



Pandemic-Provoked Pulls and Pivots in Pharmacy Practice Publications

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MAIN FINDINGS

- The proportion of faculty members who published within the Schools of Pharmacy (SOPs) did not change during the pandemic, but the number of publications increased, albeit below expected levels¹
- Faculty pivoted towards COVID-19-related research and publications, with major emphasis in the context of pharmacy education¹

	Midwest	Northeast	South	West	All
Number of SOPs (N, (%))	14 (25.5)	8 (14.5)	21 (38.2)	12 (21.8)	55 (100)
SOP Type (N, (%))					
Public	14 (100)	6 (75.0)	20 (95.2)	10 (83.3)	50 (90.9)
Private	0 (0.0)	2 (25.0)	1 (4.8)	2 (16.7)	5 (9.1)
Acad. Health Ctr. (N, (%))					
Yes	10 (71.4)	5 (62.5)	16 (76.2)	9 (75.0)	40 (72.7)
No	4 (28.6)	3 (37.5)	5 (23.8)	3 (25.0)	15 (27.3)
Carnegie Class. (N, (%))					
R1	11 (78.6)	6 (75.0)	11 (52.4)	10 (83.3)	38 (69.1)
Non-R1	3 (21.4)	2 (25.0)	10 (47.6)	2 (16.7)	17 (30.9)
Ave. 4-Yr Funding (\$Million)	34.0	28.0	29.9	51.9	35.5
Total 4-Yr Funding (% of all)	24.4	11.5	32.2	32.0	100
Faculty in Scopus (N, (%))	381 (30.3)	196 (15.6)	476 (37.9)	204 (16.2)	1257 (100)

Table 1: Characteristics of included Schools of Pharmacy (SOPs) by regions

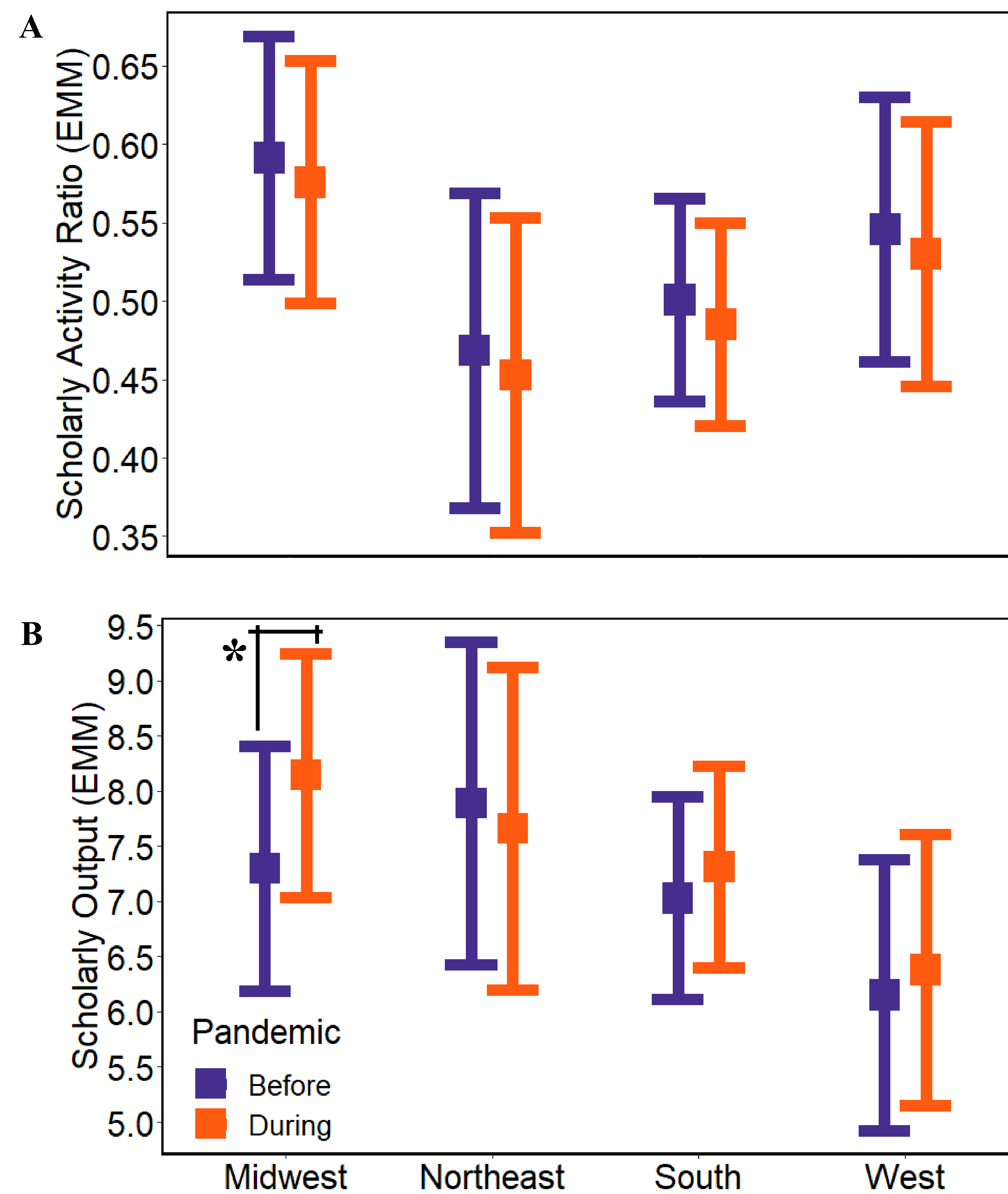


Figure 2: (A) Scholarly activity ratio (SAR) and (B) Scholarly output (SO). Estimated marginal means (EMMs) and 95% confidence intervals of outcome measures before and during the pandemic. Figures derived from linear mixed effects models. SAR~ Pandemic + Region + 2Yrfunding-rank + Fac.Review + (1|SOP), and SO~ Pandemic x Region + 4YrFunding-rank + Doc.Review + (1|SOP). *p<0.05, pairwise comparisons (FDR-adjusted). There were 2,755 and 3,001 unique publications before and during the pandemic (8.9% increase).

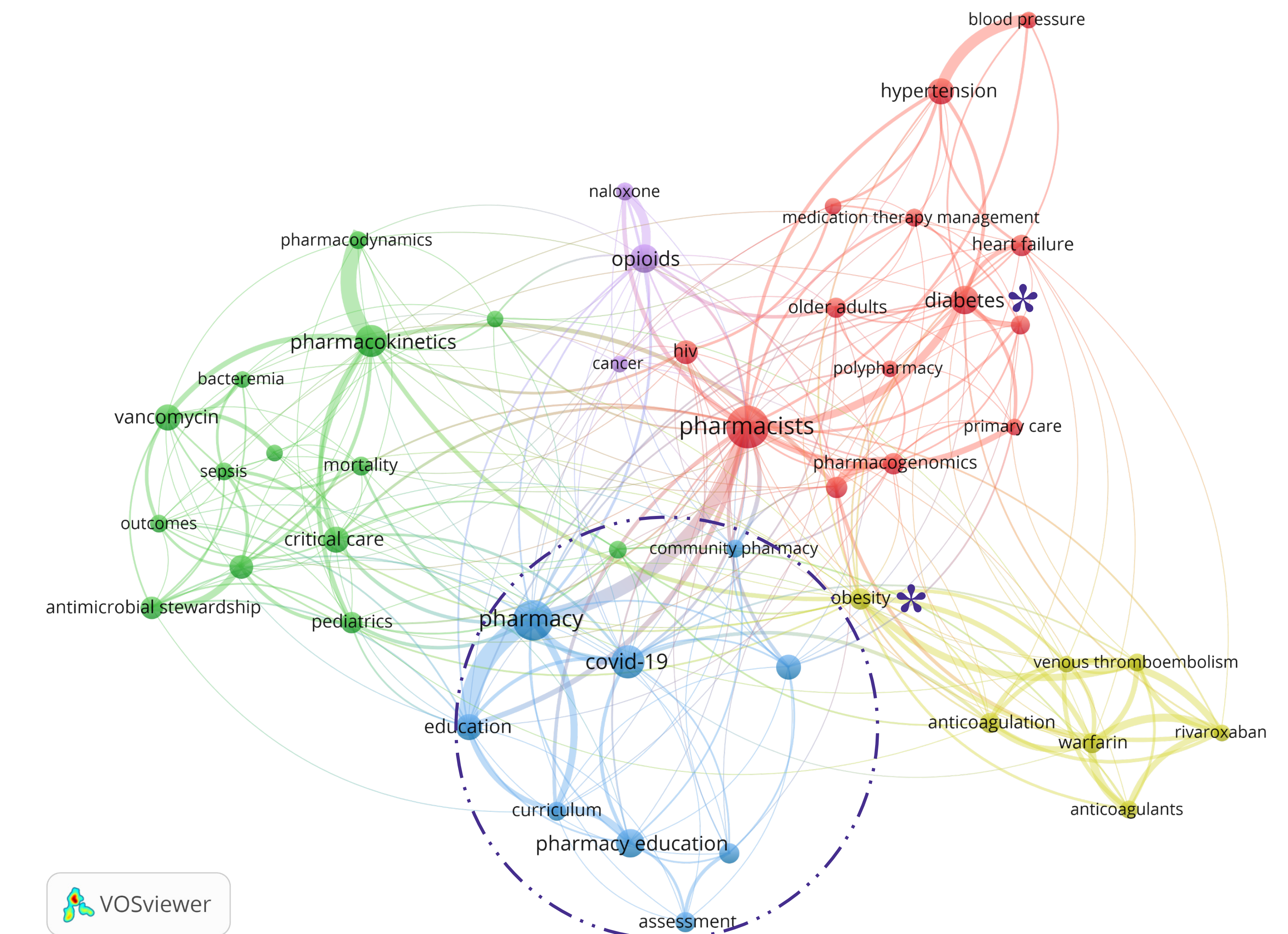


Figure 3: Keyword co-occurrence analysis of documents published during the pandemic. COVID-19 was the top keyword that emerged relative to before pandemic. COVID-19 documents (139) constituted 56.5% of the 246 increase over the period before the pandemic (Fig 2B). COVID-19 clustered with education-related keywords but not with COVID-19-exacerbating co-morbidities such as *obesity and *diabetes.

BACKGROUND

- COVID-19 pandemic increased the workload and stress involved in the necessary, emergency methods adopted for delivering pharmacy education
- The mission of faculty (teaching, research and service) was disrupted, potentially leading to research being deprioritized, paused or suspended
- If and how the pandemic affected scholarly outcomes of United States SOPs with respect to pharmacy practice faculty is not currently known

OBJECTIVES

To determine how the pandemic affected scholarly outcomes, and research focus of pharmacy practice faculty from the top 50 NIH-funded (SOPs)

METHODS

- The top 50 NIH-funded SOPs were selected by the criteria below (Fig. 1)
- Names of pharmacy practice faculty were obtained from the AACP roster
- Faculty's publications (articles and reviews) before (2018-2019) and during the pandemic (2020-2021) were obtained from Scopus
- Outcome measures** were scholarly activity ratio (SAR: proportion of faculty in an SOP who published ≥ 1 publications), and scholarly output (SO: number of publications) from the SOP during each period
- Data was analyzed with Python *pandas* (ver. 1.5.2) and VOSviewer² (ver. 1.6.19). Statistical analysis was done in R, using a linear mixed model; pandemic and region were fixed effects and SOP was the random effect

RESULTS

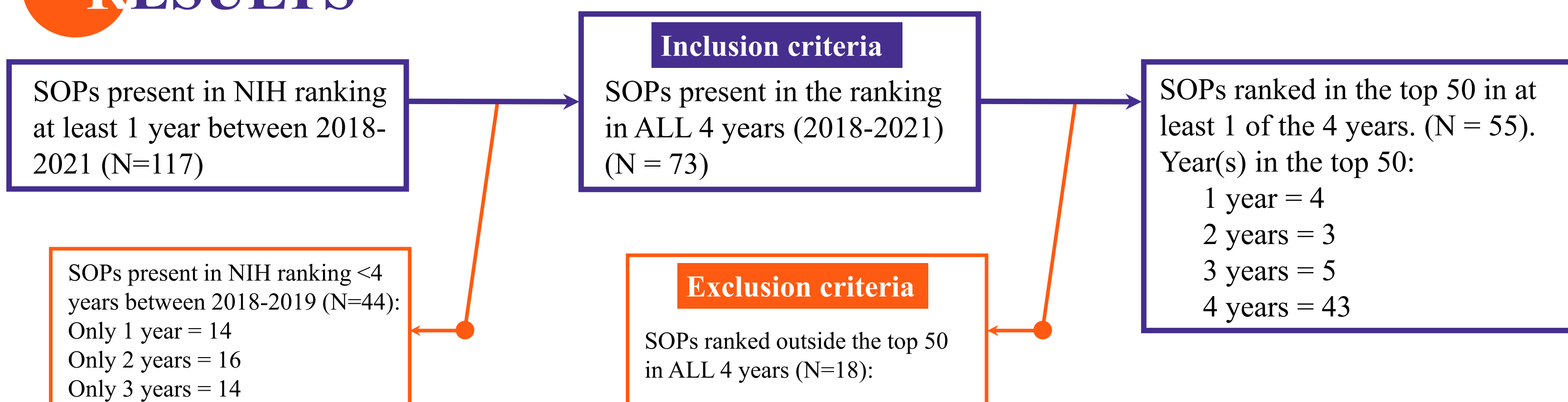


Figure 1: Inclusion and exclusion criteria of the top 50 NIH-funded Schools of Pharmacy (SOPs)

DISCUSSIONS

- SOPs remained scholarly active but the scholarly output increase of 8.9% was below previously reported 25% biennial increase³
- The differential effect of the pandemic on scholarly output within the regions may be due to variations in lockdown stringency⁴
- Ongoing studies focus on the pandemic effect at the individual-faculty level, and how it is modified by faculty characteristics

CONCLUSION

- Like the recently implemented flexibilities by the NIH,⁵ these results support the need for SOPs to adjust tenure clock and/or scholarly output benchmarks for pharmacy practice faculty

KEY REFERENCES

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