Local capacity for quality evidence syntheses: Methodological and reporting quality of systematic reviews from Dalhousie University-affiliated reviewers

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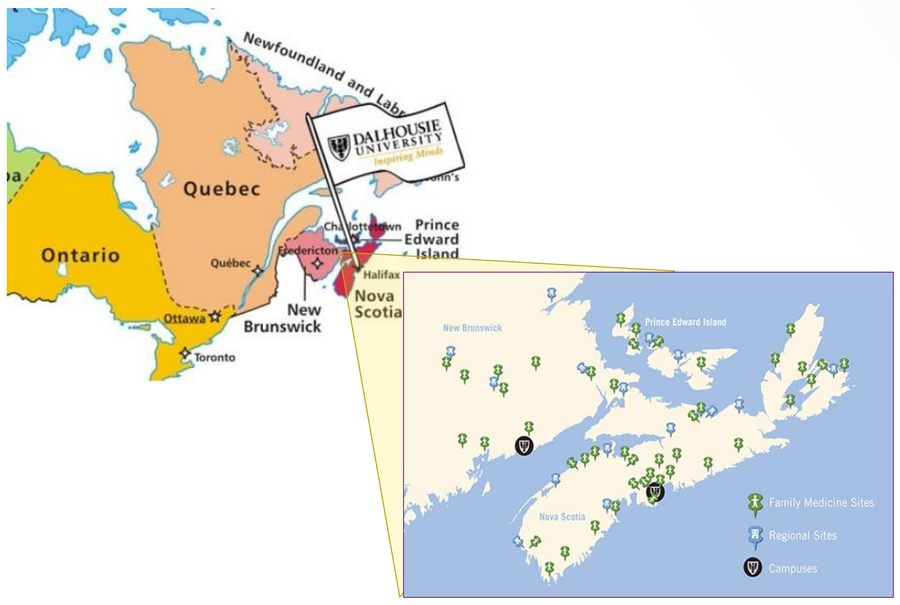
BACKGROUND

In order to best support the conduct of systematic reviews (SRs) in our institutional setting, we set out to examine the SRs produced by Dalhousie University affiliates. Initiation of an institutional subscription to Covidence increases contact between the health sciences library and reviewers and provides an opportunity for promotion of services and support. This outreach opportunity is a chance to improve SR training, so assessing the degree of adherence to methodological and reporting guidelines using AMSTAR 2 and PRISMA, respectively, will allow development of targeted training and support services for current and future review authors.

Dalhousie University

Dalhousie university is a research-intensive, mid-sized institution with over 18,800 students, nearly 1000 professors, and many more associated instructors and teaching clinicians across 13 Faculties.



METHODS

Based on the work of Ross-White (2016), search strategies were developed and peer-reviewed for sensitivity and accuracy in locating SRs with at least one Dalhousie author in the previous 5 years.

Database	Search strategy
PubMed	(((((search*[tiab] OR meta-analysis[Publication Type] OR meta-analysis[tiab] OR MEDLINE[tiab] OR (systematic[tiab] AND review[tiab])) OR systematic[sb]))) AND (dalhousie[ad] OR halifax[ad]) AND (("2013/01/01"[PDat] : "3000/12/31"[PDat])))
Embase.com	(('meta analysis'/exp OR 'systematic review'/exp OR 'meta analysis':ti,ab,kw OR search*:ti,ab OR (systematic*:ti,ab,kw AND review:ti,ab,kw)) AND (dalhousie:ad OR halifax:ad)) AND [2013-2018]/py
Cochrane Library (Wiley)	Search all text "Dalhousie" Publication Year from 2013 to 2018
Joanna Briggs Institute (Ovid)	Dalhousie.af. Limited publication date to 2013-2018
Scopus	(((TITLE-ABS-KEY (systematic* AND review)) OR (TITLE-ABS-KEY (search* OR "meta analysis" OR medline))) AND (AFFIL (dalhousie) OR AFFILCITY (halifax))) AND (PUBYEAR > 2012)

Selection of reviews

We used Covidence to screen in duplicate the titles and abstracts, and then full-text, of the studies retrieved to identify those which met the following criteria:

1) Systematic review and/or meta-analysis (based on comprehensive review) as determined by…
- Self-identification in the title, abstracts, or methods; OR
- Comprehensive review with clearly identifiable methods and results

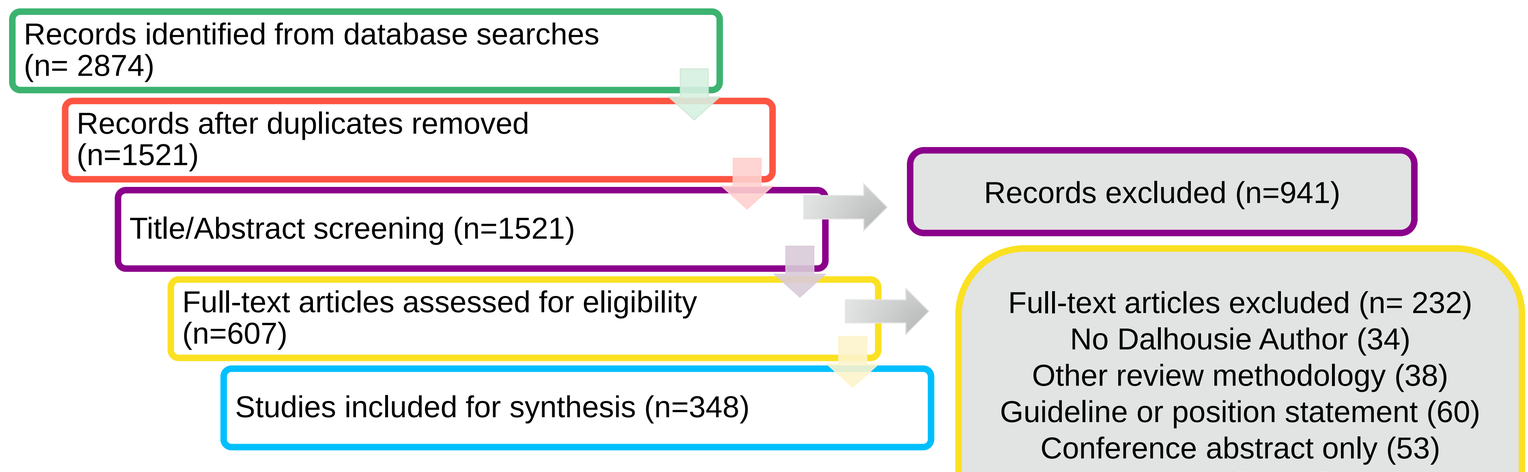
2) At least one author affiliated with Dalhousie, as determined by the affiliations in the study report or by checking (via Google) local authors for cross-affiliation

Scoping reviews and other types of evidence syntheses were excluded from this study, but flagged for future analysis. Guidelines not based on systematic evidence were deemed irrelevant and later all guidelines, consensus statements, and position papers were excluded since reporting for these syntheses follow different formats.

Data extraction and analysis

We present here descriptive details based on the authors, years and journals of publication. Data extraction on individual reviews will continue with examination of PRISMA checklist and AMSTAR 2 criteria to reflect the reporting and methodological quality, respectively.

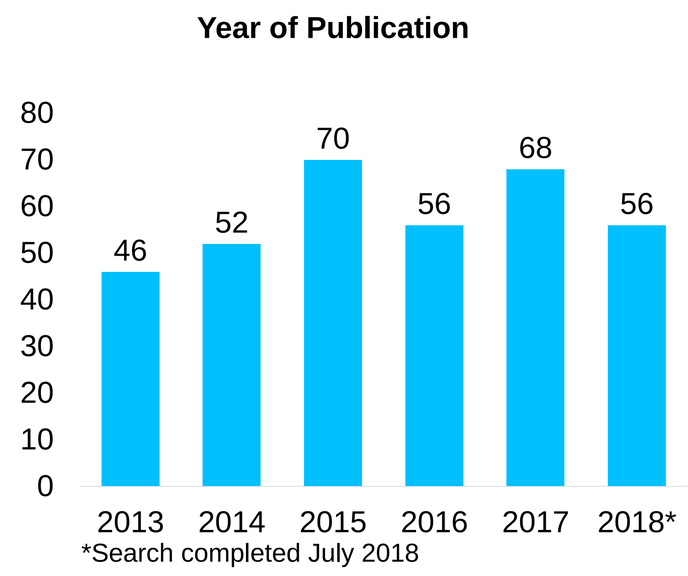
RESULTS



Journals

208 journals were represented in the publications. From 2013 to present, Dalhousie authors published 25 Cochrane reviews and 5 JBI reviews. Twenty-eight systematic reviews were published in Canadian-specific journals, including *Canadian Journal of Emergency Medicine* (n=7), *Canadian Journal of Psychiatry* (n=9), *Canadian Journal of Anesthesia* (n=3), and a number of other Canadian titles appear fewer than 3 times over this 5 year sample.

The range of topic areas represented by the journals varied considerably across health and medical topics. There are 24 reviews published in pain- or anesthesia-related journals and 26 reviews from a range of surgical sub-specialty journals, while 66 reviews were published by journals in the fields of psychiatry, psychology, and neuroscience, reflecting the diverse research foci of Dalhousie-affiliated clinicians and researchers. This sample also includes outliers, such as one special issue of systematic reviews in Gastric Cancer (2013, v 15, Supplement 1), which included 14 reviews with the same Dalhousie author, L. Helyer, (13/16 of her reviews). Only 4 non-health related journals appeared in our results, publishing 5 reviews on ecology topics.



Frequent Dalhousie-Affiliated SR Authors

Author	Frequency	Specialty
Hayden J	28	SR Methods, Low Back Pain
Kisrely S	21	Psychiatry
McGrath P	21	Psychiatry; Pediatrics
Chambers C	17	Pediatrics; Pain
Helyer L	16	General Surgery
Wei Y	15	Psychiatry
Green R	13	Emergency/Critical Care
Huguet A	11	Pediatrics; Pain
Magee K	8	Emergency
Abbass A	6	Psychiatry
Rockwood K	5	Geriatrics
Uher R	3	Psychiatry
Helwig M	3	SR Methods

DISCUSSION

Limitations

Both the search and our inclusion criteria are guided by the standards for systematic reviews and meta-analyses developed in the health sciences disciplines. As a result, we may have missed or excluded reviews that are a similar methodology from other disciplines such as environmental studies, business, or basic sciences, if they were called something different and reported in such a way that we could not clearly identify the methods. In addition, since guidelines were excluded from our final analysis, many systematic reviews which formed their evidence base were also excluded. For example, the clinical practice guidelines reported in the Journal of Obstetrics and Gynecology of Canada frequently report the systematic review from which the guideline is developed, but these did not meet our inclusion criteria, leaving this specialty under-represented in our sample despite considerable synthesis work taking place.

Future analysis

We plan to expand our data extraction beyond the initial sample to complete a more fulsome data analysis of all the criteria in the AMSTAR 2 appraisal and PRISMA checklist as well as additional data regarding affiliations and locations of all authors. In final extraction we plan to map out which Dalhousie sites are doing systematic reviews and analyze the services provided at those locations. We would like to examine the data in relation to the location and affiliation of the primary authors, subject area of the review, and involvement of library services.

We also plan to do a descriptive analysis of the other types of syntheses excluded from this review to gain an understanding of the range of methodologies applied by Dalhousie affiliates.

CONCLUSIONS

Systematic reviews authored by at least one Dalhousie affiliated researcher are published in a wide range of topics, but those included in this study are mainly in the medical and health sciences disciplines. Contrary to statistics reported elsewhere (Ioannidis, 2016), the number of systematic reviews authored by Dalhousie affiliates has not increased exponentially over the past 5 years, although this may not reflect overall evidence synthesis publications.

Link to full set of 348 included reviews: https://goo.gl/aJ4mcv

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Covidence systematic review software, Veritas Health Innovation, Melbourne, Australia; www.covidence.org

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Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

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Ioannidis JP. The mass production of redundant, misleading, and conflicted systematic reviews and meta-analyses. The Milbank Quarterly. 2016 Sep;94(3):485-514.

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