Exploring Open Access in Orthopaedic Surgery: A Study of Publication Percentages by Source Institution

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INTRODUCTION:

Research productivity has become a requirement in all medical specialties, to include orthopaedic surgery, for furthering academic advancement at every level of medical training from the undergraduate level to attending physician. The Hirschberg index (h-index) has been used as a measure of academic production and has been associated with academic promotion and prestige in many surgical specialties. Previous research has demonstrated higher volume of publications is sufficient to increase the h-index. The number of open access journals have increased over the last 20 years. Open access journals are funded by article processing fees rather than a subscriber base. These article processing fees can be quite high, averaging $900 and listed as high as $3900. These charges can be seen as a substantial barrier to submission and limit publishing to only those authors that are willing and able to pay such expensive article processing fees. *Arthroscopic Techniques* is an open access journal that offers publication with an article processing fee between $680-975 once accepted.

This study aimed to determine the overall quantity of publications per United States (U.S.)-based orthopaedic institution in *Arthroscopic Techniques* from 2021-2023 and identify those with highest proportion of publications. It further sought to determine the percentage of publications that were derived from institutions associated with “top” hospitals or training programs.

METHODS:

All articles published in *Arthroscopic Techniques* from 2021-2023 were reviewed to include the year of publication, senior author, and associated home institution of the senior author. All articles with a senior author based outside the U.S. were excluded. Additionally, all articles that listed a senior author without a doctorate of medicine (allopathic or osteopathic) were excluded. Top orthopaedic residency programs, top hospitals, and top sports medicine fellowships were defined to track the number of publications that were generated from any of these “top” programs (residency programs, hospitals, or sports medicine fellowships). Top residency programs were defined by the top 52 in the Doximity orthopaedic surgery residency ranking. Top hospitals were defined by either those on the U.S. News and World Report top 50 hospitals or listed in the top 20 U.S. institutions with the highest orthopaedic public and private research funding. Top orthopaedic sports medicine fellowships were defined by the number of publications as recorded by Mayfield et al. These rankings systems were used as proxies for total research productivity and funding of the individual institutions.

RESULTS: A total of 1045 articles were published from 2021-2023 in *Arthroscopic Techniques*. 464 publications were included for sub-analysis after applying exclusion criteria. Publications originated from a total of 128 individual orthopaedic institutions. 55.2% (256) of all included publications were from “top” institutions listed in at least one of the four ranking systems assessed. 38.8% (180) of included publications were from home institutions listed in the top 20 U.S. institutions with the highest public and private research funding. The five institutions with the highest number of publications were Midwest Orthopedics at Rush University Medical Center, Chicago, Illinois (52), Steadman Phillippon Research Institute, Vail, Colorado (38), Advanced Orthopedics and Sports Medicine, San Francisco, California (22), Twin Cities Orthopedics, Edina, Minnesota (21), NYU Langone Health, New York, New York (18). These 5 institutions represent 32.3% of all U.S. based publications in *Arthroscopic Techniques* from 2021-2023.

DISCUSSION AND CONCLUSION:

The majority of publications in *Arthroscopic Techniques* from 2021-2023 are from a small cohort of orthopaedic institutions in the United States. Over one third of publications were from institutions listed in the top 20 U.S. institutions with the highest public and private research funding. This study shows over half of all U.S. based publications in *Arthroscopic Techniques,* an open access journal with high article processing fees, are from “top” institutions (included in at least one of the four ranking systems).