

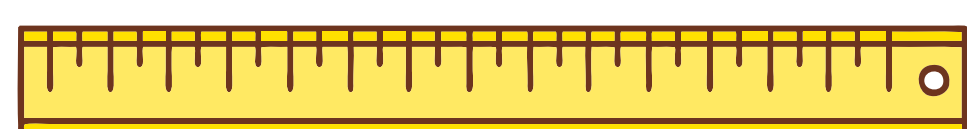
# Early career researchers in the health sciences need to consider **time, methods, experience and expertise**, as well as **training and mentorship** as critical factors for success when undertaking systematic and scoping reviews.

## The Problem

Systematic reviews (SysRevs) and scoping reviews (ScopRevs) are being published at an increasing rate. At each stage during the systematic or scoping review cycle, challenges can arise, especially for early career researchers (ECRs)



## Methods



We ran comprehensive searches in multiple electronic databases. The selection criteria for screening were established a priori and pilot tested. We included studies that focused on ScopRevs or SysRevs undertaken by ECRs in the health sciences. All levels of screening, and data abstraction, were done by two independent reviewers, conflicts were resolved by discussion or a third reviewer. Results were analysed thematically.

## Results

The literature search yielded a total of 14967 citations. 148 references were deemed potentially relevant after the first level of screening. Eight documents fulfilled our eligibility criteria and were included in our study.



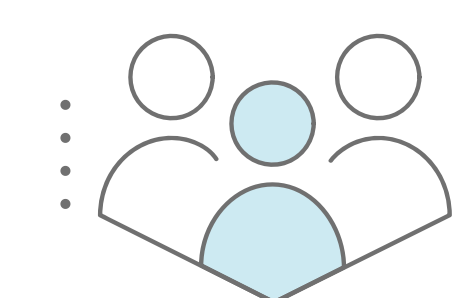
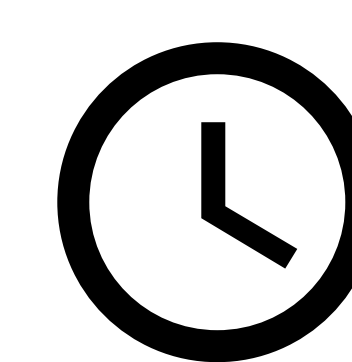
## Key Findings

### Barriers

- **Time**
  - Adequate, and protected time
  - ScopRev or SysRev took longer
- **Experience and expertise**
  - Lack of confidence in skills, managing feasibility and scope.
  - Research terminology, resources, training without practice-based component, and motivation.
- **Training and mentorship**
  - Insufficient guidance, mentorship, and funding for training.
- **Steps in the conduct of SysRevs and ScopRevs**
  - Developing research question
  - Producing an adequate search strategy
  - Lack of previous training and practice in critical appraisal, and navigating its partly subjective nature.
  - Performing and interpreting statistical analysis.

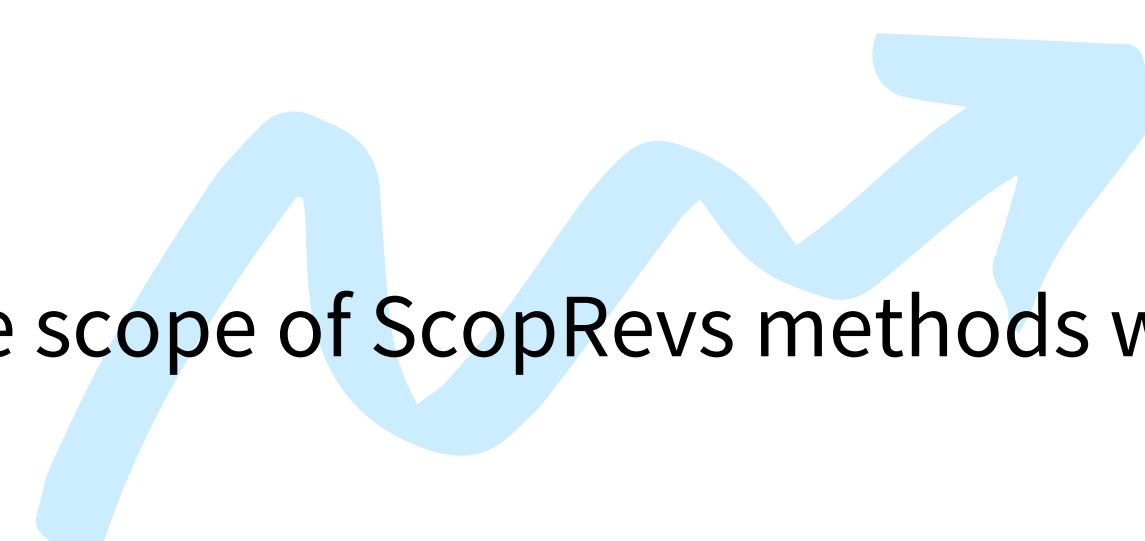
### Facilitators

- **Time**
  - Having protected time to perform tasks, and gather feedback.
- **Experience and expertise**
  - A well-rounded team that included members with methodological expertise, a strong project management plan, and open communication.
- **Training and mentorship**
  - Responsive supervisors, trainers, and mentors who provide rigorous feedback.
  - Practice-based learning.
- **Steps in the conduct of SysRevs and ScopRevs**
  - A pre-defined protocol
  - Background knowledge and training in research methods, statistics, literature searching, and critical appraisal.
  - Protected time for faculty and students to complete projects from program directors.



### Barriers and facilitators

- Peer-learning and peer-support
- An online learning environment.
- The flexibility and iterative process, and wide scope of ScopRevs methods was identified as both favourable and challenging.



## Conclusion

Our review provides an overview of the challenges ECRs face when conducting SysRevs and ScopRevs, as well as the facilitators that can be harnessed to assist them. The results can:

- Be used to evaluate, compare, and guide the validation of interventions currently being used in training and practice;
- Benefit university communities and affiliated institutions worldwide, and strengthen or develop relationships among faculties, administrators and staff to find creative solutions that will benefit ECRs who undertake scoping and systematic reviews.

Addressing the barriers will not only benefit the skills and knowledge of ECRs but will in turn lead to improved methodological rigour, conduct and reporting of published SysRevs and ScopRevs and therefore help to tackle the issue of research waste.

