

NKR 53 demens og adfærdsforstyrrelser PICO 4 søvnhygiejne

Review information

Authors

Sundhedsstyrelsen¹

¹[Empty affiliation]

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Dates

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Last Citation Issue: Not specified

Characteristics of studies

Characteristics of included studies

McCurry 2005

Methods	Study design: Randomized controlled trial Study grouping: Parallel group
Participants	Baseline Characteristics Intervention <ul style="list-style-type: none"> ● Age Mean, SD: 77.8 (8.1) ● MMSE. Mean, SD: 9.9 (7.6)

	<p>Control</p> <ul style="list-style-type: none"> ● <i>Age Mean, SD: 77.6 (6.7)</i> ● <i>MMSE. Mean, SD: 13.6 (9.0)</i> <p>Included criteria: All patients were diagnosed with probable or possible AD, confirmed in writing by their primary care physicians. Patients ranged in age from 63 to 93, were predominantly male (56%) and white (92%), and had had dementia for an average of 5.8 years. Patients' mean Mini-Mental State Examination (MMSE) score standard deviation was 11.88. All patients had two or more sleep problems on the Neuropsychiatric Inventory Nighttime Behaviors scale occurring three or more times per week and were community-dwelling, ambulatory, and without any existing diagnosis of a primary sleep disorder (e.g., sleep apnea or periodic leg movement disorder)</p> <p>Pretreatment: Preliminary analyses revealed no significant pretreatment group differences on any patient or caregiver characteristics.</p>
<p>Interventions</p>	<p>Intervention Characteristics</p> <p>Intervention</p> <ul style="list-style-type: none"> ● <i>Description:</i> Nighttime Insomnia Treatment and Education for Alzheimer's Disease. The NITE-AD program introduced the combination of sleep hygiene, daily walking, and light exposure intervention over three weekly treatment sessions. Adherence to each treatment component was monitored at three Nighttime Insomnia Treatment in Alzheimer's Disease 17 allocated to intervention. Caregiver contact control 19 allocated to intervention 14 received allocated intervention assessed at 3 months posttest 3 discontinued (1 institutionalized) (1 caregiver moved from area) (1 caregiver declined to continue) 17 received allocated intervention assessed at 3 months posttest 2 discontinued (1 institutionalized) (1 died) 69 excluded 51 ineligible 18 refused participation 105 assessed for eligibility 11 assessed at 6 months 3 discontinued (3 died) 12 assessed at 6 months 5 discontinued (3 institutionalized) (2 died) 36 randomized/intent to treat baseline assessment Figure 1. Flow of participants through the trial. 794 MCCURRY ET AL. MAY 2005-VOL. 53, NO. 5 JAGS biweekly sessions over the following 6 weeks, during which caregivers were provided assistance following the treatment plan. ● <i>Length of treatment: 2 months</i> ● <i>Longest follow-up after end of treatment: 6 months</i> <p>Control</p> <ul style="list-style-type: none"> ● <i>Description:</i> Information on AD. Throughout the treatment period, the interventionist answered questions about sleep-related reading materials handed out in the first session, offered general encouragement and support, and provided information about general dementia care and community resources when it was requested, but no specific recommendations about following a sleep hygiene program, walking, or increasing light exposure were made. Caregivers were encouraged to spend an hour every day with their patient engaged in some pleasant activity of their

	<p>choice to control for the increased caregiver attention that patients in the NITE-AD condition received during daily walking and light exposure activities</p> <ul style="list-style-type: none"> ● <i>Length of treatment</i>: 2 months ● <i>Longest follow-up after end of treatment</i>: 6 months
Outcomes	<p><i>Quality of sleep (time in bed), SD</i></p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome <p><i>Quality of sleep (Nighttime, number of awakenings), SD</i></p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome
Identification	<p>Sponsorship source: This study was supported by Grants MH01644, AG13757, MH01158, and P10-1999-1800. Portions of this paper were presented at the Associated Professional Sleep Societies' 17th annual meeting, June 3-8, 2003, Chicago, Illinois</p> <p>Country: USA</p> <p>Setting:</p> <p>Comments:</p> <p>Authors name: McCurry</p> <p>Institution: University of Washington</p> <p>Email: smccurry@u.washington.edu</p> <p>Address: Susan M. McCurry, PhD, University of Washington, 9709 3rd Avenue NE, Suite 507, Seattle, WA 98115</p>
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "Dyads were randomized after the baseline assessment using a random numbers table that blocked groups of eight to 12 patients."
Allocation concealment (selection bias)	Unclear risk	Judgement Comment: Insufficient information on allocation concealment

Blinding of participants and personnel (performance bias)	Unclear risk	Quote: "Interviewers blind to treatment assignment conducted as- sessments at screening, at baseline, after 2 months (post- treatment), and at 6 months (Figure 1)." Judgement Comment: Insufficient information on whether participants were blinded
Blinding of outcome assessment (detection bias)	Low risk	Quote: "Interviewers blind to treatment assignment conducted as- sessments at screening, at baseline, after 2 months (post- treatment), and at 6 months (Figure 1)."
Incomplete outcome data (attrition bias)	Low risk	Quote: "The primary pre-post analyses were based on intention to treat using all randomized patients, regardless of adher- ence to the intervention. Pre-post" Judgement Comment: Dropouts accounted for and equally distriubuted across groups
Selective reporting (reporting bias)	Low risk	Judgement Comment: There were no reference to study protocol, but the study appears to be free of selective outcome reporting
Other bias	Low risk	Judgement Comment: The study appears to be free of other sources of bias

McCurry 2011

Methods	Study design: Randomized controlled trial Study grouping: Parallel group
Participants	<p>Baseline Characteristics</p> <p>Intervention</p> <ul style="list-style-type: none"> ● Age. Mean, SD: 80.0 (8.2) ● MMSE. Mean, SD: 19.1 (5.8) <p>Control</p> <ul style="list-style-type: none"> ● Age. Mean, SD: 81.2 (8.0) ● MMSE. Mean, SD: 18.7 (6.9) <p>Included criteria: Participant eligibility criteria were two or more sleep prob- lems occurring several times a week measured according to the 7-item Sleep Disorders Inventory (SDI),²⁴ diagnosis of probable or possible AD25 according to GHC medical record confirmed in writing by participants' primary care phy- sicians, no previously diagnosed primary sleep disorder (sleep apnea, restless legs, periodic leg movements syn- dromes, rapid eye movement sleep behavior disorder), no significant vision impairment or medical contraindication to bright light exposure, ability to walk across a room, living with a caregiver who could monitor sleep and implement treatment recommendations, score less than 32 on the Sleep Apnea subscale of the Sleep Disorders Questionnaire,²⁶ and agreement to make no changes in sedating</p>

	<p>medication use (type or dose) during the 2-month active treatment period. Eligible individuals wore wrist actigraphs (see Measures) for 1 week. Individuals whose wake time averaged 1 hour per night or greater on actigraphy were invited to participate.</p> <p>Excluded criteria:</p> <p>Pretreatment: There were no significant between-group differences in attrition</p>
<p>Interventions</p>	<p>Intervention Characteristics Intervention</p> <ul style="list-style-type: none"> ● Description: Nighttime Insomnia Treatment and Education in Alzheimer’s Disease In Session 1, caregivers and trainers together developed an individualized sleep plan for the participant, focusing on establishing a consistent bed and rising time, reducing day-time napping, and identifying potential triggers for night-time awakenings. Participants were also placed on a daily walking program, as described above. In Session 2, trainers introduced the daily light-exposure program as described above. Sessions 3 to 6 focused on helping caregivers identify activators and consequences of nocturnal arousals and on solving any adherence challenges to following the sleep, walking, and light exposure plans. ● Length of treatment: 2 months ● Longest follow-up after end of treatment: 4 months <p>Control</p> <ul style="list-style-type: none"> ● Description: Contact Control At all three sessions, trainers offered nondirective dementia care support but provided no training or homework related to changing sleep-wake routines, implementing daily walk-ing, increasing light exposure, or managing dementia-related nocturnal behaviors. ● Length of treatment: 2 months ● Longest follow-up after end of treatment: 4 months
<p>Outcomes</p>	<p>Quality of sleep (Time in bed/night), SE</p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome <p>Quality of life (daytime sleep), SE</p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome <p>Depression (cornell depression scale), SD</p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome

Identification	<p>Sponsorship source: This work was supported by National Institute of Mental Health Grant MH072736.</p> <p>Country: USA</p> <p>Setting:</p> <p>Comments: ClinTrials.gov (Identifier: NCT00183378)</p> <p>Authors name: McCurry</p> <p>Institution: University of Washington</p> <p>Email: smccurry@u.washington.edu</p> <p>Address: Susan M. McCurry, University of Washington, 9709 3rd Avenue NE, Suite 507, Seattle, WA 98115.</p>
Notes	

Risk of bias table

Bias	Authors' judgement	Support for judgement
Random sequence generation (selection bias)	Low risk	Quote: "The random allocation sequence was obtained from a computer program that blocked in groups of 12 participants."
Allocation concealment (selection bias)	Low risk	Quote: "A research coordinator assigned treatment conditions using sealed envelopes containing the random assignment."
Blinding of participants and personnel (performance bias)	Unclear risk	Judgement Comment: Insufficient information on blinding of participants and personnel
Blinding of outcome assessment (detection bias)	Low risk	Quote: "Interviewers blind to treatment assignment conducted assessments at baseline, at 2 months (immediately after treatment), and at 6-month follow-up."
Incomplete outcome data (attrition bias)	Low risk	Quote: "Multiple imputation under the multivariate normal regression model was used to replace missing data. Thirty- one percent of participants had missing primary sleep out- come data (actigraphic total wake time and NPI scores) across the three assessment periods because of actigraph failure, study discontinuation, or assessment noncompletion. Eight percent were missing some covariate data. Imputed results were subsequently compared with the complete case (listwise deletion) analyses." Judgement Comment: Dropouts accounted for and equally distributed across groups
Selective reporting (reporting bias)	Low risk	Quote: "The study was registered at ClinTrials.gov (Identifier: NCT00183378)." Judgement Comment: Matches study protocol

Other bias	Low risk	Judgement Comment: The study appears to be free from other sources of bias
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McCurry 2012

Methods	<p>Study design: Randomized controlled trial</p> <p>Study grouping: Parallel group</p>
Participants	<p>Baseline Characteristics</p> <p>Overall</p> <ul style="list-style-type: none"> ● <i>Age. Mean, SD:</i> 86.6 (7.2) ● <i>MMSE. Mean, SD:</i> <p>Included criteria: All residents had one or more sleep problems (mean: 4.3, SD: 1.6) on the Sleep Disorders Inventory; twenty-one(45%) were taking sedating medications at night</p> <p>Excluded criteria: Residents were excluded if they had a preexisting diagnosis of a primary sleep disorder (sleep apnea, restless legs syndrome, REMbehavior disorder) or major medical illness that awakened them at night (severe pain, emphysema, uncontrolled incontinence). Residents were also excluded if their dementia was caused by alcohol abuse or Parkinson's disease, if they had a history of severe psychiatric disease (schizophrenia, bipolar disease), or if their medical status was considered fragile by AFH staff. The dementia diagnosis was confirmed by residents' primary care physicians</p> <p>Pretreatment: There were no significant pretreatment group differences on any resident or staff-caregiver characteristics</p>
Interventions	<p>Intervention Characteristics</p> <p>Intervention</p> <ul style="list-style-type: none"> ● <i>Description:</i> Sleep Education Program—The SEP was designed to teach AFH caregiver-staff about non-pharmacological strategies to improve sleep in older adults with dementia, 10, 14, 15 and to help them implement a realistic, individualized sleep plan for each resident. SEP sessions were held with the AFH owner/operator or staff-caregivers responsible for developing and following through with resident sleep plans. Table 2 shows the general outline of treatment sessions. A more detailed description of the theoretical rationale underlying the SEP and its development is available elsewhere ● <i>Length of treatment:</i> 4 weeks ● <i>Longest follow-up after end of treatment:</i> 6 months <p>Control</p> <ul style="list-style-type: none"> ● <i>Description:</i> Usual Care Control—Residents in CONT received routine medical care as typically provided by their

	<p>AFH or personal health care providers. Control AFHs did not receive training in SEP or any other type of behavioral sleep improvement strategies.</p> <ul style="list-style-type: none"> ● <i>Length of treatment</i>: 4 weeks ● <i>Longest follow-up after end of treatment</i>: 6 months
<p>Outcomes</p>	<p><i>BPSD (Sleep disorder inventory), SD</i></p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome <p><i>Quality of sleep (Time in bed/night), SD</i></p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome <p><i>Quality of life (daytime sleep), SD</i></p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome <p><i>Depression (cornell depression scale), SD</i></p> <ul style="list-style-type: none"> ● Outcome type: Continuous Outcome
<p>Identification</p>	<p>Sponsorship source: supported by grants from the Alzheimers Association</p> <p>Country: USA</p> <p>Setting:</p> <p>Comments: ClinicalTrials.gov (Identifier: NCT00393627)</p> <p>Authors name: McCurry</p> <p>Institution: University of Washington</p> <p>Email: smccurry@u.washington.edu</p> <p>Address: University of Washington 9709 3rd Ave., N.E., Suite 507 Seattle, WA 98115-2053</p>
<p>Notes</p>	

Risk of bias table

<p>Bias</p>	<p>Authors' judgement</p>	<p>Support for judgement</p>
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Random sequence generation (selection bias)	Unclear risk	Judgement Comment: Residents were randomly assigned after the baseline assessment to receive training in a 4-session Sleep Education Program (SEP) or to usual care control (CONT), according to a 2:1 simple allocation ratio designed to maximize recruitment and increase our experience with the experimental Sleep Education Program (N=31 SEP; N=16 CONT).
Allocation concealment (selection bias)	Low risk	Judgement Comment: All residents in homes with more than one participating resident were assigned to the same treatment condition.
Blinding of participants and personnel (performance bias)	Unclear risk	Judgement Comment: Insufficient information on blinding of the participants and personnel
Blinding of outcome assessment (detection bias)	Unclear risk	Judgement Comment: Insufficient information on blinding of outcome assessors
Incomplete outcome data (attrition bias)	Low risk	Judgement Comment: Intention-to-treat analysis, although missing data was not imputed. Dropouts accounted for and equally distributed across groups
Selective reporting (reporting bias)	Low risk	Judgement Comment: Matches study protocol
Other bias	Low risk	Judgement Comment: The study appears to be free of other sources of bias

Footnotes

Characteristics of excluded studies

Alessi 1999

Reason for exclusion	Wrong comparator
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Alessi 2005

Reason for exclusion	Wrong intervention
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Buettner 2002

Reason for exclusion	Wrong intervention
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Connell 2007

Reason for exclusion	Wrong intervention
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FontanaGasio 2003

Reason for exclusion	Wrong intervention
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Fowler 2016

Reason for exclusion	Wrong patient population
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Friedman 2011

Reason for exclusion	Wrong patient population
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Lee 2007

Reason for exclusion	Wrong intervention
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Lee 2008

Reason for exclusion	Wrong intervention
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Li 2014

Reason for exclusion	Wrong intervention
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Li 2017

Reason for exclusion	Wrong outcomes
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Martin 2007

Reason for exclusion	Wrong intervention
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McCurry 2004

Reason for exclusion	Wrong outcomes
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McCurry 2010

Reason for exclusion	Abstract Only
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Munch 2017

Reason for exclusion	Wrong intervention
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Namazi 1995

Reason for exclusion	Wrong intervention
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Ouslander 2006

Reason for exclusion	Wrong intervention
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Footnotes

Characteristics of studies awaiting classification

Footnotes

Characteristics of ongoing studies

Footnotes

References to studies

Included studies

McCurry 2005

McCurry, S. M.; Gibbons, L. E.; Logsdon, R. G.; Vitiello, M. V.; Teri, L... Nighttime insomnia treatment and education for Alzheimer's disease: a randomized, controlled trial. Journal of the American Geriatrics Society 2005;53(5):793-802. [DOI: JGS53252 [pii]]

McCurry 2011

McCurry, Susan M.; Pike, Kenneth C.; Vitiello, Michael V.; Logsdon, Rebecca G.; Larson, Eric B.; Teri, Linda. Increasing walking and bright light exposure to improve sleep in community-dwelling persons with Alzheimer's disease: results of a randomized, controlled trial.. Journal of the American Geriatrics Society 2011;59(8):1393-1402. [DOI:]

McCurry 2012

McCurry, Susan M.; LaFazia, David M.; Pike, Kenneth C.; Logsdon, Rebecca G.; Teri, Linda. Development and evaluation of a sleep education program for older adults with dementia living in adult family homes.. American Journal of Geriatric Psychiatry 2012;20(6):494-504. [DOI:]

Excluded studies

Alessi 1999

Alessi, C. A.; Yoon, E. J.; Schnelle, J. F.; Al-Samarrai, N. R.; Cruise, P. A.. A randomized trial of a combined physical activity and environmental intervention in nursing home residents: do sleep and agitation improve? Journal of the American Geriatrics Society 1999;47(7):784-791. [DOI:]

Alessi 2005

Alessi, C. A.; Martin, J. L.; Webber, A. P.; Cynthia Kim, E.; Harker, J. O.; Josephson, K. R.. Randomized, controlled trial of a nonpharmacological intervention to improve abnormal sleep/wake patterns in nursing home residents. *Journal of the American Geriatrics Society* 2005;53(5):803-810. [DOI: JGS53251 [pii]]

Buettner 2002

Buettner, L. L.; Fitzsimmons, S.. AD-venture program: therapeutic biking for the treatment of depression in long-term care residents with dementia. *American Journal of Alzheimer's Disease and Other Dementias* 2002;17(2):121-127. [DOI: 10.1177/1533331750201700205 [doi]]

Connell 2007

Connell, Bettye Rose; Sanford, Jon A.; Lewis, Donna. Therapeutic Effects of an Outdoor Activity Program on Nursing Home Residents with Dementia. *Journal of Housing For the Elderly* 2007;21(3-4):194-209. [DOI: 10.1300/J081v21n03_10]

FontanaGasio 2003

Fontana Gasio, P.; Krauchi, K.; Cajochen, C.; Someren, Ev; Amrhein, I.; Pache, M.; Savaskan, E.; Wirz-Justice, A.. Dawn-dusk simulation light therapy of disturbed circadian rest-activity cycles in demented elderly. *Experimental gerontology* 2003;38(1-2):207-216. [DOI: S053155650200164X [pii]]

Fowler 2016

Fowler, Christianne Nesbitt; Kott, Karen; Wicks, Mona Newsome; Rutledge, Carolyn. Self-Efficacy and Sleep Among Caregivers of Older Adults With Dementia Effect of an Interprofessional Virtual Healthcare Neighborhood. *Journal of gerontological nursing* 2016;42(11):39-47. [DOI: 10.3928/00889134-20160901-02]

Friedman 2011

Friedman L.F.; Spira A.P.; Hernandez B.; Sheikh J.; Yesavage J.A.; Zeitzer, J.. Differential effects of morning light treatment combined with sleep hygiene therapy on memory-impaired individuals and their caregivers.. *Sleep.Conference: 25th Anniversary Meeting of the Associated Professional Sleep Societies, LLC, SLEEP 2011*.Minneapolis, MN United States.Conference Publication: (var.pagings) 2011;34(SUPPL. 1):A217. [DOI:]

Lee 2007

Lee, D.; Morgan, K.; Lindsay, J.. Effect of institutional respite care on the sleep of people with dementia and their primary caregivers. *Journal of the American Geriatrics Society* 2007;55(2):252-258. [DOI: JGS1036 [pii]]

Lee 2008

Lee, Y.; Kim, S.. Effects of indoor gardening on sleep, agitation, and cognition in dementia patients--a pilot study. *International journal of geriatric psychiatry* 2008;23(5):485-489. [DOI: 10.1002/gps.1920 [doi]]

Li 2014

Li J.; Chang Y.; Jungquist C.; Porock, D.. Sleep in long-term care residents with dementia: Pilot of a person-centered care intervention.. Sleep.Conference: 28th Annual Meeting of the Associated Professional Sleep Societies, LLC, SLEEP 2014.Minneapolis, MN United States.Conference Publication: (var.pagings) 2014;37(SUPPL. 1):A348. [DOI:]

Li 2017

Li, Junxin; Grandner, Michael A.; Chang, Yu-Ping; Jungquist, Carla; Porock, Davina. Person-Centered Dementia Care and Sleep in Assisted Living Residents With Dementia: A Pilot Study.. Behavioral Sleep Medicine 2017;15(2):97-113. [DOI:]

Martin 2007

Martin, J. L.; Marler, M. R.; Harker, J. O.; Josephson, K. R.; Alessi, C. A.. A multicomponent nonpharmacological intervention improves activity rhythms among nursing home residents with disrupted sleep/wake patterns. The journals of gerontology.Series A, Biological sciences and medical sciences 2007;62(1):67-72. [DOI: 62/1/67 [pii]]

McCurry 2004

McCurry, S. M.; Logsdon, R. G.; Vitiello, M. V.; Teri, L.. Treatment of sleep and nighttime disturbances in Alzheimer's disease: a behavior management approach. Sleep medicine 2004;5(4):373-377. [DOI: 10.1016/j.sleep.2003.11.003 [doi]]

McCurry 2010

McCurry S.; Pike K.C.; Logsdon R.G.; Vitiello M.V.; Larson E.B.; Teri, L.. Walking, bright light, and a combination intervention all improve sleep in communitydwelling persons with alzheimer's disease and caregivers: Results of a randomized, controlled trial.. Sleep.Conference: 24th Annual Meeting of the Associated Professional Sleep Societies, LLC, SLEEP 2010.San Antonio, TX United States.Conference Publication: (var.pagings) 2010;33(SUPPL. 1):A353. [DOI:]

Munch 2017

Munch M.; Schmieder M.; Bieler K.; Goldbach R.; Fuhrmann T.; Zumstein N.; Vonmoos P.; Scartezzini J.L.; WirzJustice A.; Cajochen, C.. Bright light delights: Effects of daily light exposure on emotions, restactivity cycles, sleep and melatonin secretion in severely demented patients.. Current Alzheimer Research 2017;14(10):1063-1075. [DOI:]

Namazi 1995

Namazi, Kevan H.; Zadorozny, Carol A.; Gwinnup, Pauledta B.. The Influences of Physical Activity on Patterns of Sleep Behavior of Patients with Alzheimer's Disease. Int J Aging Hum Dev 1995;40(2):145-153. [DOI: 10.2190/Q1PQ-8MKY-XWHN-JH8M]

Ouslander 2006

Ouslander, J. G.; Connell, B. R.; Bliwise, D. L.; Endeshaw, Y.; Griffiths, P.; Schnelle, J. F.. A nonpharmacological intervention to improve sleep in nursing home patients: results of a controlled clinical trial. *Journal of the American Geriatrics Society* 2006;54(1):38-47. [DOI: JGS562 [pii]]

Other references

Additional references

Other published versions of this review

Classification pending references

Data and analyses

1 Sleep hygiene vs Control

Outcome or Subgroup	Studies	Participants	Statistical Method	Effect Estimate
1.1 BPSD, Longest FU, max 3 mo	1	56	Mean Difference (IV, Fixed, 95% CI)	0.40 [-0.15, 0.95]
1.2 Quality of sleep (time in bed/night), Longest FU, max 3 mo	3	136	Mean Difference (IV, Random, 95% CI)	0.06 [-0.46, 0.57]
1.3 Quality of sleep (daytime sleep), Longest FU, max 3 mo	2	100	Mean Difference (IV, Random, 95% CI)	0.32 [-0.41, 1.05]
1.4 Depression, Longest FU, max 3 mo	1	44	Mean Difference (IV, Fixed, 95% CI)	-5.70 [-8.80, -2.60]
1.5 Usage of hypnotics, Longest FU max 3 mo	0	0	Mean Difference (IV, Fixed, 95% CI)	Not estimable
1.6 Usage of hypnotics, end of treatment	0	0	Mean Difference (IV, Random, 95% CI)	Not estimable
1.7 ADL, Longest FU, max 3 mo	0	0	Mean Difference (IV, Random, 95% CI)	Not estimable
1.8 BPSD, end of treatment	0	0	Mean Difference (IV, Random, 95% CI)	Not estimable

1.9 Quality of Life, Longest FU, max 3 mo	0	0	Mean Difference (IV, Random, 95% CI)	Not estimable
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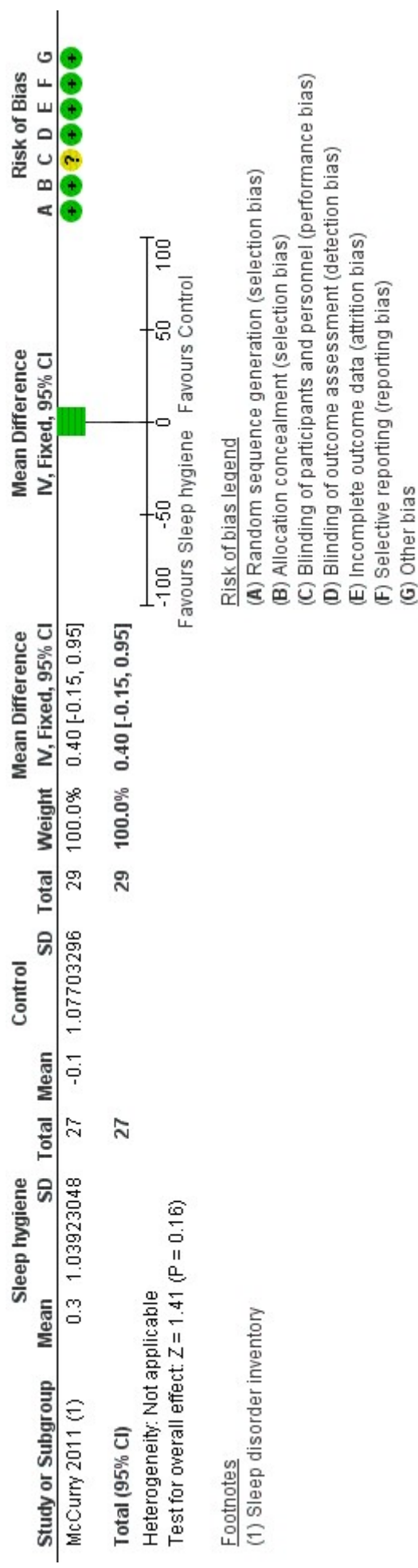
Figures

Figure 1

	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Other bias
McCurry 2005	+	?	?	+	+	+	+
McCurry 2011	+	+	?	+	+	+	+
McCurry 2012	?	+	?	?	+	+	+

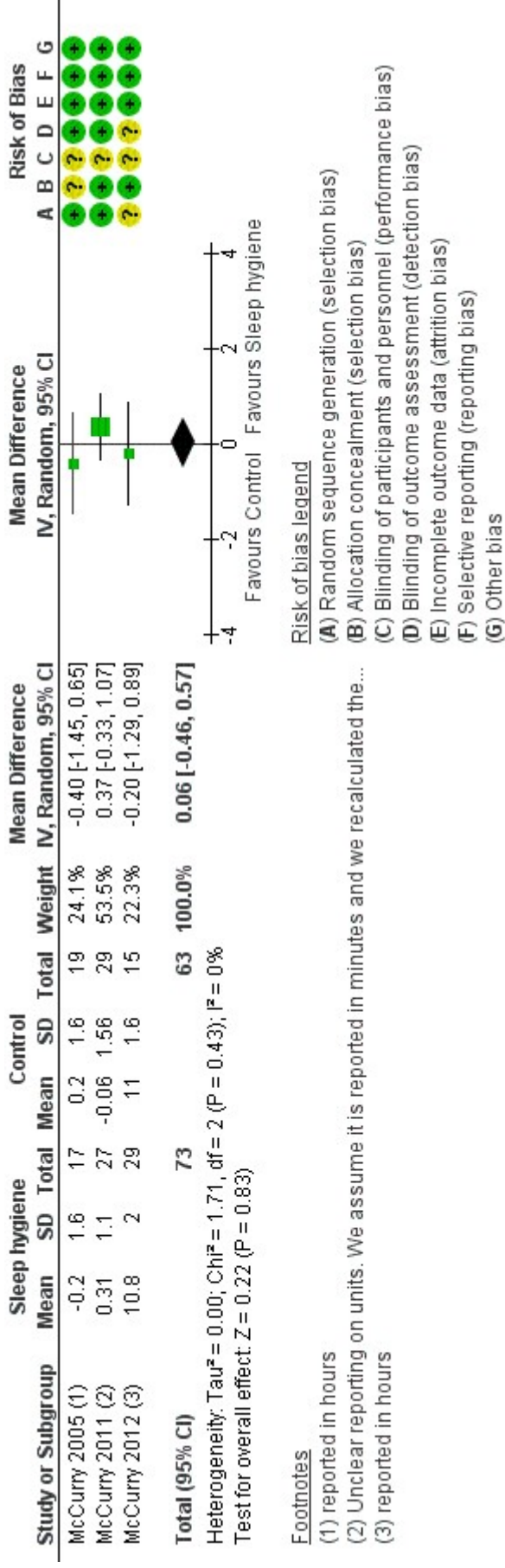
Risk of bias summary: review authors' judgements about each risk of bias item for each included study.

Figure 2 (Analysis 1.1)



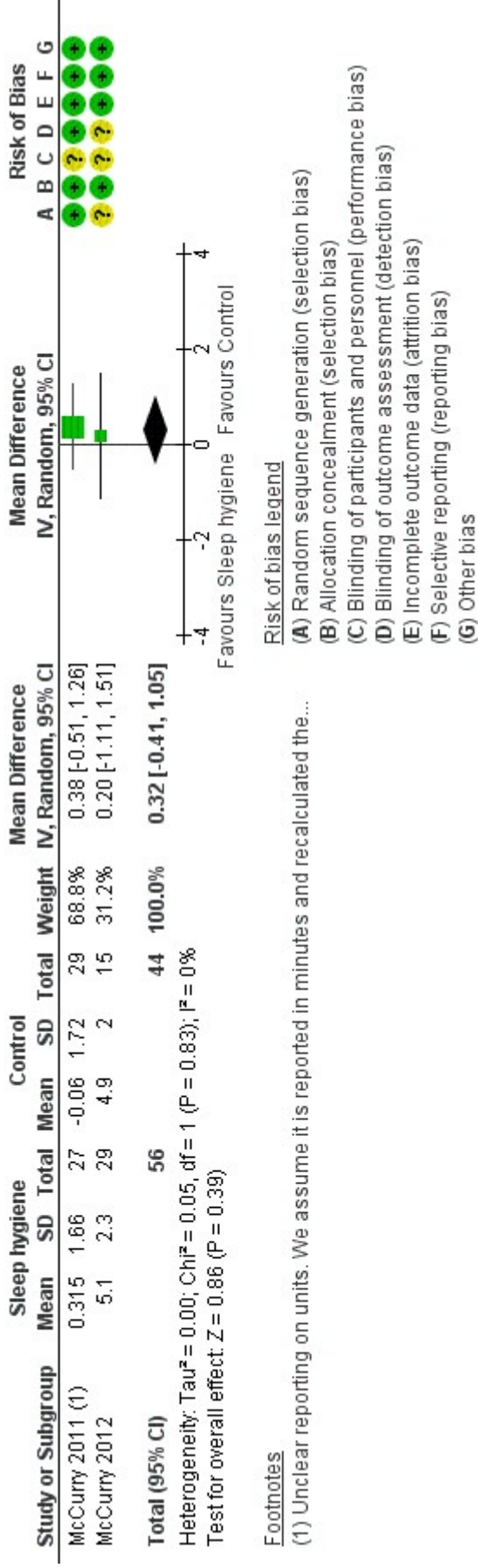
Forest plot of comparison: 1 Sleep hygiene vs Control, outcome: 1.1 BPSD, Longest FU, max 3 mo.

Figure 3 (Analysis 1.2)



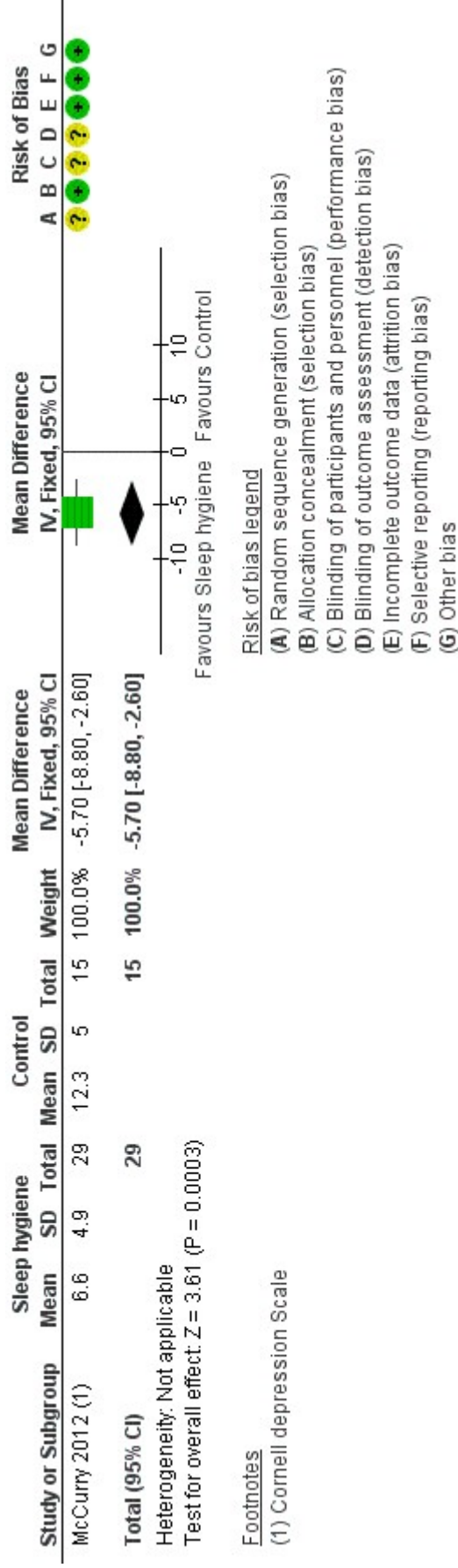
Forest plot of comparison: 1 Sleep hygiene vs Control, outcome: 1.2 Quality of sleep (time in bed/night), Longest FU, max 3 mo.

Figure 4 (Analysis 1.3)



Forest plot of comparison: 1 Sleep hygiene vs Control, outcome: 1.3 Quality of sleep (daytime sleep), Longest FU, max 3 mo.

Figure 5 (Analysis 1.4)



Forest plot of comparison: 1 Sleep hygiene vs Control, outcome: 1.4 Depression, Longest FU, max 3 mo.