

An assessment for representation of people from ethnic and racial minorities in PGx clinical trials: a systematic literature review

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Background/Purpose

Pharmacogenetics plays a crucial role in the development of personalized medicine. By understanding how an individual's genetic makeup influences their response to drugs, healthcare providers can optimize treatments to maximize efficacy and minimize adverse effects. This review assessed the representation of people from ethnic and racial minorities in pharmacogenomics clinical trials.

Methods

A total of 79 clinical trials were screened by a group of reviewers (USC Mann School of Pharmacy Class of 2025) and data were extracted. In regard to quality assurance, all 79 clinical trials were then screened twice by two independent reviewers for quality control and reduction of review bias. 70 articles met the inclusion criteria where the article has to be a PGx (pharmacogenomic/pharmacogenetic) clinical trial. In further data analysis, studies containing PROs were excluded, 38 articles were identified. Data were collected and presented in shared Excel format and presented in diagrams generated by excel and python.

Results

Results show that the PGx trials (n=70) mainly included the white population (84.1%) and socioeconomic status was not reported. African Americans constitute the second largest ethnic group at 6.5%, followed by Asians at 4.8%, and Hispanics at 1.9%. Among 38 articles containing patient reported outcomes (PRO's), the top 3 categories are Quality of Life (QoL) (22%), mental health (11.9%) and Pain (8.5%) . After analyzing the articles, the primary focus of the disease states are as follows: Pain, Oncology, Psychiatry, Infectious Diseases, Chronic Diseases, Respiratory Diseases, GI, and various other minority diseases.

Conclusions

In regard to the primary research question as “describing the representation of people from ethnic and racial minorities in pharmacogenomics clinical trials”, results show that the current PGx clinical trials mainly enroll the white population and all other ethnicities are underrepresented.