

Abstract

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Title: Improving Health and Reducing Disparities in Minority Populations with Precision Medicine and Pharmacogenomics

Introduction: There is marked underrepresentation of minority groups in the field of pharmacogenomics and precision medicine.

Objective: The primary objective is to assess the need for inclusion of minority groups in genetic testing for use in pharmacogenomics and precision medicine. The goal of increased inclusion of minority groups would hopefully lead to better outcomes of health (physical, mental, and social wellbeing) with the purpose of reducing health disparities.

Methods: This systematic review was conducted analyzing genomic data from primary and secondary databases. PubMed, CPIC Guidelines, GWAS Catalog, and other medical journals were analyzed to form a conclusion. All data analyzed was related to ethnic demographics and representation within the genomic databases.

Discussion: The history of healthcare for people of color greatly influences the quality of care that these minority groups receive. This history pertains to health insurance, the workforce in minority communities, medical education, racial attitudes, segregation, and discrimination in America. Many racial/ethnic groups have higher incidence of chronic disease, infectious disease, and mortality than white Americans. The approach to increased representation in pharmacogenomics and precision medicine will need to take these factors into consideration.

Conclusion: Ultimately the disproportionate representation in field of precision medicine places those affected at an extreme disadvantage, which increases health disparities among those populations. As shown by the examples in this article as well as other literature, inclusion of minorities in the Genome Wide Association Studies has helped the field of precision medicine and pharmacogenomics make exceptional advances which leads to positive impacts on the health of patients. Real efforts need to be implemented with a focus on prioritizing inclusion. These efforts must include cultural, geographic, linguistic, and genetic diversity, especially in Asian Americans and Hispanics. The healthcare system must gain the trust of underrepresented groups to help increase patient participation and willingness to adhere to precision medicine interventions.¹⁵