

Q&A: Homing in on the importance of diversity in research

October 11 2023, by Lynda De Widt, Mayo Clinic News Network



Credit: CC0 Public Domain

Hispanic Heritage Month pays tribute to the history, culture and traditions of Americans of Hispanic ancestry.

In this Q&A, Minerva Carrasquillo, Ph.D., a neurogeneticist at Mayo Clinic in Florida, shares a snapshot of her current research and why she believes fostering diversity in research is critical.

What is your research focus and what are you working on now?

I am an assistant professor and associate consultant in the Department of Neuroscience at Mayo Clinic in Florida. I also serve as our department's equity, inclusion and diversity leader, and associate director of the Undergraduate Biomedical Research Internship program.

My research is focused on the identification of genomic and [environmental risk factors](#) that may inform the development of effective therapies and accessible biomarkers for Alzheimer's disease, with special emphasis on underrepresented populations that are at greater risk of developing it, such as Hispanics/Latinos and African Americans.

What is your background, and how did you develop an interest in becoming a researcher?

I was born and raised in Bayamón, Puerto Rico. I left the island when I was 18 years old to attend Trinity College in Hartford, Connecticut.

Ever since I was first introduced to the biology of the human body in

eighth grade, I have been fascinated by the ability to maintain or restore health through scientific knowledge. Since that moment, I became certain that I wanted to become a doctor. I completed all pre-med requirements in college, but after I was exposed to [biomedical research](#) during the summer after my sophomore year, I realized how exciting and rewarding pursuing a career in science would be, as it holds the potential of finding novel and better treatments.

You are actively involved in the Sangre Por Salud Biobank, and you recently conducted a study that searched for genetic variants associated with dementia risk. What did your research team find?

We utilized existing [genomic data](#) from the Sangre Por Salud Biobank to test the association of variants located in or near the APOE gene with cognitive impairment and hyperlipemia in this cohort, which is primarily composed of Mexican American study participants.

Consistent with its well-established effect on Alzheimer's disease risk, the e4 variant of the apolipoprotein E (APOE) gene showed a 1.5-fold increased risk of cognitive impairment in this cohort. We also found an association between a lower risk of hyperlipemia with a variant near the APOE gene, and this association appears to be independent of the e4 variant of the APOE gene. These results are intriguing but still need to be validated in an independent cohort.

Why is it important to have diversity in research?

The need for diversity in research is twofold. Not only do all populations need to be represented in the study cohorts, but there is also a need to have representation of all populations within the research team.

Prior research has shown that therapies may not be equally effective across individuals from different genetic backgrounds, and in some

cases, treatments developed for one demographic have been shown to be harmful to another.

Moreover, recruitment and retention of study participants have been shown to be more effective when the research team includes individuals who can relate to the study participants at the cultural level, and when study teams who are diverse have a deeper appreciation for varied perspectives—which in turn boosts innovation and leads to more effective approaches.

How does having more diverse people and biosamples for research benefit patients?

A personalized medicine approach is deemed the gold standard of medical care. This is because individuals are unique, with their own sets of genetic susceptibilities and lifetime exposures that contribute to their unique risk of diseases. Therefore, it is imperative that research studies include as many study participants from as many backgrounds as possible to ensure that the study outcomes are of benefit to all groups.

My research program is tackling these needs by enhancing the participation and inclusion of two populations that have been historically underrepresented in biomedical research: Hispanics/Latinos and African Americans. These efforts are being supported by two grants that I was awarded by the National Institute on Aging this year as a co-principal investigator.

These grants support the Mayo Advancing Research Equity in AD/DRD Study in Jacksonville (MAREAS-Jax) and Centrally Linked Longitudinal Peripheral Biomarkers of AD in Multi-Ethnic Populations (CLEAR-AD) programs, which focus, respectively, on building infrastructure to improve recruitment and retention of Hispanic/Latino and African

American study participants; and on the identification of novel biomarkers, and potentially therapeutic targets, for Alzheimer's disease through the generation and analysis of multiomics data from multiethnic cohorts, including Hispanics/Latinos and African Americans.

2023 Mayo Clinic News Network. Distributed by Tribune Content Agency, LLC.

Citation: Q&A: Homing in on the importance of diversity in research (2023, October 11) retrieved 27 April 2024 from <https://medicalxpress.com/news/2023-10-qa-homing-importance-diversity.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.