**Supplementary information 1: Sample search strategy for MEDLINE (OVID)**

1. (carer or care?giv\* or caregiv\* or care giv\*).ti,ab.

2. (caretak\* or care tak\* or care?tak\*).ti,ab.

3. informal care.ti,ab.

4. children caring.ti,ab.

5. (children provid\* adj3 care).ti,ab.

6. ((parent or parents or mother or mothers or father or fathers) adj2 (care or caring)).ti,ab.

7. ((son? or daughter? or friend?) adj2 (care or caring)).ti,ab.

8. ((husband? or wives or wife or spouse? or grandparent? or grandchild? or neighbour? or neighbor? or relatives) adj2 (care or caring or support or supporting)).ti,ab.

9. ((family or families) adj2 (caring or support)).ti,ab.

10. ((grandfather? or grandmother?) adj2 (care or caring or support or supporting)).ti,ab.

11. exp caregivers/

12. or/1-11

13. (Dementia or Alzheimer\* or elderly or old age or oldest old or delirium or huntington\* or creutzfeldt\* or CJD\* or binswanger\* or korsakoff\* or wernicke\* or lewy\*).ti,ab.

14. exp dementia/ or alzheimer disease/ or \*COGNITION DISORDERS/

15. 13 or 14

16. 12 and 15

17. (Intervention\* or non-pharmacologic\* or non-pharmaceutic\* or psycho?social or support or training or therapy or (multi-dimensional adj4 support) or (carer\* adj2 support\*) or counsel?ing or psycho?educational or education or (emotional adj2 support) or befriend\* or one-to-one emotional or conversation group\* or (multi-component adj3 intervention\*) or (behavio?r adj3 manag\*) or (telephone adj3 support) or (multi-component adj3 training) or (training adj3 carer\*) or peer group\* or support group\* or information).af.

18. \*health promotion/ or exp \*community health services/ or preventive health services/ or "early intervention (education)"/ or exp health education/ or exp mental health services/ or personal health services/ or Self-Help Groups/

19. 17 or 18

20. 16 and 19

21. \*health promotion/ or exp \*community health services/ or preventive health services/ or "early intervention (education)"/ or exp health education/ or exp mental health services/ or personal health services/ or Self-Help Groups/

22. (((quality of life or qol or well being or qaly or quality-adjusted life year or ((caregiver\* or carer\*) adj2 health)) and well?being) or depression or (measure adj2 happiness) or outcome\* or burden or mental health).af.

23. or/21-22

24. 20 and 23

25. (((comprehensive\* or systematic\*) adj3 (bibliographic\* or review\* or literature)) or (meta-analy\* or metaanaly\* or "research synthesis" or ((information or data) adj3 synthesis) or (data adj2 extract\*))).ti,ab. or (cinahl or (cochrane adj3 trial\*) or embase or medline or psyclit or (psycinfo not "psycinfo database") or pubmed or scopus or "sociological abstracts" or "web of science").ab. or "cochrane database of systematic reviews".jn. or ((review adj5 (rationale or evidence)).ti,ab. and review.pt.) or meta-analysis as topic/ or Meta-Analysis.pt.

26. 24 and 25

**Supplementary information 2: List of low quality reviews not reported**

Acton GJ, Kang J. Interventions to reduce the burden of caregiving for an adult with dementia: a meta-analysis. Res Nurs Health 2001; 24 (5): 349-60.

Acton, GJ, Winter MA. Interventions for family members caring for an elder with dementia. Ann Rev of Nurs Res 2002; 20: 149-79.

Cooke DD, McNally L, Mulligan KT, Harrison MJ, Newman SP. Psychosocial interventions for caregivers of people with dementia: a systematic review. Aging Ment Health 2001; 5(2): 120-35.

Cooper C, Balamurali TB, Selwood A, Livingston G. A systematic review of intervention studies about anxiety in caregivers of people with dementia. Int J Geriatr Psychiatry 2007; 22(3); 181-8.

Corbett A, Stevens J, Aarsland D, Day S, Moniz-Cook E, Woods R, et al. Systematic review of services providing information and/or advice to people with dementia and/or their caregivers. Int J Geriatr Psychiatry 2012; 27(6): 628-36.

Eggenberger E, Heimerl K, Bennett MI. Communication skills training in dementia care: a systematic review of effectiveness, training content, and didactic methods in different care settings. Int Psychogeriatr 2013; 25(3): 345-58.

Godwin KM, Mills WL, Anderson JA, Kunik ME. Technology-driven interventions for caregivers of persons with dementia: a systematic review. Am J Alzheimer Dis Other Demen 2013: 28(3): 216-22.

Hall L, Skelton DA. Occupational therapy for caregivers of people with dementia: a review of the United Kingdom literature. Br J Occupational Therap 2012; 75: 281-8.

Martin-Carrasco M, Ballesteros-Rodriguez J, Dominguez-Panchon A, Munoz-Hermoso P, Gonzalez-Fraile E. Interventions for caregivers of patients with dementia. Acta Espanolas de Psiquiatria 2014: 42: 300-14.

McKechnie V, Barker C, Stott J. Effectiveness of computer-mediated interventions for informal carers of people with dementia – a systematic review. Int Psychogeriatr 2014; 26: 1619-37.

Napoles AM, Chadiha L, Eversley R, Moreno-John G. Developing culturally sensitive dementia caregiver interventions: are we there yet? Am J Alzheimer Dis Other Demen 2010; 25: 389-406.

Nunnesmann S, Kurz A, Leucht S, Diehl-Schmid J. Caregivers of patients with frontotemporal lobar degeneration: a review of burden, problems, needs, and interventions. Int Psychogeriatr 2012; 24: 1368-86.

Medical Advisory Secretariat. Caregiver and patient-directed interventions for dementia: an evidence-based analysis. Ontario Health Technology Assessment Series 2008, 8(4).

Powell J, Chiu T, Eysenbach G. A systematic review of networked technologies supporting carers of people with dementia. J Telemedicine & Telecare 2008: 14: 154-6.

Selwood A, Johnston K, Katona C, Lyketsos C, Livingston G. Systematic review of the effect of psychological interventions on family caregivers of people with dementia. J Affective Disorders 2007; 101:75-89.

Smith R, Greenwood N. the impact of volunteer mentoring schemes on carers of people with dementia and volunteer mentors: A systematic review. Am J Alzheimer Dis Other Demen 2014; 29: 8-18.

Thinnes A, Padilla R. Effect of educational and supportive strategies on the ability of caregivers of people with dementia to maintain participation in that role. Am J Occ Ther 2011; 65: 541-49.

Zientz J, Rackley A, Chapman SB, Hopper T, Mahendra N, Kim ES, Cleary S. Evidence-based practice recommendation for dementia: educating caregivers on Alzheimer’s disease and training communication strategies. J Med Speech-Language Pathology 2007; 15: liii-lxiv.

**Supplementary information 3:** AMSTAR Ratings

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author** | **1****A priori design** | **2****Duplicate** | **3****Search** | **4****Publication status** | **5****List of studies** | **6****Characteristics studies** | **7****Scientific quality** | **8****Conclusions** | **9****Combination methods** | **10****Publication bias** | **11****Conflict of interest** | **Score** | **Quality** |
| **Acton, 2001** | Can’t answer | Can’t answer | Yes | Yes | No | No | Yes | No | Yes | No | No | 4 | Low |
| **Acton and Winter, 2002** | Can’t answer | No | Yes | Yes | No | No | No | No | N/A | No | No | 2 | Low |
| **Boots, 2014** | Can’t answer | Yes | Yes | No | No | Yes | Yes | Yes | N/A | No | No | 5 | Moderate |
| **Brodaty, 2003** | Can’t answer | No | Yes | No | No | Yes | Yes | Yes | Yes | No | No | 5 | Moderate |
| **Chien, 2011** | Can’t answer | Yes | Yes | No | No | Yes | Yes | No | Yes | Yes | No | 6 | Moderate |
| **Cooke, 2010** | Can’t answer | No | Yes | No | No | Yes | No | N/A | N/A | No | No | 2 | Low |
| **Cooper, 2007** | Can’t answer | No | Yes | No | No | No | Yes | Yes | N/A | No | No | 3 | Low |
| **Corbett, 2012** | Can’t answer | Can’t answer | Yes | No | No | No | Yes | Yes | No | No | No | 3 | Low |
| **Eggenberger, 2013** | Can’t answer | Yes | Yes | No | No | No | Yes | Yes | N/A | No | No | 4 | Low |
| **Elvish, 2012** | Can’t answer | Yes | Yes | No | No | Yes | Yes | Yes | N/A | No | No | 5 | Moderate |
| **Godwin, 2013** | Can’t answer | No | Yes | No | No | Yes | No | N/A | N/A | No | No | 2 | Low |
| **Hall, 2012** | Can’t answer | No | Yes | No | No | No | Yes | Yes | N/A | No | No | 3 | Low |
| **Lins, 2014** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | Yes | 10 | High |
| **Marim, 2013** | Yes | Can’t answer | Yes | No | No | No | Yes | Yes | Yes | No | No | 5 | Moderate |
| **Martin-Carrasco, 2014** | Can’t answer | Can’t answer | Yes | No | No | No | No | No | N/A | No | No | 1 | Low |
| **McKechnie, 2014** | Can’t answer | Can’t answer | Yes | No | No | No | Yes | Yes | N/A | No | No | 3 | Low |
| **Medical Advisory Secretariat, 2008** | Can’t answer | No | Yes | No | No | Yes | Yes | Can’t answer | N/A | No | No | 3 | Low |
| **Napoles, 2010** | Can’t answer | Yes | Yes | No | No | No | No | N/A | N/A | No | No | 2 | Low |
| **Nunnemann, 2012** | Can’t answer | Yes | Yes | Yes | No | No | No | N/A | N/A | No | No | 3 | Low |
| **Olazaran, 2010** | Can’t answer | Can’t answer | Yes | Yes | No | No | Yes | Yes | Yes | No | No | 5 | Moderate |
| **Parker, 2008** | Can’t answer | Can’t answer | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No | 7 | Moderate |
| **Peacock, 2003** | Can’t answer | Yes | Yes | No | No | Yes | Yes | Yes | Yes | No | No | 6 | Moderate |
| **Pinquart, 2006** | Can’t answer | Can’t answer | Yes | Yes | No | Yes | Yes | No | Yes | No | No | 5 | Moderate |
| **Powell, 2008** | Can’t answer | Yes | Yes | No | No | No | No | N/A | N/A | No | No | 2 | Low |
| **Pusey, 2010** | Can’t answer | No | Yes | Yes | Yes\* | No | Yes | Yes | Yes | No | No | 6 | Moderate |
| **Selwood, 2007** | Can’t answer | Can’t answer | Can’t answer | No | No | No | Yes | Yes | N/A | No | No | 2 | Low |
| **Smith and Greenwood, 2014** | Can’t answer | Can’t answer | Yes | No | No | Yes | Yes | Yes | N/A | No | No | 4 | Low |
| **Thinnes, 2011** | Can’t answer | Yes | Yes | No | No | No | Yes | Yes | N/A | No | No | 4 | Low |
| **Thompson, 2007** | Yes | Can’t answer | Yes | Yes | No | No | Yes | Yes | Yes | No | No | 6 | Moderate |
| **Vernooij-Dassen, 2011** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Can’t answer | No | 9 | High |
| **Zientz, 2007** | Can’t answer | Can’t answer | Yes | No | No | Yes | Yes | Yes | N/A | No | No | 4 | Low |

0-4 indicated low quality, 5-8 indicated moderate quality and 9-11 indicated high quality

**Supplementary information 4: Characteristics of included reviews**

Table of inclusion criteria (outcome measures, study design and date range) used by the reviews

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Lead Author (Year) | Outcome measures\* | Study designs | Dates range of included studies |
|  | Primary\*\* | Secondary/ others |
| 1 | **Boots, 2014** | NS | NS | Quantitative and qualitative studies | 1988- 2013 |
| 2 | **Brodaty, 2003** | Carer psychological morbidity & burden | Carers - coping skills, social support, knowledge PWD – mood, nursing home placement | Quantitative (Randomised Controlled trials, quasi-experimental studies) | 1984-2000 |
| 3 | **Chien, 2011** | NS | Carers – psychological well-being, burden, social consequence | Quantitative  | 1998- 2009 |
| 4 | **Elvish, 2013** | Carer psychosocial wellbeing |  | Quantitative (studies that used random assignment) and qualitative  | 2005-2011 |
| 5 | **Lins, 2014** | Depressive symptoms of carers | Carer – burden, distress, anxiety, quality of life, self-efficacy, satisfactionPWD-institutionalisation, mood, quality of life | Quantitative for efficacy (Randomised controlled trials or cross-over trials) and qualitative studies for experience | Up to 2013 |
| 6 | **Marim, 2013** | NS | Carer- burden using the Zarit burden index | Quantitative (Randomised controlled trials with blinded assessments) | Up to 2011 |
| 7 | **Olazaran, 2010** | NS | Carer- mood, psychological well-being, objective burden, quality of lifePWD - cognition, activities of daily living, behaviour, mood, physical domain, quality of life, institutionalisation, restraint usage, mortalityEconomic - cost-effectiveness | Quantitative (Randomised controlled trials) | Up to 2008 |
| 8 | **Parker, 2008** | NS | Carer - health service utilisation, satisfaction with health service utilisation, psychological morbidity, quality of life, knowledge/ competencePWD - health service utilisation | Quantitative (Systematic review, meta-analyses, randomised controlled trials, quasi-experimental studies, cohort studies, case control studies & observational studies without control groups) | 2000-2005 |
| 9 | **Peacock, 2003** | NS | Carers - wellbeing, depression, strainPWD - institutionalisation, healthcare expenditure | Quantitative (Control group or pre-post design) | 1992-2002 |
| 10 | **Pinquart, 2006** | NS | Carers - Burden, depression, subjective well-being, ability/ knowledgePWD - symptoms, institutionalisation | Quantitative (Controlled studies) | 1982-2005 |
| 11 | **Pusey, 2001** | NS | Carer - psychological health, physical health, quality of life (including perception of burden) | Quantitative (Randomised controlled trials or controlled trials) | Up to 1999 |
| 12 | **Thompson, 2007** | NS | Carer – quality of life, physical and mental health, burden or satisfactionPWD - activities of daily living or behaviours, health service utilisationEconomic – time spent on caring activities | Quantitative (Randomised controlled trials) | Up to 2005 |
| 13 | **Vernooij-Dassen, 2011** | NS | Carer - psychological morbidity and distress, quality of life, appraisal of performancePWD - healthcare utilisation | Quantitative (Randomised controlled trials) | Up to 2009 |

\*NS= Not specified, \*\* primary outcomes only reported if so termed by original review authors