

# INPLASY

## Meta-Analysis of Race/Ethnicity and Gender in Residency Program Application and Acceptance

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### ADMINISTRATIVE INFORMATION

**Support** - None.

**Review Stage at time of this submission** - Completed but not published.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202420108

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 February 2024 and was last updated on 26 February 2024.

### INTRODUCTION

**Review question / Objective** How do race/ethnicity and gender affect the makeup of residency programs in the US?

**Rationale** We would like to investigate how race/ethnicity and gender bias affect residency program makeup in the USA. We feel this is an important topic.

**Condition being studied** Race/ethnicity and gender bias affecting residency programs in the USA.

### METHODS

**Search strategy** We obtained our data from the Journal of the American Medical Association Graduation Medical Education Reports (JAMA-GME reports). We extracted the data for twenty-five residency programs in the US from 2005 to 2021.

**Participant or population** Resident physicians in the USA.

**Intervention** Acceptance into a residency program.

**Comparator** Not being accepted.

**Study designs to be included** Not Applicable, using full data sets and meta-analysis for regression analysis and risk ratios.

**Eligibility criteria** Data found in the Journal of the American Medical Association Graduation Medical Education Reports (JAMA-GME reports) describing residency program makeup from 2005 to 2021.

**Information sources** Data found in the Journal of the American Medical Association Graduation Medical Education Reports (JAMA-GME reports) describing residency program makeup from 2005 to 2021.

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**Main outcome(s)** Residency positions.

**Additional outcome(s)** None.

**Data management** Spreadsheets were utilized to transfer data.

**Quality assessment / Risk of bias analysis** Not applicable.

**Strategy of data synthesis** Statistical analyses were conducted through STATA version 16.0 (StataCorp LLC, College Station, TX 77845, USA). We ultimately engaged the random-effects model “IVhet method” for head-to-head comparisons. All data were dichotomous (events and no events) and were pooled as weighted proportions and risk ratios (RR) with relevant 95% confidence intervals (CI). Pooled rates of proportions were calculated through the Freeman-Tukey transformation meta-analysis of proportions using MedCalc (Version 15.0; MedCalc Software, Ostend, Belgium). Heterogeneity between studies was inspected visually and statistically through Chi-square and I<sup>2</sup> tests: a Q statistic with  $P < 0.1$  indicated heterogeneity, whereas I<sup>2</sup> values of 0%, 25%, 50%, and 75% represented no, low, moderate, and high heterogeneity, respectively. Further, a meta-regression was conducted to examine whether Match percentages have changed for each subgroup over years. PRISMA guidelines were followed throughout the construction of this meta-analysis.

**Subgroup analysis** None.

**Sensitivity analysis** None.

**Language restriction** English.

**Country(ies) involved** United States.

**Keywords** residency programs, residency applicants, residency acceptance, gender, race.

**Dissemination plans** Journal publication.

#### **Contributions of each author**

Author 1 - Greg Marchand - Initial draft, conception, proofreading.

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Author 7 - Kate Ruffley - data collection, assistance in revisions (1st set).

Author 8 - Mary Petersen - data collection.

Author 9 - Sara Fernandez - data collection

Author 10 - Hollie Ulibarri - data collection, final proof reading, final draft writing, supervision, data analysis, assistance in revisions (1st set).