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Scholarly Review

Arab American Cognitive Aging: Opportunities for Advancing Research on Alzheimer's Disease Disparities

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Abstract

Background and Objectives: This article highlights the dearth of and need for research on Arab American cognitive aging. We propose that studying cognitive health issues among older Arab Americans provides an innovative opportunity to advance knowledge about causes and consequences of Alzheimer's disease (AD) disparities and refine understanding of factors linked to immigrant health in the United States.
Research Design and Methods: Demographic information is provided on Arab Americans, who are on the cusp of being recognized by the U.S. government as a distinct ethnic group separate from whites. In the tradition of minority aging, we present a broad review of specific issues in the contemporary case of Arab Americans.
Results: We detail how including Arab Americans provides unique information on the importance of: (i) extending racial/ethnic group comparisons; (ii) linking social experiences to late-life cognitive health; and (iii) incorporating ethnic factors related to immigration and religion in the study of AD disparities.
Discussion and Implications: Studying Arab American cognitive aging provides an innovative opportunity to more fully delineate factors that create and sustain health disparities, with special insights into both causes and consequences.

> **Translational Significance:** Health disparities Alzheimer's disease research may benefit from studying Arab American cognitive aging because exploring differences among Arab Americans, who have been historically classified as white, addresses implications of differentials in risk and resilience. A focus on Arab Americans provides an innovative opportunity to more fully delineate factors that create and sustain health disparities, with special insights into both causes and consequences.

Keywords: Arab American, Health disparities, Cognitive health, Ethnicity, Race

Alzheimer's disease (AD) is a growing concern for older adults, their families, and their health care providers as populations experience longer life expectancies. Research shows that AD afflicts 11% of the United States (U.S.) population aged 65 and older, with as many as half of these cases medically undiagnosed (Boustani, Peterson, Hanson, Harris, & Lohr, 2003). According to the Alzheimer's Association (2016), every 66 seconds someone develops this disease, and one in three older adults dies with AD or a related dementia. Rates of AD, as well as its antecedents and consequences, are not randomly distributed in the population. Some racial and ethnic minorities suffer greater prevalence and incidence of AD than the non-Hispanic white population in the U.S. (Mayeda et al., 2016; Zhang,

Hayward, & Yu, 2016). However, available epidemiologic studies of AD across race/ethnicity have incompletely represented the heterogeneity that exists within and between groups living in the U.S. In this article, we focus on Arab American older adults, who have been largely invisible in aging research (Salari, 2002). We argue that studying Arab Americans not only is necessary to establish an accurate and comprehensive account of AD disparities in the U.S., but also offers unique opportunities for clarifying and revealing life course mechanisms that create and sustain these disparities.

In this article, we outline how studying older Arab Americans can advance knowledge about the causes and consequences of AD disparities and, more generally, refine understanding of factors linked to immigrant health in the U.S. An overall theme of this article is the value of investigating within-group diversity. In the tradition of minority aging research, we present unique and specific issues in the contemporary case of Arab Americans to illustrate the importance of: (i) extending racial/ethnic group comparisons; (ii) linking social experiences to cognitive health; and (iii) incorporating ethnic factors related to immigration and religion. We intentionally take a broad approach to cognitive health given the paucity of in-depth research on Arab American aging and AD. We review studies measuring several constructs that are highly relevant to AD research, including verbal episodic memory, which is a robust predictor of AD, mild cognitive impairment (MCI), which is a less severe cognitive syndrome that predicts AD conversion, as well as all-cause dementia, of which the majority of cases meet further criteria for possible or probable AD. In describing the current research landscape and our recommendations for future research, we use the term "cognitive health" to broadly encompass these different constructs, as well as AD specifically.

Arab Americans

Arab American refers to those who trace their ancestry to an Arabic-speaking country (Nasser-McMillan, Ajrouch, & Hakim-Larson, 2014; Suleiman, 1999), and includes diverse national origins spanning North Africa and Western Asia. The Arab American Institute estimates at least 3.7 million Americans are of Arab descent and 94% live in metropolitan areas of Detroit, Los Angeles, New York, Chicago, and Washington D.C. (Arab American Institute Foundation, 2014). The Arab American Institute Foundation also reports that the Arab American population grew by more than 72% from 2000 to 2010. Our analyses of the American Community Survey (2010–2014 5-year estimates) shows that more than 8% of all those who claim an Arab ancestry as their first ancestry are 65 years or older. Though slightly smaller in proportion to the 2008–2010 American Community Survey's estimate of African Americans (10%) aged 65 and older, the percentage of Arab Americans aged 65 and older reflects a larger proportion than that found among Hispanics (5.5%) and Pacific Islanders (5.8%;

Ajrouch & Abdulrahim, 2014). This group is a prominent, large and fast growing, visible immigrant population with a long and varied history in the U.S (Aswad, 1974; de la Cruz & Brittingham, 2003). Yet, they are often invisible in secondary data sets and all but absent from prospective longitudinal health studies.

For 100 years, Arab Americans have been categorized as white (Gualtieri, 2009; Samhan, 1999). Yet, politically and culturally, they are often marginalized by mainstream America (Naber, 2000). At a political level, Arab Americans may report unique identities based on national origin, religion, and ethnic affiliation (Samhan, 2014). Nevertheless, they share similar experiences resulting from U.S. foreign and domestic policy (Cainkar, 2009; Marvasti, 2005) in addition to recent attention focused on banning immigration from the Arab world (Abuelezam, El-Sayed, & Galea, 2017). These social forces have resulted in a view of Arab Americans as distinct from white Americans. Negative stereotypes of Arab Americans are now arguably deeply rooted in mainstream culture. Negative images, attitudes, and beliefs can serve as a key source of discriminatory behavior even among persons who may not be prejudiced (Williams & Mohammed, 2009). The racialization of Arab Americans incurs aspects of discrimination that would suggest Arab American health deviates from the white experience. For example, there are newly documented adverse health effects arising from perceived post–September 11 discrimination (Lauderdale, 2006; Padela & Heisler, 2010). The likelihood that Arab Americans are increasingly viewed and self-identify as a minority may lead to cognitive health patterns resembling those found among other racial minorities. The unique position of Arab Americans, along with the fact that they are on the cusp of being recognized as a distinct ethnic group separate from whites by the U.S. government (Jones, 2015), makes a focus on Arab Americans especially timely and valuable. Their growing numbers, increasing marginalization, and invisibility in available data make this group an especially important priority for cognitive health and aging research.

Extending Racial/Ethnic Group Comparisons

Racial/ethnic disparities in health remain a key area of concern among those seeking to understand inequalities, and for those who develop policies, programs, or other interventions to alleviate persistent gaps. As such, racial/ethnic group affiliation has been treated as a health-risk factor, providing potential clues into health outcomes over the life course (Barr, 2014; Bulatao & Anderson, 2004; Crimmins, Kim, Langa, & Weir, 2011; Mayeda, Glymour, Quesenberry, & Whitmer, 2016). Most research on disparities has centered on African American-white or Hispanic-non-Hispanic differences (Garcia et al., 2017). Yet, there is enormous heterogeneity within these racial and ethnic groups. For instance, African Americans include those who trace their ancestry to the legacy of American slavery as

well as more recent emigrants from the Caribbean and Africa. Research shows that the health profile of African Americans differs depending on how African American is defined (Read, Emerson, & Tarlov, 2005). Similarly, patterns of Hispanic health vary widely by subgroup (e.g., Mexican, Puerto Rican, Cuban), highlighting the health impacts of environmental differences across countries of origin, as well as differences in immigration experiences (Velasco-Mondragon, Jimenez, Palladino-Davis, Davis, & Escamilla-Cejudo, 2016). Often considered as a monolithic "control" group, whites are also heterogeneous (e.g. Italian, Norwegian, Lebanese). Accumulating research underscores the importance of distinguishing Arab Americans from whites to reveal hidden patterns of health problem distribution (Dallo, Al Snih & Ajrouch, 2009; Dallo et al., 2016). In sum, research on AD and cognitive health disparities will be both refined and enriched by moving beyond superordinate racial/ethnic categories.

Disparities in cognitive aging and AD may mirror other documented Arab American-white health disparities, including higher rates of diabetes, hypertension, and cardiovascular diseases (Dallo, Ruterbusch, Kirma, Schwartz, & Fakhouri, 2016; El-Sayed, Tracy, Scarborough, & Galea, 2011; Hatahet, Khosla, & Fungwe, 2002). Importantly, all of these diseases are known risk factors for AD. In addition, African Americans display a similar pattern of higher rates of diabetes, hypertension, and cardiovascular diseases compared to whites (Williams & Mohammed, 2009), which has been shown to contribute to their higher rates of AD than whites (Tang et al., 2001). Although documented health-risk factors for AD are more prominent among Arab Americans than whites, rates of AD among Arab Americans are unknown.

Research on cognitive health among Arab American older adults is virtually nonexistent due, in part, to the lack of culturally sensitive cognitive measures and normative data (Al-Joudi, 2015), as well as researchers' limited access to a large, concentrated population. Moreover, knowledge about AD among Arabs worldwide is limited. Current knowledge is based on studies from Israel, where Arabs exhibit high prevalence rates of both AD and MCI, a less severe cognitive syndrome that predicts AD conversion. For example, epidemiologic studies of Arab older adults living in northern Israel documented unusually high rates of MCI (32%) and AD (21%) (Afgin et al., 2012; Bowirrat, Treves, Friedland, & Korczyn, 2001). These high rates of MCI and AD have been linked to hypertension (Israeli-Korn et al., 2010), but are not likely to reflect a higher genetic predisposition because Arabs have a lower frequency of the APOE-ε4 allele than other white ethnic groups (Bowirrat, Friedland, Chapman, & Korczyn, 2000), supporting the potential importance of nongenetic, experiential factors, and social experiences in need of examination.

Measurement of Cognition in Older Arab Americans

A significant challenge to conducting AD research with Arab American older adults is that there are few reliable and valid cognitive measures with appropriate normative data. Ideally, a cognitive test is highly sensitive to variability in the underlying construct of interest (e.g., episodic memory) but minimally sensitivity to demographic, educational, or linguistic variability. In the U.S., nearly all cognitive tests that are widely used in the assessment of dementia were developed and validated in samples predominated by English-speaking, U.S.-born, non-Hispanic white adults. In contrast, many Arab American older adults are immigrants and/or primarily speak Arabic. Therefore, the psychometric properties of the most frequently used measures, including their sensitivity and specificity, may be suboptimal when used with older Arab Americans. For example, the Trail Making Test may lack specificity in Arabic-speaking samples because the sequence of the Arabic alphabet can take several forms and is often not emphasized in standard school curricula (Al-Joudi, 2015).

Verbal episodic memory is a robust predictor of incident AD in older adults (Backman, Small, & Fratiglioni, 2001). Verbal episodic memory tests are, therefore, heavily weighted in typical AD batteries and diagnostic algorithms. However, translating English-language verbal tests into Arabic is complicated by the plurality of Arabic dialects, divergence of written and spoken Arabic, and the absence of high-quality word frequency databases (Al-Joudi, 2015). Although using nonverbal tests may appear to be the solution, it is important to note that even the content of nonverbal tasks is learned within a culture (Miller, 1996). Therefore, so-called "culture-free" tests remain hypothetical. For example, Arab American older adults may be less accustomed to holding a pencil, drawing, or parsing geometrically complex abstract figures due to low education and/or nonexposure to European or American educational systems. Importantly, inadequate assessment of verbal episodic memory could lead to a high rate of false negatives given the potential prognostic significance of subtle changes in verbal abilities among this highly verbal population. For these reasons, we advocate for the development and rigorous testing of verbal tests in a neutral and colloquial form of Modern Standard Arabic, which is likely to be familiar to Arab American older adults of varying nativity (Al-Joudi, 2015).

In addition to the development of high-quality cognitive measures, there is also a need for appropriate normative data on these measures. In AD assessment, normative data are used to draw conclusions about whether the score obtained by a particular individual represents clinical impairment, rather than a normative weakness. An ideal normative sample is one that shares the linguistic and cultural background of the test sample. A mismatch between normative and test samples can result in inaccurate diagnoses and prevalence

estimates. For example, Arabic speakers perform worse than English speakers on Digit Span due to differences in mean syllable length across Arabic and English (2.25 versus 1.0 syllables per digit; Naveh-Benjamin & Ayres, 1986).

Even if normative data on an Arabic-speaking population are available, mismatch between the normative and test samples remains a likely problem due to differences in Arabic dialects, educational systems, and achievement expectations at a given grade level across Arab countries (Mahmood, 2015). Indeed, much of the published Arabic normative data relevant to AD assessment were collected in only a handful of individual countries, including Saudi Arabia (Khalil, 2010; Al-Ghatani, Obonsawin, Binshaig, & Al-Moutaery, 2011), Oman (Poreh, Sultan, & Levin, 2012), Jordan (Wiig & Al-Halees, 2013), and Tunisia (Ben Jemaa et al., 2017). Notably, most Arab American older adults did not emigrate from these countries, but rather from Lebanon, Egypt, Syria, or Iraq (U.S. Census, 2014). Thus, there is a critical need for normative data on Arabic-speaking older adults living in the U.S.

Linking Social Experiences to Cognitive Health

We still do not have a clear explanation for why differences in cognitive health generally, and AD specifically, persist between racial and ethnic groups. A growing body of evidence suggests that many health differences are social in nature. Cooper and colleagues (1997) present compelling results about hypertension among persons of African ancestry: those living in Africa displayed markedly lower levels of hypertension compared to those living in the U.S. With regard to AD, African ancestry has been linked to lower rates of AD neuropathology in Brazil (Schlesinger et al., 2013), but higher rates of clinical AD in the U.S. (Hohman et al., 2016). Considered together, these results highlight race as a social construction and demonstrate how context shapes the significance of a racial category for health. It is increasingly recognized that racial formations and ethnic identities are fluid categories that change over time and include (or exclude) various "others" accordingly (Cornell & Hartmann, 1998; Ignatiev, 1995; Omi & Winant, 1994). The case of Arab Americans presents a particularly timely and relevant example of the fluidity of racial categories. Arab Americans are legally defined as white, yet can select to be white or nonwhite (Abdulrahim, 2008), and are perceived by members both inside and outside of that group as nonwhite (Ajrouch, 2004; Ajrouch & Jamal 2007; Cainkar, 2009). Given that Arab Americans have historically been considered white to the extent that they have been represented in health research, it remains to be seen whether that racial identity would make them similar to whites with regard to AD.

One significant issue related to identifying and perceiving Arab Americans as not white is heightened levels of perceived ethnic/racial discrimination. Incidents of discrimination experienced by Arab Americans have increased since the events of 9/11 and the War on Terror (Abuelezam, El-Sayed, & Galea, 2017; Tanenbaum, 2008). Perceived discrimination is associated with both lower verbal episodic memory level, as well as faster rates of subsequent verbal episodic memory decline in older adults (Zahodne, Sol, & Kraal, 2017). For African American older adults in the Health and Retirement Study, the effects of discrimination on verbal episodic memory level were mediated by its negative psychological consequences: increased depressive symptoms and increased external locus of control. The negative association between discrimination and rate of verbal episodic memory decline was independent of these psychological sequelae, and may therefore reflect more direct effects of discrimination experiences on disease physiology, particularly inflammatory (Lewis, Aiello, Leurgans, Kelly, & Barnes, 2010) and vascular (Lewis et al., 2006, 2009) components. Further, animal studies have demonstrated a causal link between chronic social stress and pathologic changes in the hippocampus and prefrontal cortex (Chen, Huang, & Hsu, 2015; Stankiewicz, Goscik, Majewska, Swiergiel, & Juszczak, 2015; Wu et al., 2014), brain regions that are particularly vulnerable to AD neuropathology. Examination of perceived discrimination among Arab Americans constitutes an opportunity to better understand various types and experiences of stress that may impact AD risk, as well as the processes through which those experiences are most harmful.

Social support may serve as a key resource in the face of discrimination. Social support has received considerable attention for its potential role in reducing AD risk and influencing racial/ethnic differences in health. The unique influences of social support on AD risk remain to be delineated among diverse racial/ethnic groups. Growing evidence shows that race/ethnicity and stress intensity (e.g., discrimination) influence how and whether social support protects health in later life. For instance, Sheffler and Sachs-Ericsson (2015) found that perceived social support benefitted African American health regardless of stress level, but benefitted whites only in the situation of low stress. Moreover, social support, which is a multidimensional concept (Antonucci, Ajrouch, & Birditt, 2014), has now been shown to manifest differently across racial and ethnic groups (Sheffler & Sachs-Ericsson, 2015; Strom & Egede, 2012; Uchino et al., 2016). Arab Americans report more contact frequency with social network members than African Americans and whites, yet their networks comprise lower proportions of individuals of the same ethnicity compared to both African Americans and whites (Ajrouch & Antonucci, 2017). Such differences may reflect cultural world-views that arise from individuals' being embedded within larger systems of norms that create, sustain, and reinforce unfair treatment (Ajrouch, 2015; Alegria et al., 2011). Given that preferences for and characteristics of social support, as well as stress levels, differ by race and ethnicity (Viruell-Fuentes, Miranda, & Abdulrahim, 2012), social support may not benefit health in the same manner across racial/ethnic

groups (Sheffler & Sachs-Ericsson, 2015; Strom & Egede, 2012; Uchino et al., 2016). Expanding racial and ethnic comparisons by including Arab Americans is an innovative opportunity to advance knowledge on social experiences linked to cognitive health by investigating a newly visible, increasingly racialized group.

Incorporating Ethnic Factors

Immigrant Factors and Arab Americans

The status quo as it pertains to research on immigrants and health is that it focuses on immigrants who are widely recognized racial/ethnic minorities in the U.S. (Hispanic, Asian, African American; Viruell-Fuentes, Miranda, & Abdulrahim, 2012). Including Arab Americans in health research represents a substantive departure from the status quo by focusing on an immigrant group who have lived in the U.S. as white, but are currently undergoing a historical transition to become an officially recognized ethnic category in the U.S. Indeed, research suggests that younger cohorts of Arab Americans are more likely to see themselves as distinct from whites compared to older Arab Americans (Ajrouch & Jamal, 2007). Characterizing multiple immigrant factors that signify diversity within the largely immigrant Arab American population represents an opportunity to examine traditional ethnic factors among a newly emerging nonwhite group consistent with the tradition in minority health research of within-group investigations.

Timing

Slightly more than 50% of Arab Americans are immigrants compared to less than 10% of whites (U.S. Census, 2014). Documented immigration to the U.S. from Arab countries began in the late 1800s and continues through the present day. Numerous scholars have defined multiple waves of Arab immigration (Abdelhady, 2014; Suleiman, 1999), and the most recent waves are generally lumped into a post-1965 cohort. Since 1965, immigration to the U.S. from Arabic-speaking countries has been constant. Though the context of the home and host countries has shifted through the years, migration within the most recent wave was often set in motion due to political unrest (Samhan, 2014). For immigrants from the Arab world, the time period in which migration occurs draws attention to significant push and pull factors that may ultimately influence cognitive health.

The year of arrival may exert important effects on Arab immigrant health because of the ways in which legal and social environments change in both the destination and sending countries. For the destination country, identifying key dates of policy changes and events (e.g., 9/11) allow for comparison of those who migrated before/after. Changes in sending countries include epidemiological transitions, eruption, and persistence of violent conflict as well as socioeconomic shifts (Hamilton, Palermo, & Green, 2015). These structural factors may have unique implications for the immigrant health paradox, which has not been universally demonstrated. Indeed, the finding that immigrants exhibit better health than those born in the U.S. may not be true for Arab Americans. For instance, among white older adults living in the U.S., immigrants who fled Europe in the face of WWII scored lower on cognitive tests than their U.S.-born counterparts (Touradj, Manly, Jacobs, & Stern, 2001). It may be that structural push factors, particularly trauma due to war, leading to immigration represent an important moderator of the immigrant status-health relationship. Moreover, fleeing war and political instability is likely to incite not only migration at older ages, but accompanying mental health challenges, including higher rates of depression (Cummings et al., 2011) and social isolation (Treas & Mazumdar, 2002), which are both established risk-factors for AD. Hence, a focus on Arab Americans may clarify questions around the immigrant health paradox. Moreover, a more nuanced understanding may emerge by considering contextualizing factors such as language issues.

Bilingualism

Research suggests that bilingual abilities provide a productive pathway for immigrant well-being, allowing individuals to accommodate competing cultural demands. Maintaining aspects of native culture while acquiring skills of their new society helps members of an immigrant group achieve bicultural adaptation, which is correlated with positive well-being (Barry, 2001; Cabassa, 2003; Portes & Hao, 2002). This may be particularly salient for Arab Americans who are facing increasing hostility from the dominant culture in the aftermath of 9/11 (Cainkar, 2009). Research has revealed that bilingualism is associated with better performance in cognitive domains of executive functioning and episodic memory, but worse performance in domains of language (Bialystok, Craik, & Luk, 2008; Gollan & Ferreira, 2009). Although retrospective, chart-review studies suggest that bilingualism is associated with later onset of clinical dementia (Alladi et al., 2013; Bialystok, Craik, & Freedman, 2007), prospective studies have shown no association between bilingualism and incident dementia (Mukadam, Sommerlad, & Livingston, 2017). Clarifying whether and how bilingualism matters for late-life cognitive health and AD risk may be achieved by examining age of second language acquisition, frequency of each language used in various contexts (Luk & Bialystok, 2013), and language pairs that have not yet been systematically studied, such as Arabic-English. The Arabic language has longer words than the English language, and hence may tax short-term memory (Cook, 1997). Lifetime use of such long words might provide a form of cognitive stimulation or training that is protective.

Other factors

Other factors to examine in the context of Arab Americans and cognitive health include those of culture, religion, and socioeconomic status. Much of the research on other cultural factors and late-life cognitive health among

U.S. immigrants show that cultural world-views matter. Meanings attributed to health are diverse, including beliefs about memory loss (Laditka et al., 2011; Laditka et al., 2009; Wilcox et al., 2009). In particular, differential rates of AD diagnosis may reflect variations in the relational nature of self-hood (Hashmi, 2009). Hashim illustrates how culturally determined notions of self-hood inform differences in how dementia is experienced and managed. Arab culture is more relational than what we usually find in the Anglo culture (Ajrouch & Antonucci, 2014; Joseph, 1999). Thus, gathering data on Arab Americans' experiences of and beliefs about AD will provide unique insights about the epidemiology of AD, formal and informal care, as well as culturally sensitive interventions.

Religion may also be a key cultural factor in shaping immigrant experiences. Approximately half of the Arab American population is Christian, and the other half is Muslim (Samhan, 2014). Muslims seem to demonstrate patterns distinct from their Christian Arab American counterparts that challenge traditional acculturation patterns. Integration links to better mental health among Christians, but does not appear to benefit Muslims (Amer & Hovey, 2007). Furthermore, Muslims who reported a high level of dominant society immersion experienced the most discrimination, whereas Christians who reported similar high levels reported less discrimination (Awad, 2010). It remains to be seen whether religion will directly influence AD risk or moderate the effects of other social or cultural factors among Arab Americans.

Finally, it is well known that AD is associated with both income and education among African Americans and whites (Díaz-Venegas, Downer, Langa, & Wong, 2016). Arab Americans in the U.S. have a bifurcated socioeconomic profile. Although many report higher socioeconomic status, there are also large pockets of low-educated Arab Americans living in poverty (Read, 2013). Lower education and income are more prominent among more recent Arab immigrants, especially refugees (Foad, 2013). Additional important insights might be gained by examining Arab Americans with different income and educational, as well as immigration, characteristics.

Future Directions

Establishing prevalence rates of AD among Arab Americans and comparing those rates to nationally and regionally representative data of other racial/ethnic groups are crucial next steps in understanding late-life health disparities. This knowledge will lead to practical and theoretical future directions. Still needed to address this important knowledge gap are currently unavailable test materials and high-quality normative data that will assist practitioners in the assessment of AD in Arab American elders. Access to normative data is necessary to make meaningful, gold-standard judgments regarding strengths and/or weaknesses in neurobehavioral capacities (Mitrushina, Boone, Razani, & DElia, 2005).

Arab Americans have experienced a significant historical evolution within the U.S. We highlight the need for a prospective, detailed study of this group, arguing that it will provide both specific insights about AD among Arab Americans and also make important contributions to our knowledge about AD more generally. The circumstances of Arab Americans in the U.S., including immigrant push and pull factors influencing their life experiences and, most notably the transition from an invisible to visible and targeted minority, offer an unprecedented opportunity to examine the influence of external circumstances on AD.

Studying Arab American cognitive aging provides an innovative opportunity to more fully delineate factors that create and sustain health disparities, with special insights into both causes and consequences. Pioneering baseline data on cognitive health and AD risk among Arab Americans is urgently needed. The social underpinnings of racial/ethnic differences in health status point to the nature of inequalities as "preventable" situations. By extension, some reasonably straightforward policies could improve health among the most disadvantaged. In particular, understanding the role of immigrant factors and social support will refine theory about AD disparities and provide key information to better target experiential factors as an intervention strategy for effective management of this growing and high-cost disease.

Conflict of Interest

None reported.

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