Tracking Demographic and Participation Trends Across BioResource Recruitment Over Time

Iyanuoluwa T. Soriyan

Background

The BioResource team developed a reporting database that integrates recruitment data with key demographic and socio-economic indicators, including the English indices of multiple deprivation.

While demographic snapshots have been previously available, this project focused on enabling time-based visualisation and analysis of participant recruitment trends to support strategic planning and inclusivity in research.

Inclusive health research is essential for ensuring that treatments and services meet the needs of diverse populations. When evidence is drawn from a broad range of communities, it can drive more effective and equitable health outcomes (1).

AIM

To create an interactive dashboard that enables exploration of trends in recruitment across ethnicity, age, gender, and deprivation over time, and supports better understanding of underrepresented populations within studies.

METHOD

Used Power BI to connect, clean, transform, perform data linkage and visualise demographic and participation data from NIHR BioResource database.

Analysis: Created multi-page dashboards

KEY FINDINGS

- **Trends reflect recent work to address representation**: Participants from most deprived areas and certain ethnic minority groups that have been previously underrepresented in health research are volunteering in greater proportions.

- **Pandemic-driven change**: There were notable increases in participation from deprived communities and greater diversity in age and ethnicity during and after the pandemic.

- **Flexible study design**: Online study types accounted for significant volumes, suggesting that flexible approaches can help reduce barriers to participation.

Why Is This Important

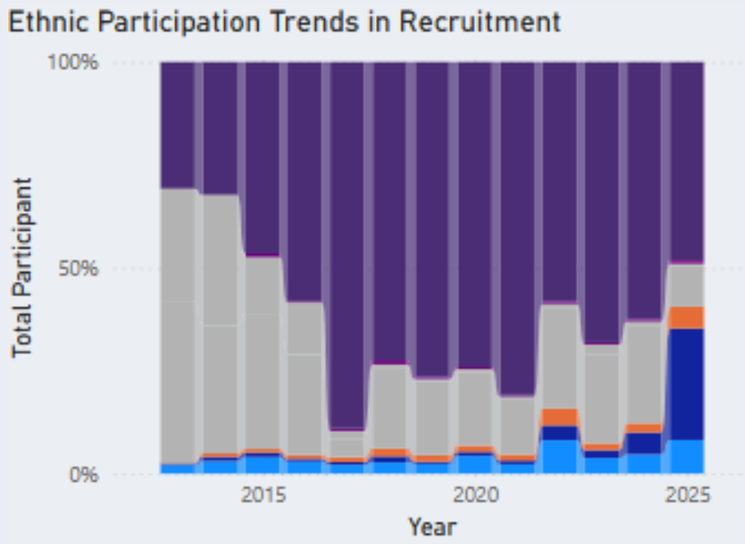
- **Enables strategic insight**: The dashboard goes beyond static snapshots, revealing time-based patterns that support data-driven decision making.

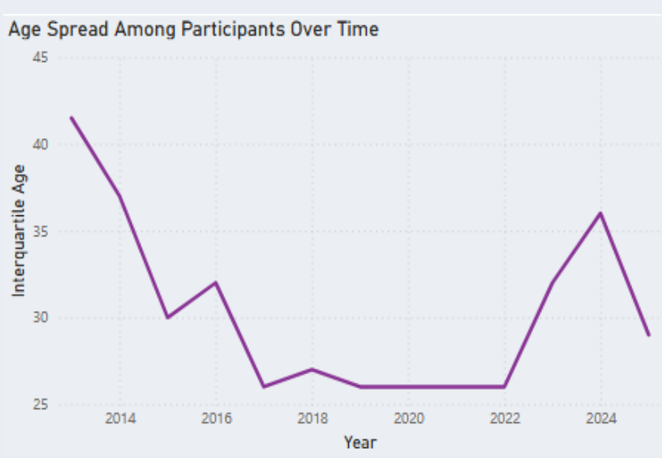
- **Promotes inclusive research practices**: By identifying where representation gaps exist, it helps shape more equitable study design and recruitment strategies.

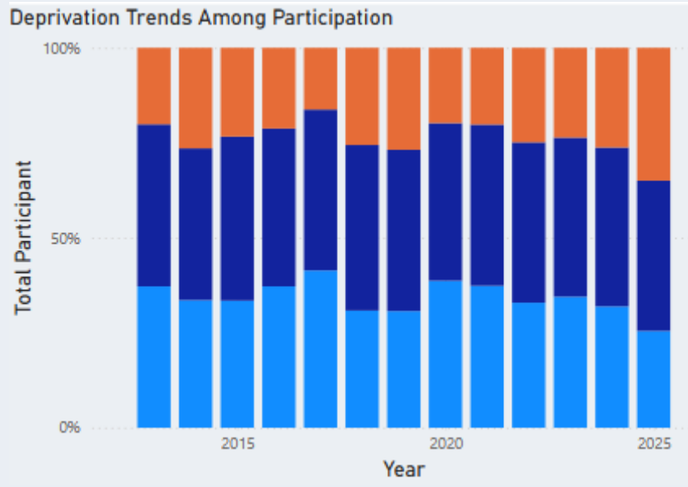
- **Bridges data and impact**: It demonstrates how integrated demographic and participation data can be turned into actionable insights through Power BI and DAX.

- **Adaptable for future use**: The visual framework can be adapted for other research areas, helping teams routinely monitor and improve recruitment equity.

Illustrative Dashboard Content







Why This Matters For Patients And Healthcare

- **Better representation leads to better science**: When research includes participants from all backgrounds, the evidence becomes more applicable, leading to fairer, more effective treatments and interventions.

- **Supports equitable healthcare delivery**: Understanding who is being reached, and who is not helps identify gaps and direct resources to underserved groups, ultimately improving health equity.

- **Drives strategic improvements in study design**: Insights into participation patterns support the design of more inclusive studies, such as those offering online options.

Limitations

- Indices of multiple deprivation data is only available for English participants.

- Incomplete or missing demographic data.

- Cohort definitions or eligibility criteria may vary across studies.

Acknowledgement

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https://www.hdruk.ac.uk/
NIHR BioResource Home Page

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Reference

1. Routen, A., Bodicoat, D., Willis, A., Treweek, S., Paget, S. and Kamlesh Khunti (2022) 'Tackling the lack of diversity in health research', *British Journal of General Practice,* 72 (722): 444-447. DOI: 10.3399/bjgp22X720665