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A scoping review of advanced or specialist pharmacist roles in hospital outpatient settings

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Background and Importance

- Hospital pharmacists are increasingly taking on advanced or specialist pharmacist roles in outpatient settings.[1-6]
- Understanding these roles is essential for workforce planning, service optimisation, and improving patient outcomes.

Aim

- To systematically map the global evidence regarding advanced or specialist pharmacist roles in hospital outpatient settings.

Methods

- Review undertaken following JBI methodology[7] and with a pre-registered protocol.[8]
- Five electronic databases were searched from inception to February 2025 (PubMed, Embase, CINAHL, Web of Science and Google Scholar).
- English language articles describing advanced or specialist pharmacist roles in hospital outpatient settings were included, with the International Pharmaceutical Federation's Global Advanced Development Framework used to guide role classification.[9]
- Two reviewers independently screened all articles; 10% underwent dual data extraction.
- Descriptive statistics were performed, and findings were narratively synthesised.

Results

Search Results

- From 8064 studies screened, 126 studies were included in the scoping review.

Country of Study

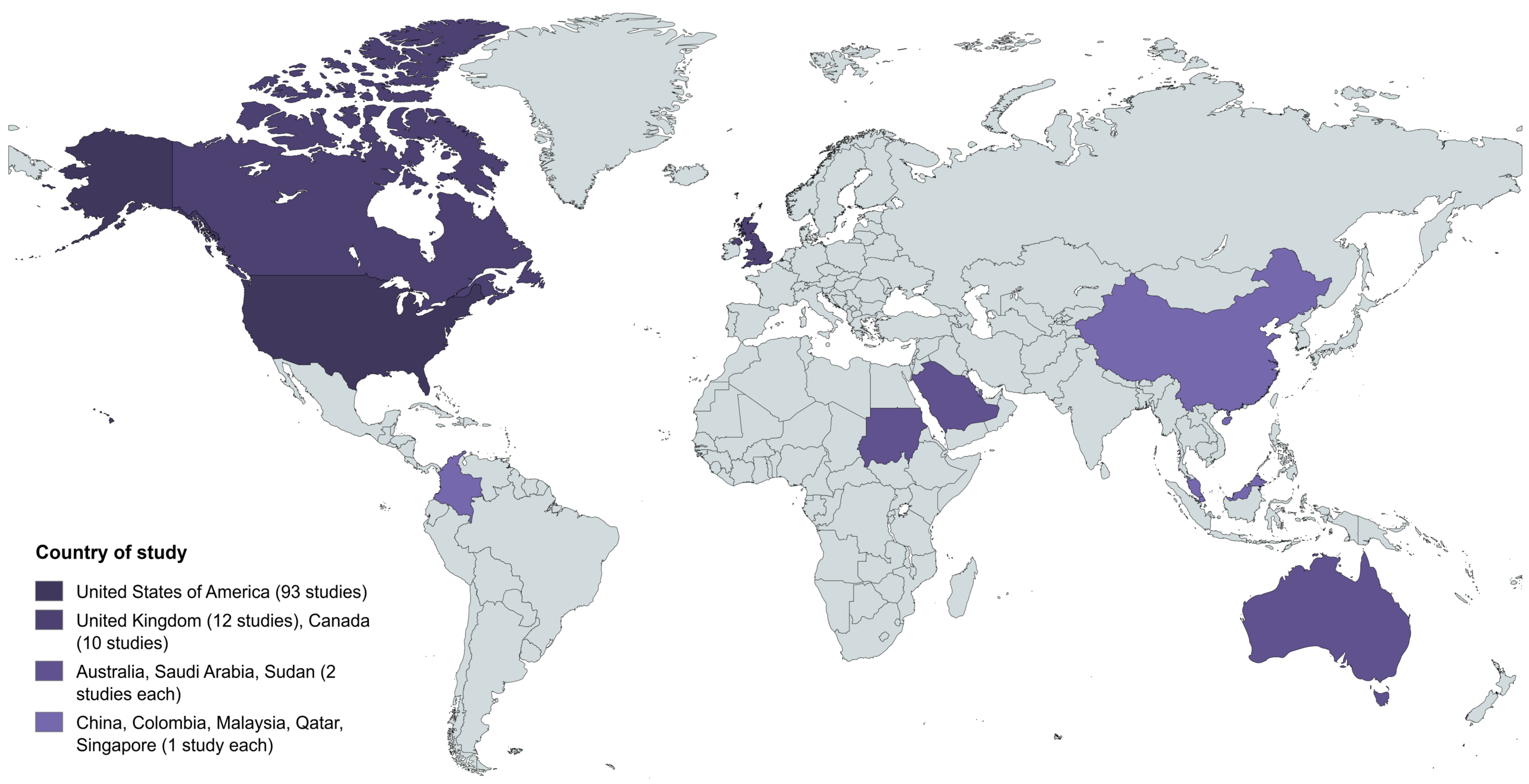

Figure 1: Global distribution of included studies

Trends in publication over time

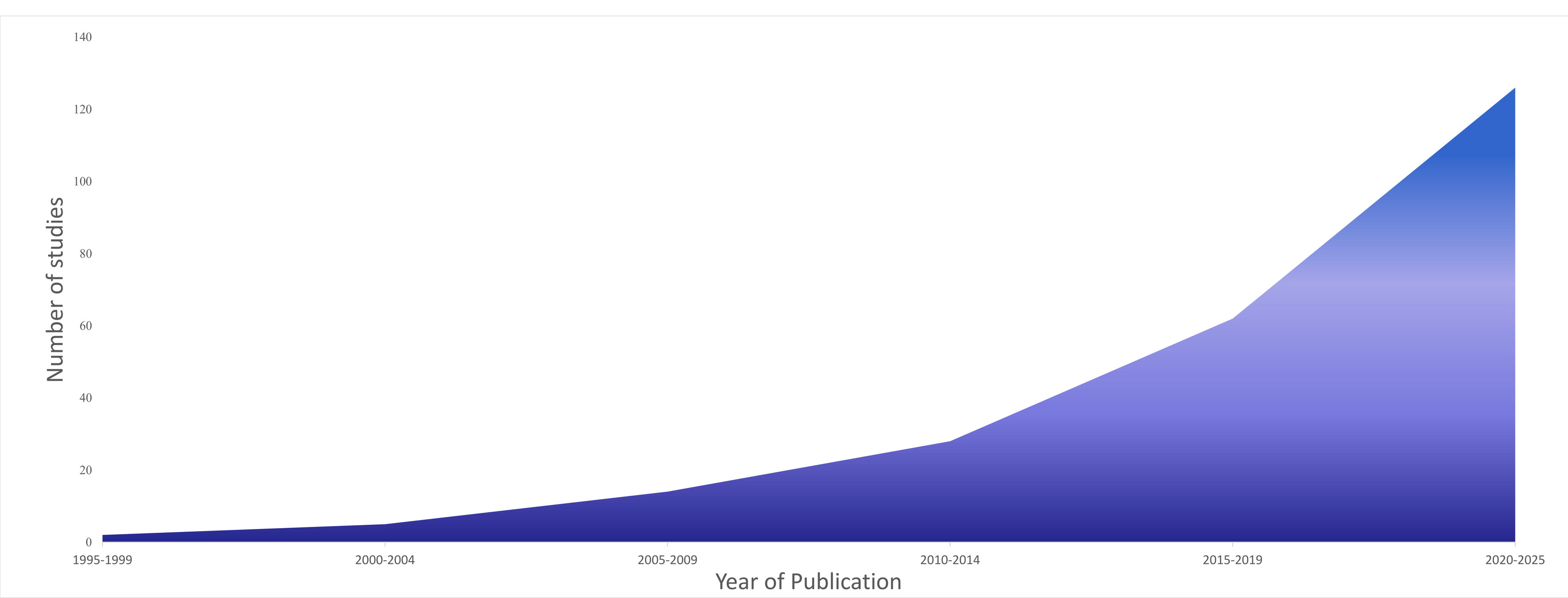

Figure 2: Growth in publications over time

Type of Study

- Descriptive case study/practice report (*n*=81); retrospective cohort study (*n*=25); pre-post study (*n*=12); randomised controlled trial (*n*=3); mixed methods (*n*=2); prospective cohort study (*n*=2); qualitative study (*n*=1)

Education and Training

- Generally poorly reported; only 51% of studies mentioned any aspect of the pharmacists' education or training.

Practice areas for advanced or specialist pharmacists in hospital outpatient settings

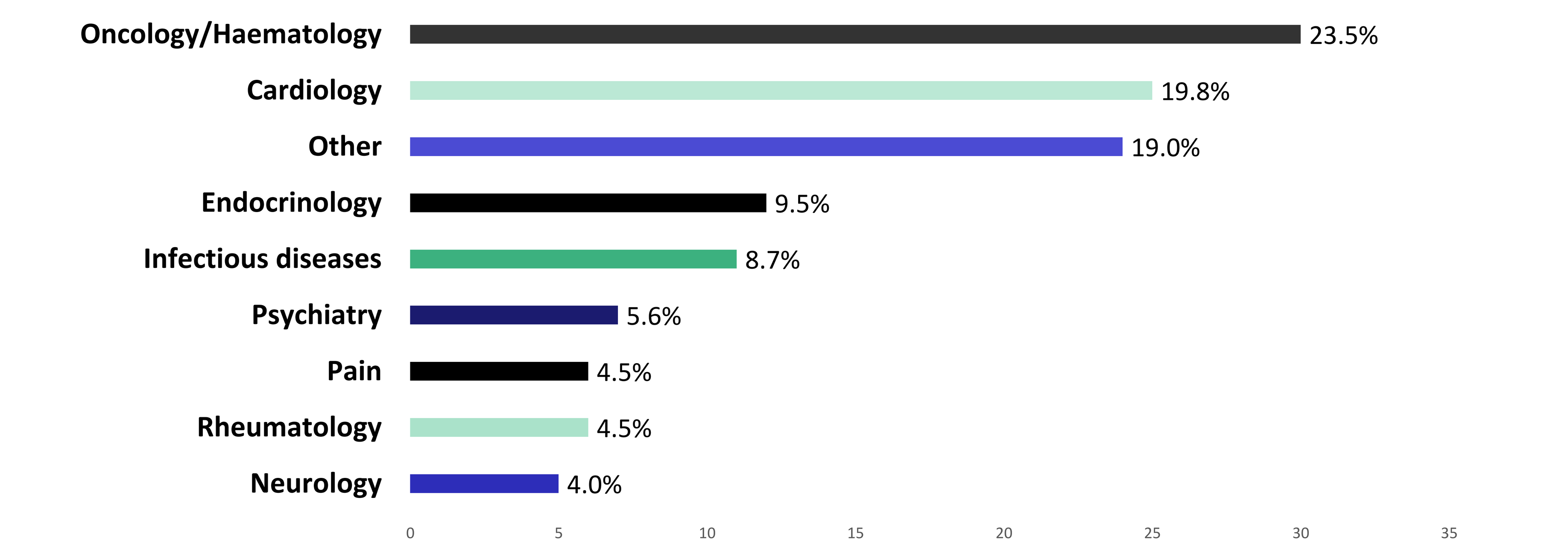

Figure 3: Bar chart showing distribution of advanced/specialist hospital pharmacists across outpatient clinical specialties.

Table 1: Tasks or activities undertaken by advanced or specialist pharmacists

Task or Activity	% of studies reporting	Task or Activity	% of studies reporting
Initiate, modify, discontinue, administer medication	88%	Clinical procedure or investigation	25%
Monitor safety of therapy	85%	Physical assessment	21%
Patient education	80%	Pharmacy staff education	17%
Monitor response to therapy	60%	Record interventions/activity	17%
Assess pharmaceutical therapy	58%	Shared decision making	16%
Document care in patient records	52%	Develop policy/procedure/guideline	13%
Other assessment e.g. adherence	48%	Multidisciplinary team meetings	11%
Healthcare professional referral	38%	Research/Clinical Trials	8%
Medicines reconciliation	32%	Healthcare professional education	7%
Care co-ordination	29%	Skin test/penicillin challenge	<1%
Management/administration	29%	Diagnosis	<1%

Table 2: Reported outcomes for these roles

Category	Key Outcomes Reported
Pharmacist productivity (*n*=86)	Visit volumes (*n*=44); number/type of interventions (*n*=39); referral rates (*n*=2); number of prescriptions authorised (*n*=1)
Patient-related outcomes (*n*=57)	Clinical parameter (*n*=26); satisfaction (*n*=12); adherence (*n*=8); patient-reported health score/rating (*n*=6); quality of life (*n*=2); mortality (*n*=2)
Resource/economic outcomes (*n*=57)	Admissions/associated costs (*n*=16); acute care visits (*n*=13); cost-savings (*n*=13); access to care (*n*=9); generated revenue (*n*=3); length of stay (*n*=2); HIV and STI screens per person year (*n*=1)
Medication outcomes (*n*=45)	Optimisation (*n*=17); adverse effects (*n*=10); therapeutic goal achieved (*n*=11); quantity of medicines used (*n*=3); medication safety (*n*=2); drug-related problems identified (*n*=2)
Staff-related outcomes (*n*=6)	Healthcare professional satisfaction with pharmacist (*n*=4); pharmacist job satisfaction (*n*=2)

Conclusion and Relevance

- This scoping review provides the first comprehensive mapping of advanced or specialist pharmacist roles in hospital outpatient settings, showing broad coverage across clinical areas, diverse tasks and activities undertaken by pharmacists in these roles, and a wide-spectrum of person-centred, clinical, and economic outcomes.
- These findings establish an evidence base to guide future role development, workforce planning, and research, and highlight gaps in reporting of pharmacist education and training, the need for more robust randomised controlled trial evidence, and the need for future research from a European perspective.

References

Acknowledgements

We would like to thank Siobhan Bowman, (UCC librarian) for her assistance with search strategy development. We are grateful to Claire Keane, Jennifer Dwyer, Susan Brosnan, and Mary O'Sullivan, pharmacists at St. Vincent's University Hospital Dublin, for their advice on the protocol, and Claire Keane and Jennifer Dwyer for additional input on the preliminary review findings.

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