

APPENDICES

Appendix I: Search Strategies

Database	Search Strategy
MEDLINE Ovid MEDLINE(R) ALL 1946 to May 27, 2022	<ol style="list-style-type: none"> 1. exp Male/ and exp Aged/ 2. exp Aging/ and exp Male/ 3. exp Male/ and exp "Aged, 80 and over"/ 4. exp Geriatrics/ and exp Male/ 5. ((older or ag?ing or aged or senior* or elder* or gerontolog* or geriatric* or "old age") adj3 (male* or man or men)).mp. 6. (men over adj ("60" or "65" or "70" or "75" or "80" or "85" or "90")).mp. 7. (male* over adj ("60" or "65" or "70" or "75" or "80" or "85" or "90")).mp. 8. or/1-7 9. exp Urinary Incontinence/ 10. ((urin* or bladder) adj2 (incontinen* or continen*)).mp. 11. exp Urinary Bladder, Overactive/ 12. ((overactiv* or hyper* or detrusor or vesic*) adj2 bladder).mp. 13. (bladder* adj2 (neuropath* or neurogen* or neurolog*)).mp. 14. ((bladder or detrusor or vesic*) adj5 (instability or stab* or unstable or irritab* or hyperreflexia or dys?ynerg* or dyskinesi* or irritat*)).mp. 15. (nervous adj1 (pollakisur* or pollakiur*)).mp. 16. or/9-15 17. exp Risk Factors/ 18. risk*.ti. or risk factor*.ab. /freq=3 19. (predict* or cause*).ti. or ((modifiable or behavio?r* or contribut* or transient* or adjust* or temporar* or chang* or adapt* or alter*) adj3 (factor* or predict* or cause*)).mp. 20. relative risk*.mp. 21. or/17-20 22. 8 and 16 and 21
Embase Ovid Embase 1974 to 2022 May 27	<ol style="list-style-type: none"> 1. exp male/ and exp aged/ 2. exp aging/ and exp male/ 3. exp male/ and exp very elderly/ 4. exp geriatrics/ and exp male/ 5. ((older or ag?ing or aged or senior* or elder* or gerontolog* or geriatric* or "old age") adj3 (male* or man or men)).mp. 6. (men over adj ("60" or "65" or "70" or "75" or "80" or "85" or "90")).mp. 7. (male* over adj ("60" or "65" or "70" or "75" or "80" or "85" or "90")).mp. 8. or/1-7

	<p>9. exp urine incontinence/ 10. ((urin* or bladder) adj2 (incontinen* or continen*)).mp. 11. exp overactive bladder/ 12. ((overactiv* or hyper* or detrusor or vesic*) adj2 bladder).mp. 13. (bladder* adj2 (neuropath* or neurogen* or neurolog*)).mp. 14. ((bladder or detrusor or vesic*) adj5 (instability or stab* or unstable or irritab* or hyperreflexia or dys?ynerg* or dyskinesi* or irritat*)).mp. 15. (nervous adj1 (pollakisur* or pollakiur*)).mp. 16. or/9-15 17. exp risk factor/ 18. risk*.ti. or risk factor*.ab. /freq=3 19. (predict* or cause*).ti. or ((modifiable or behavio?r* or contribut* or transient* or adjust* or temporar* or chang* or adapt* or alter*) adj3 (factor* or predict* or cause*)).mp. 20. relative risk*.mp. 21. or/17-20 22. 8 and 16 and 21</p>
CINAHL	<p>S1 (MH "Aged+") AND (MH "Male") S2 (MH "Aging+") AND (MH "Male") S3 (MH "Geriatrics+") AND (MH "Male") S4 (MH "Aged, 80 and Over+") AND (MH "Male") S5 (older or ag#ing or aged or senior* or elder* or gerontolog* or geriatric* or "old age") N3 (male* or man or men) S6 (men over N1 ("60" or "65" or "70" or "75" or "80" or "85" or "90")) S7 (male* over N1 ("60" or "65" or "70" or "75" or "80" or "85" or "90")) S8 S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 S9 (MH "Urinary Incontinence+") S10 ((urin* or bladder) N2 (incontinen* or continen*)) S11 (MH "Overactive Bladder") S12 ((overactiv* or hyper* or detrusor or vesic*) N2 bladder) S13 (bladder* N2 (neuropath* or neurogen* or neurolog*)) S14 ((bladder or detrusor or vesic*) N5 (instability or stab* or unstable or irritab* or hyperreflexia or dys#ynerg* or dyskinesi* or irritat*)) S15 (nervous N1 (pollakisur* or pollakiur*)) S16 S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 S17 (MH "Risk Factors+") S18 TI "risk factor*" OR AB "risk factor*" S19 TI predict* or cause* S20 ((modifiable or behavio#r* or contribut* or transient* or adjust* or temporar* or chang* or adapt* or alter*) N3 (factor* or predict* or cause*)) S21 "relative risk"</p>

	<p>S22 S17 OR S18 OR S19 OR S20 OR S21</p> <p>S23 S8 AND S16 AND S22</p>
<p>Cochrane Library</p> <p>via Wiley</p> <p>Cochrane Reviews, Trials</p>	<p>#1 [mh Male] and [mh Aged]</p> <p>#2 [mh Male] and [mh Aging]</p> <p>#3 [mh Male] and [mh "Aged, 80 and over"]</p> <p>#4 [mh Male] and [mh Geriatrics]</p> <p>#5 ((older or ag?ing or aged or senior* or elder* or gerontolog* or geriatric* or "old age") NEAR/3 (male* or man or men))</p> <p>#6 (men NEAR/2 ("60" or "65" or "70" or "75" or "80" or "85" or "90"))</p> <p>#7 (male* NEAR/2 ("60" or "65" or "70" or "75" or "80" or "85" or "90"))</p> <p>#8 {OR #1-#7}</p> <p>#9 [mh "Urinary Incontinence"]</p> <p>#10 ((urin* or bladder) NEAR/2 (incontinen* or continen*))</p> <p>#11 [mh "Urinary Bladder, Overactive"]</p> <p>#12 ((overactiv* or hyper* or detrusor or vesic*) NEAR/2 bladder)</p> <p>#13 (bladder* NEAR/2 (neuropath* or neurogen* or neurolog*))</p> <p>#14 ((bladder or detrusor or vesic*) NEAR/5 (instability or stab* or unstable or irritab* or hyperreflexia or dys?ynerg* or dyskinesi* or irritat*))</p> <p>#15 (nervous NEAR/1 (pollakisur* or pollakiur*))</p> <p>#16 {OR #9-#15}</p> <p>#17 [mh "Risk Factors"]</p> <p>#18 risk factor*:ti,ab</p> <p>#19 (predict* or cause*):ti</p> <p>#20 ((modifiable or behavio?r* or contribut* or transient* or adjust* or temporar* or chang* or adapt* or alter*) NEAR/3 (factor* or predict* or cause*))</p> <p>#21 relative risk*</p> <p>#22 {OR #17-#21}</p> <p>#23 #8 AND #16 AND #22</p>
Scopus	<p>TITLE-ABS-KEY (((older OR ag?ing OR aged OR senior* OR elder* OR gerontolog* OR geriatric* OR "old age") W/3 (male* OR man OR men)) OR (men W/2 ("60" OR "65" OR "70" OR "75" OR "80" OR "85" OR "90")) OR (male* W/2 ("60" OR "65" OR "70" OR "75" OR "80" OR "85" OR "90"))) AND TITLE-ABS-KEY (((urin* OR bladder) W/2 (incontinen* OR continen*)) OR ((overactiv* OR hyper* OR detrusor OR vesic*) W/2 bladder) OR (bladder* W/2 (neuropath* OR neurogen* OR neurolog*)) OR ((bladder OR detrusor OR vesic*) W/5 (instability OR stab* OR unstable OR irritab* OR hyperreflexia OR dys?ynerg* OR dyskinesi* OR irritat*)) OR (nervous W/1 (pollakisur* OR pollakiur*))) AND (TITLE (predict* OR cause*) OR TITLE-ABS-KEY ("risk</p>

	factor*" OR "relative risk*" OR ((modifiable OR behavior?* OR contribut* OR transient* OR adjust* OR temporar* OR chang* OR adapt* OR alter*) W/3 (factor* OR predict* OR cause*)))
Web of Science Core Collection	TS=((older or ag?ing or aged or senior* or elder* or gerontolog* or geriatric* or "old age") NEAR/3 (male* or man or men)) or (men NEAR/2 ("60" or "65" or "70" or "75" or "80" or "85" or "90")) or (male* NEAR/2 ("60" or "65" or "70" or "75" or "80" or "85" or "90"))) AND TS=(((urin* or bladder) NEAR/2 (incontinen* or continen*)) or ((overactiv* or hyper* or detrusor or vesic*) NEAR/2 bladder) or (bladder* NEAR/2 (neuropath* or neurogen* or neurolog*)) or ((bladder or detrusor or vesic*) NEAR/5 (instability or stab* or unstable or irritab* or hyperreflexia or dys?ynerg* or dyskinesi* or irritat*)) or (nervous NEAR/1 (pollakisur* or pollakiur*))) AND (TI=(predict* or cause*) OR TS=("risk factor*" or "relative risk*" or ((modifiable or behavior?* or contribut* or transient* or adjust* or temporar* or chang* or adapt* or alter*) NEAR/3 (factor* or predict* or cause*))))
ProQuest Dissertation s & Theses Global	noft((older or ag?ing or aged or senior* or elder* or gerontolog* or geriatric* or "old age") NEAR/3 (male* or man or men)) or (men NEAR/2 ("60" or "65" or "70" or "75" or "80" or "85" or "90")) or (male* NEAR/2 ("60" or "65" or "70" or "75" or "80" or "85" or "90"))) AND noft(((urin* or bladder) NEAR/2 (incontinen* or continen*)) or ((overactiv* or hyper* or detrusor or vesic*) NEAR/2 bladder) or (bladder* NEAR/2 (neuropath* or neurogen* or neurolog*)) or ((bladder or detrusor or vesic*) NEAR/5 (instability or stab* or unstable or irritab* or hyperreflexia or dys?ynerg* or dyskinesi* or irritat*)) or (nervous NEAR/1 (pollakisur* or pollakiur*))) AND (TI(predict* or cause*) or NOFT("risk factor*" or "relative risk*" or ((modifiable or behavior?* or contribut* or transient* or adjust* or temporar* or chang* or adapt* or alter*) NEAR/3 (factor* or predict* or cause*))))
Google Scholar	(older men OR elderly men OR aging males) AND ("urinary incontinence" OR "overactive bladder") AND (risk factors OR predictors OR relative risk)

Appendix II: Data extraction form

GENERAL INFORMATION	
Study ID	
Title	
Lead author contact details	
Authors/Year	
Country in which the study was conducted	
Economic status of the country	
CHARACTERISTICS OF INCLUDED STUDIES	
Methods	
Aim of study	
Study design	
Start date	
End date	
Study funding sources	
Possible conflicts of interest for study authors	
Participants	
Age	
Population description	
Inclusion criteria	
Total number of participants	
Population characteristics	
Racial/Ethnic category of participants	
Health context	
Setting/Context	
Method of analysis	
RESULTS/FINDINGS	
Types of urinary incontinence	
Types of established UI	
RISK FACTORS	
Behavioral factors	
Physiological factors	
Demographic factors	
Genetic factors	
Environmental factors	
Medical factors/diseases	
Other factors	
Comments	

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	
Limitations	20	Discuss the limitations of the scoping review process.	
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	

JB1 = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JB1 guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med.* ;169:467–473. doi: 10.7326/M18-0850