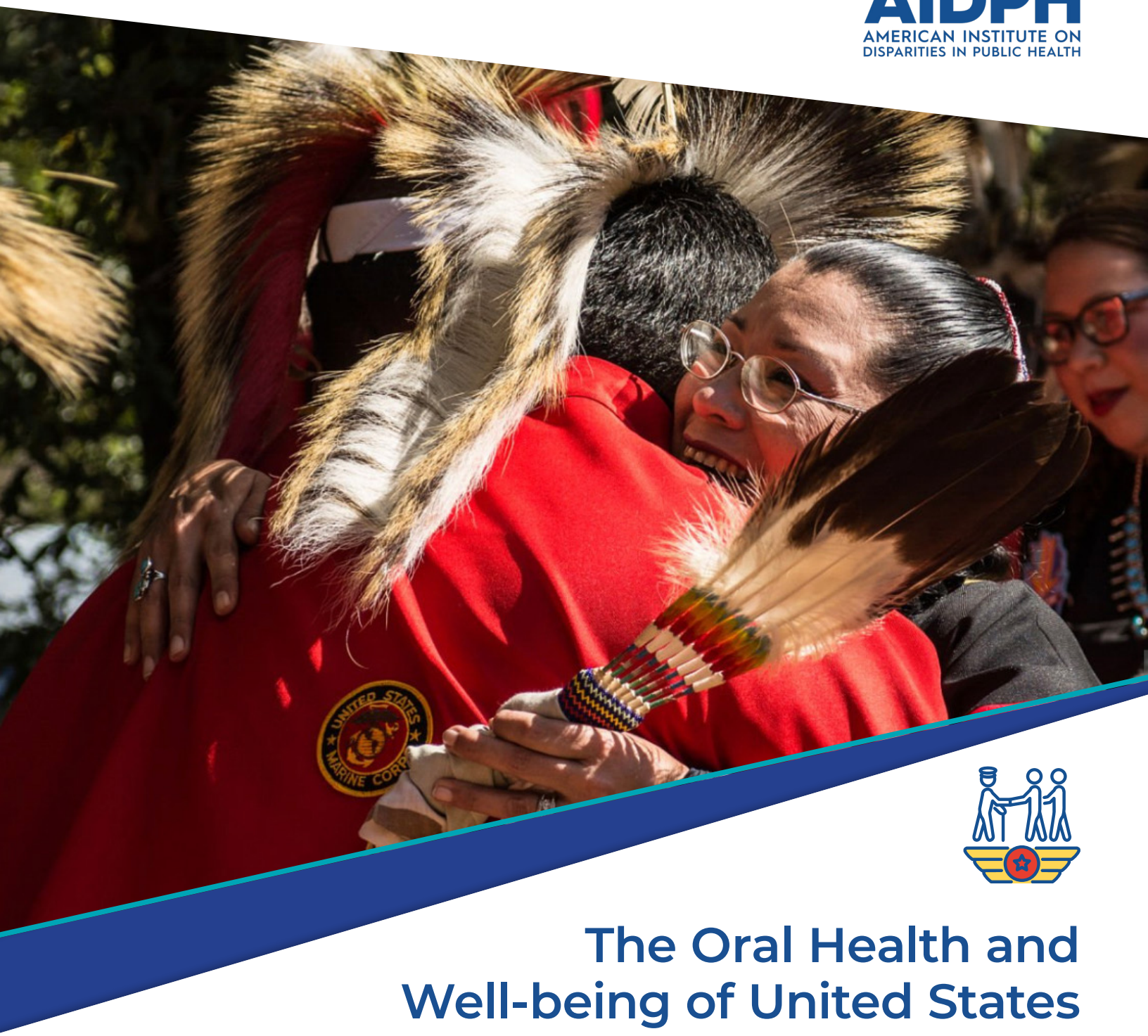
AIDPH
AMERICAN INSTITUTE ON DISPARITIES IN PUBLIC HEALTH



The Oral Health and Well-being of United States Indigenous Veterans: A Pilot Study

NOVEMBER 2026

Abstract

Background: Veterans living in the United States (U.S.) experience a siloed system of dental care due to restricted eligibility for dental care coverage through the Department of Veterans Affairs. Indigenous people serve at a higher rate than any other community. This pilot study explored the oral health status of Indigenous U.S. veterans and their barriers to dental care access and utilization.

Methods: A pilot survey was created to assess the oral health and general well-being of Indigenous veterans in connection with social, structural, and cultural aspects of care delivery. The survey was disseminated electronically to Indigenous veterans across the US in 2024.

Results: Forty-seven Indigenous Veterans participated in the survey. More than half reported having visited a dentist in the last year (57.4%). Among those who had not visited a dentist in the past year, the most common reason was fear/anxiety (14.9%) followed by cost (10.6%). Roughly 13% of respondents reported visiting the emergency department for a dental-related issue within the last five years. The most common structural barrier experienced by Indigenous service members after military separation was financial insecurity (27.7%), followed by homelessness (21.3%) and unemployment (17.0%).

Conclusions: Indigenous veterans in this pilot study self-reported significant barriers to accessing and utilizing dental care. The presence of self-reported comorbidities like diabetes and post-traumatic stress disorder (PTSD) may exacerbate poor oral health outcomes. Future research should focus on addressing the complex structural barriers Indigenous veterans experience in relation to dental care while also leveraging culturally affirming practices to improve perceptions of care delivery.

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Background

There are over 18 million veterans in the United States (U.S.), comprising close to 6% of the total U.S. population.[1] Roughly half of the veteran population (almost 9 million) accesses primary healthcare through the Veterans Health Administration (VHA), qualifying for care using a disability rating connected to their time in service. [2] Eligibility for VHA care, including dental care, is determined by Congress as defined by Title 38 of the federal code. In fiscal year 2025, the VA reported that 1.8 million veterans are eligible for dental care (22.5% of all VHA veterans) with a utilization rate of roughly 38% among eligible veterans.[3]

Poor access, high out-of-pocket costs, and limited dental coverage due to the majority of veteran dental care occurring outside of the VA system create significant barriers to achieving optimal oral health among veterans in the U.S.[4] Veterans disproportionately experience poor oral health outcomes, such as dental caries and periodontal disease (gum treatment and bone loss) compared to nonveterans.[5] These oral health disparities can be exacerbated by other risk factors such as smoking and diabetes, which are more prevalent among veterans compared to nonveterans.[6] Survey research revealed veterans' perception of their oral health is worse compared to other health areas. When rating their oral health in relation to their mental health and overall health, the veterans were more likely to select "fair" or "poor," indicating some understanding of both their dental needs and the inability to effectively address their dental health compared to other health areas.[7]

Among veterans in the U.S., approximately 1% identify as American Indian/Alaska Native.[8] The language of describing Indigenous people has fluctuated since the inception of what is now known as the United States. Indigenous is the blanket, and often preferred, term for people living in the United States prior to colonization.[9] However, Native American and American Indian are commonly used terminology in research and other federally adjacent spaces in connection to colonized language. Indigenous communities often experience poor health outcomes as a result of systemic barriers to healthcare access. Historical trauma from forced relocation, cultural suppression, and erasure policies has disenfranchised Indigenous communities and perpetuated inequitable health.[10] Generational exclusion from healthcare systems has contributed to the high prevalence of chronic disease conditions such as diabetes, heart disease, and hypertension - all of which negatively influence oral health.[11] Mental health concerns, including PTSD and substance use disorders, are also prevalent within Indigenous communities.[12] These health outcomes are often connected to inadequate preventive care and barriers to accessing healthcare services.[13]

Poor dental health outcomes also disproportionately affect Indigenous communities. Indigenous patients are more likely to report oral pain and poor oral health compared to non-Indigenous Americans in the U.S.[14] Indigenous patients experience higher rates of oral diseases such as tooth decay, periodontal disease (gum disease), and tooth loss - and they are more likely to have severe periodontal disease compared to the general U.S. population.[15] The effects of these oral diseases can result in issues with basic functioning, such as chewing, eating, and smiling, therefore, contributing to malnutrition and chronic diseases through reduced dietary intake of nutrient-rich fruits, raw vegetables, and lean meats.[16]

Despite historical trauma and violence, Indigenous Americans have a long history of serving in the U.S. Armed Forces. Indigenous people have served in every major American conflict since the American Revolution.[17] There are currently 134,131 veterans who identify as Native American or Alaska Native serving in the military.[18] Some Indigenous veterans have access to care through both the Department of Veteran Affairs (VA) and the Indian Health Service (IHS), though most only use IHS. In 2023, IHS and VA signed an updated memorandum of understanding outlining the collaboration between the two agencies. This agreement replaced the prior agreements which were amended four times. The amended agreement provides reimbursement to Indigenous veterans at 74 IHS facilities.[19] Indigenous veterans must meet five eligibility requirements to receive care at IHS or tribal facilities. Requirements include: person being of “Indian descent”, residing with the tribal purchased/referred care delivery area, residency documentation, notification and authorization of approval for payment, and utilizing alternate resources available such as Medicaid.[20] Additionally, priorities of care and treatment are determined by “relative medical need.”[21]



The research on the health outcomes of Indigenous veterans is limited, with very little data evaluating the oral health and well-being of Indigenous veterans. The paucity of available data restricts the ability to understand dental care needs, structural barriers, and social determinants of Indigenous veterans. The objective of this research was to conduct an exploratory study investigating the current state of dental and oral health outcomes among Indigenous veterans. **The exploratory questions used to guide this pilot study included:**

- What is the self-reported oral health status of Indigenous U.S. veterans?
- What general health conditions, including mental health and chronic diseases, are self-reported among Indigenous U.S. veterans?
- What barriers do Indigenous U.S. veterans face when accessing dental care?
- How does Indigenous culture influence perceptions of dental care delivery?

Methods

Survey Development

An electronic 25-item questionnaire was developed to assess the oral health and general well-being of Indigenous veterans. Questions were developed by a committee of veteran and Indigenous oral health researchers, the Southern Plains Tribal Health Board (SPTHB), and the American Institute on Disparities in Public Health (AIDPH), to ensure a culturally responsive design that mirrored other oral health assessments, such as the Behavioral Risk Factor Surveillance System (BRFFSS) and the National Health Interview Survey. The SPTHB is a tribally designated non-profit organization and the Oklahoma Area Tribal Epidemiology Center (TEC) that serves 43 federally recognized tribes located in Kansas, Oklahoma, and Texas. The AIDPH is a 501c3 nonprofit specializing in community-engaged oral health research for veterans, queer people, rural communities, and people with disabilities. The researchers intended the survey to be completed in 10 minutes or fewer with primarily quantitative responses to ensure user-friendliness and reduce survey fatigue.



The drafted survey was presented to external Indigenous leaders prior to dissemination as an additional measure of face validity and cultural review. The final questionnaire included demographic variables and evaluated four main themes: oral health (5 items), general health (2 items), cultural connection to care (3 items), and barriers to accessing or utilizing care (6 items). Among the 25 items, 22 were categorical questions ranging from multiple choice, Likert, and nominal in response format. One question (age) was open-ended numerical. The remaining two questions were free-response.

The survey was distributed electronically using a mix of convenience, purposive, and snowball sampling to a national population from February 2024 through December 2024 using Qualtrics. Sampling efforts focused on veteran communities with a high concentration of Indigenous constituents while also focusing on Indigenous organizations that regularly liaise with tribal veterans. Requests for participation were made via locally posted fliers, phone, social media, email, and requests during in-person and virtual meetings. Recruitment strategies included personal outreach to Indigenous veteran councils, Native American veteran service organizations, and tribal veteran leadership. Email outreach, warm hand-offs from project leaders to Indigenous veterans, and other community engagement techniques were routinely employed to increase response rates. Respondents consented to participate by reading the consent language on the survey website landing page and voluntarily agreeing to proceed to the survey.

Sample

Respondents were 18 years of age or older. Survey participants who were not veterans and also did not identify as Indigenous were not eligible to complete the survey. Recruitment for this survey progressed slowly despite strong outreach efforts from both oral health researchers and Indigenous leadership.

Statistical Analysis

STATA software (version 16) was used to evaluate descriptive statistics. Inferential analyses were not performed as a result of the small sample size and the pilot nature of this study. Descriptive statistics included calculating frequencies and percentages, as data were largely categorical in nature. Chi-square analyses were performed; however, the low cell sizes in this small pilot sample did not generate significant insights and were therefore not included in the results of this study. The age variable was recoded into six categories for analysis. No other variables were manipulated or recoded during analysis. Using guidance from Kunselman (2024), power analyses were not performed, and hypothesis testing was not applied as the goal of this pilot study was to ascertain baseline knowledge about a community that has not been previously assessed for oral health status.[22]



Additional guidance from Kunselman and within other published literature reinforces an appropriate sample size for analyzing and interpreting pilot results.[22-24]

Results

Sample Description

The final sample size was 47 for this pilot study. The majority of respondents were aged 50 years or older (57.4%), male (70.2%), and identified solely as Native American or Alaska Native (91.5%). Approximately 21% of the sample was between ages 30 and 39 with 14.9% of the sample ranging between ages 40 to 49. Respondents were mostly male (70.2%) and identified solely as Native American or Alaska Native (91.5%). The Midwest and Southwest had the highest proportion of respondents by U.S. region (51.1% and 38.3%, respectively). Nearly 80% of the respondents indicated they had been provided a service-connected disability rating by the VA with the majority of those respondents (55.4%) reporting a rating of 70% or higher.

General Health Outcomes

Indigenous veterans in this sample most commonly rated their overall health as "good" (42.6%) (Table 1). About one-quarter of respondents self-reported their overall health as "excellent" (4.3%) or "very good" (21.3%). Similarly, 25.5% rated their overall health as "fair." Most Indigenous veterans (59.6%) in this sample self-reported a diagnosis of Post-Traumatic Stress Disorder (PTSD), and 21.3% reported a diagnosis of diabetes.

Table 1: General Health Outcomes

Question*	Frequency	Percent
Rating of overall health		
Excellent	2	4.3
Very Good	10	12.3
Good	20	42.6
Fair	12	25.5
Poor	3	6.4
Self-Reported Health Conditions		
Diabetes	10	21.3
Pre-diabetes	10	21.3
Heart disease	3	6.4
PTSD	28	59.6
Depression	3	6.4
Anxiety	5	10.6

**Indicators with no responses were omitted from this table*

Cultural Expectations of Care

Indigenous veterans were asked how important it was for them to have a dentist who "looks like them" (Table 2). About one-third (34.0%) of respondents indicated it was "very important" or "fairly important" to have a dental provider who looks like them. Nearly half (48.0%) indicated that it was not important at all. Indigenous veterans were also asked how important it was for them to have a dental provider who understands their culture and lived experience. Most respondents indicated that it was "not important at all" or "somewhat important" (48.9%) while roughly one-third (34.0%) indicated it was "very important."

Table 2: Cultural Expectations of Care

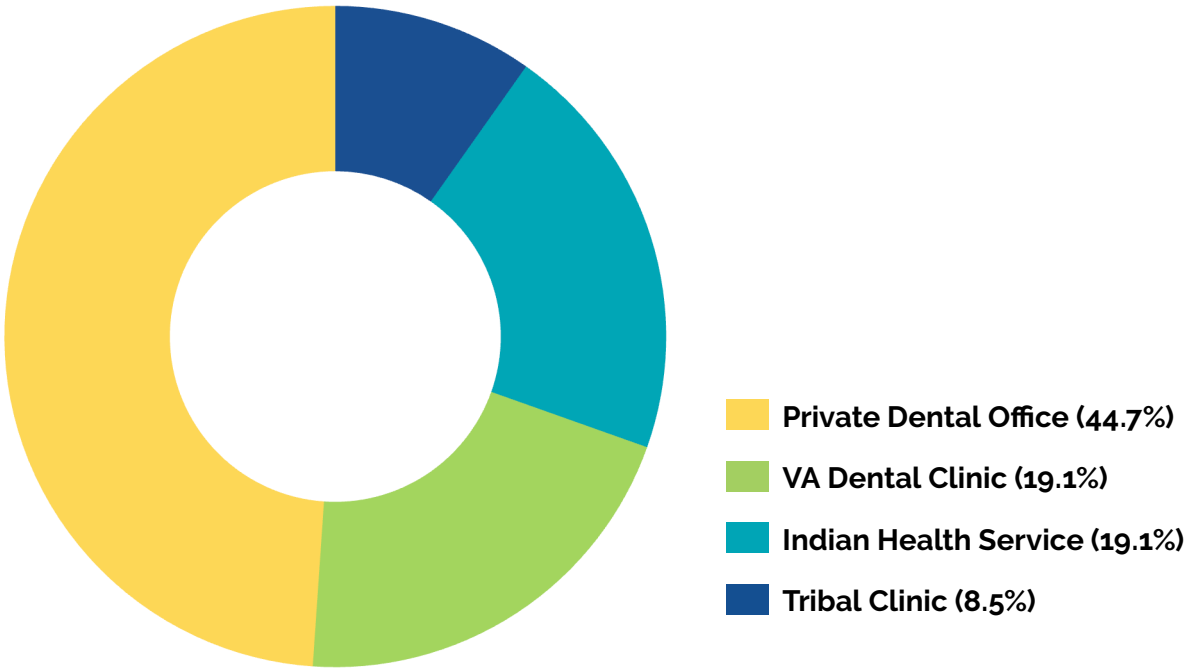
Question*	Frequency	Percent
Importance of Dental Provider Looking Like You		
Very Important	11	**23.4**
Fairly Important	5	**10.6**
Important	2	**4.3**
Somewhat Important	6	**12.8**
Not Important at All	23	**48.9**
Importance of Provider Culture		
Very Important	16	**34**
Fairly Important	4	**8.5**
Important	4	**8.5**
Somewhat Important	12	**25.5**
Not Important at All	11	**23.4**

**Indicators with no responses were omitted from this table*

Dental Care Access and Experiences

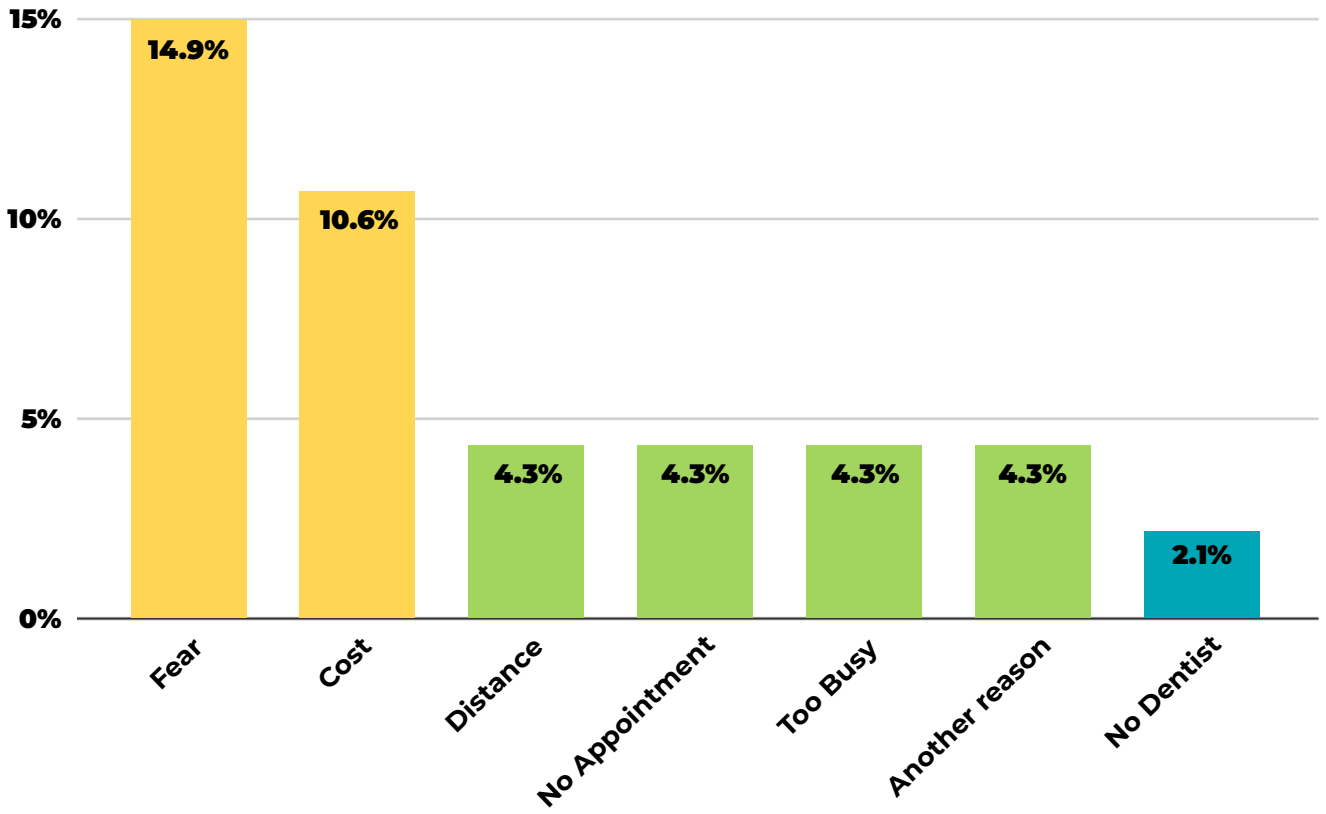
Employer-paid private dental insurance (44.7%), followed by VA dental insurance (21.3%) and government-sponsored dental insurance (10.9%),was the most common form of coverage reported in this sample. One in five Indigenous veterans surveyed (21.3%) did not have dental insurance. Most veterans usually received care in a private dental office (44.7%) followed by a VA dental clinic (19.1%) or an IHS clinic (10.1%) (Figure 1).

Figure 1: Dental Care Access Points for Indigenous Veterans



More than half of Indigenous veterans had visited a dentist in the last year (57.4%) (Table 2). Among the remaining respondents, 17% had last visited a dentist between one and two years, 10.6% had last visited a dentist between two and five years, and 14.9% had visited a dentist five or more years ago. Among those who had not visited a dentist in the past year, the most highly endorsed reason for not seeing a dentist was fear/anxiety (14.9%) followed by cost (10.6%) (Figure 2). Transportation (4.3%) and lack of appointments (4.3%) were the next commonly cited reasons. The majority of respondents said they hardly ever or never delayed dental visits (59.6%) while nearly 30% indicated they do occasionally delay dental visits. Lastly, 12.8% of respondents reported visiting an urgent care clinic or emergency department for a dental-related issue within the last five years.

Figure 2: Reasons for Delaying Dental Care in the Past Year



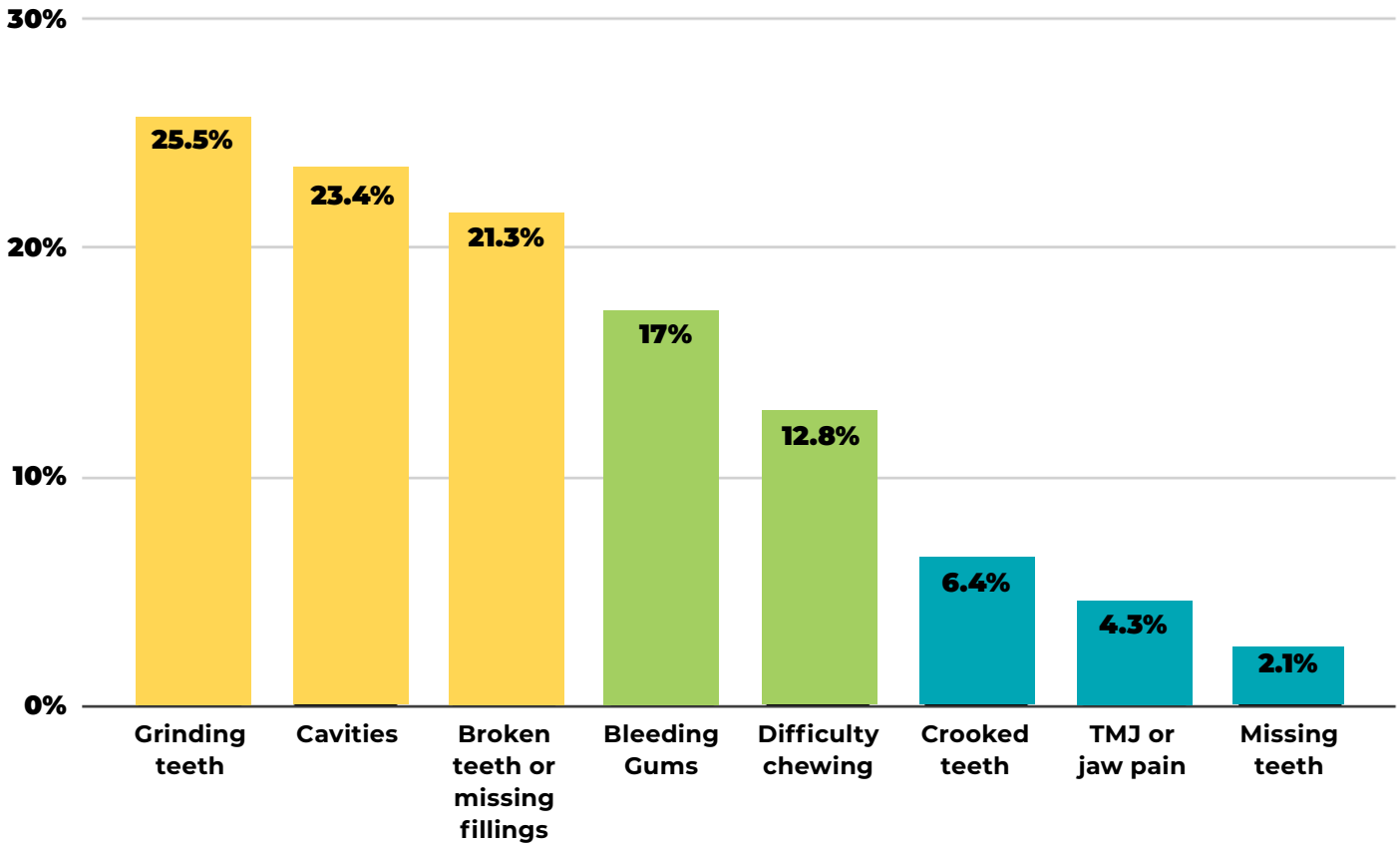
Oral Health Outcomes

Almost one-third of Indigenous veteran respondents (27.7%) rated the condition of their mouth and teeth as "good" while 19.1% rated their mouth condition as "very good." Nearly 15% self-rated their oral health as "poor." Among the 11 indicators of poor oral health listed in the survey, 31.9% of respondents indicated they had dental pain and 25.5% reported grinding their teeth (Figure 3). Almost a quarter of respondents (23.4%) reported having cavities and 21.3% had broken teeth or missing fillings. Bleeding gums and missing teeth were endorsed by 17.0% and 12.8% of respondents, respectively.

Over one-third of Indigenous veterans in this sample reported having mouth pain occasionally within the last year (36.2%), with 17.1% reporting pain as "often" or "very often." When asked how often they avoided food due to problems in their mouth, 29.8% reported occasionally avoiding food, with 46.8% indicating "never" or "hardly ever." One in five (21.3%) Indigenous veterans reported avoiding food very often or fairly often within the last year due to problems with their mouth or teeth. When asked about pain management, Indigenous veterans reported using over-the-counter pain medications most frequently (57.4%) with holistic methods as the second most common pain management method (10.6%).

Veteran respondents were asked which environments, if any, they felt self-conscious or embarrassed in because of problems with their teeth, mouth, or dentures in the past year. The most common environments included friends (40.4%), family (36.2%), and during social gatherings (21.3%). Work (6.4%), healthcare visits (8.5%), and other places (4.3%) were the least commonly endorsed among the list of environments. Over one-third (38.3%) of Indigenous veterans reported no feelings of self-consciousness over their mouth or teeth within the last year.

Figure 3: Reasons for Delaying Dental Care in the Past Year



Structural Barriers to Health and Wellbeing

Indigenous veterans were assessed for experiences of common structural barriers to health and wellbeing after military separation including homelessness, lack of permanent housing, food insecurity, financial insecurity, stigma/discrimination, disability, and/or unemployment. The most common structural barrier experienced after military separations was financial insecurity (27.7%) followed by homelessness (21.3%) and unemployment (17.0%). About one-third of Indigenous veterans (34.0%) reported experiencing at least one structural barrier with 40.4% of respondents reporting either three or four structural barriers to health and wellbeing.



Discussion

Summary of Main Findings

This study explored how Indigenous veterans experience structural barriers, perceive their oral and general health, and report oral health outcomes. No studies currently exist examining the intersection of Indigenous veterans and oral health outcomes within this community, making the current pilot study a unique contribution in assessing this knowledge gap. The interpretations and conclusions generated from this exploratory pilot survey are guarded in terms of generalizability, but the results of the present study indicate that this sample of Indigenous veterans self-report the following outcomes related to their oral health and well-being:

- Indigenous veterans report substantial barriers to accessing care with disproportionate experiences of structural risk factors.
- High reported prevalence of comorbidities, like diabetes and PTSD, may negatively influence oral health outcomes.
- Indigenous veterans in this sample report high rates of dental pain and a high occurrence of emergency department visits.
- Self-reported poor oral health outcomes and dental problems in this population remain a significant issue and may be influencing social outcomes such as embarrassment, anxiety, or avoiding dental visits.
- Culturally affirming care is a complex and nuanced topic, particularly among a veteran population who also identify as Indigenous.

Indigenous Veteran Experience of Structural Barriers

Self-reported experiences of insecure housing/homelessness, financial insecurity, unemployment, and disability were particularly high within this pilot study sample. Indigenous people generally report higher experiences of structural barriers, financial barriers, unstable employment, and poor access to resources.[25] These structural barriers to optimal health and well-being can result in limited ability to pay for healthcare costs, inability to source care or consistently maintain health needs, or physical inability to address healthcare needs.[26] This result is particularly concerning given 21.3% of Indigenous veterans in this sample report having no dental insurance coverage. Chronic experiences of structural barriers and the inability to support optimal health and well-being may promulgate poor mental health among Indigenous veterans, an outcome consistent with the self-reported findings of this study. These structural barriers are particularly challenging to overcome and require systemic change, predominantly within healthcare policy, to ensure Indigenous veterans can access financial resources, reduce financial burdens, and sustain their ability to meet their oral healthcare needs. Future research should focus on identifying upstream and downstream responses for Indigenous veterans, recognizing these solutions often benefit many marginalized or historically excluded communities.

General Health and Connections to Oral Health Among Indigenous Veterans

Self-reported prevalence of chronic disease conditions within this sample was higher than the general population. According to 2022 BRFSS data, 15% of veterans nationally report they have been diagnosed with diabetes compared to 21% in this pilot sample.[27] This finding is consistent with established research indicating Indigenous people experience higher rates of chronic disease conditions, particularly those that negatively impact oral health such as diabetes and heart disease.[28] This result is particularly concerning paired with research indicating veterans have higher rates of these conditions compared to nonveterans, creating overlapping disparate outcomes for veterans who are also Indigenous.[29]

Oral Health Among Indigenous Veterans

The results of this pilot study suggest that Indigenous veterans visit the dentist less frequently than recommended, experience more severe oral health outcomes, and experience social embarrassment in relation to perceived poor oral health. The self-reported experiences of dental pain were considerable in this sample, potentially connected to the findings associated with avoiding food due to dental pain and high emergency department utilization. At least one respondent reported removal of their own tooth/teeth due to dental pain and lack of dental insurance - and 17% of this sample responded they just "deal with the pain without medication.[32] These findings generate great concern for Indigenous veterans who are already experiencing a disproportionate burden of disease and disability compared to nonveterans and non-Indigenous populations. Dental pain is often avoidable with routine access to affordable dental care, saving both personal discomfort and increased cost of care by visiting an emergency department or urgent care clinic.[33] Future research should explore this result within a larger and more diverse sample to examine the drivers of disparate oral health and dental pain among Indigenous veterans.

Culturally Affirming Dental Care is a Complex Issue

Indigenous veterans in this sample reported that culturally affirming providers either mattered a great deal or didn't matter much at all, a polarizing result that requires nuanced perspective for interpretation. One such consideration for Indigenous veterans is the intersection of historical cultural erasure and the requirement of assimilation in active duty service.[34] When a veteran has experienced historical exclusion, cultural erasure, and the need to assimilate to maintain employment and succeed in a homogeneous environment, the resulting desire for culturally affirming providers may be diluted. In addition to the intersecting complexities of military service and Indigenous identity, there is a disproportionately low representation of Indigenous dental providers in the oral health workforce.[35] Indigenous veterans may have low exposure to Indigenous dental providers and culturally affirming care, resulting in the inability to compare dental care from an Indigenous provider to care from other providers. In examining the relationship between culturally affirming care and healthcare providers, asking if it is important for a provider to "look like you" could inadvertently perpetuate the physical appearance of "looking Native" vs the identity and cultural connection or humility to Native peoples or communities. Additionally, in a system that already provides multiple barriers to accessing oral health care as mentioned previously, provider preference could be seen as obsolete when extreme efforts are made to ultimately be seen by a provider. Future research should compare the experiences of Indigenous veterans who have received dental care from Indigenous providers with care from non-Indigenous providers to assess the resulting oral health outcomes and perception of care delivery.

Limitations

This pilot study had a relatively small sample size (N = 47) compared to the broader population of Indigenous veterans. Although recruitment for this survey occurred over 11 months, employed a mix of outreach efforts from both oral health researchers and Indigenous leadership, and recruitment efforts spanned multiple states/regions, the resulting sample size was very small and largely connected to the Southwest and Midwest regions. As such, there is low generalizability and guarded interpretations within these results. Self-reported data may be biased toward socially desirable responses and may not confer clinical diagnoses. However; this study remains the first of its kind assessing perceptions of oral health among Indigenous veterans and creating recommendations for future research. The benefits and unique contribution of this pilot study outweigh the potential limitations by providing a strong foundation for which future research can be conducted.

Conclusions

The results of this novel pilot study showed that Indigenous veterans continue to experience poor oral health outcomes, high prevalence of comorbidities, high rates of dental pain and emergency department visits, and perceived structural barriers to accessing quality and affordable oral healthcare. Furthermore, these data show that poor oral health outcomes may contribute to negative social outcomes (e.g., embarrassment, anxiety, or avoiding dental visits). Additionally, the findings portray culturally affirming care as particularly nuanced in this niche population. Taken together, there is an undeniable need to further examine preventative pathways and existing healthcare policies to overcome physical and mental health disparities resulting from compounding social determinants of health in this important population. Researchers, dental clinicians, health educators, and other healthcare providers can benefit from a clearer understanding of the role of culturally affirming care delivery in oral health outcomes and perceived quality of care. Future efforts to increase community engagement in research among an Indigenous veteran population could build on the initial results of this pilot. In alignment with other health disparities research, the results of this exploratory pilot survey should be leveraged for additional exploration, including a more robust follow-up survey or qualitative data collection to understand contextual factors driving provider preference and underutilization of dental care.

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Acknowledgments & Suggested Citation

The American Institute on Disparities in Public Health is a nonprofit organization empowering our community to eliminate health disparities through research, education, and advocacy. AIDPH operates at the intersection of health issues, communities, and systems change. Our framework reflects the belief that health disparities emerge where health systems, social drivers, and community experiences intersect. We recognize that issues like oral health, mental health, chronic disease, and women's health are shaped by policy environments, care delivery structures, workforce capacity, and the lived experiences of the communities most affected.
AIDPH would like to thank the Southern Plains Tribal Health Board for their collaboration in developing this manuscript.

Suggested Citation: Cothron, AE, Stone, KA, Llaneza, AJ, Seward, J., and Eason, K. The Oral Health and Well-being of United States Indigenous Veterans: A Pilot Study. The American Institute on Disparities in Public Health. Chicago, IL. November 2026. https://doi.org/10.58677/MZIT3931



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