



Strong Heart Study Newsletter

Investigating Cardiovascular Disease in American Indians

Updates for Community Members and Strong Heart Study Participants

Volume 34, Issue 1 Spring 2024

The 2024 Wellness & Research in Indian Country Symposium

April 16th-18th, Rapid City, South Dakota

Mountains appeared when I looked down from the airplane window. We were arriving at the Rapid City Regional Airport. In the next three days, the **2024 Wellness & Research in Indian Country Symposium** would be held here. The hosts of the symposium were the Strong Heart Study (SHS) Dakota Field Center and the Avera Research Institute.

Entering the Dahl Arts Center the next morning, I felt energized by the bustling conference rooms. After welcome and blessing, presenters from local communities and academic institutes across the country discussed the findings of their research projects.

Water safety and the link between environmental issues and health attracted a large audience. Drs. Navas-Acien, Bostick, and Ms. Martinez-Morata from the Columbia Mailman School of Public Health presented their research findings from the SHS Water Study. Dr. Erdei from the University of New Mexico and Dr. Hoover from the Arizona State University participated in the presentations virtually. Maternal and pediatric health, nutrition, CPR & heart health, spirituality and health, strong Lakota family, and determinants of health were other topics of the symposium.

Ms. Cecelia Fire Thunder (Oglala Lakota Nation) from Ma.píya Lúta & Native Wellness Institute, Dr. Umans from the Georgetown University, and Dr. Elliott from Avera Research Institute hosted the panel discussion about **how research served Native communities**. Mr. Jeff Mowrer (Cheyenne River Sioux Tribe) from the SHS Community

Advisory Group, Dr. Fretts (Eel Ground First Nation, Mi'kmaq) from the University of Washington, and Dr. Navas-Acien hosted another panel discussion on the same topic the other day. As an academic researcher, hearing firsthand from community members about the impact of our research projects is a rare privilege.



On April 18th, we participated in a **Student Science Day** hosted by the Crazy Horse School in the Pine Ridge Indian Reservation. During their science class hour, elementary middle, and high school students rotated through stations hosted by SHS researchers to learn about blood flow and heart pumping, heart health numbers, disease transmission, organ transplants, smoking and health, robotics, water purification, CPR, DNA sequencing, and yoga and mind.

Students were interested in the topics and talked to researchers about their own life stories. At the end of the Science Day, I felt that I learned more from students than I could offer to them.

We met tribal elders, artists, and youth in the symposium. They impressed me with their kindness, open-mindedness, and their urgency to preserve their culture, elders, and youth. More community based participatory research should be conducted in Indian country, not less, was the thought I brought back from Rapid City. **-Ying**



We would like to recognize and celebrate Dr. Amanda Janitz (Choctaw Nation of Oklahoma) for her efforts in a cancer research project, which is a spin-off from the Strong Heart Study. Her work has led to her selection for the 'NCI Early

Investigator Advancement Program' for the upcoming year!

THE FUTURE OF STRONG HEART STUDY: MARY MOHR, PHD

WRITTEN BY: MARY MOHR, PhD & CHERMIQUA TSOSIE

When she was in 3rd grade, Mary Mohr **(Pictured right)** was already dreaming about changing the world. She recalled a memory from her upbringing that shaped her desire to pursue a prestigious degree, a doctorate in Biomedical Sciences.

When Mary's elementary school principal attained his doctorate in education she was confused as to what his duties would now entail. Mary's father explained the principal was a different type of doctor—a PhD. Her father explained that her principal cared so much about education he committed his life to learning about it.

"I knew from then on that I wanted to care so much about something that I committed my life to learning about it"

Mary is a descendant of the Oneida Nation of Wisconsin. Her maternal grandfather played a tremendous role in her life and was the closest connection to her Oneida heritage. Although he was unable to finish high school, he wanted education for his descendants. He passed these wishes onto Mary's mother who with her father, inspired a passion for education.

As a teenager, Mary was diagnosed with supraventricular tachycardia and had to undergo two ablations. Undergoing these procedures, Mary gained firsthand knowledge of being a cardiovascular patient. In her family medical history, cardiovascular disease was a consistent aggressor.

Having personally discovered what she cared most about, shaped her career aspirations. These experiences fostered a passion to work in cardiovascular research and work with indigenous populations to better understand the complexities of cardiovascular health. Most of all, it meant understanding her family's history.

During her journey to achieving her PhD, Mary overcame several obstacles. Moving away from her home in Green Bay, WI, for undergraduate and graduate training, Mary often dealt with a deep disconnect from her family.

Carrying out her endeavors, she learned to adapt and found ways to maintain relationships despite the demand from her work. Throughout



her professional training, Mary faced the discrediting of her expertise because of her tribal affiliation. In spite of it all, Mary remained focused. Personal experiences caused Mary to

reevaluate her values and beliefs despite what science and academia value. Being able to handle both scientific information and individual experience, makes Mary more solution focused.

This past November, Mary was welcomed into the Strong Heart Study family as a Research Scientist. "The position was a perfect fit and exactly aligned with my career goals," Mary states. She found the Strong Heart Study appealing for its commitment to Native American cardiovascular health.

Mary believes that the work SHS does helps Native American communities, like her own, to make decisions about health. Through SHS, indigenous communities are able to create community-based initiatives to combat cardiovascular disease.

Mary's hope for the future is to encourage more indigenous people to attain prestigious degrees. With these wishes, Mary adds some caution, "I want to encourage more indigenous folks to get their PhD but I also want them to be fully aware and prepared for the long hours and years working towards the degree." Mary emphasized the need for a strong support systems, and self-determination are key to succeeding. Mary believes that as indigenous people we already are naturally resilient and have support systems in place.

As resilient as her parents and grandparents, Mary embarks on a new chapter in her academic journey. An exciting endeavor that allows her to learn about other tribes, and connects her back to her Oneida roots.

IDASHBOARD FOR TRIBAL LEADERS



The iDASH team composed of researchers from Yale University and the University of California San Diego, in collaboration with Strong Heart Study (SHS), is working to provide privacy-protecting solutions to allow an overview of SHS data, by authorized researchers, without the need to download data of individual participant.

When discussing how this system would work for researchers, the iDASH team was encouraged to think about a way to also provide tribal leaders with access to a similar tool, with the purpose of comparing their health data with those of other SHS tribal communities as a whole, also in a privacy-protecting manner.

As a result, the iDASH team is developing the iDASHboard for tribal leaders. In this dashboard, authorized leaders will be able to obtain simple statistics about their population, and better understand whether the health of their community is above or below benchmarks obtained by averaging all other SHS tribal communities. The figure below shows an example of pie charts showing a hypothetical distribution of Chronic Kidney Disease for a particular Tribe (*My Tribe*) and for All Other SHS Tribes combined (**Figure 1-1.5**).

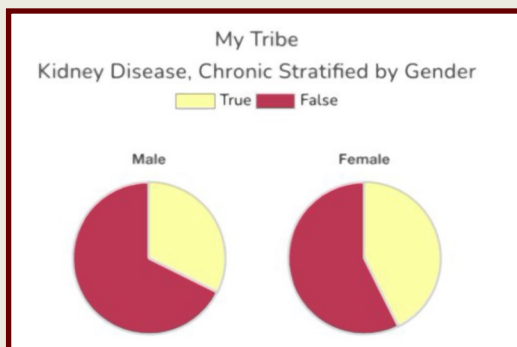
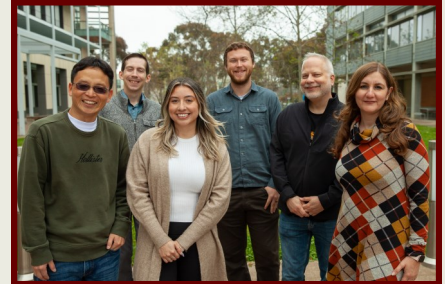
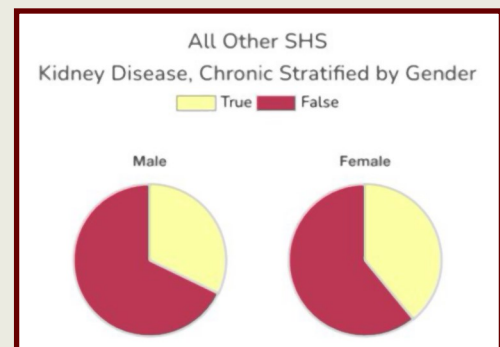


Figure 1-1.5. Comparison of Kidney Disease at *My Tribe* and All Other ones in the StrongHeart Study (SHS).



Bar charts are also available for comparison of numeric data, such as average systolic blood pressure according to gender and hypertension treatment (**Rx**) (**Figure 2-2.5**). In this example, in *My Tribe* there is a higher proportion of females with this condition than on the All Other SHS Tribes.

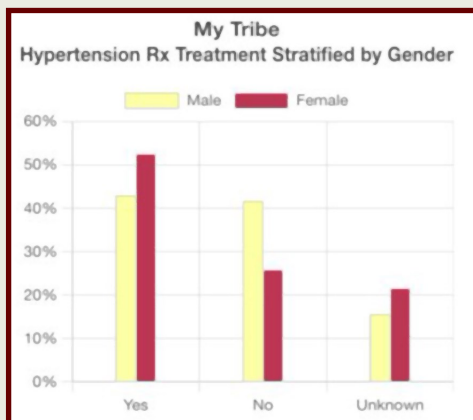
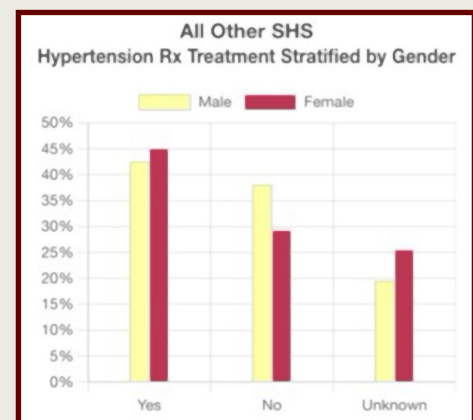


Figure 2-2.5. Comparison of Males and Females on treatment (Rx) for hypertension or not on treatment, at *My Tribe* and all other SHS ones.

In this example, in *My Tribe* there is a higher proportion of females on treatment for hypertension than males. A similar, although less noticeable difference, is observed in all other SHS Tribes.



The grant that is funding this project will be completed soon, at which time we expect to apply for continuing funding to improve the system and have the system deployed and ready for evaluation.

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Research Findings: Lipid Disorders in Youth and Young Adults of the Strong Heart Study

An article, published by the Strong Heart Study (SHS) team, entitled "**Dyslipidemia in American Indian Adolescents and Young Adults: Strong Heart Family Study**" has attracted attention from health care providers and researchers nationwide and internationally.

More than 1,400 participants, ages 15-39, were followed in 2001-2003 and again in 2020. At the beginning of the study, 55% of participants ages 15-19 had abnormal cholesterol levels, as did 74% of those ages 20-29, and 78% of those ages 30-39.

About 40% of study participants had high LDL levels (at least 100 mg/dL), while nearly 3% had very high levels (at least 160 mg/dL). However, less than 2% of participants with very high LDL cholesterol took cholesterol-lowering medication at the start of the study.

The National Institute of Health (NIH) published a news release on March 6, 2024 to highlight the importance of cholesterol screening and education in the younger generations. The American Heart

Association published a news release on March 13, 2024

In February 2024, after the online publication of this article, SHS researchers submitted a grant application to conduct interventions aimed at improving lipid disorders in American Indian youth.

Thanks to the sacrifice, dedication, and commitment of study participants, community partners, researchers, and the funding agency, National Heart, Lung and Blood Institute (NHLBI), the SHS continues to identify important health issues and provide evidences for targeted intervention to improve cardiovascular health in American Indian communities.



Scan this QR Code to read the "**Dyslipidemia in American Indian Adolescents and Young Adults: Strong Heart Family Study**" article.