

# **Dementia module - evidence profile DEM2: Psychological interventions for people with dementia and comorbid depression**

WHO mhGAP guideline update: Mental Health Gap Action Programme (mhGAP) guideline for mental, neurological and substance use disorders

2023

## Contents

<b>1. Background.....</b>	<b>3</b>
<b>2. Methodology .....</b>	<b>4</b>
2.1. PICO Question .....	4
2.2. Search strategy.....	4
2.3. Data collection and analysis .....	5
2.4. Selection and coding of identified records.....	6
2.5. Quality assessment .....	6
2.6. Analysis of subgroups or subsets .....	6
<b>3. Results .....</b>	<b>7</b>
3.1. List of systematic reviews and/or studies identified by the search process .....	8
3.2. Narrative description of studies that contributed to GRADE analysis .....	9
3.3. Grading the Evidence .....	9
<b>4. From Evidence to Recommendations .....</b>	<b>9</b>
4.1. Summary of findings .....	9
<b>5. References.....</b>	<b>11</b>
<b>Appendix I: mhGAP process note.....</b>	<b>12</b>
<b>Appendix II: Search terms used to identify systematic reviews.....</b>	<b>15</b>
<b>Appendix III: Search terms used to identify primary research.....</b>	<b>20</b>
<b>Appendix IV: Choosing a database: comparative table of six databases .....</b>	<b>25</b>
<b>Appendix V: Differences in search syntax.....</b>	<b>26</b>

Mental Health Gap Action Programme (mhGAP) guideline for mental, neurological and substance use disorders, available at: <https://www.who.int/publications/i/item/9789240084278>

## 1. Background

Dementia and depression (major depressive disorder or clinical depression) are two of the most prevalent neurocognitive and mental health issues in older people. Globally, 55 million people have dementia and about 16% of those with dementia also have a major depressive disorder (Asmer et al. 2018). The prevalence of depression or depressive symptoms in dementia, without a formal diagnosis of depression, is much larger, almost doubled (32%) (Goodarzi et al. 2017). Whilst major depression is perceived to be less common in moderate to severe dementia than mild dementia, this notion remains to be inconclusive due to the limited detection and accuracy of assessment of depression in more severe stages of dementia (Asmer et al. 2018).

Dementia and depression share similar challenges in terms of poor quality of life, decreased self-care abilities, limited daily functioning, premature institutionalization, and increased carer stress and burden (Baharudin et al., 2019; Jeon et al., 2015). Under-detection, under-diagnosis, and under-treatment, as well as a lack of trained staff to assess and deliver best evidence informed care, are also common challenges associated with dementia and depression in older people. When a person has dementia and co-existing depression, however, timely assessment and management of depression can be much more difficult due to common symptomatology they share, and undesirable interactions of medications used to treat their respective symptoms. To date, research has shown limited efficacy of antidepressants to treat depression in dementia. A recent Cochrane systematic review (Dudas et al. 2018) concludes that “The available evidence is of variable quality and does not provide strong support for the efficacy of antidepressants for treating depression in dementia, especially beyond 12 weeks. On the only measure of efficacy for which we had high-quality evidence (depression rating scale scores), antidepressants showed little or no effect.”

In the last Mental Health Gap Action Programme (mhGAP) (2015), it was recommended that people with dementia and mild to moderate symptoms of depression may be offered psychological interventions (such as cognitive behavioural therapy [CBT], interpersonal therapy [IPT], structured counselling and behavioural activation [BA] therapy), in non-specialized health care settings under supervision of a specialist. Strength of recommendation was CONDITIONAL and Quality of evidence was LOW.

Following a preliminary review of research studies using MEDLINE (2019-2021) in December 2021, the review team and the World Health Organization (WHO) methodology team agreed that a systematic review of existing relevant, up to date, high-quality systematic reviews would be deemed to provide sufficient evidence for this update of mhGAP guideline recommendations for psychological interventions as possible treatments for depression in dementia. The aim of this review was to identify current evidence on the effectiveness of psychological interventions for people with depression in dementia.

## 2. Methodology

The process for evidence retrieval and synthesis is based on Chapter 8 of the WHO handbook for guideline development <https://apps.who.int/iris/handle/10665/145714>. A summary of the process is also available in the process note in Appendix I: mhGAP process note.

### 2.1. Question

For people with dementia and comorbid depression, do psychological interventions produce any benefit and/or harm compared to controls?

**Population (P):** Adults with depression and dementia

**Intervention (I):** Psychological interventions (e.g. CBT, BA, IPT, and counselling)

**Comparator (C):** Control (including usual care or enhanced usual care or attention-control educational programs or diagnostic feedback)

**Outcomes (O):**

List critical outcomes:

- Critical outcome 1: depression symptoms.

List important outcomes:

- Important outcome 1: quality of life.
- Important outcome 2: activities of daily living (ADLs).
- Important outcome 3: neuropsychiatric symptoms.
- Important outcome 4: cognition.

**Subgroups:** N/A

### 2.2. Search strategy<sup>1</sup>

We searched the following databases: MEDLINE, EMBASE, PsycInfo, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus, African Index Medicus, Index Medicus for the Eastern Mediterranean Region, Index Medicus for the South-East Asian Region, Latin American and Caribbean Health Sciences Literature, and Western Pacific Region Index Medicus, EPISTEMONIKOS (<https://www.epistemonikos.org> )

Repositories of systematic reviews protocols were also searched including International prospective register of systematic reviews (PROSPERO), Open Science Framework (OSF), and Cochrane to identify additional systematic reviews.

Searches were limited to title, abstract, and keywords, and subject Headings. Wildcards (\*) were used to accommodate variations of American/British English.

Terms/Concepts used included, but not limited to, the following: (depressi\*) AND ( dementia OR alzheimer) AND ("psychological\* intervention" OR "cognitive behavio\* therapy" OR "behavio\* activation" OR "interpersonal therapy" OR counsel\*) AND (systematic reviews).

For dementia related search terms, where applicable, we used MeSH (exp) which included all types of dementia. Where MeSH was not applicable, we used dementia and Alzheimer's disease. Where applicable, we combined MeSH and non-MeSH terms for all search terms.

Selection criteria applied to search terms were based on:

---

<sup>1</sup> See Appendix 1 for more detailed, exhaustive search terms, with results per each database.

- *Type of studies:* Primarily systematic reviews and/or with meta-analysis. We excluded meta/umbrella/systematic overview of systematic reviews, narrative reviews, qualitative reviews, realist reviews, scoping reviews, and protocols.
- *Types of participants:* People with dementia and comorbid depression. People with dementia (Mild Cognitive Impairment [MCI] was not the focus but if a review had distinctive groups of people with dementia and people with MCI in meta-analysis, it was included). Depression here is depressive disorders, as part of affective/mood disorders, and excludes sadness, depressive symptoms which were likely to be covered in DEM3.
- *Types of interventions:* *all psychological interventions.* See PICOS (the interventions were not exhaustive lists and other interventions not included in PICOS were considered if they were psychological interventions for people living with dementia who have comorbid depression).
- *Types of outcome measures:* all primary and secondary outcomes were considered in the selection of studies. However, they were not used for initial search processes (See PICOS).
- *Published language of study:* No language limit.
- *Date range:* Last three years (January 2019 – January 2022).

See Appendix II for search terms and results of each bibliographic database, and repository of systematic reviews.

### 2.3. Data collection and analysis

As the first stage in selecting relevant studies, records retrieved from the bibliographic databases and from other sources (such as snowballing and expert recommendations) were recorded and assessed for eligibility by examining their titles and abstracts only using COVidence by two researchers independently. This assessment was performed in accordance with the inclusion and exclusion criteria developed above. The full text of articles found to be potentially relevant on the basis of their titles and abstracts were then retrieved and examined in light of the eligibility criteria in the second stage of study selection. Data from eligible studies were extracted into pre-defined templates that generally included the characteristics of the study design and of the population, intervention, comparator, and outcomes.

To ensure accuracy, two people independently assessed the eligibility of the studies identified and extracted data from study reports. Any inconsistencies between the two researchers were discussed as a team and consensus was reached. The lead researcher provided guidance throughout and acted as a final decision maker if consensus could not be reached.

The search strategy and results were carefully documented. This involved reporting the databases searched, the strategy used to search each database, the total number of citations retrieved from each database, and the reasons for having excluded some publications after reviewing the full text.

The flow of articles throughout the search and up to the final cohort of included studies were depicted with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram, which included the number of excluded articles and the reasons for any exclusions at the full-text screening stage.

## 2.4. Selection and coding of identified records

We used COVidence and EndNote X.9.3.3 to organize all searched papers and remove duplicate records obtained from the searches, with search outputs for each database before duplications are removed. A copy of the reference library in electronic format (without attached pdfs of included publications) is supplied alongside the final report.

## 2.5. Quality assessment

The AMSTAR-II<sup>2</sup> (A Measurement Tool to Assess systematic Reviews-II) was used to assess the quality of included systematic reviews. This assessment was carried out by the two researchers independently and consensus was reached after discussion of any discrepancies found between the researchers. During this process it was found out the interventions included in the final three full-text systematic reviews were not psychological interventions.

Chan et al. (2020). Cognitive training interventions and depression in mild cognitive impairment and dementia: a systematic review and meta-analysis of randomized controlled trials. *Age and ageing*, 49(5), 738-747. **LOW, Cognitive training not psychological intervention**

Oates et al. (2020). Behavioural activation treatment for depression in individuals with neurological conditions: a systematic review. *Clinical rehabilitation*, 34(3), 310-319. **CRITICALLY LOW, No meta-analysis**

Watt et al. (2021). Comparative efficacy of interventions for reducing symptoms of depression in people with dementia: systematic review and network meta-analysis. *BMJ*, 372. **LOW, Psychosocial interventions, not psychological interventions**

## 2.6. Analysis of subgroups or subsets

N/A

---

<sup>2</sup> [https://amstar.ca/Amstar\\_Checklist.php](https://amstar.ca/Amstar_Checklist.php)

### 3. Results

Due to the lack of systematic reviews suitable for this project, the WHO methodology team was further consulted. The project lead carried out further searches of systematic reviews published between 2015 and 2018 and new primary research (limited to randomized controlled trials and controlled trials) published since 2015 using the same PICO for the DEM 2 question (See Appendix III).

None of the studies from the additional searches met the PICO criteria for the DEM 2 question.

In the absence of new evidence, the earlier recommendation from mhGAP (2015) remains as i.

#### Recommendation(s)

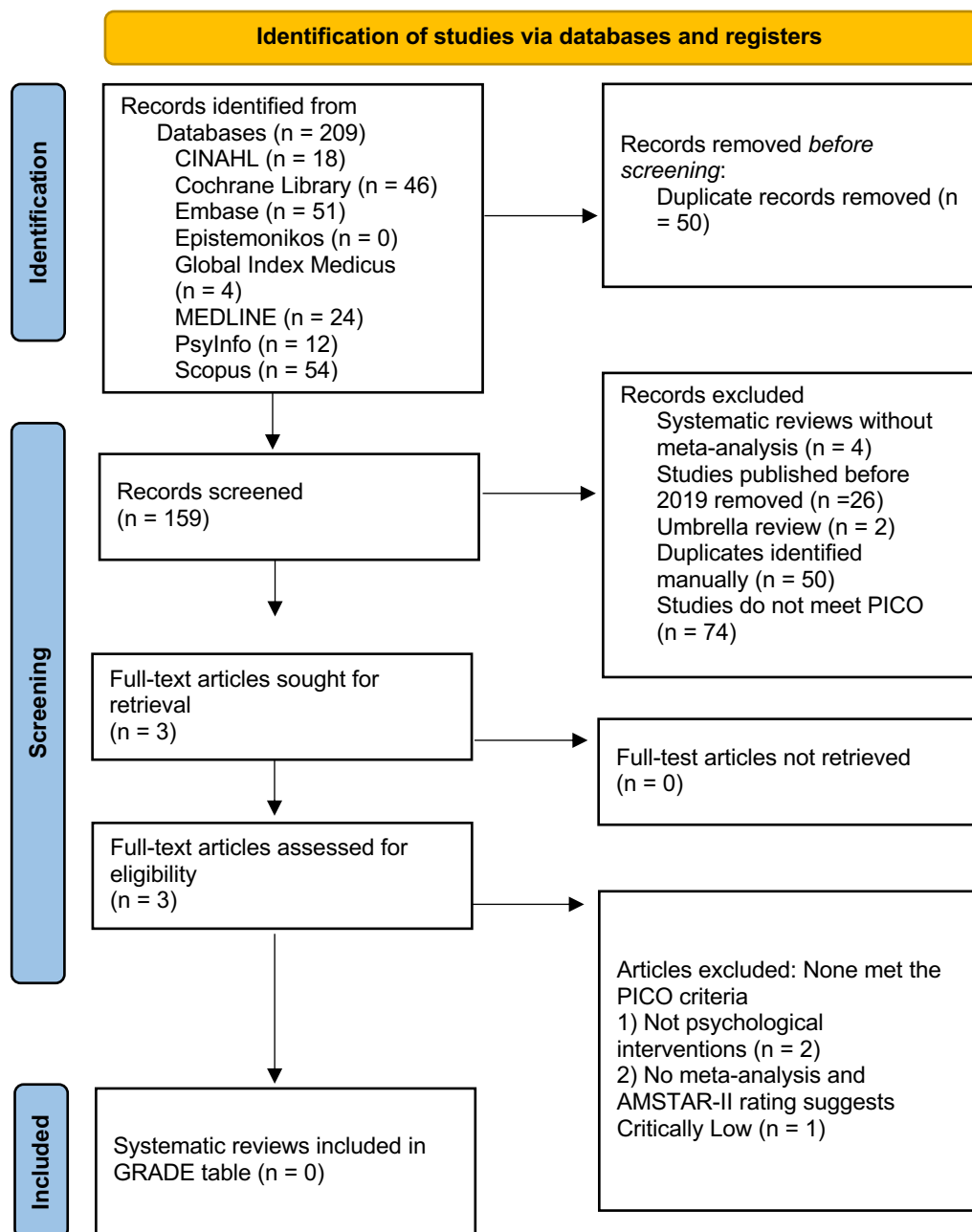
People with dementia and mild to moderate symptoms of depression may be offered psychological interventions (CBT, IPT, structured counselling and BA therapy), in non-specialized health care settings under supervision of a specialist.

*Strength of recommendation: CONDITIONAL*

*Quality of evidence: LOW*

### 3.1. List of systematic reviews and/or studies identified by the search process

Figure 1: PRISMA 2020 flow diagram for systematic review of reviews which includes searches of databases and registers only





### **3.1.1. Included in grade tables/footnotes**

None

### **3.1.2. Excluded from grade tables/FOOTNOTES (n=22)**

None

### **3.2. Narrative description of studies that contributed to GRADE analysis**

None

### **3.3. Grading the Evidence**

N/A

#### **3.3.1. Additional evidence not mentioned in GRADE tables**

N/A

## **4. From Evidence to Recommendations**

N/A

### **4.1. Summary of findings**

N/A

## 5. References

Asmer MS, Kirkham J, Newton H, Ismail Z, Elbayoumi H, Leung RH, Seitz DP. (2018). Meta-Analysis of the Prevalence of Major Depressive Disorder Among Older Adults With Dementia. *J Clin Psychiatry*. 79(5):17r11772. doi: 10.4088/JCP.17r11772. PMID: 30085437.

Baharudin AD, Din NC, Subramaniam P, Razali R. (2019). The associations between behavioral-psychological symptoms of dementia (BPSD) and coping strategy, burden of care and personality style among low-income caregivers of patients with dementia. *BMC Public Health*. 19(Suppl 4):447. doi:10.1186/s12889-019-6868-0

Dudas R, Malouf R, McCleery J, Denning T. (2018). Antidepressants for treating depression in dementia. *Cochrane Database of Systematic Reviews*, Issue 8. Art. No.: CD003944. DOI: 10.1002/14651858.CD003944.pub2. Accessed 22 May 2022.

Goodarzi ZS, Mele BS, Roberts DJ, Holroyd-Leduc J. Depression Case Finding in Individuals with Dementia: A Systematic Review and Meta-Analysis. *J Am Geriatr Soc* 2017;65:937-48. doi:10.1111/jgs.14713

Jeon, Y. H., Li, Z., Low, L. F., Chenoweth, L., O'Connor, D., Beattie, E., Liu, Z., & Brodaty, H. (2015). The clinical utility of the Cornell Scale for Depression in Dementia as a routine assessment in nursing homes. *American Journal of Geriatric Psychiatry*, 23(8), 784–793. <https://doi.org/10.1016/j.jagp.2014.08.013>

WHO. (2021). Global status report on the public health response to dementia. Geneva, WHO.

## Appendix I: mhGAP process note

### mhGAP Guideline Update: Notes on process for identifying level of evidence review required v1\_0 (09/11/2021)

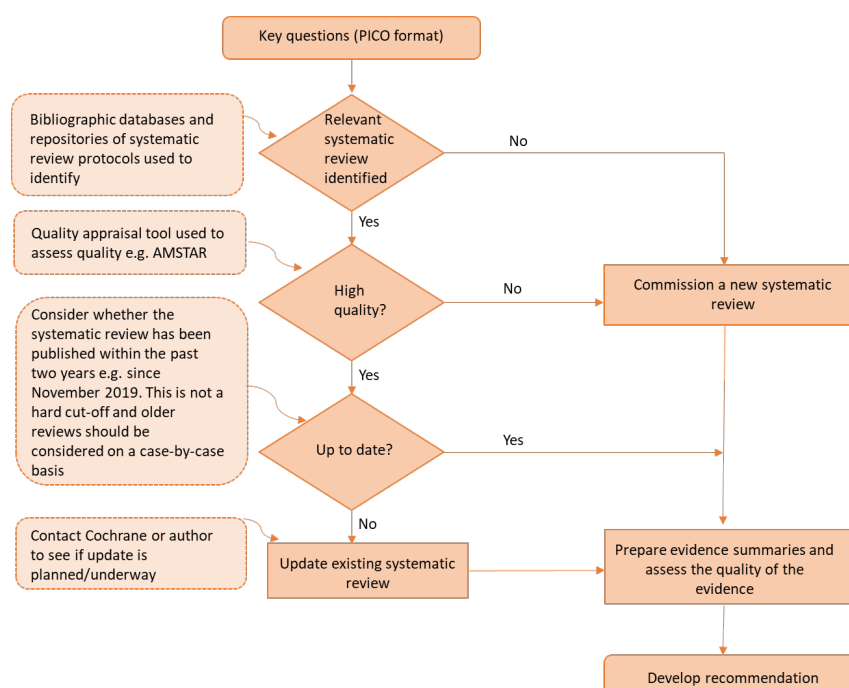
This document is intended to provide guidance to focal points on the level of evidence review required as part of the evidence retrieval process for the mhGAP guideline update process. As a general rule, the update process should be informed by existing high-quality systematic reviews. The process for evidence retrieval and synthesis is fully outlined in chapter 8 of the WHO handbook for guideline development <https://apps.who.int/iris/handle/10665/145714>.

Three main categories of evidence review are proposed in this document:

- i) Existing relevant, up to date, high quality systematic review(s) provide the evidence required. **An existing systematic review is sufficient to prepare the evidence summaries.** It may be possible to include more than one systematic review for the same PICO, as different reviews may match different outcomes of a PICO. However, if more than one systematic review is available for the same PICO outcome, one review should be selected, based on quality, relevance, search comprehensiveness and date of last update. The selection process should be transparently reported, with justification of choices.
- ii) Existing high quality systematic reviews are either out of date or do not fully address the PICO, though it is considered that the review can be updated to meet these requirements. **An update of an existing systematic review is required before the evidence summaries can be prepared.** The update process may require addition of new studies published after the review, or inclusion of outcomes not covered by the existing reviews.
- iii) Existing systematic reviews are either not of sufficiently high quality or cannot be updated to fully address the PICO. **A new systematic review is required before the evidence summaries can be prepared.**

Figure 1 below details the process to identify which level of evidence review is required to support the evidence retrieval process for a PICO.

**Figure 1: Is a new systematic review needed.**



Subsequent steps include the following:

i) **Identify and evaluate existing systematic reviews:** Identify one or more systematic review(s) to address each PICO question. Existing systematic reviews will inform the guideline development process, whether a new systematic review or an update of an existing review is required, and the evidence review team will detail existing systematic reviews in each case. The method for identifying existing systematic reviews should be fully detailed in the evidence summary and include the following sources:

- a. Search of bibliographic databases, such as PubMed/MEDLINE, EMBASE, PsycInfoPsycInfo, Cochrane Central Register of Controlled Trials (CENTRAL), CINAHL, Scopus, African Index Medicus, Index Medicus for the Eastern Mediterranean Region, Index Medicus for the South-East Asian Region, Latin American and Caribbean Health Sciences Literature, and Western Pacific Region Index Medicus.
- b. Search of repositories of systematic reviews protocols, including PROSPERO, Open Science Framework (OSF), and Cochrane.

ii) **Assess if systematic review is up to date:** It is preferred that identified systematic reviews have been published within the past two years e.g. since November 2019. This is not a hard cut-off and older reviews should be considered on a case-by-case basis, particularly those covering the time period since the last update of the mhGAP guideline in 2015. It is acknowledged that COVID has led to a pausing of many mental health research activities over the past two years, and this may also impact the availability of systematic reviews within the preferred two-year period. For any reviews that fall outside the two-year period, the guideline methodologist will advise on suitability.

iii) **Appraise quality of systematic review:** Use the AMSTAR quality appraisal tool to assess the quality of the identified systematic review(s) [https://amstar.ca/Amstar\\_Checklist.php](https://amstar.ca/Amstar_Checklist.php). This includes

consideration of the extent to which the PICO is fully addressed by the systematic review(s) identified.

By following the process outlined in figure 1, and steps 1-3 above, the focal point and evidence review team will have sufficient evidence to assess which of the three main categories of evidence review apply to each PICO under consideration:

- 1) Existing systematic reviews are sufficient to prepare the evidence summaries.
- 2) An update of an existing systematic review is required before the evidence summaries can be prepared.
- 3) A new systematic review is required before the evidence summaries can be prepared.

## Appendix II: Search terms used to identify systematic reviews

### Overview of results

Database	Result	Date
MEDLINE	24	02/02/2022
CINAHL	18	02/02/2022
Embase	51	02/02/2022
SCOPUS	54	02/02/2022
Cochrane Library	46	02/02/2022
PsylINFO	12	02/02/2022
Global Index Medicus	4	02/02/2022
EPISTEMONIKOS	0	02/02/2022
Total (with Duplicate)	<b>209</b>	02/02/2022

### Search strategy (PICO table / concept mapping table)

Concept1	Concept 2	Concept3	Concept4
Dementia	Depression	Cognitive behaviour therapy	Systematic Review
Alzheimer	Mood disorder	Counseling	Meta-Analysis
	Depressive disorder	Behaviour activation	
		Interpersonal therapy	
		Psychological intervention	

### Database results

#### 2.1. DATABASE: MEDLINE via OVIDSP

Database: Ovid MEDLINE(R) ALL <1946 to January 31, 2022>

Search Strategy:

- 
- 1 exp Dementia/ (186349)
  - 2 Dementia\*.mp. (145062)
  - 3 Alzheimer\*.mp. (181123)
  - 4 1 or 2 or 3 (289947)
  - 5 Depressi\*.mp. (514391)
  - 6 Depression/ (137163)
  - 7 Mood Disorders/ (15318)
  - 8 Mood disorder\*.mp. (31132)
  - 9 Depressive Disorder/ (74521)
  - 10 5 or 6 or 7 or 8 or 9 (529531)
  - 11 Cognitive Behavioral Therapy/ (28382)
  - 12 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (36322)
  - 13 Counseling/ (38156)
  - 14 Counsel\*.mp. (147295)
  - 15 behavior\* activation\*.mp. (2177)
  - 16 Interpersonal therap\*.mp. (412)
  - 17 psychological intervention\*.mp. (7075)
  - 18 11 or 12 or 13 or 14 or 15 or 16 or 17 (189393)
  - 19 "systematic review"/ (183799)

20 Systematic review\*.mp. (261890)  
 21 "systematic review".pt. (183799)  
 22 Systematic Reviews as Topic/ (7363)  
 23 Primarily systematic review\*.mp. (2)  
 24 meta-analysis/ (151896)  
 25 meta?analysis\*.mp. (1826)  
 26 19 or 20 or 21 or 22 or 23 or 24 or 25 (331636)  
 27 4 and 10 and 18 and 26 (66)  
 28 limit 27 to yr="2019 -Current" (24)

## 2.2. DATABASE: CINAHL via EBSCO Host

Coverage 1982 present

#	Query	Results
S24	S4 AND S9 AND S16 AND S22 (2019 to current)	18
S23	S4 AND S9 AND S16 AND S22	52
S22	S17 OR S18 OR S19 OR S20 OR S21	Display
S21	"meta analysis*"	Display
S20	"meta?analysis*"	Display
S19	(MH "Meta Analysis")	Display
S18	"systematic review*"	Display
S17	(MH "Systematic Review")	Display
S16	S10 OR S11 OR S12 OR S13 OR S14 OR S15	Display
S15	(MH "Psychosocial Intervention") OR "psychological intervention*"	Display
S14	"Interpersonal therap*"	Display
S13	"behavio* activation*"	Display
S12	Counsel*	Display
S11	(MH "Counseling+")	Display
S10	"cognitive-behavio* therap*" OR "cognitive behavio* therap*"	Display
S9	S5 OR S6 OR S7 OR S8	Display
S8	"Depressive Disorder*"	Display
S7	"Mood Disorders*"	Display
S6	"Depress*"	Display
S5	(MH "Depression+")	Display
S4	S1 OR S2 OR S3	Display
S3	"Alzheimer*"	Display

S2	"Dementia*"	Display
S1	(MH "Dementia+")	Display

### 2.3. DATABASE: Embase via OVID SP

Database: Embase Classic <1947 to 1973>, Embase <1974 to 2022 January 31>  
Search Strategy:

- 
- 1 exp dementia/ (402294)
  - 2 Dementia\*.mp. (228352)
  - 3 Alzheimer\*.mp. (272225)
  - 4 1 or 2 or 3 (470164)
  - 5 Depress\*.mp. (902991)
  - 6 depression/ (408855)
  - 7 mood disorder/ (47570)
  - 8 Mood disorder\*.mp. (63245)
  - 9 Depressive Disorder/ (107617)
  - 10 Depressive Disorder\*.mp. (61086)
  - 11 5 or 6 or 7 or 8 or 9 or 10 (930161)
  - 12 cognitive behavioral therapy/ (17874)
  - 13 (cognitive-behavo\* therap\* or cognitive behavio\* therap\*).mp. (36752)
  - 14 counseling/ (74585)
  - 15 Counsel\*.mp. (248885)
  - 16 behavio\* activation\*.mp. (2781)
  - 17 Interpersonal therap\*.mp. (693)
  - 18 psychological intervention\*.mp. (10052)
  - 19 12 or 13 or 14 or 15 or 16 or 17 or 18 (294106)
  - 20 "systematic review"/ (330175)
  - 21 Systematic review\*.mp. (429336)
  - 22 systematic review.pt. (0)
  - 23 "systematic review (topic)"/ (28139)
  - 24 Primarily systematic review\*.mp. (2)
  - 25 meta analysis/ (236152)
  - 26 (Meta?Analysis\* or Meta analysis\*).mp. (347894)
  - 27 20 or 21 or 22 or 23 or 24 or 25 or 26 (584856)
  - 28 4 and 11 and 19 and 27 (130)
  - 29 limit 28 to yr="2019 -Current" (51)

### 2.4. DATABASE: Scopus via Elsevier

( TITLE-ABS-KEY ( dementia\* OR alzheimer\* ) AND TITLE-ABS-KEY ( depress\* OR "Mood disorder\*" OR "Depressive Disorder\*" ) AND TITLE-ABS-KEY ( "cognitive-behavo\* therap\*" OR "cognitive behavio\* therap\*" OR counsel\* OR "behavio\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*" ) AND TITLE-ABS-KEY ( "Systematic review\*" OR "Primarily systematic review\*" OR "meta-analysis" OR "meta analysis" ) ) AND ( LIMIT-TO ( PUBYEAR , 2021 ) OR LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) )

### 2.5. DATABASE: Cochrane Library via OVID-SP



Database: EBM Reviews - NHS Economic Evaluation Database <1st Quarter 2016>, EBM Reviews - Health Technology Assessment <4th Quarter 2016>, EBM Reviews - Cochrane Methodology Register <3rd Quarter 2012>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to January 26, 2022>, EBM Reviews - ACP Journal Club <1991 to January 2022>, EBM Reviews - Database of Abstracts of Reviews of Effects <1st Quarter 2016>, EBM Reviews - Cochrane Clinical Answers <January 2022>, EBM Reviews - Cochrane Central Register of Controlled Trials <December 2021>

Search Strategy:

- 
- 1 exp Dementia/ (6665)
  - 2 Dementia\*.mp. (16813)
  - 3 Alzheimer\*.mp. (14008)
  - 4 1 or 2 or 3 (24998)
  - 5 Depressi\*.mp. (99243)
  - 6 Depression/ (13611)
  - 7 Mood Disorders/ (896)
  - 8 Mood disorder\*.mp. (4196)
  - 9 Depressive Disorder/ (8415)
  - 10 5 or 6 or 7 or 8 or 9 (100882)
  - 11 Cognitive Behavioral Therapy/ (8723)
  - 12 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (19897)
  - 13 Counseling/ (4653)
  - 14 Counsel\*.mp. (29633)
  - 15 behavior\* activation\*.mp. (1124)
  - 16 Interpersonal therap\*.mp. (340)
  - 17 psychological intervention\*.mp. (3513)
  - 18 11 or 12 or 13 or 14 or 15 or 16 or 17 (50837)
  - 19 "systematic review"/ (0)
  - 20 Systematic review\*.mp. (69210)
  - 21 "systematic review".pt. (8873)
  - 22 Systematic Reviews as Topic/ (24)
  - 23 Primarily systematic review\*.mp. (2)
  - 24 meta-analysis/ (23)
  - 25 meta?analysis\*.mp. (1357)
  - 26 19 or 20 or 21 or 22 or 23 or 24 or 25 (70958)
  - 27 4 and 10 and 18 and 26 (169)
  - 28 limit 27 to yr="2019 -Current" [Limit not valid in DARE; records were retained] (46)

## 2.6. DATABASE: PsycInfo via OVID-SP

Database: APA PsycInfo <1806 to January Week 4 2022>

Search Strategy:

- 
- 1 exp dementia/ (84392)
  - 2 Dementia\*.mp. (81942)
  - 3 Alzheimer\*.mp. (71165)
  - 4 1 or 2 or 3 (118370)
  - 5 Depression\*.mp. (359358)
  - 6 Mood Disorder\*.mp. (24326)
  - 7 Depressive Disorder\*.mp. (81573)
  - 8 5 or 6 or 7 (382048)
  - 9 exp Cognitive Behavior Therapy/ (24290)

- 10 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (33566)
- 11 Counseling/ (24484)
- 12 Counsel\*.mp. (134742)
- 13 behavior\* activation\*.mp. (3069)
- 14 Interpersonal therap\*.mp. (848)
- 15 psychological intervention\*.mp. (7524)
- 16 9 or 10 or 11 or 12 or 13 or 14 or 15 (177463)
- 17 "Systematic Review"/ (681)
- 18 Systematic review\*.mp. (38795)
- 19 Systematic Reviews as Topic\*.mp. (91)
- 20 Primarily systematic review\*.mp. (0)
- 21 meta-analysis/ (5137)
- 22 (meta?analysis or meta-analysis).mp. (37213)
- 23 17 or 18 or 19 or 20 or 21 or 22 (65282)
- 24 4 and 8 and 16 and 23 (40)
- 25 limit 24 to yr="2019 -Current" (12)

## 2.7. EPISTEMONIKOS (<https://www.epistemonikos.org> )

((title:(dementia\* OR alzheimer\*) OR abstract:(dementia\* OR alzheimer\*)) AND (title:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*") OR abstract:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*")) AND (title:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*") OR abstract:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*")) AND (title:("Systematic review\*" OR "Primarily systematic review\*" OR "meta-analysis" OR "meta analysis") OR abstract:("Systematic review\*" OR "Primarily systematic review\*" OR "meta-analysis" OR "meta analysis")) OR abstract:((title:(dementia\* OR alzheimer\*) OR abstract:(dementia\* OR alzheimer\*)) AND (title:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*") OR abstract:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*")) AND (title:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*") OR abstract:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*")) AND (title:("Systematic review\*" OR "Primarily systematic review\*" OR "meta-analysis" OR "meta analysis") OR abstract:("Systematic review\*" OR "Primarily systematic review\*" OR "meta-analysis" OR "meta analysis"))))

0 results

## 2.8. Global Health Medicus

tw:((tw:(dementia\* OR alzheimer\*)) AND (tw:(depress\* )) AND (tw:(behaviour\* OR behavior\*))) AND ( type\_of\_study:("systematic\_reviews")) AND (year\_cluster:[2019 TO 2022])

4 Results

## APPENDIX III: Search terms used to identify primary research

### Overview of results

Database	Result	Date
MEDLINE	107	13/04/2022
CINAHL	37	13/04/2022
Embase	171	13/04/2022
SCOPUS	159	13/04/2022
Cochrane Library	203	13/04/2022
PsyINFO	62	13/04/2022
Global Index Medicus	16	13/04/2022
EPISTEMONIKOS	0	13/04/2022
Total (with Duplicate)	<b>755</b>	13/04/2022

### Search strategy (pico table / concept mapping table)

Concept1	Concept 2	Concept3	Concept4
Dementia	Depression	Cognitive behaviour therapy	Randomized control trial
Alzheimer	Mood disorder	Counseling	Pragmatic trial
	Depressive disorder	Behaviour activation	Control trial
		Interpersonal therapy	
		psychological intervention	

### Database results

#### 3.1 DATABASE: MEDLINE via OVIDSP

Database: Ovid MEDLINE(R) ALL <1946 to April 11, 2022>

Search Strategy:

- 
- 1 exp Dementia/ (189389)
  - 2 Dementia\*.mp. (147123)
  - 3 Alzheimer\*.mp. (183595)
  - 4 1 or 2 or 3 (293872)
  - 5 Depressi\*.mp. (520626)
  - 6 Depression/ (139457)
  - 7 Mood Disorders/ (15428)
  - 8 Mood disorder\*.mp. (31486)
  - 9 Depressive Disorder/ (74640)
  - 10 5 or 6 or 7 or 8 or 9 (535897)
  - 11 Cognitive Behavioral Therapy/ (28683)
  - 12 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (36763)
  - 13 Counseling/ (38412)
  - 14 Counsel\*.mp. (148937)
  - 15 behavior\* activation\*.mp. (2213)
  - 16 Interpersonal therap\*.mp. (416)
  - 17 psychological intervention\*.mp. (7253)

18 11 or 12 or 13 or 14 or 15 or 16 or 17 (191617)  
 19 randomized controlled trials as topic/ or pragmatic clinical trials as topic/ (154829)  
 20 (randomi?ed\* trial\* or pragmatic\* trial\*).mp. (102914)  
 21 Controlled trial\*.mp. (833795)  
 22 19 or 20 or 21 (870194)  
 23 4 and 10 and 18 and 22 (204)  
 24 limit 23 to yr="2015 -Current" (107)

### 3.2. DATABASE: CINAHL via EBSCO Host

Coverage 1982 present

#	Query	Results
		<b>Limiters</b> - Published Date: 20150101- 20221231
S22	S4 AND S9 AND S16 AND S20	<b>37</b>
S21	S4 AND S9 AND S16 AND S20	<b>66</b>
S20	S17 OR S18 OR S19	Display
S19	"Controlled trial"	Display
S18	"randomi?ed* trial*" or "pragmatic* trial*"	Display
S17	(MH "Randomized Controlled Trials+")	Display
S16	S10 OR S11 OR S12 OR S13 OR S14 OR S15	Display
S15	(MH "Psychosocial Intervention") OR "psychological intervention*"	Display
S14	"Interpersonal therap*"	Display
S13	"behavio* activation*"	Display
S12	Counsel*	Display
S11	(MH "Counseling+")	Display
S10	"cognitive-behavio* therap*" OR "cognitive behavio* therap*"	Display
S9	S5 OR S6 OR S7 OR S8	Display
S8	"Depressive Disorder*"	Display
S7	"Mood Disorders*"	Display
S6	"Depress*"	Display
S5	(MH "Depression+")	Display
S4	S1 OR S2 OR S3	Display
S3	"Alzheimer*"	Display

S2	"Dementia*"	Display
S1	(MH "Dementia+")	Display

### 3.3. DATABASE: Embase

Database: Embase Classic <1947 to 1973>, Embase <1974 to 2022 April 11>  
Search Strategy:

- 
- 1 exp dementia/ (407592)
  - 2 Dementia\*.mp. (231621)
  - 3 Alzheimer\*.mp. (275899)
  - 4 1 or 2 or 3 (476361)
  - 5 Depress\*.mp. (915277)
  - 6 depression/ (419626)
  - 7 mood disorder/ (48303)
  - 8 Mood disorder\*.mp. (64102)
  - 9 Depressive Disorder/ (119910)
  - 10 Depressive Disorder\*.mp. (62044)
  - 11 5 or 6 or 7 or 8 or 9 or 10 (942795)
  - 12 cognitive behavioral therapy/ (18631)
  - 13 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (37634)
  - 14 counseling/ (75602)
  - 15 Counsel\*.mp. (252748)
  - 16 behavior\* activation\*.mp. (2820)
  - 17 Interpersonal therap\*.mp. (706)
  - 18 psychological intervention\*.mp. (10262)
  - 19 12 or 13 or 14 or 15 or 16 or 17 or 18 (298981)
  - 20 exp "randomized controlled trial (topic)" / (224519)
  - 21 (randomi?ed\* trial\* or pragmatic\* trial\*).mp. (144797)
  - 22 Controlled trial\*.mp. (1040650)
  - 23 20 or 21 or 22 (1100573)
  - 24 4 and 11 and 19 and 23 (267)
  - 25 limit 24 to yr="2015 -Current" (171)

### 3.4. DATABASE: Cochrane Library

Database: EBM Reviews - Cochrane Methodology Register <3rd Quarter 2012>, EBM Reviews - Database of Abstracts of Reviews of Effects <1st Quarter 2016>, EBM Reviews - Health Technology Assessment <4th Quarter 2016>, EBM Reviews - NHS Economic Evaluation Database <1st Quarter 2016>, EBM Reviews - Cochrane Database of Systematic Reviews <2005 to April 6, 2022>, EBM Reviews - ACP Journal Club <1991 to March 2022>, EBM Reviews - Cochrane Clinical Answers <March 2022>, EBM Reviews - Cochrane Central Register of Controlled Trials <March 2022>

Search Strategy:

- 1 exp Dementia/ (6751)
- 2 Dementia\*.mp. (16718)
- 3 Alzheimer\*.mp. (13888)
- 4 1 or 2 or 3 (24811)
- 5 Depressi\*.mp. (99179)
- 6 Depression/ (13860)

- 7 Mood Disorders/ (902)
- 8 Mood disorder\*.mp. (4188)
- 9 Depressive Disorder/ (8473)
- 10 5 or 6 or 7 or 8 or 9 (100808)
- 11 Cognitive Behavioral Therapy/ (8872)
- 12 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (19810)
- 13 Counseling/ (4698)
- 14 Counsel\*.mp. (29490)
- 15 behavior\* activation\*.mp. (1135)
- 16 Interpersonal therap\*.mp. (345)
- 17 psychological intervention\*.mp. (3523)
- 18 11 or 12 or 13 or 14 or 15 or 16 or 17 (50651)
- 19 (randomi?ed\* trial\* or pragmatic\* trial\*).mp. (125004)
- 20 Controlled trial\*.mp. (705230)
- 21 19 or 20 (761316)
- 22 4 and 10 and 18 and 21 (365)
- 23 limit 22 to yr="2015 -Current" [Limit not valid in DARE; records were retained] (203)

### 3.5. DATABASE: PsycInfo

Database: APA PsycInfo <1806 to April Week 1 2022>

Search Strategy:

- 
- 1 exp dementia/ (85599)
  - 2 Dementia\*.mp. (82974)
  - 3 Alzheimer\*.mp. (72107)
  - 4 1 or 2 or 3 (119825)
  - 5 Depression\*.mp. (362961)
  - 6 Mood Disorder\*.mp. (24493)
  - 7 Depressive Disorder\*.mp. (82012)
  - 8 5 or 6 or 7 (385743)
  - 9 exp Cognitive Behavior Therapy/ (24610)
  - 10 (cognitive-behavior\* therap\* or cognitive behavior\* therap\*).mp. (33947)
  - 11 Counseling/ (24687)
  - 12 Counsel\*.mp. (135648)
  - 13 behavior\* activation\*.mp. (3105)
  - 14 Interpersonal therap\*.mp. (854)
  - 15 psychological intervention\*.mp. (7644)
  - 16 9 or 10 or 11 or 12 or 13 or 14 or 15 (178904)
  - 17 randomized controlled trials/ or clinical trials/ or randomized clinical trials/ (13181)
  - 18 (randomi?ed\* trial\* or pragmatic\* trial\*).mp. (10523)
  - 19 Controlled trial\*.mp. (52919)
  - 20 17 or 18 or 19 (67746)
  - 21 4 and 8 and 16 and 20 (101)
  - 22 limit 21 to yr="2015 -Current" (62)

### 3.6. DATABASE: Scopus

159 document results

( TITLE-ABS-KEY ( *dementia\** OR *alzheimer\** ) AND TITLE-ABS-KEY ( *depress\** OR "*Mood disorder\**" OR "*Depressive Disorder\**" ) AND TITLE-ABS-KEY ( "*cognitive-behavior\* therap\**" OR "*cognitive behavior\* therap\**" OR *counsel\** OR "*behavior\* activation\**" OR "*Interpersonal therap\**" OR "*psychological*

*intervention\**) AND TITLE-ABS-KEY ( *"randomi?ed\* trial\*" OR "pragmatic\* trial\*" OR "Controlled trial\*"* ) AND ( LIMIT-TO ( PUBYEAR , 2022 ) OR LIMIT-TO ( PUBYEAR , 2021 ) OR LIMIT-TO ( PUBYEAR , 2020 ) OR LIMIT-TO ( PUBYEAR , 2019 ) OR LIMIT-TO ( PUBYEAR , 2018 ) OR LIMIT-TO ( PUBYEAR , 2017 ) OR LIMIT-TO ( PUBYEAR , 2016 ) OR LIMIT-TO ( PUBYEAR , 2015 ) )

### 3.7. EPISTEMONIKOS (<https://www.epistemonikos.org> )

(title:(title:(dementia\* OR alzheimer\*) OR abstract:(dementia\* OR alzheimer\*)) AND (title:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*") OR abstract:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*") OR abstract:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*")) AND (title:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*") OR abstract:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*")) AND (title:(*"randomi?ed\* trial\*" OR "pragmatic\* trial\*" OR "Controlled trial\*"*) OR abstract:(*"randomi?ed\* trial\*" OR "pragmatic\* trial\*" OR "Controlled trial\*"*)) OR abstract:(title:(dementia\* OR alzheimer\*) OR abstract:(dementia\* OR alzheimer\*)) AND (title:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*") OR abstract:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*") OR abstract:(depress\* OR "Mood disorder\*" OR "Depressive Disorder\*")) AND (title:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*") OR abstract:(cognitive-behavior\* therap\*" OR "cognitive behavior\* therap\*" OR counsel\* OR "behavior\* activation\*" OR "Interpersonal therap\*" OR "psychological intervention\*")) AND (title:(*"randomi?ed\* trial\*" OR "pragmatic\* trial\*" OR "Controlled trial\*"*) OR abstract:(*"randomi?ed\* trial\*" OR "pragmatic\* trial\*" OR "Controlled trial\*"*))))

0 Results

### 3.8. Global Health Medicus

(tw:(dementia\* OR alzheimer\*)) AND (tw:(depress\*)) AND (tw:(*"randomi?ed\* trial\*" OR "pragmatic\* trial\*" OR "Controlled trial\*"*)) limit to 2015-2022  
TW – Title, Abstract and Keywords

16 Results

## Appendix IV: Choosing a database: comparative table of six databases

Database	Scope	Coverage	Bibliographic / Full-Text	Includes Subject Headings (Thesaurus)	Citation limit when exporting to Endnote
<b>MEDLINE via OvidSP</b>	Biomedical	1946 – present 18,000,000 references indexing over 5,200 journals	Bibliographic (full text access for subscribed e-Journals)	Medical Subject Headings (MeSH)	999
<b>Embase via OvidSP</b>	Pharmacy and biomedical	1947 – present 20,000,000 references indexing 7,000 journals	Bibliographic	Emtree	999
<b>PubMed (free version of MEDLINE)</b>	Biomedical plus some general science, chemistry and molecular biology.	1946 (some earlier) – present 21,000,000 references indexing over 23,000 journals. Contains in-process citations for articles before they are indexed for MEDLINE	Bibliographic (full text access for subscribed e-Journals)	MeSH for material from MEDLINE	Not recommended for systematic review searches
<b>Web of Science</b>	Multi-disciplinary including Science, social Science, and arts and humanities	1900 – present (science related material) 46,000,000 references indexing over 12,000 journals and 148,000 proceedings	Bibliographic (full text access for subscribed e-Journals)	WOS doesn't have a thesaurus or list of subject terms. Key concepts need to be identified and linked together.	500
<b>Scopus</b>	Multi-disciplinary including chemistry, science, and arts and humanities	1996- present Over 21,500 titles (Over 21,500 peer-reviewed journals (including 4,200 full open access journals); Over 60 million records • Patents: • More than 27 million patent records from five patent offices	Bibliographic (full text access for subscribed e-Journals)	Scopus doesn't have a thesaurus or list of subject terms. Key concepts need to be identified and linked together	2000
<b>Cinahl via Ebsco</b>	Nursing, biomedicine, health sciences, alternative/ complementary medicine, consumer health and 17 allied health disciplines	1982- present Provides indexing for over 2,928 journals from the fields of nursing and allied health	Bibliographic (full text access for subscribed e-Journals)	Enter the search terms in the Find field, check the Suggest Subject Terms box and click Search. Note: You can also browse CINAHL or MeSH Headings by clicking the link in the top toolbar.	Add 50 at a time to the Folder, then export from Folder



## Appendix V: Differences in search syntax

Syntax feature	MEDLINE	Symbol	CINAHL	Symbol	Scopus	Symbol
Subject	MeSH (Explode or Focus) – searches only the subject headings field. Tick box ‘Map to Subject Headings’	MeSH	Searches only the subject headings field. Automatically explodes the term. To use, tick box ‘Suggested Subject Terms’ and type in search term		No subject	
Keyword	Textword search: Title and Abstract only  Multipurpose search: Title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier  No need to untick Map to subject headings, just add <b>.mp</b> or <b>.tw</b> to the search term and click <b>Search</b>	.tw  .mp	Untick “suggested subject terms” mapping option and type in the search term. Searches: Title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier  Alternatively, use Field codes IN FRONT of keywords, eg. <b>TX keyword</b>	TX keyword (in CINAHL) = keyword .mp (in MEDLINE)	Nested search  <u>Example:</u>  (dogs OR cats) AND (house OR apartment)	
Adjacency	Finds words or phrases within selected number of words from one another in either order, e.g. health adj3 promotion find health promotion and promotion of health	adj( <i>number</i> )	Finds words or phrases within selected number of words from one another in either order, e.g. health N3 promotion finds health promotion and promotion of health	N( <i>number</i> )	Finds words or phrases within selected number of words from one another in either order, e.g. health W/3 promotion finds promotion of health	W/ <i>number</i>
Optional Wildcard	Replaces 0-1 character e.g. p?ediatric finds pediatric or paediatric	?	Replaces 0-1 character, e.g. p#ediatric finds pediatric or paediatric	#	n/a	
Mandated Wildcard	Replaces 1 character e.g. wom#n finds woman or women	#	Replaces 1 character, e.g. wom?n finds woman or women	?	Replaces 1 character, e.g. wom?n finds woman or women; not essential (Scopus does it automatically anyway)	?
Truncation	Finds any extension of the root term – unlimited characters, e.g. imag* will find image, images, imaging or imagination	*OR \$	Finds any extension of the root term – unlimited characters; e.g imag* will find image, images, imaging or imagination	*	Finds any extension of the root term – unlimited characters; e.g imag* will find image, images, imaging or imagination	*
Phrases	Phrases ONLY need be enclosed in quotation marks if they contain stop words (AND, OR, NOT, OF etc.)		Use quotation marks to search for phrases	“-”	Use quotation marks to search for phrases	“-” OR { }