Causality Matters: Preventing and Mitigating Behavioral and Psychological Symptoms of Dementia

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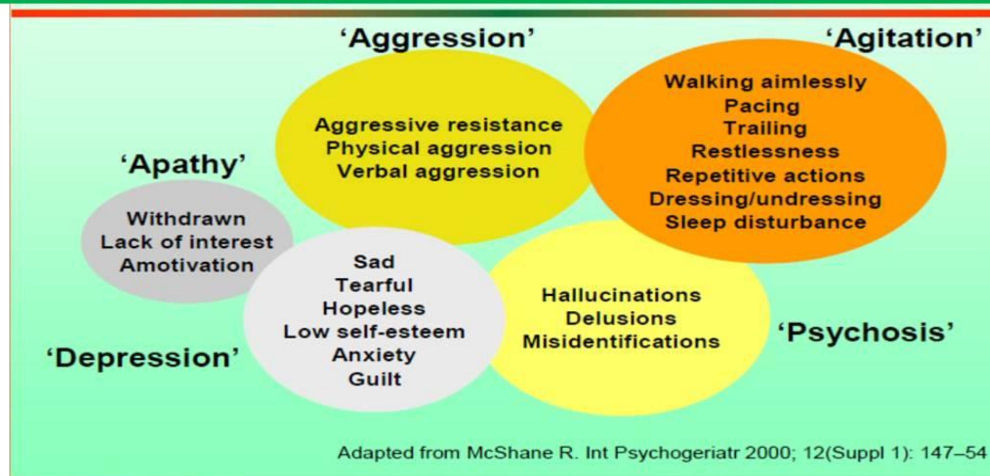
#DementiaCareSummit

What are the Behavioral and Psychological Symptoms of Dementia (BPSD)?

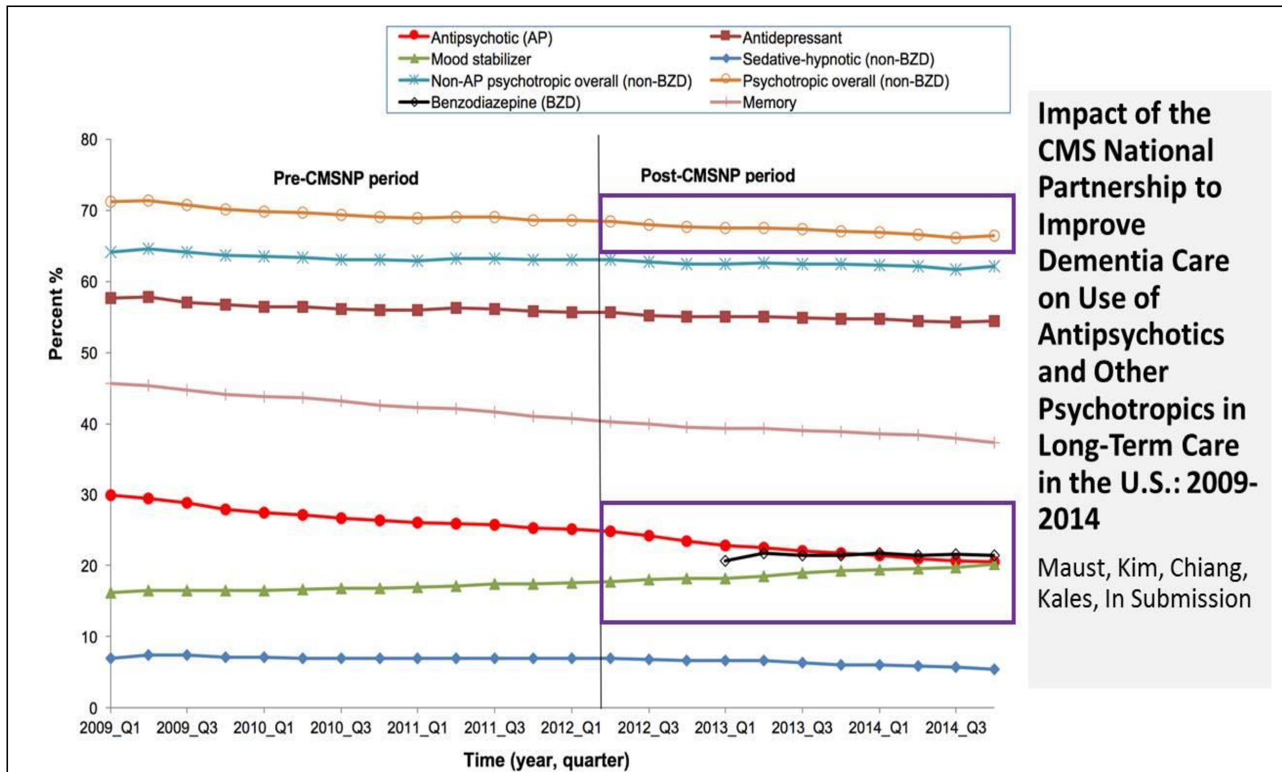


Sources: Rabheru, 2004; McShane, International Psychogeriatrics, 2000

Evidence for Current Pharmacological Treatments

Medication Class	Evidence from Randomized Controlled Trials
Antipsychotics	No evidence for behavioral improvement with conventional APs. Atypical antipsychotics appear to improve behaviors like agitation in a modest way (effect size 0.13)
Antidepressants	No evidence for behavioral improvement with older antidepressants. Mixed evidence for depression with newer antidepressants. Preliminary evidence for the treatment of agitation (citalopram).
Mood Stabilizers	No evidence for valproic acid and derivatives. Some evidence that carbamazepine is helpful for agitation.
Benzodiazepines	No evidence for behavioral improvement.
Cholinesterase inhibitors	No evidence for behavioral improvement except for in Parkinson's disease dementia.
Memantine	No evidence for behavioral improvement.

Sources: Kales et al, British Medical Journal, 2015; Gitlin et al, JAMA, 2012; Corbet et al, Current Treatment Options in Neurology, 2012.

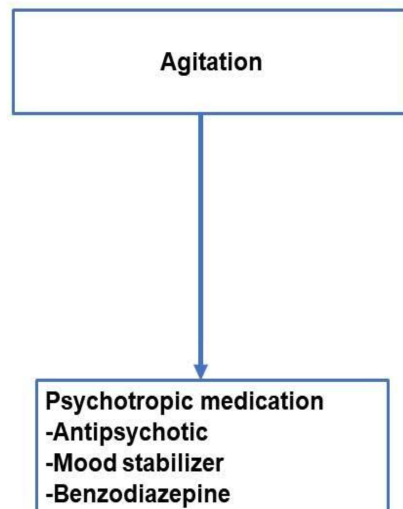


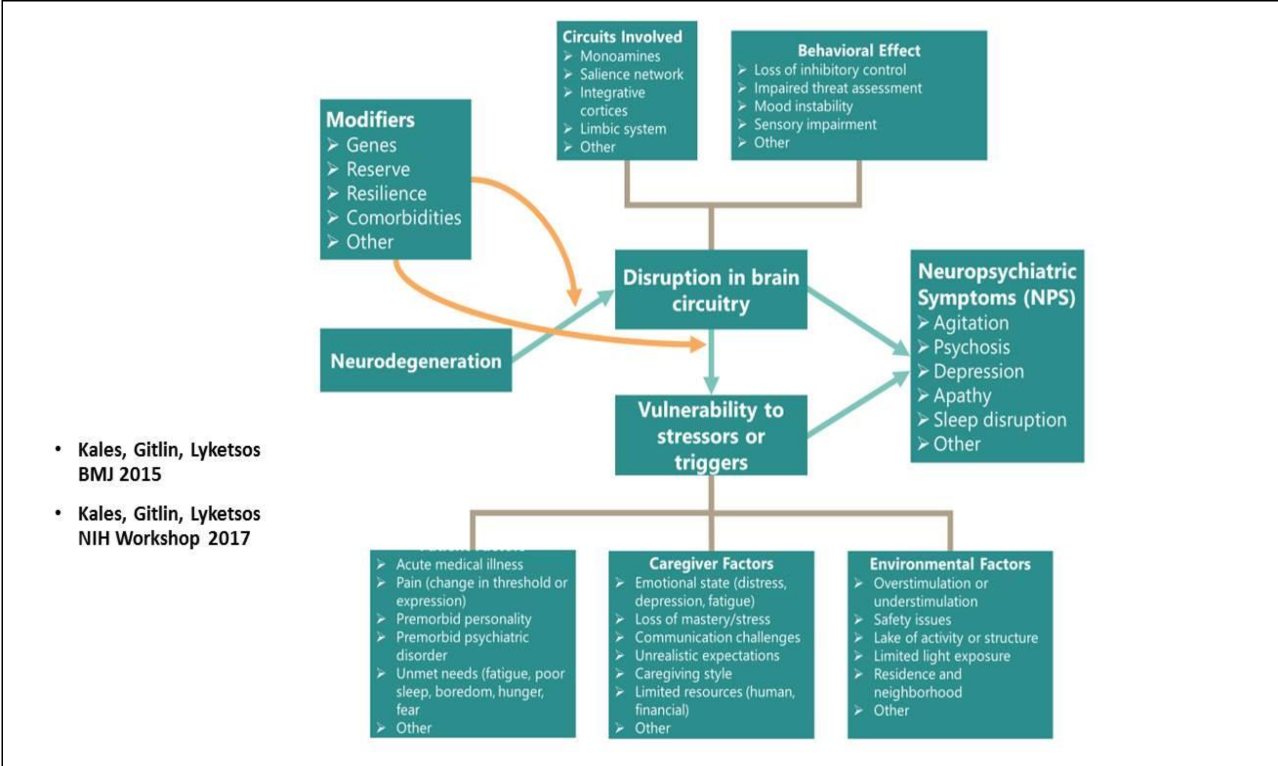
Evidence for Current Ecobiopsychosocial Treatments

Type of Intervention	Evidence from Randomized Controlled Trials
Sensory stimulation (music, dance, acupressure, aromatherapy, etc)	Music therapy appears effective in reducing behaviors (agitation, aggression). However the evidence is limited by heterogeneity/variability of interventions.
Cognitive/emotion-oriented interventions (cognitive stimulation, reminiscence, validation, simulated presence, etc)	Many methodological limitations. Convincing evidence lacking.
Behavior-management therapies	Effectiveness found for formal caregiver training; dementia mapping in residential care; and techniques to improve communication skills. Some evidence for multicomponent multidisciplinary approaches in nursing homes. Family caregiver training effect size estimated at 0.34.
Other (exercise, animal-assisted therapy, etc)	No convincing effect.

Sources: Abraha et al, BMJ Open, 2017, Kales et al, British Medical Journal, 2015; Gitlin et al, JAMA, 2012; Brodaty et al, American Journal of Psychiatry, 2012.

Current Real-World "Assessment" of Behavioral and Psychological Symptoms of Dementia

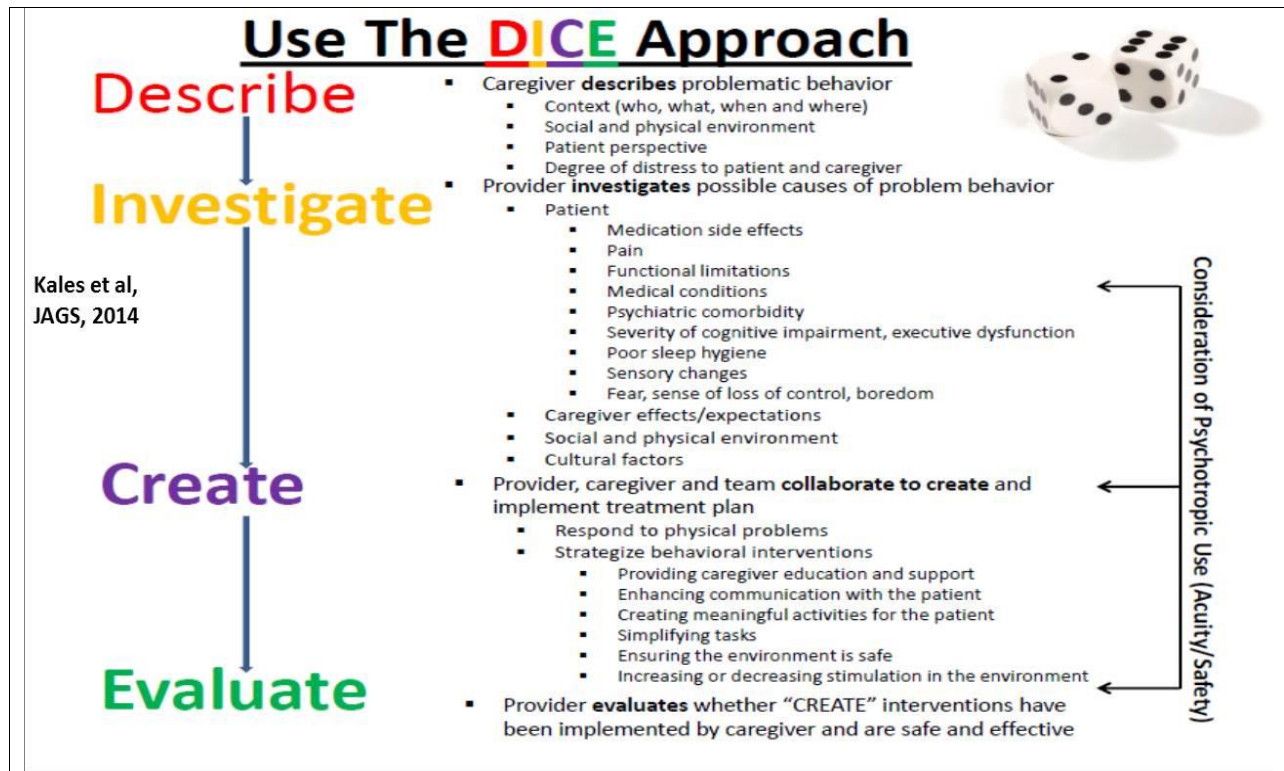




Evidence for causality for specific BPSD

- Kolanowski et al, Nursing Outlook, In Press.

Behavior	Evidence for causality
Aggression	*PLWD:* male gender; lower functional status; sadness; premorbid personality *Caregiver:* caregiver burden
Agitation	*PLWD:* younger age; younger age of onset; male gender; Alzheimer's dementia; dementia severity; pain; boredom; premorbid personality *Caregiver:* communication *Environment:* lack of stimulation or activity
Apathy	*PLWD:* BvFTD; dementia severity; presence of other BPSD; neuroanatomical changes; genetic factors *Environment:* lack of stimulation or activity
Depression	*PLWD:* female gender; lower level of education; younger age of onset; genetic factors; brain changes; type of dementia; cerebrovascular disease; premorbid personality; severity of functional impairment *Caregiver:* caregiver burden
Psychosis	*PLWD:* neuropathological changes in the brain; dementia severity; greater functional and cognitive impairment; genetic factors



Summary

- Current real-world treatment of BPSD is often impressionistic (agitation=antipsychotic)
- Need to consider BPSD with equal precision as in medical symptoms (shortness of breath analogy)
- To do so, we need to fully consider causality
  - Is agitation caused by:
    - Pain?
    - An overstimulating environment?
    - Communication issues with a caregiver?
- Such approaches also have utility to improve the precision of treatment trials

Recommendations

1. Policy needs to be informed by research data showing that focusing on a single medication class may not be the most effective way to improve treatment of BPSD
   a. Unintended consequences of shifts to other (less efficacious classes)
   b. No evidence that National Partnership has increased use of effective non-pharmacologic strategies
2. More research is needed on the determinants of BPSD so that treatments can be better tailored to potentially modify those factors
3. Future research needs to take into account the impact of patient, caregiver and environmental factors on BPSD
   a. Combination pharmacologic and non-pharmacologic strategies
   b. Approaches like DICE ahead of randomization in pharmacologic trials to decrease heterogeneity (e.g. separate out agitation from pain or other modifiable causes)