Identification of barriers to and practical strategies for increasing clinical trial diversity: A scoping review.

Dominique Seo, MPH, Divya Patil, MS[1]; Jennifer Choi, PhD[1]; Emily F. Gorman[2]; Abdou Senghor[1]; T. Joseph Mattingly II, PharmD, MBA, PhD[3]

1. University of Maryland School of Pharmacy
2. Health Sciences and Human Services Library, University of Maryland, Baltimore, Maryland, USA.
3. Department of Pharmacotherapy, University of Utah School of Pharmacy, Salt Lake City, Utah, USA

Purpose

- Diversity in clinical trials is vital for generalizability, safety assessment, and equitable healthcare.
- Historically underrepresented groups (racial/ethnic minorities, older adults, low socioeconomic status (SES) individuals, Sexual and gender minority (SGM) populations) are often excluded.
- US Food and Drug Administration (FDA) and National Institutes of Health (NIH) have issued guidance promoting diversity plans in trials.
- The review focused on answering the following questions:
  - Which factors contribute to health disparity in clinical trial design phase?
  - Which factors influence health equity during clinical trial design phase?
  - Which tools are crucial and must be included in a clinical trial design protocol?
- This scoping review aims to identify practical strategies and resources to overcome persistent barriers to increasing clinical trial diverstiy.

Methods

- We completed a search of three databases: Embase, Medline, Cochrane Library (2009–2024)
- An initial search of the Embase database (Embase.com interface) was conducted on September 20, 2022. An update of the Embase search and a full search of Medline (Ovid interface) and the Cochrane Library (WileyOnline interface, includes Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Trials) was conducted on April 30, 2024.

Search Strategy

- The search strategies were developed by a health sciences librarian (EFG) and reviewed for accuracy and relevance by another health sciences librarian.
- Three separate search strategies were constructed for each database to address the following clinical trial components:
  1. engagement and planning
  2. assessment and evaluation
  3. training
- Articles were included if they were written in English, discussed tools or interventions to improve clinical trial diversity, and included discussion of minority groups
- Full-text review was equally distributed and reviewed among DS, DP, JC and AS, with all papers reviewed by TJM. Inclusion disagreements were discussed until consensus was reached.

Results

Study Selection

- A total of 1,481 records were identified through database searches, and after removing 361 duplicates, 1,120 records were screened by title and abstract (Supplementary Table 1).
- Of those, 300 full-text articles were reviewed, and ultimately 79 studies met inclusion criteria and were included in the final synthesis.

Quantitative Review

- Results for the quantitative review can be found in table 1
- The most common study design was evidence-based guidance (43%), followed by Evidence-based frameworks (24%), Randomized Controlled Trials (RCTs) (22%), qualitative studies (8%), case studies (3%), and mixed methods designs (1%)
- Nearly half (49%) of studies focused exclusively on recruitment
- About a quarter of studies covered both recruitment and retention
- About 9% focused on pre-recruitment and on all phases, including engagement.
- Retention-only strategies were reported in just 4% of the included studies
- Most studies (61%) targeted racial and ethnic minority populations, aligned with NIH-defined health disparity groups.

Table 1. Descriptive summary of quantitative variables for included studies (n=79)

	N	%
Study Design		
Evidence Based Guidance	34	43%
Randomized Controlled Trial	17	22%
Evidence Based Framework	19	24%
Qualitative	6	8%
Case Study or Series	2	3%
Mixed Methods	1	1%
Clinical Trial Phase		
All	7	9%
Pre-Recruitment	7	9%
Recruitment Only	39	49%
Recruitment/Retention	18	23%
Retention Only	3	4%
Engagement	2	3%
NIH Focus Population		
Racial and Ethnic Minority	58	61%
People with lower SES	13	14%
Sexual and gender (SGM) groups	2	2%
Underserved rural community	18	19%
Other*	58	61%

Columns may not add up to 79 because studies can contribute to multiple categories.
*Includes studies focusing on older adults, Individuals with impaired decision making, youth, and other academic positions (i.e. study coordinator, early-stage researcher, etc.)

Qualitative Review

- A qualitative review of included manuscripts (n=29) identified four key themes (Supplemental Table 2):
  - **Barriers to Participation**
    - Patient-level barriers: Most common and included financial stress, travel burdens, logistical challenges, and mistrust
    - Provider-level barriers: Included limited trial access in rural areas, informed consent issues, and lack of institutional support or culturally competent staff.

"Participants suggested videos or simplified consent forms would support decision-making for those with impaired capacity."[1]

"The financial, familial, and emotional resources needed for the travel prohibited most patients from participating, particularly those from marginalized communities.."[2]

  - **Strategies to Promote Participation**
    - Establish partnerships with community leaders and organizations
    - Use plain language, culturally relevant materials, and trusted messengers
    - Broaden eligibility criteria and adding trial sites to promote access to clinical trials
    - Workshops and outreach programs can improve perceptions and willingness to participate.
  - **Resources to Support Inclusion**
    - Cultural competency for staff and education on the importance of participation for communities
    - Include the use of telehealth tools, simplified consent forms, and recruitment databases

Results Cont.

"Electronic databases helped monitor community events and build long-term trust with community partners."[3]

Positive Outcomes

- Enhanced recruitment and retention
- Stronger community engagement and trust
- Increased use of digital tools to track and manage recruitment progress

Discussion

- Most research focused on racial/ethnic minority recruitment; gaps exist for SGM, rural, low SES, and non-English speaking populations
- Our review identified several gaps in the literature, stressing the need for an increased focus on tools for increasing recruitment of participants from racial and ethnic minorities, underserved rural communities, people with lower socioeconomic status, and SGM groups.
- More tools are also needed on tools applicable to assessment and dissemination of results. Increasing diversity in clinical trials could help increase the generalizability of results and will promote equity in clinical research.
- FDA/NIH guidance is helpful but needs broader demographic focus beyond race/ethnicity

Conclusion

- This review identified barriers to and facilitators/tools to increase clinical trial diversity in clinical trial protocol development and implementation.
- There are a variety of patient- and provider-level barriers that must be overcome to enhance equity in clinical trial participation
- Increasing diversity in clinical trials could help increase the generalizability of results and will promote equity in clinical research.

References

References are available upon request.

Supplement

Included studies and additional results are available upon request.

Contact Information: Dominique Seo, MPH
Department of Practice, Sciences, and Health Outcomes Research
University of Maryland School of Pharmacy, 220 Arch Street, 12th Floor, Room 01-409, Baltimore, MD 21201
(e-mail: dseo@umaryland.edu).