

Inclusivity and Diversity in Human Neuromodulation Research Supported by the NIH



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OBJECTIVE

To examine the integration and impact of efforts to advance diversity and inclusion in neuromodulation articles reporting on human neuromodulation research supported by the NIH (2013-2022) (N=521).

BACKGROUND

- The National Institute of Health (NIH) has made a concerted effort to increase to inclusivity and diversity neuroscience research, particularly under the BRAIN Initiative program.
- Historically, neuroscience research has focused on white males (1,2) even while ethnic groups and gender minorities have high rates of predisposing risk factors for relevant disorders (1,3).
- Exclusion from neuroscience research and limited access to advances in medicine is also a known phenomenon for marginalized populations and people living in rural and remote communities (4).
- Proposal follow-up, generalizability of results, and social justice are core neuroethical concerns.

ACKNOWLEDGEMENTS

Disclaimer: The authors have no COI to declare. Opinions are theirs only.

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METHODS

- Search of NIH RePORTER for peer-reviewed articles with terms “human” and “neuromodulation” and their variations (January 2014 – June 2022) (Fig. 1).
- Content analysis of strategies for and outcomes of recruitment diversity and enrollment inclusivity in NIH-supported studies.

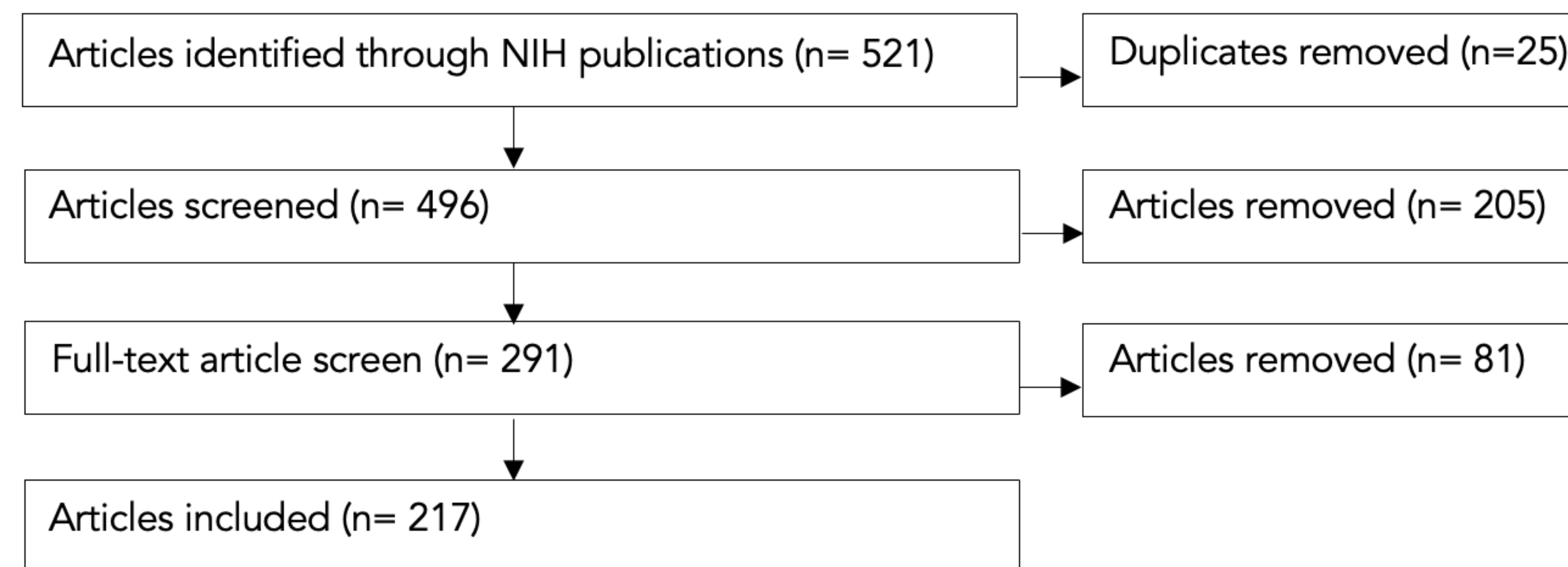


Figure 1. Search results and curation for inclusion.

RESULTS

Overall

- 15% (n=33) of papers were published in *Brain Stimulation*; the rest appeared across 112 other journals.
- 30% (n=66) reported on neuromodulation for psychiatric targets: 70% (n=151) on neurology targets.

Inclusivity and diversity

- 93% (n=202) reported on gender of the recruited sample; 19% (n=41) reported on race.
- 60% (n=131) reported sociodemographic data. Of these, 45% (n=98) reported on nonconventional demographic targets (e.g., recruitment from multiple sites with differing populations, methods to reduce barriers to participation such as transportation).
- 16% (n=35) of papers mentioned or discussed referenced the impact of inclusivity on the study.
- 18% (n=39) acknowledged the lack of diversity in their study population.
- Papers with psychiatry targets contained a higher percentage of inclusion strategies (56%, n=37) than papers with neurology targets (40%, n=61) (Fig. 3).

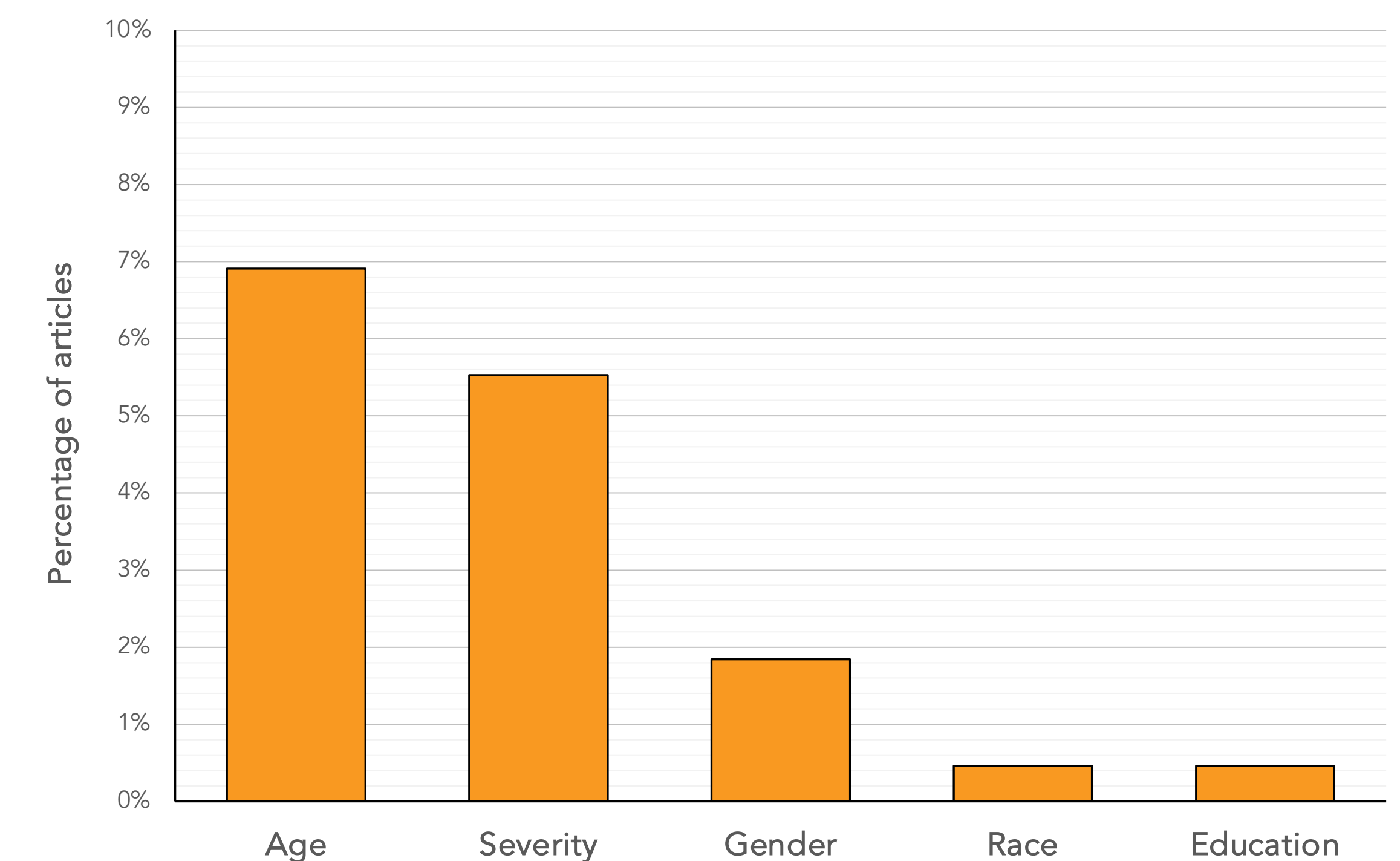


Figure 2. Percentage of studies per specific demographic inclusion strategy as a percentage of all studies reviewed.

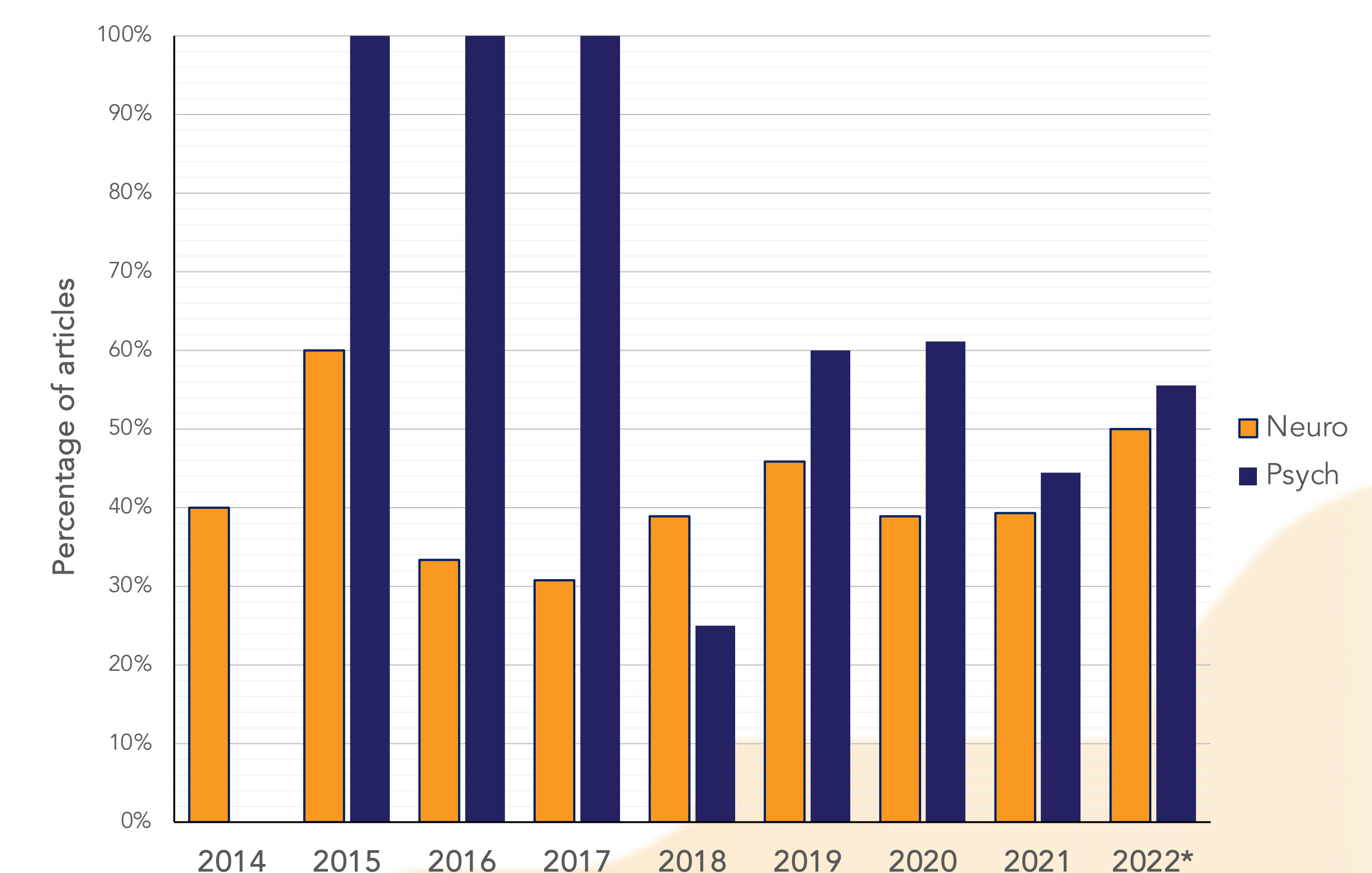


Figure 3. Percentage of papers reporting inclusion strategies by neurology and psychiatry.

CONCLUSIONS

- The most common variables reported were age and gender.
- Although few, some articles reported on strategies to reduce barriers to participation.
- Remedies of attention to other historically neglected variables pertaining to inclusivity and diversity in human has yet to be fully realized.