Henry Brodaty

How you can understand, prevent & remedy behavioural and psychological symptoms of dementia (BPSD)

Never Stand Still | Medicine

- **Dementia Collaborative Research Centre**

  www.dementiaresearch.org.au

- **Centre for Healthy Brain Ageing**

  www.cheba.unsw.edu.au

University of New South Wales (UNSW Australia)

Potential conflict of interests

- **Advisor, consultant, remunerated speaker and/or investigator for multiple drug companies over last 30 years**
- **Currently: advisory board for Nutricia & recently completed trial for Tau Therapeutics**

Clinical scenario

“Dr, Mr Smith-Jones is hitting the nurses, disrupting the other residents and being impossible. Can you prescribe something?”

What are BPSD?

- Agitation
- Aggression
- Calling out/ screaming
- Disinhibition (sexual)
- Wandering
- Night time disturbance
- Shadowing
- Swearing

- Depression
- Anxiety
- Apathy
- Delusions
- Hallucinations
- Irritability
- Elation/euphoria

Why are BPSD important?

- Ubiquitous, >90% of PWD during course
- Distress to PWD and to caregivers
- Increase rate of institutionalisation
- Higher rate of complications in hospital
- Associated with:
  - Faster rate of decline
  - Increased mortality

Effects of BPSD

- **Residents with BPSD are more likely to[1]:**
  - **be physically restrained**
  - **receive antipsychotic medication**
  - **negatively influence other residents**
- **BPSD increase the cost of institutional care for persons with dementia[2]**
- **BPSD, especially aggression[3] & calling out[4], increase nurse stress**

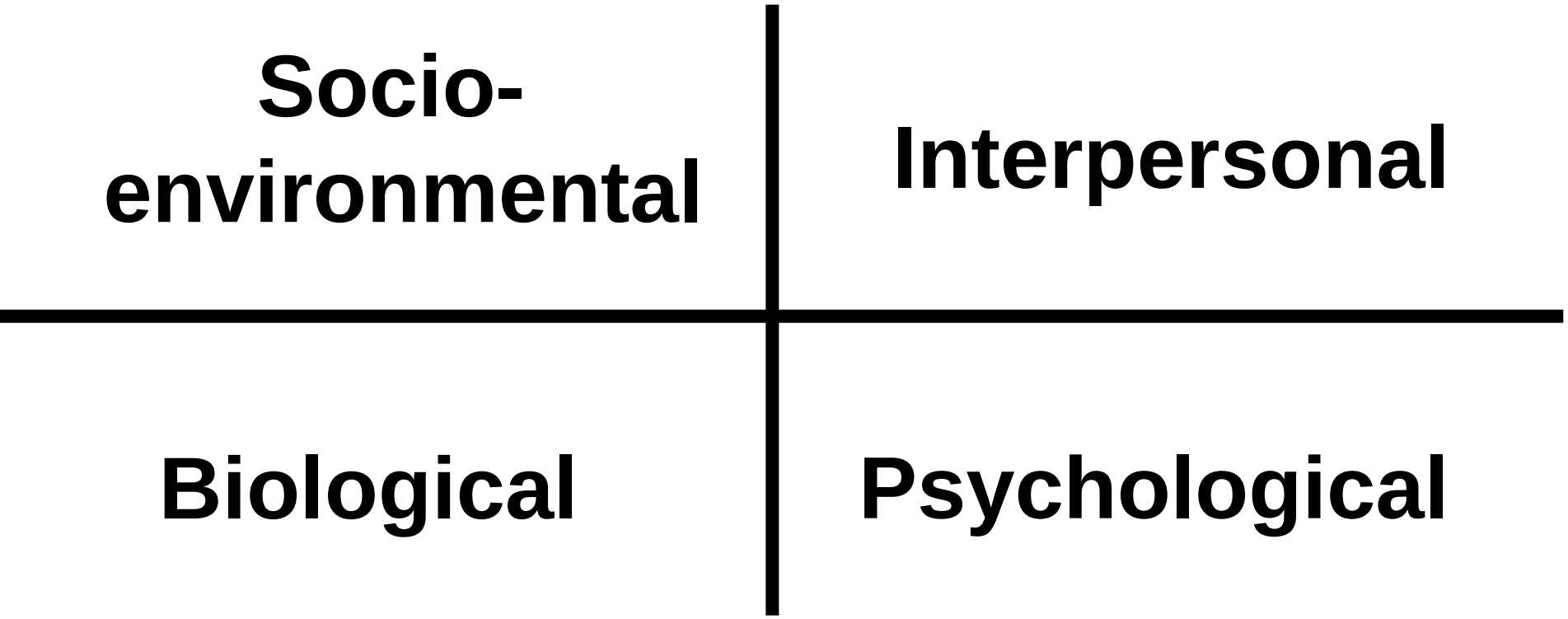
[1]Maslow K 1994; [2]O'Brien JA et al, 2000; [3]Rodney, 2000; [4]Draper et al, 2000

Prevalence of BPSD

- In community
  - 2/3 PWD have at least one behavioural Sx
  - 1/3 PWD have significant symptoms
- In developing countries similar rates
- In residential care, residents with dementia:
  - 40- 90% have BPSD
  - Rates in similar NHs vary >3-fold

[1]Lyketsos et al, Am.J. Psychiatry, 2000; 157:708-714;
[2]Prince M et al 2004;
[3]Brodaty H et al, 2001;
[4] Seitz et al, *Int Psychogeriatrics,* 2010; *22*:1025–1039

The bio-psycho-social framework



Biological causes - intrinsic

- **Frontal pathology (behavioural disturbance, disinhibition, depression)**
- **Basal ganglia lesions (delusions)**
- **Temporal lobe (delusions, hallucinations)**
- **Locus coeruleus (psychosis, depression)**
- **Chemical changes – serotonin, NA, DA**
- **Genes – serotonin, dopamine receptors**
- **Family history of psychiatric disorder**

Biological causes - extrinsic

- Acute medical illness
- Medication
- Pain
- Constipation
- Sensory impairments
- Fatigue
- Fears
- Basic needs (hunger, thirst...)
- Psychiatric syndromes – eg depression

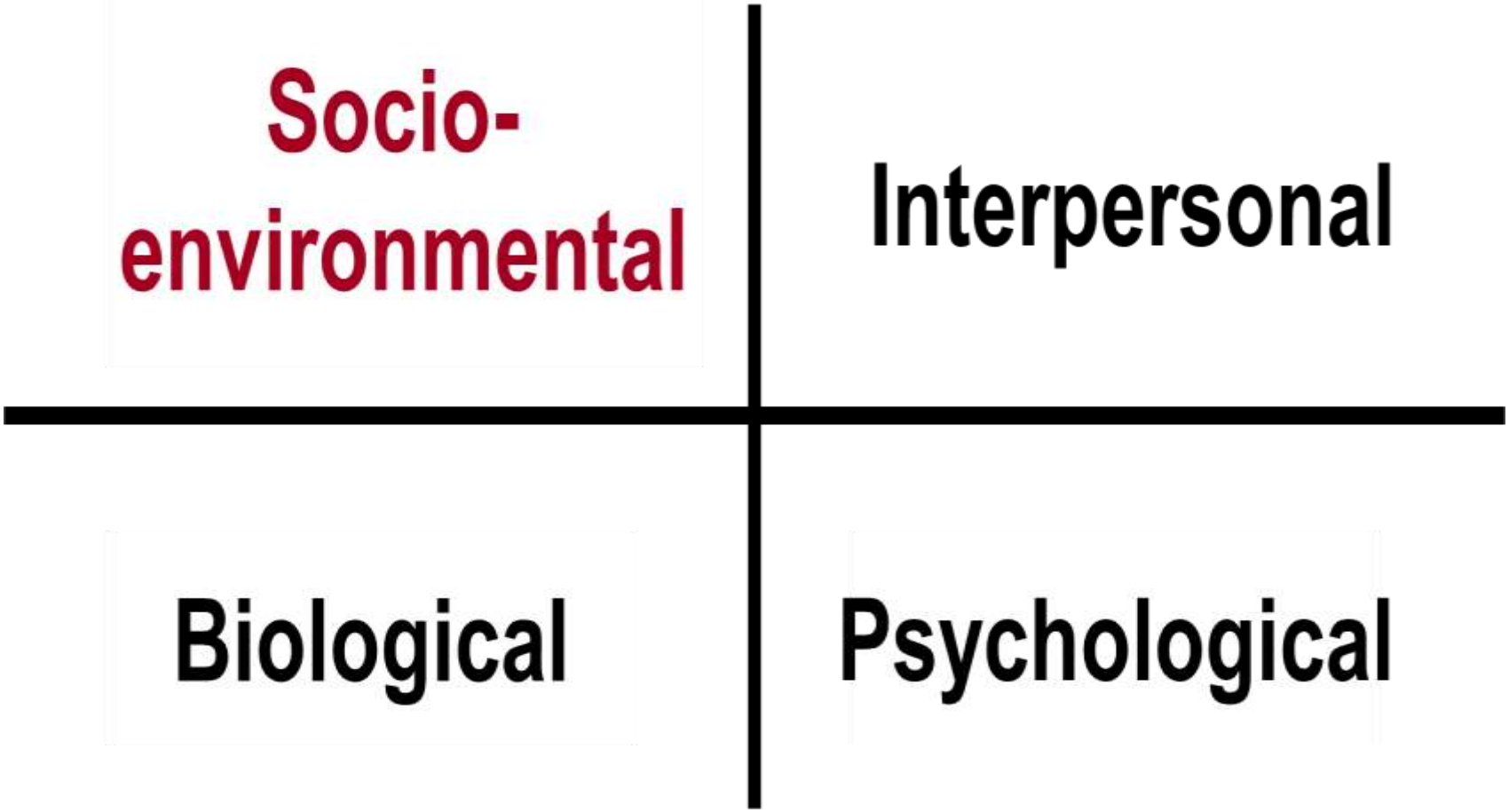
The bio-psycho-social framework

Environmental vulnerability → ↓threshold for stress or stimuli[1]	**Unmet needs; unable to comprehend or make needs known[2]**
Neurological deterioration → behavioural disinhibition[4]	**Behavioural: triggers and feedback from others control behaviours [3]**

[1]Hall and Buckwalter 1987; [2] Algase et al, 1996; [3] Teri & Logsdon 2000; [4] Cummings JL

Before intervening …

1. Is the description accurate?
2. Identification of target behaviour
3. Does behaviour require intervention?
4. Careful diary of behaviours
5. Exclude non-dementia causes
6. Correct sensory impairment - hearing, vision


Socio-environmental
Interpersonal
Biological
Psychological

How to intervene: *Environment*

- **Modify environment rather than person**
- **Avoid too much or too little stimulation**
- **Adequate space**
- **Privacy available**

How to intervene: *Environment*

- Secure grounds
- Personalised space
- Non-institutionalised environment
- Home-like

- Colour, furnishings, architecture
- Lighting
- Resident mix
- Size of residential facility

Enhanced Environment

Good evidence for …

- **Careful optimisation of level of stimulation**
  - **Reduce unhelpful stimuli**
    - **eg noise, busy entry doors**
  - **Optimise helpful stimuli**
    - **eg light**
- **Good visual access to toilets**
- **Outdoor access *with staff***

Fleming R – www.dementiaresearch.org.au

Moderate evidence

- **Small unit size**
  - **hard to differentiate effect of unit size from staff related factors**
- **Opportunity to engage in ordinary ADLs**
  - **hard to differentiate from staff support/ engagement**

Fleming R – www.dementiaresearch.org.au

Interesting – but little evidence

- Signage
- Display of personal memorabilia

Snoezelen: multisensory stimulation[1]

- Significant treatment effect
  - Apathetic behaviour ↓
  - Loss of decorum ↓
  - Rebellious behaviour ↓
  - Aggressive behaviour ↓
  - Depression ↓
  - Well-being during morning care↑
- Numbers small, methodology moderate

Van Weert et al, JAGS 2005;53: 24–33
Verkaik R et al, IJGP 2005; 20: 301–314

Aroma therapy

Lavender

Lemon Balm

moderate evidence from Cochrane review

Lemon balm (melissa officinalis)

- **Antibacterial (eugenol)**
- **Antiviral (tannins)**
- **Mild sedative or calming agent (terpenes)**
- **Antioxidant activity**

Light therapy

- **Five studies met criteria; only 3 able to be included**
- **No adequate evidence of effectiveness of BLT**

Forbes D, Morgan DG, Bangma J et al; Cochrane Review 2004, updated 2006

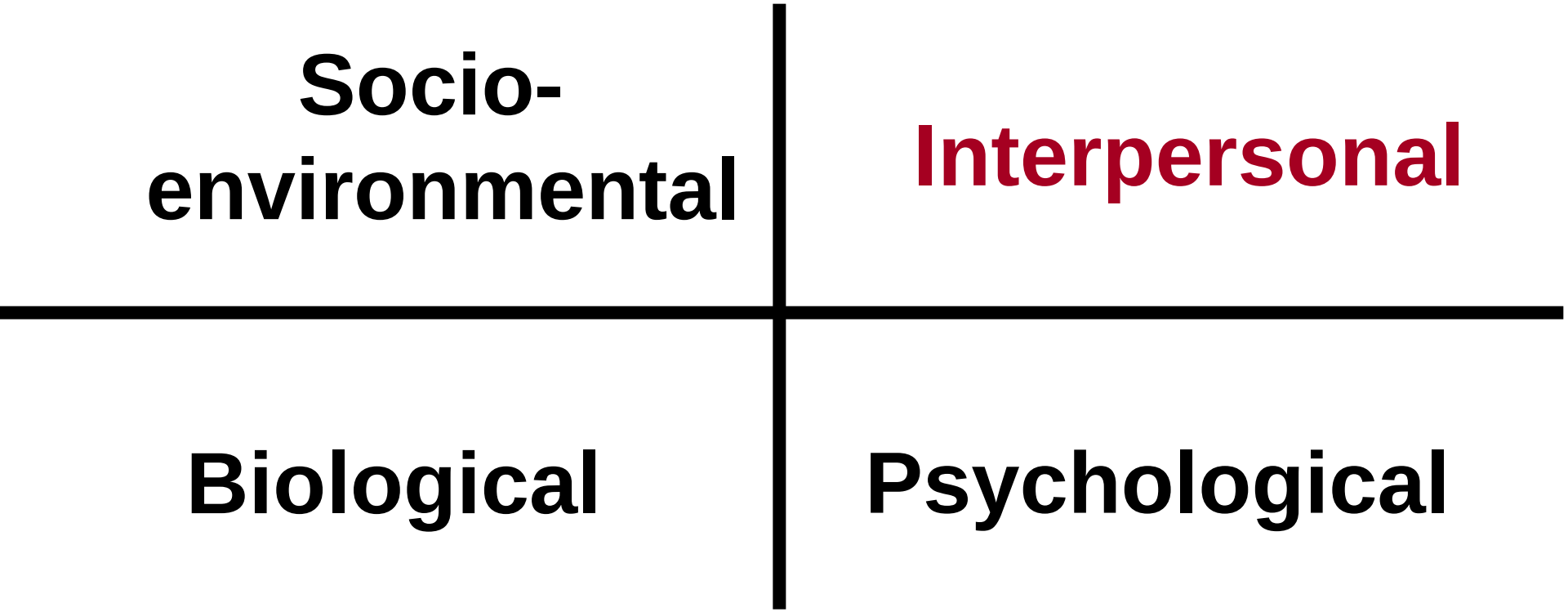
Review on animal-assisted therapy (AAT)[1]

- 11 papers examining the impact of AAT on BPSD regarding their ability to
  - Reduce agitation and/or aggression
  - Promote social behaviour
  - Improve nutrition
  - Role of pet substitutes
- Small samples, short duration, few studies

[1]Filan & Llewellyn-Jones (2006) Int. Psychogeriatr; 18:4, 597-611

Robotic pets, toys, dolls

The bio-psycho-social framework



Family caregivers

- **Family carers as therapists for people living in the community**
- **Systematic review**
  - **ES 0.34 for decreasing BPSD**
  - **ES 0.15 for decreasing caregiver “stress”**

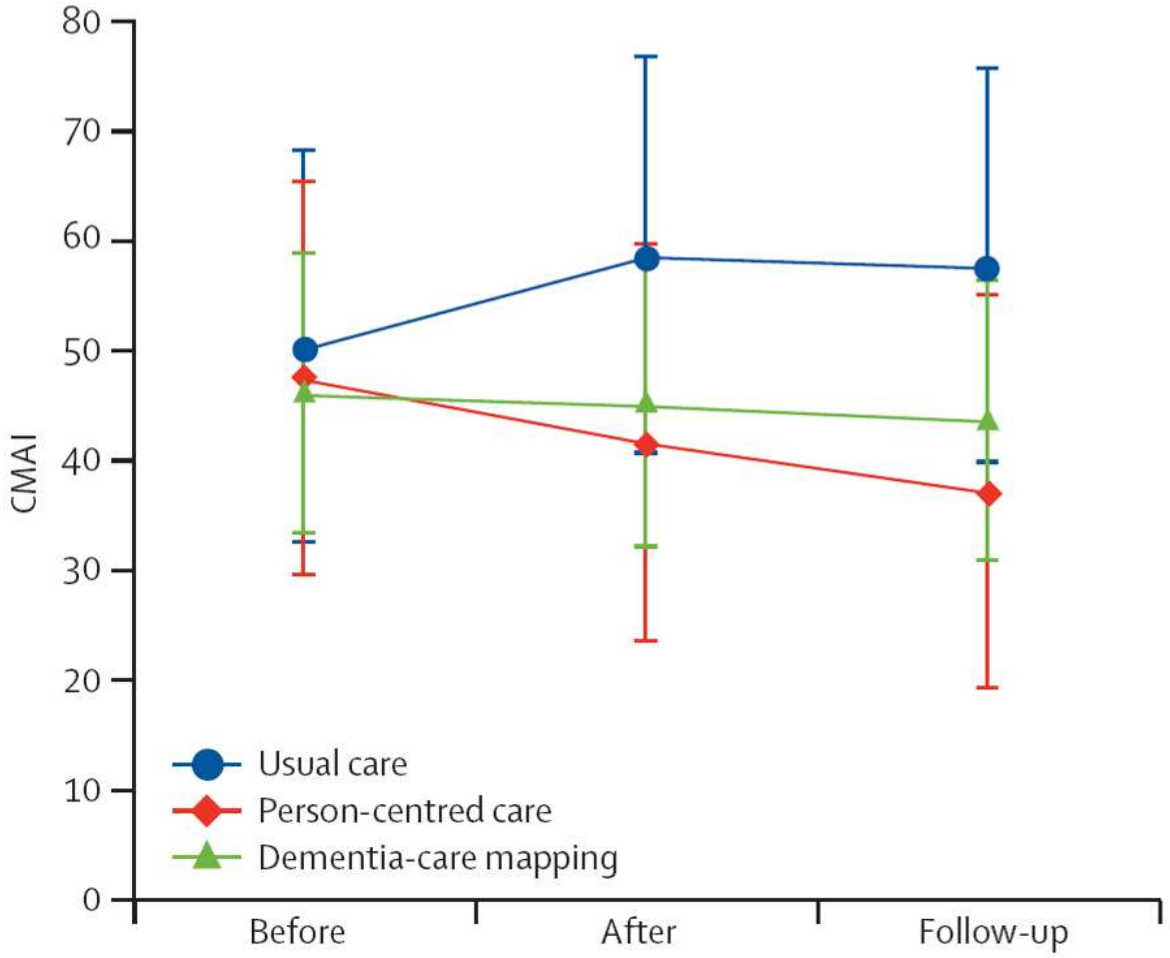
Brodaty H & Arasaratnam C, Am J Psychiatry, 2012

CGs administer behavioural treatments for depression to patients with AD [1]

- **Behaviour therapies (pleasurable events schedule or problem solving techniques) → pt depression Sx & Dx better than controls**
- **Improvements maintained @ 6 months**
- ***Bonus*: CGs' depression better**

[1]Teri et al, J. Gerontol. 1997; 52B:159-166

Dementia Care Mapping & Person Centred Care for agitation



Cost for PCC ≈ $6 to reduce a point on CMAI

Chenoweth et al. Lancet Neurology 2009

The bio-psycho-social framework

Socio-environmental	Interpersonal
Biological	Psychological

Psychological Mx approaches to BPSD

- **1632 studies identified → 162 met inclusion criteria → 9 studies with Level 1 evidence**
- **Psycho-education for CGs effective**
- **Benefits lasted months**
- **Other CG interventions not effective**
- **Behaviour Mx techniques centering on individual pts' or CG behaviours → similar benefits**
- **Residential care staff education beneficial**
- **Cognitive stimulation similar effects**

Livingston G et al Am J Psychiatry 2005; 162:1996-2021

Psychological approaches to BPSD

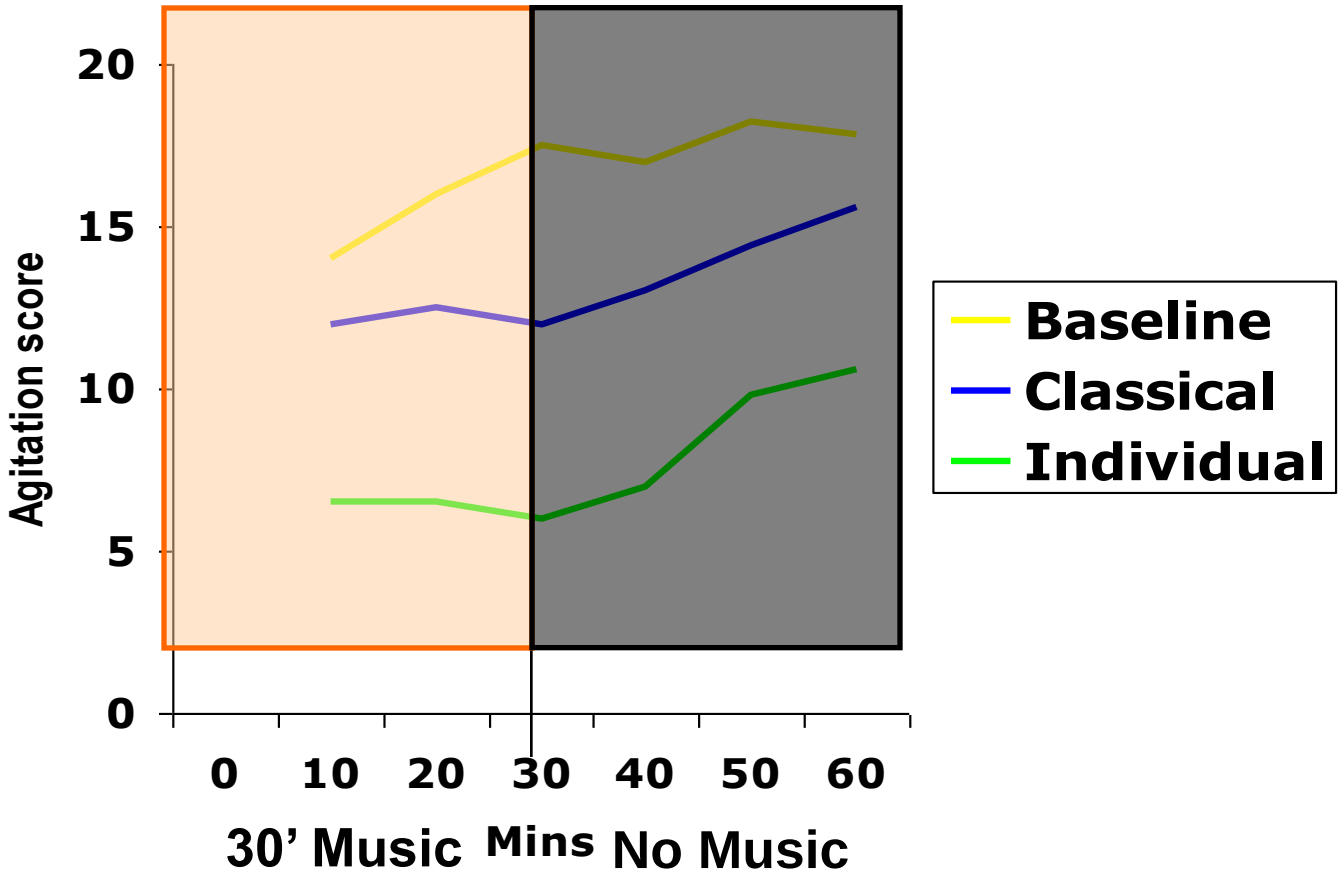
- Music therapy
- Snoezelen
- ? Sensory stimulation

} Useful during treatment but not long term

- Interventions that changed visual environment looked promising, but …
  … ⇨ research required

[1]Livingston G et al
Am J Psychiatry 2005;
162:1996-2021

Individualised music[1]



[1]Gerdner L et al, Int Psychogeriatr 2000, 12, 49-65

Calming music and/or hand massage

10 min CMAI ratings

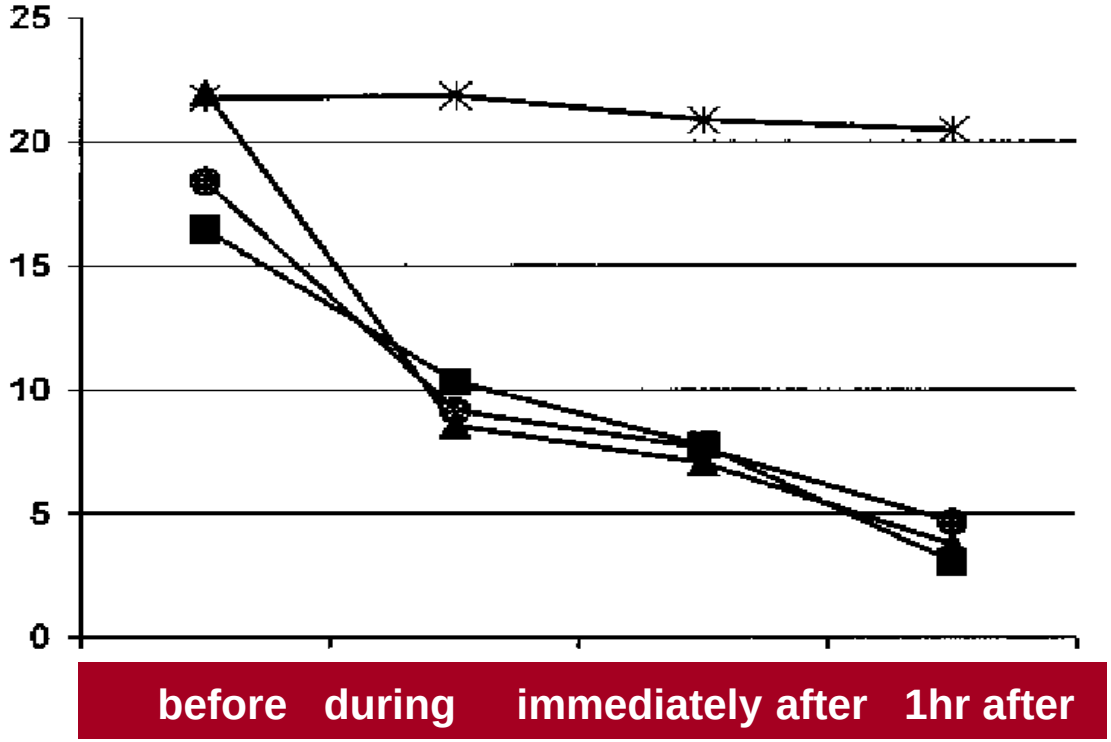


FIGURE 1. Mean agitation scores by treatment group over time. ● calming music; ■ hand massage; ▲ calming music and hand massage together; ✳ control.

Remington, *Nursing Research*, 2002

Novel strategies

- **Humour therapy**
- **Volunteers**
- **Music, singing, dance therapy**
- **Integrating kindergarten/ babies**

Humor therapy: SMILE study

- 20% reduction in agitation
- Effect size = antipsychotic medications for agitation
- Adjusting for dose of humour therapy
  - Decreased depression
  - Improved quality of life

Low LF et al BMJ Open 2013
Brodaty et al Am J Ger Psych 2014
Low LF et al JAMDA 2014

Key elements

- Engagement
- Understanding
- Time

Barriers

- Time
- Money
- Staff
- Attitudes
- Training

Pharmacological interventions

Anti-Alzheimer medications

ChEIs & BPSD

- **Some benefit, statistically significant in some reviews but questionable clinical significance**

- **Individual Sx may be more susceptible: apathy, hallucinations, aberrant motor behaviour, delusions, anxiety, depression**

- **Trinh N-H et al, 2003**
- **Rodda et al, 2009**
- **Campbell et al, 2008**

www.ipa-online.org

Memantine on BPSD

- **Mixed results**
  - **Several negative results [1-2]**
  - **Some positive results [3-4]**
- **Specific benefits reported for cluster of aggression, hallucinations & delusions**

[1] Reisberg B et al, 2003; [2] Van Dyck et al, 2007;
[3] Tariot P et al, 2004 ; [4] Gauthier et al (2005), IJGP, 20, 459-464

Antidepressants

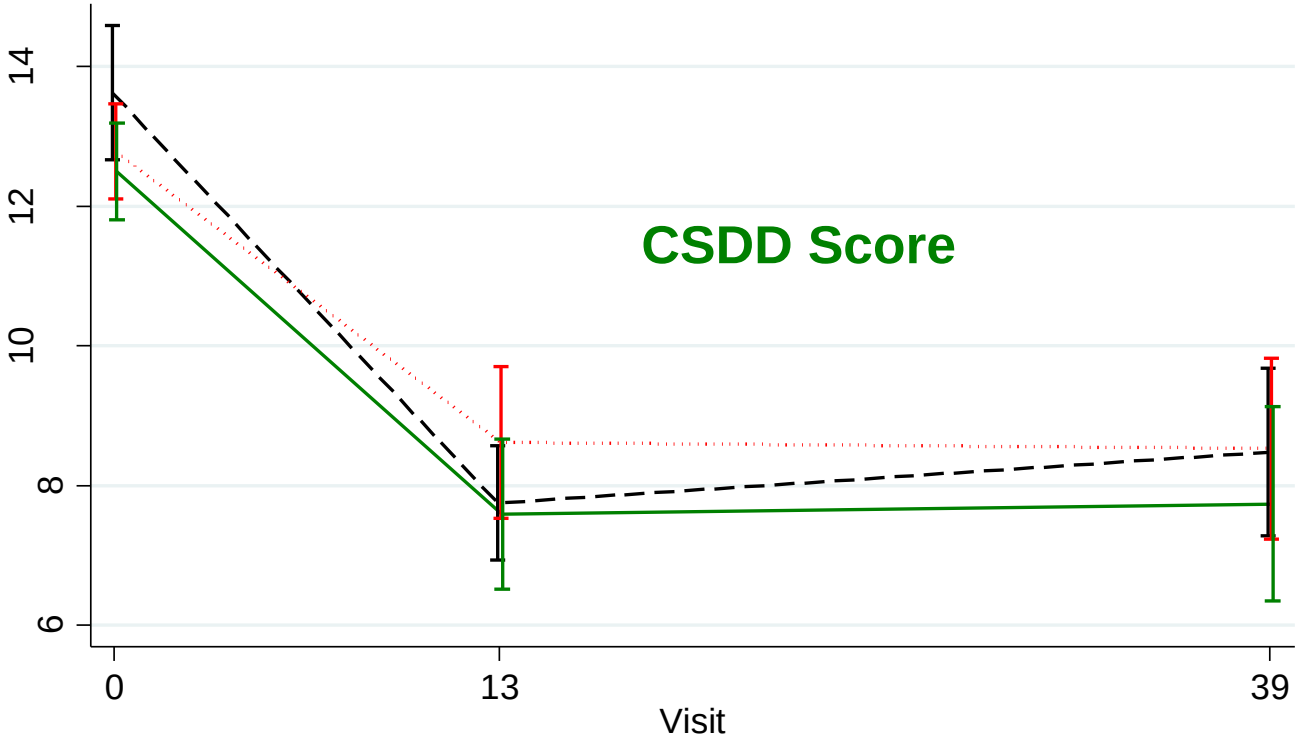
Sertraline for treatment of depression in AD: Wk-24 Outcomes (DIADS-2)

- 67 Sertraline, 64 placebo; 12 wk RCT + 12 wk
- No between-groups diff. in depression response
  - in CSDD score
  - remission rates
  - secondary outcomes
- SSRI associated > adverse events of diarrhoea, dizziness, dry mouth, pulmonary SAE (pneumonia)

Weintraub D et al. Am J Ger Psych, 2010;18:332-340

HTA-SADD Trial

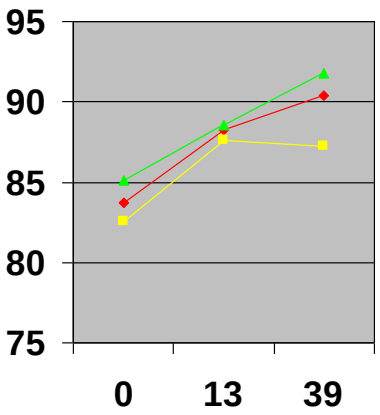
- Mirtazapine 15 mg & sertraline 50 mg; 1→3/day



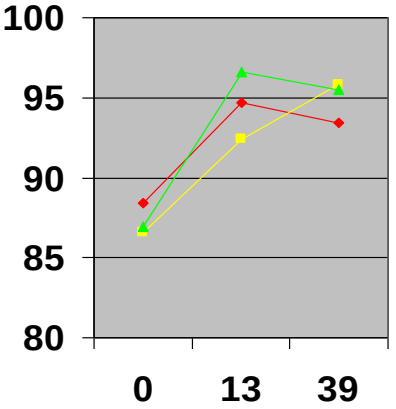
N = 507

Banerjee S, HTA-SADD trial, Lancet, 2011

DEMQOL



DEMQOL-Proxy Score



Effects of citalopram on BPSD

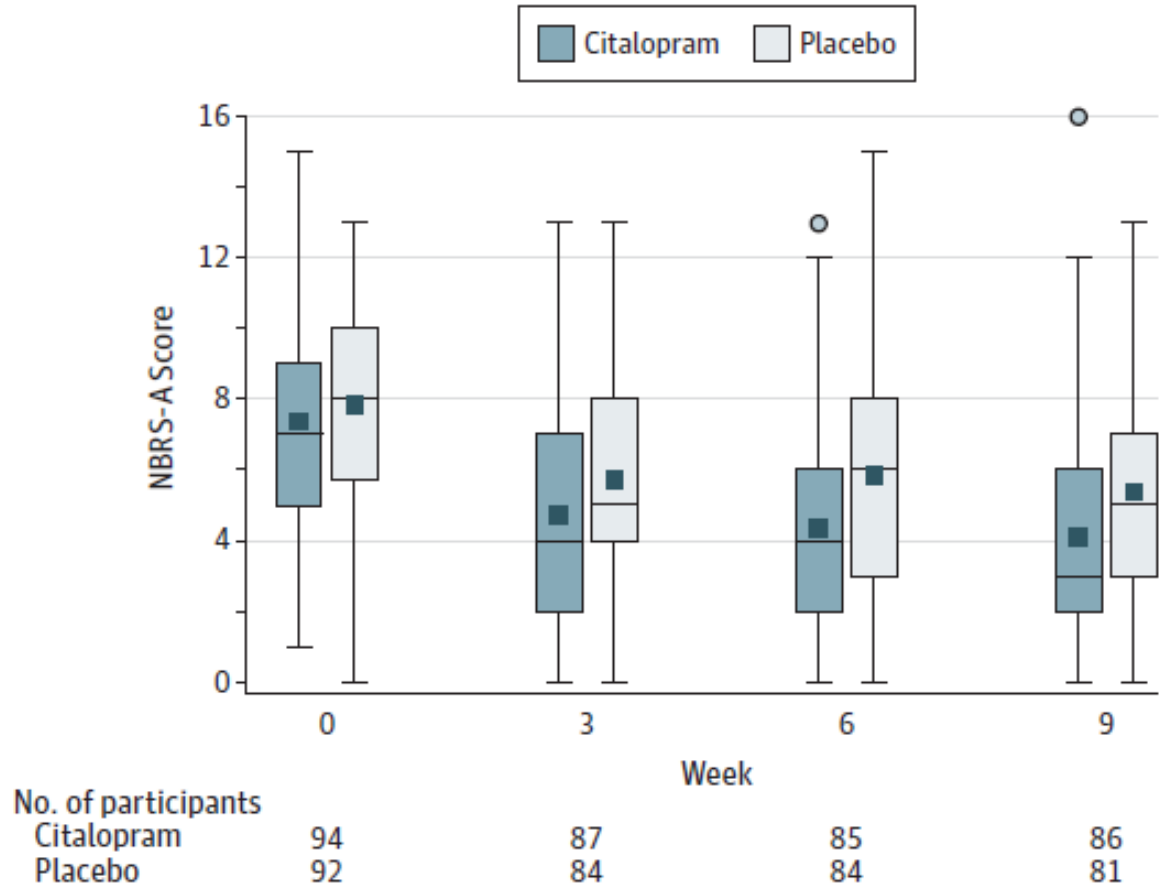
- **Improve hallucinations and delusions (= antipsychotics)**
- **Improve agitation**
- **60% ↓ irritability and apathy (but n.s.)**
- **↓ hallucinations (statistical but ?clinical significance)**

Pollock et al. (2002). Am J Psych 159: 460-465

Pollock et al. (2007). Am J Geriatr Psych 15: 1-11

Siddique et al. (2009) J Clin Psychiatry 70(6):915-918

CitAD RCT – citalopram & agitation



- **Significant better with citalopram**
- **Cognitive & cardiac adverse effects may limit effectiveness at 30mg/day**

Porsteinsson et al. *JAMA*. 2014;311(7):682-691. doi:10.1001/jama.2014.93

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Anticonvulsants for BPSD [1]

- Literature review of 7 RCT (2 carbamazepine & 5 valproate)
- Results (treatment vs placebo):
  - 1 study: sig. ⇩ BPSD
  - 5 studies: no sig. difference
  - 1 study: sig. ⇧ BPSD
  - AEs more frequent in treatment groups
- Might be beneficial for some patients
- Not recommended for routine use

[1] Kanovalov et al (2008). Int Psychogeriatr, 20:2

Antipsychotics

Drugs

Drug Safety and Availability

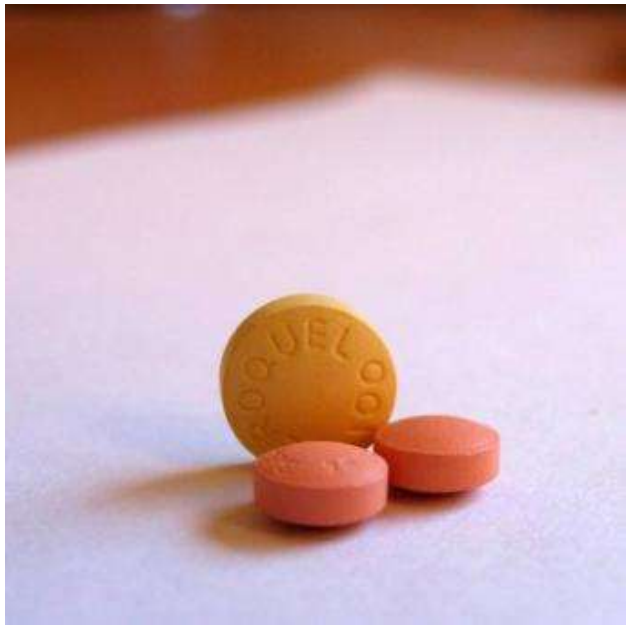
- Postmarket Drug Safety Information for Patients and Providers
- Drug Safety Information for Healthcare Professionals

Public Health Advisory: Deaths with Antipsychotics in Elderly Patients with Behavioral Disturbances

The issues described in this communication have been addressed in product labeling (see Drugs@FDA).

4/11/2005

Effects of antipsychotics



- Meta-analysis from 13 studies[1] :
  - Mean ES in Rx = 0.45
  - Mean ES in placebo = 0.32
- Effect sizes of atypical antipsychotics for BPSD are medium, not statistically better than placebo
- Increased rate of stroke[2]
- Increased mortality[3]
- Increased AEs in general

[1] Yury C & Fisher J, Psychotherapy and Psychosomatics 2007
[2] BrodatyH et al, J Clin Psychiatry 2003
[3] Schneider L, 2005

Side effects of antipsychotics

- Sedation
- Dizziness
- Extra pyramidal symptoms
- Falls
- Metabolic syndrome
- Weight gain
- Orthostatic hypotension
- ↑ Prolactin - gynaecomastia
- Anticholinergic side effects (e.g. glaucoma, urinary outflow)
- Stroke
- Death

Continuing vs stopping anti-psychotics in dementia patients?

Ballard 2008

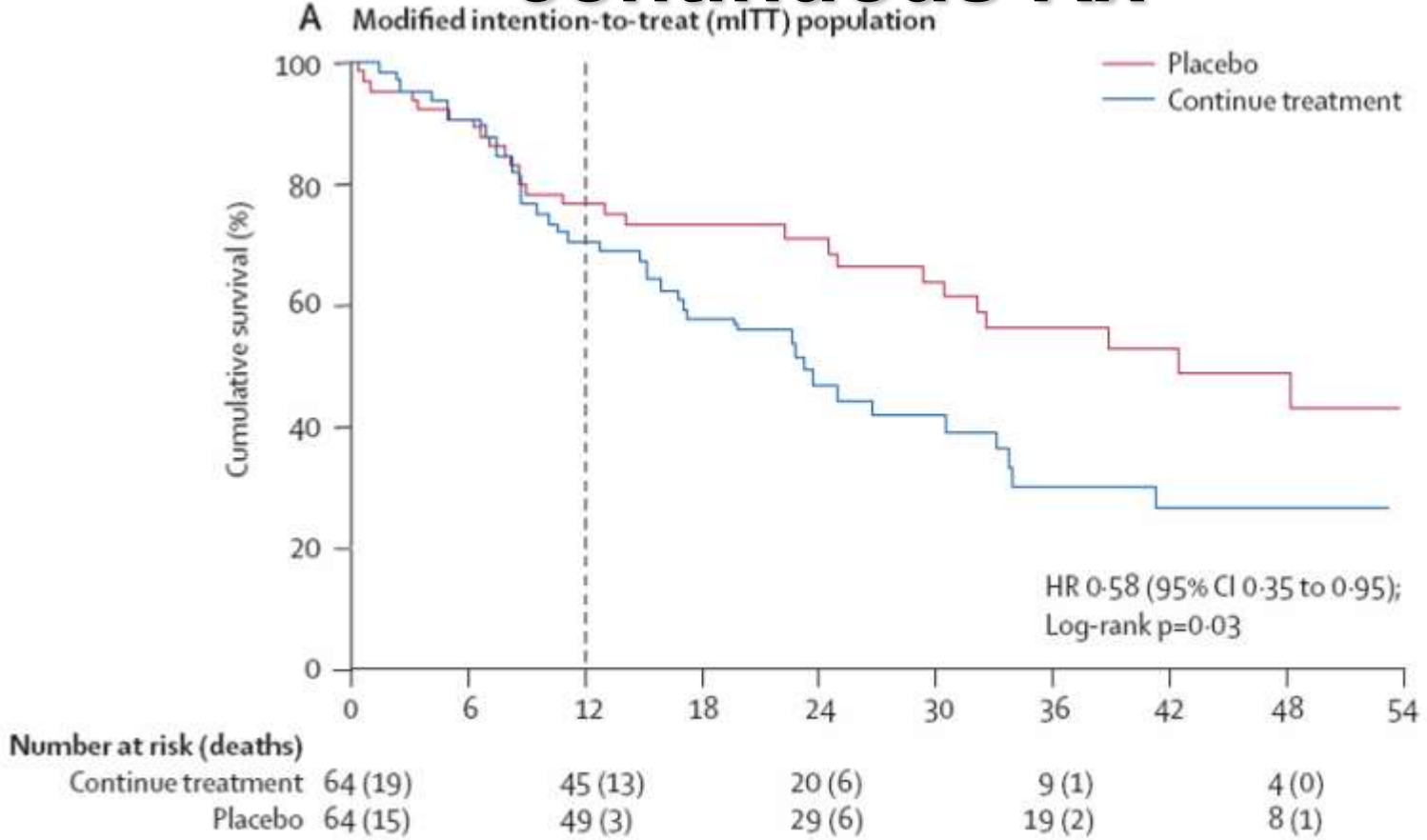
- **12 months RCT, continuous use vs placebo**
- **For most AD patients withdrawal - no detriment**
- **Continuers: ↓ verbal fluency (p<.002); ↑mortality**
- **Subgroup of pts with more severe symptoms (NPI ≥ 15) might benefit from continued Rx**

Devanand 2012

- **Pts who responded for psychosis or agitation**
- **Discontinuation → higher rate of relapse**

Ballard et al 2008 PLOS Medicine, 5:587-599; Devanand DP_NEJM, 2012

DART-AD – mortality associated with continuous Rx



[1] Ballard et al, 2009 *Lancet Neurology*, 8, 151–157

The HALT study

Halting Antipsychotic use in Long-Term care

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CHeBA Healthy Brains Positive Ageing

UNSW AUSTRALIA

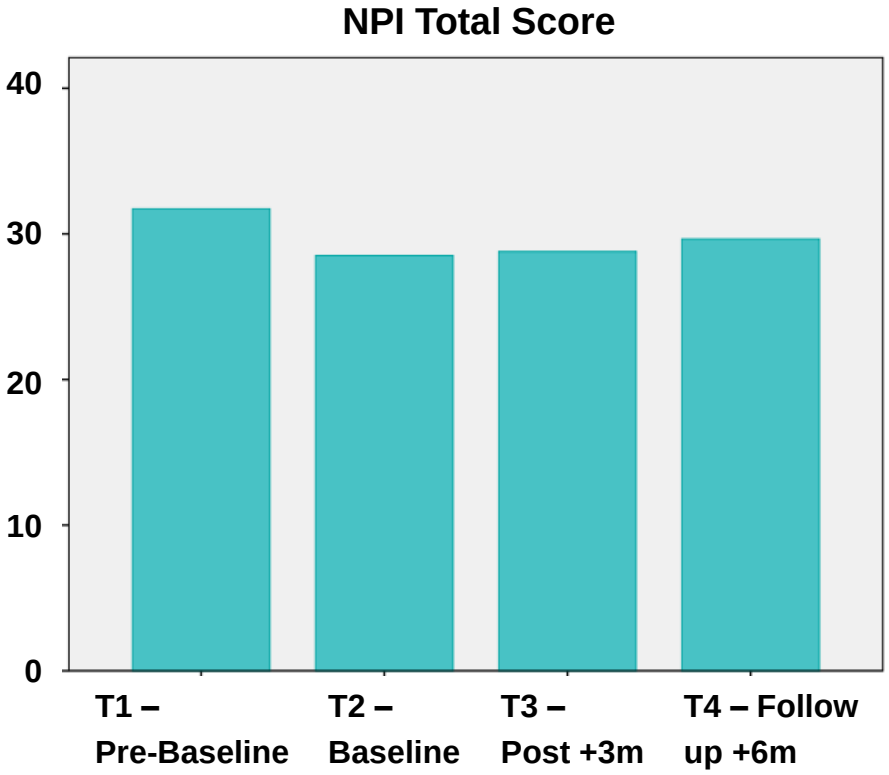
HALT Protocol

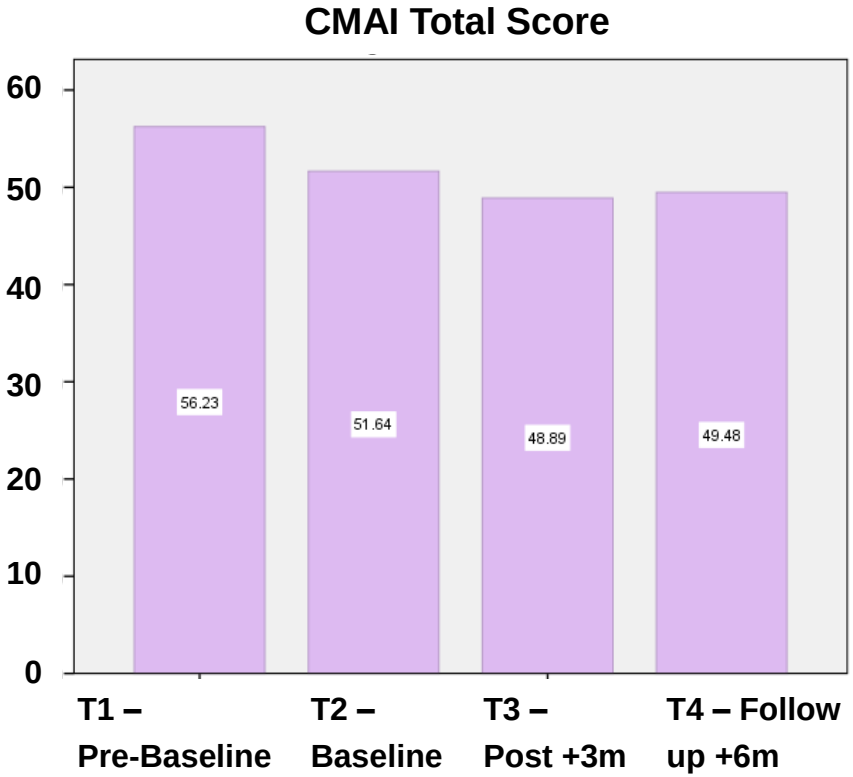
- **A single arm 12-month longitudinal study in 24 aged care facilities of at least 60 beds in urban and rural NSW**
- **Resident participants assessed ≈1-4 weeks prior to deprescribing (T1 & T2)**
- **Re-assessed 3, 6 and 12 months later (T3 – T5)**

HALT results to date

- **Deprescribing commenced for all 134 participants assessed at baseline (T2)**
- **Antipsychotics ceased for 125 by 1st follow-up**
- **39 deprescribed prior to planned HALT timeline**
- **15 recommenced regular a'psychotic before f-up**
- **A further 9 at 6 months (T4; data collection)**

NPI and CMAI





$p > .05$

$p < .05$

HALT - Challenges

- **Difficult to recruit - NHs, GPs, Families**
- **Lack of education around BPSD for care staff, GPs and families**
- **Task oriented nursing care, change process to implementing PCC, family expectations**
- **Presence of “nurse led” prescribing of antipsychotics**

HALT - Discussion

- **Champion – management partnerships essential to success**
- **Knowledge, awareness and shared confidence in non-pharmacological approaches**
- **Deprescribing successful – some started early!**
- **Small sub-group re-prescribed – reason why??**
- **Σ BPSD stable 6 months after deprescribing**

Antipsychotics for …

- **Screaming X**
- **Wandering X**
- **Intruding into other people's rooms X**
- **Aggression ?√ (but not first line)**
- **Delusions and hallucinations ?√ (but not 1st)**

Cochrane: aim to discontinue antipsychotics [1]

[1] Declercq T et al, Cochrane Review, 2013

Benzodiazepines

- **PBO RCTs: BDZ decrease agitated behaviours during short-term use**
- **Short-acting BDZs eg oxazepam or lorazepam that do not accumulate are better**
  - **most effective if used for short periods at low doses (e.g., lorazepam 0.5–2.0 mg/day)**
- **AEs = Sedation, falls, confusion, amnesia**

(Chesrow et al., 1965; Kirven and Montero, 1973; Covington, 1975; Coccaro et al., 1990)

Analgesics

- Cluster RCT, 60 NHs, 352 residents, 8 + 4wks
- Mod-severe dementia, CMAI ≥ 39
- Stepped analgesia vs usual care
- ≈ 70% of residents paracetamol 1gm tds
- CMAI ↓17% (9.6 vs 3.4, p<.001)
- CMAI score ↑ 4 weeks after stop analgesia
- NPI & Pain scores significantly ↓

Husebo BS et al, BMJ, 2011;343:d4065 doi: 10.1136bmj.d0465

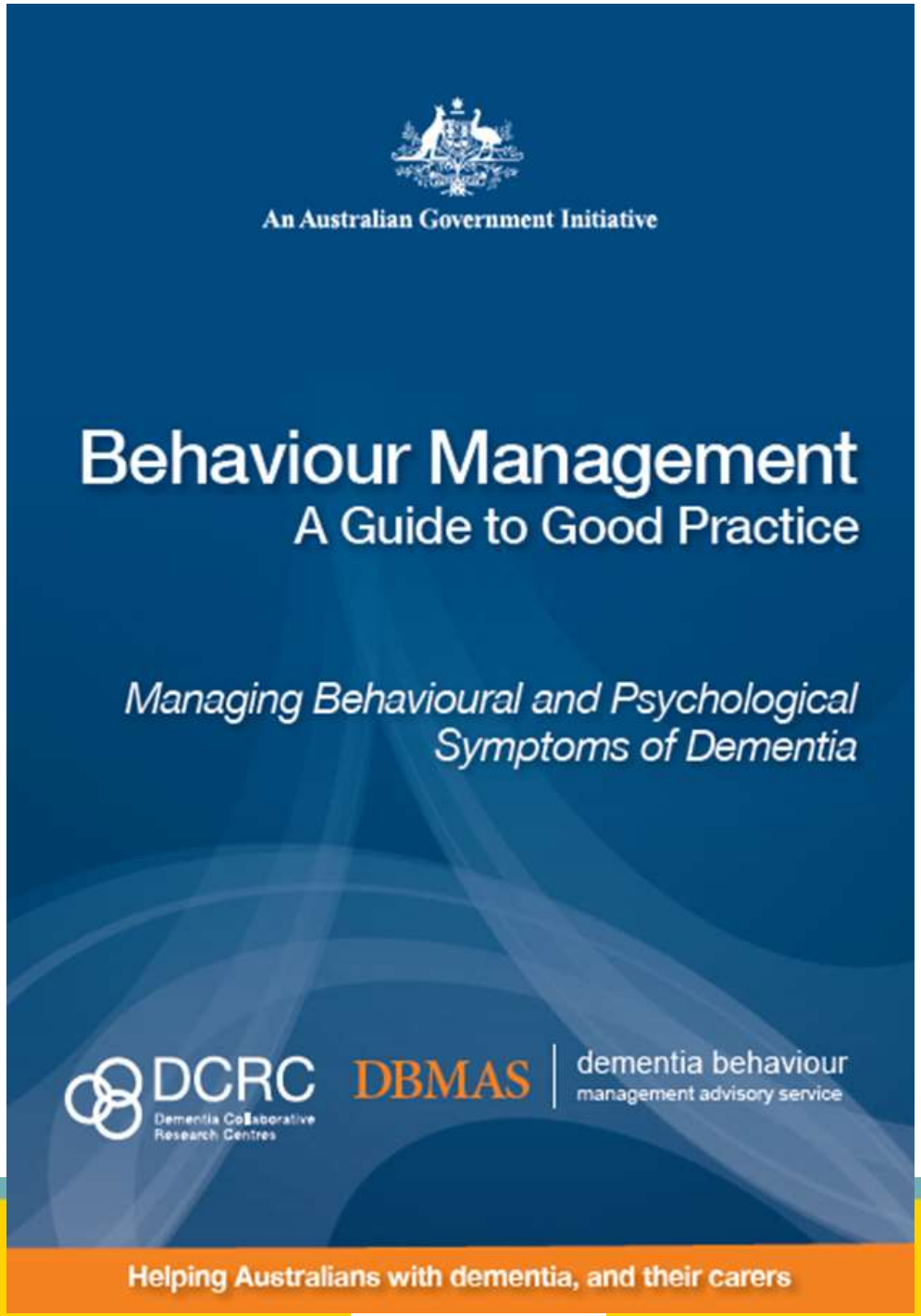
Legal consent for psychotropics

- **Depending on jurisdiction a *Person Responsible* must give consent**
- **Survey of 3 NHs; 77 residents without capacity to give informed consent; on psychotropics[1]**
- **Only 6.5% written consent**
- **+ 6.5% partial or attempted consent**

[1] Rendina N et al, 2009

Prevention of BPSD

- **Person centred care and environment**
- **Right level of stimulation**
- **Attention to environment**
- **Treat physical disorders quickly**



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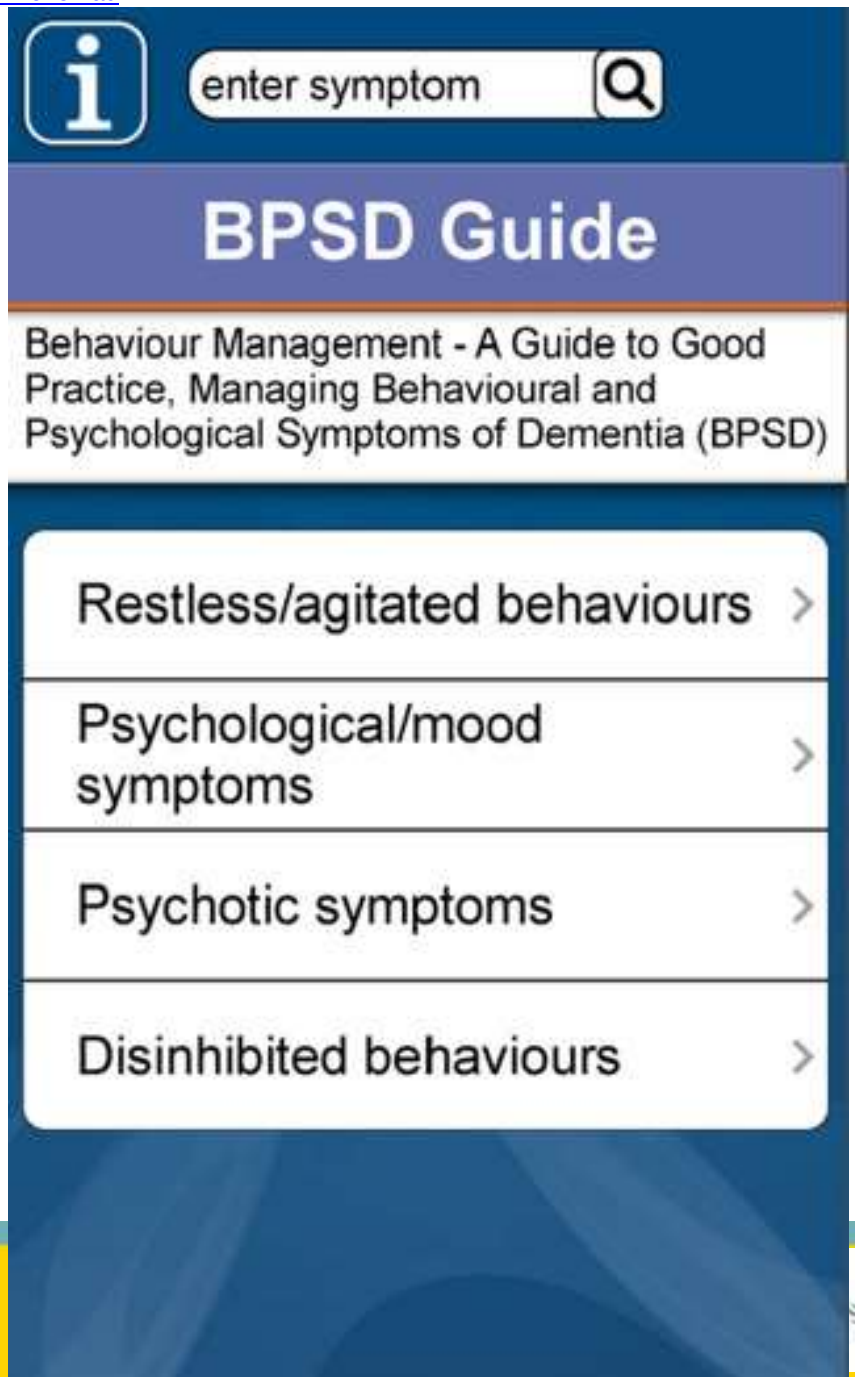
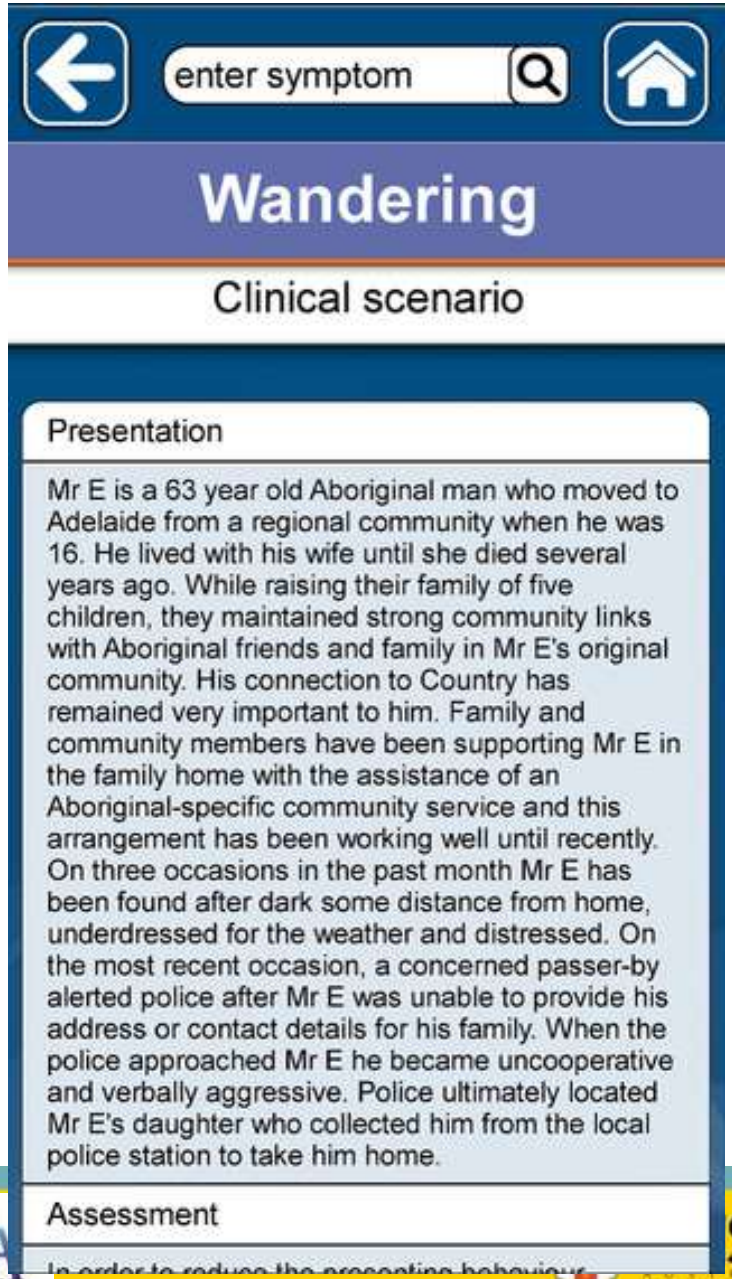
Screenshots

iPhoneiPad




enter symptom
Agitation
Psychosocial/environmental interventions
Acupressure
Scientific quality of research: Moderate
Outcomes: Positive; 1 large & 1 small pilot study
Animal-assisted therapy
Scientific quality of research: Limited
Outcomes: Positive; 1 small case series
Aromatherapy with lavender oil inhalation
Scientific quality of research: Moderate
Outcomes: Positive; 1 study
Bright light therapy
Scientific quality of research: Moderate
Outcomes: No benefit; 1 study *MAY INCREASE AGITATION
Closing Group intervention, small group, resident driven program
Scientific quality of research: Limited
Outcomes: Positive; 1 small study


enter symptom
Wandering
Clinical scenario
Presentation
Mr E is a 63 year old Aboriginal man who moved to Adelaide from a regional community when he was 16. He lived with his wife until she died several years ago. While raising their family of five children, they maintained strong community links with Aboriginal friends and family in Mr E's original community. His connection to Country has remained very important to him. Family and community members have been supporting Mr E in the family home with the assistance of an Aboriginal-specific community service and this arrangement has been working well until recently. On three occasions in the past month Mr E has been found after dark some distance from home, underdressed for the weather and distressed. On the most recent occasion, a concerned passer-by alerted police after Mr E was unable to provide his address or contact details for his family. When the police approached Mr E he became uncooperative and verbally aggressive. Police ultimately located Mr E's daughter who collected him from the local police station to take him home.
Assessment

DBMAS | dementia behaviour management advisory services

Home | Your state | What we do | Want to know more? | Contact us | Staff members' area | A- A+ Reset

New South Wales

24 HOUR HELPLINE
1800 699 799

Home » Your state » New South Wales

HammondCare
An independent Christian charity

The NSW Dementia Behaviour Management Advisory Services (NSW DBMAS) is one of the many services provided by HammondCare – our passion is improving quality of life for people in need

When behaviours impact the care and quality of life for people living with dementia, Dementia Behaviour Management Advisory Services (DBMAS) are there to help.

The HammondCare DBMAS program provides a state-wide service across NSW and is accessible through the national DBMAS number **1800 699 799**. Callers will be connected with a consultant from our highly skilled multi-disciplinary team who will make an assessment about the intervention and recommendations required.

The NSW DBMAS program supports staff and carers, including family carers in the community, primary care settings with assessment, advice, short and medium term support

http://dbmas.org.au/

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Clinical conclusions about management of BPSD

"Dr,

Mrs Smith-Jones is hitting the nurses, disrupting the other residents and being impossible. Can you prescribe something?"

Clinical conclusions about management of BPSD

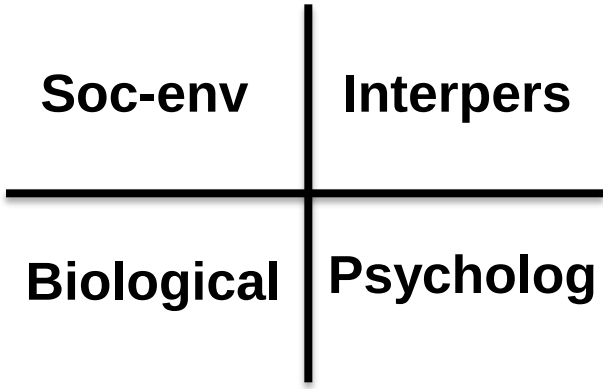
"Dr, Mr Smith-Jones is hitting the nurses, disrupting the other residents and being impossible. Can you prescribe something?"

Clinical practice 1

- Ask nurses to monitor behaviours – what, when, what happens before, during and after?
- How often, when, what are precipitants?
- Exclude pain, UTI
- Determine cause
- Correct reversible factors eg stimulation level
- Start with psychological & environmental intervention(s)
  - except if urgent or sometimes concurrent
  - informed consent

II: Understand the person - Don't just label the behaviour

- **Why is this person behaving this way *now*?**
- **Aetiological map → management plan**
- **Different approaches often together**
- **Be creative**
- **Document**
- **Monitor outcome**
- **Partnership with family/ carers**



Clinical practice 2

- **No cause can be found or correctable**
- **Try psychosocial treatments**
  - **not sure how?**

  →BPSD Guide on your app

  → call DBMAS or local psychogeriatric team
- **Psychosocial treatment fail**
- **Consider pharmacological treatment**
- **1st need informed consent from patient or proxy (*Person Responsible,* Guardianship Act)**
- **Start low and go slow**

Rx for BPSD - summary

- Analgesic stepped approach
- Cholinesterase inhibitors – for apathy
- Memantine - ?benefit for agitation/aggression/ delusions/ hallucinations
- Antidepressants – citalopram, sertraline, venlafaxine, mirtazapine
- Risperidone 0.5 - 2mg/day; modal = 1mg
- Olanzapine 5mg/day, up to 10mg/day
- Oxazpeam 7.5 – 15 mg as short term rescue Rx
- Carbamazepine, valproate – titrate dose against response, SEs and blood level

Prescribing & Deprescribing Psychotropics

- **Review regularly**
  - **At least after 3 months**
  - **Trial reduction, monitor behaviours**
- **Resident arrived from hospital on psychotropics**
  - **Find out why**
  - **If primary psychiatric diagnosis eg Sz, BAD → seek psychiatric review**
  - **If not, trial reduction after pt. settled**

When everything fails?

- You do everything right but BPSD continues
- Risk to other residents/ staff/ family
- Special care units
  - Medium term → transfer back to mainstream
- Intensive care unit for very aggressive/ violent

Brodaty H, Draper B and Low LF Medical Journal of Australia 2003

Summary … d'oh!

- **Drug treatments limited benefit and → side effects – yet 30% of residents in Australia are on antipsychotics and half on ≥1 psychotropic**
- **Most drug Rx given without required consent[1]**
- **Psychosocial and environmental therapies beneficial with effect size ≥ drug Rx**

Rendina N et al, IJGP, 2009

Summary … d'oh!

- **So why are nursing homes not engaging more?**
- **Why is the knowledge not being translated into practice?**
  - **Training – too little?**
  - **Cost – too much?**
  - **Time – not enough?**
  - **Residents, families, system??**

How to make good care *Practice As Usual?*

- Incentives for owners, managers, staff
- Accreditation standards
- Drive demand – families, residents
- Show cost effectiveness
- Publicise, communicate
- Leadership, training

Conclusions

- **BPSD common**
- **Prevent BPSD PCC, environment, titrate stimulation, CG and staff training**
- **Drugs have limited effects *and* AEs**
- **Psychosocial treatments have ↑ evidence**
- **Problem is implementation**
- **Practical suggestions for working with facilities**
- **Need policy recognition too – accreditation standards, government policy, research support**

Conclusions

- **Pharmacotherapy**
  - **modestly effective for BPSD**
  - **Prescribe judiciously**
  - **Need medico-legal informed consent**
  - ***Start low and go slow***
  - **Importance of deprescribing**
  - **Review regularly, at least 3 monthly**
    - **Trial reductions**

Thank you

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