

How Many and What Type of Abstracts from the American Academy of Orthopaedic Surgeons 2022 Meeting were Subsequently Published?

Jose Acosta, Kishore Konar, Rachel Zhang, Jinjaemin Yoon, Pui Man Choy, Prince Tandukar, Joshua B Davis, Daniel Chukwuebuka Gabriel¹, Marcos R Gonzalez, Devon Tracey Brameier, Bram Paul Verhofste², Antonia F Chen

¹Harvard Medical School, ²Massachusetts General Hospital

INTRODUCTION: Variability exists between meeting attendance and subsequent manuscript publication. A previous study demonstrated that the publication rate of abstracts and podium presentations at the American Academy of Orthopaedic Surgeons (AAOS) meeting presentations has increased from 30% to 74% in the last 15 years. However, this analysis has not been extended to 2022, and an evaluation of publications by subspecialties and levels of evidence is not available. This study aims to provide a descriptive analysis of the abstracts and podiums presented at the AAOS 2022 meeting, identify subsequent publication rates, and analyze differences across subspecialties.

METHODS: All abstracts presented at the AAOS Annual Meeting 2022 were retrospectively identified using the AAOS ePosters archive. PubMed and Google Scholar were comprehensively queried to determine whether abstracts presented at the AAOS 2022 meeting were later published in indexed journals. If a publication could not be located with the title and author alone, various title keywords and authors' permutations were used. We recorded the online and in-print publication dates and the level of evidence (LOE). To determine that an abstract or podium presentation led to publication, the online publication date had to be after the last day of the AAOS 2022 meeting. The primary outcome measure was the publication rate. The top 10 institutions was ranked by the total number of abstracts/podiums presented at the AAOS meeting from a single institution. Descriptive statistics were calculated. Differences between categorical variables were assessed using Mann-Whitney's U test. Univariate logistic regression was performed to analyze associations between subspecialty and publication rates. A p-value ≤ 0.05 was considered statistically significant. All statistical analysis was performed.

RESULTS:

There were 997 abstracts presented at AAOS 2022, comprising of 868 posters and 122 podium presentations (Table 1). The subspecialties with the most abstracts presented were Adult Reconstruction Knee (19.6%), Adult Reconstruction Hip (17.1%), and Shoulder & Elbow (14.3%) (Figure 1). The publication rate was 44.4% for posters and 29.5% for podiums. There was a significantly higher publication rate for posters than podium presentations ($p=0.003$). The average online time to publication was 11.7 months for posters and 5.7 months for podium presentations. Medical student involvement in the poster and podium presentations among the top 10 institutions were not associated with publication rates ($p=0.560$ and $p=0.360$, respectively).

Among the publications, the LOE varied with 5.3% LOE I, 8.2% LOE II, 50% LOE III, 32.6% LOE IV, and 3.8% LOE V. The subspecialties of spine (odds ratio [OR]=1.46, $p=0.050$) and sports medicine (OR=1.78, $p=0.047$) were associated with a higher publication rate compared to other subspecialties (Table 2).

DISCUSSION AND CONCLUSION:

Presenting abstracts at AAOS 2022 has a close to 50% chance of subsequent publication in PubMed or Google Scholar citable journals, but only 29.5% of podium presentations were published. Adult reconstruction of the knee was the subspecialty with most abstracts presented. However, the abstracts within the spine and sports medicine subspecialties were more likely to result in publication than others. In addition, research presented in the podium format showed a significantly shorter time to publications than poster presentations. This data should encourage members of the orthopaedic community to submit their research for constructive criticism in meetings, and greater emphasis should be placed on converting poster and podium abstracts to published research.

Figure 1. Distribution of posters by sub-specialty at the American Academy of Orthopedic Surgeons Conference 2022.

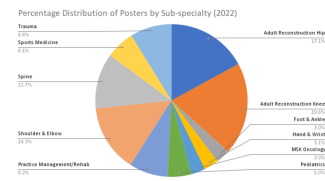


Table 1. Descriptive analysis of our cohort and their association with publication rates

	Publication	No publication	p-value
N	400	538	
Conference year			
2022	400 (100.0%)	538 (100.0%)	
Orthopedic sub-specialty			0.190
Adult Recon Hip	54 (13.5%)	99 (18.5%)	
Adult Recon Knee	69 (17.3%)	91 (17.0%)	
Foot & Ankle	14 (3.5%)	14 (2.6%)	
Hand & Wrist	12 (3.0%)	19 (3.5%)	
MSK Oncology*	10 (2.5%)	19 (3.5%)	
Pediatrics	25 (6.3%)	25 (4.7%)	
Practice Management & Rehab	34 (8.5%)	48 (9.0%)	
Shoulder & Elbow	45 (11.3%)	70 (13.0%)	
Spine	55 (13.8%)	58 (10.8%)	
Sports Med	32 (8.0%)	29 (5.4%)	
Trauma	30 (7.5%)	58 (10.8%)	
Type of presentation			0.001
Poster	368 (92.2%)	480 (89.0%)	
Podium	33 (7.8%)	75 (14.0%)	
Medical student involved			0.560
No	67 (24.8%)	95 (22.9%)	
Yes	203 (75.2%)	320 (77.1%)	
Top 10 institutions**			0.360
No	258 (73.5%)	354 (76.3%)	
Yes	93 (26.5%)	110 (23.7%)	

*MSK=Musculoskeletal
 **The top 10 institutions were defined by the total number of abstracts/podiums presented at the American Academy of Orthopedic Surgeons 2022 meeting.

Table 2. Univariate analysis for publication rates per sub-specialty

Orthopedic sub-specialty (Baseline: Adult Recon Hip)	OR [95% CI]*	p
Adult Recon Knee	1.18 (0.8-1.72)	0.409
Foot & Ankle	1.86 (0.96-3.63)	0.067
Hand & Wrist	1.02 (0.47-2.19)	0.968
MSK Oncology*	0.85 (0.38-1.9)	0.687
Pediatrics	1.55 (0.84-2.84)	0.159
Practice Management & Rehab	1.21 (0.76-1.93)	0.413
Shoulder & Elbow	1.38 (0.8-2.1)	0.138
Spine	1.46 (1.2-1.3)	0.006
Sports Med	1.78 (1.03-3.12)	0.041
Trauma	0.83 (0.5-1.39)	0.482

*OR=odds ratio; CI=Confidence Interval; MSK=musculoskeletal
 *A p-value less than 0.05 was considered statistically significant