Factors That Influence Risk Perceptions and Successful COVID-19 Vaccination Communication Campaigns With American Indians

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Abstract
COVID-19 vaccinations are the primary tool to end the pandemic. However, vaccine hesitancy continues to be a barrier to herd-immunity in the United States. American Indians (AI) often have higher levels of distrust in western medicine and lower levels of satisfaction with health care when compared to non-Hispanic Whites. Yet AIs have high COVID-19 vaccination rates. We discuss factors that influence AI risk perceptions of COVID-19 vaccinations including the impact of COVID-19 on AI Elders, community, and culture. We conclude with future research needs on vaccination communication and how culturally congruent communication campaigns may have contributed to high COVID-19 vaccination rates.

Keywords
indigenous, disease, vaccine, COVID-19, pandemic, elders

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Introduction

American Indians (AI) are often affected by infectious disease at higher rates than other racial groups and this remains true for SARS-CoV-2, the virus that causes COVID-19. In a study of 14 participating states, age-adjusted COVID-19 associated mortality among AI and Alaska Native populations was 1.8 times higher than non-Hispanic Whites (Arrazola et al., 2020). COVID-19 vaccinations are the primary tool to end the pandemic. However, vaccine hesitancy continues to be a barrier to widespread vaccination and ultimately, herd-immunity among the greater U.S. population. Contrary to what many public health officials expected, CDC data show AIs have higher COVID-19 vaccination rates compared to White, Asian, Black, or Hispanic people (Hill & Artiga, 2021). For example, 98% of eligible citizens of the Blackfeet Nation in Montana are vaccinated compared to about 40% of Montana’s total population (Ortiz, 2021). Why might this be? And are there public health lessons to be learned from the higher vaccination rates of AI communities?

It is well-established that to develop effective health messages, communicators must first explore the factors that influence perceptions of a hazard (Lundgren & McMakin, 2018). It is especially important to understand the factors that influence AI risk perceptions because there may be distinct factors unique to this population (Boyd & Furgal, 2019). For example, studies find that Native populations may combine understandings of conventional biomedicine with culturally grounded perspectives of health to form a comprehensive view of AI well-being (Lang, 1989). When communicators understand the factors that influence risk perceptions they can better address those considerations in health communication campaigns. Did public health messengers lean on cultural knowledge of risk perceptions to produce the higher vaccination rates that we see?

In this commentary, we discuss factors that may influence perceptions of COVID-19 such as the historical spread of disease, health disparities, and how AIs are disproportionately affected by the virus. Specific factors associated with perceptions of COVID-19 that are unique to the AI population are also discussed. This includes distrust of research, researchers, and western medicine. We also discuss the impact of COVID-19 on AI Elders. We then review COVID-19 vaccination communication campaigns targeted at AIs, as well as current research on AI perspectives of COVID-19 vaccinations. Our goal is to provide insight into how culturally congruent health communication campaigns contributed to the success in COVID-19 vaccination rates among AIs, and to perhaps use this as a model for other public health efforts.
Historical and Contextual Background to Perceptions of COVID-19 Vaccinations

Spread of Infectious Disease

Infectious diseases originating in foreign lands are not new to Indigenous populations. The arrival of Europeans in North America exposed AI populations to new infectious diseases (Patterson & Runge, 2002). In the 1700s, smallpox (Variola Virus) was transmitted to AIs throughout the United States through infected blankets or garments and was even used for biological warfare (Patterson & Runge, 2002). Smallpox was greatly feared among AI populations because of the high mortality rate for most tribes (Patterson & Runge, 2002), which in turn was caused by a lack of prior exposures and immunity. Politics played an important role in the smallpox epidemic. Tribes that were viewed as friendly would be vaccinated while those that were seen as aggressive were not (Pearson, 2003). AIs have not forgotten this disease or attempts to irradicate populations with a virus (Urban Indian Health Institute, 2021). Memories and associated stories will continue to shape perceptions of viruses and vaccines in general, and COVID-19 specifically.

Health Disparities and AIs as Disproportionately Affected by COVID-19

In general, AIs experience lower health status when compared to other Americans (Indian Health Service, 2021). AIs have higher rates of cardiovascular disease, diabetes, chronic lower respiratory diseases, among other illnesses (Centers for Disease Control and Prevention [CDC], 2021). Lower life expectancy and disproportionate disease burden, “exist perhaps because of inadequate education, disproportionate poverty, discrimination in the delivery of health services, and cultural differences” (Indian Health Service, 2021). Enduring health disparities are particularly relevant to COVID-19. People with underlying medical conditions are at higher risk of developing severe symptoms than those without these conditions. There are numerous inequalities in infrastructure, public health funding, access to medical care, housing, and clean water that place AI communities at higher risk for infection, mortality, and severe illness from COVID-19 (Arrazola et al., 2020). These structural forces and a history of systemic racism limits access to health care services. They will also likely remain a factor in the ability to receive COVID-19 vaccinations and may even contribute to vaccine hesitancy.
Factors Unique to AI Populations That Influence Perceptions of COVID-19 Vaccinations

Distrust of Western Medicine and Research

AIs have significantly higher levels of mistrust and lower levels of satisfaction with health care than non-Hispanic Whites (Guadagnolo et al., 2009). Trust, as a concept, is an important factor in the provision of health care because it is associated with seeking treatments for illness or disease (Pearson & Raeke, 2000). In general, many AIs distrust health care systems and non-Indigenous physicians. This distrust stems from a legacy of genocide, medical experimentation (Pacheco et al., 2013), and physicians lack of cultural competency in treating AIs (Guadagnolo et al., 2009).

Related to the lack of trust in health care is the lack of trust in research. There is good reason for mistrust of research as there are many documented cases of researchers failing to obtain informed consent, changing protocols without consulting participants, withholding information, or failing to follow up as promised (Guadagnolo et al., 2009). Trust in researchers and the science behind the development of COVID-19 vaccines is shown to be a factor in positive perceptions of COVID-19 vaccines among the general U.S. population (Latkin et al., 2021). Therefore, distrust in research, researchers, and western medicine could influence AI perceptions of vaccines. Indeed, there is already a documented history of distrust of some vaccinations, such as HPV (Bowen et al., 2014). Highlighting this concern, an online article from National Public Radio was headlined, “‘We are not guinea pigs’: Trust issues and the COVID-19 vaccine trial in the Navajo Nation” (Wallace, 2020). It is important for health communicators to understand historical contexts, trauma, and the related distrust of research and health care when developing health messaging about COVID-19.

COVID-19 Impact on Elders

Individuals ages 65 and older are at highest risk for severe illness, hospitalization, and death from COVID-19 (CDC, 2021). This is an important factor in perceptions of COVID-19 for AIs. AI cultural values provide guidance for, and recognize the importance of, taking care of Elders (Whitewater et al., 2016). It is important that Elders are respected and are provided with resources and care. Elders are valued as knowledge keepers, teachers, language carriers, the intergenerational transmitters of cultural knowledge, and are often leaders within tribes or communities (Garrett et al., 2014). AI concern for Elders was reported in many U.S. newspaper articles. For example, a New
York Times headline reports, “Tribal Elders are dying from the pandemic, causing a cultural crisis for American Indians. The virus has killed American Indians at especially high rates, robbing tribes of precious bonds and repositories of language and tradition” (Healy, 2021). COVID-19 vaccines are viewed as a strategy to protect AI Elders.

**Factors Influencing Successful Communication Strategies: Harnessing the Strength and Resilience of AI People and Culture**

*Data-Driven Message Design: Lead by Indigenous People and Organizations*

A recent systematic literature review on communication about environmental health risks with Indigenous people examined the factors that lead to communication campaign success (Boyd & Furgal, 2019). The most common factor that led to success was if AIs were involved in, or directed, communication design and delivery. This is in part because AI organizations may be more trusted by AI individuals. Cultural and traditional norms may also be better incorporated into messages (Boyd et al., 2021). In the case of COVID-19, many tribal, regional, and national AI organizations directed the development and dissemination of health communication messaging for AI populations. Tribes are sovereign nations and have the right to govern themselves. AI organizations and communities therefore could, and did, create vaccine communication strategies and distribution methods that could be tailored to tribes or regions. Furthermore, AI organizations and communities collected data to inform the development and dissemination of COVID-19 vaccine messages. For example, numerous community groups and researchers hosted listening sessions as part of the COVID-19 Vaccine Confidence Project (Regan-Udall Foundation, 2021). Researchers aimed to understand AI perceptions about COVID-19 vaccines, identify what information AIs want, and ultimately create messages to provide that information. An additional study was completed by the Urban Indian Health Institute (2021) to understand perceptions about COVID-19 vaccinations and determine COVID-19 vaccine knowledge. A total of 1,435 participants, representing 318 tribal affiliations across 46 U.S. states, completed the survey. The results from these studies, in addition to many others, provided information on knowledge, attitudes, and beliefs about COVID-19 vaccines. This information could form an understanding of the cultural and social context needed for effective messaging about COVID-19.
Messages Focusing on the Protection of Elders, Community and Culture

Three themes of health messages emerged about COVID-19 vaccinations including the need to protect Elders, community, and culture. There is a strong sense of responsibility to community, Elders, and ancestors in AI value systems. COVID-19 was a threat to AI Elders and their communities. As discussed previously, Elders are considered knowledge keepers and the inter-generational transmitters of cultural knowledge. Studies from AI organizations found that respondents expressed the need to protect and care for Elders, achieved by being vaccinated. For example, one respondent of the Urban Indian Health Institute (2021, p. 3) survey stated, “We have to protect our old ones and seven generations to come. It’s a big responsibility. Warrior up.” Therefore, health messages were created to invoke a responsibility to care for our Elders through receiving COVID-19 vaccinations.

“Community” is an important facet of AI life (Graham & Thomas, 2002) and vaccinations were viewed as a way to protect community. Indeed, results from the COVID-19 Vaccine Confidence Project (Regan-Udall Foundation, 2021) showed that many AI participants believed getting vaccinated was their responsibility to community. Community is a protective factor in AI health (McKinley et al., 2019). It therefore reasonable that another theme of messages emerged that focused on AI responsibility to protect community through COVID-19 vaccinations.

COVID-19 was also seen as a threat to AI culture—both to culture in general and to gatherings specifically. In fact, results from the Urban Indian Health Institute survey show that the primary reason why participants indicated willingness to get vaccinated was not only, “to prevent unnecessary death and illness of loved ones, but also essential for preserving Native cultures, traditions, languages, and sacred knowledge” (Urban Indian Health Institute, 2021, p. 38). Furthermore, AIs often gather to celebrate culture. For example, through powwows Indigenous people come together to share and celebrate culture through dancing, singing, and socializing. Powwows were understandably cancelled during COVID-19. Results from the COVID-19 Vaccine Confidence Project found that getting vaccinated facilitated a more rapid return to in-person community events and the return of community celebrations (Regan-Udall Foundation, 2021). The third theme of health messages urged AIs to get vaccinated for their culture and return to celebrations of their culture.

Trusted Information Sources

It is well-established that trust in information source is an important component of successful health communication campaigns. However, trust in information
source is particularly crucial to AI health communication campaigns due to historical and ongoing mistrust in research and western medicine, as discussed previously. Without trust in information source, health communication campaigns that focus on AI populations rarely succeed (Boyd et al., 2021). Studies have examined preferred information sources about COVID-19 vaccinations. Results show that trusted messengers include Indigenous health care providers, tribal leaders, and Elders (Regan-Udall Foundation, 2021). A large factor in the success of vaccination communication campaigns was likely that information sources were often AIs. Numerous tribal, regional, and national campaigns featured Elders and Indigenous health care professionals as spokespeople that both provided information about COVID-19 and urged AI to get a COVID-19 vaccination. For example, the Association of AI Physicians launched a social media campaign showing AI doctors getting the COVID-19 vaccine and urging others to do the same (Hatzipanagos, 2021).

Conclusion

Effective health communication campaigns begin with examining the context behind risk perceptions. In this case, it is important to understand the social, cultural, and historical reasons which factor into why AIs may or may not choose to receive COVID-19 vaccinations. The historical spread of disease and distrust in western medicine sets the context for health messaging. It is important to understand that just because COVID-19 is a new disease, these historical and contextual factors will influence risk perceptions and need to be considered when designing health communication strategies.

We argue that the development and dissemination of successful COVID-19 vaccination communication campaigns contributed to the high vaccination rates of AIs. The lessons learned from COVID-19 vaccination campaigns can be applied to other AI public health efforts. The following three guiding principles align with Indigenous perspectives and could advance health messaging strategies with AI people. First, data-driven campaigns are needed. Particularly campaigns that are directed by Indigenous people and organizations. Second, culture and community are core to AI value systems and should be incorporated into messages when appropriate. Third, messages should come from trusted sources.

We recommend two areas of future research on communication about COVID-19 vaccinations with AIs. First, while we have provided insight into the factors that affect risk perceptions, empirical research is needed. Additional studies should examine AI opinions about COVID-19 vaccinations and evaluate COVID-19 vaccination communication development and dissemination. Second, as many AIs become vaccinated, rates will inevitably
decrease and more information about hesitancy will be illuminated. Research should be aimed at understanding how to continue increasing vaccination rates among AIs, examining misinformation about COVID-19 and communication strategies that reduce hesitancy.

COVID-19 has been devastating for AI populations throughout the United States. COVID-19 vaccines remain the primary tool for ending the pandemic and effective communication about vaccines is critical. Through the success of COVID-19 vaccination campaigns much information has been gleaned about how to communicate with AIs in a culturally congruent manner. It is important to note that the resilience of AIs and strength in culture was ultimately a factor that contributed to the success of the communication campaigns and high vaccination rates. Ultimately, it is important to continue to develop and disseminate information about COVID-19 vaccines effectively and learn from these communication campaigns to build on information strategies for other health and wellness campaigns that resonate with AI populations.

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