

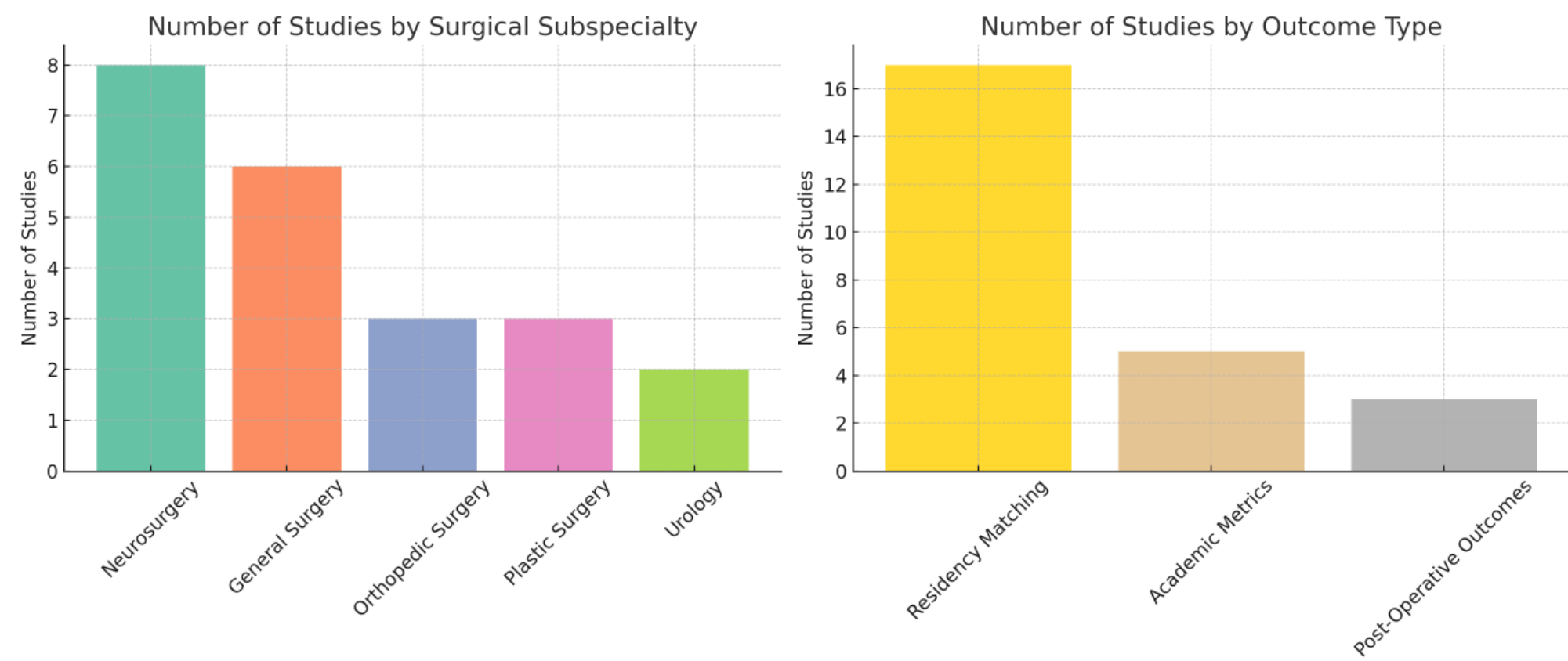
INTRODUCTION

- IMGs are an important component of the U.S. physician workforce, yet entry into competitive surgical training remains debated.
- In addition to the competitive nature of surgical subspecialties, IMGs often face additional barriers in the surgical training pipeline (visa issues,, limited U.S. clinical opportunities, and screening practices), which may influence match outcomes.
- Quantifying differences in matching and downstream performance can inform fair and balanced approaches to resident and fellow selection.
- In this study, we compared IMGs vs USMGs in (1) residency/fellowship matching, (2) academic productivity, and (3) postoperative outcomes

METHODS

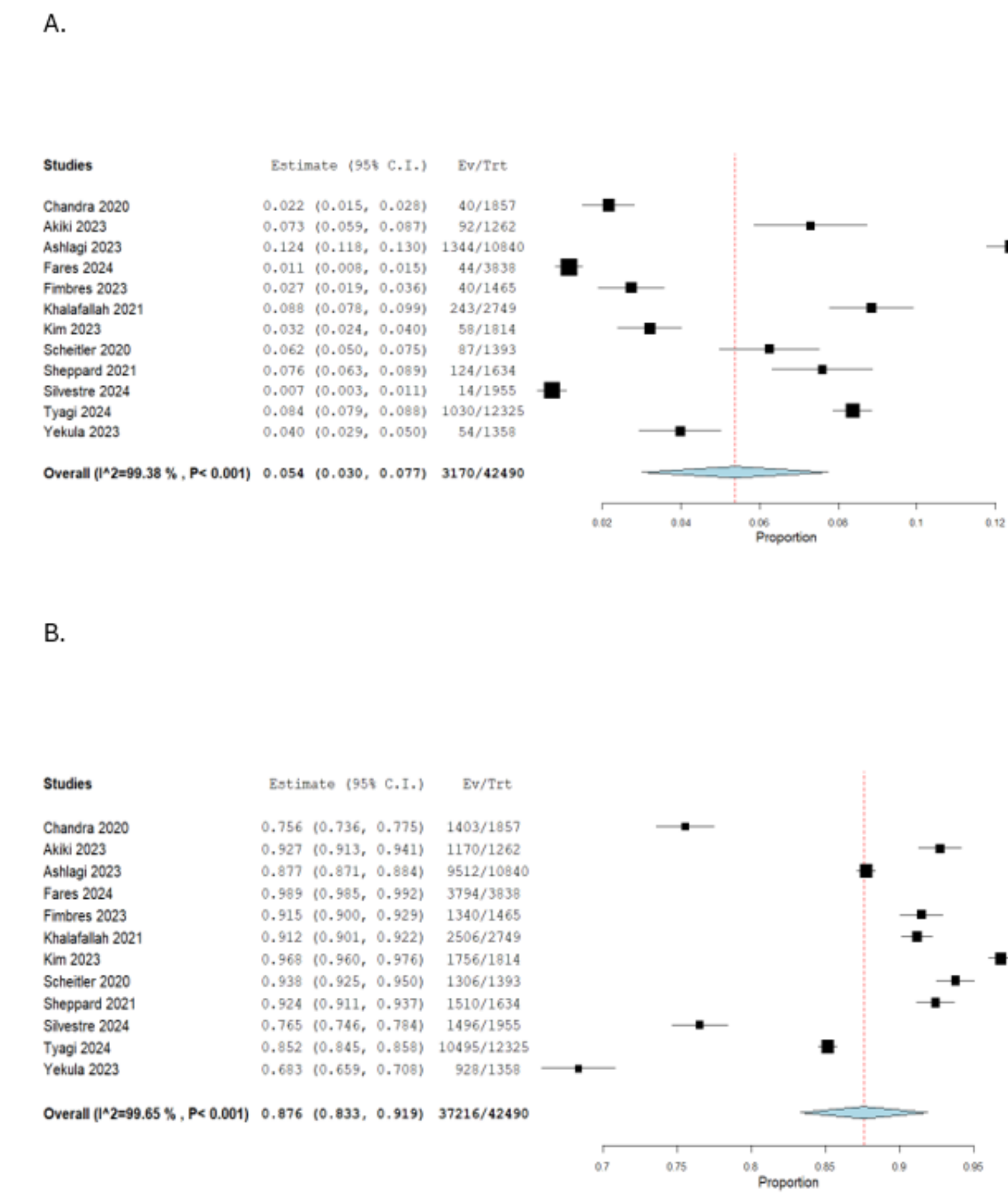
- Systematic review + random-effects meta-analysis (PRISMA; PROSPERO: CRD420251010992).
- Databases: PubMed + Scopus through Dec 2024.
- Included surgical subspecialty studies reporting matching, academic metrics, and/or postop outcomes.
- Pooled proportions (matching), WMD (publications/H-index), OR (postop outcomes).
- Risk of bias: Newcastle–Ottawa Scale; publication bias assessed.
- Heterogeneity: I²; subgroup/meta-regression by subspecialty.

RESULTS



Included Studies by Subspecialty and Reported Outcomes

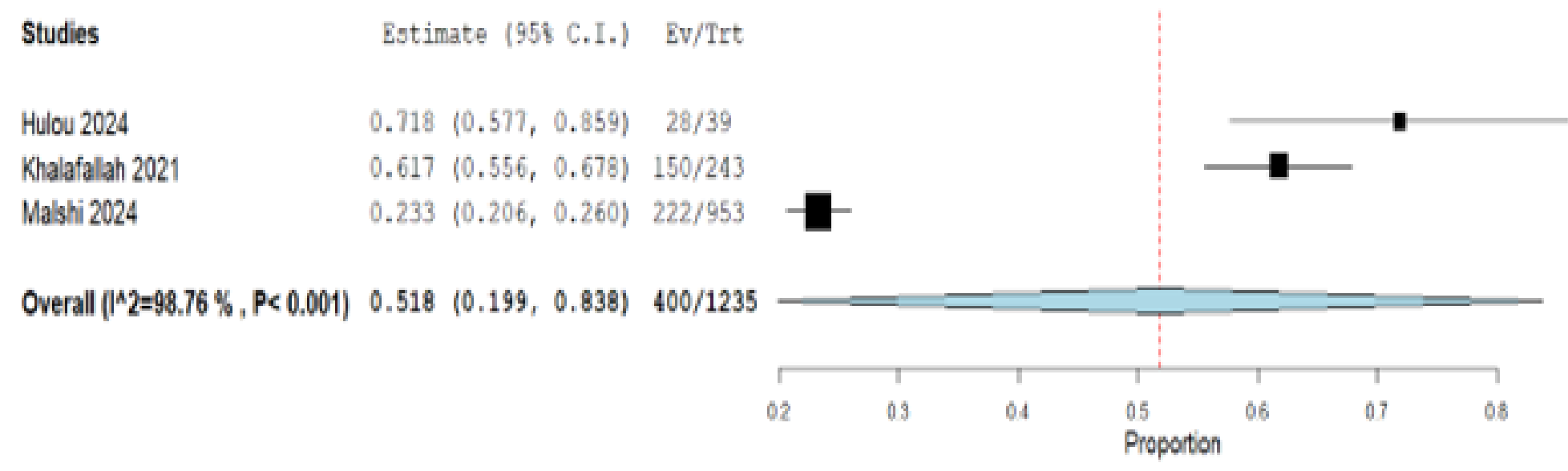
- 22 studies (2002–2024) were included in the analysis. The most represented subspecialties were neurosurgery (8/22; 36.4%) and general surgery (6/22; 27.3%), followed by orthopedic surgery (3/22; 13.6%), plastic surgery (3/22; 13.6%), and urology (2/22; 9.0%).
- Across 17 studies, IMGs had a significantly lower pooled residency match proportion (**5.4%**, 95% CI **3.0–7.7**; p<0.001) compared with USMGs (**87.6%**, 95% CI **83.3–91.9**; p<0.001), with high heterogeneity (I²>99%).



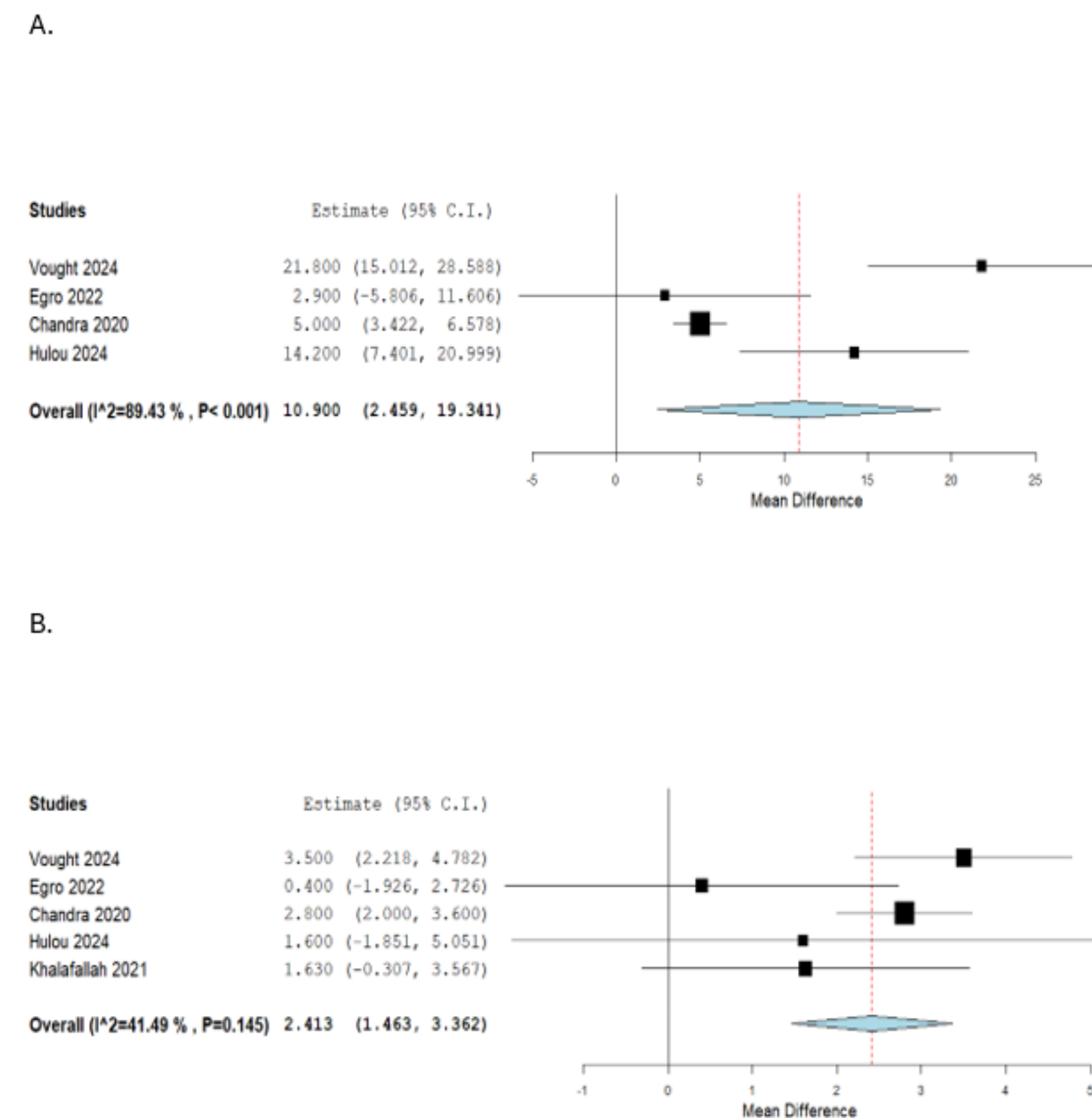
Residency Matching. (A) International Medical Graduates Pooled proportion for residency matching. (B) U.S Medical Graduates pooled proportion for residency matching.

RESULTS

- In 3 studies, IMGs had a pooled fellowship match proportion of **0.518** (95% CI **0.199–0.838**; p=0.001), also with high heterogeneity (I²=98.7%).
- In 5 studies, IMGs had a higher mean number of publications (**mean difference +10.9**, 95% CI **2.46–19.34**; p=0.011) and a higher H-index (**mean difference +2.41**, 95% CI **1.46–3.36**; p<0.001).
- In 3 large-scale studies of practicing surgeons/faculty, IMGs had slightly higher pooled postoperative mortality (**OR 1.076**, 95% CI **1.010–1.146**; p=0.023), while postoperative complications were similar between groups (**OR 1.033**, 95% CI **0.921–1.160**; p=0.576)

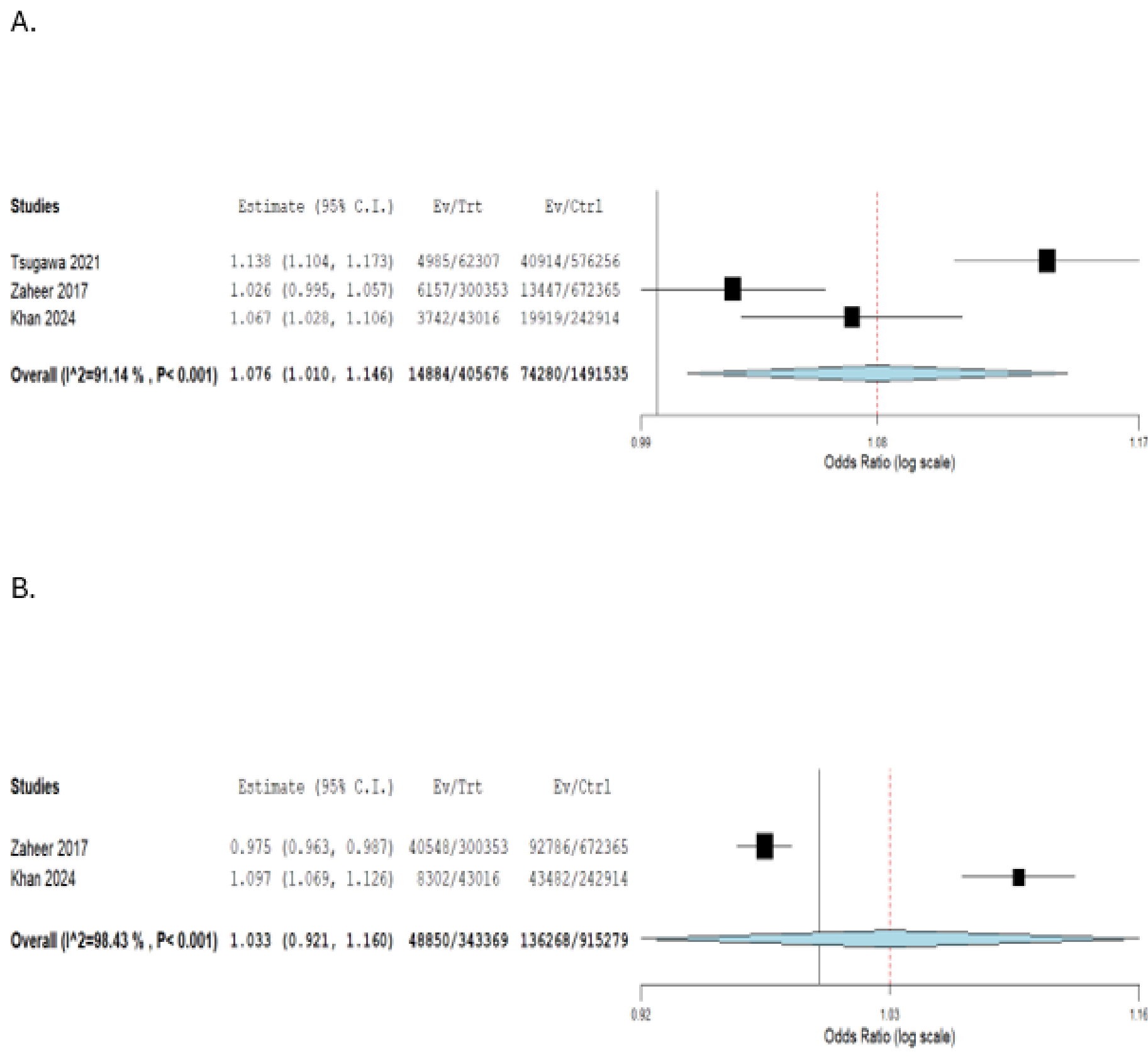


International Medical Graduates Pooled proportion for Fellowship matching.



Academic Measures. (A) Mean difference in number of publications between IMGs and USMG. (B) Mean H-Index between IMGs and USMGs.

RESULTS



Post Operative Outcomes between IMG and USMG Faculty. (A) Post operative Mortality. (B) Post operative Complications.

CONCLUSION

- Across surgical subspecialties, IMGs have **substantially lower residency match rates** than USMGs, highlighting persistent barriers in the surgical training pipeline.
- Despite lower match proportions, IMGs demonstrate **higher academic productivity** (publications and H-index), suggesting strong scholarly output among those pursuing surgical careers.
- Among practicing surgeons, **postoperative outcomes are largely comparable** between IMGs and USMGs –complication rates do not differ, though pooled mortality was slightly higher—supporting the need for nuanced, evidence-based discussions of performance and selection.
- Significant Heterogenicity exists in published literature and in IMG outcomes evaluation