NITE-AD
Psychoeducation

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Objective  To evaluate whether a comprehensive sleep education program (Nighttime Insomnia Treatment and Education for Alzheimer's Disease (NITE-AD)) could improve sleep, depression and behavioral disturbances in people with AD.
Setting  At home
Participants  People with ‘probable’ or ‘possible’ Alzheimer’s Disease
Mean age  People with dementia: E=77.8 (± 8.1); C=77.6 (± 6.7)
Caregivers: E=62.8 (± 15.3); C=63.7 (± 16.7)
Gender  People with dementia: E: 41.2% female; C: 47.4% female
Caregivers: E: 76.5% female; C: 68.4% female
MMSE  E=9.9 (± 7.6); C=13.6 (± 9.0)
Design  Randomized controlled trial (NITE-AD versus contact general dementia education and caregiver support)
Sample size  nE=17, nC=19
Follow-up  6 months
Intervention  All study participants received 6 educational in-home sessions on sleep hygiene, sleep practices, changes associated with normal ageing and strategies to improve sleep. Manuals on treatment of sleep problems were provided. Participants in the NITE-AD program also received a daily walking and a light exposure intervention with a Sun-Ray light box. Participants in the control group received sleep-related reading materials; the interventionist answered their questions and provided general encouragement.
Frequency  All: six times over two months; E: 3 weekly sessions, 3 bi-weekly sessions, C: Caregivers were encouraged to spend one hour per day with their relatives
Duration  All: one hour; E: 9 weeks, C throughout the treatment
Facilitator  geropsychologist
Outcome measures  
**Dyads:**
Sleep-wake activity  total night sleep, percentage of time asleep, number of awakenings, duration of time awake, estimated daytime sleep, circadian rest-activities variables
Light exposure  mean lux exposure during day, number of minutes lux > 1000
Sleep diary  ratings of patient and caregiver sleep, patient behavior, caregiver mood

**Caregivers:**
Caregiver sleep  Pittsburgh Sleep Quality Index (PSQI; Buysse et al., 1989)
Depression  Center for Epidemiological Study of Depression (CES-D;
People with dementia:
- Patient daytime sleepiness: Epworth Sleepiness Scale (ESS; Johns, 1991)
- Depression: Cornell Depression Scale (Alexopoulos et al., 1988)
- Behavioral disturbance: Revised Memory and Behavior Problem Checklist (RMBPC; Teri et al., 1992)

Results
After two months the NITE-AD subjects were less awake during the night as compared to the control group, both in frequency and total time awake during the night (32% reduction). NITE-AD subjects exercised significantly more and had lower levels of depression. These effects also lasted after 6 months. However, participants in the NITE-AD group experienced more rapid cognitive decline. Percentage of sleep and sleep time improved for caregivers in the NITE-AD after the intervention and 6 months later as compared to controls. The also woke less frequently during the night.

Implementation material
- E = experimental group; C = control group
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