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Adherence to the PRISMA 2020 Guideline: An Evaluation of Meta-Analyses and Systematic Reviews Published in Pharmacy Journals

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BACKGROUND AND OBJECTIVE

- The Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) 2020 statement is a guideline that provides recommendations for the reporting of systematic reviews and meta-analyses. Many authors of systematic reviews and meta analyses cite PRISMA in their articles. However, it is unclear whether how adherent articles are to PRISMA.
- The purpose of this study was to determine how adherent systematic reviews and meta-analyses are to the PRISMA guidance.

DESIGN AND METHODS

- Scrimago Journal and Country Rank was used to generate a list of the largest pharmacy journals by citations across all fields of pharmacy using H index and total citations.
- A PubMed search was used to identify meta-analyses published from January 2016 to December 2021 in the selected journals. Filters used were “meta-analysis” and “English.” Studies that were not systematic reviews and/or meta-analyses were excluded. A total of 127 articles were included in the study.
- Two reviewers evaluated each article for adherence to PRISMA. A Google form was created with each item on the PRISMA 2020 checklist. Reviewers entered the PubMed ID and journal article into the online form, then selected “yes” or “no” for each item on the checklist. Reviewers also indicated on the form whether the authors stated that PRISMA was followed. A third reviewer was available for discrepancies. Data from the online form was exported to Microsoft Excel for analysis.
- Each article was assigned a score of 0 (no items completed) to 42 (all items completed). The average score for each journal was calculated. An overall median and mean score of all included studies was calculated. An adherence score was also calculated for each item on the PRISMA checklist to determine which items had higher adherence rates.

RESULTS

- The median article score was 30 out of 42 possible (IQR 6). The average article score was a 69% (29.25 out of 42 total +/- 5.27).
- Six items scored above a 95% on the PRISMA checklist (3, 6, 23a, 4, 7, 23d). These pertained to background and rationale of the study, discussion items, and explaining search strategy.
- Five items scored 25% or below on the PRISMA checklist (24b, 24a, 21, 27, 24c). These pertained to registration and protocol, supplementary data, and reporting bias. No article completed 24c (statement of amendments to the protocol).
- 74% of articles stated that they followed the PRISMA Guidelines.
- The most frequent intervention types in the articles were the efficacy and safety of drugs (42), comparison between drugs (31), and measurements of adherence (12).
- The most studied clinical subjects between the articles were processes with no specific clinical disease state (28), cardiology interventions (24), and psychiatric interventions (12).
- A subgroup analysis was completed for the overall score by pharmacy journal. A one-way ANOVA test was performed, resulting that none of the journals had a significantly different average article score ($p > 0.50$).

Average Journal Score	Journal Name	# of Articles
30.18	J Am Pharm Assoc	11
30.10	Res Social Adm Pharm	10
30.08	Ann Pharmacother	36
29.88	J Manag Care Spec Pharm	8
29.20	Am J Health Syst Pharm	5
28.86	Int J Clin Pharm	22
28.59	Pharmacotherapy	27
28.50	Int J Pharm Pract	4
23.25	Am J Pharm Educ	4

Table 1. Results of the subgroup analysis by journal score.

DISCUSSION AND CONCLUSION

- On average, meta-analyses in pharmacy journals have been adherent to PRISMA guidelines.
- Articles have room for improvement in several areas noted besides the lowest 5 items by percentage. Several articles were noted to have listed inclusion criteria but not exclusion criteria (items 5, 13a). Articles frequently did not list specific reasons for exclusion whilst describing their flow diagrams (item 16b).
- Research articles should be critically evaluated against all applicable guidelines when impacting decisions for patient care.

REFERENCES

1. Page MJ, McKenzie JE, Bossuyt PM, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71. doi:10.1136/bmj.n71

Included Articles by Journal

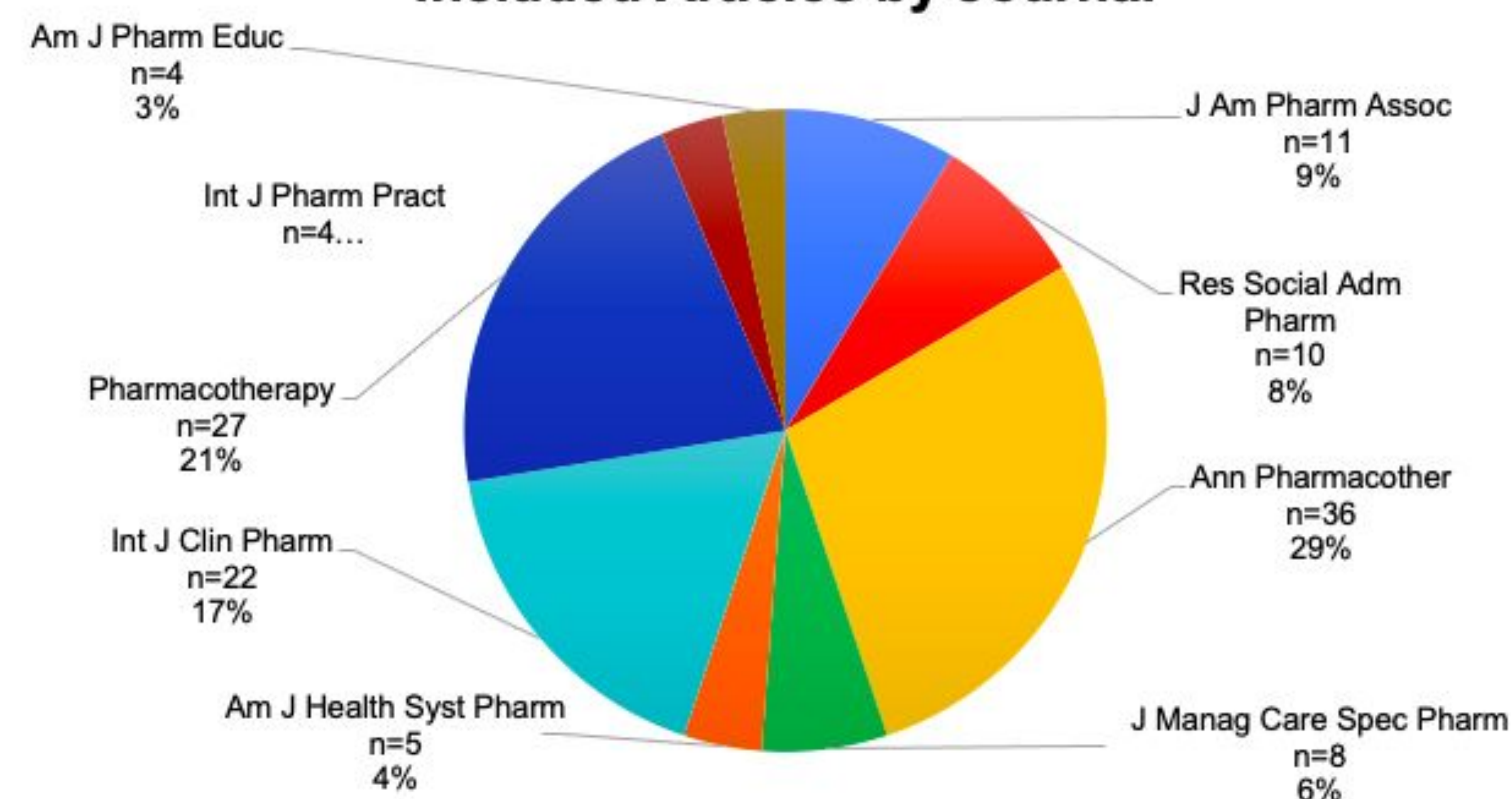


Figure 1. Included articles by journal.