying as MENA, being over the age of 18, having the

ability to read English, and living in the US. Among the 203, 126 completed the larger survey and thus comprise our study sample.

Once all eligibility criteria had been met, participants were brought to a screen where they were asked to complete an informed consent. Next, individuals who consented to participation were sent to a screen where they completed self-report questionnaires regarding demographic characteristics, experience with different forms of discrimination, religious support, family support, depressive and anxiety symptoms, and their overall physical health. Participants earned 15 cents for answering if they identify as MENA and then those who complete the larger survey earned an additional $4.25 for a total of $4.40. The survey took approximately 20-35 minutes to complete. Self-report data through Prolific was used over other methods to acquire experiences from MENAs across the country. This was done as MENAs nationally may have varied experience in their exposure to discrimination and access to religious and family support. All procedures were approved by the UNCC Institutional Review Board.

## 2.3 Measures

### *Demographics and Potential Covariates*

Participants reported on their age, sex, gender identity, generational status including number of years living in the US, education level, income, religious affiliation, family country of origin. Many of these variables have been used as covariates in previous studies that included MENAAs (Ahmed et al., 2011; Bjorck & Maslim, 2011).

### *Family Support*

Perceived family support was measured by the Multidimensional Scale of Perceived Social Support (Ramaswamy et al., 2009; Zimet et al., 1988). While the total

scale is 12 items, only the 4 items that assess family support (e.g., “My family is a real source of comfort for me”) were used. The other items create friend and special person subscales. However, since we are only interested in perceived family support, the items of these two subscales were dropped. The scale asks participants to rate the amount they agree with each statement of perceived family support on a 7-point scale ranging from “very strongly disagree” (1) to “very strongly agree” (7; Zimet et al., 1998). Scores were averaged with higher scores meaning more perceived family support. The perceived family support scale had an excellent internal consistency in our study (α=.94).

***Religious Support***

Perceived religious support was assessed by the Multi-Faith Religious Support Scale (Bjorck & Maslim, 2011). This scale is comprised of 21 items which can be split into three subscales assessing perceived support from religious leaders (7 items e.g., “My religious leaders care about my life and situation”), religious deity (7 items e.g., “I am valued by God”), and religious attendees or participants (7 items e.g., “I feel appreciated by other participants in my religious group”). Participants were asked how much they agree with each statement regarding religious support on a 5-point scale ranging from “strongly disagree” (1) to (5) “strongly agree”. However, since prior reports suggest the three negatively worded items in the measure can decrease reliability (Torrecillas et al., 2020), these were omitted from scoring. A composite religious support scale was created by averaging the remaining 18 items, with higher scores meaning more perceived religious support. This scale has been validated and used across numerous religions, including Christianity and Islam (Bjorck & Maslim, 2011; Torrecillas et al., 2020). The religious support scale had excellent internal consistency in our study (α=.98).

***Discrimination***

In order to assess for discrimination, we adapted the Brief Perceived Ethnic Discrimination Questionnaire Community Version (Brief PEDQ-CV; Brondolo et al., 2005). The original measure assesses exposure to discrimination due to race or ethnicity across the lifetime. However, it is possible that due to the intersectionality of race/ethnicity and religious identities (Amer & Kayyali, 2016) as well as discrimination derived from Islamophobia, MENAAs may perceived the source of discrimination as due to their ethnicity/race, or, religion. To account for this potential, we reframed the questionnaire to ask perceptions of discrimination due to ethnicity/race, or religion. We then administered the 17 items of the Brief PEDQ-CV which asses a variety of forms of discrimination including: Exclusion rejection (e.g., "Made you feel like an outsider because of appearance"), Stigmatization (e.g., "Hinted you are dishonest or can't be trusted"), Discrimination at work/school (e.g., "Treated unfairly by teachers"), and Threat/aggression (e.g., "Actually hurt you"). We also decided to adapt some of the questions to make them more relevant to MENAA. For example, we adapted a question that assessed perceived discrimination from police officers and security guards to also include airport officials as this maybe a salient area of exposure to discrimination for MENAAs. Participants were asked how often these forms of discrimination happened throughout their life on a 5-point scale ranging from "never happened" (1) to "happened very often" (5). Scores were averaged across all items to create an average lifetime discrimination scale, with higher scores meaning more discriminatory experiences. This scale had excellent internal consistency in our study ($\alpha$=.95).

***Depression Symptoms***

Participants completed the 10 Item Center for Epidemiologic Studies Depression Scale (CESD-10; Andresen et al., 1994). Participants reported on depressive symptoms within the past week such as "I was bothered by things that usually don't bother me" on a 4-point scale "less than 1 one day" (1) to "5-7 days" (4). The 10-item scale was used over the 20-item scale to reduce the amount of time needed to complete the entire survey. Items were then summed with higher scores meaning higher counts of depression symptoms. The CESD-10 has been well validated and is considered a reliable measure of depression including with various racial and ethnic groups (Boey, 1999; González et al., 2017). The CESD-10 had excellent internal consistency in our study (α=.87). While interpretive scores were not found for the CESD-10, some research suggests a cutoff score of 10 for risk of depression (Boey, 1999).

***Anxiety Symptoms***

Participants completed the General Anxiety Disorder scale (GAD-7; Spitzer et al., 2006). Participants reported on anxiety symptoms within the past two weeks such as "How often have you been bothered by feeling nervous, anxious, or on edge" on a 4-point scale "not at all" (0) to "nearly every day" (3). Items were then summed with higher scores meaning higher rates of anxiety. The GAD-7 is a well validated measure of anxiety that has been used with numerous racial and ethnic groups (Borgogna et al., 2020). This scale had excellent internal consistency in our study (α=.92). Authors of the GAD suggests that scores from 0-4 are minimal levels of anxiety, 5-9 are mild levels of anxiety, 10-14 are moderate levels of anxiety, and 15-21 are considered severe levels of anxiety (Spitzer et al., 2006).

***Self-Rated Physical Health***

Self-rated physical health was measured with 1 item asking participants, “How would you rate your overall physical health? Would you say it is excellent, very good, good, fair or poor?”. Studies have shown that self-rated health broadly is associated with mortality, illness, and health behaviors (Albqoor et al., 2020; DeSalvo et al., 2006; Kepka et al., 2007; Manor et al., 2001). Among MENAAs, poor self-rated health is associated with more drinking behaviors, psychological distress, and having a family member that required daily assistance (Albqoor et al., 2020). In order to distinguish between physical health and mental health, we specified physical health within the question. Items were coded in such that higher scores meant worst self-rated physical health (Kananen et al., 2021).

# CHAPTER 3: DATA ANALYSIS

## 3.1 Descriptive Analysis

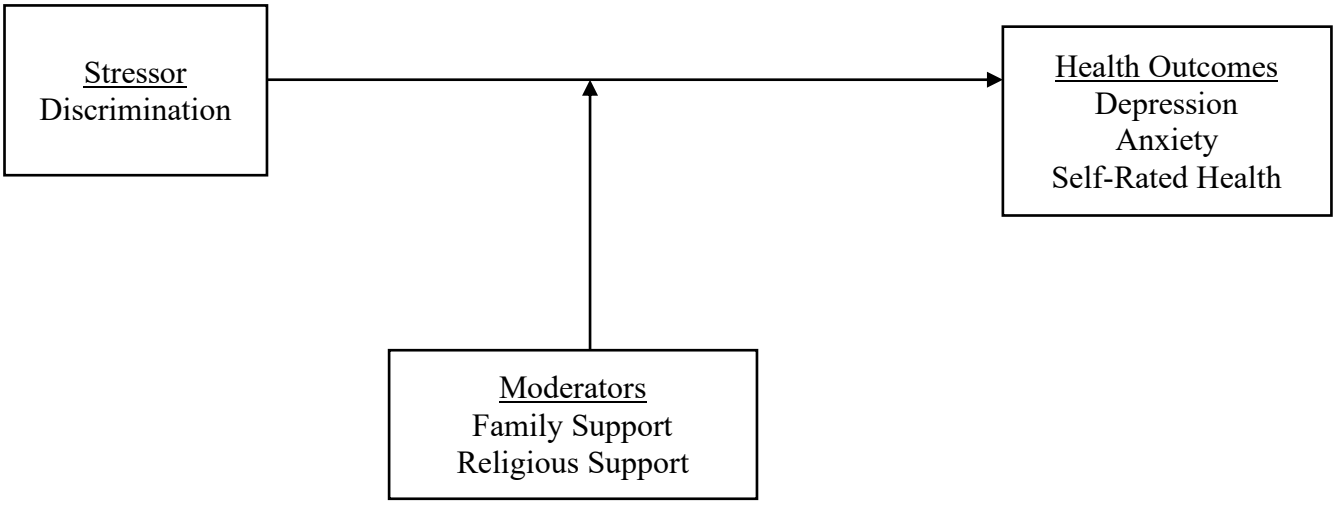
All data were analyzed with SPSS Version 28. Descriptive analyses were run to ensure data was normally distributed and had acceptable variance. No item had more than 3% missing and therefore corrections for missingness was not implemented. Pearson's correlations were conducted to examine relationships between study variables and continuous sociodemographic variables. Point biserial correlations were conducted to examine relationship between study variables and categorical sociodemographic variables. One-way ANOVAS were conducted to determine differences among multicategorical sociodemographic variables and our study variables to see if they should be included as covariates. Only sociodemographic factors significantly associated with multiple study variables were utilized as covariates to reduce model complexity.

## 3.2 Primary Analysis

To examine the direct and interactive effects between religious and family support and discrimination on the outcome variables (e.g., depression, anxiety, self-rated health), hierarchical multiple regressions were analyzed using SPSS. All outcome variables were treated as continuous (Kananen et al., 2021; Rosenberg et al., 2021; Spitzer et al., 2006). To ensure data were interpretable and comparable, all predictor variables (e.g., religious support, family support, and discrimination) were mean centered (Hayes, 2012). In order to reduce model complexity, each model was run with one support variable (religious or family support) and one outcome variable (depression, anxiety, or self-rated health; see Figure 1). Potential covariates were added as predictors of the outcome variables during Step 1 of the regression. The main effects of the support variables and discrimination

were entered during Step 2 of the regression. The interaction between the support variable and discrimination was added in Step 3. A significant increase in $R^2$ between Step 2 and Step 3 as well as a significant interaction term indicated potential moderation. Models where a significant increase in $R^2$ occurred and interaction terms were significant were then analyzed in PROCESS Macro Model 1 (Hayes, 2012) to examine for moderation effects. Using PROCESS Macro Model 1, simple slope analyses were conducted (1 SD above and below the mean) to investigate any significant interactions between the religious and family support variables and discrimination (Aiken et al., 1991).

**Figure 1**. Conceptual model of family and religious support moderating the effects of discrimination on health outcomes.




*Note*: Model was tested individually with each moderator run separately with one health outcome.

# CHAPTER 4: RESULTS

## 4.1 Descriptive Results

Descriptives of study variables are provided in Table 2. Briefly, mean scores indicated that, as a group, participants "seldom" experienced discrimination ($M$ = 1.98, $SD$ = .83) and, on average, they neither "disagreed or agreed" with the experience of religious support ($M$ = 2.69, $SD$ = 1.33). The mean score on the family support measure ($M$ = 5.16, $SD$ = 1.57) indicated that participants "mildly agreed" with the four statements regarding family support, although the scale authors indicate that a score of more than "5" should be considered a high level of family support (Zimet, n.d.). Participants reported mild anxiety levels ($M$ = 9.70, $SD$ = 6.24) and higher levels of depression based on published cut off scores ($M$ = 13.03, $SD$ = 6.89). Lastly, participants reported good to very good levels of physical health ($M$ = 2.95, $SD$ = .96).

Correlations among study variables are reported in Table 2. Briefly, family support was negatively correlated with depression, anxiety, and experiences of discrimination, ($r$ = -.22 to -.36, $ps$ < .05 and $ps$ < .001). Additionally, religious support was positively associated with family support ($r$ = .21, $p$ < .05) and negatively associated with depression ($r$ = -.19, $p$ < .05). Discrimination was positively correlated with depression and anxiety ($r$ = .33 to .34, $ps$ < .001). Lastly, depression was positively correlated with anxiety and worse self-rated health ($r$ = .37 to .66, $ps$ < .001), and anxiety was positively associated with worse self-rated health ($r$ = .25, $p$ < .01).

**Table 2.** *Descriptives and Correlations for Study Variables*

| | *M (SD)* | Min-Max | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. Discrimination | 1.98 (0.83) | 1-5 | -- | | | | |
| 2. Religious Support | 2.69 (1.33) | 1-5 | .03 | -- | | | |
| 3. Family Support | 5.16 (1.57) | 1-7 | **-.22*** | **.21*** | -- | | |
| 4. Depression | 13.03(6.89) | 0-30 | **.34**** | **-.19*** | **-.36**** | -- | |
| 5. Anxiety | 9.70 (6.24) | 0-21 | **.33**** | -.09 | **-.36**** | **.66**** | -- |
| 6. Self-Rated Health | 2.95 (0.96) | 1-5 | .14 | -.15 | -.16 | **.37**** | **.25**** |

*$p < .05$. **$p < .001$.

Among potential covariates, being a younger age was correlated with higher levels of anxiety ($r$ = -.24, $p < .01$) and discrimination was correlated with lower income ($r$ = - .19, $p < .05$). Sex at birth and education were not correlated with any of the study variables and therefore were not included in analyses. Due to low variability, marital status was dichotomized into single (single/ never married and divorced) and in a relationship (married and in a relationship) but was not correlated with any of the study variables. Similarly, sexual orientation was dichotomized due to low variability. Heterosexual and mostly heterosexual were collapsed into one group. All other responses were collapsed into a LGBQA+ category (0=heterosexual and 1= LGBQA+). Point Biserial correlation results revealed that being a member of LGBQA+ was associated with higher levels of depression and anxiety ($r$pb = .26 to .33, $ps < .01$ and $ps < .001$), and less family and religious support ($r$pb = -.23 to -.42, $ps < .05$ and $ps < .001$).

In order to determine if generational status should be included in the model, one-way ANOVAs were conducted to examine differences in study variables by generational status. First, temporary residents ($n$ = 1) were coded as first generation since we believe it is feasible that their experiences are most similar to individuals who have immigrated to the US. Next, homogeneity of variance was met for all study variables except anxiety. Therefore, one-way ANOVAs were conducted for all study variables except for anxiety.

4.04, $p$ <.01. Tukey post hoc comparisons revealed participants identifying as third generation (M =17.45, SD = 8.02) reported higher levels of depression compared to first generation ($M$ =8.89, $SD$ = 6.04).

Since homogeneity of variance was not met for anxiety, a Welch $F$-ratio test was conducted. This revealed significant differences of anxiety by generational status $F($3, 22.97) = 14.26, $p$ <.001. Further, we used a Game-Howell post hoc test since homogeneity was not met. This revealed lower levels of anxiety for first generation ($M$ =3.67, $SD$ = 3.79) compared to second ($M$ =10.54, $SD$ = 6.11), third ($M$ =13.09, $SD$ = 6.33), and fourth generation ($M$ = 9.33, $SD$ = 6.24). Therefore, to control for potential differences, generational status was included in the model with second generation as the reference group. Overall, based on these results and to reduce model complexity, we chose to include only covariates that were associated with multiple variables. Therefore, only generational status and sexual orientation were included as covariates.

**4.2 Primary Results**

Regression assumptions were evaluated prior to analyses. Based on visual inspections of histograms, discrimination was positively skewed, and family support was negatively skewed. Therefore, we transformed discrimination using log10 and transformed family support by squaring it. Visually, histograms revealed a normal distribution after transformation. Analyses were conducted using transformed variables and untransformed variables. Results were similar between transformed and untransformed variables. Therefore, for ease of interpretation, results reported are from untransformed variables. All other study variables were mostly normally distributed. When regressions were conducted, histograms of residuals followed a normal distribution

and P-P plots revealed a linear relationship for all regression models. A Durbin-Watson test was conducted and determined independence of residuals as values were under 2.5 for all models. There was no violation of multicollinearity as all correlations were under .80. Lastly, scatterplots of the regression standardized residuals suggested no violation of the assumption of homoscedasticity for the models predicting depression and anxiety. For both models predicting self-rated health, scatterplots suggested a violation of the assumption of homoscedasticity. However, it should be noted that regression analyses are robust to this violation (Ernst & Albers, 2017). Therefore, corrections were not implemented for models predicting self-rated health.

***Family Support as a Moderator***

**Model Predicting Depression.** In Step 1 of the model to predict depression, generation status and sexual orientation were entered. Second-generation and heterosexual were used as the reference groups. This step accounted for a significant amount of the variance predicting depression ($R^2 = 0.12$, $F$ (4,118) = 4.19, $p < .01$). During Step 1, LGBQA+ members had higher levels of depression compared to their heterosexual counterparts ($b = 3.09$, $p < .05$). However, this became non-significant in the following steps of the regression. Additionally, first generation MENAs had lower levels of depression compared to second- generation ($b = -3.48$, $p < .05$). However, this became non-significant in Step 2 but became significant again in Step 3. Mean centered discrimination and family support were entered during Step 2 of the regression. This step accounted for a significant increase in the amount of the variance predicting depression ($R^2 = 0.27$, $F$ (6,116) = 7.23, $p < .001$). Step 2 of the regression revealed that family support predicted less depression ($b = -1.12$, $p < .01$) and discrimination predicted more

depression ($b = 2.12$, $p < .01$). Step 3 of the model added the interaction between family support and discrimination to the model. This model also accounted for a statistically significant amount of the variance predicting depression ($R^2 = 0.35$, $F$ (7,115) = 8.91, $p <$ .001). Additionally, this model accounted for significantly more of the variance than Step 2 ($R^2$ change = .08 $p < .001$), indicating that the interaction between family support and discrimination significantly predicted depression ($b = 1.41$, $p < .001$). Using PROCESS Macro Model 1, simple slopes revealed that discrimination predicted depression at high ($b = 5.12$, $p < .001$) and the mean ($b = 2.92$, $p < .001$) levels of family support but not at low levels of family support ($b = 0.71$, $p = .34$); see Figure 2.

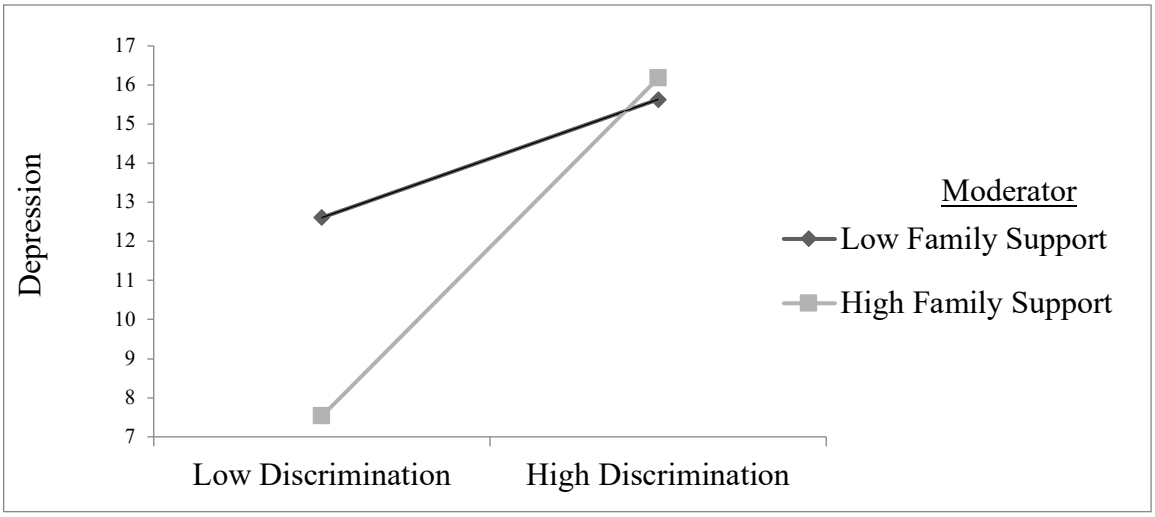



**Figure 2**. Family support moderating the relationship between discrimination and depression.

**Model Predicting Anxiety.** In Step 1 of the model to predict anxiety, generation status and sexual orientation were entered. Second-generation and heterosexual were used as the reference groups. This step accounted for a significant amount of the variance predicting anxiety ($R^2 = 0.23$, $F$ (4,118) = 8.98, $p < .001$). During Step 1, LGBQA+ members had higher anxiety compared to their heterosexual counterparts ($b = 3.66$, $p <$

.01) and first-generation MENAs had lower levels of anxiety compared to second-generation MENAs ($b$ = -6.04, $p$ < .001). These remained significant throughout each step. Mean centered discrimination and family support were entered during Step 2 of the regression. This step accounted for a significant amount of the variance predicting anxiety ($R^2$ = 0.36, $F$ (6,116) = 10.74, $p$ < .001). During Step 2 of the regression, main effects revealed family support predicted less anxiety ($b$ = -0.90, $p$ < .01) and discrimination predicted more anxiety ($b$ = 1.81, $p$ < .01). Step 3 of the model added the interaction between family support and discrimination to the model. This model was also significant ($R^2$ = 0.37, $F$ (7,115) = 9.80, $p$ < .001). However, there was no significant increase in $R^2$ between Step 2 and Step 3, and the interaction term did not significantly predict anxiety ($b$ = .58, $p$ = .08). This indicates there was no moderation effect.

**Model Predicting Self-Rated Health.** In Step 1 of the model, generation status and sexual orientation were entered predicting self-rated health. Second-generation and heterosexual were used as the reference groups. This step did not account for a significant amount of the variance predicting self-rated health ($R^2$ = 0.04, $F$ (4,118) = 1.33, $p$ = .26). Mean centered discrimination and family support were entered during Step 2 of the regression. This step did not account for a significant amount of the variance predicting self-rated health ($R^2$ = 0.07, $F$ (6,116) = 1.43, $p$ = .21). Additionally, there was no main effect of family support or discrimination predicting self-rated health. Step 3 added the interaction between family support and discrimination to the model. This model also did not account for a significant amount of the variance ($R^2$ = 0.09, $F$ (7,115) = 1.60, $p$ = .14). There was also no significant increase in $R^2$ between Step 2 and Step 3, and the

interaction term did not significantly predict self-rated health ($b$ = .10, $p$ = .12). This indicates there was no moderation effect.

***Religious Support as a Moderator***

**Model Predicting Depression.** In Step 1 of the model, generation status and sexual orientation were entered predicting depression. Second-generation and heterosexual were used as the reference groups. This step accounted for a significant amount of the variance predicting depression ($R^2$ = 0.12, $F$ (4,118) = 4.19, $p$ < .01). During Step 1, LGBQA+ members had higher levels of depression compared to their heterosexual counterparts ($b$ = 3.09, $p$ < .05) and . first generation MENAs had lower levels of depression compared to second- generation participants ($b$ = -3.48, $p$ < .05). However, both variables became non-significant in the following models. Mean centered discrimination and religious support were entered during Step 2. This step accounted for a significant amount of the variance predicting depression, with an $R^2$ = 0.23, $F$ (6,116) = 5.61, $p$ < .001. During Step 2 of the regression, mains effects revealed that discrimination significantly predicted depression ($b$ = 2.60, $p$ < .001), however religious support did not. Step 3 of the model added the interaction between discrimination and religious support. This model also accounted for a statistically significant amount of the variance predicting depression ($R^2$ = 0.26, $F$ (7,115) = 5.62, $p$ < .001). Additionally, this model accounted for significantly more of the variance than Step 2 ($R^2$ change = .03 $p$ < .05). The interaction between religious support and discrimination also significantly predicted depression ($b$ = 1.10, $p$ < .05). Using PROCESS Macro Model 1, simple slopes revealed that discrimination predicted depression at high ($b$ = 4.05, $p$ < .001) and the mean ($b$ = 2.58, $p$ < .001) levels of religious support but not at low levels of religious support ($b$ = 1.11, $p$ =

.25); see Figure 3. Lastly, while non-significant in the previous steps, Step 3 of the regression revealed that third-generation MENAs had higher levels of depression ($b$ = 4.35, $p < .05$) compared to second-generation.

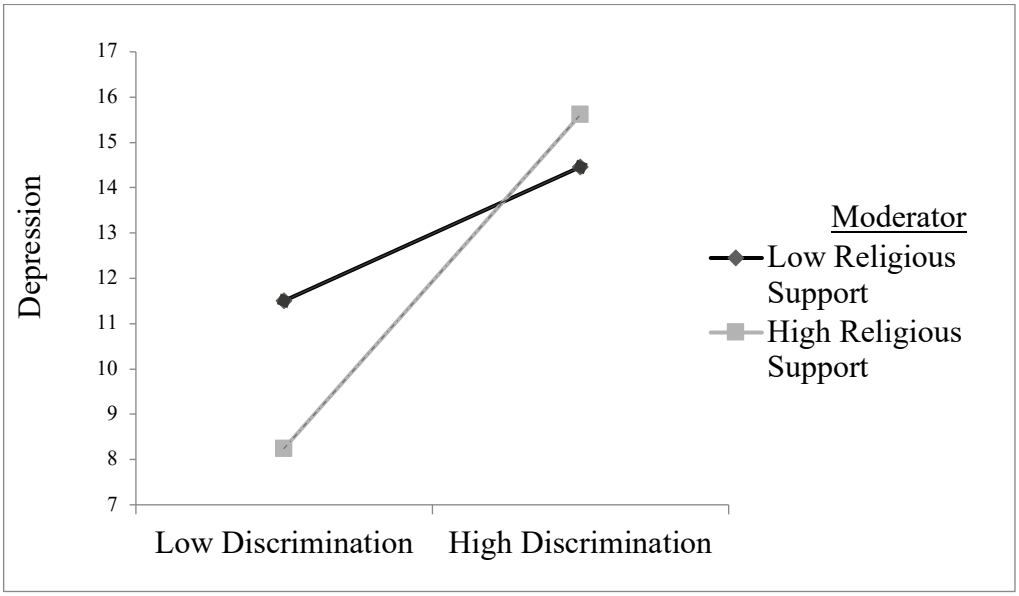



**Figure 3.** Religious support moderating the relationship between discrimination and depression.

**Model Predicting Anxiety.** In Step 1 of the model predicting GAD scores, generation status and sexual orientation were entered. Second-generation and heterosexual were used as the reference groups. This step accounted for a significant amount of the variance predicting anxiety ($R^2$ = 0.23, $F$ (4,118) = 8.98, $p < .001$). Step 1 revealed LGBQA+ members had higher levels of anxiety compared to their heterosexual counterparts ($b$ = 3.66, $p < .01$) and ) and first-generation MENAs had lower levels of anxiety compared to second- generation MENAs ($b$ = -6.04, $p < .001$). These findings remained significant throughout the rest of the steps of the regression. Mean centered discrimination and religious support were entered predicting anxiety during Step 2. This step accounted for a significant amount of the variance predicting anxiety ($R^2$ = 0.32, $F$

(6,116) = 8.89, $p < .001$). Discrimination ($b = 2.08$, $p < .001$), but not religious support, significantly predicted anxiety. Step 3 of the model added the interaction between discrimination and religious support. Although this model also accounted for a statistically significant amount of the variance predicting anxiety ($R^2 = 0.32$, $F$ (7,115) = 7.57, $p < .001$) ,there was no significant increase in $R^2$ between Step 2 and Step 3, and the interaction term did not significantly predict anxiety ($b = -.12$, $p = .78$). This indicates there was no moderation effect.

**Model Predicting Self-Rated Health.** In Step 1 of the model, generation status and sexual orientation were entered predicting self-rated health. Second-generation and heterosexual were used as the reference groups. This step did not account for a significant amount of the variance predicting self-rated health ($R^2 = 0.04$, $F$ (4,118) = 1.33, $p = .26$). Mean centered discrimination and religious support were entered during Step 2. This step also did not account for a significant amount of the variance predicting self-rated health ($R^2 = 0.07$, $F$ (6,116) = 1.49, $p = .19$). Additionally, there was no main effect of religious support or discrimination predicting self-rated health. Step 3 of the model added the interaction between religious support and discrimination to the model. This model also did not account for a significant amount of the variance ($R^2 = 0.07$, $F$ (7,115) = 1.29, $p = .26$). There was also no significant increase in $R^2$ between Step 2 and Step 3, and the interaction term did not significantly predict self-rated health ($b = .03$, $p = .70$). This indicates there was no moderation effect.

# CHAPTER 5: DISCUSSION

This study examined the moderating role of family and religious support in the relationship between discrimination and three health outcomes: depression, anxiety, and self-rated health. The present findings are that discrimination predicted higher levels of depression and anxiety whereas family support predicted less depression and anxiety. Neither the support variables nor discrimination predicted self-rated health. The moderation analyses found that family and religious support exacerbated the discrimination and depression link. Lastly, neither family support or religious support moderated the relationship between discrimination and anxiety or self-rated health.

## 5.1 Main Effects

While not a part our main hypotheses, there are a number of main effects to note. First, as expected, discrimination was associated with more depression and anxiety. This is consistent with the literature on MENAAs (Kader et al., 2019) and the larger discrimination literature (Williams et al., 2019). However, more surprisingly, there was no direct effect of discrimination predicting self-rated health in our study. This is inconsistent with research among MENAA that found that discrimination predicted poor health (Kader et al., 2019; Padela & Heisler, 2010) as well as the larger discrimination literature on physical health (Carter et al., 2019). It should be noted that some metanalytic reviews have found that discrimination has a stronger effect on mental health compared to physical health (Carter et al., 2019).

As expected, family support was related to less depression and anxiety. There is an abundance of research that supports the main effects of family support or social support more broadly linked to better mental health (Harandi et al., 2017; Wei et al.,

2010). However, family support did not predict self-rated health. Research shows that the effects of social support broadly on physical health markers are typically small (Miyazaki et al., 2003; Runsten et al., 2014) and there may be other contributors to self-rated health such as health behaviors (Zarini et al., 2014).

Lastly, religious support was not directly related any of the health outcomes. This was surprising as religious support has been noted to be correlated with better health among MENAA (Ahmed et al., 2011). One possible explanation may be due to racialization of religion due to Islamophobia. If MENAA participants are worried that they will be under scrutiny or attack due their religion, it may make it difficult to use religious support as a coping strategy.

### 5.2 Family Support as a Moderator

#### *Depression model*

We found that family support amplified the effects of discrimination on depression. That is, at higher levels of family support, discrimination is strongly associated with depression. This did not support our hypothesis and is inconsistent with previous literature on the buffering role of family support broadly among racial ethnic minorities. Similarly, it is inconsistent with research among MENAAs showing that family connectedness - which included elements of social support - buffered the effects of discrimination on psychological distress (Ikizler & Szymanski, 2018). It is also inconsistent with general social support buffering the effects of discrimination on well-being in a sample of Middle Eastern immigrants in Australia (Hashemi et al., 2020).

While the literature reviewed in this paper showed that family support was a consistent buffer in the discrimination health link, the larger social support literature is

mixed. For example, several metanalytic reviews examined social support as a moderator in the discrimination and health link. One such article included 10 studies in which social support was examined as a buffer between the discrimination and mental health defined broadly (Pascoe & Smart Richman, 2009). They found only five effects in which social support buffered the effects of discrimination on mental health. In the remaining 17 effects, social support did not buffer the effects of discrimination (Pascoe & Smart Richman, 2009). Additionally, another metanalytic review found 75 tests in which social support was examined as a moderator between discrimination and psychological well-being which was broadly defined (Schmitt et al., 2014). Out of the 75 tests, these researchers found that nearly 80% of the tests of social support as a moderator were non-significant. Furthermore, they found that in about 15% of the tests, social support buffered the effects of discrimination on psychological well-being. Finally, about 7% of the tests social support exacerbated the relationship between discrimination and well-being. Another study examined social support as moderator between the relationship of discrimination and blood pressure. They found that at high levels of discrimination, social support was related to higher blood pressure in a Black college sample (Clark, 2003) which was consistent with our finding of family support exacerbating the discrimination and depression link. Similarly, another study found that among men, positive family environments which had elements of family support exacerbated the effects of discrimination on depressive symptoms (Kim et al., 2021). Clearly, the general literature on social support as a moderator is mixed and there is some evidence that is consistent with our findings of social support exacerbating the relationship between discrimination and health broadly (depression in our study).

There are several plausible explanations for this surprising finding. One possible explanation could be due to how MENAA families are discussing race and discrimination. The process of families and/or parents discussing race and discrimination with children and adolescents is known as racial socialization (Neblett Jr et al., 2008).

There are multiple forms of racial socialization in which parents can discuss race and discrimination to their children and family. One form is referred to as cultural socialization which broadly focuses on fostering racial or cultural pride and developing cultural traditions among children. Parents typically employ cultural socialization by teaching children about their culture and history of their race. This can include exposing children to books, celebrating holidays, cultural foods, and music (Hughes et al., 2006). Other forms of racial socialization include discussing racial barriers (Neblett Jr et al., 2008) as well as messages preparing children for experiences of discrimination (Harris-Britt et al., 2007). Alternatively, parents can also give negative messages about their race or culture (Neblett Jr et al., 2008).

Among racial ethnic minorities, the different types of racial socialization have been noted to have direct relationships with health outcomes as well as to impact the discrimination-health link. For example, research among minoritized racial and ethnic college students has shown cultural socialization which includes items like families discussing the importance of their background is associated with less depression (Liu & Lau, 2013). Alternatively, messages about preparation for bias or discrimination was associated with more depression (Liu & Lau, 2013). While less attention has focused on negative messages, research has shown that receiving negative messages about one's

race/ethnicity is associated with worse health such as more depression, stress and worse psychological well-being among African American adolescents (Neblett Jr et al., 2008).

Additionally, racial socialization can play a role in the discrimination-health link. For example, among African American adolescents, messages of racial pride buffered the effects of discrimination on self-esteem (Harris-Britt et al., 2007). Similarly, another study found that forms of cultural socialization which included items such as being encouraged to read books about other racial-ethnic groups buffered the effects of discrimination on psychological distress in a sample of Asian American high school students (Atkin et al., 2019). Findings on receiving messages about preparation for bias or discrimination has been mixed. One study found that receiving moderate levels of messages about preparation for bias or discrimination buffered the effects of discrimination on self-esteem in a sample of African American adolescents. However, this same study found that at low and high levels, messages of preparation for bias or discrimination exacerbated the discrimination and self-esteem link. (Harris-Britt et al., 2007). Alternatively, another study found that among Asian American high school students, that messages about preparation for bias or discrimination did not significantly moderate the effects of discrimination on psychological distress (Atkin et al., 2019).

Unfortunately, little research has paid attention to how parents and families are giving messages to children and adolescents about race and discrimination among MENAA. One qualitative paper interviewing MENAA college students found that some parents were giving messages of downplaying their identity at college (Modir & Kia-Keating, 2018). While this may be a way for parents to protect their children from discrimination, it could also be seen as a form of negative racial socialization which, as

discussed, is linked to poor health outcomes (Neblett Jr et al., 2008). If in our sample, MENAA participants are receiving negative messages about their race and are being told to downplay their identity, it is plausible that this could explain why family support amplifies the effects of discrimination on depression. In other words, we can see how if MENAA in our sample go to their family for support to cope with discrimination and are told to downplay their identity or receive negative messages about their identity how this could increase levels of depression when exposed to high levels of discrimination. Understanding the messages about race and discrimination that MENAA grow up hearing is an important next step in understanding the moderating role of family support in the discrimination and health link. This is especially important in our sample in which the overwhelming majority of participants (86%) reported being born in the US.

Another explanation could be due to co-rumination which can be broadly defined as frequently discussing the same problem and focusing on negative emotions (Rose, 2002). It is possible that MENAA who perceive high amounts of family support may go to their family for support or advice in the wake of experiencing discrimination. These MENAA family members may also be experiencing discrimination which could lead to co-rumination. There is an abundance of research, including meta analyses, that show co-rumination leads to increased risk of depression (Spendelow et al., 2017).

Co-rumination may be particularly salient in regard to discrimination as research among African Americans have found that discrimination is associated with greater co-rumination and that co-rumination and thought intrusion mediated the relationship between discrimination and negative affect (Hacker et al., 2016). Similarly, another study found that discrimination was associated with having negative conversations about one's

racial group and these negative conversations about race mediated the relationship between discrimination and depressive symptoms (DeLaney et al., 2021). If MENAA go to their family for support and end up co-ruminating about experiences of discrimination or have negative discussions about their race, this could exacerbate the effect of discrimination on depression. Further research is required in order to understand the effects of co-rumination on discrimination and depression among MENAA.

***Anxiety Model***

Contrary to our hypothesis, family support did not moderate the relationship between discrimination and anxiety. As noted above, the moderating effect of social support broadly is mixed on mental health. Unfortunately, compared to depression, much less research examines family support or even social support more broadly as a moderator of anxiety. Many studies, including most reviewed in this paper, examined depression or psychological well-being as the health outcome. In some cases, anxiety symptoms (e.g., trouble concentrating) are included as a part of a composite mental health outcome such as psychological distress as was the case in a study that examined the moderating role of family connectedness as a buffer for discrimination (Ikizler et al., 2018). Therefore, our study is one of the few studies to examine family support as a moderator of discrimination with anxiety specifically as an outcome.

While our findings were inconsistent with our hypotheses, there is some research that is consistent with our null findings. For example, one study found that positive family environment, which had elements of family support, did not buffer the effects of discrimination on anxiety symptoms in a diverse sample of early adults (Kim et al., 2021). Similarly, another study that examined general social support as a moderator

between discrimination and health outcomes found that social support did not moderate the effects of discrimination on depression, anger, or anxiety symptoms in a sample of Asian Indians (Nadimpalli et al., 2016).

Overall, while family support exacerbated the relationship between discrimination and depression and was non-significant for anxiety, it is important to note that were significant main effects. Therefore, while family support may have a complex relationship when interacting with discrimination, independently it was related to better health such as less depression and anxiety in our study. Clearly, the relationship between cultural factors such as family support, discrimination and health outcomes are complex and require further study.

### *Self-Rated Health Model*

Contrary to our hypotheses, family support did not buffer the effects of discrimination on self-rated physical health. Unfortunately, compared to mental health much, less research has paid attention to family support or social support, more broadly, as a buffer of discrimination on physical health measures. Additionally, the research on the moderating role of family or social support more broadly is mixed with physical health. For example, one metanalytic review found six studies that examined social support as a moderator of discrimination and physical health (Pascoe & Smart Richman, 2009). From these studies, only one of the effects found social support to buffer the effects of discrimination on physical health. Moreover, four effects found that social support exacerbated the effects of discrimination on physical health. The remaining effects were non-significant (Pascoe & Smart Richman, 2009). Similarly, another study found that positive family environments did not buffer the effects of discrimination on

physical health symptoms (Kim et al., 2021). Alternatively, one study found that social support buffered the effects of discrimination on self-rated health in a sample of Latinos (Finch & Vega, 2003). Clearly, the research on general social support buffering physical health outcomes such as self-rated health are mixed. However, there does seem to be some research supporting our non-significant finding.

### 5.3 Religious Support as a Moderator

#### *Depression model*

Religious support exacerbating the effects of discrimination on depression was inconsistent with our hypothesis. Very little research has examined a potential moderating role of religious support among MENAA. Research on religious support has been fairly consistent among other racial and ethnic minorities. However, research on religious support or even religious variables broadly as moderators of discrimination has been mixed among MENAA. Our findings do not align with some literature that has found religious support as a buffer of discrimination on depression in a sample of Muslims that included MENAAs. However, this same study found that religious support exacerbated the effects of discrimination on depression via acculturative stress which is better aligned with our findings (Tineo et al., 2021). Similarly, other research has found that religious variables can be harmful amongst MENA: for example, one study that found religiosity amplified the effects of discrimination on psychological distress (Ikizler et al., 2018). Lastly, other studies that included religious support as one part of a cultural resource measure have found non-significant results (Ahmed et al., 2011). Clearly, the literature on religious variables as moderators are mixed. While we proposed religious

support may be an important factor, our results along with other studies show evidence that religious variables may not always be helpful for MENAAs.

There are several plausible explanations for this finding. One possible explanation may be due to the racialization of religious identity, especially in the United States. In our sample, over a third of participants identified as Muslim which is the largest religious identity in our sample. Research suggests that MENAA Muslims experience more discrimination compared to MENAA Christians (Padela & Heisler, 2010) and that MENAA Muslims who have high religiosity also experience more discrimination (Ikizler et al., 2018). It is possible that participants in our study may not believe that they can use religious support if they believe they are going to be discriminated against for using religion. In other words, it is possible that individuals who use religious support may experience more discrimination which could then lead to increases in depression. This rationale would align with research findings of religiosity amplifying the effects of discrimination on distress in a sample of MENAAs overall.

Additionally, the attack on religious identity could also be particularly salient for people who have higher religiosity or perceive more support from their religion. Reports suggests that for MENAAs, religious identity is interconnected with ethnic identity (Amer & Kayyali, 2016). Therefore, it is possible that discrimination is more salient for people who perceive high amounts of religious support as they may see this as an attack on their identity which then would increase depression. In support of this, research has found that among MENAAs, religious centrality or the idea of how important religion is to one's identity predicted higher psychological distress. Further, these researchers found that negative religious public regard or the idea of how much people believe their

religious identity is being disrespected also predicted more psychological distress. They also found that the impact of religious centrality and negative religious public regard on psychological distress was similar for both MENAA Christians and Muslims. These researchers then found that negative religious public regard and discrimination mediated the relationship between religious centrality and psychological distress across MENAAs overall (Hashem & Awad, 2021). This study could help explain our finding as it is possible in our sample that MENAAs who perceive high religious support may hold religion close to their identity. If they are being disrespected or discriminated due to their religion this could be seen as an attack on their identity and may feel shame or embarrassment which could then increase depression.

Lastly, another explanation could be due to how MENAAs in our sample are using religion. Reviews have suggested that individuals have used religion to make meaning in their life (Newton & McIntosh, 2013). It is possible that these meanings could play a role in the stress appraisal process. There has been research supporting the role of religion and appraisal process such as one study that found that praying was associated with positive reappraisal and that positive reappraisal mediated the relationship between praying and pain tolerance (Dezutter et al., 2011). Religion may also play a role in appraising stressors such as discrimination. For example, it is possible that MENAAs could appraise discrimination as a form of persecution of the righteous. Alternatively, it is possible that MENAAs could perceive exposure to discrimination simply as racism or a form of punishment from God. How MENAAs use religion to make sense of situations may play a role in if religion can buffer the effects of discrimination. For example, research suggests that negative forms of religious coping such as believing that negative

events are punishment from God has been linked to poorer health such as higher trauma symptoms in a sample of earthquake survivors (Feder et al., 2013). It is possible that even if participants perceive high support from religion but appraise the stressor as a form of punishment from God then this could increase distress in our model. Therefore, an important next step is to understand the role religion plays in appraising stressors. Such a step would be consistent with the stress buffering hypothesis (Cohen & Wills, 1985) in that religion may be able to buffer in the negative effects of stress only when religion helps individuals adopt benign stress appraisals.

### *Anxiety Model*

Inconsistent with our hypothesis, religious support did not moderate the effects of discrimination on anxiety. While there is evidence that religious support buffers the effects of discrimination on general anxiety (Graham & Roemer, 2012), the buffering role of religious support for anxiety is more mixed. For example, similar to our findings, one study found that religious support did not buffer the effects of discrimination on anxiety in a sample of Muslims that included MENAAs. However, they did find that religious support amplified the effects of discrimination on anxiety indirectly via acculturative stress (Tineo et al., 2021). Other studies examined the buffering role of religious support in the relationship between resource loss following a mass shooting and health outcomes among church members found similar results. They found that religious support buffered the effects of resource loss on depression and PTSD but not anxiety (San Roman et al., 2019). The moderating role of religious support is not clear for anxiety.

### *Self-Rated Health Model*

Inconsistent with our hypothesis, religious support did not moderate the effects of discrimination on self-rated health. One study found that religious support buffered the effects of discrimination on self-rated health (Finch & Vega, 2003). To our knowledge, this is the only study to examine religious support as a buffer of discrimination on self-rated health. Additionally, less research overall has paid attention to the buffering role of religion on physical health markers overall. More research has focused on the direct relationship between religion and health broadly. For example, recent reviews have documented the promotive role of religion on physical health such as self-rated health, biological functioning such as blood pressure as well as mortality (Page et al., 2020). Clearly, more research on the buffering role of religious support on discrimination and physical health is needed.

While our results show religious support does not moderate the effects of discrimination on self-rated health, perhaps religious support may impact health in other ways. For example, research shows religious support is related to positive health behaviors such as fruit and vegetable consumption as well as moderate physical activity (Debnam et al., 2012). It is possible that high amounts of religious support may lead to promotive health behaviors which then may play a role in impacting self-rated health. Future research should examine the relationship between self-rated health, discrimination, health behaviors and religious support among MENAA.

### 5.4 Strengths and Limitations

Our study had several strengths and limitations to note. First, one strength was our ability to use a MENAA sample. Many studies have used only subsamples of MENAAs such as Arab Americans, however our study recruited a MENAA sample which the

literature is now increasingly grouping together as one racial and ethnic group (Awad et al., 2019). Since research is starting to group this population together this will allow for future research to compare finding across studies easier. Furthermore, many previous studies relied on snowball sampling, which tends to limit the generalizability of results. However, this study used a research software which could lead to a more accurate representation of MENAA in the US. We also had a higher non-religious population compared to some other studies, which may represent a larger portion of MENAAs compared to other studies that utilized snowball sampling. Additionally, we collected data on a variety of population characteristics including generational status, sexual orientation, gender identity and were able to covary many of these identities out in order to control for potential differences. Very few previous studies on MENAAs collected data on gender identity or sexual orientation. Lastly, a great deal of care went into the selection of our measures. Measures were chosen that were validated in populations close to the one in our study (e.g., Middle Eastern migrants in Australia, and Muslim women that included MENAAs).

Our study had several limitations as well. First, we cannot assume causality as our study was cross-sectional . Additionally, we relied solely on self-report data. It is possible that our correlations are artificially inflated due to shared method variance since all measures were  self-report in nature. Furthermore, our sample included a smaller percentage of North Africans than are estimated to be present in the U.S., as some research suggests about 30% of MENAAs are North Africans (Cumoletti & Batalova, 2018) whereas only about 17% of our sample identified with North African origin. However, it should be noted that of the 202 participants on Prolific invited to complete

the larger survey, about 23% identified with North African origin. Additionally, individuals who choose to participate in research softwares may also be different compared to those who do not participate. Due to the nature of research software, our sample is limited to only those who know about Prolific and who have electronic devices and stable internet/cell service. There may be MENAAs who do not have access to such means who were unable to participate in this study. Lastly, while focusing on a Middle Eastern and North African American population may allow for easier comparison across studies in the future, it should also be reiterated that there is heterogeneity within this group. Therefore, it is important to note that there may be differences between MENAAs from different countries of origin.

**5.5 Future Directions**

Based on our findings, there are a number of emerging directions that future research can explore. First it will be important to understand how MENAA parents are socializing their children who are growing up in post 9/11 and post Trump presidency. What type of messages are MENAA children raised in the US receiving from their families and communities? How do these messages relate to health among MENAA? To our knowledge, no study examining racial socialization patterns among MENAA has yet been published. While types of racial socialization have been linked to positive and negative health outcomes among other racial and ethnic groups, it will be important to determine if these same trends hold among MENAA. For example, while negative forms of racial socialization have been linked to poor health outcomes, it is possible that for MENAA negative forms of racial socialization such as downplaying one's identity may

be protective against discrimination. Future research should examine these racial socialization patterns among MENAA.

It will also be important to understand how these messages impact the discrimination-health link. For example, it is possible that messages of downplaying one's identity could exacerbate this link whereas as positive messages such as ones that promote racial pride could buffer the effects of discrimination. It will be important to understand the role of family support in the context of racial socialization. It is possible that high amounts of family support are only helpful if MENAA are receiving positive racial socialization messages. Alternatively, if MENAA are receiving negative messages about their race it is possible that under this context family support could exacerbate the effects of discrimination as found in our study. Perhaps in the context of discrimination, family support is only promotive when paired with positive forms of racial socialization. Understanding the interplay between family support, racial socialization, discrimination, and health outcomes is an important next step in understanding the role the family plays in the discrimination and health link among MENAAs.

Another important future direction will be to examine co-rumination and discrimination among MENAA. One pathway that could link discrimination to health problems among MENAA is through co-rumination. There is limited research on co-rumination and discrimination broadly and to our knowledge there has not been a single study that has focused on co-rumination and discrimination among MENAA. Understanding this link could help clinicians and researchers reduce the impact that discrimination has on health among MENAA. Additionally, it will be important to examine the role family support or even social support more broadly has on co-

rumination and discrimination. It is possible that support from family or even same race friends may encourage co-rumination which could then amplify the effects of discrimination. The relationship between family support, co-rumination and, discrimination has not been studied in a MENAA sample.

One emerging area that future research should examine is how MENAAs are using religion to appraise discrimination. Furthermore, research could examine the relationship between religious support, positive and negative reappraisals, and discrimination. It is possible that religious support is protective for individuals who have positive reappraisals but when individuals have negative reappraisals religious support could amplify the effects of discrimination.

While we looked at the role of religious support broadly among MENAA, it is important to examine differences among religious identification in the buffering role of religious support in the discrimination and health link. Perhaps, religious support exacerbated the discrimination-depression link since our sample was majority Muslim. It is possible there are some differences in the moderating role of religious support when examined amongst different religions. There has been some emerging research that has shown differences in the use of religion as a coping resource between Christians and Muslims (Shah, 2019).

While we examined family support and religious support as important cultural factors in the context of discrimination and health, there are other cultural factors important to MENA. For example, researchers have highlighted morality, honor/shame, and family centricity (Awad et al., 2022). It will be important for future research to examine how these other cultural factors play a role in the discrimination and health link.

In line with this, future research should also examine other identities that MENAA may hold such as different gender identities or sexual orientations. Family support and religious support may contrast starkly for MENAA who are sexual or gender minorities. Research should examine relationships between family support, religious support, and discrimination in the context of intersecting identities.

Lastly, research should examine the relationships between family support, religious support, and discrimination with health measured in different ways. While we found that neither family support nor religious support buffered the effects of discrimination on anxiety or self-rated health, perhaps significant findings would have been found by using different measures. For example, instead of using self-rated health for a marker of physical health future research could measure objective health markers such as blood pressure or measure certain health symptoms (e.g., headaches, stomach pain) or even health behaviors such as drinking or smoking. Furthermore, our measure of anxiety was of general anxiety. Perhaps research could examine anxiety measures that have a broader focus that include multiple anxiety disorders.

### 5.6 Implications and Conclusions

Several implications emerged from this study. First, clinicians should assess for discrimination when working with MENAA patients considering the devastating impact on health. It will also be important to assess for clients' religious and family support as these are important parts of MENAA culture. Furthermore, clinicians should also examine the interplay between cultural factors such as family and religious support and how these may ameliorate or amplify the effects of discrimination. As found in this study, the direct effect of family support was related to better health but family support along

with religious support amplified the effects of discrimination on depression. If support from family or religion is not helpful in the context of discrimination, clinicians and researchers should examine other coping factors that may help with experiences of discrimination.

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# APPENDIX A: ELGIBILITY QUESTIONS

1. Are you 18 years old or older?*
    a. Yes
    b. No

2. Do you identify as a Middle Eastern or North African American?*
    a. Yes
    b. No
3. Are you currently living in the US?*
    a. Yes
    b. No

4. Are you able to read in English?*
    a. Yes
    b. No

*If any of the above questions are answered with a no, the survey will end with a message saying they are not eligible for the study.

# APPENDIX B: DEMOGRAPHIC QUESTIONS

1. What is your current age in years? _____

2. In addition to MENA what other ethnicity/race or origin do you identify with?
   I only identify as Middle Eastern and/or North African (MENA)
   White or European American
   Black or African American or Afro Caribbean
   Hispanic, Latino, or Spanish origin
   East Asian or East Asian American
   Native Hawaiian or Other Pacific Islander
   Native American or Alaska Native or First Nations
   South Asian or South Asian American
   Multiracial/Biracial (please check all that apply)
   Other (please specify): _____
   Prefer not to answer

3. What country or countries are you or your family from? (check all that apply; if part of family is from area outside of MENA [Middle East and/or North Africa]; please specify in the other category)

   Algeria
   Armenia
   Bahrain
   Comoros Islands
   Djibouti
   Egypt
   Ethiopia
   Iran
   Iraq
   Israel
   Jordan
   Kuwait
   Lebanon
   Libya
   Malta
   Mauritania
   Morocco
   Oman
   Palestine
   Qatar
   Saudi Arabia
   Sudan

Syria
Tunisia
Turkey
United Arab Emirates
West Bank and Gaza
Yemen
Other/please specify
Prefer not to answer

4. What sex were you assigned at birth, meaning on your original birth certificate?
   Male
   Female
   Prefer not to answer

5. Which best describes your current gender identity?
   Woman
   Man
   Trans Woman
   Trans Man
   Gender Queer
   Gender nonconforming
   Gender Fluid
   Non-Binary
   Self-Identify: _____
   Prefer not to disclose
6. What is your sexual orientation?

A. Exclusively heterosexual/straight
B. Mostly heterosexual,only incidentally homosexual/gay/lesbian
C. Equally heterosexual/straight and homosexual/gay/lesbian
D. Mostly homosexual/gay/lesbian, only incidentally heterosexual
E. Exclusively homosexual/gay/lesbian
F. Pansexual
G. Queer
H. Asexual: No socio-sexual contacts or reactions
I. Prefer not to disclose

7. What generation are you in the US?
   1st generation (immigrated to the US with family or alone)
   2nd generation (parents immigrated to the US but you were born here)
   3rd (grandparents immigrated to the US but you and your parents were born here)

4th generation (great-grandparents immigrated to the US but you, your parents, and grandparents were born in the US)
Temporary resident (e.g., here for work or school but plan to return home)
Other: _____
Prefer not to answer

8. How long have you lived in the US in years?

_____

9. What religion do you identify as?
Baha'i
Christian
Druze
Jewish
Mandeans
Muslim
Samaritan
Shabak
Yazidi
Zoroastrian
Other/please specify: ____
Not religious/not applicable
Prefer not to answer

10. What is your marital status?
Single and never married
Married
Common law marriage
In a relationship
Separated
Divorced
Widowed

11. What is the highest level of education you have completed
Less than High School
High school, not currently in college or tech school
High school, currently in college/tech school
Associate Degree (or other two-year degree)
Bachelor's degree, not currently in grad school
Bachelor's degree, currently in grad school
Master's Degree
Terminal Degree (e.g., PhD, MD, JD)
Prefer not to answer

12. Which of the following categories best describes your pre-tax household income (Bernburg et al.) in the last year
Less than 10,000

10,000 to 14,999
15,000 to 19,000
20,000 to 24,999
25,000 to 29,000
30,000 to 39,999
40,000 to 49,999
50,000 to 74,999
75,000 to 99,999
100,000 to 149,999
Greater than 150,000
Prefer not to answer

13. What is your current occupation status?
    Employed full time
    Employed part time
    Not employed outside the home but looking for a job
    Not employed outside the home and not looking for a job
    Retired
    Student and not employed
    Student and employed full time
    Student and employed part time
    Receiving Disability Payment
    Prefer not to answer

14. Where were you born? _____

15. What is your current zip code? _____

# APPENDIX C: FAMILY SUPPORT SCALE

**Multidimensional Scale of Perceived Social Support- Family Subscale**

We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

Response Options:

- 1 = very strongly disagree
- 2 = strongly disagree
- 3 = Mildly disagree
- 4 = neutral
- 5 = mildly agree
- 6 = strongly agree
- 7 = very strongly agree

Items:

1. My family is around when I am in need
2. I can talk about my problems with my family
3. My family is a real source of comfort to me
4. My family cares about my feelings

# APPENDIX D: RELIGIOUS SUPPORT SCALE

**Multi-Faith Religious Social Support Scale**

We want to learn about how people of different religions really feel about various aspects of their spiritual and religious lives. Religions have different beliefs. For example, some do not believe in God, some believe in one God, and some believe in many Gods, and there are many names used (e.g., Allah, G-d, Jesus, Vishnu, etc.). Some religions have many leaders, and some have few. There are many other differences. Please read the following instructions and then answer the questions

The word "God" means *your idea of God* (Supreme Being, Mind, Higher Power, many Gods, etc.) The phrase "religious leaders," means *leaders of any religious group* where you participate (imams, monks, rabbis, priests, pastors, sunims, small group leaders, etc.). The word "participants" means *other regular attenders and/or participants* in your religious group (temple, center, synagogue, mosque, church, etc.)."

If an item does not apply, e.g., "if you do *not* believe there is a God, please mark "1" for the items about God."

Response Options:

- 1= non applicable/ strongly disagree
- 2=disagree
- 3= Neither agree nor disagree
- 4= Agree
- 5= Strongly Agree

Items:

1. I can turn to other participants in my religious group for advice when I have problems.
2. If something went wrong, my religious leaders would give me help.
3. God gives me the sense that I belong.
4. Other participants in my religious group care about my life and situation.
5. I am valued by my religious leaders.
6. I feel appreciated by God.
7. I do not feel close to other participants in my religious group. *

8. I can turn to my religious leaders for advice when I have problems.
9. If something went wrong, God would give me help.
10. Other participants in my religious group give me the sense that I belong.
11. My religious leaders care about my life and situation.
12. I am valued by God.
13. I feel appreciated by other participants in my religious group.
14. I do not feel close to my religious leaders. *
15. I can turn to God for advice when I have problems.
16. If something went wrong, other participants in my religious group would give me help.
17. My religious leaders give me the sense that I belong.
18. God cares about my life and situation.
19. I am valued by other participants in my religious group.
20. I feel appreciated by my religious leaders.
21. I do not feel close to God. *

*Indicates items were removed from scoring

APPENDIX E: DISCRIMINATION SCALE

***Brief PED-QV (Revised) Community Version*** **(We adapted for MENAA)**

Now think about your **ethnicity/race and religion**.

How often have any of the things listed below ever happened to you**, because of your ethnicity/race or religious identity**?

| **How often…** | **Never** | | **Sometimes** | **Very Often** | |
|---|---|---|---|---|---|
| 1. Have you been treated unfairly by teachers, principals, or other staff at school? | 1 | 2 | 3 | 4 | 5 |
| 2. Have others thought you couldn't do things or handle a job? | 1 | 2 | 3 | 4 | 5 |
| 3. Have others **threatened** to hurt you (ex: said they would hit you)? | 1 | 2 | 3 | 4 | 5 |
| 4. Have others **actually** hurt you or tried to hurt you (ex: kicked or hit you)? | 1 | 2 | 3 | 4 | 5 |
| 5. Have policemen or security officers or airport officials been unfair to you? | 1 | 2 | 3 | 4 | 5 |
| 6. Have others **threatened** to damage your property? | 1 | 2 | 3 | 4 | 5 |
| 7. Have others **actually** damaged your property? | 1 | 2 | 3 | 4 | 5 |
| 8. Have others made you feel like an outsider who doesn't fit in because of your dress speech, or other characteristics related to your ethnicity? | 1 | 2 | 3 | 4 | 5 |
| 9. Have you been treated unfairly by co-workers or classmates? | 1 | 2 | 3 | 4 | 5 |

**BECAUSE OF YOUR ETHNICITY/RACE or Religious identity …**

| | | | | | |
|---|---|---|---|---|---|
| 10. Have others hinted that you are dishonest or can't be trusted? | 1 | 2 | 3 | 4 | 5 |

| | | | | | |
|---|---|---|---|---|---|
| 11. Have people been nice to you to your face, but said bad things about you behind your back? | 1 | 2 | 3 | 4 | 5 |
| 12. Have people who speak a different language made you feel like an outsider? | 1 | 2 | 3 | 4 | 5 |
| 13. Have others ignored you or not paid attention to you? | 1 | 2 | 3 | 4 | 5 |
| 14. Has your boss or supervisor been unfair to you? | 1 | 2 | 3 | 4 | 5 |
| 15. Have others hinted that you must not be clean? | 1 | 2 | 3 | 4 | 5 |
| 16. Have people not trusted you? | 1 | 2 | 3 | 4 | 5 |
| 17. Has it been hinted that you must be lazy? | 1 | 2 | 3 | 4 | 5 |

APPENDIX F:DEPRESSION SCALE

**10 Item Center for Epidemiologic Studies Depression Scale**

Below is a list of some ways you may have felt or behaved. Please indicate how often you have felt this way during the last week by checking the appropriate space. Please only provide one answer to each question.

Response:

- 0= Rarely or none of the time (less than 1 day)
- 1= Some or a little of the time (1-2 days)
- 2= Occasionally or moderate amount of time (3-4 days)
- 3= Most or all of the time (5-7 days)

Items:

1. I was bothered by things that do not usually bother me.
2. I had trouble keeping my mind on what I was doing.
3. I felt depressed.
4. I felt everything I did was an effort.
5. I felt hopeful about the future. *
6. I felt fearful.
7. My sleep was restless.
8. I was happy. *
9. I felt lonely.
10. I could not get going.

*Indicates items are reversed coded

# APPENDIX G: ANXIETY SCALE

**Generalized Anxiety Disorder 7**

Over the last two weeks, how often have you been bothered by the following problems?

Responses:

- 0= Not at all
- 1= Several days
- 2= More than half the days
- 3= Nearly every day

Items:

1. Feeling nervous, anxious, or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that it is hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid, as if something awful might happen

# APPENDIX H: SELF-RATED PHYSICAL HEALTH

How would you rate your overall physical health?

- 1= Excellent
- 2= Very Good
- 3= Good
- 4= Fair
- 5= Poor