HHS Public Access

Author manuscript

Pedagogy Health Promot. Author manuscript; available in PMC 2024 November 27.

Published in final edited form as:

Pedagogy Health Promot. 2022 June ; 8(2): 134–141. doi:10.1177/2373379920974387.

Northwest Native American Research Center for Health: A Summary of Fellowship Trainees' Success Over 15 Years of Funding

Grazia Cunningham, MPH[1], **Thomas M. Becker, MD, PhD**[1], **Tanya Firemoon**[1], **Ashley Thomas, MPH**[1]

[1]NW Portland Area Indian Health Board, Portland, OR, USA

Abstract

117American Indians and Alaska Natives (AI/ANs) continue to be severely underrepresented in biomedical research, particularly in principal investigator roles. Efforts to decrease health disparities have shifted to building research capacity and training highly skilled AI/AN health researchers who can conduct quality research within their tribal communities. Funded by the National Institutes of Health and the Indian Health Service, the Northwest Native American Research Centers for Health (NW NARCH) program has offered financial support and mentorship to 149 AI/AN biomedical and public health graduate students for the past 15 years. In 2018, trainees were surveyed to track their progress and career development. Survey results confirmed that the financial support and mentorship available via the NW NARCH program were instrumental to their professional advancement. Support to AI/AN biomedical graduate students should continue not only to diversify the public health workforce, but also to address risk factors and health conditions that disproportionately affect AI/AN people.

Keywords

public health; research training; workforce diversity; underrepresented populations

Despite tribal, federal, and state efforts to improve health outcomes for Native populations, American Indians/Alaska Natives (AI/ANs) continue to experience significant health disparities compared to non-AI/AN. In fact, AI/ANs have a higher incidence of disease, injury, and mortality from preventable causes than other Americans (Indian Health Service, 2018; U.S. Department of Health & Human Services, 2015). This gap is further exacerbated by limited access to health care for a substantial proportion of tribal people, lower economic status for many, and underrepresentation in health research or health-related fields. Within the past decade, national efforts to decrease health disparities and improve AI/AN health have focused on building research capacity within indigenous communities by increasing the number of AI/ANs entering biomedical fields and those pursuing research careers,

Corresponding Author: Grazia Cunningham, NW NARCH Project Coordinator, NW Portland Area Indian Health Board, NPAIHB, 2121 SW Broadway 300, Portland, OR 97201, USA. gcunningham@npaihb.org.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

specifically in key principal investigator roles (National Center for Education Statistics, 2018; U.S. Department of Defense, 1998). Of those who received biomedical degrees in 2016, only 5% were from underrepresented minorities National Academies of Sciences, Engineering, and Medicine, 2018). According to education data from 2008–2016, AI/ANs have the lowest proportions of graduates in STEM (science, technology, engineering, mathematics) fields among minority groups (National Center on Education Statistics, 2017). In fact, AI/ANs are the most underrepresented minority in STEM fields and in higher education overall. Training AI/AN researchers to conduct well-designed community health research is essential to foster community trust in research, increase community participation in research, and create sustainable improvements in AI/AN health and life expectancy (Becker et al., 2005; James et al., 2013; Warne, 2006). Minority researchers in principal investigator roles have the trust of their community and tend to focus on those diseases or risk factors that disproportionately affect their communities (Ginther et al., 2011; Shavers et al., 2005).

Historically mistrustful of research and outside researchers, tribes are recognizing the value of community health research as a "tool of tribal sovereignty" (National Congress of American Indians, n.d.). Thus, many tribes understand the importance of training health researchers who are competent in the culture and traditions of their own communities. Gray and Carter (2012) coined the term *growing our own* to support the idea of developing AI/AN student researchers and professionals capable of working in their tribal communities and dedicated to reducing health disparities among tribal people. Despite this, many obstacles impede AI/ANs from attaining graduate degrees or pursuing research careers including family/personal challenges, limited financial resources, limited access to academic prep resources, and racial bias (Patterson et al., 2009). Funding agencies recognize the value of qualified AI/ANs in principal investigator roles in decreasing health disparities among tribal communities, but, American Indian and Alaska Native scientists and principal investigators continue to be the least funded racial/ethnic group of researchers (Buchwald & Dick, 2011; Shavers et al., 2005; Valentine, 2006).

Since 2000, the National Institutes of Health (NIH) and the Indian Health Service (IHS) have awarded Native American Research Centers for Health (NARCH) training grants to increase research capacity within the tribes and train highly skilled biomedical, behavioral, or population AI/AN scientists with the goal of better addressing the health needs of these communities (National Institute of General Medical Sciences, n.d.). Buchwald and Dick (2011) found that access to appropriate mentors and collaborative relationships with senior faculty or principal investigators encourages AI/AN graduate students to pursue advanced careers in health and research fields. A collaboration between the Northwest Portland Area Indian Health Board (NPAIHB) and Oregon Health & Science University (OHSU), the Northwest NARCH (NW NARCH) program has provided financial support and mentorship to AI/AN graduate students and public health professionals pursuing community health research careers since 2001. The overall goal of the NW NARCH program is to develop highly skilled AI/AN health researchers—particularly in principal investigator roles—focused on population health research in areas of concern to tribal communities. Federal investment in the NW NARCH has exceeded $7 million since inception of the program. Central to the NW NARCH is its focus on building "true capacity" (Chino & DeBruyn,

2006) within indigenous communities by encouraging award recipients to direct their own research paths and focus on areas of specific concern to their own tribal populations—a recommended strategy for creating sustainable interventions and programs in indigenous communities (NCAI Policy Center, n.d.). We have found that most native students answer the call to return to their tribes, preferring to conduct research within their tribes or tribal organizations. In all, the NW NARCH has supported the professional advancement of 149 AI/AN graduate students and employees in public health and/or biomedical research. In 2015, our group published results of an independent evaluation of the NW NARCH program from 2001 to 2014 (Zaback et al., 2015). Here, we present follow-up data on NW NARCH trainees through 2018.

About the NW NARCH Program

A detailed description of the NW NARCH program can be found elsewhere (Zaback et al., 2015). Briefly, the program focuses on two goals: (1) recruiting and supporting aspiring AI/AN researchers from various levels, including postdoctoral students, graduate students, medical students, and tribal employees and (2) training AI/AN health researchers with the skills and practical tools to conduct community health research. Table 1 briefly summarizes the various levels of awards available through the NW NARCH program. It is important to note that only one 4-year cycle included financial support for faculty career development, thus only nine trainees have received faculty career development funds to support workshops, seminars, and travel to professional meetings. The majority of support for remaining cycles has been earmarked for graduate students (e.g., Fellows and Scholars) who require the most assistance with tuition and supplemental education costs.

Method

We used a self-reported survey of trainee accomplishments. All past and current NW NARCH trainees (n = 149) were emailed biweekly over a 3-month period and asked to complete an online survey. The survey consisted of 13 questions that attempted to assess professional achievements, including presentations, publications, grants awarded, earned degrees, and professional positions. In those situations where emails were undeliverable, we conducted internet searches or used our extensive network of professional contacts to obtain valid contact information. Phone calls were made to update information and encourage completion of the survey. All trainees were emailed or called to confirm receipt of the survey and/or to encourage survey completion. When possible, we verified self-reported data with CVs (curriculum vitae). To increase responses, we also provided an incentive for participants to complete the survey. Respondents were entered in a raffle to win a framed print of NW Coast tribal art.

Results

Sixty-three of 149 NW NARCH award recipients responded to the survey (42.3% response rate). Twenty-five emails were undeliverable. Despite our best efforts to track down those individuals, we were only able to personally connect with 15 individuals. Internet searches of trainees revealed that a majority still worked in tribal health.

Education Levels

Figure 1 presents education levels reported by respondents. Survey respondents consisted of 37 Fellows, 18 Board Scholars (who are full-time employees of the NPAIHB), two Faculty career development fellows and six Interns. Fifty-three respondents reported on education. A majority of respondents reported having a master's in public health (n = 23, 43.4%) and doctoral degrees (n = 14, 21.5%). Others reported BA/BS (n = 6, 9.5%), MPH/MD (n = 2, 3.2%) degrees.

Fourteen trainees were currently working toward a degree at the time of the survey. Six (42.8%) were enrolled in a doctoral program; five (35.7%) were currently working toward an MPH. Two trainees reported being enrolled in dual master's programs.

Focal Areas in Indian Health

Trainees were asked to report the area of tribal health in which they currently work. As shown in Figure 2, areas of focus included biomedical research (n = 22, 36.7%), behavioral health (n = 19, 31.7%), and cancer (n = 16, 26.7%). More than half of respondents reported working in "Other" areas of Indian health. Most commonly reported among these respondents included public health systems practice and policy (n = 4), maternal and child health (n = 4, 6.3%), health disparities (n = 2, 3.2%), epidemiology (n = 2, 3.2%), and program evaluation (n = 2, 3.2%). Several trainees reported working in other areas such as HIV, tobacco, community health, and medical anthropology/cultural awareness (n = 1 per area).

Forty-nine people responded about their employer. The majority reported working for academic institutions (n = 19, 38.8%), Tribal Epidemiology Centers (n = 13, 26.5%), and Tribal Health Boards (n = 10, 20.4%). IHS (n = 3, 17.6%) and City or County government (n = 4, 23.5%) employers were most commonly reported among those respondents who chose the "other" category.

Professional Accomplishments

National or Local Presentations.—Dissemination of research findings to key stakeholders is an invaluable part of health research. Of the 63 respondents, a vast majority (82.5%) reported presenting at various national or local events since receiving NARCH program funding. A summary of trainee presentations is presented in Table 2.

Four trainees also reported presenting at other venues, including the History of the Oregon Tribes for the State of Oregon, 2017 Spirit of Eagles Conference, NARCH Cancer Fellowship Training Fall Institute (2018).

Publications.—NW NARCH trainees recognize the importance of publishing for a successful career as a researcher. Thirty-four trainees reported having published their work. Combined, these individuals authored more than 100 publications. Table 3 summarizes these publications.

Grant Writing.—Twenty-one NW NARCH trainees answered questions about grant writing and submissions. Eleven trainees applied for and received at least one grant. We verified funding information with CVs for 10 respondents. In one case, where a CV was not provided, we verified grant information via their professional website. We excluded grants that did not appear to be health-related. Nine trainees received a collective total of 35 federal grants and nine foundation grants. Other grants listed included three association grants and two subcontracts with tribes. Individuals reported federal funding from the NIH, IHS, Centers for Disease Control and Prevention, Office of Minority Health, Substance Abuse and Mental Health Services Administration, for example. Eight respondents were principal investigators on federal grants; two were coinvestigators.

Facilitating Factors and Barriers to Development

Trainees were asked to identify all the factors that influenced their professional development. Sixty trainees selected facilitating factors. Access to supportive mentors (93.3%), to professional development opportunities (86.7%), and to scholarship/training opportunities (83.3%) were the most important facilitators to their development. Fifty respondents reported barriers to their development. The most commonly reported barriers were limited financial resources (66.0%) and family-related challenges (66.0%). Lack of appropriate mentors was seen as barrier to advancement for some respondents. One respondent shared that they would “love more connection with AIAN/Indigenous mentors to validate experiences or navigate the systems . . .” Table 4 summarizes facilitating factors for and barriers to success as reported by survey respondents.

Trainees explained other barriers including “culturally specific leadership programming” and “individual career support” to help reach their goals. Three trainees cited bias against indigenous people as a barrier to achieving their goals at University.

Discussion

Despite targeted efforts to increase the number of minority health researchers, American Indian and Alaska Natives continue to be the most underrepresented minority in biomedical and health fields, particularly in principal investigator roles. In part, this can be explained by the small numbers of AI/ANs pursuing graduate studies in the sciences. In 2015–2016, AI/ANs made up 0.5% of all master’s level students, 0.4% of all doctoral students, and 0.3% of life sciences doctoral students (National Center for Education Statistics, 2017). Encouraging AI/ANs to pursue careers in health research should increase the number of culturally competent researchers who focus on reducing and eliminating health disparities in their tribal communities (Shavers et al., 2005). Since 2001, the NIH-sponsored NW NARCH program has provided financial assistance and mentorship to AI/AN graduate students interested in becoming skilled health researchers.

Current follow-up data confirm 2010 survey results and demonstrate how vital NW NARCH support is to promising AI/AN health researchers. In general, NW NARCH award recipients have been successful in their graduate and/or postgraduate pursuits and in meeting benchmarks of success for researchers: for example, writing grants, receiving grant awards, publishing research, and presenting on both the national and local levels. Overall, our

results showed that all levels of award recipients have attained their goals by completing or pursuing graduate/postgraduate studies, publishing manuscripts, and presenting at regional or national meetings. Even though only a small number answered questions about grant submissions, the majority of respondents reported securing funding from federal sources and foundations. This was similar to findings by Zaback et al. (2015). Overall, we have had remarkably successful trainees—particularly nonfaculty members—who have secured significant awards from pools of funding aimed at tribal applicants. For those fellows and scholars who are currently in graduate programs, the continued mentorship and financial support provided via NW NARCH is essential to their development and success as students and researchers. The benefits of this type of mentoring relationship for minority researchers has been demonstrated by other studies (Kreuter et al., 2011); the lack of which has been linked with failure to complete graduate programs and meet career goals (Patterson et al., 2009). In our follow-up survey, respondents stressed that the NW NARCH program was a major facilitator in their career or educational progress. “Being a NARCH fellow is a critical factor in my personal professional development,” said one respondent. Another noted “The NARCH fellowship I received was instrumental in supporting the completion of my PhD. Other support from RWJF was key to securing a faculty appointment and promotions.” Survey respondents specifically mentioned the lack of supportive mentors as a hurdle to their success. Several respondents called out “supposed mentors who were unsupportive” and “implicit bias of nonnative mentors” as barriers to their educational or career development after graduating from the NW NARCH program.

To track the professional achievements of NW NARCH award recipients, we created a database of all our trainees in Microsoft Access and have attempted to monitor their careers over the past 15-year period. Despite repeated efforts to reach trainees—which included multiple emails, internet searches, phone calls, and tapping our network of professional contacts—the 2018 follow-up survey response rate (42%) was significantly lower than the 2010 follow-up (83%). In part, this is due irregular updating of records due to limited staff or resources and reliance on trainees to update program managers of any changes. To address this issue in the future, we are considering ways to facilitate how trainees update their own information including access to an online database via our website, blog submissions, and requiring trainees update us with any changes via signed contract (for a period of time). We plan to improve our outreach efforts with regular and consistent contact via phone, email, online professional development websites, and/or social media.

The strengths of the NW NARCH program continue to include our ability to recruit promising AI/AN graduate students and maintain a strong network of national tribal contacts dedicated to the development of highly skilled AI/AN researchers. We have had only seven individuals fail to meet education goals while supported in our program. Despite this, we are proud that most of our trainees—even those who did not meet their educational goals—actively work in tribal health for tribal organizations and/or conduct quality health research in areas specific to the needs and priorities of their tribal community. The financial support and mentorship available to these promising researchers as NW NARCH trainees were major facilitators to their professional development and success. In the first evaluation, Zaback et al. (2015) concluded that the financial support provided by the NW NARCH was

the “most significant contributing factor of success for the NW NARCH program.” (p. 92). This continues to be true, as evidenced by testimonials of award recipients in our survey.

The limitations of our findings include a low response proportion, an emphasis on traditional benchmarks of success (e.g., publications) versus other measures (e.g., advocacy campaigns or policy development), and lack of in-depth trainee and mentor qualitative assessment of the program. The low response was a disappointing result of this survey and a marked difference from the first follow-up survey (Zaback et al., 2015). A great deal of time was spent performing online searches and phone calls in an attempt to secure responses, but even when contact was made, it did not translate into an increase in response rate for reasons that are not entirely clear. It is possible the incentive was not alluring, the trainees were too busy, or they did not fully appreciate the value of this evaluation. PubMed searches of nonresponders could have resulted in information about publications and should be completed in the future. Earlier cycles of NW NARCH relied on trainees to report address changes to program managers. Recent cycles of NW NARCH have required award recipients (via signed contract) to update their contact information with program managers and to respond to evaluation surveys twice a year. This has resulted in better communication between trainees and program managers, and a better understanding of trainee development. We did not validate the trainee responses in any manner, such as Ovid searches for articles. Only a few respondents provided their CV for cross-referencing purposes. Additionally, our findings may not be generalizable to other groups of AI/AN graduate students or fellows in other training programs. Last, our analysis was simply descriptive, although more sophisticated modeling techniques may not be appropriate for this type of report. Despite these limitations, the value of the NW NARCH program on overall professional development for aspiring AI/AN researchers was still evident. We would make a strong case for continued federal funding, not just of our own program, but for other similar programs that serve tribal students at multiple levels of academic pursuit. Personal testimonials confirm this (Figure 3):

Acknowledgments

We thank all the mentors and staff who supported our NARCH trainees and guided them toward their goals.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This training grant was supported by the NIH/NIGMS and the Indian Health Service Native American Research Centers for Health (NARCH) program to the Northwest Portland Area Indian Health Board (NPAIHB) (U26IHS300003) and (U26IHS300415). The CDC-funded Center for Healthy Communities (1 U48DP001937) also provided support.

References

Becker TM, Dunn E, Tom-Orme L, & Joe J. (2005). Cancer control research training for native researchers: A mode for development of additional native researcher training programs. American Indian Culture and Research Journal, 29(2), 75–83. 10.17953/aicr.29.2.1164480n016721u6

Buchwald D, & Dick RW (2011). Weaving the native web: Using social network analysis to demonstrate the value of a minority career development program. Academic Medicine, 86(6), 778–786. 10.1097/ACM.0b013e318217e824 [PubMed: 21512364]

Chino M, & DeBruyn L. (2006). Building true capacity: Indigenous models for indigenous communities. American Journal of Public Health, 96(4), 596–599. 10.2105/AJPH.2004.053801 [PubMed: 16449598]

Ginther DK, Shaffer WT, Schnell J, Masimore B, Liu F, Haak LL, & Kington R. (2011). Race, ethnicity, and NIH research awards. Science, 333(6045), 1015–1019. 10.1126/science.1196783 [PubMed: 21852498]

Gray JS, & Carter PM (2012). Growing our own: Building a Native research team. Journal of Psychoactive Drugs, 44(2), 160–165. 10.1080/02791072.2012.684632 [PubMed: 22880544]

Indian Health Service. (2018). Fact sheet: Disparities. https://www.ihs.gov/newsroom/factsheets/disparities/

James RD, McGlone West K, & Madrid TM (2013). Launching Native health leaders: Reducing mistrust of research through student peer mentorship. American Journal of Public Health, 103(12), 2215–2219. 10.2105/AJPH.2013.301314 [PubMed: 24134376]

Kreuter MW, Griffith DJ, Thompson V, Brownson RC, McClure S, Scharff DP, Clark EM, & Haire-Joshu D. (2011). Lessons learned from a decade of focused recruitment and training to develop minority public health professionals. American Journal of Public Health, 101(S1), S188–S195. 10.2105/AJPH.2011.300122 [PubMed: 21551376]

National Academies of Sciences, Engineering, and Medicine. (2018). The next generation of biomedical and behavioral science researchers: Breaking through. National Academies Press.

National Center for Education Statistics. (2018). Condition of education: Characteristics of postsecondary students. https://nces.ed.gov/programs/coe/indicator_csb.asp

National Center for Education Statistics. (2017). Table 318.45: Number and percentage distribution of science, technology, engineering, and mathematics (STEM) degrees/certificates conferred by postsecondary institutions, by race/ethnicity, level of degree/certificate, and sex of student: 2008–09 through 2015–16. Digest of Education Statistics. https://nces.ed.gov/programs/digest/current_tables.asp

National Congress of American Indians. (n.d.). NCAI Policy Research Center. http://www.ncai.org/policy-research-center/research-data/introduction-to-research

National Insitute of General Medical Sciences. (n.d.). Native American research centers for health research. https://www.nigms.nih.gov/capacity-building/division-for-research-capacity-building/native-american-research-centers-for-health-(narch)

National Research Council. (2012). Expanding underrepresented minority participation: America's science and technology talent at a crossroads. National Research Council and National Academies Press. https://onlinelibrary.wiley.com/doi/epdf/10.1002/sce.21032

Patterson DG, Baldwin LM, & Olsen PM (2009). Supports and obstacles in the medical school application process for AI/AN. Journal of Health Care for the Poor and Underserved, 20(2), 308–329. 10.1353/hpu.0.0150 [PubMed: 19395832]

Shavers VL, Fagan P, Lawrence D, McCaskill-Stevens W, McDonald P, Browne D, McLinden D, Christian M, & Trimble E. (2005). Barriers to racial/ethnic minority application and competition for NIH research funding. Journal of the National Medical Association, 97(8), 1063–1077. [PubMed: 16173321]

U.S. Department of Defense. (1998, November). Initiative for biomedical and behavioral minority research: Final Report of the Planning Process and Consensus Recommendations.

U.S. Department of Health & Human Services. Indian Health Service. (March 2015). Trends in Indian health: 2014 edition. https://www.ihs.gov/sites/dps/themes/responsive2017/display_objects/documents/Trends2014Book508.pdf

Valentine HA (2006, June 9). NIH AA/B funding disparity working group: Findings and recommendations. NIH ACD Meeting. https://diversity.nih.gov/sites/coswd/files/2016-09/AA-B-funding-disparities.pdf

Warne D. (2006). Research and educational approaches to reducing health disparities among American Indian and Alaska Natives. Journal of Transcultural Nursing, 17(3), 266–271. 10.1177/1043659606288381 [PubMed: 16757666]

Zaback T, Becker T, & Kennedy JRB (2015). Accomplishments of a training support program for American Indian and Alaska Native health researchers. American Indian Culture and Research Journal, 39(1), 83–94. 10.17953/aicr.39.1.b42p6267p5222p11

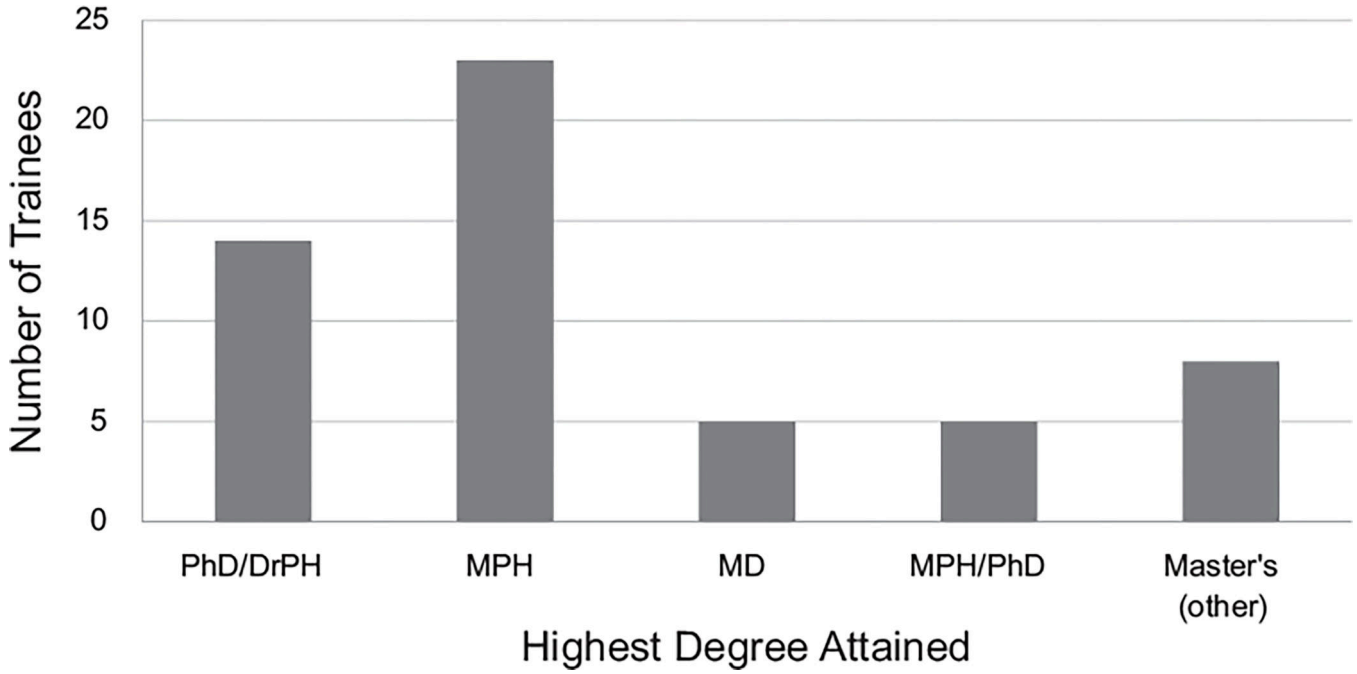

Figure 1.

Highest Level of Education Reported by NW NARCH Trainees, 2018 Follow-Up Survey (n = 53).

Note. NW NARCH = Northwest Native American Research Centers for Health.

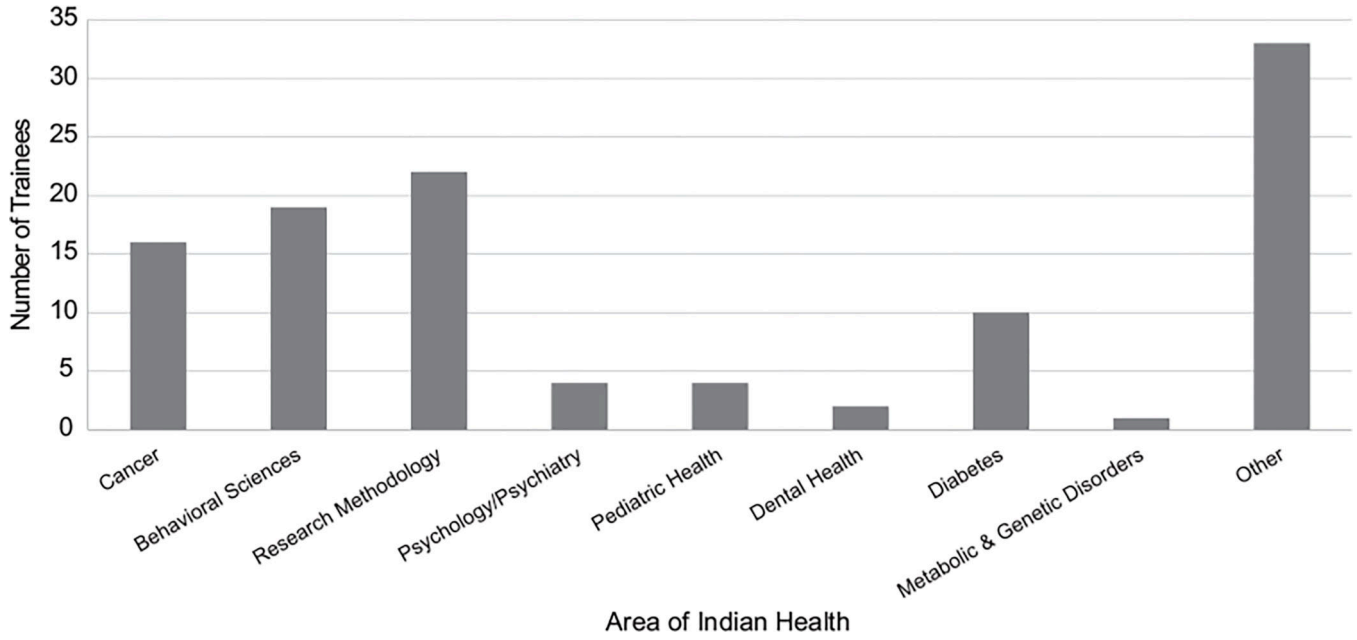

Figure 2.

Area of Expertise in Indian Health, 2018 NW NARCH Trainee Follow-Up Survey (n = 60).

Note. NW NARCH = Northwest Native American Research Centers for Health.

Figure 3 -

NW NARCH Testimonial – Danica Brown, PhD

Note. NW NARCH = Northwest Native American Research Centers for Health.

Danica Love Brown, PhD, is a citizen of the Choctaw Nation of Oklahoma, born and raised in Northern New Mexico. She recently received her Doctorate in Social Work and Social Research at Portland State University. Dr. Brown was a Northwest Native American Research Center for Health (NW NARCH) fellow from 2015–2018, an Indigenous Substance Abuse Medicines, and Addictions Research Training (ISMART) fellow and Council of Social Work Education, Minority Program fellow. Her research has focused on Indigenous Ways of Knowing and Decolonizing Methodologies to address historical trauma health disparities in Tribal communities. Currently, she is the Behavioral Health Manager with the Northwest Portland Area Indian Health Board. focusing her work on the Tribal Opioid Response projects, the Northwest Tribal Juvenile Justice Alliance and the Behavioral Health Aid programs.

Table 1

NW NARCH Award by Type, Recipients, and Purpose

Award Type	Recipients	Purpose/Description
Faculty Award	Postdoctoral AI/AN trainees interested	Increase research capabilities of postdoctoral AI/AN trainees to conduct well-designed research in tribal communities
Fellow Award	Masters and Doctoral students to ensure graduation.	Provide financial assistance and mentorship thru assigned research projects. Award amounts: $28,000-$37,000.
Scholar Award	NPAIHB Native and non-Native employees seeking additional career-related research skills	Up to $5,000 awarded to NPAIHB researchers/year
Intern Award	Medical/Public Health students working on short term projects	Paid hourly wage. Short term.

Table 2

Number of Professional Presentations Since Enrollment in the NW NARCH Program, 2018 NW NARCH Trainee Follow-Up Survey (n=52)

	Faculty	Fellow	Scholar	Intern	Total
Local Community Setting (Workshop, Conference)	1	20	14	2	38
Regional Setting (Workshop)	2	20	13	2	37
Tribal Health Board		7	11	1	19
Tribal Conference	1	16	17	2	36
Institutional Review Board	1	6		2	9
Abstract at National Conference	2	8	10	1	21
Poster at National Conference	2	12	8	1	23
Total	**9**	**89**	**73**	**11**	**183**

Table 3

Publications Written Since Enrollment in NW NARCH Program, 2018 NW NARCH Trainee Follow-Up Survey (n=34)

	Faculty	Fellow	Scholar	Intern	Total
Book chapters	2	5	4	2	14
First/Second author in peer-reviewed journal	2	15	5	2	24
Contributor in peer-reviewed journal	1	15	7	1	24
Author in non-peer reviewed journal (magazines, newspapers)	1	4	5	2	12
Newsletter article (e.g. Tribal Health Board newsletter)	1	6	10	0	17
Brochure (educational or program	1	3	6	3	0
Online publication		5	4	0	9
Other (e.g. Curricula, Textbook, Policy Brief, Community Report)		1	2	1	5
Total	**8**	**54**	**32**	**11**	**105**

Table 4-

Self-Reported Facilitators and Barriers to Professional Development, 2018 NW NARCH Trainee Follow-Up Survey (n=60)

Facilitators to Success	
Factor	**Frequency (Percent)**
Supportive Mentors	56 (93.3%)
Access to Professional Opportunities (e.g. conferences)	52 (86.7%)
Scholarship/Training Opportunities (including NARCH)	53 (88.3%))
Flexible Work schedule	40 (66.7%)
Other institutional support	26 (43.3%)
Barriers to Success	
Factor	**Frequency (Percent)**
Limited financial resources	34 (68.0%)
Family related challenges	34 (68.0%)
Lack of appropriate mentors	18 (36.0%)
Other institutional barriers (e.g. timeframe to complete studies)	12 (24.0%)
No/limited access to professional development opportunities (conferences)	9 (18.0%)