

Socioeconomic Disparities in Pediatric Orthopaedic Authorship: A Two-Decade Review of Global Representation

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INTRODUCTION: Disparities in global health research output have garnered increasing attention across medical disciplines, with high-income countries frequently occupying dominant positions in authorship, access to funding, and publication visibility. To date, no comprehensive study has examined the geographic and socioeconomic distribution of authorship in pediatric orthopedic literature. This study analyzed authorship trends across two major pediatric orthopedic journals over two decades, with attention to authorship role, international collaboration, and citation outcomes.

METHODS: Authorship metadata were extracted from the *Journal of Pediatric Orthopaedics* (2003–2024) and *Journal of Children's Orthopaedics* (2007–2024) using Scopus. Affiliation country was determined from metadata and categorized by World Bank income tier. Author position was classified as first, middle, or last. Analyses evaluated authorship distribution, international collaboration, and citation trends.

RESULTS:

A total of 29,774 authorship entries were analyzed, comprising 23,845 from the *Journal of Pediatric Orthopaedics* (JPO) and 5,929 from the *Journal of Children's Orthopaedics* (JCO). Of these, 27,397 entries (91.9%) included sufficient affiliation metadata to assign a country of origin. High-income countries accounted for 90.7% (n = 24,838) of entries, followed by upper-middle (7.2%, n = 1,968), lower-middle (2.0%, n = 557), and low-income countries (0.1%, n = 34). Unique author representation followed a similar pattern: high-income (81.2%, n = 10,495), upper-middle (9.9%, n = 1,277), lower-middle (2.8%, n = 366), and low-income (0.25%, n = 32). Average publications per unique author were highest in high-income countries (2.37) and lowest in low-income (1.06).

From 2003 to 2024, the number of unique contributing countries increased from 31 to 49. However, the proportional contributions of lower-middle (1–4%) and low-income (<1%) nations remained largely stagnant. The United States (n = 17,317), United Kingdom (n = 1,064), and Canada (n = 915) were the top contributors among high-income countries. In the upper-middle-income group, Turkey (n = 778), China (n = 635), and Brazil (n = 147) led. India (n = 488), Egypt (n = 223), and Nepal (n = 24) were the most represented lower-middle-income countries, while Uganda (n = 10), Ethiopia (n = 8), and Malawi (n = 8) topped the low-income tier.

International collaboration occurred in 718 papers (15.7%), 54% of which spanned income classifications. Only 14 papers (0.3%) included authors from low-income countries; of these, 9 (64%) involved higher-income collaborators, while just 3 featured low-income authors as first or last author. Among 137 papers featuring lower-middle-income authors, 47.4% were collaborative across income tiers, and in those, lower-middle authors served as first author on 31% and last author on 40%.

A regression analysis on citation counts for papers involving low-income authors showed a strong negative correlation with publication year ($r = -0.71$), while no correlation was observed with author position ($r = 0.01$). Year of publication was a significant predictor of citations ($p = 0.032$), whereas authorship position was not ($p = 0.802$).

DISCUSSION AND CONCLUSION: This study reveals persistent disparities in global pediatric orthopedic authorship. While geographic representation has modestly broadened over two decades, authors from low- and lower-middle-income countries continue to contribute minimally and infrequently occupy first or last author positions—key indicators of academic leadership. The consistency of low proportional representation despite increased international collaboration points to potential structural barriers, such as limited funding, inequitable editorial gatekeeping, and restricted research infrastructure. Importantly, regression analysis found that citation impact was more strongly associated with publication year than with author income level, suggesting that quality and visibility are not inherently tied to institutional wealth. These findings underscore the need for intentional structural efforts—such as mentorship networks, collaborative grant models, and inclusive editorial policies—to foster more equitable participation in pediatric orthopedic research.

