# APPENDIX A. SEARCH STRATEGY FOR NON-PHARMACOLOGICAL TREATMENT OF DEMENTIA, REVIEWS

| MEDLINE (PubMed) searched on 10/08/2009 | | | |
|---|---|---|---|
| **Search #** | **Concept** | **Search String** | **N** |
| 1 | Dementia | "dementia"[MeSH Terms] OR "dementia"[All Fields] OR dement*[tiab] OR "mild cognitive impairment" [tiab] | 110,737 |
| 2 | Non-Pharmacological treatments | ("non pharmacologic*"[tiab] OR "non-pharmacologic*"[tiab] OR "nonpharmacologic*"[tiab]) AND ( therapy [tiab] OR intervention [tiab]) | 1,357 |
| 3 | Psychotherapy | "psychotherapy"[MeSH Terms] OR "psychotherapy"[tiab] | 126,941 |
| 4 | exercise/physical activity | "Exercise/therapy"[Mesh] OR "Exercise Therapy"[Mesh] OR "exercise"[tiab] OR "motor activity"[MeSH Terms] OR ("motor"[tiab] AND "activity"[tiab]) OR "motor activity"[tiab] OR ("physical"[tiab] AND "activity"[tiab]) OR "physical activity"[tiab] | 281,156 |
| 5 | transcutaneous electrical nerve stimulation (TENS) | "transcutaneous electrical nerve stimulation"[tiab] OR ("transcutaneous electric nerve stimulation"[MeSH Terms] OR ("transcutaneous"[tiab] AND "electric"[tiab] AND "nerve"[tiab] AND "stimulation"[tiab]) OR "tens"[tiab]) | 9,317 |
| 6 | snoezelen multi-sensory stimulation | "Snoezelen" OR "multisensory stimulation" OR "multi sensory stimulation" OR "multi-sensory stimulation" OR "multisensory environment" OR "multi sensory environment" OR "multi-sensory environment" | 108 |
| 7 | bright light therapy | "phototherapy"[MeSH Terms] OR "phototherapy"[tiab] OR ("light"[tiab] AND "therapy"[tiab]) OR "light therapy"[tiab] OR "photo-therapy"[tiab] OR "light-therapy"[tiab] | 31,862 |
| 8 | smart home technologies | (Home-based[tiab] AND (assistive technologies[tiab] OR assistive technology[tiab])) OR smart home technologies[tiab] OR smart home technology[tiab] OR ("Telemetry"[Mesh] OR "Telemedicine"[Mesh]) | 16,073 |
| 9 | acupuncture | "acupuncture"[MeSH Terms] OR "acupuncture"[tiab] OR "acupuncture therapy"[MeSH Terms] | 14,240 |
| 10 | massage and touch therapies | ("touch"[MeSH Terms] OR "touch"[tiab]) AND ("therapy"[Subheading] OR "therapy"[tiab] OR "therapeutics"[MeSH Terms] OR "therapeutics"[tiab]) OR "Massage"[Mesh] OR "massage" [tiab] | 13,184 |
| 11 | music therapy | "music therapy"[MeSH Terms] OR ("music"[tiab] AND "therapy"[tiab]) OR "music therapy"[tiab] | 1,990 |
| 12 | sensory stimulation | "sensory stimulation"[tiab] | 1,514 |
| 13 | aromatherapy | "aromatherapy"[MeSH Terms] OR "aromatherapy"[tiab] OR ("aroma"[tiab] AND "therapy"[tiab]) OR "aroma therapy"[tiab] | 590 |
| 14 | reality orientation | "Reality Therapy"[Mesh] OR reality orientation [tiab] OR reality therapy [tiab] | 374 |
| 15 | behavioral management | (behavior* [tiab] AND management [tiab]) OR Behavior Therapy [MeSH] | 50,249 |
| 16 | simulated presence | "simulated presence" [tiab] | 10 |
| 17 | reminiscence therapy | ("reminisce" [tiab] OR "reminiscence" [tiab]) AND ("therapy" [tiab] OR "technique*" [tiab] OR "treatment" [tiab] OR "intervention" [tiab] OR "group" [tiab]) | 224 |
| 18 | validation therapy | "validation" [tiab] AND ("therapy" [tiab] OR "technique*" [tiab] OR "treatment" [tiab] OR "intervention" [tiab]) | 13,769 |

| | | | |
|---|---|---|---|
| 19 | all treatments | OR (#2-18) | 506,887 |
| 20 | all treatments for dementia | #19 AND #1 | 4,729 |
| 21 | non-indexed articles from set #20 | #20 AND (in process[sb] OR publisher[sb] OR pubmednotmedline[sb]) | 140 |
| 22 | indexed articles from set #20 | #20 NOT #21 | 4,589 |
| 23 | articles indexed as systematic reviews | #22 AND systematic [sb] | 196 |
| 24 | (systematic reviews, or un-indexed) English only | (#23 OR #21) AND English[lang] | 304 |
| The symptoms, comparators, outcomes and settings are best dealt with using inclusion and exclusion criteria, including them in the search risks artificially limiting the search results. | | | |

| **PsycINFO (OVID)searched on 10/08/2009** | | | |
|---|---|---|---|
| **Search #** | **Concept** | **Search String** | **N** |
| 1 | Dementia | exp dementia/ or exp alzheimers disease/ or exp cognitive impairment/ or Dementia.mp. | 52,506 |
| 2 | Psychotherapy | psychotherapy.mp. or exp Psychotherapy/ | 169,679 |
| 3 | exercise/physical activity | exp physical activity/ or exercise.mp. or physical activity.mp. | 30,661 |
| 4 | transcutaneous electrical nerve stimulation (TENS) | exp Electrical Stimulation/ or transcutaneous electrical nerve stimulation.mp. or tens.mp. | 14,847 |
| 5 | snoezelen multi-sensory stimulation | snoezelen.mp. or perceptual stimulation.mp. or exp Perceptual Stimulation/ or multi sensory stimulation.mp. or multi sensory environment.mp. | 49,928 |
| 6 | bright light therapy | light therapy.mp. or exp Phototherapy/ | 801 |
| 7 | smart home technologies | (exp Technology/ and exp Housing/) or smart home.mp. or exp telemedicine/ | 1,122 |
| 8 | acupuncture | acupuncture.mp. or exp Acupuncture/ | 759 |
| 9 | massage and touch therapies | exp Massage/ or massage.mp. or exp Physical Contact/ or touch therapy.mp. | 2,162 |
| 10 | music therapy | music therapy.mp. or exp Music Therapy/ | 2,763 |
| 11 | aromatherapy | aromatherapy/ or olfactory stimulation/ or (aromatherapy or aroma therapy).mp. | 1,1661 |
| 12 | reality orientation | exp Reality Therapy/ or reality orientation.mp. or reality therapy.mp. | 964 |
| 13 | behavioral management | exp Behavior Therapy/ or exp Behavior Modification/ or behavioral management.mp. | 34,227 |
| 14 | simulated presence | simulated presence.mp. | 12 |
| 15 | reminiscence therapy | exp Reminiscence/ or reminiscence therapy.mp. | 1,200 |
| 16 | validation therapy | validation therapy.mp. | 39 |
| 17 | all treatments | OR (#2-16) | 286,924 |
| 18 | all treatments for dementia | #17 AND #1 | 2.150 |
| 19 | systematic reviews | limit #18 to (“0800 literature review” or “0830 systematic review” or 1200 meta analysis) | 127 |
| 20 | English | limit 19 to english language | 120 |
| After de-duplication with PubMed results : 102 unique citations | | | |

| **Cochrane Database of Systematic Reviews & Cochrane Database of Abstracts of Reviews of Effects (OVID) searched on 10/08/2009** | | | |
|---|---|---|---|
| **Search #** | **Concept** | **Search String** | **N** |
| 1 | Dementia | dementia.mp. or alzheimers.mp. or cognitive impairment.mp. | 559 |
| 2 | Non-Pharmacological treatments | non-pharmacological treatment.mp. | 37 |
| 3 | Psychotherapy | Psychotherapy.mp. | 587 |
| 4 | exercise/physical activity | exercise.mp. or physical activity.mp. | 1,750 |
| 5 | transcutaneous electrical nerve stimulation (TENS) | transcutaneous electrical nerve stimulation.mp. or tens.mp. | 181 |
| 6 | snoezelen multi-sensory stimulation | snoezelen.mp. or multi sensory environment.mp. or multi-sensory stimulation.mp. | 10 |
| 7 | bright light therapy | light therapy.mp. or phototherapy.mp. | 0 |
| 8 | smart home technologies | smart home.mp. or telemedicine.mp. | 60 |
| 9 | acupuncture | acupuncture.mp. | 1 |
| 10 | massage and touch therapies | massage.mp. or touch.mp. | 391 |
| 11 | music therapy | music therapy.mp. | 78 |
| 12 | sensory stimulation | sensory stimulation.mp. | 23 |
| 13 | aromatherapy | (aromatherapy or aroma therapy).mp. | 45 |
| 14 | reality orientation | reality orientation.mp. or reality therapy.mp. | 18 |
| 15 | behavioral management | behavioral management.mp. or behavior therapy.mp. or behavior modification.mp. | 270 |
| 16 | simulated presence | simulated presence.mp. | 6 |
| 17 | reminiscence therapy | reminiscence therapy.mp. | 11 |
| 18 | validation therapy | validation therapy.mp. | 5 |
| 19 | all treatments | OR (#2-18) | 2,848 |
| 20 | all treatments for dementia | #19 AND #1 | 158 |
| No duplicated detected by EndNote | | | |

# APPENDIX B. SEARCH STRATEGY FOR PRIMARY STUDIES ON ANIMAL-ASSISTED THERAPY FOR DEMENTIA

## PubMed search 12/9/2009, 275 results

"humans"[MeSH Terms] AND ((((((((((pet therapy[tiab] OR animal assisted therapy[tiab]) OR animal therapy[tiab]) OR dog therapy[tiab]) OR dog assisted therapy[tiab]) OR animal-assisted activities[tiab]) OR animal-assisted interventions[tiab]) OR aquarium[tiab]) OR (("Dogs"[Mesh] OR "Cats"[Mesh]) OR "Birds"[Mesh])) OR ("Bonding, Human-Pet"[Mesh] OR "Animals, Domestic"[Mesh])) AND ("dementia"[MeSH Terms] OR "dementia"[All Fields]))

## PsycINFO search 12/9/2009, 83 results (61 unique)

PsycINFO 1806 to December Week 2 2009

| # | Searches | Results |
|---|---|---|
| 1 | pet therapy.mp. or exp Animal Assisted Therapy/ | 335 |
| 2 | animal assisted therapy.mp. or exp Animal Assisted Therapy/ | 330 |
| 3 | animal assisted therapy.mp. | 330 |
| 4 | exp Interspecies Interaction/ or exp Pets/ or exp Dogs/ | 5351 |
| 5 | dog therapy.mp. | 8 |
| 6 | dog assisted therapy.mp. | 3 |
| 7 | animal assisted activities.mp. | 18 |
| 8 | animal assisted interventions.mp. | 10 |
| 9 | aquarium.mp. | 269 |
| 10 | cats.mp. or exp Cats/ | 11113 |
| 11 | birds.mp. or exp Birds/ | 22735 |
| 12 | 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 | 38995 |
| 13 | dementia.mp. or exp Dementia/ | 45487 |
| 14 | 12 and 13 | 83 |
| 15 | from 14 keep 1-10 | 10 |
| 16 | from 14 keep 1-83 | 83 |

## CINAHL search 12/9/2009, 65 results (44 unique)

| # | Searches | Results |
|---|---|---|
| S14 | S12 and S13 | 65 |
| S13 | ("dementia") or (MH "Dementia+") | 23,299 |
| S12 | S1 or S2 or S3 or S4 or S5 or S6 or S7 or S8 or S9 or S10 or S11 | 3,595 |
| S11 | ("birds") or (MH "Birds") | 926 |
| S10 | ("cats") or (MH "Cats") | 923 |
| S9 | aquarium | 20 |
| S8 | "animal assisted interventions" | 7 |
| S7 | "animal assisted activities" | 4 |
| S6 | ("dog assisted therapy") or (MH "Service Animals") | 126 |
| S5 | "dog therapy" | 0 |
| S4 | ("pets") or (MH "Pets") | 1,279 |
| S3 | ("human pet bonding") or (MH "Human-Pet Bonding") | 288 |
| S2 | "animal assisted therapy" | 105 |
| S1 | ("pet therapy") or (MH "Pet Therapy") | 526 |

Deduplication notes – MPF 10Dec09
Total citations after deduplication = 371

# APPENDIX C. INCLUSION/EXCLUSION CRITERIA FOR SYSTEMATIC REVIEWS OF NON-PHARMACOLOGICAL INTERVENTIONS

1. Is the publication a systematic review/meta-analysis of clinical trials or observational studies?
   a. No ..... STOP
   b. Yes ..... ❑

2. Does the study population at least partly include patients with dementia?
   a. No ..... STOP
   b. Yes ..... ❑

3. Was the study conducted in an outpatient care setting (including home-based care, ambulatory care, and extended-care facilities)?
   a. No ..... STOP
   b. Yes ..... ❑

4. Does the study address the following behavioral symptoms: apathy, agitation, disturbed sleep, wandering, impulsivity, disinhibition, depression, or inappropriate sexual behavior?
   a. No ..... STOP
   b. Yes ..... ❑

5. Does the study evaluate the effectiveness, safety, or cost of any of the following types of interventions?
   Acupuncture ..... ❑
   Animal-assisted therapy ..... ❑
   Aromatherapy ..... ❑
   Exercise / physical activity ..... ❑
   Light therapy ..... ❑
   Massage and touch therapies ..... ❑
   Music Therapy ..... ❑
   Psychotherapy; e.g., behavioral mgmt, cognitive stimulation or rehabilitation, reality orientation, simulated presence, reminiscence, validation ..... ❑
   Snoezelen or other sensory stimulation ..... ❑
   Smart home technologies: (social alarms, electronic assistive devices, environmental control systems, automated home environments) ..... ❑
   Transcutaneous Electrical Nerve Stimulation (TENS) ..... ❑
   Other, non-pharmacological treatment, specify ..... ❑
   None of the above ..... STOP

6. Does the comparator intervention consist of any of the following: another non-pharmacologic treatment, medical/ pharmacological treatment, or no treatment? Note: ECT is considered medical treatment.
   a. No ..... STOP
   b. Yes ..... ❑

7. Does the study report on any of the following patient outcomes?
   Use of psychotropic drugs ..... ❑
   Cognition ..... ❑
   Mood ..... ❑
   Behavioral disturbances ..... ❑
   Social function ..... ❑
   Physical function ..... ❑
   Hospitalizations, institutionalization, or other healthcare visits, including:
   ER visits ..... ❑
   Accidents ..... ❑
   Health-related quality of life ..... ❑
   Satisfaction with healthcare ..... ❑
   Other, specify ..... ❑
   None of the above ..... Proceed to Q8

8. Is the text of the article in English?
   a. No ..... STOP
   b. Yes ..... ❑

9. If this article meets no other criterion, should it be saved for background or discussion?
   a. No ..... STOP
   b. Yes: narrative review with potentially useful references ..... ❑
   c. Yes: primary study, possibly more recent than existing SRs ..... ❑
   d. Yes: clinical guidelines ..... ❑
   e. Yes: discusses methodological issues ..... ❑
   f. Yes: systematic review that did not meet all quality criteria ..... ❑

# APPENDIX D. QUALITY RATING CRITERIA FOR SYSTEMATIC REVIEWS*

Overall quality rating for each systematic review is based on the below questions. Ratings are summarized as: *Good, Fair, or Poor*:

- Search dates reported? *Yes or No*
- Search methods reported? *Yes or No*
- Comprehensive search? *Yes or No*
- Inclusion criteria reported? *Yes or No*
- Selection bias avoided? *Yes or No*
- Validity criteria reported? *Yes or No*
- Validity assessed appropriately? *Yes or No*
- Methods used to combine studies reported? *Yes or No*
- Findings combined appropriately? *Yes or No*
- Conclusions supported by data? *Yes or No*

*Definitions of ratings based on above criteria*

Good: Meet all criteria: Reports comprehensive and reproducible search methods and results; reports pre-defined criteria to select studies, and reports reasons for excluding potentially relevant studies; adequately evaluates quality of included studies and incorporates assessments of quality when synthesizing data; reports methods for synthesizing data and uses appropriate methods to combine data qualitatively or quantitatively; conclusions supported by the evidence reviewed.

Fair: Studies will be graded fair if they fail to meet one or more of the above criteria, but the limitations are not judged as being major.

Poor: Studies will be graded poor if they have a major limitation in one or more of the above criteria.

***Created from the following publications**:

Harris RP, Helfand M, Woolf SH, et al. Current methods of the US Preventive Services Task Force: a review of the process. *Am J Prev Med.* 2001:20(3S); 21-35.

National Institute for Health and Clinical Excellence. The Guidelines Manual. London: Institute for Health and Clinical Excellence; 2006.

Oxman AD, Guyatt GH. Validation of an index of the quality of review articles. *J Clin Epidemiol*. 1991;44:1271-8.

# APPENDIX E. INCLUSION/EXCLUSION CRITERIA FOR PET/ANIMAL-ASSISTED THERAPY

1. Is the publication considered a controlled clinical trial?
   a. No ..... STOP
   b. Yes (with control group) ..... ❑
   *If yes, list study type*:
   _____

2. Does the study population at least partly include patients with dementia?
   a. No ..... STOP
   b. Yes ..... ❑

3. Was the study conducted in an outpatient care setting (including home-based care, ambulatory care, and extended-care facilities)?
   a. No ..... STOP
   b. Yes ..... ❑

4. Does the study address any of the following behavioral symptoms: apathy, agitation, disruptive vocalizations, aggression, disturbed sleep, wandering, impulsivity, disinhibition, depression, inappropriate sexual behavior, or chronic/intermittent hallucinations and delusions?
   a. No ..... STOP
   b. Yes ..... ❑

5. Does the study evaluate the effectiveness, safety, or cost of any form of animal (pet) assisted therapy?
   a. No ..... STOP
   b. Yes ..... ❑

6. Does the comparator group consist of usual care (no treatment/intervention)?
   a. No ..... STOP
   b. Yes ..... ❑

7. Does the study report on any of the following patient outcomes?
   Use of psychotropic drugs ..... ❑
   Cognition ..... ❑
   Mood ..... ❑
   Behavioral disturbances ..... ❑
   Social function ..... ❑
   Physical function ..... ❑
   Hospitalizations, institutionalization, ER or other healthcare visits ..... ❑
   Accidents ..... ❑
   Health-related quality of life ..... ❑
   Satisfaction with healthcare ..... ❑
   All cause mortality ..... ❑
   Other, specify ..... ❑
   None of the above ..... proceed to Q8

8. Is the text of the article in English?
   a. Yes ..... ☒

9. If this article meets no other criterion, should it be saved for background, discussion, or other reasons?
   a. No ..... STOP
   b. Yes: narrative review, general description, reports of uncontrolled studies, informal observational studies with potentially useful references ..... ❑
   c. Yes: clinical guidelines ..... ❑
   d. Yes: discusses methodological issues ..... ❑
   e. Yes: other non-pharmacological therapy, may apply to larger report ..... ❑

# APPENDIX F. ABBREVIATIONS

| | |
|---|---|
| AA | African American |
| AARS | Apparent affect rating scale |
| AAT | Animal-assisted therapy |
| ABID | Agitated Behaviors in Dementia |
| AD | Alzheimer's disease |
| ADL | Activities of daily living |
| ADRDA | Alzheimer Disease and Related Disorders Association |
| AGECAT Organic, Depression | AGECAT is a computerised diagnostic system designed for use with the Geriatric Mental State and the History and Aetiology Schedule (designed to collect information about the history of the respondent with special reference to psychiatric illness including dementia, and about putative aetiological factors) for use in research with older people. AGECAT contains syndrome clusters for organic, anxiety, depression, etc. |
| AHRQ | Agency for Healthcare Research and Quality |
| AoA | Administration on Aging |
| BACS | Beliefs about Caregiving Scale |
| BAI | Beck Anxiety Inventory |
| BDI | Beck Depression Inventory |
| BDRS | Blessed Dementia Rating Scale |
| BEHAVE | Behavioral Pathology in Alzheimer's Disease Rating Scale |
| BMT | Behavior management training |
| BPRS | Brief Psychiatric Rating Scale |
| BRAD | Behavior Rating in AD |
| BVRT | Benton Visual Retention Test |
| CAS | Clinical Anxiety Scale |
| CES-D | Center for Epidemiologic Studies Depression Scale |
| CF | Category fluency |
| CG | Caregiver |
| CHS-M | Modified Caregiver Hassles Scale |
| CI | Confidence interval |
| CMAI-O, CMAI-N | Cohen-Mansfield Agitation Inventory - observer-derived score, nursing staff-derived score |
| COPE | Care of Persons with Dementia in their Environments |
| COWA | Controlled oral word association |
| CQLI | Caregiver Quality of Life Instrument |
| CR | Care recipient |
| CSDD | Cornell Scale for Depression in Dementia |
| CSQ | Caregiver sleep questionnaire |
| CTIS | Computer-Telephone Integration System |
| DBS | Disruptive behavior scale |
| DMSS | Dementia Management Strategies Scale |
| DRS | Depression Rating Scale |
| DSC | Dementia Steering Committee |
| ECR | Elderly Caregiver Family Relationship |
| EPC | Evidence Based Practice Center |
| ESP | Evidence-based Synthesis Program |
| FIM | Functional Independence Measure |
| GDRS | Geriatric Depression Rating Scale |
| GDS | Global Deterioration Scale |
| GIPB | Geriatric Indices of Positive Behavior |
| GPS | Global Positioning System |
| GQ-SRs | Good quality systematic reviews |
| HBPC | Home Based Primary Care |
| HDLF | Health and Daily Living Form |
| HDRS | Hamilton Depression Rating Scale |
| HSR&D | Health Services Research and Development |
| HTA | Health Technology Assessment |
| IADL | Instrumental Activities of Daily Living scale |
| ICT | Information and Communication Technology |
| ITT | Intention-to-treat |
| LSIZ | Life Satisfaction Index |
| LSNI | Lubben Social Network Index |
| LTC | Long-term care |

| | |
|---|---|
| MAACL | Multiple Affect Adjective Checklist |
| MADDE | Medicare Alzheimer's Disease Demonstration and Evaluation program |
| MAI | Multilevel Assessment Inventory |
| MBPC | Memory and Behavior Problems Checklist |
| MFW | Minnesota Family Workshop |
| MMSE | Mini Mental State Exam |
| MOSES | Multidimensional Observation Scale for Older Subjects |
| MPB | Management of Problem Behaviors |
| MSS | Multisensory stimulation |
| N | Number |
| NHS | National Health Service |
| NIA/NINR | National Institute on Aging/National Institute of Nursing Research |
| NICE | National Institute for Health and Clinical Excellence |
| NINCDS | National Institute of Neurological and Communicative Diseases and Stroke |
| NPI | Neuropsychiatric Inventory |
| NYU | New York University |
| OARS | Older Americans Resource and Services Multidimensional Functional Assessment Questionnaire |
| ODAS | Observable displays of affect scale |
| OGEC | Office of Geriatrics and Extended Care |
| PAC | Positive Aspects of Caregiving scale |
| PAIS | Psychological Adjustment to Relative's Illness |
| PAVeD | Preventing Aggressive Behavior in Demented Patients |
| PCI | Patient Care Index |
| PDC | Partners in Dementia Care |
| PHQ9 | Patient Health Questionnaire-9 Item |
| PIC | Partners in Caregiving |
| POMS | Profile of Moods States |
| PSS | Perceived Stress Scale |
| QALY | Quality of adjusted life years |
| QOL/QoL | Quality of life |
| RAGE | Rating Scale for Aggressive Behavior in the Elderly |
| RCT | Randomized controlled trial |
| REACH | Resources for Enhancing Alzheimer's Caregiver Health |
| RIL | Record of Independent Living |
| RMBPC | Revised Memory and Behavior Problem Checklist |
| RSCSE | Revised Scale for Caregiving Self-Efficacy |
| SADS | Social Avoidance and Distress Scale |
| SBP | Stress-Busting Program |
| SCB | Screen for Caregiver Burden |
| SCN | Suprachiasmatic nuclei |
| SF-36 (PF, PRF) | Short-form health survey (physical functioning and physical role functioning subscales) |
| SIP (BCM, M, HM) | Sickness Impact Profile (mobility scale; home management subscale |
| SPT | Simulated presence therapy |
| SR | Systematic Review |
| SSCQ | Short Sense of Competence Questionnaire |
| STAI | State Trait Anxiety Inventory |
| STAXI | State Trait Anger Expression Inventory |
| T1 | Timepoint 1 |
| T2 | Timepoint 2 |
| TENS | Transcutaneous electrical nerve stimulation |
| TLC | Telephone-Linked Care |
| Tx | Treatment |
| UK | United Kingdom |
| VA | Veterans Affairs |
| VAMC | Veterans Affairs Medical Center |
| VAS | Visual analog scale |
| VHA | Veterans Health Administration |
| VISN | Veterans Integrated Service Network |
| VSO | Visit Satisfaction Questionnaire |
| ZBI | Zarit Burden Interview |

# APPENDIX G. REVIEWER COMMENTS AND RESPONSES

| Reviewer | Comment | Response |
|---|---|---|
| **Are the objectives, scope, and methods for this review clearly described?** | | |
| 1 | Yes; no comment. | Noted. |
| 2 | Yes; no comment. | Noted. |
| 3 | Yes. The data is carefully addressed. An unfortunate feature of the study is that the results are largely negative. In spite of this, the findings are useful in determining appropriate care for people with dementia. | Noted. |
| 4 | P. 2: Several non-pharmacological interventions classified as "psychotherapy" (e.g., cognitive stimulation therapy, simulation presence therapy, and many behavioral management techniques) are not typically considered as psychotherapy. Furthermore, "behavior therapy" is referenced in the results and conclusion but is not listed as an intervention in the Methods section. It is also not clear what is meant by behavior therapy in the report. Additional specification or definition would be helpful, as this is often used broadly but technically involves a specific type of psychotherapy. | This section has been changed to clarify terminology and follow the outline of the report. |
| 4 | P. 3: The fact that the review included studies on management of behavioral symptoms of dementia in a wide variety of settings, including all outpatient settings, home-based care, and extended care settings may have affected the findings and contributed to mixed or non-conclusive results in some cases if data were analyzed in the aggregate. Certain interventions may work differently or require adaptation in different settings. It would be best to review and report results for different settings separately. This would also be helpful for guiding application of the results and future research directions. | There were insufficient numbers of behavior management studies to examine effects within subgroups by setting, provider type, and patient population, and therefore results were aggregated. The diversity of the settings examined across studies prohibited grouping based on this variable. Additionally, all behavior management technique studies had methodological limitations, and no subgroup of studies was exempt from these limitations. |
| **Is there any indication of bias in our synthesis of the evidence?** | | |
| 1 | No; no comment. | Noted. |
| 2 | No; no comment. | Noted. |
| 3 | No; no comment. | Noted. |
| 4 | No; no comment. | Noted. |
| 5 | On search strategy - I do not see evidence of bias but am unclear as to whether there were search of primary studies that conducted on a particular topic between the time of the published systematic review and July 2009. Many of the systematic reviews in the Reference list were published in 2008 and 2009 but there are also several that were published before 2007. For those systematic reviews published prior to 2007, was a search conducted for more recent articles? | The breadth of this report's scope is enormous given the variety of interventions being considered. It would have not been feasible to systematically conduct updated searches for primary literature for each of the interventions under consideration. We did, however, consider newer primary studies identified through expert input and resources like the AoA compendium when applicable and we discuss them if they added to the body of literature already cited. |

| Reviewer | Comment | Response |
|---|---|---|
| **Are there any studies on non-pharmacological interventions for behavioral symptoms of dementia that we have overlooked?** | | |
| 1 | Yes. Missing studies on the following types of interventions that were to be included in this review:<br>• Psychotherapy (e.g., behavioral management techniques; cognitive rehabilitation; cognitive stimulation therapy; reality orientation)<br>• Smart home technologies | The initial review of psychotherapeutic techniques incorrectly ruled out behavior management techniques as being administered by the caregiver and therefore included in a separate ESP report. In light of the feedback, we re-examined the literature on behavior management techniques and include this as a section in the updated report.<br><br>The report included smart home technologies such as tracking devices, motion detection devices, and home alarms within the section on wandering. No additional reviews meeting our quality criteria reviewed research on smart home technologies targeting symptoms other than wandering. |
| 2 | Yes. Among the interventions that were to be focus of review were "psychotherapy (e.g., behavioral management techniques…") They are notably absent in the report. My review of this literature indicates that there are a number of well-done studies that have demonstrated the utility of behavioral management approaches to decrease dementia-related behavioral problems. I'd like to bring one leading article to your attention: Logsdon, R.G., McCurry, S.M., & Teri, L. (2007). Evidenced-based psychological treatments for disruptive behavior in individuals with dementia. Psychology and Aging, 22, 28-36. The authors utilize the American Psychological Association's criteria for identifying evidence based treatment to review studies in this area. They conclude (from the abstract): "Results of this review indicate that behavioral problem-solving therapies that identify and modify antecedents and consequences of problem behaviors and increase pleasant events and individualized interventions based on progressively lowered stress threshold models that include problem solving and environmental modifications meet EBT criteria." The specific studies that they identify as meeting EBT criteria are delineated in the article. | The initial review of psychotherapeutic techniques incorrectly ruled out behavior management techniques as being administered by the caregiver and, therefore, was included in a separate ESP report. In light of the feedback, we re-examined the literature on behavior management techniques and include this as a section in the updated report. We have included the Logsdon et al. (2007) article in the updated report. |
| 2 | Other review articles worth mention include:<br><br>Allen-Burge, R., Stevens, A.B.,& Burgio, L.D. (1999). Effective behavioral interventions for decreasing dementia-related challenging behavior in nursing homes. International Journal of Geriatric Psychiatry, 14, 213-232.<br><br>Kasl-Godley, J. & Gatz, M. (2000). Psychosocial interventions for individuals with dementia: An integration of theory, therapy, and a clinical understanding of dementia. Clinical Psychology Review, 20, 755-782.<br><br>Cohen-Mansfield, J. (2001). Nonpharmacological interventions for inappropriate behaviors in dementia: A review, summary, and critique. American Journal of Geriatric Psychiatry, 9, 361-381. | We reviewed all of these articles, and none met our quality criteria for inclusion in the report. Additionally, similar articles which met our quality criteria are included in the report and adequately cover the topics in these suggested articles (Ayalon et al., 2006; Livingston et al., 2005; & Logsdon et al., 2007). |

| Reviewer | Comment | Response |
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| 2 | Also, in one of the review articles cited in your report, the authors draw favorable conclusions about the utility of behavioral interventions for dementia. Livingston et al. (2005). Systematic review of psychological approaches to the management of neuropsychiatric symptoms of dementia. American Journal of Psychiatry, 162, 1996-2021. "Only behavior management therapies, specific types of caregiver and residential care staff education, and possibly cognitive stimulation appear to have lasting effectiveness for the management of dementia-associated neuropsychiatric symptoms…" (from the abstract) | Noted. See response to previous comments re: inclusion of behavior management techniques as a section in the updated report. |
| 3 | No. The analysis was very carefully done. | Noted. |
| 1 | If you have not already, I suggest you also look at the following compendium from Administration on Aging (AoA). This was also used by the Portland ESP group that did the recent report on Interventions for Non-professional Caregivers of Individuals with Dementia.<br>• Administration on Aging's Alzheimer's Disease Supportive Services Program. Annotated Bibliography: Evidence-based interventions that target people with ADRD or their caregivers. 2010. http://www.aoa.gov/AoARoot/AoA_Programs/HCLTC/Alz_Grants/docs/EB2010.pdf | We reviewed the AoA compendium for relevant, recent studies related to behavior management techniques and did not find any that met our criteria. Relevant studies included work by Linda Teri that was already included in the report, as well as other articles referencing behavior management techniques that were limited to assessing caregiver outcomes rather than patient outcomes. |
| 4 | Yes: Did not see relevant research by Burgio and Cohen-Mansfield (e.g., Burgio et al. 2002; Cohen-Mansfield et al., 2007), which provide further support for non-pharmacological approaches to managing dementia-related behaviors. Were these bodies of work included in the reviewed research? | Based on this feedback, we reviewed both primary articles. The Cohen-Mansfield article was included in the section on agitation as it was part of the Kong (2009) review that was cited in that section; we did not examine primary articles in this section of the report. Though the Burgio (2002) article was *cited* in the reviews included in the BMT section of our paper, it was not included as evidence in these reviews for the same reason that it is not applicable to this review: This research examines two BMT interventions with different staff training strategies. Because there is no control group receiving a non-BMT intervention, there is no way to examine the effects of BMT overall (only the relative efficacy of different types of BMT); therefore, any change in outcome could be due to maturation rather than intervention. Related work by Burgio was also included in the reviews cited in our report and, therefore, this research is represented in our overall reporting of results. Though these articles both provide some support for the effectiveness of certain behavior management techniques, unfortunately, neither one is methodologically rigorous enough to change our overall interpretation of findings. |
| 5 | The following study may be of interest. Wall M, Duffy A. The effects of music therapy for older people with dementia Br J Nurs. 2010 Jan 28-Feb 10;19(2):108-13. | This study was not included in the report because it was outside our search timeframe. In reviewing the findings, however, we noted that the authors of this paper came to the same conclusions as we did regarding the effectiveness of music therapy: Though initial research documents positive results in terms of reducing agitation, methodologically sound studies are needed to adequately support positive results. |

| Reviewer | Comment | Response |
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| **Additional comments** | | |
| 1 | Executive Summary, Results<br>• Key Question 1 (thru page ix) –<br>o Missing information on several groups of interventions that were to be included in the review<br>§ psychotherapy – e.g., behavior management, cognitive rehabilitation, cognitive stimulation, reality orientation;<br>§ smart home technologies<br>o Is there any summary statement on comparison of non-pharm interventions with each other, and with pharmacological approaches? | Noted. See response to previous comments re: inclusion of behavior management techniques as a section in the updated report. We added a summary statement on the lack of comparison information.<br><br>See response to previous comment re: smart home technologies being covered in the section of the report on wandering. |
| 1 | • Key Question 2 (page ix) –<br>o Missing information on several groups of interventions that were to be included in the review<br>§ psychotherapy – e.g., behavior management, cognitive rehabilitation, cognitive stimulation, reality orientation;<br>§ smart home technologies<br>o Is there any summary statement on comparison of non-pharm interventions with each other, and with pharmacological approaches? | Noted. See response to previous comments re: inclusion of behavior management techniques as a section in the updated report. We added a summary statement on the lack of comparison information.<br><br>See response to previous comment re: smart home technologies being covered in the section of the report on wandering. |
| 1 | Methods, Interventions (page 2) – Throughout the report<br>• Missing information on several groups of interventions that were to be included in the review<br>o psychotherapy – e.g., behavior management, cognitive rehabilitation, cognitive stimulation, reality orientation;<br>o smart home technologies | Noted. See response to previous comments re: inclusion of behavior management techniques as a section in the updated report.<br><br>See response to previous comment re: smart home technologies being covered in the section of the report on wandering. |
| 1 | Results, Wandering (page 28, 34, elsewhere?) –<br>• Should add a reviewer who has a focus on wandering. | Done. |
| 1 | Results, Key Question 2 (page 33)<br>• At end of this section, consider adding a statement about the comparison of non-pharm interventions with each other, and with pharmacological approaches. If there are no relevant studies, you could have a statement to that effect as you do on page 31 for Key Question 1. | Agreed. This statement has been added. |
| 1 | NOTE: Additional comments/suggested edits are shown in Track Changes on the document attached (mostly punctuation/grammar changes for clarification). | All edits included in the document were addressed. Because they primarily consisted of word grammar edits and are not in need of additional discussion, they are not itemized here. |
| 2 | I'd suggest adding behavioral interventions to one of the key areas addressed in this report. | Noted. See response to previous comments re: inclusion of behavior management techniques as a section in the updated report. |
| 6 | Page v, line 3: "We obtained additional articles from reference lists of pertinent studies." This method should be more fully explained below in "Study Selection and Quality Assessment" | Manual searching for articles that were not identified through the systematic search of electronic databases is a standard, supplemental search method used in conducting systematic reviews. |

| Reviewer | Comment | Response |
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| 6 | Page v, line 29: "cycles that individuals with dementia experience." Awkward?; Better: "cycles experienced by individuals with dementia?" | Agreed. This sentence has been changed. |
| 6 | Page x, line 1: "None of the systematic reviews captured in our search identified any head-to-head trials that directly compared safety among different non-pharmacological interventions, or between non-pharmacological and pharmacological treatments." Repeat of above text | This section of text refers to safety, while the previous text refers to effectiveness. |
| 6 | page 2, line 15: BY 'BEHAVIORAL MANAGEMENT TECHNIQUES DO YOU MEAN BEHAVIOR MODIFICATION ?: Behavior modification is the use of empirically demonstrated behavior change techniques to improve behavior, such as altering an individual's behaviors and reactions to stimuli through positive and negative reinforcement of adaptive behavior and/or the reduction of maladaptive behavior through its extinction, punishment and/or therapy. | Due to the broad range of interventions covered, as well as the need to group them into an accessible organizational framework, we chose to use the term "Behavior management techniques" to represent the variety of techniques which were investigated. We agree that many different terms are used in the field, though this choice of terminology is consistent with other articles (e.g., Logsdon et al., 2007, refer to "behavior management interventions and Livingston et al., 2005, refer to "behavioral management techniques"). |
| 6 | Page 4, line 12: "We organized the literature into the following categories." Should you better explain the rationale underpinning your categorization schema? For example, couldn't ALL of listed categories be considered "Behavioral Management?" | All categories focus on reducing behavioral symptoms of dementia; however, we organized the review in a manner such that similar types of interventions were grouped, consistent with existing literature (e.g., Livingston et al., 2005). We agree that other organizational frameworks could have been considered, though we believe that this is the most parsimonious manner in which to adequately capture all relevant techniques. |
| 6 | Page 8, line 13: "With the exception of one small trial (N=17) that showed a benefit on mood," Needs citation? | We chose not to include citations because this text is in the summary of findings for this section. Citations are provided in the subsequent section that provides the results in greater detail. |
| 6 | page 10, line 7: "The review identified three additional studies that could not be combined in the meta-analysis; of these, two studies found that SPT was effective in reducing challenging behaviors, and the third found no overall benefit, and that the response to SPT may differ among individuals." Each and every study discussed in this work should be cited. | Because our overview of non-pharmacological interventions summarizes the work done previously by other systematic reviews, we refer to the systematic reviews themselves rather than the individual studies these reviews included. BMT was an exception to this format because we focused on the individual studies that had been identified by previous systematic reviews. |
| 6 | Page 18 line 7: "during the four week treatment period" May need hyphen. | This change has been made. |
| 6 | Page 19 line 27: Wide indeed! You may need to break this broad category into sub-categories? For example, functional behavior analysis, token economies and individualized behavioral reinforcement strategies are clearly catagorizable as "Behavior Modification;" other inclusions here a "stretch…" | We considered many different ways of organizing this category. The reviews and even the individual studies included such a variety of intervention components that separating "specific ingredients" into subgroups was not possible. As noted above, due to the broad range of interventions covered, as well as the need to group them into an accessible organizational framework, we chose to use the term "behavior management techniques" to represent the variety of techniques which were investigated. We agree that many different terms are used in the field, though this choice of terminology is consistent with other articles (e.g., Logsdon et al., 2007, refer to "behavior management interventions and Livingston et al., 2005, refer to "behavioral management techniques"). |

| Reviewer | Comment | Response |
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| 6 | Page 20 line 2: "Three good quality systematic reviews, including a total of 31 studies, examined the effectiveness of behavior management techniques for the treatment of behavioral symptoms of dementia." Cite! | We agree and have added the citations to these 3 systematic reviews. |
| 6 | Tables 1 and 2. Table more effective/useful if column added to list primary author and date | Due to space limitations, we chose not to include the primary author list and, rather, included this information as citations within the table. |
| 6 | Page 35, line 21: MSS - need to define abbreviation. | This change has been made. |
| 6 | Page 42 line 30: "That cognitively impaired elderly adults are at increased risk of falls represents simultaneously a potential rationale for and risk of exercise programs." Should be cited! | The previous sentence documents this same point and includes 2 relevant citations. |
| 6 | References, page 53: Note font variation in ref #4 | This change has been made. |
| 1 | I had some of the same thoughts about whether you can make any statement about relative efficacy or safety of non-pharm versus pharm approaches, even though there aren't head-to-head comparisons. Otherwise, the serious risks of pharmacological approaches gets lost…. | We agree that, given the dearth of direct comparisons, statements implying a comparison of approaches are not warranted; therefore, we only included statements about the dearth of research rather than any statements about the relative efficacy and safety without adequate documentation of comparisons. |
| **1** | **Feedback on the new text on behavioral management techniques (BMT) found on pages 19-25, as well as pages vii, xi, 39, 43, 46, and 50:** | |
| 1 | 1. Page 21, Table 1 | |
| 1 | a. Is there room to add information on the study setting? (Table 2 has a column for Setting) | Due to the other information included in the table, there was no additional room for more study details, and we tried to include the most relevant information in the table. |
| 1 | b. Can you add a glossary of tests included in the "Outcomes" column, to spell out the abbreviations? | Yes. This has been added. |
| 1 | 2. Page 23 | |
| 1 | a. On this page and throughout the document – be consistent in use of present or past tense when giving study results (e.g., page 23, line 5 has past tense, "…Gitlin…was the only study…"; line 22 has present tense, "Though they use a more conservative p value…." | This change has been made. |
| 1 | b. Line 20 – define "Type 1 error" | This term has been defined. |
| 1 | c. Line 23 – define "p value" | This term has been defined. |
| 1 | 3. Page 24 | |
| 1 | a. Line 26 – Text says setting of the Teri, Huda, et al. (2005) study was nursing home, but title of the article in References section page 55, line 4 says assisted living staff. Please clarify setting of the study. | This correction has been made. |
| 1 | b. Line 26 – Not sure this is a comment for the report, but just to let you know – VACO Mental Health is currently pilot-testing an adaptation of the Teri STAR program in VA Community Living Centers. | Thank you for this information. |
| 1 | 4. Page 25 | |

| Reviewer | Comment | Response |
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| 1 | a. Line 13 – says "…this report examined a broader range of primary studies…" – Does this sentence include the studies mentioned in the preceding bullets, or is this sentence referring to some other studies? (Maybe I just didn't follow correctly.) | This paragraph has been re-worded for clarity. |
| 1 | b. Line 22 – Define "grade of B" | We chose not to include additional information on this definition in text but provided additional contextual information in the report (i.e., describing the findings) so that readers could more easily interpret the grade-related findings. We have added a citation to the Oxford Centre for Evidence Based Medicine (http://www.cebm.net) for further information on their particular grading system. |
| 1 | **Feedback on other parts of the report**: | |
| 1 | 1. General – Whenever possible, be consistent in order of results for the types of interventions – use same order in Executive Summary, Table of Contents, and in body of document. | We have examined the report for consistency in ordering of interventions and have made changes as needed to maintain consistency throughout. |
| 1 | 2. Page vii, first paragraph, on TENS – Can you clarify the last sentence -- If no significant effects found in 3 RCTs, why say there is insufficient evidence? (e.g., poor quality studies, even though there were 3 RCTs?) | In order to clarify the conclusions, we have stated the conclusions made directly by the authors of the Cochrane review on TENS. |
| 1 | 3. Page ix, Key Question 2 – If possible, use same order as in Key Question 1 summary of findings starting on page iv (put Behavior management techniques paragraph before Animal-assisted therapy….)? | This change has been made. |
| 1 | 4. Page xiii, Appendix G, Reviewer comments – Just a reminder that these should be anonymous. | Noted. |
| 1 | 5. Page 1, line 9 – "…placement of individuals with dementia into residential care." | This change has been made. |
| 1 | 6. Page 3, line 4, "…home based care and ambulatory care; and extended care…." [remove comma after home-based care, and use semi-colon after ambulatory care?] | This change has been made. |
| 1 | 7. Page 8 bottom, Page 9 top – Why not cite the individual studies and give their references (when possible), rather than the review references 10 and 11? | Because our overview of non-pharmacological interventions summarizes the work done previously by other systematic reviews, we refer to the systematic reviews themselves rather than the individual studies these reviews included. BMT was an exception to this format because we focused on the individual studies that had been identified by previous systematic reviews. |
| 1 | 8. Page 9: | |
| 1 | a. Line 9 "…on problem behaviors." [Add references] | Given the broad scope of this report, whenever possible we summarized the findings of existing systematic reviews. Because in most cases we did not review the individual studies ourselves, we chose to refer only to the systematic review as the primary source. |
| 1 | b. Line 25 – "…in some individuals." | This change has been made. |
| 1 | c. Line 30 – "…among persons with dementia." | This change has been made. |
| 1 | 9. Page 10, lines 4-5 and 8-11 – give references? | Please see response to item "8a" above. |
| 1 | 10. Page 11: | |

| Reviewer | Comment | Response |
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| 1 | a. Line 6 – give reference? | Please see response to item "8a" above. |
| 1 | b. Line 9 – give reference? | Please see response to item "8a" above. |
| 1 | c. Line 12 - …usual care." | This change has been made. |
| 1 | c. Line 12 - And add reference? | Please see response to item "8a" above. |
| 1 | 11. Page 13 – Line 22 and line 27 – give references? | Please see response to item "8a" above. |
| 1 | 12. Page 14 – Line 23 and line 29 – give references? | Please see response to item "8a" above. |
| 1 | 13. Page 15 | |
| 1 | a. Line 2 – remove comma after "dementia" | This change has been made. |
| 1 | b. Line 3 – remove comma after "massage" | This change has been made. |
| 1 | c. Line 9 – "…in persons with dementia in the…" | This change has been made. |
| 1 | d. Line 17 – "…preserved in individuals with dementia…" | This change has been made. |
| 1 | 17. Page 17, line 25 – "…in persons with dementia…" | This change has been made. |
| 1 | 18. Page 18, Line 1, line 3, line 8, line 11, line 14 – add references. | Please see response to item "8a" above. |
| 1 | 19. Page 19, Line 8, line 9, line 10 – add references. | Please see response to item "8a" above. |
| 1 | 20. Page 26 | |
| 1 | a. Line 9 – Please clarify, is it the British National Institute for Health and Clinical Excellence? | Yes. This change has been made. |
| 1 | b. Lines 11-12 – Past or present tense (be consistent) | This change has been made. |
| 1 | 21. Page 29, Table top row, column on Intervention - viewed (past tense) | This change has been made. |
| 1 | 22. Page 30, Table second row, column on Setting – What kind of "Veterans home" – State Veterans Home? | The primary article describes the setting as a "20-bed special care Alzheimer's unit in a midwestern Veteran's home." The article provided no further details. |
| 1 | 23. Page 33, line 24 – Spell out "BMI" if first time used. | This change has been made. |
| 1 | 24. Page 35, line 21 – Spell out "MSS" if first time used. | This change has been made. |
| 1 | 25. Page 36, line 21 – Do you mean, "…on the behavioral symptoms of agitation in dementia" here? | Yes. This has been edited for clarity. |
| 1 | 26. Page 37 | |
| 1 | a. Lines 21-23 – Says no systematic reviews on inappropriate sexual behavior. Did you check for individual studies on this topic? | Given the scope of this report, we did not search for individual studies on inappropriate sexual behavior. However, we recognize that it is an important topic that may warrant a focused systematic review of primary studies. |
| 1 | b. Lines 28-30 – Next sentence says the opposite of this sentence? (clarify?) | This has been clarified. There were no head to head studies; only one review attempted to examine results across studies by comparing effect sizes. |
| 1 | 27. Page 38, line 8 – Can you add a concluding sentence for this paragraph? | This has been added. |
| 1 | 28. Page 38, line 21 – Add reference number closer to name HTA to make clear it is ref 70. | This change has been made. |
| 1 | 29. Page 40, line 7 – "The HTA report [add ref number here]…" | This change has been made. |

| Reviewer | Comment | Response |
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| 1 | 30. Page 59, bottom of first table on the page – "The symptoms, comparators, [add comma], outcomes and settings are best dealt with using inclusion and exclusion criteria; [use semicolon here]…." | This change has been made. |
| 4 | I am pleased to see this review of non-pharmacological approaches to managing dementia-related challenging behaviors. This is an area of important focus for VHA, especially in light of the lack of evidence for and increased death risk associated with the use of antipsychotics with older patients. The manuscript is generally comprehensive; below are some comments to consider as the report is finalized, in addition to the comments provided above. | Thank you for this feedback. |
| 4 | P. iii: "terms" is misspelled | This correction has been made. |
| 4 | Pp. iv-v: Behavior management interventions is referenced, but is not defined as other interventions are. | This section has been updated to include a definition. |
| 4 | At times the paper refers to "behavior management techniques" and at other times "behavioral management techniques". This should be made consistent. | This term is now consistently "behavior management techniques" throughout the report. |
| 4 | Behavior therapy is referred to throughout the report, though it is not clear what this specifically refers to. | While behavior management techniques are referred to throughout the report, behavior therapy is referred to only in relation to the agitation findings. This is the term used in the review cited within the agitation section. Due to space limitations, none of the interventions in this section (social contact, environmental modification, caregiver training, and behavior therapy) were defined, under the assumption that readers could examine the cited systematic review if they want more specific information than this included in this report. |
| 4 | P. 24: The summary of the Logsdon, Teri, et al.(1997) study states "yet there was no change on measures of cognition". Unless the reference to "cognition" is meant to refer to behaviors, this statement is unclear as one would not expect to see change in cognition from a behavior management intervention. | The wording of this summary has been changed to clarify the results. |
| 4 | Aggregating the results of studies across different settings (and patient populations with presumably different levels of dementia and behavioral severity) may attenuate findings, especially perhaps in studies examining behavior management interventions. Recommend reporting results/conclusions separately for different settings, to the extent possible. | We considered many different organizational strategies, and reviewed existing literature for models (e.g., Livingston et al., 2005). The reviews and even the individual studies on behavior management techniques included such a variety of intervention components that separating "specific ingredients" into subgroups was not possible. |
| 4 | Similarly, studies on behavior management techniques are aggregated in the report. This category represents a very broad array of interventions, thus limiting its internal validity and potentially contributing unclear or inconsistent findings. | We agree that the broad range of interventions and intervention components limit our ability to draw conclusions from this body of literature. We did look at each study and individual interventions, but there was very limited data for any single intervention. Therefore, it's difficult to conclude that there is a strong body of evidence for any single intervention. |

| Reviewer | Comment | Response |
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| 4 | P. 36: It is stated that "there is no evidence demonstrating an effect of various of social contact, environmental modification, caregiver training, combination training, or behavior therapy on the behavioral symptoms of dementia." This is unclear, as elsewhere in the manuscript evidence in support of one or more of these types of interventions is provided. Furthermore, this section is labeled as addressing agitation, yet the statement above relates more broadly to "behavioral symptoms of dementia". Furthermore, it is not clear whether some of Cohen-Mansfield's seminal work in this area was excluded. | This paragraph has been re-worded for clarity. Now the paragraph specifically refers to behavioral symptom of agitation. The review examined in this section (Kong, 2009) did include relevant Cohen-Mansfield work on this topic (1986, 2001); however, Cohen-Mansfield's (2007) work was not included in the review because the review search dates only extended through 2004. Based on this reviewer feedback, we obtained this primary article and updated the report accordingly. Thank you for this suggestion. |
| 4 | Pp. 42-43: Given that the greatest evidence reported was for behavior management interventions, it would seem that this should be reported earlier in the Discussion. | The discussion section has been ordered to follow the presentation of interventions in the rest of the paper, per reviewer requests; however, much of the discussion is devoted to behavior management techniques as we agree that these intervention strategies included the greatest evidence. |
| 4 | P. 50: The rating of "Low" level (versus, for example "Medium") of evidence assigned to behavioral management interventions seems inconsistent with the findings of the research reported in this area. While findings are not consistent across all studies, multiple RCTs (and other research) has provided some moderate level of support for (some of) these interventions. Further, as noted above, this category aggregates a wide range of different types of interventions that may contribute to inconsistent findings. | The rating of "low" rather than "medium" was used in reference to behavior management techniques because of the methodological concerns that occurred across studies. Inadequate blinding of raters, providers, and participants is a major threat to the internal validity of the existing studies, particularly as most outcomes were assessed by self-report or caregiver report; it is very likely that, following participation in what one knows to be the treatment condition, a participant or caregiver would (possibly inadvertently) provide a more positive rating on outcome measures simply due to being aware of participation. In addition to blinding concerns across all but one study, the reviewed studies also suffered from other threats to validity including using control groups that were non-intervention or waitlist controls, poorly defined/operationalized interventions, inadequately accounting for nesting, and inadequately adjusting for increased risk of a Type I error due to using multiple outcome measures. Though many of these studies reported positive results, the inconsistencies in results were noted both across studies and within studies. The inconsistent results included different results across timepoints as well as across measures assessing similar outcomes. We attempted to adequately describe the multiple positive findings reported by RCTs while also noting the methodological limitations across all studies. We agree that, overall, this area of research is promising; however, methodologically rigorous research conducted across research groups is needed to provide unequivocal support for the effectiveness of behavior management techniques. |
| 2 | Review of behavioral management techniques is a welcome addition to the report. Despite the many caveats raised in the report about the quality of studies of interventions for behavioral symptoms of dementia, behavioral management techniques appear to be some of the more promising interventions among them. | Noted. We agree and attempted to present the findings in such a way that this was presented in the BMT section and discussion. |

| Reviewer | Comment | Response |
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| 2 | Comparison of non-pharmacological vs. pharmacological approaches regarding their relative safety (Key Question 2) and cost (Key Question 3). | |
| 2 | The report only draws conclusions when there are head-to-comparisons between non-pharmacological and pharmacological studies. Might it be possible draw some conclusions about these questions based on the broader aggregate of findings? | Because there was no research-based evidence on this topic, we chose not to include this information in the body of the report. This is because the strength of evidence is compromised when the effectiveness of two interventions is indirectly compared. However, we included this point in the discussion section of the report as we agree that this is an important consideration for future research directions. |
| 2 | On p. 1 of the report it notes: "Psychotropic medications are commonly used to reduce the frequency and severity of the behavioral symptoms of dementia. There is little evidence, however, that such interventions are effective, and their potential side effects are frequent and often hazardous. It has been reported that the use of atypical and typical antipsychotic medication is associated with the increased risk of death." In view of this, would it be imprudent for the report to conclude that despite the mixed evidence for non-pharmacological interventions, they should be first line of treatment rather than pharmacological approaches? That is because non-pharmacological approaches are safe (vs. potentially serious side effects of medications) and some of them might be effective with certain behavioral symptoms or constellation of symptoms. | This is an important point to include in the discussion section, and we have included such a discussion in the report. We chose to include this in the discussion section rather than the body of the report because there is no research-based evidence to document on this topic. |
| 2 | Table 1, p. 21 I wasn't clear what the term "clustering" refers to. | The term "nesting" has been added to this table to clarify the meaning of the column header. |
| 2 | P. 36, lines 19-22: "Overall, there is no evidence demonstrating an effect of social contact, environmental modification, caregiver training, combination therapy, or behavior therapy on the **behavioral symptoms of dementia**." Since this section discusses studies of agitation, shouldn't this read "…**on symptoms of agitation in dementia**."? | This paragraph has been edited for clarity. |
| 5 | Page iv, line 2—for what years were the primary studies searched? | The search for primary studies for animal-assisted therapy was conducted from database inception through 12/9/2009, as noted in Appendix B. |
| 5 | page iv: Results. I find this section confusing. "We identified 22 good quality systematic reviews in single nonpharmacological interventions plus 8 good quality reviews" (lines 8 and 9). The rest of this paragraph mentions 10 reports (line 10), 12 reports (line 11), 3 reports( line 12), 3 reports (line 14), 5 reports (line 15) and 1 report (line 16). These reports add to 34 reports. | Yes, some of the reports reviewed multiple interventions and are therefore included in more than one subsection; therefore, reports used in subsections are not additive due to the fact that they are not mutually exclusive. The number of reports was inconsistent with other areas of the report, however, and this inconsistency has been corrected. |

| Reviewer | Comment | Response |
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| 5 | Throughout the document, the terms "behavioral symptoms", "behavioral problems", and "behavioral disturbances "seem to be used interchangeably. If these terms each mean something different, could definitions. For example: The three key questions all use the term "behavioral symptoms" but many of the discussions use "behavioral problems" and "behavioral disturbance." The Background section (page 1,) uses both the terms "behavioral problems" and "behavioral symptoms". If the terms all refer to the same thing, would it be helpful to use only one term? | This terminology has been made consistent throughout the report; now, behavioral symptoms is referred to throughout the document. |
| 5 | Page 2, line 10. "Population is adults with mild, moderate, severe dementia." Since there are several types of dementia, did studies discriminate between types of dementia? How does this report define "dementia?" | We proposed to use broad categories of dementia in our scope and objectives, in order to not limit the population of interest. Our search strategy in Appendix A shows the various terms we used to search for dementia in the literature. We relied on the definitions and diagnostic criteria used by the individual systematic reviews and the primary studies they included. |
| 5 | Page 3, line 26: Categories of drugs are mentioned with the exception of memantine which is the only medication listed by name. To be consistent, might want to say NMDA receptor antagonist rather than memantine. | This change has been made. |
| 5 | Page 6, line 5 states that 28 systematic reviews were included—seems inconsistent with what is reported in Executive Summary. | This inconsistency has been corrected. |
| 5 | Figure 1, page 7 is confusing—I am not following how the numbers add up | Some of the reports reviewed multiple interventions and are therefore included in more than one subsection; therefore, reports used in subsections are not additive due to the fact that they are not mutually exclusive. |
| 5 | Page 9: Discussion on reminiscence therapy refers several times to "problem behaviors"—not sure what these problem behaviors are that were assessed in the systematic review on reminiscence. | This terminology has been made consistent throughout the report; now, behavioral symptoms is referred to throughout this section and the entire document. |
| 5 | The section on Behavior Management Techniques (page 19-20) does not have any citations although various reviews and studies are mentioned. This might pose a problem for readers wanting to obtain additional information about these techniques | We agree and have cited the systematic reviews. |
| 5 | The sections on cognitive/emotion-oriented interventions and sensory-stimulation interventions are straightforward. The Behavior Management Techniques section is less clear. The explanation of behavior management techniques (page 19, lines 27-31) is vague—what is meant by "functional analysis of specific behaviors"? What are "token economies". What is meant by habit training—what habits? | These terms have been clarified in the report. |
| 5 | Table 1 on pages 21 and 22 seem disconnected from the discussion on pages 23 and 24. | We chose to include the table in text to summarize the entire behavior management technique section. |
| 5 | The bullet points on page 24, describing specific study findings, do not correspond to the order in which the studies are mentioned in Table 1. A reader, reading the bullet points on page 24, may want additional information about a particular study. The reader then has to read the table to try and match the references. Would it be better to have the bullet points reflect the same order of the studies in the table. | The table and bulleted list are in the same order. |

| Reviewer | Comment | Response |
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| 5 | Page 25, line 13: "Though the three reviews cited in this report . . . " Not clear which "3 reviews" are being discussed here—there are more than three reviews discussed in this report. | This sentence has been clarified. |
| 5 | I am not clear why Table 1 and Table 2 are embedded in report but there are no tables embedded for sections on cognitive/emotion-oriented interventions, sensory-stimulation interventions, wandering, or agitation. | These were the only two sections which included primary studies and therefore we included evidence tables for only these two sections in the report. |
| 5 | There seems to be some inconsistency as to what the interventions are called throughout the report—sometimes they are "therapies", sometimes "treatments", sometimes "non-pharmacological interventions", sometimes "psychosocial therapies", and sometimes "approaches". | These terms are used interchangeably throughout the report; specifically, we tried to use terminology reflective of the terminology used in the various reviews we were citing and, therefore, we used all of these terms in the report. |
| 5 | Conclusion section is good. | Noted. |
| 5 | Page 42, line 21 mentions that masters level personnel are required for the emotion-oriented approaches. The only other place in the report that level of education for the interventionist is mentioned is in Table 1. If level of education is relevant (and I think it is), perhaps education should be mentioned in the text of the report when discussing emotion-oriented approaches. | We have added additional information to other sections of the discussion; additionally, information on degree requirements is included in Table 3. |
| 5 | As a clinician reading the conclusion, I might be interested in and want to read more about a particular intervention that shows some promise. I think it would be helpful to include the citations when discussing these interventions. For instance on page 43, line 4, it would be helpful to provide the citation for those studies that "suggest that behavior management techniques are effective strategies to reduce behavioral symptoms of dementia." | We have included a reference to Table 1 in this section of the discussion. |