

A white, American, adult, and male bias in clinical research

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Introduction

Behavioral sciences have documented biased sampling in research participants, drawing predominantly from Western, educated, industrialized, rich, and democratic (**WEIRD**) societies.

Members from WEIRD societies have been found to be unusual and unrepresentative of humans in general. How such **sampling bias** manifests in clinical research, and how it affects the **communication** of scientific findings remain unclear.

Here we examined potential **sampling bias** and **reporting bias** in clinical research.

Methods

- **Journals:** searched full text empirical articles published in 2020 from four leading medical journals (*Lancet*, *Journal of the American Medical Association*, and *BMJ*, *NEJM*) and seven clinical psychology journals (*Clinical Psychological Science*, *Journal of Abnormal Psychology*, *Journal of Consulting and Clinical Psychology*, *Journal of Counseling Psychology*, *Schizophrenia Bulletin*, *Depression and Anxiety*, and *International Journal of Eating Disorders*).
- **Sampling bias:** encoded four characteristics of the sample from the methods and results sections of each article, including country/region, race/ethnicity, gender, and age.
- **Reporting bias:** we encoded the same information but from the title and abstract. Reporting bias is evident when characteristics of the sample were disproportionately emphasized in the title and abstract.

Fig. 1

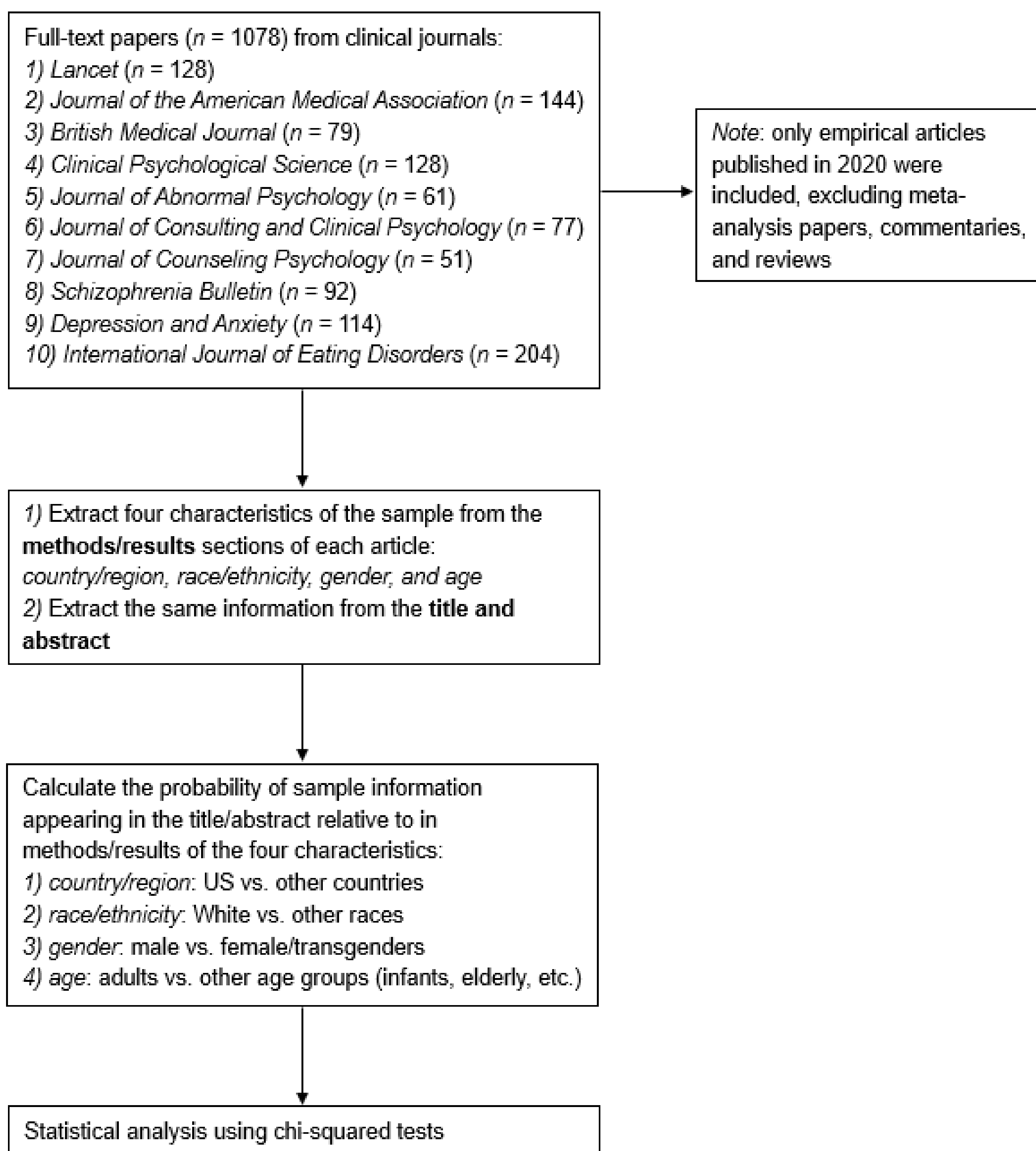


Figure 1. Data analysis flowchart

Reporting Bias Results

- The proportion of title/abstract emphasizing **United States** (44.7%) was much lower than that of other countries (77.1%), $\chi^2 = 52.03$, $df = 1$, $p < 0.001$ (**Fig. 2**).
- The proportion of title/abstract emphasizing **white** (9.3%) was much lower than that of other races (23.9%), $\chi^2 = 16.3$, $df = 1$, $p < 0.001$ (**Fig. 3**).
- The proportion of title/abstract emphasizing **male** (20.6%) was much lower than that of female/transgenders (38.3%), $\chi^2 = 72.9$, $df = 1$, $p < 0.001$ (**Fig. 4**).
- The proportion of title/abstract emphasizing **adult** (28.5%) was much lower than that of special age group (54.7%), $\chi^2 = 35.6$, $df = 1$, $p < 0.001$ (**Fig. 5**).

Fig2

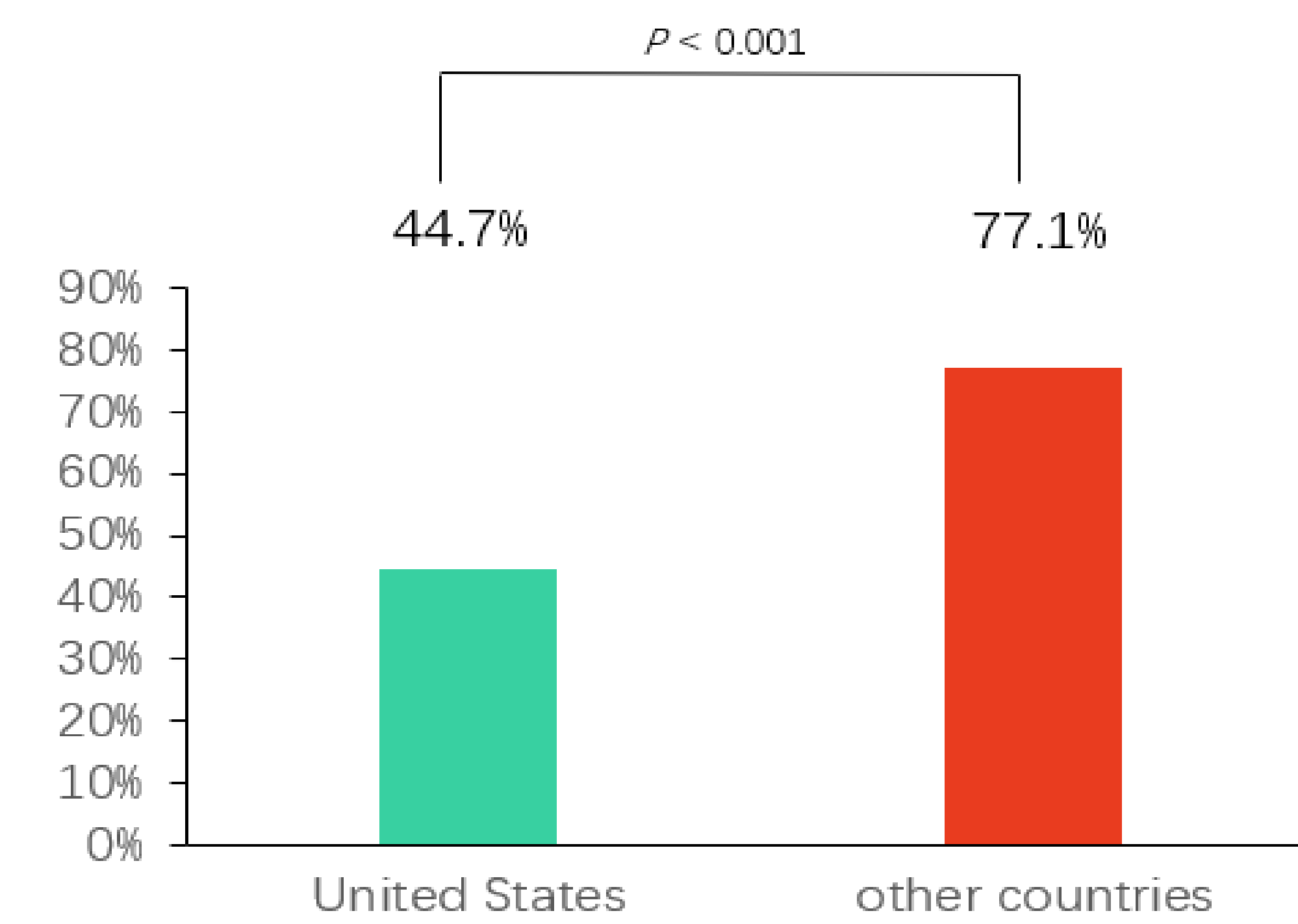


Fig. 2. Country/region reporting bias

Fig. 3

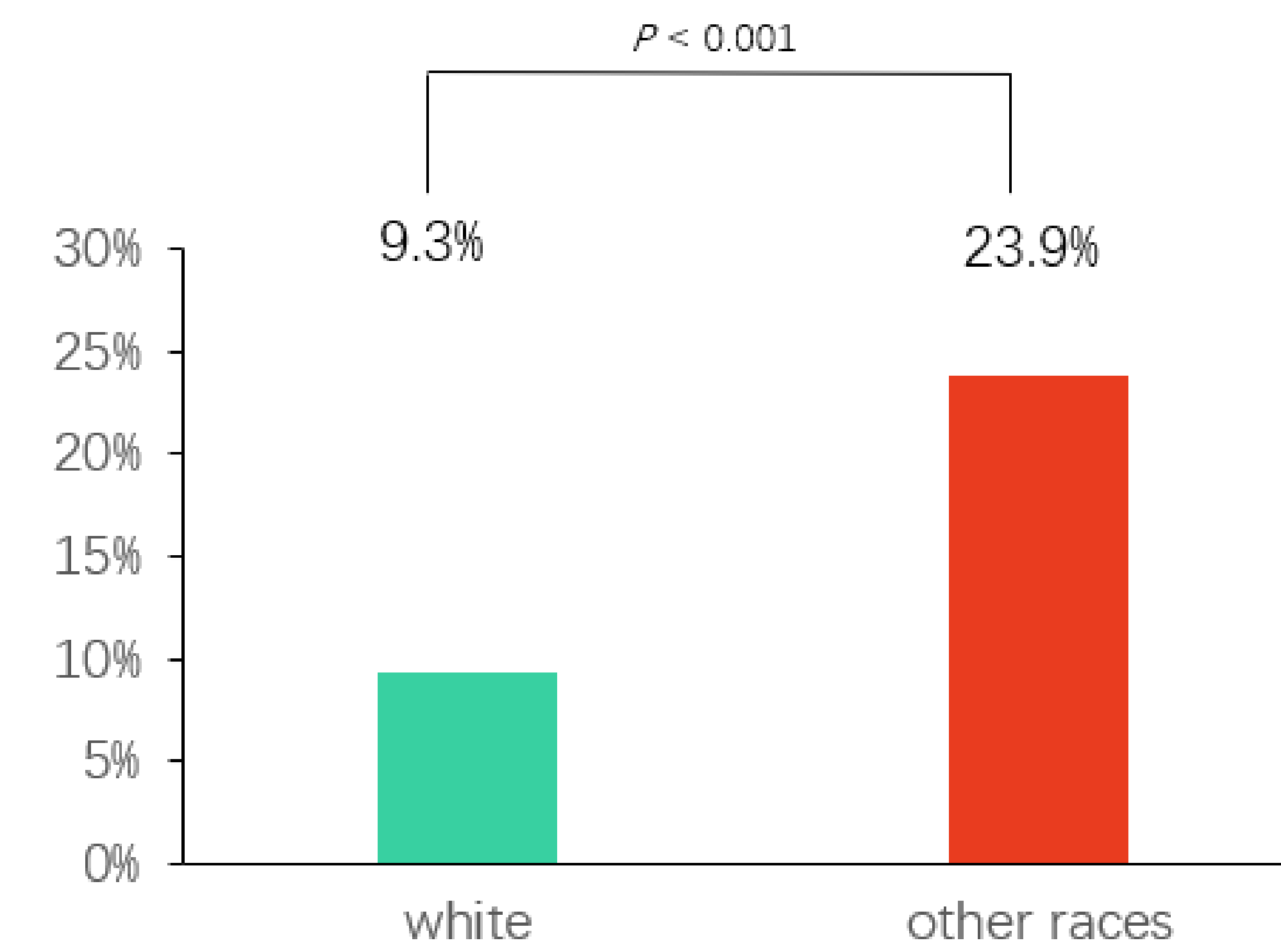


Fig. 3. Race/ethnicity reporting bias

Fig. 4

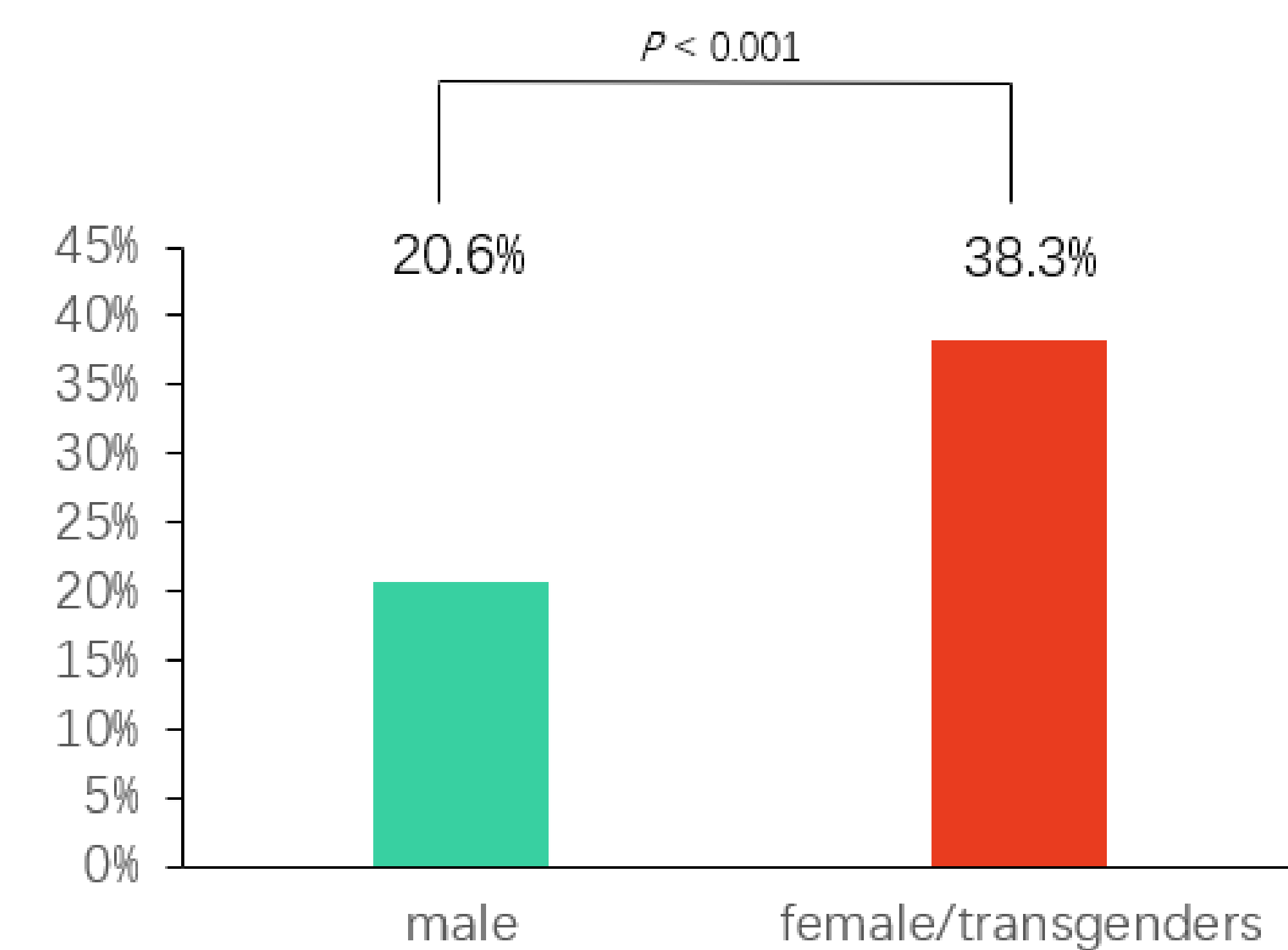


Fig. 4. Gender reporting bias

Fig. 5

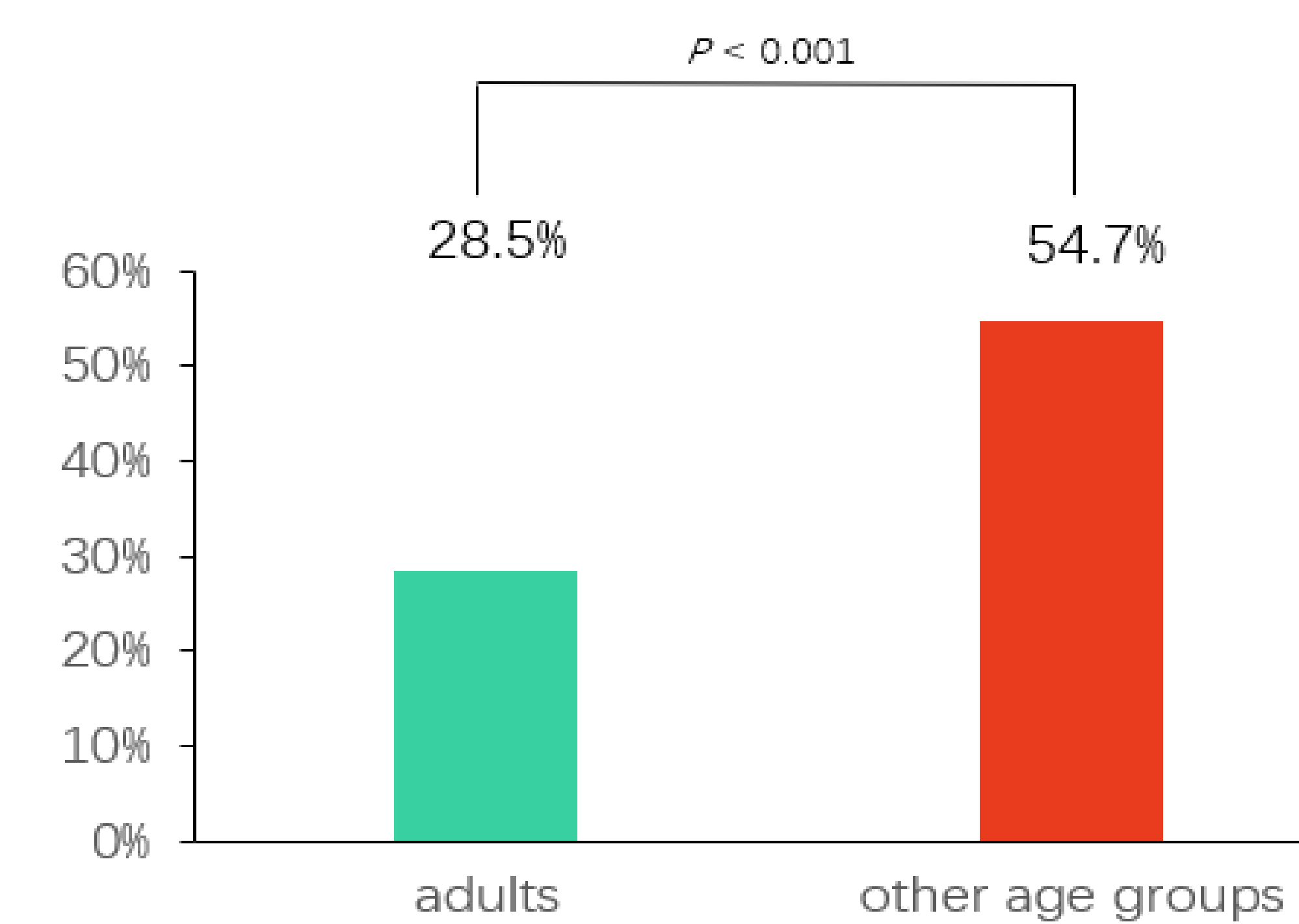


Fig. 5. Age reporting bias

Discussion

We found that the **research samples** were predominantly from **white American adults (WAA)**, with a smaller proportion of males than non-male (female, transgender, and others). With respect to **reporting bias**, we found a **white, American, adult, and male (WAAM) bias**: compared with white samples, race information about non-white samples was more likely to appear in the title and abstract; the same bias was evident when the samples were not from America, or not adults, or not males. These results demonstrate both a **WAA** sampling bias and a **WAAM** reporting bias that emphasized characteristics that deviate from this “norm”.

References

- Rad, M., Martingano, A., & Ginges, J. (2018). Toward a psychology of Homo sapiens. *Proceedings of the National Academy of Sciences - PNAS*, 115(45), 11401-11405.
- Cheon, B., Melani, I., & Hong, Y. (2020). How USA-Centric Is Psychology? An Archival Study of Implicit Assumptions of Generalizability of Findings to Human Nature Based on Origins of Study Samples. *Social Psychological & Personality Science*, 11(7), 928-937.