

The cluster rankings facilitated a standardized comparison of the relative perspectives among the gender and age subgroups. For example, while the average impact ratings for Limited Availability of Services were very similar for men in the 55-64 and 65+ age groups (7.77 and 7.63, respectively), this theme ranked #8 on health impact (i.e., almost the lowest rank order) for men 55-64, but #3 for men aged 65+.

An examination of the average rank score (i.e., the average of the rank order across the four subgroups) indicated that Provider Issues and Relationships was the overall highest-ranked thematic cluster for impact on health (average rank score of 2) and was ranked in the top three across all four subgroups. The second highest ranked theme was Tribal/National Policy (average rank score of 3.5). This thematic category was rated in the top three for three out of the four subgroups. However, while Tribal/National Policy was generally perceived as impactful on health, men 55-64 differed substantially by ranking this category lowest of the nine thematic categories. Additionally, the highest ranked domain among women 65+ was Accessibility and Transportation Barriers, while this category was ranked no higher than #7 among any of the other subgroups. Similarly, among men 55-64, Health-Related Self-Efficacy was ranked #2, but no higher than #7 among any of the other subgroups.

Table 3
Impact on American Indian Elder health ratings of individual health care access factor statements by gender and age subgroups^a

Item #	Individual Health Care Access Factor Statement	Women 55-64 years (n = 14)		Women 65+ years (n = 31)		Men 55-64 years (n = 9)		Men 65+ years (n = 11)		Groups with Z-score >=1
		Mean "Impact" rating	Z-score diff. from group mean	Mean "Impact" rating	Z-score diff. from group mean	Mean "Impact" rating	Z-score diff. from group mean	Mean "Impact" rating	Z-score diff. from group mean	
	<i>Average impact rating for all 61 items</i>	7.76	SD=0.73	7.10	SD=0.63	8.02	SD=0.64	7.40	SD=0.86	
1	Long waits at healthcare facilities	9.46	2.3	7.71	1.0	7.89	-	8.73	1.5	3
2	Limited knowledge of computers or the Internet to obtain online information about insurance	8.69	1.3	7.97	1.4	7.56	-	8.30	1.0	3
3	Not knowing how to report or appeal healthcare/insurance decisions	8.77	1.4	8.11	1.6	9.11	1.7	7.18	-	3

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Table 3 Continued
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		Mean "Impact" rating	Z-score diff. from group mean	Mean "Impact" rating	Z-score diff. from group mean	Mean "Impact" rating	Z-score diff. from group mean	Mean "Impact" rating	Z-score diff. from group mean	
	<i>Average impact rating for all 61 items</i>	7.76	SD=0.73	7.10	SD=0.63	8.02	SD=0.64	7.40	SD=0.86	
4	Health care is a low priority for national politicians	8.77	1.4	8.41	2.1	7.33	-1.1	9.27	2.2	3
5	Not having a "regular" doctor that knows personal health history	7.85	-	7.43	-	9.38	2.1	8.30	1.0	2
6	Difficulties dealing with emotions related to health care (e.g., feeling like a burden on family)	8.77	1.4	7.82	1.1	7.44	-0.9	6.09	-1.5	2
7	Difficulty scheduling appointments	8.77	1.4	7.45	-	8.89	1.4	7.40	-	2
8	Not knowing how to influence tribal leadership	7.83	-	7.72	1.0	7.22	-1.3	8.82	1.7	2
9	Health care is a low priority for tribal leadership	8.08	-	7.73	1.0	6.89	-1.8	9.00	1.9	2
10	Not being aware of Purchased/Referred Care or how to use it	8.08	-	7.83	1.2	8.33	-	8.45	1.2	2
11	Lack of education about insurance plan choices	8.92	1.6	7.57	-	7.89	-	8.45	1.2	2
12	Information not shared with the community or general meetings	9.08	1.8	6.90	-	8.44	-	8.73	1.5	2

^a Z-scores are listed only if they exceed +/- 0.75. Note: 10-point rating scale (1 = *no effect* on Elder health and 10 = *very large effect* on Elder health)

Table 3 lists the 12 (out of 61) individual factor statements that participants perceived to be particularly impactful on Elder health (i.e., having a z-score difference from the group mean of at least 1.0 in at least two subgroups). Four individual factors were rated as particularly impactful on health across three subgroups: "Long waits at healthcare facilities," "Limited knowledge of computers/Internet to obtain online information about insurance," "Not knowing how to report or

appeal healthcare/insurance decisions” and “Health care is a low priority for national politicians.” Eight additional factors were rated as especially impactful by two subgroups (see Table 3).

Two factor statements reflected a gendered response pattern. “Not having a ‘regular’ doctor,” was highly rated only among men, while “Difficulties dealing with emotions related to health care,” was highly rated only among women (with men highly underrating this item per the large negative z -scores). Similarly, there were four factors with an age-related pattern. Both women and men 55-64 identified “Difficulty scheduling appointments” as particularly impactful on health and only persons 65+ highly rated “Not knowing how to influence tribal leadership,” “Health care is a low priority for tribal leadership,” and “Not being aware of Purchased/Referred Care or how to use it.”

Of note, as shown in Table 3, the mean ratings for the impact for all 61 factors differed across the four subgroups in a systematic manner. For example, within both women and men, the aged 55-64 overall mean impact rating was approximately 0.6 higher than the aged 65+ group mean of the respective gender. Additionally, for both age groups, the group mean for men was approximately 0.3 higher than the corresponding age group mean among women.

DISCUSSION

Concept mapping is a community-based methodology that incorporates qualitative and quantitative data on complex, multilevel phenomena—in this case, factors influencing the ability of AI Elders to effectively access health care. Use of this approach helps to identify and prioritize key areas for intervention to improve the physical and mental health of Elders in general and to extricate the unique perspectives and needs of subgroups of Elders, specifically women and men, as well as younger and older Elders. Overall, our findings emphasized several areas of agreement among Elders, particularly the perception that Provider Issues and Relationships and Tribal/National Policy have a significant impact on Elder health. Likewise, rankings of individual factor statements underscored that difficulties associated with interactions with health care organizations (i.e., “Long waits at healthcare facilities,” “Not knowing how to report or appeal healthcare/insurance decisions”), unfamiliar technology (i.e., “Limited knowledge of computers or the Internet to obtain online information about insurance”), and a policy environment perceived to be indifferent to Elders’ needs (i.e., “Health care is a low priority for national politicians”) were broadly shared and thought to be impactful among Elders.

The above results resonate with the findings of our larger study on health care access and utilization, which revealed shared experiences of frustration, confusion, and inadequate care resulting from program and funding shortages at IHS and tribal facilities, the bureaucratic complexities associated with health insurance, and a pervasive atmosphere of uncertainty surrounding the stability of public health insurance programs (Jaramillo & Willging, 2021). They also fit within a historical context of discrimination, abuse, and neglect against AIs within the U.S. health care system that has not been redressed. Individual and cultural memories of atrocities, such as the forced sterilization of AI women well into the latter half of the 20th century (Lawrence, 2000), as well as everyday experiences of stigma and mistreatment at the hands of medical providers, shape Elders' trust in, and engagement with, the health care system (Armenta et al., 2021; Guadagnolo et al., 2009; Simonds et al., 2014). As we argue elsewhere (Sommerfeld et al., 2021; Willging et al., 2021), our findings illuminate an urgent need to prioritize system and organizational changes to facilitate Elders' use of health care, including advocating for state and federal governments to meet their treaty obligations by securing stable and adequate funding for tribal health care facilities to provide a full range of care and devoting more resources to helping Elders navigate the health care system. Given the particular emphasis on Provider Issues and Relationships indicated across all four subgroups, this domain should be prioritized for improvement, both at the individual level (i.e., via health literacy efforts on how to navigate, understand, and build productive relationships with health care providers), and at the system level (i.e., ensuring that providers have the time and education to serve populations that have been historically marginalized and disenfranchised, such as AI Elders). In addition, the ubiquity of web-based information and communication in health and insurance systems highlights the need for increased investments in efforts to bridge the "digital divide" for the many AI communities that lack equitable access to broadband internet (Goldstein, 2018), as well as for AI Elders with limited financial and educational resources to obtain and use digital technology.

Although our data suggest that there are many commonalities among Elders in their perspectives on barriers to health care, each of the subgroups had particular areas of concern. Analysis of these differences, facilitated by discussions with our CAB members, allows us to elucidate important ways that Elders' experiences may vary according to gender and as they age. For example, women of both age groups accorded special importance to "Difficulties dealing with emotions related to health care." CAB members noted that this finding points not only to conventional expectations about women exhibiting more emotionality than men, but also to

women's roles as caregivers (Byers, 2010; Gallant et al., 2010). They explained that women's relative difficulty dealing with their own emotions related to health care may stem from the perceived obligation to subordinate the expression of such emotions to those of others and "put on a brave face" for their children and families. Another difficult emotion that was common among elderly women was the fear of "becoming a burden" and no longer being able to care for others if they require care themselves. For example, one CAB member recounted how her cancer diagnosis made her fear that her family would treat her like "a sick person" and not like the grandmother they were used to (Jaramillo et al., 2019). Additionally, we found that the theme of Accessibility and Transportation Barriers was ranked as having the most impact on health among women over age 65, even though no other groups ranked this theme any higher than seventh. Among AIs, women have a higher life expectancy and thus make up a majority of the over-65 population (U.S. Department of Health and Human Services, 2018). Consequently, older women may not only be more likely to experience age-related accessibility barriers, such as not being able to drive or having a hard time making appointments due to hearing impairments or language differences, but also may live alone or have lost former sources of social and material support, such as a spouse who drives them. Moreover, AI women may experience emotional and financial hardships as they utilize their own limited resources to care for others (Gallant et al., 2010; Haozous & Goins, 2012; Letiecq et al., 2008). These findings underscore the influence of social relationships on the mental and physical well-being of Elder women in particular (Roh et al., 2015; Sherman et al., 2011) and the need to acknowledge Elder women's roles as caregivers. Interventions for Elder women should thus include increased opportunities to cultivate social relationships that offer both emotional and pragmatic support, especially as they get older.

In contrast, our findings suggest that Elder men have specific needs around access to and routine use of health care. The higher ranking of "Not having a 'regular' doctor that knows personal health history" among men compared to women is likely due to lower rates of health care utilization among men in general, which would allow them to establish a relationship with a regular care provider (Pinkhasov et al., 2010; Vaidya et al., 2012). A relative lack of familiarity with health care may also explain the higher ranking of Health-Related Self-Efficacy among men aged 55-64 compared to the remaining subgroups. CAB members suggested that younger Elders who were less familiar with health care might emphasize individual-level factors like the ability to self-advocate and "ask the right questions," while older Elders with more complex health care needs would highlight the difficulties of dealing with convoluted health systems, as we describe

below. A similar dynamic may occur among younger Elders in general, contributing to their higher ranking of “Difficulty scheduling appointments” compared to older Elders. Moreover, younger Elders’ challenges with scheduling appointments are likely to be related to variability in health insurance enrollment (Artiga et al., 2017). While Elders aged 65 and older are commonly enrolled in Medicare and are thus more likely to receive regular check-ups and follow-up visits (Boccuti et al., 2014), younger Elders may avoid making appointments because they lack health insurance or struggle with finding providers who are covered by the insurance they have. These findings suggest that efforts to improve health for younger Elders and men should focus on integrating individuals into usual sources of care. This includes ensuring that younger Elders have adequate health insurance coverage and increasing Elders’ comfort with seeking care and interacting with health care providers.

Other age-related variations in our findings relate to challenges for older Elders in navigating complex bureaucracies (“Not being aware of Purchased/Referred Care and how to use it”) and tribal decision-making processes (“Not knowing how to influence tribal leadership,” “Health care is a low priority for tribal leadership”). Older Elders are likely to need more frequent, more complex, and potentially more expensive health care as they age (Okoro et al., 2007), necessitating those who use the IHS to increasingly rely on the PRC system to arrange and pay for specialty services. However, Elders may avoid using PRC due to experiences of rationed care and unexpected medical bills (Artiga et al., 2013). Similarly, while younger men are likely to be involved in tribal government, older Elders—particularly women—may feel unable to access tribal leaders and advocate for their own needs. This tendency is underscored by our finding that men aged 55-64 rated Tribal/National Policy as the least important theme, while all other subgroups rated it among the top three themes in importance. Consequently, efforts to support Elders should focus on helping them navigate health systems by facilitating access to understandable and effective information about resources and services to which they are entitled. For example, interventions to provide culturally congruent health navigators, who can help Elders with decision making, scheduling, transportation, and communication with health care providers, have been well-received among AIs and have been shown to increase knowledge about health and health care, improve access to care, and avoid delays in diagnosis of serious health problems (Burhansstipanov et al., 2014; Grimes et al., 2017). Additionally, tribes can work to increase accountability and responsiveness of tribal leaders—who are often young, rarely have a background in health care or insurance, and frequently are preoccupied with

other matters of relevance to their community—by educating them about the needs of Elders (Jaramillo et al. 2019).

Overall, this study underscores the need to craft interventions that address the multilevel gender- and age-specific factors contributing to physical and mental health disparities for AI Elders. Our findings confirm that health interventions focused on health literacy and behavior (e.g., Centers for Disease Control and Prevention, 2009), particularly those that include technological and online literacy, are needed by Elders. Yet, this research also suggests that such interventions are primarily beneficial to younger Elders and men, whose health struggles are more closely linked to issues with health care utilization. Improving the health and well-being of older Elders and women will require multilevel approaches that target interpersonal and community relationships, the functioning of health care organizations, and broader social and historical factors that contribute to emotional and financial hardships. For example, health care providers should consider the “structural vulnerabilities” of their elderly women patients, meaning the upstream social structures and forces that may influence their health and ability to attend appointments or adhere to medical advice (Bourgois et al., 2017). Addressing these vulnerabilities may include modifying health care environments or procedures (e.g., the ways that appointments are scheduled) and making “prescriptions” of social and economic resources (e.g., food assistance, help with transportation; Metzl & Hansen, 2014). Finally, Elder advocates and tribal, state, and federal policymakers must step up their efforts on meeting treaty-established obligations to guarantee health care for AI people.

Limitations

To promote accurate interpretation of these data, we obtained input from the CAB and contextualized the data within the findings of our broader study, which included the perspectives of many different stakeholders. However, the sample sizes—especially of men—are relatively small and there may be biases in the sample such that these findings are not generalizable to all AI Elders, given the cultural and sociopolitical heterogeneity that characterizes Native North America. The small sample sizes also precluded the identification of issues unique to other subgroups of Elders, such as the “oldest old” (i.e., over age 75) or rural vs. urban residents, which should be prioritized in future research. In addition, individuals targeted for this study were usually fluent in English. However, Elders who were not completely comfortable with written English

may have declined to participate. Although we did not identify any participants as potentially having cognitive impairment, it is possible that individuals with cognitive or other limitations (e.g., of hearing or vision) may have declined to participate.

Because concept mapping is an attention- and time-intensive process, we did not ask our elderly participants to consider separate factor statements related to physical and mental health. However, primary care is the de facto mental health system for patients of all ages (Starfield et al., 2005); consequently, we expect that themes considered here contribute to both physical and mental health disparities.

CONCLUSION

As the population of AI Elders in the United States grows, researchers and policymakers must prioritize efforts to understand and address the persistent inequities that affect their health and quality of life. Findings from this study underscore the inadequacy of broad, primarily individually focused health interventions that do not account for variations in the experiences and needs of AI women and men of different ages, nor for the multilevel challenges that they encounter (Manson, 2020). Rather, this research highlights the need to tailor physical and mental health interventions to Elders' specific life histories and circumstances. Moreover, tribal, state, and federal policymakers must engage in efforts to address the funding shortages, bureaucratic complexity, and inattention to Elders' needs that contribute to their alienation from systems of care. Finally, given the long history of abuse and neglect of AIs in the U.S. health care system, this study points to the need for future research to delve more deeply into variations in the cultural memories and experiences of Elders over the course of their lives and how those experiences influence their access to health care.

REFERENCES

- Adakai, M., Sandoval-Rosario, M., Xu, F., Aseret-Manygoats, T., Allison, M., Greenlund, K. J., & Barbour, K. E. (2018). Health disparities among American Indians/Alaska Natives – Arizona, 2017. *MMWR Morbidity & Mortality Weekly Report*, 67(47), 1314-1318. <http://dx.doi.org/10.15585/mmwr/mm6747a4>
- Adamsen, C., Schroeder, S., LeMire, S., & Carter, P. (2018). Education, income, and employment and prevalence of chronic disease among American Indian/Alaska Native elders. *Preventing Chronic Disease*, 15, 170387. <http://dx.doi.org/10.5888/pcd15.170387>

- Armenta, R. F., Kellogg, D., Montoya, J. L., Romero, R., Armao, S., Calac, D., & Gaines, T. L., (2021). 'There is a lot of practice in not thinking about that': Structural, interpersonal, and individual-level barriers to HIV/STI prevention among reservation based American Indians. *International Journal of Environmental Research and Public Health*, 18(7), 3566. <https://doi.org/10.3390/ijerph18073566>
- Artiga, S., Arguello, R., & Duckett, P. (2013). Health coverage and care for American Indians and Alaska Natives. *Kaiser Family Foundation*. <https://www.kff.org/racial-equity-and-health-policy/issue-brief/health-coverage-and-care-for-american-indians-and-alaska-natives/>
- Artiga, S., Ubri, P., & Foutz, J. (2017). Medicaid and American Indians and Alaska Natives. *Kaiser Family Foundation*. <https://www.kff.org/medicaid/issue-brief/medicaid-and-american-indians-and-alaska-natives/>
- Beals, J., Manson, S. M., Whitesell, N. R., Spicer, P., Novins, D. K., & American Indian Service Utilization Psychiatric Epidemiology Risk and Protective Factors Project Team. (2005). Prevalence of DSM-IV disorders and attendant help-seeking in 2 American Indian reservation populations. *Archives of General Psychiatry*, 62(1), 99-108. <http://dx.doi.org/10.1001/archpsyc.62.1.99>
- Bernard, H. R. (2017). *Research methods in anthropology: Qualitative and quantitative approaches* (6th ed.). New York: Rowman & Littlefield
- Boccuti, C., Swoope, C., & Artiga, S. (2014). The role of Medicare and the Indian Health Service for American Indians and Alaska Natives: Health, access and coverage. *Kaiser Family Foundation*. <https://www.kff.org/medicare/report/the-role-of-medicare-and-the-indian-health-service-for-american-indians-and-alaska-natives-health-access-and-coverage/>
- Bourgois, P., Holmes, S. M., Sue, K., & Quesada, J. (2017). Structural vulnerability: Operationalizing the concept to address health disparities in clinical care. *Academic Medicine*, 92(3), 299-307. <http://dx.doi.org/10.1097/ACM0000000000001294>
- Brave Heart, M. Y., Chase, J., Elkins, J., Martin, J., Nanez, J. X., & Mootz, J. J. (2016). Women finding the way: American Indian women leading intervention research in Native communities. *American Indian and Alaska Native Mental Health Research*, 23(3), 24-47. <http://dx.doi.org/10.5820/aian.2303.2016.24>
- Brega, A. G., Ang, A., Vega, W., Jiang, L., Beals, J., Mitchell, C. M., Moore, K., Manson, S. M., Acton, K. J., Roubideaux, Y., & the Special Diabetes Program for Indians Healthy Heart Demonstration Project. (2012). Mechanisms underlying the relationship between health literacy and glycemic control in American Indians and Alaska Natives. *Patient Education and Counseling*, 88(1), 61-68. <http://dx.doi.org/10.1016/j.pec.2012.03.008>

- Burhansstipanov, L., Krebs, L. U., Dignan, M. B., Jones, K., Harjo, L. D., Watanabe-Galloway, S., Petereit, D. G., Pingatore, N. L., & Isham, D. (2014). Findings from the Native Navigators and the Cancer Continuum (NNACC) study. *Journal of Cancer Education*, 29(3), 420-7. <http://dx.doi.org/10.1007/s13187-014-0694-y>
- Byers, L. (2010). Native American grandmothers: Cultural tradition and contemporary necessity. *Journal of Ethnic & Cultural Diversity in Social Work*, 19(4), 305-316. <http://dx.doi.org/10.1080/15313204.2010.523653>
- Bylander, J. (2018). Meeting the needs of aging Native Americans. *Health Affairs Blog*. <https://www.healthaffairs.org/doi/10.1377/hblog20180305.701858/full/>
- Centers for Disease Control and Prevention. (2009). *Improving health literacy for older adults: Expert panel report 2009*. <https://www.cdc.gov/healthliteracy/pdf/olderadults-508.pdf>
- Concept Systems Inc. (2018). *The Concept System* (version 2018.284.23) [computer software]. <https://conceptsmsglobal.com>
- Davison, M. L. (1983). *Multi-dimensional scaling*. New York: John Wiley & Sons.
- Espey, D. K., Jim, M. A., Cobb, N., Bartholomew, M., Becker, T., Haverkamp, D., & Plescia, M. (2014). Leading causes of death and all-cause mortality in American Indians and Alaska Natives. *American Journal of Public Health*, 104(S3), S303-S311. <http://dx.doi.org/10.2105/AJPH.2013.301798>
- Fox, E. (2011). *Health care reform: Tracking tribal, federal and implementation*. <https://www.cms.gov/Outreach-and-Education/American-Indian-Alaska-Native/AIAN/Downloads/CMSHealthCareReform5202011.pdf>
- Gallant, M. P., Spitze, G., & Grove, J. G. (2010). Chronic illness self-care and the family lives of older adults: A synthetic review across four ethnic groups. *Journal of Cross Cultural Gerontology*, 25(1), 21-43. <http://dx.doi.org/10.1007/s10823-010-9112-z>
- Garrett, M. D., Baldrige, D., Benson, W., Crowder, J., & Aldrich, N. (2015). Mental health disorders among an invisible minority: Depression and dementia among American Indian and Alaska Native elders. *The Gerontologist*, 55(2), 227-236. <http://dx.doi.org/10.1093/geront/gnu181>
- Goldstein, M. (2018). Tribal broadband: FCC's data overstate access, and tribes face barriers accessing funding [GAO-19-134T]. Washington, D.C.: U.S. Government Accountability Office. <https://www.gao.gov/assets/700/694934.pdf>
- Gone, J.P., & Trimble, J. E. (2012). American Indian and Alaska Native mental health: Diverse perspectives on enduring disparities. *Annual Review of Clinical Psychology*, 8, 131-160. <http://dx.doi.org/10.1146/annurev-clinpsy-032511-143127>
- Grandbois, D. M., & Sanders, G. F. (2009). The resilience of Native American Elders. *Issues in Mental Health Nursing*, 30, 569-580. <https://doi.org/10.1080/01612840902916151>

- Grimes, C., Dankovchik, J., Cahn, M., & Warren-Mears, V. (2017). American Indian and Alaska Native cancer patients' perceptions of a culturally specific patient navigator program. *The Journal of Primary Prevention*, 38, 121-135. <https://doi.org/10.1007/s10935-016-0458-z>
- Guadagnolo, B. A., Cina, K., Helbig, P., Molloy, K., Reiner, M., Cook, E. F., & Petereit, D. G. (2009). Medical mistrust and less satisfaction with health care among Native Americans presenting for cancer treatment. *Journal of Health Care for the Poor and Underserved*, 20(1), 210-226. <https://doi.org/10.1353/hpu.0.0108>
- Haozous, E., & Goins, R. T. (2012). Becoming an elder: Native women and aging. In J.R. Joe & F.C. Gachupin (Eds.), *Health and social issues of Native American women* (pp. 101-112). Santa Barbara, CA: Praeger
- Indian Health Service (IHS). (2015). *Trends in Indian health, 2014 edition*. <https://www.ihs.gov/dps/publications/trends2014/>
- Indian Health Service (IHS). (2020a). *IHS Profile*. <https://www.ihs.gov/newsroom/factsheets/ihsprofile/>
- Indian Health Service (IHS). (2020b). *Fiscal year 2021: Justification of estimates for appropriations committees*. <https://www.fda.gov/media/135078/download>
- Institute of Medicine. (2002). *The future of the public's health in the 21st century*. Washington, D.C.: National Academies Press.
- Jacobs, B., Gallagher, M., & Heydt, N. (2019). Aging in harmony: Creating culturally appropriate systems of health care for aging American Indian/Alaska Natives. *Journal of Gender, Race & Justice*, 22, 1.
- Jaramillo, E. T., Willging, C. E., Haozous, E., Verney, S. P., & Lujan, E. (2019). Speak your mind and heart in the Indian way: Wellness and agency among American Indian Elders. In J. Page-Reeves (Ed.), *Well-being as a multidimensional concept: Understanding connections among culture, community, and health* (pp. 193-212). Lanham, MD: Lexington Books of Rowman & Littlefield.
- Jaramillo, E. T., & Willging, C. E. (2021). Producing insecurity: Healthcare access, health insurance, and wellbeing among American Indian Elders. *Social Science & Medicine*, 268, 113384. <https://doi.org/10.1016/j.socscimed.2020.113384>
- Kelly, C. M., Baker, E. A., Brownson, R. C., & Schootman, M. (2007). Translating research into practice: Using concept mapping to determine locally relevant intervention strategies to increase physical activity. *Evaluation and Program Planning*, 30(3), 282-293. <http://dx.doi.org/10.1016/j.evalprogplan.2007.05.007>
- Kim, H., & Xie, B. (2016). Health literacy and internet- and mobile app-based health services: A systematic review of the literature. *Computer Science*, 52, 1-4. <http://dx.doi.org/10.1002/pr2.2015.145052010075>

- Lawrence, J. (2000). The Indian Health Service and the sterilization of Native American women. *The American Indian Quarterly*, 24(3), 400-419. <https://doi.org/10.1353/aiq.2000.0008>
- Leticq, B. L., Bailey, S. J., & Kurtz, M. A. (2008). Depression among rural Native American and European American grandparents rearing their grandchildren. *Journal of Family Issues*, 29(3), 334-356. <http://dx.doi.org/10.1177/0192513x07308393>
- Manson, S. (2020). The role of culture in effective intervention design, implementation, and research: Its universal importance. *Prevention Science*, 21(Suppl 1), 93-97. <http://dx.doi.org/10.1007/s11121-019-01065-7>
- Metzl, J. M., & Hansen, H. (2014). Structural competency: Theorizing a new medical engagement with stigma and inequality. *Social Science & Medicine*, 103, 126-133. <http://dx.doi.org/10.1016/j.socscimed.2013.06.032>
- Okoro, C. A., Denny, C. H., McGuire, L. C., Balluz, L. S., Goins, R. T., & Mokdad, A. H. (2007). Disability among older American Indians and Alaska Natives: Disparities in prevalence, health-risk behaviors, obesity, and chronic conditions. *Ethnicity & Disease*, 17(4), 686-692. <https://pubmed.ncbi.nlm.nih.gov/18072380/>
- Pinkhasov, R. M., Wong, J., Kashanian, J., Lee, M., Samadi, D. B., Pinkhasov, & Shabsigh, R. (2010). Are men shortchanged on health? Perspective on health care utilization and health risk behavior in men and women in the United States. *International Journal of Clinical Practice*, 64(4), 475-87. <http://dx.doi.org/10.1111/j.1742-1241.2009.02290.x>
- Roh, S., Burnette, C. E., Lee, K. H., Lee, Y. S., Easton, S. D., & Lawler, M. J. (2015). Risk and protective factors for depressive symptoms among American Indian older adults: Adverse childhood experiences and social support. *Aging & Mental Health*, 19(4), 371-80. <http://dx.doi.org/10.1080/13607863.2014.938603>
- Sherman, A. M., Skrzypek, A., Bell, R., Tatum, C., & Paskett, E. D. (2011). The contribution of social support and social strain to depressive symptoms in African American, Native American, and European American women. *Journal of Social and Personal Relationships*, 28(8), 1104-1129. <http://dx.doi.org/10.1177/0265407511406895>
- Shieb, L., Ayala, C., Valderrama, A. L., & Veazie, M. A. (2014). Trends and disparities in stroke mortality by region for American Indians and Alaska Natives. *American Journal of Public Health*, 104(S3), S368-S376. <http://dx.doi.org/10.2105/AJPH.2013.301698>
- Simonds, V. W., Goins, R. T., Krantz, E. M., & Garrouette, E. M. (2014). Cultural identity and patient trust among older American Indians. *Journal of General Internal Medicine*, 29(3), 500-6. <http://dx.doi.org/10.1007/s11606-013-2578-y>
- Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*. Washington, D.C.: The National Academies Press.

- Starfield, B., Shi, L., & Macinko, J. (2005). Contribution of primary care to health systems and health. *Milbank Quarterly*, 83(3), 457-502.
- Trotter, R. T., & Potter, J. M. (1993). Pile sorts, a cognitive anthropological model of drug and AIDS risks for Navajo teenagers: Assessment of a new evaluation tool. *Drugs & Society*, 7(3-4), 23-39. https://doi.org/10.1300/J0234v07n03_03
- U.S. Census Bureau. (2000). Decennial census.
- U.S. Census Bureau. (2012). Population projections.
- U.S. Department of Health and Human Services, Office of Minority Health. (2018). Profile: American Indian/Alaska Native. <https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=3&lvlid=62>
- Vaidya, V., Partha, G., & Karmakar, M. (2012). Gender differences in utilization of preventive care services in the United States. *Journal of Women's Health*, 21(2), 140-145. <http://dx.doi.org/10.1089/jwh.2011.2876>
- Veazie, M., Ayala, C., Schieb, L., Dai, S., Henderson, J.A., & Cho, P. (2014). Trends and disparities in heart disease mortality among American Indians/Alaska Natives, 1990-2009. *American Journal of Public Health*, 104(Suppl 3), S359-67. <http://dx.doi.org/10.2105/AJPH.2013.301715>
- Verney, S. P., Jervis, L.L., Fickenscher, A., Roubideaux, Y., Bogart, A., & Goldberg, J. (2008). Symptoms of depression and cognitive functioning in older American Indians. *Aging & Mental Health*, 12(1), 108-115. <http://dx.doi.org/10.1080/13607860701529957>
- Willing, C. E., Sommerfeld, D. H., Jaramillo, E. T., Lujan, E., Bly, R. S., Debenport, E. K., Verney, S. P., & Lujan, R. (2018). Improving Native American Elder access to and use of health care through effective health system navigation. *BMC Health Services Research*, 18(1), 464. <https://doi.org/10.1186/s12913-018-3182-y>
- Willing, C. E., Jaramillo, E. T., Haozous, E., Sommerfeld, D. H., & Verney, S. P. (2021). Macro- and meso-level contextual influences on health care inequities among American Indian Elders. *BMC Public Health*, 21, 636. <https://doi.org/10.1186/s12889-021-10616-z>
- Windsor, L. C. (2013). Using concept mapping in community-based participatory research: A mixed methods approach. *Journal of Mixed Methods Research*, 7(3), 274-293. <https://dx.doi.org/10.1177/1558689813479175>

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CONFLICT OF INTEREST DISCLOSURE

The authors declare they have no conflicts of interest.

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