

Managing agitation in dementia using non-pharmacological therapies

Gill Livingston

Lynsey Kelly, Elanor Lewis-Holmes,
Gianluca Baio, Rumana Omar,
Stephen Morris, Nishma Patel,
Cornelius Katona, Claudia Cooper.

Funding Acknowledgement:

This is independent research commissioned by the UK National Institute for Health Research (NIHR) Health Technology Assessment Programme: HTA 10/43/01.

The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the HTA programme, NIHR, NHS or the Department of Health.

The study was sponsored by UCL. Neither funders nor sponsors had a role in the study design and the collection, analysis, and interpretation of data and the writing of the article .

What I will talk about

- What is agitation?
- Why is agitation important in dementia?
- Why we don't just use drugs?
- Why not just consider neuropsychiatric symptoms as a whole
- What we did
 - Search
 - Inclusion
 - Quality assessment
 - Analysis
- What we found
 - What works, who for, what length of time and what setting
 - What doesn't work
 - What needs more evidence
- What it means, why it matters and what next?



Non-pharmacological interventions for agitation in dementia: systematic review of randomised controlled trials

Gill Livingston, Lynsey Kelly, Elanor
Lewis-Holmes, Gianluca Baio,
Stephen Morris, Nishma Patel,
Rumana Z. Omar, Cornelius Katona,
Claudia Cooper

DOI: 10.1192/bjp.bp.113.141119

Published 1 December 2014

What is agitation in dementia

- Agitation is inappropriate verbal, vocal or motor activity
- It encompasses purposeless activity, shouting out, physical and verbal aggression and wandering.
- It has a behavioural component and is not solely emotional.

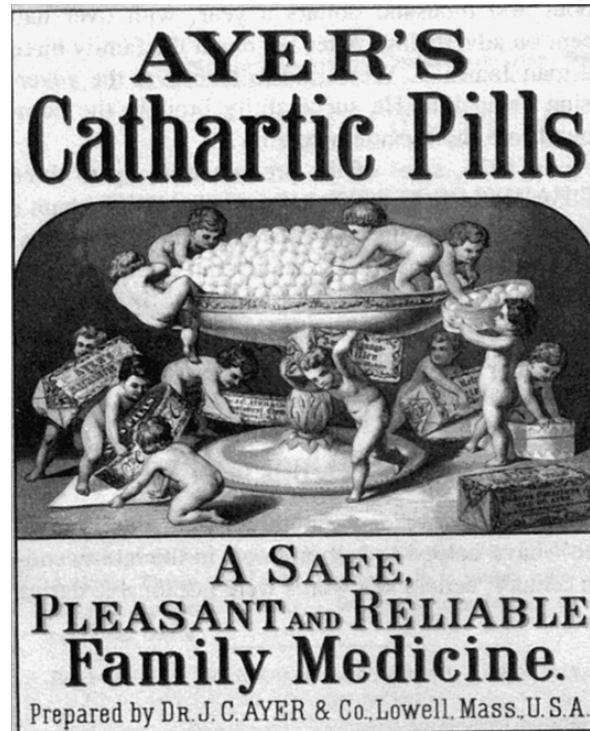
Why is agitation important in dementia

- **Dementia is common and costly**
 - 820 000 people with dementia in UK ; Cost £23 billion/year
 - Numbers doubling and cost tripling in 20 years

Agitation may be more important than cognition

- **Agitation is common, persistent and distressing symptom**
 - 80% of those with clinically significant symptoms still symptomatic 6 months later
- **Agitation leads to**
 - decreased quality of life,
 - excess cost associated with agitation is 20% of the medical and social care costs of dementia
 - care breakdown
 - care home admission.
- **Agitation affects family relationships adversely.**

Why we don't just use drugs



Source: http://commons.wikimedia.org/wiki/File:Ayers_Cathartic_Pills.png

Why we don't just use drugs

- **Antipsychotics**
 - increase cognitive decline; EPSE; mortality
 - limited efficacy.
 - Evidence that haloperidol, **risperidone**, aripiprazole and **olanzapine** work sometimes. Quetiapine does not. Atypicals increase mortality 1.5-1.7 x in first 90 days. Haloperidol increases 1.5 x more
- **Citalopram**-increases QT interval and decreases cognition
- **Benzodiazepines** increase cognitive decline.
- **Cholinesterase inhibitors** and **memantine** ineffective.
- One randomised (non-placebo controlled) study of **analgesics** improved agitation in people with dementia. Effect size comparable to antipsychotics
- Preliminary evidence with carbamazepine, mirtazepine, Valproate ineffective
- Overall limited efficacy and risks ++

What we did in our systematic review

- (1) systematically review the evidence for non-pharmacological interventions to determine which decrease agitation in people with dementia immediately and longer term;
- (2) model the cost of the successful interventions.

Electronic Search

Twice- 9.8.11 and 12.6.12

- Web of Knowledge, Pub Med, British Nursing Index, The HTA Programme Database, PsycINFO, NHS Evidence, System for Information on Grey Literature, the Stationery Office Official Documents website, the Stationery National Technical Information Service, INAHL and the Cochrane Library

Other searches

- We hand-searched included papers' reference lists
- Contacted authors to ask if they knew of other relevant studies

Search terms

agitation OR restless* OR irrita* OR aggression OR "aberrant motor behav*" OR "psychomotor activity" OR "challenging behav*" OR pacing OR sundowning OR wander* OR "walking about" OR "safe walking") AND (dement* OR alzheimer OR "vascular dement*" OR "pick's disease" OR huntington OR creutzfeldt OR cjd OR binswanger OR lewy) AND ("randomised control* trial*" OR RCT OR cohort OR observational OR intervention OR "single blind" OR "double blind" OR evaluation OR comparative OR pretest OR "post test");

Inclusion criteria and quality assessment

We included RCTs in any language:

- Evaluating psychological, behavioural or sensory intervention for agitation;
- Where participants all had dementia, or those with dementia were analysed separately;
- Measuring agitation using a quantitative outcome or providing data from which one could be generated.
- Level 1b: high quality RCTs.
 - at least single blind, follow-up rates $\geq 80\%$, sufficiently powered; used ITT, valid outcome measures and relatively narrow confidence intervals.
- Level 2b: lower quality RCTs

PRISMA diagram

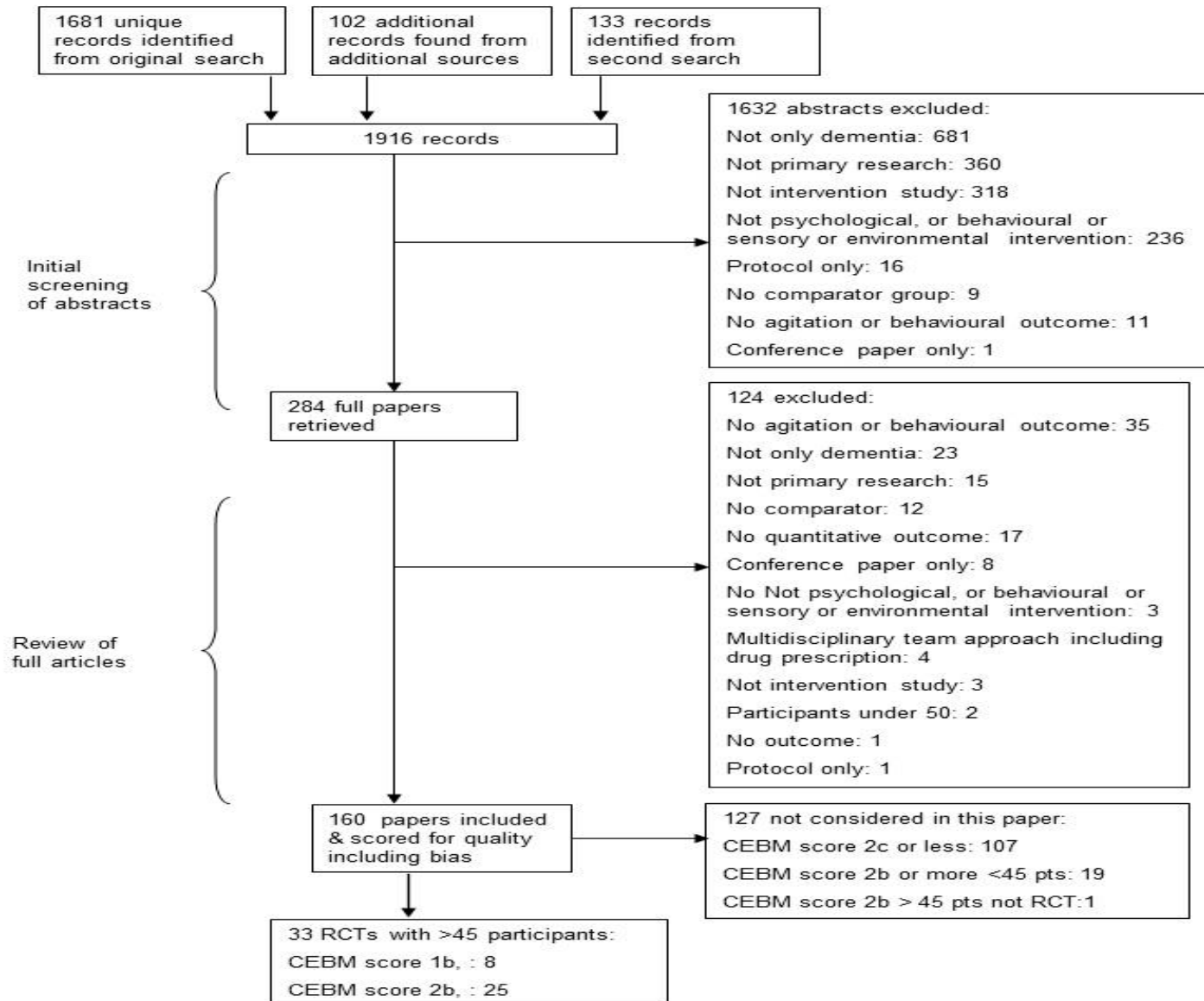


Figure 1

Level of agitation

- 1) All agitation levels including no agitation symptoms;
- 2) At least some agitation symptoms;
- 3) Clinically significant agitation level;
- 4) Level unspecified.

We used conventional thresholds; >39 on the Cohen Mansfield Agitation Inventory (CMAI) 18 and Neuropsychiatric Inventory (NPI) agitation scale score >41 to denote significant agitation.

Statistical analysis

- Calculated standardised effect sizes (SES;95% CI) to compare studies using a common effect measure.
 - used data from the last time point to estimate the SES, since individual patient data were not available to incorporate repeated measures.
 - We recalculated results for studies not directly comparing intervention and control groups and with one-tailed significance tests, so some results differ from the original analysis.
- Meta-analysis could not be done as required homogenous interventions with same outcome measure

Interventions which worked

- Activities
- Music therapy to a protocol
- Sensory interventions
- Supervised person centred care
- Supervised communication skills
- Dementia mapping



Activities

- Five included RCTs implemented group activities in care homes (eg cooking, storytelling) ↓ **symptomatic agitation** (SES range =0.2 to 1.05) while in place.
- Individualising activities did not cause significant additional reductions in agitation.
- There is no evidence for those who are severely agitated or who are not resident in care homes.

Music therapy by protocol

- Music therapist warm up with a well known song, listening to, then joining in with music
- In care homes this ↓overall agitation immediately.
- SES 0.5-0.9
- There is no evidence for people with severe agitation or outside care homes
- No evidence it works over long term

Sensory interventions

- Sensory interventions eg massage, music, multisensory intervention;
- ↓ symptomatic agitation, and clinically significant agitation, during the intervention.
- “Therapeutic touch” (healing based touch focussing on person as a whole) was not superior to usual treatment or .
- There is insufficient evidence about long term effects or in settings outside of care homes.

Person centred care; communication skills; dementia care mapping

- Six RCTs to change the caregiver's perspective, communication with and thoughts, to see and treat people with dementia as individuals vs task focussed.
- Training paid caregivers **with supervision** in care homes
- **PCC and CS** ↓symptomatic and severe agitation, both immediately and up to six months. SES= 0.3-1.8 immediately and 0.2-2.2 in following months.
- Dementia care mapping ↓severe agitation, immediately and four months afterwards, in care homes. The SES= 1.4 immediately and 1.5 in the long term.
- Cost £31-87 (PCC and CS) and £108-137 DCM

Interventions which do not work

- Light therapy
- Aromatherapy
- Training family carers in behavioural and cognitive interventions

Light therapy

Light therapy is hypothesised to reduce agitation through manipulation of the disrupted circadian rhythms of dementia, typically by 30-60mins of daily bright light exposure

Three large RCTs showed **light therapy increases agitation**

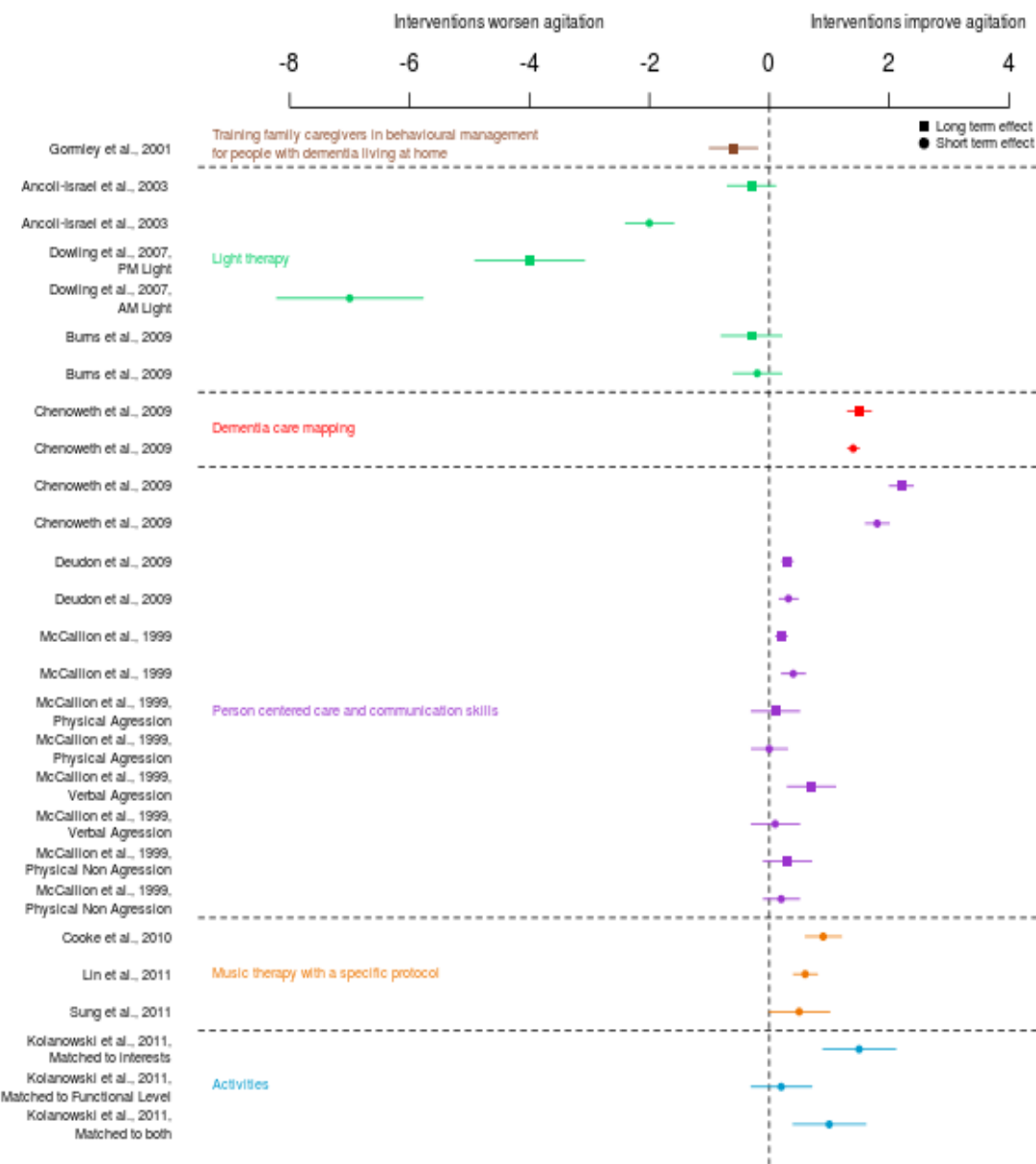
The SES was from 0.2 for improvement to 4.0 for worsening symptoms

Aromatherapy

- Blinded assessments found it was ineffective.
- Results of non-blinded studies were mixed.
- Aromatherapy not been shown to work for agitation

Training family caregivers in behavioural management or CBT for people with dementia living at home

- Three RCTs
- Ineffective (harmful) for severe agitation
- No immediate or long term effect to decrease agitation symptoms



BMJ Open

BMJ Open 2015;5:e007382
doi:10.1136/bmjopen-2014-007382

Monetary costs of agitation in older adults
with Alzheimer's disease in the UK:
prospective cohort study

Stephen Morris,
Nishma Patel,
Gianluca Baio,
Lynsey Kelly,
Elanor Lewis-Holmes,
Rumana Z Omar,
Cornelius Katona,
Claudia Cooper,
Gill Livingston

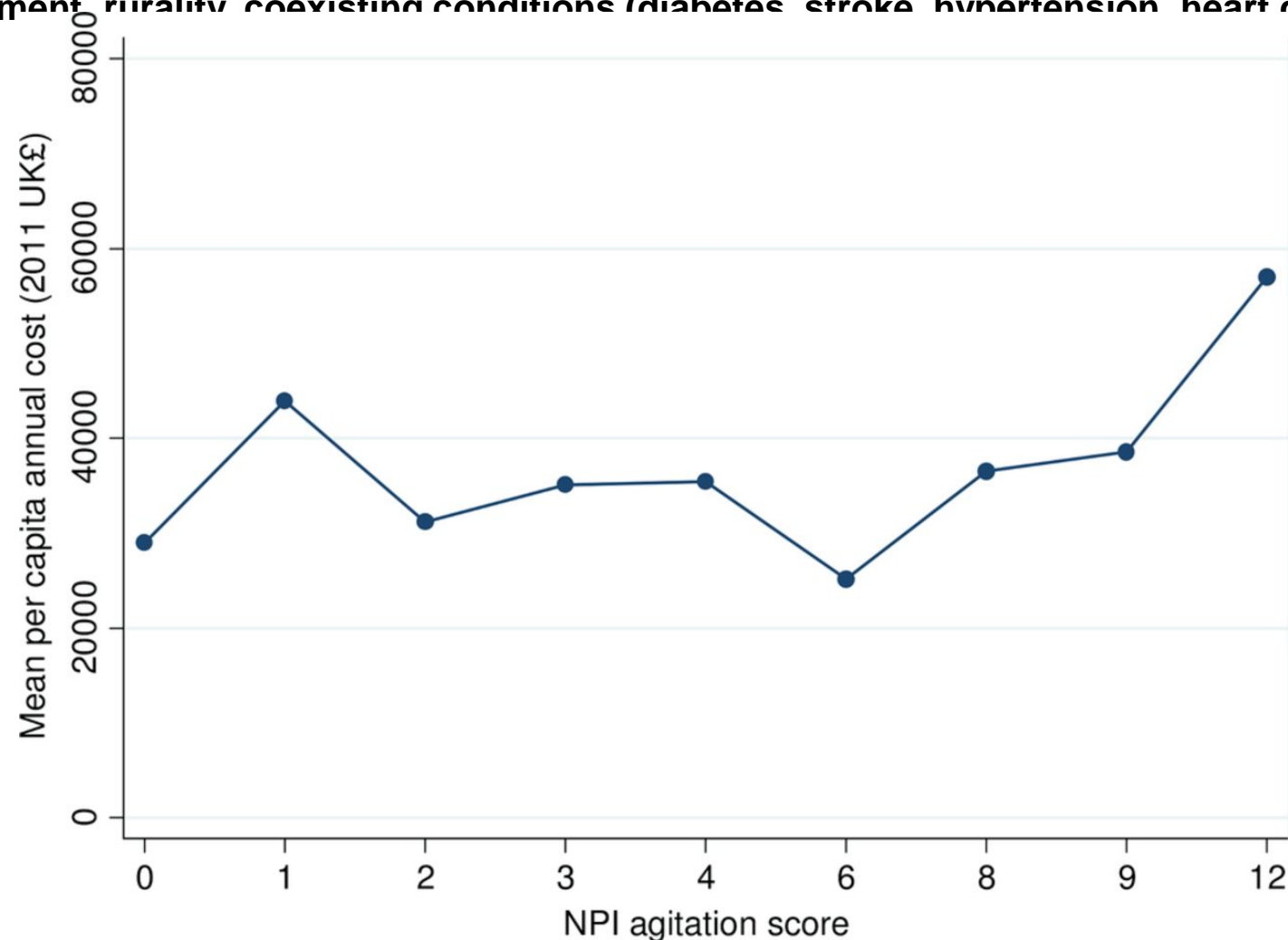
Health economic

Cost effectiveness not possible.

Health and social care costs varied by NPI agitation scores, from £29 000 over a 12-month period with no agitation symptoms (NPI agitation score=0) up to £57 000 at the most severe levels of agitation (NPI agitation score=12; $p=0.01$, .



Adjusted mean per capita annual costs by agitation symptoms (N=695). Controls are included for age, gender, marital status, ethnic group, highest level of education, previous employment, rurality, coexisting conditions (diabetes, stroke, hypertension, heart disease),



Stephen Morris et al. BMJ Open 2015;5:e007382

UK cost of agitation in dementia



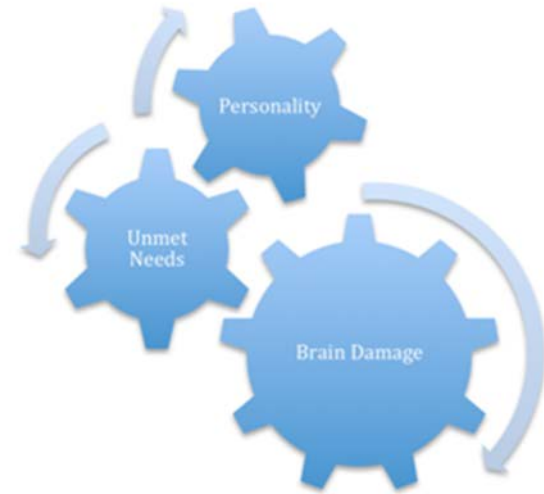
- Adjusted annual cost/person with AD with significant agitation = £33 075 Vs £28 983 others
- Excess cost associated with agitation/person with AD = £4091/year.
- So....agitation accounts for 12% ($£4091/£33\ 075$) of the health and social care costs of AD each year.
- In the UK, there are 800 000 people with dementia and around 62% of cases are accounted for by AD.
- The expected excess cost associated with agitation in people with AD is therefore £2.0 billion a year ($£4091 \times 800\ 000 \times 0.62$).
- Potential to save money ++ with effective interventions

Discussion

Training paid caregivers in communication or person centred care skills or dementia care mapping with supervision works for symptomatic and severe agitation, during the intervention and for six months afterwards, and preliminary evidence that it helps prevent emergent agitation.

The standardised effect sizes suggest they are similarly efficacious,

Agitation



- Sensory interventions, activities and music therapy by protocol reduce agitation and decrease symptomatic agitation in care homes while they are in place.
- No evidence for those who are severely agitated.

What is agitation in dementia?

- Way of communicating feels bad
- Pain, constipation, thirst, boredom, lack of touch, loneliness, discomfort
- Brain changes
- Communication and listening plus sensory activity done well may make the difference
- Medication often not really relevant
- Need effectiveness and cost effectiveness RCT
- Lots more work at home where most people are