Planning for PRISMA: A tool to accurately track citations in multiphase systematic review searches

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Introduction

Citation management plays an important role in the transparent reporting of systematic review methods. The PRISMA flow diagram is recommended to assist systematic reviewers with tracking and reporting citations from retrieval to inclusion. This can be challenging as systematic reviews often draw from multiphase searches of databases, grey literature, reference lists, and from hand searches.





Librarians are ideally placed to help systematic review teams with citation management. We describe the development and preliminary testing of a citation tracking tool to accompany the PRISMA flow diagram.

Description

- > We conducted a literature review and an environmental scan of citation management strategies employed by librarians and/or systematic reviewers.
- > Two librarians created a tool and accompanying guide in consultation with experienced systematic review collaborators.
- > The tool was pilot tested by seven graduate students completing their first systematic review, and feedback was collected through a questionnaire and group discussion. In addition to qualitative feedback, students assigned scores out of five for usability and utility.

Tool Features

The tool is an Excel workbook with five sheets which identify the type and detail of information to collect at each phase of the systematic review literature search. There are a mix of modifiable and automated fields to help reviewers manage their project.



The first sheet of the tool, the

Database Searching sheet, enables reviewers to keep all of their review information related to the database searches (and updates, if conducted) in one place. This sheet is made up of three major sections.

Figure 3. Database searching sheet

	ARCH	SEARCH UPDATE	S	
		SEARCH UPDATE #1		Т
red text = included in PRISMA Flow Diagram		red text = included in PRISMA Flow Diagram		
Search information		Search information		
Date of searches	09-Feb-17	Date of searches	[date]	
Name of searcher	Leah	Name of searcher	[name]	
Date limit applied	none	Date limit applied	[date range]	
Databases searched	Records count	Databases searched	Records count	Da
MEDLINE	550	MEDLINE	0	м
Embase	750	Embase	0	Er
CENTRAL	50	CENTRAL	0	CE
[database 4]	0	[database 4]	0	ſd
[database 5]	0	[database 5]	0	[d
[database 6]	0	[database 6]	0	[d
[database 7]	0	[database 7]	0	ſd
[database 8]	0	[database 8]	0	ſd
[database 9]	0	[database 9]	0	b]
[database 10]	0	[database 10]	0	ſd
Total records identified	1350	Total records identified	0	Т
Duplicates	Records count	Duplicates	Records count	D
Duplicates removed	600	Duplicates removed	0	D
Records after duplicates removed	750	Records after duplicates removed	0	Re
Title/Abstract screening	Records count	Title/Abstract screening	Records count	Ti
Records screened (title/abstract)	750	Records screened (title/abstract)	0	R
Records excluded (title/abstract)	725	Records excluded (title/abstract)	0	R
Records remaining	25	Records remaining	0	Re
Full Text screening	Records count	Full Text screening	Records count	Fu
Records screened (full text)	25	Records screened (full text)	0	R
Records excluded (full text), total	15	Records excluded (full text), total	0	R
Wrong population	10	Wrong population	0	W
Wrong setting	5	Wrong setting	0	W
[reason 3]	0	[reason 3]	0	In
[ieddoli d]	0	[reason 4]	0	In
[reason 4]				- P-
· · · · · · · · · · · · · · · · · · ·	0	[reason 5]	0	[n

Outcomes

Respondents provided positive feedback on the layout of the tool and found it user friendly, though they did suggest some modifications to certain pages which we will address in further iterations of the tool. In addition to the qualitative feedback, average scores from the questionnaire were as follows:

Usability: How easy was it to use the tool?





Utility: How useful is the tool?



searching.

Figure 4. Sheets 2-5

GREY LITERATURE	Grey literature searching is a form o
	title/abstract screening; all selected reco
	are therefore immediately eligible for f
	text screening
red text = included in PRISMA Flow Diagram	
Grey literature search #1	
Date of search	09-Feb-17
Name of searcher	Leah
Database/resource searched	ClinicalTrials.gov
Records identified for full text screening*	20
Grey literature search #2	
Date of search	[date]
Name of searcher	[name]
Database/resource searched	[name]
Records identified for full text screening	0
Grey literature search #3	
Date of search	[date]
Name of searcher	[name]
Database/resource searched	[name]
Records identified for full text screening	0
Grey literature search #4	
Date of search	[date]
Name of searcher	[name]
Database/resource searched	[name]
Records identified for full text screening	0
Grey literature search #5	
Date of search	[date]
Name of searcher	[name]
Database/resource searched	[name]
Records identified for full text screening	0
Total from formal grey lit searches	20
Other grey literature found	5
Total records identified for full text screening	25
Duplicates	Records count
Duplicates removed/already identified	0
Records after duplicates removed	25
Full Text screening	Records count
Records screened (full text)	25
Records excluded (full text), total	15
Wrong population	10
Wrong setting	5
[reason 3]	0
[reason 4]	0
[reason 5]	0
Total studies included	10

HANDSEARCHING OF KEY JOURNALS	Handsearching is a form of	REFERENCE SEARCHING	Reference searching is a form of title/abstract screening;	FORWARD SEARCHING	Forward searching is a form of title/abstract
HANDSEARCHING OF RET JOORNALS	title/abstract screening; all selected	<u>REPERENCE SEARCHING</u>	all selected records are therefore immediately eligible for	PORWARD SLARCHING	screening; all selected records are therefore
	records are therefore immediately		full text screening		immediately eligible for full text screening
d Asuta included in DDICASA Class Diseases		red text = included in PRISMA Flow Diagram		red text = included in PRISMA Flow Diagram	n
d text = included in PRISMA Flow Diagram		Reference Search #1		Reference Search #1	
andsearch #1	71 - A	Date of search	[date]	Date of search	[date]
ate of search	[date]	Name of searcher	[name of searcher]	Name of searcher	[name of searcher]
ame of searcher	[name of searcher]	Number of reference lists searched	0	Number of records forward searched	0
ame of journal searched	[name of journal]	Details	[any relevant details or notes]	Details Records identified for full text screening	[any relevant details or notes]
ate range of journals searched	[date range]	Records identified for full text screening*	0	Records identified for full text screening Reference Search #2	U
ecords identified for full text screening*	0	Reference Search #2		Date of search	[date]
andsearch #2	11 • 3	Date of search	[date]	Name of searcher	[name of searcher]
ate of search	[date]	Name of searcher	[name of searcher]	Number of records forward searched	0
ame of searcher	[name of searcher]	Number of reference lists searched	0	Details	[any relevant details or notes]
ame of journal searched	[name of journal]	Details	[any relevant details or notes]	Records identified for full text screening	0
ate range of journals searched	[date range]	Records identified for full text screening	0	Reference Search #3	
ecords identified for full text screening	0	Reference Search #3	1	Date of search	[date]
andsearch #3		Date of search	[date]	Name of searcher	[name of searcher]
ate of search	[date]	Name of searcher	[name of searcher]	Number of records forward searched	0
ame of searcher	[name of searcher]	Number of reference lists searched	0	Details	[any relevant details or notes]
ame of journal searched	[name of journal]	Details	[any relevant details or notes]	Records identified for full text screening	0
ate range of journals searched	[date range]	Records identified for full text screening Reference Search #2	0	Reference Search #2 Date of search	1 1 - 1
ecords identified for full text screening	0	Reference Search #2 Date of search	[date]	Name of search	[date] [name of searcher]
andsearch #4		Name of search	[date] [name of searcher]	Number of records forward searched	(name of searcher) N
ate of search	[date]	Name of searcher	[name of searcher]	Details	[any relevant details or notes]
ame of searcher	[name of searcher]	Details	[any relevant details or notes]	Records identified for full text screening	0
ame of journal searched	[name of journal]	Records identified for full text screening	any relevant details of notes]	Reference Search #4	_
ate range of journals searched	[date range]	Reference Search #4	U	Date of search	[date]
ecords identified for full text screening	0	Date of search	[date]	Name of searcher	[name of searcher]
andsearch #5		Name of searcher	[name of searcher]	Number of records forward searched	0
ate of search	[date]	Number of reference lists searched	0	Details	[any relevant details or notes]
ame of searcher	[name of searcher]	Details	[any relevant details or notes]	Records identified for full text screening	0
ame of journal searched	[name of journal]	Records identified for full text screening	0	Reference Search #5	
ate range of journals searched	[date range]	Reference Search #5	U U	Date of search	[date]
ecords identified for full text screening	0	Date of search	[date]	Name of searcher Number of records forward searched	[name of searcher]
andsearch #6	0	Name of searcher	[name of searcher]	Number of records forward searched Details	U [any relevant details or notes]
ate of search	[date]	Number of reference lists searched	0	Becords identified for full text screening	[any relevant details of notes]
ame of searcher	[name of searcher]	Details	[any relevant details or notes]	Total studies identified for full text screening	0
ame of journal searched	[name of journal]	Records identified for full text screening	0	Duplicates	Records count
atte range of journals searched	[date range]	Total studies identified for full text screening	0	Duplicates removed/already identified	0
ecords identified for full text screening		Duplicates	Records count	Records after duplicates removed	0
-	0	Duplicates removed/already identified	0	Full Text screening	Records count
otal from formal handsearching	•	Records after duplicates removed	0	Records screened (full text)	0
ther records found (including those identified by expert	0	Full Text screening	Records count	Records excluded (full text), total	0
otal studies identified for full text screening	0	Records screened (full text)	0	Wrong population	0
uplicates	Records count	Records excluded (full text), total	0	Wrong setting	0
uplicates removed/already identified	0	Wrong population	0	(reason 3)	0
cords after duplicates removed	0	Wrong setting	0	(reason 4)	0
II Text screening	Records count	[reason 3]	0	/reason 5/ Total studies included	0
cords screened (full text)	0	[reason 4]	0	rotal studies included	U
cords excluded (full text), total	0	[reason 5]	0		
rong population	0	Total studies included	0		
rong setting	0				
eason 3]	0				
eason 4]	0				
eason 5]	0				
otal studies included	0				

The sixth and final sheet "PRISMA Flow Diagram Data" automatically collects all of the pertinent data from the previous sheets to generate the necessary information for authors to input into a PRISMA Flow diagram.

PRISMA FLO entification Records identifie Additional record Total records iden Duplicates Duplicates remove Records after du Title/Abstract Sc Records screened Records excluded Total studies iden Full Text Screening Full-text articles a Full-text articles e Wrong population Wrong setting [reason 3] [reason 4] [reason 5] Total studies inclu those included in a automatically) Synthesis Studies included i Studies included

Discussion

Overall, respondents found the tool was useful, and made tracking and reporting less intimidating. The tool responds to the complexity of multiphase systematic review searching. More testing, from systematic review initiation to completion, is required to confirm its usability and utility.

References http://bit.ly/2oFT28G

Contact





Sheets two through five track grey literature searching (optional), handsearching (optional), reference searching, and forward citation

Figure 5. PRISMA Flow Diagram Data sheet

<u>N DIAGRAM DATA</u>	Automatic calculation
	n =
d through database searching	1350
identified through other sources	25
ntified (does not appear in PRISMA flow diagram)	1375
	n =
ed (does not appear in PRISMA flow diagram)	600
plicates removed	775
reening	n =
d (ti/ab)	775
d (ti/ab)	725
ntified for full text screening* (does not appear in PRISMA flow diagram	50
וק	n =
assessed for eligibility	50
excluded, with reasons	30
า	20
	10
	0
	0
	0
ided (does not appear in PRISMA flowchart; total is further divided by qualitative and quantitative syntheses, which will not populate	20
	n =
in qualitative synthesis (these values need to be filled manually)	0
in quantitative synthesis (these values need to be filled manually)	0