Can Academic Productivity Predict Nonresearch Industry Earnings Among Shoulder Surgeons?

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INTRODUCTION: Orthopaedic surgeons receive and report industry funding at substantially higher rates than other physicians. The relationship between surgeons and medical device industry raises concerns regarding bias, spanning from research outcomes to clinical decision-making. There remains a gap in literature on factors that may influence industry payments for shoulder surgeons. Additionally, the association between industry payments to shoulder surgeons and academic productivity has yet to be examined. This study aims to explain the relationship between academic productivity and industry payments for fellowship-trained shoulder surgeons in faculty positions at shoulder & elbow fellowships.

METHODS: A cross-sectional study was performed for full-time academic shoulder surgeons affiliated with Accreditation Council for Graduate Medical Education-approved shoulder and elbow surgery fellowship programs in the United States. For each surgeon, bibliometric variables (h-index, m-index, total number of publications, total number of citations, I-10 index, and maximum number of citations from a single work) and demographic variables (gender, training factors, academic rank) were recorded. Industry funding was defined as the total nonresearch lifetime earnings reported in the Centers for Medicare & Medicaid Services database.

RESULTS: Forty orthopaedic surgery shoulder & elbow fellowship programs were identified, comprising of 170 full-time faculty members. A moderate, positive correlation was found between individual surgeon h-index and lifetime nonresearch earnings ($P < .001$; Spearman's $\rho = 0.488$).

DISCUSSION: Surgeons with higher academic productivity are more likely to have greater nonresearch lifetime earnings. However academic productivity only accounts for part of the observed variation, suggesting that additional variables may contribute to lifetime industry earnings. Further investigation into the influence of nonresearch industry funding and scholarly output may provide valuable insight into the dynamics linking industry academia within shoulder surgery.

SIGNIFICANCE: This study highlights a measurable link between academic productivity and nonresearch industry earnings among shoulder surgeons, offering new insight into how scholarly output may shape financial relationships with industry.

REFERENCES: Miltenberg B, Johns WL, Baumann AN, et al. Academic Productivity at Orthopaedic Surgery Sports Medicine Fellowship Programs in the United States Has a Weak Positive Correlation With Nonresearch Lifetime Industry Earnings. *Arthrosc Sports Med Rehabil*. 2024;7(2):101042. Published 2024 Nov 9. doi:10.1016/j.asmr.2024.101042

Table 1. Demographics	
Total Surgeons	170
Sex (M:F)	160:10
With PhD (%)	5 (3%)
More than 1 Fellowship (%)	34 (20%)
Years as Attending, mean ± SD (range)	17.8 ± 10.6
ASES Membership (%)	119 (70%)
Academic Rank Distribution (%)	
Clinical Instructor / Lecturer	21 (12%)
Assistant Professor	34 (20%)
Associate Professor	41 (24%)
Professor	54 (32%)
Endowed Professor	4 (2%)
Adjunct Professor	16 (9%)

Table 2. Academic Productivity and Professional Metricd	
Academic Productivity	
Total Publications	22,373
Mean Publications	131.6 ± 151.7
Total Citations	733,299
Citations, mean ± SD	4313.5 ± 6746.1
Max Citations from Single Work, mean ± SD	291.8 ± 325.8
H-Index, mean ± SD	27.5 ± 22.1
I-10 Index, mean ± SD	70.7 ± 96.9
M-Index, mean ± SD	1.2 ± 0.7
Financials	
Total General Payments ($)	44,006,275.91
Total Ownership/Investment ($)	8,996,407.63
Total Nonresearch Earnings ($)	52,962,670.47

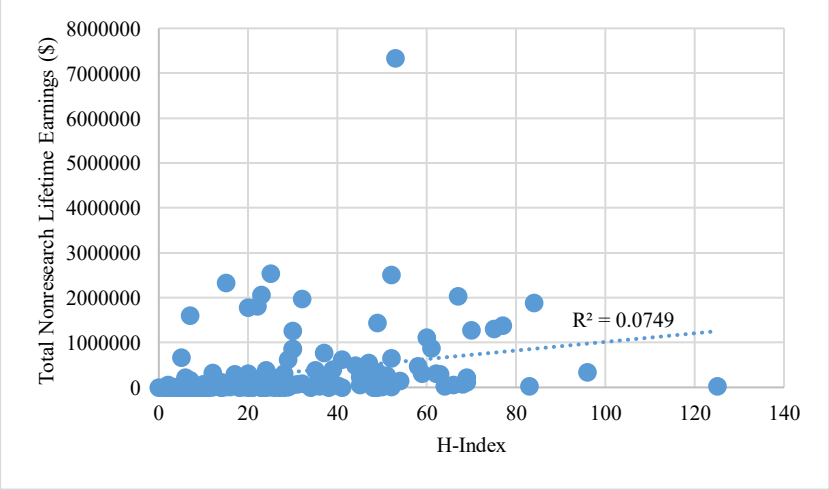

Figure 1. Total Nonresearch Lifetime Earnings vs H-Index