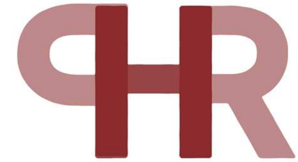
The problem of poor and fair self-rated health among Native Americans in Arizona: Implications for education policy



Erin Appelt, PT, DPT, MPH (c), University of Minnesota School of Public Health

Policy Proposal
Published July 31, 2019

The Problem

Health disparities in mortality and morbidity rates exist among Native Americans living in Arizona [1, 2]. Considering the breadth of health issues in this population, an assessment of policies that affect social determinants of health for Native Americans is necessary to prioritize action. Self-reported health, a valid and reliable measure associated with mortality and morbidity can be used to make decisions regarding policies that will affect social determinants of health, and overall health outcomes [3, 4]. Native Americans in Arizona report poor or fair health at significantly higher rates compared to all other Arizonans [1].

Self-rated poor or fair health is correlated with socioeconomic factors such as low levels of educational attainment, poverty, and living in areas with high levels of income inequality [5–7]. Native Americans in Arizona fare poorly in all three of these areas. The Native American poverty rate is double the statewide poverty rate [8]. Arizona counties with a higher concentration of Native American residents have greater levels of income inequality[9]. Native American youth in Arizona drop out of high school more often and enroll in college less frequently compared to state averages [10, 11]. Although the relationship between the social determinants of health and health outcomes is complex, there is research supporting the premise that low educational attainment and poverty both independently cause poor self-rated health, and poor health outcomes [7, 12].

This paper will focus on the relationship between educational policy and self-rated health. Education has an independent role in shaping health outcomes[13]. In Arizona, those without a high school diploma are four times more likely to report poor or fair health compared those with a bachelor's degree, after controlling for income [14]. Education is also a powerful tool to address poverty, which can also lead to better self-rated health [7]. Policies related to poverty and income inequality should be considered part of a comprehensive plan to mitigate health disparities for Native Americans in Arizona. But in light of the incremental nature of the policy-making system, it is reasonable to start with education policy as it can impact other determinants of health.

Magnitude of the Problem

There are over 300,000 Native Americans living in Arizona, which is 4.4% of the state's total population [15]. The Arizona Department of Health Services defines a Native American as a person with a Native American mother on his or her birth certificate [2]. This encompasses a wide variety of individuals; Native American Arizonans live on and off reservations and represent 17 distinct tribes [2].

Native Americans in Arizona report poor or fair health at a rate of 28.7% [1]. This is 76% more often than whites in Arizona, and 22% more often than all other races and ethnicities [1]. This disparity is reflected in actual health outcomes. Morbidity rates for a variety of illnesses are disproportionately higher for Native Americans in Arizona. For example, diabetes, obesity, and hypertension [1] gestational diabetes and liver disease [2], and chlamydia [16], all occur at higher rates in Arizona Native Americans compared to the state average (Figure 1). All-cause mortality was 47% higher for Native Americans in Arizona compared to all racial and ethnic groups combined in 2016, and life expectancy was 16 years below life expectancy for Arizonans as a whole [2]. These inequalities are not improving; the gap between Native American morbidity and mortality compared to the rest of the state is growing for several conditions [2, 17] (Figure 2).

There are also considerable disparities in educational outcomes for Native American Arizonans. The statewide high school graduation rate was 78% in 2016, but Native American students only graduated 67% of the time, the lowest rate of any other racial or ethnic group, and five percentage points lower than the national high school

graduation rate for Native Americans [10]. Twenty-three percent of Native Americans in Arizona age 18 to 24 enroll in college, at almost half the frequency of white Arizonans in the same age group [11].

Main issue to be addressed

Improving educational attainment for Native American Arizonans can have a substantial impact on self-rated health, and thus health outcomes [13, 14, 18]. Arizona must improve public education in ways that equitably improve educational attainment for Native American students, who have the worst educational outcomes in the state [10].

Social, Political and Economic Factors

The United States federal government has a trust responsibility to the Native American people, established through treaties, to provide specified resources [19]. The Bureau of Indian Education (BIE) is the federal agency responsible for Native American education [20]. Unfortunately, there is evidence that the BIE is not living up to this trust responsibility. In 2017, nine Native American children in Arizona sued the BIE for failing to provide equitable education at a school on the Havasupai Reservation [21]. This is especially relevant to Arizona, as it has more BIE schools than any other state, where the high school graduation rate is only 53% [20]. BIE schools are often fraught with historical trauma for Native Americans, as their main purpose was once to forcefully assimilate Native American youth to Anglo-American culture [22]. The alternatives to BIE schools, such as public schools, are not always well suited to serve Native American youth. Native American students who attend public schools graduate at higher rates compared to BIE schools, but Native American high school graduation rates are still lower than any other racial or ethnic group in Arizona [10]. Graduation rates for Native Americans may be affected by differences in cultural values, explicit and implicit biases of teachers and administrators, and they are more likely to be living in poverty compared to other students [8, 23–26].

The Great Recession (2007-2009) resulted in cuts to public education funding in Arizona [27]. Since then, a Republican-controlled state legislature and a Republican governor have contributed to continued cuts in the state's education budget, and support for programs that allow state education funding to be diverted to private schools [28–30]. Although the state has recovered in terms of economic activity and employment rates since the Great Recession [31], education expenditures continue to be lower than pre-recession levels [32]. Teacher salaries and per-pupil expenditures have decreased, while student to teacher ratios and teacher turnover rates have increased [27, 33]. The ratio of students to school counselors in Arizona is now the highest in the country [34].

Policies and Pressure for Action

The Arizona teacher strikes in 2018 resulted in broad support for increasing public education funding in the state [35, 36]. AZ Senate Bill 1345 and other similar legislation was introduced in 2019 and proposed an increase in funding for public education by adding a ballot initiative that will increase an existing sales tax to supplement current public educational funding [37]. This legislation does not address the lack of student counselors in Arizona, address improving educational attainment, or propose a large enough increase in funding to make up for losses incurred during the recession [37, 38]. As Arizona state lawmakers work to improve public education funding, they should also work to equitably improve Native American educational outcomes, which can have a great impact on long-term health.

Policy Solution

Require public schools to have a 250:1 student to school counselor ratio and create a tax revenue in order to subsidize the cost of additional student counselor salaries for all K-12 public schools.

During the 2015-2016 school year, the ratio of students to school counselors in Arizona public schools was 903:1, the highest in the country [34]. The recommended ratio by the American Association of School Counselors is 250:1 [39]. This is based on a review of school counseling policies that finds a consistent association between low student to counselor ratios and, "higher attendance rates, higher college application rates, and (for elementary students) enhanced academic achievement."[40] School counselors appear to contribute to student success in all stages of education, not only at the high school level.

Effectiveness

Student success and graduation rates are positively correlated with a sense of "school connectedness" or the perception by students that adults care about their

education and about them as individuals[41]. School counseling programs that are responsive to student needs have been shown to increase the sense of school connectedness among students [42]. Many of the barriers to high school graduation for Native American students are not related directly to how well they understand course content. Native American students often face issues such as poverty, being the first-generation family member to complete high school, and managing absences due to participation in tribal ceremonies [23, 25, 26]. A school counselor with a manageable case-load can be helpful in overcoming these challenges [39]. School counselors are also key actors in implementing multi-level programs that have demonstrated improved educational and health outcomes for students with complex social needs [41].

Financial and Administrative Feasibility

Requiring schools to meet the recommended ratio would require hiring a substantial number of school counselors. Based on Education Digest counts of students enrolled in Arizona public schools in 2016 [43], the state would need to spend an additional $200 million per year to employ enough school counselors with an annual salary of $55,000 [44]. Administrative costs may be incurred if extra space is needed for the additional counselors to work in.

Ethical Feasibility

Limiting implementation to areas with high Native American populations could reduce costs, but this would not be ethical. Of the 43,453 Native American students enrolled in Arizona public schools, 47% attend schools where Native American students make up a small percentage of the school population [45]. By allocating resources throughout the state to increase the likelihood of high school graduation, this proposal remains ethical in terms of distribution. However, other ethical issues with this policy do exist.

The regressive nature of the sales tax used to finance this policy does raise concerns. Arizonans will pay the tax based on the number of goods that they purchase, meaning that lower-income people could pay a higher percentage of their earnings to fund this program.

This policy would only directly affect Native American students in the Arizona public school systems. Arizona state laws do not have jurisdiction on tribal lands [46]. The state can accommodate this by collaborating with tribes in Arizona to improve the student to school counselor ratios in schools run by the tribes or BIE.

Political Feasibility

Polling before the 2018 midterm elections indicated that education quality and financing were important issues to voters [35, 36]. Democratic politicians feel they have a mandate from voters and educators to make substantial changes to public education funding [46], and Republican politicians have proposed legislation that would increase taxes to pay for education [37,38]. Arizona teachers went on strike in 2018 even after Republican Governor Doug Ducey offered a plan for increasing salaries by 20%, largely because the proposal made cuts to other education programs and did not increase funds for school support staff [47]. This policy would have bipartisan support in the legislature, support from public school teachers, and a large number of voters.

Recommendation

Decreasing the ratio of students to school counselors in public schools is the best course of action at this time. The cost of the policy can be incorporated into recently proposed legislation and there are minimal administrative barriers to overcome. Increased prevalence of school counselors in Arizona public schools also provide greater opportunity for programs that integrate with community services, especially in areas with the highest levels of disadvantage.

The self-rated health status of Arizona Native Americans can improve, especially with strategies that address social determinants of health such as educational attainment in addition to disease-specific programs. The Arizona state legislature can ensure that Native American students, and other students facing barriers to educational success, are more likely to succeed by improving the ratio of students to school counselors to 250:1. Improvements in educational attainment will produce long-term gains in the self-rated health status of Native Americans in Arizona, which will translate into improved overall health outcomes.

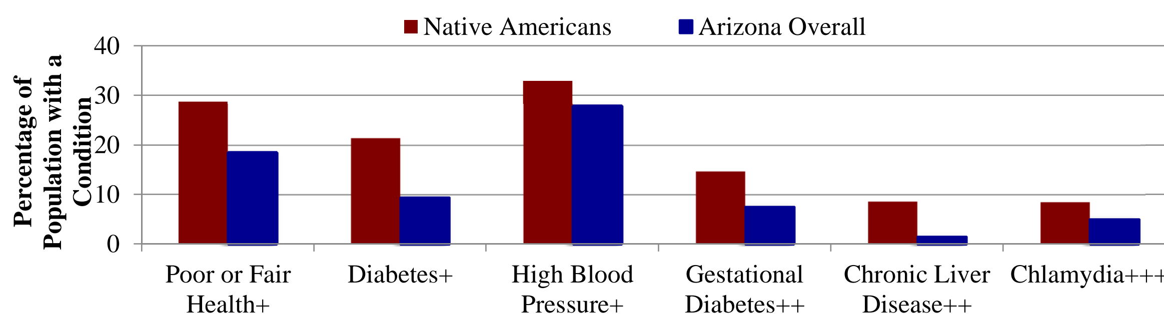


Figure 1: *Morbidity rates for selected diagnoses in Native Americans in Arizona, compared to Arizona state averages.* Created by the author using data from: +Adakai, et al. 2018 ++Health Status Profile of American Indians in 2016 +++2016 Arizona Annual STD Report. Note: rates for chronic liver disease and chlamydia have been inflated but the relationship between Arizonan Native Americans and the rest of the state is accurate.

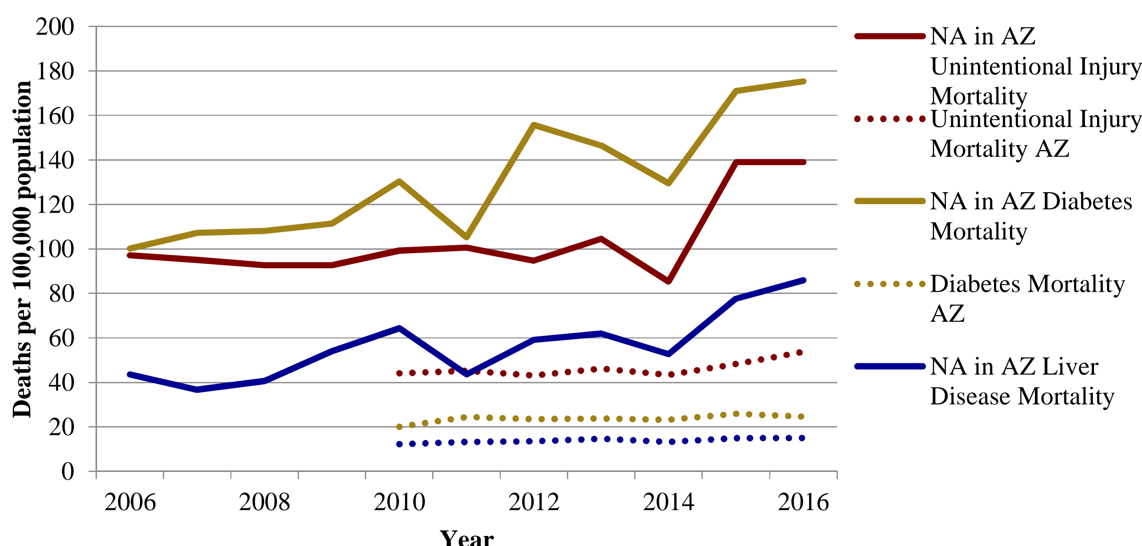


Figure 2: *Mortality rates for Native Americans compared to statewide mortality rates for selected causes*. Created by the author using data from the Health Status Profile of Indian Americans in Arizona and the Arizona Department of Health Services Community

Author Contact Information

Erin Appelt: appel106@umn.edu

References

[1] Adakai, M., Sandoval-Rosario, M., Xu, F., Aseret-Manygoats, T., Allison, ; Michael, Greenlund, K. J., … Barbour, E. (2018). Health Disparities Among American Indians/Alaska Natives-Arizona, 2017. Morbidity and Mortality Weekly Report, 67(47), 1314–1318.

[2] Arizona Department of Health Services. (2016). Health Status Profile of American Indians in Arizona. Arizona Department of Health Services. Retrieved from https://pub.azdhs.gov/health-stats/report/hspam/2016/index.php

[3] Bombak, A. E., & Bruce, S. G. (2012). Self-rated health and ethnicity: focus on indigenous populations. International Journal of Circumpolar Health, 71. doi:10.3402/ijch.v71i0.18538

[4] Idler, E. L., & Benyamini, Y. (1997). Self-Rated Health and Mortality : A Review of Twenty-Seven Community Studies. Journal of Heaalth and Social Behaviour, 38(1), 21–37.

[5] Shippee, T. P., Rowan, K., Sivagnanam, K., & Oakes, J. M. (2015). Examining the impact of maternal health, race, and socioeconomic status on daughter's self-rated health over three decades. International Journal of Aging and Human Development, 81(3), 155–175. doi:10.1177/0091415015617482

[6] Dudovitz, R. N., Nelson, B. B., Coker, T. R., Biely, C., Li, N., Wu, L. C., … Dudovitz, R. (2016). Long-term Health Implications of School Quality. Soc Sci Med, 158, 1–7. doi:10.1016/j.socscimed.2016.04.009

[7] Hahn, R. A., & Truman, B. I. (2015). Education Improves Public Health and Promotes Health Equity. International Journal of Health Services, 45(4), 657–678. doi:10.1177/0020731415585986

[8] United States Census Bureau. (n.d.). Selected Economic Characteristics: 2013-2017 American Community Survey 5-Year Estimates. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP03&prodType=table

[9] Income inequality in Arizona. (2017). Retrieved from http://www.countyhealthrankings.org/app/arizona/2018/measure/factors/44/map

[10] Table 219.46. Public high school 4-year adjusted cohort graduation rate (ACGR), by selected student characteristics and state: 2010-11 through 2016-17. (n.d.). Digest of Education Statistics, 2018. Retrieved September 12, 2018, from https://nces.ed.gov/programs/digest/

[11] Table 302.65. Percentage of 18- to 24-year-olds enrolled in degree-granting postsecondary institutions, by race/ethnicity and state: 2017. (n.d.). Digest of Education Statistics, 2018. Retrieved June 28, 2019, from https://nces.ed.gov/programs/digest/d18/tables/dt18_302.65.asp?current=yes

[12] Hounkpatin, H. O., Wood, A. M., & Dunn, G. (2016). Does income relate to health due to psychosocial or material factors? Consistent support for the psychosocial hypothesis requires operationalization with income rank not the Yitzhaki Index. Social Science & Medicine, 150, 76–84. doi:10.1016/j.socscimed.2015.12.008

[13] Asada, Y., Whipp, A., Kindig, D., Billard, B., & Rudolph, B. (2014). Inequalities in multiple health outcomes by education, sex, and race in 93 US counties: Why we should measure them all, 13, 1–8. doi:10.1186/1475-9276-13-47

[14] Behavioral Risk Factor Surveillance System. (2016). Retrieved from https://nccd.cdc.gov/weat/index.html#/

[15] United States Census Bureau. (n.d.). 2013-2017 American Community Survey Demographic and Housing Estimates. American FactFinder. Retrieved May 29, 2019, from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_5YR_DP05&prodType=table

[16] Arizona Department of Health Services. (2016). 2016 Arizona STD Annual Report (p. 189). Arizona Department of Health Services Sexually Transmitted Disease Control Program. Retrieved from https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/disease-integrated-services/std-control/reports/2016-std-annual-report.pdf

[17] Community Profiles Dashboard. (n.d.). Retrieved from https://www.azdhs.gov/preparedness/public-health-statistics/profiles/index.php

[18] Hood, C. M., Gennuso, K. P., Swain, G. R., & Catlin, B. B. (2016). County Health Rankings: Relationships Between Determinant Factors and Health Outcomes. American Journal of Preventive Medicine, 50(2), 129–135. doi:10.1016/J.AMEPRE.2015.08.024

[19] Warne, D., & Bane Frizzell, L. (2014). American Indian Health Policy: Historical Trends and Contemporary Issues. American Journal of Public Health, 104(S3), S263–S267. doi:10.2105/AJPH.2013.301682

[20] Bureau of Indian Education | Home. (n.d.). Retrieved June 29, 2019, from https://www.bie.edu/

[21] Cheney-Rice, Z. (2017). 9 Havasupai Native American children are suing the US Bureau of Indian Education. Here's why. Mic.com. Retrieved from https://mic.com/articles/165194/9-havasupai-native-american-children-are-suing-the-us-bureau-of-indian-education-heres-why#.6yLFCZcJX

[22] Arizona's Native Students Struggle to Stay In School,Tribal Leaders Move To Help. (2016). Retrieved from https://newsmaven.io/indiancountrytoday/archive/arizona-s-native-students-struggle-to-stay-in-school-tribal-leaders-move-to-help-3jaV6D3RJkSm3XfxQ1xAIg/

[23] Flugaur-Leavitt, C. (2017). Helping Native American Students Succeed in School. Children and Schools, 39(3), 187–189. doi:10.1093/cs/cdx013

[24] Heck, R. H., & Mahoe, R. (2006). Student Transition to High School and Persistence: Highlighting the Influences of Social Divisions and School Contingencies. American Journal of Education, 112(3), 418–446. doi:10.1086/500715

[25] Masta, S. (2018). 'I am exhausted:'' everyday occurrences of being Native American.' International Journal of Qualitative Studies in Education, 31(9), 821–835. doi:10.1080/09518398.2018.1499984

[26] Wilcox, K. C. (2019). " Not at the Expense of Their Culture ": Graduating Native American Youth from High, 98(4), 337–352.

[27] Jimenez-Castellanos, O., & Martinez, D. (2014). State of the States 2013: Arizona. Journal of Education Finance, 39(3), 247–249.

[28] Beard Rau, A. (2015). Arizona private-school families cash in on state's tax-credit program. Retrieved from https://www.azcentral.com/story/news/arizona/investigations/2015/07/26/private-school-families-arizona-tax-credit-program/30647833/

[29] Santos, F., & Rich, M. (2015). Recession, Politics and Policy Stretch Arizona School Budgets - The New York Times. Retrieved from https://www.nytimes.com/2015/06/06/us/arizona-school-budgets-stretched-by-recession-politics-and-policy.html

[30] O’Dell, R., & Wingett Sanchez, Y. (2017). Arizona taxpayer-funded vouchers benefiting students in more-affluent areas. Retrieved from https://www.azcentral.com/story/news/politics/arizona-education/2017/03/30/arizona-taxpayer-funded-vouchers-benefiting-students-more-affluent-areas/99707518/

[31] Hammond, G. W. (2017). Arizona’s Economy (p. 28). University of Arizona Eller College of Management Economic and Business Research Center. Retrieved from https://www.azeconomy.org/wp-content/uploads/2013/11/AZEFall2017.pdf

[32] Table 236.70. Current expenditure per pupil in average daily attendance in public elementary and secondary schools, by state or jurisdiction: Selected years, 1969-70 through 2015-16. (n.d.). Digest of Education Statistics, 2018. Retrieved June 29, 2019, from https://nces.ed.gov/programs/digest/d18/tables/dt18_236.70.asp?current=yes

[33] Hunting, D. (2017). Finding and Keeping Educators for Arizona’s Classrooms (pp. 1–44). Morrison Institute for Public Policy. Retrieved from https://morrisoninstitute.asu.edu/sites/default/files/content/products/AZ TEACHERS REPORT 2017_0.pdf

[34] MacDonald-Evoy, J., & Altavena, L. (2018). Arizona has highest ratio of students to school counselors in U.S. Retrieved from https://www.azcentral.com/story/news/local/arizona-education/2018/08/14/arizona-has-highest-ratio-students-school-counselors-united-states/889833002/

[35] Zetino, G. (2018). Majority of Arizona voters support ballot initiative taxing rich for education. Retrieved from http://ktar.com/story/2097066/majority-of-arizona-voters-support-ballot-initiative-taxing-rich-for-education/

[36] Zieglar, Z. (2018). Poll Shows Education Funding a Major Factor in Race for Arizona Governor - AZPM. Retrieved from https://www.azpm.org/p/home-articles-news/2018/6/27/132280-poll-shows-education-funding-a-major-factor-in-race-for-arizona-governor/

[37] Brophy McGee, K., & Carter, H. (2019). SB 1345. State of Arizona Senate Fifty-fourth Legislature. Retrieved from https://www.azleg.gov/legtext/54leg/1R/bills/SB1345P.pdf

[38] Altavena, L. (2019). Republican state lawmaker proposes education sales tax increase. Retrieved from https://www.azcentral.com/story/news/politics/arizona-education/2019/01/09/republican-arizona-lawmaker-proposes-education-sales-tax-increase-sylvia-allen-redfored-investined/2516215002/

[39] American Association of School Counselors. (2017). The School Counselor and Comprehensive School Counseling Programs (pp. 1–4). Retrieved from www.schoolcounselor.org

[40] Carey, J. C., & Martin, I. (2015). A Review of the Major School Counseling Policy Studies in the United States: 2000-2014 (pp. 1–91). Amhurst, MA: The Ronald H. Friedrickson Center for School Counseling Outcome Research and Evaluation. Retrieved from https://files.eric.ed.gov/fulltext/ED561867.pdf

[41] Anderson Moore, K., Lantos, H., Jones, R., Schindler, A., Belford, J., & Sacks, V. (2017). Making the Grade: A Progress Report and Next Steps for Integrated Student Supports. Retrieved from https://www.childtrends.org/wp-content/uploads/2017/12/ISS-FULL-Report_FINAL-FINAL-12_5_v3.pdf

[42] Lapan, R. T., Wells, R., Petersen, J., & McCann, L. A. (2014). Stand tall to protect students: School counselors strengthening school connectedness. Journal of Counseling and Development, 92, 304–315. doi:10.1002/j.1556-6676.2014.00158.x

[43] Table 203.40. Enrollment in public elementary and secondary schools, by level, grade, and state or jurisdiction: Fall 2016. (n.d.). Digest of Education Statistics, 2018. Retrieved June 28, 2019, from https://nces.ed.gov/programs/digest/d18/tables/dt18_203.40.asp?current=yes

[44] Fuschillo, A. (2018). The Troubling Student-to-Counselor Ratio That Doesn’t Add Up | Committee for Economic Development of The Conference Board. Retrieved from https://www.ced.org/blog/entry/the-troubling-student-to-counselor-ratio-that-doesnt-add-up

[45] Arizona 2016 Indian Education Annual Report. (2017). Retrieved from http://www.azed.gov/oie/files/2017/03/arizona_2016_indian_education_annual_report_final_3-23-17.pdf

[46] Bureau of Indian Education (BIE) | Indian Affairs. (n.d.). Retrieved June 29, 2019, from https://www.bia.gov/bie

[47] Elk, M. (2018). Arizona teachers begin strike as wave of education walkouts rolls west. Retrieved from https://www.theguardian.com/us-news/2018/apr/26/arizona-teachers-strike