Acupuncture and the sleep quality of elderly with dementia: A within-subjects trial

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Research Background
Method
Results
Discussion & Conclusion
Q & A
Elderly with dementia are often afflicted with sleep disturbance.

Negative impact on the quality of life of both the caregivers and the care recipients.

Sleep disruption appears to be worsened as the disease progresses.

Elderly in the later stages of dementia spend as much as 40% of their time in bed awake.
Common prescriptions for dementia patients with sleep problems
- Benzodiazepine
- Antihistamines

Some can have detrimental side effects
- Excessive daytime sleepiness
- Impaired motor performance → risk of fall

Polypharmacy is associated with functional decline
What is acupuncture?
- Traditional Chinese medicine
- Sticking sterilized needles into meridian points on human body which govern different organs and their interactions
- Restoring Qi, blood and body fluids to normalcy
- Procedure is safe
**Evidence on the effect of acupuncture**
- Alleviates sleep disturbances in patients with HIV disease and renal diseases
- Reduces the agitated behaviors exhibited among dementia patients
- Improves the sleep quality of anxious adult subjects by causing an increase in melatonin secretion

**Research hypothesis**
- Acupuncture improves the sleeping quality of Chinese elderly with dementia who suffer from sleep problem
Method

- Research design
  - Within-subjects trial
  - Develop an acupuncture program for enhancing sleep quality in Chinese seniors who have dementia
  - Evaluate its effectiveness in reducing sleep disturbances

- Intervention period
  - Between March 2011 and August 2012
Method

- 22 elders with dementia who had sleep disturbances
  - Recruited from elderly community centres, dementia-related health talks, and memory clinic of a dementia service centre
- Inclusion criteria
  - Clinical diagnosis of dementia
  - Sleep problem as perceived by patient or family
  - Stable drug regime or no drug intake in the past 3 months
Method

- **Exclusion criteria**
  - Skin problems around the application area
  - Psychiatric disorder or exhibiting aggressive behavior
- **Subjects were assigned into batches according to the dates they enrolled in the study**
- **3 to 5 elders in each batch**
- **Each batch went through**
  - 6-week control period then
  - 6-week treatment period
Method

- 19 subjects completed the treatment
- **Intervention**
  - Delivered by a registered Chinese medicine practitioner with clinical experience in acupuncture
  - Treatment took place at a dementia service centre
  - A total of 12 sessions were offered to each subject
  - Twice a week for 6 weeks
  - Approximately 30 minutes each session
Intervention

Summarized from various literature, the common meridian points for sleep promotion are:

- Shenmen (HT7)
- Baihui (DU20)
- Anmian II (EX-HN9)
- Yintang (EX-HN3)
- Zusanli (ST36)
- Sanyinjiao (SP6)

Acupuncture was only applied to these 6 meridian points for each subject throughout all treatment sessions.
Method

- Assessments were carried out immediately before and after control and treatment periods

- Measurements
  - Wrist actigraphy (Actiwatch 2)
  - Neuropsychiatric Inventory (NPI) – Sleep and Nighttime behavior
Results

- 22 subjects were recruited
- 19 subjects completed the treatment
  - Reasons for withdrawal: intercurrent illness, perceived lack of response, fear of needles
- Completion rate = 86%

Photo source: www.telegraph.co.uk
Results

- Demographics characteristics:
  - Between 75 to 84 years of age (63.2%)
  - Female (73.7%)
  - 57.9% widowed and 42.1% married
  - With primary (36.8%) and secondary schooling (31.6%)
  - Cared by family members or domestic helper (94.7%)
## Results

- Sleep disturbance and nighttime behaviors reported by caregiver

<table>
<thead>
<tr>
<th>Sleep disturbances</th>
<th>%</th>
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<tbody>
<tr>
<td>Difficulty falling in asleep</td>
<td>76.2%</td>
</tr>
<tr>
<td>Get up during the night</td>
<td>71.4%</td>
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<tr>
<td>Awaken too early in the morning</td>
<td>61.9%</td>
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<tr>
<td>Wander, pace or get involved in inappropriate activities at night, wake up at night, dress, and plan to go out</td>
<td>33.3%</td>
</tr>
<tr>
<td>Dress and undress repeatedly</td>
<td>14.3%</td>
</tr>
<tr>
<td>Other nighttime behaviors</td>
<td>28.6%</td>
</tr>
<tr>
<td>2 or more of the above disturbances</td>
<td>78.9%</td>
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<tr>
<td>Mean number of sleeping disturbances</td>
<td>3.1</td>
</tr>
<tr>
<td>Median number of sleeping disturbances</td>
<td>3.5</td>
</tr>
</tbody>
</table>
Significant increase in bed time ($Z = -2.05, p < .05$) and sleep time ($Z = -2.21, p < .05$) in treatment period than in control period.
Acupuncture treatment was tolerated by many demented people

Acupuncture over twelve weeks increased sleep time in demented people with sleep problems
Thank you

Q & A