

Colonization, Food Access, and Health in American Indian and Alaska Native Communities

Introduction

In 2018, the United States Census Bureau estimated 6.8 million people who identified as American Indian or Alaska Native¹. Since colonization, American Indians and Alaska Natives (AI/ANs) have experienced a devastating history that is characterized by extreme loss of land and culture. Policies such as the Indian Removal Act of 1830 forced American Indians from their tribal lands^{2,3}. Before colonization, AI/AN people followed traditional food systems that, depending on the region, might include farming, hunting, or fishing. But over time, as relocation separated people from the rivers, valleys, and lands that sustained them, AI/ANs became more and more dependent on commercially produced foods and government rations. The effects of these practices continued up through the present, where AI/AN communities see high rates of food insecurity and a lack of access to healthy, affordable food choices⁴.

Despite being a culturally and demographically diverse group, AI/AN populations collectively experience some of the worst health outcomes of any racial group in the United States. They are 2.3 times more likely to be diagnosed with diabetes than the general US population⁵. Loss of land, culture, and language still deeply affects AI/AN communities today, however, the way in which this loss contributes to health disparities is not completely understood. This brief aims to identify the downstream effects of colonization on health, focusing on current day nutrition of AI/AN populations. It will review what is known about food access and nutritional health outcomes of AI/AN populations on tribal lands. Then, it will review the role of federal assistance programs, focusing on the Supplemental Nutrition Assistance Program (SNAP) and

the Food Distribution Program on Indian Reservations (FDPIR).

Background

Access to Healthy Foods

After the loss of resources to relocation and urbanization, many AI/AN peoples were forced to depend on markets and commercially produced foods³. However, tribal areas are mostly rural, and as a result, the supermarkets and grocery stores can be more difficult to access than those in urban areas. A national study found that only 25.6% of people in tribal areas were within walking distance of a supermarket, as opposed to 58.8% of all Americans⁶. The study also found that of the people who were not within walking distance of a supermarket, AI/AN individuals were 13.2 miles away, whereas all Americans were 2.2 miles away. Additionally, increased supermarket availability has been associated with a lower prevalence of overweight and obesity, while more convenience store availability has been associated with a higher prevalence of overweight and obesity, suggesting that food store access impacts health outcomes in AI/ANs⁷.

The incentive for large supermarkets to move into less wealthy, rural areas with lower population density is not very strong, leaving many individuals on tribal lands to depend on smaller grocery and convenience stores. Although these stores may be more readily available, they are less likely to have equal food options compared to supermarkets. One study looked at stores on reservations in Washington to see if they sold items from the Thrifty Food Plan, a national standard for the cheapest foods required for adequate nutrition. Across 50 stores, only about 38% of the items from the plan were available, with dairy and sugars/sweets the most available and fresh fruits and vegetables the least available. The study also revealed that supermarkets had the lowest costs for the most common

nutritious items⁸. Furthermore, higher costs in the closer convenience stores is a challenge considering that about 2.4 times as many AI/AN individuals are living at or below the federal poverty level as compared to white Americans².

The combination of increased poverty and few food choices can limit people's ability to access healthy foods, resulting in increased food insecurity. Food insecurity, defined as the limited and uncertain availability of healthy foods, is higher in AI/AN populations compared to the general population. Jernigan et al found that over a 10 year period, AI/ANs across the United States were twice as likely to be food insecure compared to whites⁴. Almost 40% of families on the Pine Ridge Reservation experience food insecurity⁹. This evidence suggests that even when food stores are within reasonable distance, AI/AN individuals on tribal lands have few nutritional and affordable options, a challenge that is made more difficult by low incomes. Food insecurity has been linked to malnutrition, type 2 diabetes, and obesity^{4,7}. AI/ANs have high rates of chronic disease in general, and see higher rates of obesity, diabetes, and heart disease than most other racial/ethnic groups². Decreased access to healthful foods may be one factor that contributes to these nutritional health disparities.

Federal Assistance

High poverty rates in AI/AN communities means that more individuals are eligible for, and depend upon, federal assistance programs. One of these programs is the Supplemental Nutrition Assistance Program (SNAP), a national program that provides low-income recipients with benefits that can be used for the purchase of food in authorized grocery stores. An alternative to SNAP is available for individuals living on reservations, called the Food Distribution Program on Indian Reservations (FDPIR). FDPIR provides

monthly food packages to income-eligible households.

Households may not participate in both SNAP and FDPIR in the same month. On tribal lands, the choice between programs may be related to geographic proximity, as SNAP authorized markets can be limited on reservations. One study on AI and AN lands found decreased access (fewer individuals within walking distance and more individuals more than 10 miles away) to SNAP-authorized supermarkets as compared to general supermarkets⁶. Although SNAP may have more options than FDPIR, SNAP alone may not have the coverage necessary to improve food access on reservations. A report of FDPIR-eligible households found that in an average month, 13% of households would not be eligible for SNAP, 41% received greater retail value from FDPIR, and 46% of households found greater retail value from SNAP¹⁰. Thus, FDPIR may provide another option for those only eligible for a small SNAP benefit. In a study that combined SNAP and FDPIR access, 83.9% of people in American Indian Tribal Areas and 97.4% of people in Alaska Native Village Areas were within walking or driving distance of either outlet⁶. FDPIR may be covering gaps that SNAP alone does not reach, and when considered together, SNAP and FDPIR seem to result in increased food access for AI/AN communities.

However, there has been little research into the efficacy of FDPIR in participation and nutrition. An evaluation of the FDPIR food packages found that they scored significantly lower than the maximum score according to the Healthy Eating Index 2010 (HEI-2010), including on measures such as total fruit, total vegetables, and total protein¹¹. But, the study also revealed that FDPIR food packages were *more* nutritious than other federal assistance and nutrition programs, including SNAP. This finding could indicate that participation in FDPIR leads to better nutrition than participation in other programs. However, the study only

measured the food packages themselves and not participant's actual choices and consumption, so more research is necessary before drawing conclusions.

Community-Based Interventions

Community-based interventions have gained recent traction for their potential in AI/AN populations. Mistrust of outside or state-funded interventions is common among minority populations who have a history of marginalization. In one synthesis, 50% of articles that researched AI communities chose research questions completely internally and with no input from the communities themselves¹². Smaller scale programs have the capacity for culturally tailored, more specific interventions that include community stakeholders in the creation and implementation of the intervention. The results of these types of interventions have been mixed. One synthesis of AI community-oriented studies showed improved community outcomes, but could not confirm a direct link to health outcomes¹². Some relatively successful examples of community interventions that seek to decrease obesity and increase healthy food practices are outlined in an article by Gittelsohn et al⁵. The Pathways trial, which sought to change school-food environments by educating food service workers and teachers on healthier options, saw some improvements in diet but acknowledged the lack of corresponding interventions at home, which limited the results. Another trial, the Apache Healthy Stores program, benefitted from the use of community workshops in the process of creating the intervention. It involved programs like cooking demonstrations, creating promotional materials, and working with food stores to increase community-approved healthy foods. The trial found improvements in both food knowledge and healthy food choices⁵. The Zhiwaapenewin Akino'maagewin (ZA) trial, which was also developed through community workshops, had a similar approach of working with local

stores to increase food choices. The ZA trial also added a corresponding school intervention, finding a significant improvement in the ability of participants to acquire food⁵. These case studies suggest that including AI/AN communities in the creation of interventions can provide insight that yields positive results. It also underscores the importance of multilevel programs that work simultaneously at the institutional, community, and household levels.

Conclusion

Colonization of AI/AN peoples have had a lasting impact on health outcomes today. Isolation from traditional resources have led AI/ANs to experience increased poverty and dependence upon government assistance. This trend is exacerbated by the fact that many reservations have limited access to supermarkets with affordable healthy foods, leaving AI/ANs to experience increased rates of diabetes and obesity as a result. Although the evidence is incomplete, FDPIR seems to be somewhat successful in providing another option to individuals who only get small benefits from SNAP, or who do not live near a SNAP authorized store. Smaller scale community interventions have shown mixed results, but studies reveal that including AI/AN stakeholders in the creation of the intervention can be a significant asset.

Recommendations

It is clear that there is a gap in the research when it comes to the effects of colonization on modern day food systems and ultimately the nutrition of AI/ANs. There needs to be much more research, especially on the efficacy of FDPIR. Additionally, although this brief focused on food access on tribal lands, it is important to note that AI/ANs living in urban areas also experience high rates of food insecurity⁴. Future research is necessary to address this group of AI/ANs facing poor health outcomes off of tribal lands. Finally, community-oriented programs that operate with a multilevel approach could be an alternate path to

implementing change. Nutrition interventions should include AI/AN communities themselves in their efforts to promote traditional foods and healthier food choices.

Additional Resources

1. [USDA Foods Available List for FDPIR](#)
2. [Apache Healthy Stores](#)
3. [Native American foods, dietary habits take center stage](#)

References

1. U.S. Census Bureau. American Indian and Alaska Native Heritage Month. Facts for Features. http://www.census.gov/newsroom/releases/pdf/cb13ff-26_aian.pdf. Published 2018.
2. Warne D, Wescott S. Social Determinants of American Indian Nutritional Health. *Curr Dev Nutr*. 2019;3(Suppl 2):12-18. doi:10.1093/cdn/nzz054
3. Conti KM. Diabetes Prevention in Indian Country: Developing Nutrition Models to Tell the Story of Food-System Change. *J Transcult Nurs*. 2006;17(3):234-245. doi:10.1177/1043659606288380
4. Jernigana VBB, Huyserb KR, Valdesc J, Simondsd VW. Food Insecurity among American Indians and Alaska Natives: A National Profile using the Current Population Survey–Food Security Supplement. *J Hunger Env Nutr*. 2017;12(1):1-10. doi:10.1080/19320248.2016.1227750
5. Gittelsohn J, Rowan M. Preventing diabetes and obesity in American Indian communities: The potential of environmental interventions. *Am J Clin Nutr*. 2011;93(5):1179-1183. doi:10.3945/ajcn.110.003509
6. Kaufman P, Dicken C, Williams R. Measuring Access to Healthful, Affordable Food in American Indian and Alaska Native Tribal Areas. 2014;(131):29. <https://permanent.access.gpo.gov/gpo55515/eib131.pdf>.
7. Morland K, Diez Roux A V., Wing S. Supermarkets, other food stores, and obesity: The Atherosclerosis Risk in Communities Study. *Am J Prev Med*. 2006;30(4):333-339. doi:10.1016/j.amepre.2005.11.003
8. O'Connell M, Buchwald DS, Duncan GE. Food access and cost in American Indian communities in Washington State. *J Am Diet Assoc*. 2011;111(9):1375-1379. doi:10.1016/j.jada.2011.06.002
9. Bauer KW, Widome R, Himes JH, et al. High food insecurity and its correlates among families living on a rural American Indian reservation. *Am J Public Health*. 2012;102(7):1346-1352. doi:10.2105/AJPH.2011.300522
10. Finegold K, Pindus N, Levy D, Tannehill T, Hillabrant W. Tribal Food Assistance: A Comparison of the Food Distribution Program on Indian Reservations (FDPIR) and the Supplemental Nutrition Assistance Program (SNAP). 2009;3(58):1-167. http://www.fns.usda.gov/sites/default/files/Urban_Institute_FDPIR_SNAP_Comparison_0.pdf.
11. Byker Shanks C, Smith T, Ahmed S, Hunts H. Assessing foods offered in the Food Distribution Program on Indian Reservations (FDPIR) using the Healthy Eating Index 2010. *Public Health Nutr*. 2016;19(7):1315-1326. doi:10.1017/S1368980015002359
12. Hearod JB, Wetherill MS, Salvatore AL, Jernigan VBB. Community-Based Participatory Intervention Research with American Indian Communities: What is the State of the Science? *Curr Dev Nutr*. 2019;3(Supplement_2):39-52. doi:10.1093/cdn/nzz008