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Cross-border Ties and Arab American Mental Health

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Abstract

Due to increasing discrimination and marginalization, Arab Americans are at a greater risk for mental health disorders. Social networks that include ties to the country of origin could help promote mental well-being in the face of discrimination. The role of countries of origin in immigrant mental health receives little attention compared to adjustment in destination contexts. This study addresses this gap by analyzing the relationship between nativity, cross-border ties, and psychological distress and happiness for Arab Americans living in the greater Detroit Metropolitan Area (N=896). I expect that first generation Arab Americans will have more psychological distress compared to one and half, second, and third generations, and Arab Americans with more cross-border ties will have less psychological distress and more happiness. Data come from the 2003 Detroit Arab American Study, which includes measures of nativity, cross-border ties – attitudes, social ties, media consumption, and community organizations, and the Kessler-10 scale of psychological distress and self-reported happiness. Ordered logistic regression analyses suggest that psychological distress and happiness do not vary much by nativity alone. However, cross-border ties have both adverse and protective effects on psychological distress and happiness. For all generations of Arab Americans, cross-border attitudes and social ties are associated with greater odds of psychological distress and for first generation Arab Americans, media consumption is associated with greater odds of unhappiness. In contrast, for all generations, involvement in cross-border community organizations is associated with less psychological distress and for the third generation, positive cross-border attitudes are associated with higher odds of happiness. These findings show the complex relationship between cross-border ties and psychological distress and happiness for different generations of Arab Americans.

Keywords

Cross-border ties; Immigrant health; Arab American; Mental health; United States

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Introduction

In the years following 9/11, Arab Americans report higher incidences of psychological distress (Padela & Heisler, 2010; Wrobel & Paterson, 2014). In fact, sixty-six percent of Arab Americans are at risk of developing some type of depressive disorder, and mental health problems comprise two of the top five reported problems among Arab Americans (W. Baker et al., 2003; Wrobel & Paterson, 2014). Arab Americans are defined as those who are residents of the United States who trace their ancestral, cultural, or linguistic identity or heritage to one of 23 Arab countries. In the United States, there are approximately 3.5 million Arab Americans of varied nativity – foreign-born (first generation), U.S. born children of immigrants (1.5 and second generation), or U.S. born to U.S. born parents (third and higher generations) (Brittingham et al., 2005).

Due to conflicts in the Middle East, Arab Americans are disproportionately recent immigrants to the United States, and Detroit is home to the largest concentration Arab Americans. Anti-Arab sentiment has been linked to mental health outcomes like depression, psychological distress, and decreased happiness (Abdulrahim et al., 2012; Aroian et al., 2015; Moradi & Hasan, 2004; Padela & Heisler, 2010). In general, first generation immigrants report more stress and psychological distress than their U.S. born counterparts (Cuellar et al., 2004; Liebkind & Jasinskaja-Lahti, 2000). However, little is known about how psychological distress differs across first, second, and subsequent generations of Arab Americans.

By contributing to immigrant's sense of belonging, ethnic identity, and social support in the face of anti-immigrant sentiments, cross-border ties or the social, material, and emotional support immigrants exchange with their sending communities can impact health. Very few studies have considered cross-border ties and immigrant health (Falcon et al., 2009; Murphy & Mahalingam, 2004; Torres, 2013; Viruell-Fuentes & Schulz, 2009). For Arab Americans who are increasingly stigmatized in the United States, understanding how both nativity and cross-border connections to countries of origin influence mental health is particularly important. This study uses the Detroit Arab American Study to examine differences in mental health – psychological distress and happiness among several immigrant generations of Arab Americans. It also seeks to investigate whether cross-border ties are protective for mental health, and if cross-border ties interact with nativity to influence psychological distress and happiness.

Background

Arab American Mental Health

There is limited research about the health and well-being of Arab Americans (Abdulrahim & Baker, 2009; Abdulrahim et al., 2012; Amer & Bagasra, 2013; El-Sayed & Galea, 2009; Moradi & Hasan, 2004; Padela & Heisler, 2010; Wrobel & Paterson, 2014). This is partially due to the lack of recognition of Arab Americans as an ethnic minority (Amer & Bagasra, 2013). In general, Arab Americans report greater psychological distress and lower levels of happiness compared to the general U.S. population (Padela & Heisler, 2010). Foreign-born Arab Americans have lower self-reported happiness and worse self-reported health

compared to U.S. born Arab Americans (Abdulrahim & Baker, 2009; Moradi & Hasan, 2004).

Immigration, acculturation, and discrimination-associated stress are associated with negative Arab American mental health outcomes (Abdulrahim & Baker, 2009; El-Sayed & Galea, 2009; Padela & Heisler, 2010). For Arab Americans, the process of immigration, incorporation, and coping with social changes can lead to feelings of hopelessness, failure, and depression (Erickson & al-Timimi, 2001). Due to changes in the socio-political climate, more recent Arab immigrants might experience more mental health problems as compared to more established generations of Arab Americans. However, due to data limitations, studies on Arab Americans are rarely able to include nativity – whether the respondents are first, second, or third generation to look at incorporation over time. Accordingly, mental health patterns of several generations of Arab Americans are not fully understood.

Immigrant Integration and Cross-border Ties

The theory of segmented assimilation describes the socio-economic integration of children of immigrants as having ties to both parental attributes and host country attributes (Portes & Zhou, 1993). Some suggest that immigrants who can accommodate demands of both the host and home cultural expectations have improved health outcomes (Jadalla & Lee, 2012; Mulvaney-Day et al., 2007), while others show that segmented assimilation is detrimental to health (Finch et al., 2007).

Cross-border ties could further understanding of the relationship between segmented assimilation and health. Cross-border ties are derived from the transnationalism framework. Portes and colleagues define transnationalism as the maintenance of occupations or activities that necessarily require regular social contacts over time across national borders and/or across cultures (Portes et al., 1999). Transnationalism can occur on a variety of levels from within a familial to a social or even economic sphere (Smith, 2005). Transnationalism recognizes immigrants have ties with the country of origin as they establish ties in the destination context.

Cross-border ties are defined as social actions and conditions that either facilitate or hinder an immigrant's ties between home and host countries (Waldinger, 2008). Specifically, cross-border ties are transnational activities that include communication with friends and relatives in the country of origin, sending remittances, traveling to the country of origin, participation in hometown associations, engagement in ethnically similar communities at destination, maintenance of businesses, and participation in politics of the country of origin (Guarnizo et al., 2003; Smith, 2005; Waldinger, 2015; Waldinger et al., 2012). One of the basic ways an immigrant maintains ties is through social contact with relatives and friends in countries of origin, including travel back to visit (Waldinger, 2008). However, cross-border ties do not have to involve movement as many who cannot afford to travel reside in enclaves in the host country. Immigrant organizations, social gatherings, religious services, and other community activities help maintain ties (Portes & Zhou, 2012; Smith, 2005). Economic activity in countries of origin are another cross-border tie. While there is variety cross-border ties, maintaining cross-border ties could be an indication of segmented assimilation into the United States (Levitt & Waters, 2002; Torres, 2013).

Social ties are important for the migration and settlement process (Massey et al., 1990) and immigration literature has increasingly focused on these ties as they might socially enhance the immigrants' lives through maintaining social networks (Levitt & Schiller, 2004; Menjivar, 2000). However, cross-border ties and connections with the country of origin remain largely untested in health research. Cross-border ties were found to be integral for first generation Mexican American women's emotional well-being and important for identity formation in second generation women (Virell-Fuentes & Schulz, 2009). Another study of Latino adults found both protective and adverse effects on overall health status depending on generational status (Torres, 2013). In New York, Caribbean immigrants with more communication with family and friends in countries of origin had more social support and better mental health outcomes (Murphy & Mahalingam, 2004).

In general, among immigrants, psychosocial factors like stronger social support are associated with more positive health outcomes (Berkman & Glass, 2000; Mulvaney-Day et al., 2007). Therefore, it is reasonable to expect that cross-border ties may promote a broader social support network for Arab Americans and enhance their mental health. Importantly, the relationship between cross-border ties and health depends on nativity (Torres, 2013; Virell-Fuentes & Schulz, 2009). To date, there are no studies that examine how nativity and cross-border ties are associated with Arab American mental health. The present study addresses this gap. The evidence thus far suggests the following hypotheses. I hypothesize that first generation immigrants will have more psychological distress and unhappiness as compared to one and a half, second, and third generation Arab Americans. I hypothesize that Arab Americans with more cross-border ties to the country of origin will have less psychological distress and more happiness. I also hypothesize that the relationship between cross-border ties and psychological distress and happiness is conditional on nativity so that cross-border ties will be associated with lower psychological distress and more happiness for first and 1.5 generation, but not associated for second and third generation Arab Americans.

Data and Methods

The data come from the 2003 Detroit Arab American Study (DAAS), a representative sample of Arab Americans living in the Detroit metropolitan area (N=1016). This is the latest representative sample of Arab Americans in an area in the United States. The largest and most diverse concentration of Arab Americans in the United States is in the Detroit metropolitan area. Compared to Arab Americans nationally, those living in the Detroit area are more likely to be foreign-born, Muslim, and bilingual (Abdulrahim & Baker, 2009; W. Baker et al., 2003). Drawn from the three-county Detroit metropolitan area, the DAAS is a companion survey of the 2003 Detroit Area Study. The DAAS aimed to provide perspectives and experiences since September 11, 2001 and collected information on social trust, local social capital, attachments to transnational communities, respondent characteristics, community needs, and psychological distress and happiness (W. Baker et al., 2006). For the entire DAAS sample, the risk for psychological distress is comparable and happiness is slightly lower than the general public (W. Baker et al., 2003). Professional bilingual translators used forward to backward translation, and the DAAS advisory panel of Arabic speaking community representatives verified conceptual and semantic equivalence between the source and final versions.

The sampling frame included all adults who self-identified as of Arab or Chaldean descent who resided in the Detroit metropolitan area from July through November of 2003. There were 4619 households screened, 1389 were eligible, and 1016 household members 18 years and older completed interviews. Trained bilingual Arab Americans conducted face-to-face interviews in the respondent's choice language. The overall response rate was 73.7% (W. Baker et al., 2006). This analysis is limited to 896 individuals who had complete data on nativity (N=1,012), cross-border ties (N=939), and psychological distress and happiness (N=896). All estimates were standardized to the demographic characteristics of the Detroit Arab-American population as recommended by DAAS research team. DAAS received ethical approval from the University of Michigan IRB. This study uses de-identified, public use secondary data and was exempt from further human subjects review.

Measures

Dependent

The two dependent measures are *psychological distress* and *happiness*. *Psychological distress* is based on the respondents' self-report through the Kessler Psychological Distress Scale (K10), a well-known, validated method of determining the prevalence of anxiety or depressive disorders (Andrews & Slade, 2001). The K10 has been cross-culturally validated and compares well with the General Health Questionnaire and the Medical Outcomes Study Short-Form 12-Item Health Survey (Fassaert et al., 2009; Slade et al., 2011). It consists of ten questions on the level of anxiety or depressive symptoms in the preceding 12-month period (Appendix Table 1). Responses were scored on a five-point Likert scale ranging from "1 = all of the time" to "5 = not at all". Responses were recoded to allow for proper summation, creating a scale ranging from 10 to 50 ($\alpha = 0.84$). The scale was coded for thresholds such that "0 = 10 to 15" or low or no risk, "1 = 16 to 29" or medium risk, and "2 = 30 to 50" or high risk for psychological distress (Andrews & Slade, 2001).

Happiness is based on the respondents' self-reported happiness. Happiness is an important measure of population mental health (Bray & Gunnell, 2006). Despite some controversy over self-reports of health and life satisfaction measures as indicators of peoples' true health and happiness levels, there is consensus that they reflect individuals', including Arab populations', health and happiness (Abdulrahim & Baker, 2009; M. Baker et al., 2004; Subramanian et al., 2005). Self-reported happiness has been validated among Arabs, and happiness is tied to other mental health outcomes (Abdel-Khalek, 2006). The respondents were asked "taking all things together, would you say you are very happy, happy, not very happy, or not happy at all?". Responses were scored on a four-point Likert scale from "1 = very happy" to "4 = not happy at all". Items were recoded so that "0 = not happy", "1 = happy", and "2 = very happy".

Independent

Nativity is based on the birthplace of respondents and their parents. This creates four groups for comparison – first generation (foreign born to at least one foreign born parent and immigrated before the age of 14), 1.5 generation (foreign born to at least one foreign born

parent and immigrated at 14 years old or older), second generation (U.S. born to at least one foreign born parent), and third+ generation (U.S. born to U.S. born parents).

Cross-border ties are measured based on four different scales: *cross-border attitudes*, *media consumption*, *social ties*, and *community/volunteer organizations*. Other researchers have used similar attributes and scales of cross-border ties (Murphy & Mahalingam, 2004). *Cross-border attitudes* is a 5-item continuous scale based on questions where respondents were asked to consider how much connections to the Arab world mean to them (0 = not relevant, 1 = not at all, 2 = only a little, 3 = somewhat, and 4 = a lot). Items load on one factor and scores are averaged creating a scale ranging from 0 for negative cross-border attitudes to 4 for positive cross-border attitudes ($\alpha = .72$).

Media consumption is a continuous measure, based on 6 items. Items include aspects of media consumption from television to internet news. For example, respondents were asked “In a typical week, do you watch any television news broadcast in Arabic”. All items were dichotomous as “0 = no” and “1 = yes”. Items are summed to create a scale ranging from 0 to 6 with higher scores indicating more cross-border media consumption ($\alpha = 0.63$).

Social ties is a continuous measure, based on 6 items about having and communicating with friends, family, and business contacts outside the USA. All items were recoded to be dichotomous as “0 = no” and “1 = yes”. Items are summed to create a scale ranging from 0 to 6 with higher scores indicating more cross-border social ties ($\alpha = 0.65$).

Community Organizations is based on four items that assess respondents’ participation in community organizations with connections to the Arab world. For example, “Are you active in a village club?”. All items were recoded to be dichotomous as “0 = no” and “1 = yes”. Items are summed to create a scale ranging from 0 to 4 with higher scores indicating more activity in cross-border community organizations ($\alpha = 0.84$). These measures of cross-border ties are not highly correlated.

Covariates

I account for socio-demographic covariates that could be endogenous to nativity and cross-border ties to ensure the socio-demographic variables are not confounding the explanations for my primary hypotheses. Socio-demographic covariates include age, sex, marital status, education, income, domestic ties, religion, health insurance, US Citizenship, and language of the interview. Marital status is a dichotomous variable with “0 = not married” and “1 = married”. Education is coded as less than a high school diploma, high school graduate (includes GED or vocational school completion), some college, and college graduate or graduate degree completion. Income is a four category measure of total family income, and in coding the measure, the 97 (10.8%) cases with missing data were coded to the median income of \$20,000 – \$49,999. Domestic ties are included as a measure of social support in the United States. Domestic ties is continuous and based on 8 items about having and communicating with friends and family in Michigan and in the greater USA. All items were recoded to be dichotomous as “0 = no” and “1 = yes” and summed to create a scale from 0 to 8 with higher scores indicating more domestic social ties ($\alpha = 0.74$). Religion was coded

as “0 = Christian or other” and “1 = Muslim”. Language of the interview is whether the interview was in Arabic vs. English.

Statistical Analyses

Descriptive statistics were calculated for all variables. Bivariate analyses test associations between nativity and psychological distress, happiness, and cross-border ties. Then, multivariate ordinal logistic regression models estimate associations between nativity and cross-border ties, as independent variables, and the three category psychological distress and happiness measures, as dependent variables, while accounting for relevant covariates. Preliminary analyses of the psychological distress scale as a linear variable are consistent with results presented. The proportional odds assumption was tested and the models satisfy the restriction that the variable coefficients are equal across the categories of the dependent variable. For multivariate analyses, Model 1 includes nativity and all covariates except for cross-border ties. Models 2 adds cross-border ties. Interactions between nativity and cross-border ties were tested. For psychological distress, interactions were not significant and for parsimony, are not included. For happiness, significant interactions are shown in Models 3 through 5. Analyses were completed with STATA vs. 14.

Results

The majority of respondents are first generation (60.3%, N=524), and about a fifth of respondents are second generation (22.4%, N=195) (Table 1). The average age is 44 years old (43.5, SD=0.56), and 53% (N=460) of the sample is female. About two-fifths (39.6%, N=344) are Christian and 59.2% (N=514) are Muslim. About half of respondents are US Citizens (50.6%, N=440), and 57.2% (N=497) completed interviews in English.

Cross-border attitudes towards the Arab world are somewhat positive, with the average score between the only a little and somewhat response categories (Table 2). Three quarters report that visiting family in the Arab world is important to them. On average, respondents consume between one and two Arab media sources. Social ties are slightly higher with an average between two and three social ties, indicating that Arab Americans have and communicate with some family, friends, and business contacts. Arab Americans participate in one to two community/volunteer organizations on average.

Table 3 shows the frequency or means and standard deviations for psychological distress (K10), happiness, and cross-border ties by nativity. There are no differences in psychological distress by nativity. Two-thirds of Arab Americans are considered medium risk (scores between 16 and 29), and the average psychological distress scores for all generations are between 18 and 20 (not shown). There are nativity differences in happiness. Specifically, those who are 1.5 generation and higher had significantly higher odds of indicating better categories of self-reported happiness (e.g. “happy” versus “not happy”) compared to first generation Arab Americans ($p<0.001$). Cross-border ties also differ significantly by nativity ($p<0.001$). First generation Arab Americans have more positive cross-border attitudes, consume more media, and have more social ties compared to all other generations ($p<0.001$). Second generation Arab Americans participate in more community/volunteer organizations (Mean=2.5, SD=0.11) as compared to all other generations ($p<0.001$).

Model 1 shows the adjusted models of nativity for psychological distress (Table 4). The 1.5 generation has significantly lower odds (OR=0.57) of risk of psychological distress (e.g. “high risk” versus “medium risk”, “medium risk” versus “low to no risk”) compared to the first generation, all else equal ($p<0.05$).

Arab Americans with more positive cross-border attitudes have significantly higher odds (OR 1.29, $p<0.01$) of psychological distress (Model 2). For each additional social tie to countries of origin, Arab Americans have higher odds (OR 1.15, $p<0.05$) of psychological distress (e.g. “high risk” versus “medium risk”). For each additional cross-border community organization Arab Americans participate in, they are associated with lower odds of psychological distress (OR: 0.85, $p<0.01$). Interactions between cross-border ties and nativity are not significantly associated with psychological distress and subsequently, not shown. Some socioeconomic measures were also significantly associated with psychological distress. Those who have greater total family income have lower odds of psychological distress compared to those who have the lowest family income. Respondents who completed interviews in Arabic also have lower odds of psychological distress (OR 0.57, $p<0.01$) compared to those who completed English interviews.

After adjusting for covariates, contrary to the first hypothesis, nativity is not associated with happiness (Table 5). In Model 2, when including cross-border ties, those who consume media from more sources have 14% lower odds of happiness compared to those who use less sources ($p<0.01$). Model 3 adds terms interacting nativity with cross-border attitudes. The ratio of the odds ratios for the first and third generation is shown by the interaction term in the model (OR: 3.12, $p<0.01$), demonstrating the significant differences in the effect of cross-border attitudes on the odds of better self-reported happiness for different generational groups. Among third generation Arab Americans, an increase in attitudes towards country of origin is associated with higher odds of happiness (e.g. “happy” versus “very happy”), relative to the 1st generation. The odds ratio for the main effect of attitudes towards country of origin suggests that for the omitted category, or the first generation, more favorable cross-border attitudes are associated with lower odds of happiness (OR: 0.77, $p<0.05$).

Model 4 shows the interaction between nativity and media consumption is not significant, but the odds ratio for the main effect of media consumption and happiness is significant suggesting that for the omitted category, or the first generation, consuming media from more sources is associated with lower odds of happiness (OR: 0.84, $p<0.05$). Among third generation Arab Americans, greater involvement in community organizations is associated with higher odds of happiness relative to the first generation (OR: 1.57, $p<0.05$) (Model 5). Socioeconomic measures were also significantly associated with happiness. Arab Americans with greater total family income have higher odds of happiness compared to those with the lowest total family income. Those with health insurance are associated with higher odds of happiness compared to those without insurance (OR 2.19, $p<0.001$).

Discussion

This study shows a mixed set of relationships between nativity, cross-border ties, and psychological distress and happiness for a sample of Arab American adults living in Detroit,

Michigan. Prior research consistently demonstrates that Arab Americans are an increased risk for mental health disorders (Aroian et al., 2015; Moradi & Hasan, 2004; Padela & Heisler, 2010; Wrobel & Paterson, 2014). This study expands on such research by analyzing how various types of cross-border ties to countries of origin influence psychological distress and happiness of Arab American immigrants of differing generations. While there are limited differences in psychological distress and happiness across generations, there is important variation in these outcomes by different types of cross-border ties.

Providing mixed support for the second hypothesis, cross-border ties are both positively and negatively associated with psychological distress and happiness. To review, all immigrant generations who have more positive cross-border attitudes and more social ties towards countries of origin have higher odds of psychological distress compared to those who do not. More cross-border social ties and positive cross-border attitudes could be an indication of the stress of separation from family and home country culture (Suarez-Orozco et al., 2010). Stress is a known determinant of worse mental health among immigrants (Pumariiega et al., 2005). More simply, migration often separates nuclear and extended families, which has emotional costs (Falicov, 2007). More cross-border social ties could be indicative of that separation. These findings align with work that finds cross-border ties are associated with greater depression among Caribbean immigrants (Murphy & Mahalingam, 2004).

In contrast, all immigrant generations who are participating in local organizations with ties to the Arab world have lower psychological distress compared to those who are not. Immigrants experience social isolation during the migration process (Massey et al., 1990). Ties with organizations might be indicative of a strong social network, which can help buffer the stresses of immigration and promote positive well-being (Mulaney-Day et al., 2007). Transnational ties are also important for the construction of a positive ethnic identity (Viruell-Fuentes & Schulz, 2009), which protects against psychological distress (Sellers et al., 2003). Engagement in local community organizations with ties to the Arab world demonstrates both ties to countries of origin and local social connections in the destination country. This type of cross-border tie may have health protective effects as it reduces social isolation and could promote a sense of identity. Social support and ethnic identity have been linked to positive Arab American mental health outcomes (Moradi & Hasan, 2004; Padela & Heisler, 2010). It is important to note that it is difficult to disentangle the local vs. transnational dimension of cross-border community and volunteer organizations. While future work should try to assess the contribution of both local and cross-border ties, the link between community organizations and psychological distress lends some support to segmented assimilation and positive health outcomes. Those participating in cross-border local organizations are adopting aspects of U.S. social systems, maintaining ties to culture of origin, and experiencing lower psychological distress.

While nativity and cross-border ties do not interact for psychological distress, there is some support for the third hypothesis about an interaction between nativity and cross-border ties for happiness. The interaction is not in the expected direction. Positive cross-border attitudes and involvement in community organizations are associated with higher odds of happiness for third generation Arab Americans, U.S. born to U.S. born parents, relative to first generation Arab Americans. For the third generation, these types of cross-border ties could

provide a sense of belonging in a family or ethnic community. Qualitative research shows that higher generation immigrants are exposed to discrimination and “othering” in communities in the United States (Viruell-Fuentes, 2007) and may use cross-border ties to help construct their sense of identity, which helps promote positive health outcomes (Viruell-Fuentes & Schulz, 2009).

In contrast, there is a negative association between media consumption and happiness for first generation Arab Americans, but not 1.5 generation or higher Arab Americans. Consumption of media from the country of origin could indicate separation anxiety for first generation Arab Americans who are far from their birth country. In addition, national media can contribute to further marginalization of immigrants, and media from countries of origin can offer connections to countries of origin and a sense of belonging (Christiansen, 2004). However, for first generation immigrants and not higher generations, cross-border ties also create worries, stresses, and frustration about circumstances in home countries that are seemingly out of immigrants’ control (Menjivar, 2000; Viruell-Fuentes & Schulz, 2009). First generation Arab Americans could be seeking media from countries of origin to gain a sense of belonging, but experiencing unhappiness because of exposure to circumstances out of their control. For Arab Americans, perceived loss of personal control is associated with psychological distress (Moradi & Hasan, 2004). First generation Arab Americans consuming more cross-border media could feel a lower sense of control in trying to navigate both their country of origin and destination context and thus, experience unhappiness.

These findings show that the type of cross-border tie matters. The countervailing forces between types of ties may contribute to the non-significant results for some measures of cross-border ties. Cross-border ties that allow connection to the country of origin and simultaneously create social support in the destination context may be associated with positive mental well-being. While some do not view cross-border ties and assimilation as mutually exclusive phenomenon (Soehl & Waldinger, 2010; Waldinger & Fitzgerald, 2004), others claim that it prevents immigrants from assimilating (Kivisto, 2001). Therefore, while I control for domestic ties, those with more cross-border attitudes, social ties, and media consumption might not be establishing as many connections in the destination context. To further understand these relationships, there is need for more research that looks at possible mediating factors between cross-border ties and mental health like family support, social support, social patterns, and quality of life of Arab Americans across the life course.

This study is the first to consider nativity, cross-border ties, and mental health of Arab Americans. However, there are some limitations. The primary limitation is that the data are more than ten years old and only generalizable to Arab Americans in the Detroit area. This particular concentration of Arab Americans may have unique social and community contexts that have implications for cross-border ties and mental health. Health indicators among Arab Americans in Michigan may not be representative of Arab Americans in the United States. For example, in health research among Arab Americans in Michigan, their socioeconomic status is lower than the general population of the state (El Reda et al., 2007; Jaber et al., 2004), but national data shows Arab Americans are more educated and financially well off compared to the general U.S. population (Arab American Institute, 2015). In general, there is a need for large, nationally representative, quantitative studies of Arab American health.

The health of Arab Americans in Detroit could differ meaningfully from Arab Americans in other areas of the United States.

A second methodological limitation is that the data are cross sectional so the relationship could be reversed. For example, those with less psychological distress could participate in more community and volunteer organizations. Since the data are cross-sectional, a causal link between cross-border ties and mental health cannot be established. It will be important to further examine the relationship between cross-border ties and psychological distress and happiness over multiple time points. The data are also based on self-report and could be subject to social desirability bias. In addition, the findings show differences in psychological distress by language of interview. This could represent associations between nativity, language, and cross-border ties; although, it could also indicate issues with translation. While the forward to backward process is considered the preferred method of achieving culturally equivalent instruments (Carlson, 2000; Maneesriwongul & Dixon, 2004), the translation may be influenced by the competence of the forward and backward translators. Additionally, DAAS was designed to understand political participation of Arab Americans and only includes limited measures of mental health. While the K10 has been validated among populations of North Africa and the Middle East (Fassaert et al., 2009), it not been specifically validated within the Arab American population. Future studies should use validated instruments for a range of physical and mental health outcomes.

Despite these limitations and given the current lack of data on Arab Americans, this study begins to show the associations between different types of cross-border ties and psychological distress and happiness for several immigrant generations of Arab Americans. Importantly, this study provides preliminary evidence that cross-border ties contribute to the etiology of psychological distress and happiness for a Detroit-area representative Arab American sample. Given the limited research on cross-border ties and health, future work should consider additional measures like economic and political ties. Overall, this analysis shows the importance of cross-border ties as part of social determinants of immigrant health, meriting further research on mechanisms to explain the relationship between cross-border ties and mental health.

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Appendix

Appendix Table 1

Questions Comprising Psychological Distress Scale, 2003 Detroit Arab American Study (N=896)

Kessler 10 Item Psychological Distress Scale ($\alpha = 0.84$)

In the previous 12 months:

- 1 How often did you feel nervous?
 - 2 How often did you feel so nervous that nothing could calm you down?
 - 3 How often did you feel restless and fidgety?
 - 4 How often did you feel so restless you could not sit still?
 - 5 How often did you feel tired out for no good reason?
 - 6 How often did you feel hopeless?
 - 7 How often did you feel depressed?
 - 8 How often did you feel so depressed that nothing could cheer you up?
 - 9 How often did you feel that everything was an effort?
 - 10 How often did you feel worthless?
-

Highlights

- Study examines nativity, cross-border ties, and mental health of Arab Americans
- Psychological distress and happiness do not vary much by nativity alone
- Cross-border media consumption is associated with unhappiness for first generation
- Positive cross-border attitudes are associated with happiness for third generation
- Cross-border ties have both adverse and protective effects on mental health

Table 1

Weighted Socio-Demographic Characteristics of Arab Americans in the 2003 Detroit Arab American Survey (N=896)

Demographic Characteristics	N	Mean (SE) or %
Nativity		
1 st Generation	524	60.3
1.5 Generation	91	10.5
2 nd Generation	195	22.4
3 rd Generation	59	6.8
Age (18–88 years)	869	43.5 (0.56)
Female (0/1)	460	52.9
Marital Status		
Single	142	16.3
Married	618	71.1
Separated/Divorced/Widowed	109	12.5
Education		
<High School	212	24.4
HS Grad/GED/Vocational	170	19.6
Some College	253	29.1
College Grad/Graduate Degree	234	26.9
Health Insurance (0/1)	869	83.8
Income		
<\$20,000	176	20.3
\$20,000 – \$49,999	323	37.2
\$50,000 – \$99,999	192	22.1
>\$100,000	178	20.5
Domestic Ties in the USA	869	6.0 (0.06)
US Citizen (0/1)	440	50.6
Religion		
Christian	344	39.6
Muslim	514	59.2
None	11	1.3
Language of Interview		
English	497	57.2
Arabic	372	42.8

Note: percentages may not add to 100% due to rounding

Table 2

Cross-Border Ties for Arab Americans in the 2003 Detroit Arab American Study (N=896)

Cross-Border Ties	N	% or Mean (SE)
Attitudes (0 – 4)	896	2.8 (0.03)
Speaking Arabic	896	3.2 (0.04)
Marrying an Arab	896	3.0 (0.04)
Arab Arts and Culture Events	896	2.4 (0.04)
Supporting Palestine	896	2.6 (0.05)
Visiting Family in the Arab World	896	2.8 (0.05)
Media Consumption (0 – 6)	896	1.5 (0.05)
Arabic TV (0/1)	447	51.4
Arabic Radio (0/1)	140	16.1
Arabic Newspaper (0/1)	142	16.3
Foreign Arabic Newspaper (0/1)	40	4.6
Arabic Satellite Television (0/1)	465	53.5
Arabic Internet News (0/1)	90	10.4
Social Ties (0 – 6)	896	2.3 (0.05)
Family outside USA (0/1)	757	87.1
Friends outside USA (0/1)	456	52.5
Business contacts outside USA (0/1)	46	5.29
Talk to Family outside USA each month (0/1)	474	54.6
Talk to Friends outside USA each month (0/1)	222	25.6
Talk to Business Contacts outside USA each month (0/1)	34	3.9
Community/Volunteer Organization (0 – 4)	896	1.9 (0.05)
Arts and Cultural Organization (0/1)	372	42.8
Village Club (0/1)	352	40.5
Advocacy Group (0/1)	347	39.9
Religious Organization (0/1)	554	63.8

Table 3

Psychological distress (K10), Happiness, and Cross-Border Ties by Nativity, 2003 Detroit Arab American Study (N=896)

	1st Generation N=524	1.5 Generation N=91	2nd Generation N=195	3rd Generation N=59
Mental Health Outcomes				
	% or Mean (SD)			
Psychological Distress (K10)				
No or low risk (10 – 15)	26.3	30.8	24.1	30.5
Medium risk (16 – 29)	64.7	64.8	69.2	66.1
High risk (30 – 50)	9.0	4.4	6.7	3.4
Happiness ***				
Not Happy	11.3	3.3 ^a	2.1 ^b	6.8 ^c
Happy	55.7	49.5	51.3	39.0
Very Happy	33.0	47.3	46.7	54.2
Cross Border Ties				
Attitudes *** (0 – 4)	2.9 (0.04)	2.9 (0.09)	2.6 ^b (0.07)	2.0 ^c (0.11)
Media Consumption *** (0 – 6)	2.1 (0.06)	1.2 ^a (0.13)	0.6 ^b (0.07)	0.2 ^c (0.10)
Social Ties *** (0 – 6)	2.7 (0.06)	2.1 ^a (0.15)	1.6 ^b (0.09)	1.3 ^c (0.20)
Community/Volunteer Organization *** (0 – 4)	1.5 (0.07)	2.2 ^a (0.16)	2.5 ^b (0.11)	2.3 ^c (0.21)

Notes:

*
p<0.05,

**
p<0.01,

p<0.001 indicate bivariate tests for differences between generations.

Individual tests for differences at p = 0.01 noted by

^a Significant difference between 1st Generation and 1.5 Generation

^b Significant difference between 1st Generation and 2nd Generation

^c Significant difference between 1st Generation and 3rd Generation.

Table 4

Odds Ratios and Standard Errors from Multivariate Ordinal Logistic Regression Models of Psychological Distress (K10) on Nativity and Cross-Border Ties, 2003 Detroit Arab American Study (N=896)

Key Variables	Model 1		Model 2	
	OR	(SE)	OR	(SE)
Nativity (Ref=1st Generation)				
1.5 Generation	0.57 *	(0.15)	0.66 ^a	(0.18)
2 nd Generation	0.87	(0.25)	1.29	(0.39)
3 rd Generation	0.62	(0.22)	1.09	(0.42)
Cross Border Ties				
Attitudes (0 – 4)	-	-	1.29 **	(0.12)
Media Consumption (0 – 6)	-	-	1.05	(0.07)
Social Ties (0 – 6)	-	-	1.15 *	(0.07)
Community/Volunteer Organization (0 – 4)	-	-	0.85 **	(0.04)
Age (years)	0.99	(0.00)	0.99	(0.00)
Female	1.12	(0.16)	1.09	(0.16)
Married	0.76	(0.13)	0.72	(0.12)
Education (Ref=< High School)				
HS Grad/GED/Vocational	0.96	(0.22)	0.91	(0.21)
Some College	0.89	(0.20)	0.85	(0.19)
College Grad/Graduate Degree	1.01	(0.23)	0.97	(0.23)
Health Insurance	1.21	(0.26)	1.25	(0.27)
Income (Ref=<\$20,000)				
\$20,000 – \$49,999	0.63 *	(0.14)	0.59 *	(0.13)
\$50,000 – \$99,999	0.56 *	(0.14)	0.50 **	(0.13)
>\$100,000	0.59 *	(0.16)	0.53 *	(0.14)
Domestic Ties in the USA	1.14	(0.37)	1.09	(0.36)
US Citizen	1.17	(0.25)	1.28	(0.28)
Muslim	1.01	(0.16)	1.23	(0.21)
Arabic Interview	0.66 *	(0.14)	0.57 **	(0.12)

Notes:

*
p<0.05,

**
p<0.01,

p<0.001.

^a Coefficient differs significantly between 1.5 Generation and 2nd Generation (p = 0.05). Standard errors in parentheses

Table 5

Odds Ratios and Standard Errors from Multivariate Ordinal Logistic Regression Models of Happiness on Nativity and Cross-Border Ties, 2003 Detroit Arab American Study (N=896)

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Nativity (Ref=1st Generation)										
1.5 Generation	1.30	(0.33)	1.17	(0.30)	1.20	(0.98)	1.08	(0.38)	1.19	(0.50)
2 nd Generation	1.34	(0.36)	1.09	(0.31)	0.57	(0.33)	1.00	(0.33)	0.97	(0.37)
3 rd Generation	1.55	(0.55)	1.12	(0.42)	0.11 ^{**}	(0.09)	1.00	(0.40)	0.42	(0.23)
Cross Border Ties										
Attitudes (0 – 4)	-	-	0.89	(0.08)	0.77 [*]	(0.09)	0.88	(0.08)	0.87	(0.08)
Media Consumption (0 – 6)	-	-	0.86 ^{**}	(0.05)	0.86 ^{**}	(0.06)	0.84 [*]	(0.06)	0.86 ^{**}	(0.05)
Social Ties (0 – 6)	-	-	1.00	(0.06)	1.00	(0.06)	1.00	(0.06)	1.01	(0.06)
Community/Volunteer Organization (0 – 4)	-	-	1.04	(0.05)	1.03	(0.05)	1.04	(0.05)	0.99	(0.06)
Age (years)										
Age (years)	0.99	(0.01)	0.99	(0.01)	0.99	(0.01)	0.99	(0.01)	0.99	(0.01)
Female										
Female	0.81	(0.11)	0.83	(0.12)	0.82	(0.12)	0.83	(0.12)	0.83	(0.12)
Married										
Married	1.30	(0.21)	1.35	(0.22)	1.38	(0.23)	1.36	(0.22)	1.35	(0.22)
Education (Ref=< High School)										
HS Grad/GED/Vocational	1.12	(0.25)	1.17	(0.26)	1.18	(0.26)	1.18	(0.26)	1.16	(0.26)
Some College	1.15	(0.25)	1.22	(0.27)	1.21	(0.26)	1.22	(0.27)	1.20	(0.26)
College Grad/Graduate Degree	1.22	(0.27)	1.24	(0.28)	1.27	(0.29)	1.26	(0.29)	1.22	(0.28)
Health Insurance	2.19 ^{***}	(0.46)	2.17 ^{***}	(0.46)	2.21 ^{***}	(0.47)	2.16 ^{***}	(0.46)	2.19 ^{***}	(0.46)
Income (Ref=<\$20,000)										
\$20,000 – \$49,999	1.47	(0.30)	1.54 [*]	(0.32)	1.59 [*]	(0.34)	1.55 [*]	(0.33)	1.59 [*]	(0.34)
\$50,000 – \$99,999	2.33 ^{***}	(0.56)	2.48 ^{***}	(0.61)	2.62 ^{***}	(0.65)	2.49 ^{***}	(0.61)	2.67 ^{***}	(0.66)
>\$100,000	2.66 ^{***}	(0.67)	2.85 ^{***}	(0.73)	2.94 ^{***}	(0.76)	2.87 ^{***}	(0.74)	3.01 ^{***}	(0.78)
Domestic Ties in the USA										
Domestic Ties in the USA	1.37	(0.44)	1.36	(0.44)	1.31	(0.43)	1.38	(0.45)	1.36	(0.45)
US Citizen										
US Citizen	1.04	(0.21)	1.05	(0.22)	1.04	(0.22)	1.04	(0.22)	1.08	(0.22)
Muslim										
Muslim	1.40 [*]	(0.22)	1.32	(0.21)	1.39 [*]	(0.23)	1.32	(0.21)	1.33	(0.21)

Key Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)	OR	(SE)
Arabic Interview	0.94	(0.18)	1.07	(0.22)	1.12	(0.23)	1.08	(0.22)	1.07	(0.22)
Nativity X Attitudes (Ref=1st Generation X Attitudes)										
1.5 Generation X Attitudes	-	-	-	-	1.00	(0.26)	-	-	-	-
2 nd Generation X Attitudes	-	-	-	-	1.28	(0.24)	-	-	-	-
3 rd Generation X Attitudes	-	-	-	-	3.12**	(1.13)	-	-	-	-
Nativity X Media (Ref=1st Generation X Media)										
1.5 Generation X Media	-	-	-	-	-	-	1.05	(0.19)	-	-
2 nd Generation X Media	-	-	-	-	-	-	1.08	(0.19)	-	-
3 rd Generation X Media	-	-	-	-	-	-	1.30	(0.46)	-	-
Nativity X Organizations (Ref=1st Generation X Organizations)										
1.5 Generation X Organizations	-	-	-	-	-	-	-	-	1.00	(0.16)
2 nd Generation X Organizations	-	-	-	-	-	-	-	-	1.07	(0.12)
3 rd Generation X Organizations	-	-	-	-	-	-	-	-	1.57*	(0.28)

Notes:

* p<0.05,

** p<0.01,

*** p<0.001.

^a Coefficient differs significantly between 1.5 Generation and 2nd Generation (p = 0.05). Standard errors in parentheses