GERIATRIC DISORDERS (JA CHEONG, SECTION EDITOR)



Mental Health Issues in Racial and Ethnic Minority Elderly

Nhi-Ha T. Trinh 1,2 • Richard Bernard-Negron 1 • Igbal "Ike" Ahmed 3,4,5

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Abstract

Purpose of Review With the current demographic shifts, the USA will soon become a "majority minority" country. While the population of the USA over the age of 65 years is projected to increase from 13.5% to 20% in 2030, racial and ethnic minority elderly, who are now 21% of the population, will increase to 44% by 2060. As the population of racial and ethnic minority elderly continues to grow, there is a demographic and public health imperative to understand how to better care for this population. **Recent Findings** This review evaluates the impact of race, ethnicity, and culture on the aging process, psychopathology, psychiatric care, psychiatric education, and clinical research. Relevant advances in recent literature are reviewed, and gaps in cultural competency education and training, and clinical research are identified.

Summary Clinical recommendations and future directions are highlighted, as an effort to improve care for this underserved population at risk. By striving to better care for racial and ethnic minority elders, one of the most marginalized populations, health care is improved for all.

Keywords Race · Ethnicity · Minority · Geriatric · Psychiatric care · Psychopathology

Introduction

With the current demographic shifts, the USA will soon become a "majority minority" country. US Census estimates that by 2044, no race or ethnic group in the USA is projected to have greater than a 50% share of the nation's total population. The population of the USA over the age of 65 years is projected to increase from 13.5 to 20% in 2030 (see Table 1); racial and ethnic minority elderly, who are now 21% of the population, will increase to 44% by 2060 [1]. Racial and ethnic elders age 85 years and over are the fastest growing segment of the American population [2•]. Racial and ethnic minorities in the USA include Black Americans, Latino

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- ☐ Iqbal "Ike" Ahmed ahmedi96822@gmail.com
- Depression Clinical and Research Program, Department of Psychiatry, Massachusetts General Hospital, Boston, MA, USA
- ² Harvard Medical School, Boston, MA, USA
- Tripler Army Medical Center, Honolulu, HI, USA
- ⁴ Uniformed Services University of Health Sciences, Honolulu, HI, USA
- ⁵ University of Hawaii Honolulu, Honolulu, HI, USA

Americans, Asian Americans and Pacific Islanders, and American Indians and Alaskan Natives, and smaller ethnic groups exist within these larger categories. In addition, some individuals who identify as racial or ethnic minority elderly may themselves have multiple ethnic identities [3]. As racial and ethnic minorities continue to grow, there is a demographic imperative to understand how to care for these populations.

Before beginning, definitions of race, ethnicity, culture, and minority status are reviewed here. Race is defined as a category of humankind that shares certain distinctive physical traits, such as skin color, facial features, and stature [4]. Most people think of race in biological terms; however, anthropologists, sociologists, and many biologists now question the value of these categories, and thus, the value of race is a helpful biological concept [5, 6]. In contrast, ethnicity refers to an ethnic affiliation or group, with the term ethnic relating to large groups of people classed according to common racial, national, tribal, religious, linguistic, or cultural origin or background ethnic minorities. Thus, ethnic groups are also a social construct; individuals who self-identify with a particular ethnic group share social, cultural, and historical experiences, often stemming from common national or regional backgrounds. These include beliefs, customs, places of origin, religion, diet, language, dress, self-concept, and normative expectations [4].

The term *culture* has multiple meanings: culture can describe the beliefs, customs, arts, etc., of a particular society,



Table 1 The percentage of people aged 65 and over within each racial group and Hispanic origin in the USA, from the 2010 US Census

	2010 (%)	2030* (%)	2050* (%)
White*	14.2	20.7	21.0
Non-Hispanic*** White	16.1	24.8	25.5
Black	8.6	15.2	18.5
American Indian and Alaska Native	7.4	14.5	16.8
Asian	9.3	16.5	21.9
Native Hawaiian and Other Pacific Islander	6.5	13.2	17.9
Two or more races	5.1	7.2	7.8
Hispanic***	5.7	10.0	13.2
All races and ethnicities	13	19.3	20.2

^{*}Predictions for 2030 and 2050 are presented. Data was adapted from the US Census and pooled from people who reported a race alone

group, place, or time; culture can be used as a synonym for a particular society that has its own beliefs, ways of life, art, etc. Finally, culture can refer to a specific way of thinking, behaving, or working that exists in a place or organization [4]. Clearly, certain ethnic or racial groups can have their own cultures, but the association is not always one to one. Groups or organizations made up of multiple races or ethnicities can create their own culture. Take for example, "American culture," or the culture of medicine.

Finally, a *minority group* is a part of a population that differs from others in some characteristics and is often subjected to differential treatment [4]. Minority groups are differentiated from the social majority, defined as those who hold on to major positions of social power in a society. The differentiation can be based on one or more observable human characteristics, including ethnicity, race, religion, disability, gender, wealth, health, or sexual orientation—and may be enforced by law. Usage of the term is applied to various situations and civilizations within history despite its association with a numerical, statistical minority [7].

Race, Ethnicity, and Culture: Aging

Race, ethnicity, and culture affect aging, both the developmental process and intergenerational issues. These factors affect developmental constructs such as age norms, family roles and responsibility, age grading, and rituals. In addition, intergenerational issues may occur through intergenerational differences in expectations about family responsibilities due to acculturation differences [8, 9].

The effects can also be biological. The study of cultural neuroscience has begun to lead to a broader understanding of developmental processes. Culture—gene coevolutionary processes may produce cultural variation in core cognitive and neural architecture (e.g., structure and function) across

generations through geographical variation in environmental pressures. Environmental factors, such as pathogen prevalence, are known to lead to cultural selection of behavior patterns affecting an orientation to individualism in contrast to collectivism, due at least in part to genetic selection of the short allele of the serotonin transporter gene [10].

In addition, there may be epigenetic effects of ethnocultural differences. Epigenome-wide studies have reported variation in methylation patterns between racial and ethnic groups. DNA methylation differences may be a potential biomarker for underlying racial health disparities between human populations. Ethnicity-related methylation differences may appear to set their mark during early embryonic development [11]. Although these discoveries are compelling, they are also preliminary, and additional work needs to be done in this area to understand how such cultural patterns ultimately become encoded in our genome. The study of cultural neuroscience could also lead to new discoveries in the understanding of brain–body processes, as well as interventions that can target the way some people experience mental health problems [12•].

Race, Ethnicity, and Culture: Psychopathology

Alzheimer Disease and Related Dementias

Racial, ethnic, and cultural factors can affect psychopathology and the differential prevalence, presentation, and causes of symptoms in cognitive disorders. In epidemiological catchment area studies, African American and Latino American elderly have been found to have higher levels of cognitive impairment, one of the indicators of dementia. This indicator is seen more in ethnic minorities—as much as double the amount seen in the general population [13]. Recent research has indicated that the burden of Alzheimer disease and related dementia in the USA will nearly double from 2014 to 2060;



^{**}Each racial group includes both Hispanics and non-Hispanics, except non-Hispanic Whites

^{***}People in the Hispanic category can be of any race

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the highest increases in this burden will occur in racial and ethnic minority groups, with the highest increase in incidence specifically in the Hispanic population [14••]. A recent population-based sample followed for 14 years found that dementia incidence is highest among African Americans and American Indian/Alaska Natives, lowest among Asian Americans, and intermediate among Latinos, Pacific Islanders, and whites [15]. Additionally, there is an association between literacy and cognitive reserve, with the observation that some racial and ethnic groups do not have access to a formal education, which could help explain some of the differences in prevalence of AD [13]. Limits, however, exist in the assessment and diagnosis of AD and related dementia in these populations, including challenges with the generalizability, cultural validity, and representativeness of neuropsychological testing. Finally, little research exists when it comes to neuroimaging, biofluid-based, and EEG/event-related potentials-based biomarkers for AD in racial and ethnic minority populations [16••].

Psychiatric Disorders in the Aging Population

Racial, ethnic, and cultural factors can affect psychopathology and the differential prevalence, presentation, and causes of symptoms in other psychiatric disorders as well. There are differences in causation and prevalence of disorders; for example, the prevalence of posttraumatic stress disorder differs in specific racial and ethnic minorities, as well as the elderly populations, due to differential exposure to risk factors, rather than differences in vulnerability [17]. A recent study found that in senior home settings, those racial and ethnic minority elders with lower incomes were more likely to be depressed than those with moderate incomes [18]. Furthermore, the prevalence of mental health disorder diagnoses overall is higher in older individuals, and this is especially the case for older African Americans [19].

In contrast, social support can mitigate risk; a study of African American elders found that support from the church and family was inversely associated with depression symptoms in this group; churchgoing seems to be protective for this minority group and generally results in lower depressive symptoms [20]. Complicating the issue, for some racial and ethnic minority elderly groups, the difference in reported prevalence of psychiatric illness can be also due to challenges in assessment of psychopathology, due to limitations of the sensitivity of culturally appropriate assessment instruments for different racial and ethnic groups [21].

Additionally, family factors and coping styles may affect presentation of psychopathology in the clinical setting [2•, 9]. For example, in American Indians, there seems to be a sense of interdependence between family members that often results in an increased observation of caregiving [22]. For other racial and ethnic minority elderly groups, immigration factors may also affect psychopathology and help-seeking behaviors, including age at immigration, historical events leading to immigration, degree of familiarity with the larger institutions, presence of family, cultural and religious institutions, and what generation of immigrants they belong to (such as first or second generation) [23].

Intersectionality in Psychopathology

Finally, each racial and ethnic minority group has pertinent historical and social challenges; even within each racial and ethnic minority group, there can be considerable heterogeneity. Several theories of aging and psychopathology may be relevant to our understanding of this relationship from a transcultural perspective. One such theoretical model is the "double jeopardy" hypothesis. In some Western societies and many transitional societies, the status of older persons is relatively low compared with other age groups; being old and a member of a minority group confers additional disadvantage or marginalization [23]. Older women may be subject to "triple jeopardy" because they are typically accorded lower status than men. An additional jeopardy would be the stigma of mental illness, and thus, in this model, racial ethnic minority elderly women will face "quadruple jeopardy" [2•]. In addition, racial and ethnic minority elderly are more likely to have experienced poverty in their lifetimes, and low socioeconomic status can pose additional risk [24]. Sexual minorities also may experience further marginalization; for example, transgender older adults often experience higher percentage of depressive symptoms than the general population, which is correlated with higher perceived stress in this population [25]. These intersectional aspects of being part of more than one minority lead to a complex identity with many vulnerabilities [26].

Race, Ethnicity, and Culture: Psychiatric Care

Cultural beliefs can contribute to different explanatory models of illness, such as folk models of dementia as compared with more Western biomedical models of dementia [23]. One study found lower levels of biomedical knowledge on dementia in Asian ethnic minorities in Hawaii. This population tend to have a higher degree of folk perceptions of dementia, leading them to associate symptoms of the disease with the general process of aging [27•].

One's racial and ethnic background can also affect the outcomes of psychopharmacologic agents through differences in pharmacogenetics, treatment adherence, and placebo effects [2•]. Additionally, differences exist in prescription patterns for racial and ethnic elders. Non-White elders with cooccurring depression and dementia have a lower chance of being prescribed antidepressants as an adjunct treatment than their White counterparts [28]. Another study noted lower antidepressant prescription rates for elderly African American



cancer patients with depression as compared with White patients with the same diagnoses [29].

Cultural beliefs can affect attitudes toward medication, therapy, traditional healing, alternative treatments, medications, and end-of-life care. Stigma surrounding mental illness can cause racial and ethnic minorities to underutilize psychiatric resources, and this is exacerbated in the older population. In a recent study, aging Hispanic elders and other racial and ethnic minority elder groups were less likely to use mental health resources, as compared with their African American and non-Hispanic White counterparts; the latter had similar levels of mental health resources use [30].

Racial and ethnic minority elders' families and their caregivers' behaviors and perceptions may be influenced by cultural beliefs as well. Cultural beliefs, such as familyism, collectivism, and fatalism, may affect the caregiving experience for the families of racial and ethnic minority elders. A recent study found that although Asian American caregivers spent much more time caring for their loved ones as compared with non-Hispanic Whites, non-Hispanic White caregivers tend to report more distress from caregiving, than their Hispanic and Asian American counterparts [31].

Race, Ethnicity, and Culture: Clinical and Research Settings

Given the influences of race, ethnicity, and culture on aging, psychopathology, and psychiatric care, disparities in access to and quality of mental health for racial and ethnic minority elders can occur, resulting from insufficient cultural competence in systems of care, absence of access to health care choices, and issues of stigma or even mistrust of the health care system by racial and ethnic minority elders. A larger framework is needed to provide culturally informed, culturally sensitive, and culturally competent care to racial and ethnic minority elders. The *Cultural Influences on Mental Health* framework is a useful approach to characterizing cultural factors in the relationship that develops between the patient and the mental health care system [32].

In research, significant efforts need to be made to increase the recruitment of racial and ethnic minority elders in clinical trials, specifically research related to AD and related dementias. Recruitment of racial and ethnic minorities in general AD trials is often as low as 1–2% [16••]. In addition, it is an imperative to collect more population-based, representative, and disaggregated data for certain racial and ethnic minority elders, including the Asian American, Pacific Islander, and Native American populations, to identify populations at risk, and to develop and test culturally tailored interventions specifically for racial and ethnic minority elder populations [33•]. One such recent example of a research study targeted low health literacy in African American elders; low health literacy has been linked with worse

health outcomes such as diminished physical function and poor mental health [34., 35.]. This clinically tailored intervention for Alzheimer dementia (AD) education for African American elders found that those who received culturally tailored followup text messages on AD education showed the largest increase in health literacy, as compared with those who received regular informative daily text messages or none at all [34...]. Another example is Happy Older Latinos are Active (HOLA): a newly developed intervention that using a community health worker to lead a health promotion program in order to prevent common mental disorders among at-risk older Latinos; the pilot study tested the feasibility and acceptability of delivering HOLA to older, at-risk Latinos [36]. These studies are examples of how targeted, culturally tailored interventions can be effective as a means of addressing multiple disparities (for example, mental health outcomes, mental health service use, stigma) among racial and ethnic minority elderly.

Race, Ethnicity, and Culture: Clinical Considerations

Therapeutic relationships can be often affected through differences in the patient's and clinician's cultures. Because of the professional culture of the clinician, some degree of distance between clinician and patient always exists, regardless of the racial or ethnic background of either clinician or patient. In addition, cultural beliefs and experiences of the racial and ethnic minority elder and their clinician can affect transference and countertransference [3]. Because cultural differences can lead to unequal treatment due to bias, stereotyping, and prejudice on the part of clinicians, clinicians need to be particularly vigilant when while caring for racial and ethnic minority elderly [37].

As such, in the clinical setting, individual clinicians must be mindful of each patient's racial and ethnocultural identity. However, stereotyping must be avoided and cultural humility maintained, as each person is a unique individual [38]. The study and use of the DSM-5 Cultural Formulation Interview and Supplementary Modules can be a useful tool with every patient—not just racial and ethnic minorities—to facilitate evaluation, diagnosis, and treatment planning [39, 40]. In addition, the American Psychiatric Association's Ethnic Minority Elderly Curriculum is a helpful resource for both trainees and clinicians seeking continuing education on this topic [23]. Clinicians and trainees must be mindful of the "hidden curriculum," vigilant of the asymmetrical power dynamics that may influence our care of vulnerable populations.

Conclusion

Racial and ethnic minority elders often experience a greater burden of unmet mental health needs, due, in part, to a



combination of patient, provider, and health care system barriers. Limited data exists on the effects of race, ethnicity, and culture on psychopathology and treatment for our elders. Most of the data that does exist is in the area of racial and ethnic differences in dementia prevalence; even more, limited data exist on the impact of race, ethnicity, and culture on aging issues.

To address the mental health needs of racial and ethnic minority elderly, high-quality research involving racial and ethnic minority elderly and continuing education and training approaches to provide culturally competent care for this population must be pursued [38]. As the prevalence of dementia and other mental health disorders continues to grow for racial and ethnic minority elders, more efforts in pursuing research in general, and particularly designing and evaluating culturally tailored interventions, are needed to allow for earlier diagnosis, treatment, and education for racial and ethnic minority elders and their families [41]. Barriers to racial and ethnic minority recruitment in research trials must be addressed, including advocating for more research on culturally tailored interventions to ultimately reduce health care disparities for racial and ethnic minority elder communities. On a structural level, clinicians and institutions must improve screening and prevention approaches and provide education and outreach as well as grapple with policy changes to increase access to culturally competent care [41]. By striving to better care for racial and ethnic minority elders, one of the most marginalized populations, health care is improved for all.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

References

Papers of particular interest, published recently, have been highlighted as:

- · Of importance
- Of major importance
- Vincent GK, Velkoff VA, Census Bureau US. The next four decades: the older population in the United States: 2010 to 2050.
 Washington, DC: U.S. Dept. of Commerce, Economics and Statistics Administration, U.S. Census Bureau; 2010.
- 2.• Cohen C, Elmouchtari M, Ahmed I. Working with elderly across cultures. In: Bhugra D, Bhui K, editors. Textbook of cultural psychiatry. Cambridge: Cambridge University Press; 2017. p. 552-69. This book chapter discusses how culture affects concepts of aging and psychopathology, looks at details of comparative

- cross-cultural studies of psychiatric disorders, the study of migrant populations and cultural variations in illness within ethnically diverse nations. In addition it discusses how ethno-cultural factors may impact assessment and treatment.
- U.S. Department of Health and Human Services. Mental health: culture, race, and ethnicity—a supplement to mental health: a report of the surgeon general. Rockville: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; 2001.
- 4. Merriam Webster. https://www.merriam-webster.com/dictionary/.
- Smedley A. "Race" and the construction of human identity. Am Anthropol. 1998;100:690–702.
- Smedley A. Race in North America: origin and evolution of a worldview. 4th ed. Boulder: Westview Press; 2012.
- Barzilai G. Communities and law: politics and cultures of legal identities. Ann Arbor: University of Michigan Press; 2003.
- Takeshita J, Ahmed I. Cultural aspects of geriatric psychiatry. In: Tseng WS, Streltzer J, editors. Culture competence in clinical psychiatry. Washington, DC: American Psychiatric Press Inc; 2004. p. 165–6
- Lee J, Ahmed I. Geriatric psychopathology. In: Streltzer J, editor. Culture and psychopathology: a guide to clinical assessment. New York: Routledge; 2017.
- Chiao JY, Cheon BK, Pornpattananangkul N, Mrazek AJ, Blizinsky KD. Cultural neuroscience: progress and promise. Psychol Inq. 2013. https://doi.org/10.1080/1047840X.2013.752715.
- Kader F, Ghai M. DNA methylation-based variation between human populations. Mol Gen Genomics. 2017. https://doi.org/10.1007/s00438-016-1264-2.
- 12.• Bhui K. Cultural neuroscience: ideas worth knowing. Nord J Psychiatry. 2018. https://doi.org/10.1080/08039488.2018. 1525647. This article presents the idea of cultural neuroscience as it relates to cultural psychiatry, including the need to understand how culture is encoded in the brain to develop better culturally adapted practices.
- Ahmed I. Geriatric psychopathology. In: Tseng W, Streltzer, editors. Culture and psychopathology: a guide to clinical assessment. Philadelphia: Brunner/Mazel; 1997. p. 223–40.
- 14. •• Matthews KA, Xu W, Gaglioti AH, Holt JB, Croft JB, Mack D, et al. Racial and ethnic estimates of Alzheimer's disease and related dementias in the United States (2015–2060) in adults aged ≥65 years. Alzheimers Dement. 2018. https://doi.org/10.1016/j.jalz. 2018.06.3063. This article provides estimates of the future burden of ADRD by age, race and ethnicity in the US and is the first to provide these kinds of future estimates. It discusses the importance of culturally-tailored interventions.
- Mayeda ER, Glymour MM, Quesenberry CP, Whitmer RA. Inequalities in dementia incidence between six racial and ethnic groups over 14 years. Alzheimers Dement. 2016. https://doi.org/ 10.1016/j.jalz.2015.12.007.
- 16.•• Babulal GM, Quiroz YT, Albensi BC, Arenaza-Urquijo E, Astell AJ, Babiloni C, et al. Perspectives on ethnic and racial disparities in Alzheimer's disease and related dementias: update and areas of immediate need. Alzheimer's Dement. 2018. https://doi.org/10.1016/j.jalz.2018.09.009. This article details the needs of racial and ethnic minority groups who have Alzheimer's and related dementias. It breaks down how racial/ethnic factors play a role in different areas of ADRD such as disease detection, interventions and methods.
- Alegría M, Fortuna LR, Lin JY, Norris FH, Gao S, Takeuchi DT, et al. Prevalence, risk, and correlates of posttraumatic stress disorder across ethnic and racial minority groups in the United States. Med Care. 2013. https://doi.org/10.1097/MLR.000000000000000007.
- Park S, Kim B, Han Y. Differential aging in place and depressive symptoms: interplay among time, income, and senior housing. Res Aging. 2018. https://doi.org/10.1177/0164027517697106.



- Wu C, Chiang M, Harrington A, Kim S, Ziedonis D, Fan X. Racial disparity in mental disorder diagnosis and treatment between non-Hispanic White and Asian American patients in a general hospital. Asian J Psychiatr. 2018. https://doi.org/10.1016/j.ajp.2018.04.019.
- Chatters LM, Taylor RJ, Woodward AT, Nicklett EJ. Social support from church and family members and depressive symptoms among older African Americans. Am J Geriatr Psychiatry. 2015. https:// doi.org/10.1016/j.jagp.2014.04.008.
- Perry W, Lacritz L, Roebuck-Spencer T, Silver C, Denney RL, Meyers J, et al. Population health solutions for assessing cognitive impairment in geriatric patients. Arch Clin Neuropsychol. 2018. https://doi.org/10.1093/arclin/acy052.
- Schure MB, Goins RT. Association of depressive symptomatology with receipt of informal caregiving among older American Indians: the Native Elder Care Study. Am J Geriatr Psychiatry. 2015. https:// doi.org/10.1016/j.jagp.2014.03.013.
- Ahmed I, Kramer E, for the APA EME Committee. American Psychiatric Association (APA) Ethnic Minority Elderly Curriculum: 2004–2006.2006. Available from http://www.aagponline.org/clientuploads/08cultcompcur.pdf.
- Administration on Aging. Minority aging. Retrieved from: http:// www.aoa.gov/AoARoot/Aging_Statistics/Minority_Aging/index. aspx. US Department of Health and Human Services; 2011.
- Hoy-Ellis CP, Fredriksen-Goldsen KI. Depression among transgender older adults: general and minority stress. Am J Community Psychol. 2017. https://doi.org/10.1002/ajcp.12138.
- Crenshaw K. Mapping the margins: intersectionality, identity politics, and violence against women of color. Stanford Law Rev. 1991. https://doi.org/10.2307/1229039.
- 27.• Suzuki R, Goebert D, Ahmed I, Lu B. Folk and biological perceptions of dementia among Asian ethnic minorities in Hawaii. Am J Geriatr Psychiatry. 2015. https://doi.org/10.1016/j.jagp.2014.03. 012. This study examines the folk beliefs on dementia in Asian ethnic minorities in Hawaii and explores how these beliefs can lead to associating symptoms of the disease with the general process of aging.
- Bhattacharjee S, Oh YM, Reiman EM, Burke WJ. Prevalence, patterns, and predictors of depression treatment among community-dwelling elderly individuals with dementia in the United States.
 Am J Geriatr Psychiatry. 2017. https://doi.org/10.1016/j.jagp. 2017.03.003
- Alwhaibi M, Madhavan S, Bias T, Kelly K, Walkup J, Sambamoorthi U. Depression treatment among elderly Medicare beneficiaries with incident cases of cancer and newly diagnosed depression. Psychiatr Serv. 2017;68(5):482–9.
- Byers AL, Lai AX, Arean P, Nelson JC, Yaffe K. Mental health service use across the life course among adults with psychiatric disorders and prior suicidal behavior. Psychiatr Serv. 2016. https:// doi.org/10.1176/appi.ps.201500019.
- Meyer OL, Liu X, Nguyen TN, Hinton L, Tancredi D. Psychological distress of ethnically diverse adult caregivers in the California Health Interview Survey. J Immigr Minor Health. 2018. https://doi.org/10.1007/s10903-017-0634-0.
- Jimenez DE, Cook B, Bartels SJ, Alegría M. Disparities in mental health service use of racial and ethnic minority elderly adults. J Am Geriatr Soc. 2013. https://doi.org/10.1111/jgs.12063.

- 33.• Mehta KM, Yeo GW. Systematic review of dementia prevalence and incidence in United States race/ethnic populations. Alzheimers Dement. 2017. https://doi.org/10.1016/j.jalz.2016.06.2360. This paper synthesizes what is currently known about the specific race/ethnic diverse groups regarding dementia prevalence and incidence, including relevant gaps in the literature which allows readers to make evidence-based decisions about care for diverse patients.
- 34.•• Lincoln KD, Chow TW, Gaines BF. BrainWorks: a comparative effectiveness trial to examine Alzheimer's disease education for community-dwelling African Americans. Am J Geriatr Psychiatry. 2019. https://doi.org/10.1016/j.jagp.2018.09.010 .This paper highlights the importance of culturally-tailored educational interventions and their effect on health literacy.
- 35.•• Verney SP, Gibbons LE, Dmitrieva NO, Kueider AM, Williams MW, Meyer OL, et al. Health literacy, sociodemographic factors, and cognitive training in the ACTIVE study of older adults. Int J Geriatr Psychiatry. 2018. https://doi.org/10.1002/gps.5051. This article reviews the relationship between health literacy and sociodemographic factors, including the association between low health literacy and worse physical and mental health outcomes.
- Jimenez DE, Reynolds CF, Alegría M, Harvey P, Bartels SJ. The Happy Older Latinos are Active (HOLA) health promotion and prevention study: study protocol for a pilot randomized controlled trial. Trials. 2015. https://doi.org/10.1186/s13063-015-1113-3.
- Smedley BD, Stith AY, Nelson AR, for the Institute of Medicine Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Unequal treatment: confronting racial and ethnic disparities in health care. Washington, DC: National Academies Press; 2003.
- Ahmed I. 2017 American Association for Geriatric Psychiatry (AAGP) Annual Meeting Presidential Plenary Address: The Cultural Diversity Amongst Us (Members of the AAGP) and Our Patients—Our Challenge and Our Strength. Am J Geriatr Psychiatry. 2017. https://doi.org/10.1016/j.jagp.2017.05.020.
- American Psychiatric Association. Cultural formulation. In: Diagnostic and statistical manual of mental disorders. Fifth ed. Washington, DC: American Psychiatric Association; 2013. p. 749–59.
- Lewis-Fernandez R, Aggarwal NK, Hinton L, Hinton DE, Kirmayer LJ. DSM-5 Handbook on the cultural formulation interview. Washington, DC: American Psychiatric Association Press; 2016.
- Adler D, Foster NL, Tsai J, Hwang U, Ivey L, Kramer J, et al. Population health solutions for assessing cognitive impairment in geriatric patients. Arch Clin Neuropsychol. 2018. https://doi.org/ 10.1093/arclin/acy052.

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