Geropsychopharmacology: Myth and Tradition vs. Evidence

Michael J. Rice, Ph.D, APRN-NP, FAAN
Professor
College of Nursing
University of Nebraska Medical Center
As of July 1st
Professor &
Endowed Chair of Psychiatric Nursing
College of Nursing
University of Colorado Anschutz Medical Center

Disclosure
- The speaker has no conflict of interest to disclose
- Off-label use of medications will be discussed in this presentation
- This session will be recorded and available on the APNA eLearning Center

Objectives
1. Review the myths of psychopharmacology in elders
2. Examine the evidence on the neurochemical changes associated with aging
3. Examine the evidence on current traditional use of psychotropics with the elderly
4. Examine the evidence based effectiveness of psychopharmacology with aging disorders

Geropsychopharmacology
- 21,526 older adults : median age of 84
- In Community
  1.1% on antipsychotics
- In Care Agency
  20 times more likely to be on Antipsychotics

Antipsychotic Use with Elders : US

<table>
<thead>
<tr>
<th>Medication</th>
<th>Weighted Frequency</th>
<th>Percentage</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antipsychotic use</td>
<td>227,722</td>
<td>32.88</td>
<td>31.50, 34.26</td>
</tr>
<tr>
<td>Atypical</td>
<td>219,071</td>
<td>31.63</td>
<td>30.27, 33.00</td>
</tr>
<tr>
<td>olanzapine</td>
<td>76,626</td>
<td>11.06</td>
<td>10.16, 11.99</td>
</tr>
<tr>
<td>risperidone</td>
<td>73,782</td>
<td>10.65</td>
<td>9.76, 11.55</td>
</tr>
<tr>
<td>quetiapine</td>
<td>64,121</td>
<td>9.27</td>
<td>8.41, 10.13</td>
</tr>
<tr>
<td>ziprasidone</td>
<td>61,107</td>
<td>0.59</td>
<td>0.38, 0.80</td>
</tr>
<tr>
<td>aripiprazole</td>
<td>61,642</td>
<td>0.89</td>
<td>0.62, 1.16</td>
</tr>
<tr>
<td>Typical</td>
<td>12,123</td>
<td>1.75</td>
<td>1.37, 2.13</td>
</tr>
<tr>
<td>haloperidol</td>
<td>6,864</td>
<td>1.16</td>
<td>0.86, 1.47</td>
</tr>
<tr>
<td>others</td>
<td>4,230</td>
<td>0.61</td>
<td>0.38, 0.84</td>
</tr>
</tbody>
</table>

Kamble, Chen, Sherer, & Aparasu 2009

Elders in Nursing Homes : US Rate
- 1 of 3 elderly LTC residents with dementia used antipsychotic agents, mainly atypical
- Olanzapine,
- Risperidone and
- Quetiapine highest use

Rochon et al. 2013
US Rate (cont.)

- Psychiatric disorders such as anxiety were associated with use of atypical agents with dementia.
- Predisposing factors: 1. male, 2. bed capacity
- Need factors: 1. decision-making, 2. depression, 3. behavioral symptoms, 4. ADLs, and 5. bed mobility

Kamble, Chen, Sherer, & Aparasu 2009

US rates (cont.)

- 8.2% were put on antipsychotics, 14.8% were given hypnotics, and 7.8% were prescribed anxiolytics.
- Six months after admission to a care home, 30.2% of all new residents had received at least one prescription for an antipsychotic, 37.1% for a hypnotic, and 24.5% for an anxiolytic.

Kamble, Chen, Sherer, & Aparasu 2009

Myths: Setting the Stage for Pharmacological Misuse

- Older adults complain.
- Older adults are negative.
- Older adults have rigid personalities.
- Dementia is normal for aging.
- Any cognitive impairment is Alzheimer's.

Kennedy, 2003

Myths (cont.)

- Genetics determine illness and disability.
- Disability is inevitable.
- Loss of social ties leaves elders alone and isolated.
- Most elderly are depressed, demented, or dependent.

Kennedy, 2003

Myths (cont.)

- All elders have a chronic illness.
- Aging eliminates individual needs and potential.
- Psychiatric meds control behaviors.
- Psychiatric meds only affect the brain.
- Learning capacity declines.

Kennedy, 2003

Neurochemistry Myths

- Adult age - Adult Psychopharmacology
- Psychiatric meds control behaviors.
- Psychiatric meds only affect the brain.
- Learning capacity declines.
Traditional Geropsychopharmacology

- Anxiolytics
- Antidepressants
- Antipsychotics
- Antiepileptic Medications
- Off Label Use – FDA Designation
- Traditional Wisdom is... Use one third the normal adult dose to adjust for metabolism.

### Anxiolytic use

<table>
<thead>
<tr>
<th>Generic (Brand Name)</th>
<th>Initial Dosage</th>
<th>Maximum Daily Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alprazolam (Xanax®)</td>
<td>0.125 mg to 0.25 mg BID</td>
<td>0.25 mg to 2 mg BID</td>
</tr>
<tr>
<td>Lorazepam (Ativan®)</td>
<td>0.25 mg to 0.5 mg BID</td>
<td>0.5 mg to 4 mg BID</td>
</tr>
<tr>
<td>Oxazepam (Serax®)</td>
<td>10 mg BID</td>
<td>10 mg to 30 mg BID</td>
</tr>
<tr>
<td>Temazepam (Restoril®)</td>
<td>7.5 mg O HS</td>
<td>7.5 mg to 5 mg O HS</td>
</tr>
<tr>
<td>Eszopiclone (Lunesta®)</td>
<td>1 mg to 2 mg O HS</td>
<td>1 mg to 2 mg O HS</td>
</tr>
<tr>
<td>Gabapentin (Neurontin®)</td>
<td>100 mg O HS</td>
<td>100 mg to 800 mg O HS</td>
</tr>
<tr>
<td>Mirtazapine (Remeron®)</td>
<td>7.5 mg O HS</td>
<td>7.5 mg to 45 mg O HS</td>
</tr>
<tr>
<td>Nortriptyline (Pamelor®)</td>
<td>10 mg to 25 mg O HS</td>
<td>10 mg to 100 mg O HS</td>
</tr>
<tr>
<td>Trazodone (Desyrel®)</td>
<td>25 mg O HS</td>
<td>25 mg to 200 mg O HS</td>
</tr>
<tr>
<td>Zaleplon (Sonata®)</td>
<td>5 mg O HS</td>
<td>5 mg to 10 mg O HS</td>
</tr>
<tr>
<td>Zolpidem (Ambien®)</td>
<td>5 mg O HS</td>
<td>5 mg to 10 mg O HS</td>
</tr>
</tbody>
</table>

Lindsey, 2009

### Antidepressants Elders

<table>
<thead>
<tr>
<th>Generic (Brand Name)</th>
<th>Starting Dosage</th>
<th>Daily Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citalopram (Celexa®)</td>
<td>10 mg to 20 mg per day</td>
<td>10 mg to 40 mg per day</td>
</tr>
<tr>
<td>Escitalopram (Lexapro®)</td>
<td>10 mg per day</td>
<td>5 mg to 20 mg per day</td>
</tr>
<tr>
<td>Fluoxetine (Prozac®)</td>
<td>10 mg per day</td>
<td>5 mg to 40 mg per day</td>
</tr>
<tr>
<td>Buproprion (Wellbutrin®, Wellbutrin SR®, Wellbutrin XL®)</td>
<td>37.5 mg to 75 mg per day; SR: 75 mg to 100 mg every morning; XL: 150 mg every morning</td>
<td>25 mg to 200 mg per day</td>
</tr>
<tr>
<td>Duloxetine (Cymbalta®)</td>
<td>20 mg per day</td>
<td>20 mg to 60 mg per day</td>
</tr>
<tr>
<td>Mirtazapine (Remeron®)</td>
<td>7.5 mg at bedtime</td>
<td>7.5 mg to 45 mg at bedtime</td>
</tr>
<tr>
<td>Venlafaxine (Effexor®, Effexor XR®)</td>
<td>25 mg twice per day; XR: 37.5 mg per day</td>
<td>50 mg to 400 mg at bedtime</td>
</tr>
<tr>
<td>Desipramine (Norpramin®)</td>
<td>10 mg to 25 mg per day</td>
<td>100 mg per day</td>
</tr>
</tbody>
</table>

Lindsey, 2009

### Antipsychotic Use

<table>
<thead>
<tr>
<th>Generic Name</th>
<th>Starting Dosage</th>
<th>Daily Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol (Haldol®)</td>
<td>0.25 mg to 0.5 mg per day</td>
<td>0.25 mg to 4 mg per day</td>
</tr>
<tr>
<td>Aripiprazole (Abilify®)</td>
<td>5 mg per day</td>
<td>2.5 mg to 15 mg per day</td>
</tr>
<tr>
<td>Olanzapine (Zyprexa®)</td>
<td>2.5 mg per day</td>
<td>2.5 mg to 15 mg per day</td>
</tr>
<tr>
<td>Quetiapine (Seroquel®)</td>
<td>25 mg at bedtime</td>
<td>50 mg to 400 mg at bedtime</td>
</tr>
<tr>
<td>Ziprasidone (Geodon®)</td>
<td>0.25 mg to 0.5 mg at bedtime</td>
<td>0.25 mg to 3 mg at bedtime</td>
</tr>
<tr>
<td>Desipramine (Norpramin®)</td>
<td>20 mg twice per day with food</td>
<td>20 mg to 80 mg twice per day with food</td>
</tr>
</tbody>
</table>

Lindsey, 2009

### Risks of Falls with Drug Classes

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Adjusted Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sedatives and hypnotics</td>
<td>1.47 (1.35 – 1.62)</td>
</tr>
<tr>
<td>Benzodiazepines</td>
<td>1.41 (1.20 – 1.71)</td>
</tr>
<tr>
<td>Antidepressants</td>
<td>1.36 (1.13 – 1.70)</td>
</tr>
</tbody>
</table>

### Adverse Events with Psychotropics

- 1,889 (8.8%) had a serious event
  - (1,044 women, 7.6%; 845 men, 10.9%)
- 718 (3.3%) died
  - (363 women, 2.6%; 355 men, 4.6%)
- 1,467 (6.8%) had a hospital admission
  - (812 women, 5.9%; 655 men, 8.4%) within 30 days.
- Men were 47% more likely than women to have a serious event
**Black BOX: FDA Warning**

**WARNING:** INCREASED MORTALITY IN ELDERLY PATIENTS WITH DEMENTIA-RELATED PSYCHOSIS

See full prescribing information for complete boxed warning.

- Elderly patients with dementia-related psychosis treated with antipsychotic drugs are at an increased risk of death.
- Risperdal is not approved for use in patients with dementia-related psychosis.

**The Evidence**

- Anxiolytics
- Antidepressants
- Antipsychotics
- Off Label Use – FDA Designation

**Aging Neurochemistry Reality**

- Neurophysiologic capacity
- Physiological capacity
- Metabolic capacity

**Natural Volumetric Loss**

- Hedden and Gabrielle 2004

**Dopamine**

- Age-related changes in
- Dopamine synthesis,
- Dopamine binding sites,
- Decrease in D1 and D2 receptors
- Significant declines in dopamine receptors, D2 and D3

**Dopamine Receptor Modulation**

- Li 2012

Figure 1: Schematic life span profiles of subcortical and cortical dopamine modulation. The preservation of the cortical system is more pronounced than that of the subcortical system, which predis to abnormalities.
Serotonin

- Decreasing levels of different serotonin receptors and
- Serotonin transporter, 5-HTT

Serotonin Receptor Density Decline

Blood Brain Barrier Aging

- Different changes in development and aging, leading to an optimal amino acid transport
- Minimum penetration of lipophilic agents in the adult brain, reducing transport and increasing the penetration of lipophilic compounds

Neurochemical Aging

- Levels of neurotransmitters (Acetylcholine [ACh], serotonin [5-HT] and dopamine) levels are all decreased
- Metabolic enzyme activities such as choline acetyltransferase and choline esterase increase

Pharmacokinetics Principles in Aging

- Rate of Absorption
- Rate of Excretion
- Rate of Elimination

Neurotransmitters with Aging

- Metabolic enzyme activities of choline acetyltransferase and choline esterase activities increase.
- Tryptophan hydroxylase activity is not affected.
- Monoamine oxidase-A increases
Liver function

- Changes in the hepatic sinusoid have been identified that contribute to the substantial age-related changes in liver function.
- Reduction in capacity to metabolize

Le Couteur DG, et al. 2008

Renal Aging

- A progressive linear decline in clearance from 140 ml/min/1.73m² at age 30 to 97 at age 80.
- 254 "normal" subjects, the mean decrease in creatinine clearance was 0.75 ml/min/year.
- Decline in renal function is associated with co-existing cardiovascular diseases and risk factors.

Rowe et al. 1985

Respiratory Capacity and PO2 Exchange

Evidence For Geropsychopharmacology

- Based on systematic reviews
- Evidence Based Practices

Anxiolytics in use

- Buspirone
- Chlordiazepoxide
- Diazepam
- Lorazepam
- Hydroxyzine

Anxiolytics Evidence Based

- No controlled trials support use of benzodiazepines in the treatment of non-alcohol withdrawal related delirium and
- At this time benzodiazepines cannot be recommended for the control of agitation in dementia/ delirium.

Lonergan, Luxenberg, Sastre. 2009
Depression in Dementia

- Depression affects up to 50% of persons with dementia
- Commonly treated with Antidepressants

Typical Elder Antidepressants

- Tricyclic antidepressants
- SSRI's
- SNRI's
- Atypical Antipsychotics

All TCAs versus SSRIs, Outcome

<table>
<thead>
<tr>
<th>Trade or subgroup</th>
<th>All TCAs</th>
<th>SSRIs</th>
<th>No of</th>
<th>Weight</th>
<th>No of</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ce Fixate 500 mg</td>
<td>101</td>
<td>127</td>
<td>9</td>
<td>4.3</td>
<td>9</td>
<td>[0.34.4.23]</td>
<td></td>
</tr>
<tr>
<td>Dymak 200 mg</td>
<td>120</td>
<td>62</td>
<td>18</td>
<td>5.8</td>
<td>18</td>
<td>[0.9, 0.2, 0.8]</td>
<td></td>
</tr>
<tr>
<td>Rohozer 200 mg</td>
<td>150</td>
<td>63</td>
<td>25</td>
<td>8.3</td>
<td>25</td>
<td>[0.9, 0.2, 0.8]</td>
<td></td>
</tr>
<tr>
<td>Ciprafix 150 mg</td>
<td>200</td>
<td>150</td>
<td>30</td>
<td>10.3</td>
<td>30</td>
<td>[0.9, 0.2, 0.8]</td>
<td></td>
</tr>
<tr>
<td>Total 50% CI</td>
<td>520</td>
<td>350</td>
<td>90</td>
<td>4.0</td>
<td>90</td>
<td>[0.9, 0.2, 0.8]</td>
<td></td>
</tr>
</tbody>
</table>

TCA vs SSRI Pooled studies

<table>
<thead>
<tr>
<th>Outcome or subgroup</th>
<th>No of</th>
<th>No of</th>
<th>Statistical method</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (X)</td>
<td>9</td>
<td>100</td>
<td>[0.34.4.23]</td>
<td></td>
</tr>
<tr>
<td>2Depression severity (HAD-2)</td>
<td>9</td>
<td>100</td>
<td>[0.34.4.23]</td>
<td></td>
</tr>
<tr>
<td>3Withdrawal due to side effects</td>
<td>12</td>
<td>100</td>
<td>[0.34.4.23]</td>
<td></td>
</tr>
<tr>
<td>4Total withdrawals</td>
<td>12</td>
<td>100</td>
<td>[0.34.4.23]</td>
<td></td>
</tr>
</tbody>
</table>

SNRI Evidence

- Limited data
- Dual-action agents (either TCAs or SNRIs) do not use any additional benefits in efficacy over SSRI’s for the elderly.
SNRI Effectiveness

- Dual action agents, such as TCAs and SNRIs do confer any additional efficacy benefits over SSRI's for treatment of depression in the elderly.
  - Mukai & Tampi 2009

Atypicals For Depression

- Lonergan 2009

Augmentation with Antipsychotics

- No therapeutic effects were found for haloperidol compared to placebo and trazodone & compared to risperidone and placebo.
- RCTs with risperidone, olanzapine, and aripiprazole have shown modest efficacy for reducing aggression and overall agitation in AD.
  - Kales et al 2012

SSRI’s Harmsless?

- Increased Risk of falls
- Deplete sodium through renal excretion
- Prolong QTc (citalopram)
  - Schwarz Froelich & Burns 2012

There is currently no firm evidence supporting use of antidepressants in patients with depression and dementia.
- Treatment of psychosis and agitation in patients with dementia remains a clinical challenge.
- Antipsychotics are associated with increased mortality.
  - Schwartz Froelich & Burns 2012

Antidepressants are associated with a substantial risk for adverse effects, and
- Efficacy is not proven.
  - Schwartz Froelich & Burns 2012
Atypical Antipsychotics

- Serotonin Dopamine Agonists
- Multiple variable receptor activities
  - Histamine
  - Muscarinic
  - 5HT1-7
  - D1-5
  - Alpha adrenergic.

Off-Label Atypical Use with Dementia

<table>
<thead>
<tr>
<th>Condition</th>
<th>Strength of evidence</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral problems in dementia</td>
<td>Moderate for risperidone, olanzapine, and quetiapine; Low for aripiprazole.</td>
<td>Meta-analysis found a small benefit for risperidone and aripiprazole on agitation and psychotic outcomes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meta-analysis shows a possible trend toward effectiveness of olanzapine for psychosis but results did not reach statistical significance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are 3 studies of quetiapine; were too dissimilar in their design and outcomes to pool.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Result in the Clinical Antipsychotic Trials of Intervention Effectiveness-Alzheimer's Disease (CATIE-AD) showed no differences in time to discontinuation of medication between risperidone, olanzapine, quetiapine, and placebo.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Efficacy favored risperidone and aripiprazole, and</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tolerability outcomes favored quetiapine and placebo.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>There are no studies of aripiprazole.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meta-analysis showed a possible trend toward effectiveness of olanzapine for psychosis but results did not reach statistical significance.</td>
</tr>
</tbody>
</table>

Typical Vs Atypical Mortality Risks

- Haloperidol (RR=1.54, 95% CI =1.38-1.73)
- Risperidone (reference risk),
- Olanzapine (RR =0.99, 95% CI=0.89-1.10),
- Quetiapine (RR=0.73, 95% CI=0.67-0.80).

- Association between mortality and antipsychotics is understood and may be due to a direct medication effect.

Anticonvulsants in use

- Valproic acid
- Carbamazepine
- Levetiracetam,
- Ox carbazepine,
- Topiramate and
- Zonisamide's

Stable Findings

- Valproic acid: 83% develop hyperammonia
  - Induced encephalopathy
- Carbamazepine: Three RCT's indicate management of aggression and hostility.
Anticonvulsants Evidence Review

• Data are relatively limited.
• Levetiracetam, oxcarbazepine, topiramate and zonisamide – not recommended as behavioral treatment with dementia.

Pretreatment Screening

• Take a good drug and alcohol history –
• Polypharmacy accounts for majority of iatrogenic morbidity.
• Antidepressant trial in older patients should last at least 6–8 weeks.
  – Continuation treatment is 12 months.
• Lithium dose ranges are lower in the elderly – 0.4–0.6 mmol/l.

Lifestyle & Pharma Aids

• 1. Eliminate caffeine – including hidden forms;
  – Educate on caffeine effects – last > 24 hours and affects sleep even if taken in the morning.
• 2. Attempt to eliminate alcohol. In patients with dementia, remove and/or limiting amount.
• 3. If reflux (causing arousals, silent or with cough): avoid food and fluids 2-3 hours before HS, raising head of bed, & consider trial of antacid.

• 4. For allergic rhinitis (causes snoring/apnea, postnasal drip, and coughing): Try nasal steroid spray at HS, if persistent, add daytime antihistamine.
• 5. If suspected pain, use mattress foam topper – Ensure firm bed (with or without mattress topper) for back pain.
• 6. Schedule acetaminophen;
• 7. Avoid opiates.

• 8. Circadian rhythm factors:
  – Avoid or time daytime naps using hard-back chair for TV - no recliners
  – Offer stimulating activities during the sleepy times
  – Ensure bright light in day;
  – Lower lights in evening and night.
• 9. Consider nighttime melatonin with morning light and strict wake time.
• 10. Ensure that patient does not have other primary sleep conditions that affect sleep, like RLS

• 11. Dose medication with sleep-disrupting effects earlier in the AM
  – {β-blockers, cholinesterase inhib., SSRIs, venlafaxine, bupropion}.
  – Donepezil (Aricept) causes sleep disruption more than other cholinesterase agents.
• 12. Use non activating antidepressants.
• 13. Consider trial of switching to alternative galantamine or rivastigmine.
14. Dose cholinesterase inhibitor in the AM.

15. Nocturia: eliminate all access to fluids in 3 hours before bedtime.

16. Ensure that patient does not have other primary sleep conditions that affect sleep, like RLS

17. Nocturia: eliminate all access to fluids in 3 hours before bedtime.

18. Consider taking twice daily medications at dinner rather than before bed to reduce fluid load.

Types of Psychotherapy studied

- Problem Solving
- Insight Oriented
- Psychodynamic
- Cognitive Behavioral Therapy
- Mindfulness
- Modular Psychotherapy

Traditional Psychotherapy

- Intentional interpersonal relationship used by trained psychotherapists to aid a client in solving problems

Evidence Overview

<table>
<thead>
<tr>
<th>Author</th>
<th>Design</th>
<th>Sample</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jonkers et al.</td>
<td>RCT</td>
<td>361 older adults</td>
<td>Nurse managed Group Pre Post test CBT</td>
<td>CBT was superior to active control interventions</td>
</tr>
<tr>
<td>Stenberg, et al</td>
<td>RCT</td>
<td>56 older adults</td>
<td>Psychotherapy vs enhanced community treatment</td>
<td>CBT and IPT were effective, significantly greater improvements were found in anxiety, depressive symptoms, worry</td>
</tr>
<tr>
<td>Xilone, Mathson &amp; Vanden, 2006</td>
<td>Cohort Review</td>
<td>CBT vs Psychodynamic therapy</td>
<td>CBT and IPT were effective, significantly greater improvements were found in anxiety, depressive symptoms, worry</td>
<td></td>
</tr>
<tr>
<td>Jonkers et al.</td>
<td>RCT</td>
<td>60 older adults</td>
<td>One group Post test CBT</td>
<td>CBT was superior to active control interventions</td>
</tr>
<tr>
<td>Jonkers et al.</td>
<td>RCT</td>
<td>60 older adults</td>
<td>Nurse managed Group Pre Post test CBT</td>
<td>Increase in self efficacy</td>
</tr>
<tr>
<td>Van Schie, et al</td>
<td>RCT-2 groups</td>
<td>100 patients</td>
<td>18 sessions of IPT x 2 - 3 times a week</td>
<td>Reduced depression began up to 3 times a week</td>
</tr>
</tbody>
</table>

Psychotherapy

- Modular psychotherapy reduces anxiety symptoms, worry, depression and improved quality of life
- Interpersonal therapy reduces depression, improves social and overall mental functioning
- Interpersonal therapy increases time to remission of depression with lower cognitive functioning
- Cognitive behavioral therapy reduces depression, worry, increases life satisfaction
- Self-worth therapy reduces depressive symptoms two months after treatment
- Problem-solving therapy reduces depressive symptoms and number of depressive days for up to 2 years after treatment

Cognitive Stimulation

- Using stimulation of any basic cognitive function to prevent the decline of functional skills and offset depression
Evidence Overview

<table>
<thead>
<tr>
<th>Author</th>
<th>Design</th>
<th>Sample</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>McDougall, G</td>
<td>RCT</td>
<td>26 Eledrs</td>
<td>CBT memory</td>
<td>Significant change in functional status and depression</td>
</tr>
<tr>
<td>Upah, et al.</td>
<td>RCT</td>
<td></td>
<td></td>
<td>Patients in the T1S memory training group had a lower depression level than the control group.</td>
</tr>
<tr>
<td>Walker, et al.</td>
<td>RCT</td>
<td></td>
<td></td>
<td>Significant improvement in memory training on memory tests, especially long-term recall.</td>
</tr>
<tr>
<td>Kurokawa, et al.</td>
<td>RCT</td>
<td></td>
<td>Reading and Math Problems</td>
<td>Reading and math problems can help restore frontal lobe function and independence.</td>
</tr>
<tr>
<td>McDougall, G</td>
<td>RCT</td>
<td>110 elders</td>
<td>CBT model of everyday memory</td>
<td>Prospective memory items improved.</td>
</tr>
</tbody>
</table>

Cognitive Exercises Summary

- Visual Speed training (search, identify and locate visual information) can reduce depression rates at one year.
- Reading and math problems help restore frontal lobe function and independence.
- Virtual reality memory training can improve performance on memory and long term recall.

Exercise

- Any bodily activity that enhances or maintains physical fitness and overall health.

<table>
<thead>
<tr>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yoga reduces daytime dysfunction, depression, improves sleep quality, physical and mental health</td>
</tr>
<tr>
<td>Exercise improves MMSE scores</td>
</tr>
<tr>
<td>Recreational therapy reduces agitation, passivity, and clinging to caregiver</td>
</tr>
<tr>
<td>Tai Chi and Wai Tan Kung reduce sympathetic nervous system activity</td>
</tr>
</tbody>
</table>

Reminiscence Therapy

- Guided by a trained person to reflect on a variety of aspects relating to their lives. Reflections may be themed on one period in time or wider and reflect a guided discussion through an issue across time.
**Evidence Overview**

<table>
<thead>
<tr>
<th>Author</th>
<th>Design</th>
<th>Sample</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wang, 2007</td>
<td>RCT, 2 group pre and post test</td>
<td>120 elderly</td>
<td>Group reminiscence therapy</td>
<td>Improved cognitive function and reduced depression</td>
</tr>
<tr>
<td>Chou, et al 2006</td>
<td>Quasi-experimental</td>
<td>All elderly nursing home residents</td>
<td>Reminiscence therapy</td>
<td>Improved self-esteem, but not depression</td>
</tr>
<tr>
<td>Ballo, 2004</td>
<td>Cross-over RCT</td>
<td>20 people with dementia</td>
<td>Individual reminiscence therapy</td>
<td>Effective for reducing agitation and depression in institutionalized people</td>
</tr>
<tr>
<td>Hsieh &amp; Wang 2003</td>
<td>Systematic Review</td>
<td>9 studies</td>
<td>Reminiscence therapy</td>
<td>Tx v. standard care: 4 studies favored tx, 4 showed no difference</td>
</tr>
<tr>
<td>Jones 2002</td>
<td>Quasi-experimental pre-post test</td>
<td>30 long-term care residence</td>
<td>Reminiscence therapy</td>
<td>Experimental group showed reduced depression</td>
</tr>
<tr>
<td>De Niet, Tiemens, Lendemeijer, &amp; Hutschemaekers 2009</td>
<td>Meta-analysis - 5 studies</td>
<td>308 older adults</td>
<td>Music-assisted relaxation</td>
<td>Music-assisted relaxation was associated with moderate sleep improvement and significant in reducing behaviors for any level of dementia intervention</td>
</tr>
<tr>
<td>Remington 2002</td>
<td>Repeated measures</td>
<td>66 nursing home residents</td>
<td>Listening music, based treatment</td>
<td>Music-assisted relaxation was associated with moderate sleep improvement and significant in reducing agitation and depression for any level of dementia intervention</td>
</tr>
<tr>
<td>Wall, Duffy</td>
<td>Review of literature</td>
<td>13 studies</td>
<td>Music therapy</td>
<td>Music therapy group had improvement in language on MoCA and reduced variability of behaviors found</td>
</tr>
<tr>
<td>Leger, Bader 2007</td>
<td>Pre and post test</td>
<td>35 people with Alzheimer's</td>
<td>Weekly music therapy group</td>
<td>Music therapy group had improvement in language on MoCA and reduced variability of behaviors found</td>
</tr>
</tbody>
</table>

**Music Therapy**

- An interpersonal process in which the therapist uses music activities to help clients to improve or maintain their health
- Activities involve improvising, re-creating, composing, listening
- After the activity clients discuss the music, reactions to music, such as thoughts, images or feelings.

**Music Therapy**

- Music therapy can reduce irritability, agitation, and problem behaviors in people with depression and dementia
- Music therapy can improve language functioning in people with dementia
- Music therapy can improve sleep in depressed elders

**Community Vigilance and Treatment Models**

- Treatment approach designed to provide comprehensive, community-based psychiatric treatment and support to elders
Community Treatment Models
- Gatekeeper Models
- Assertive Community Treatment Models
- Primary Care Problem Solving

Evidence Overview

<table>
<thead>
<tr>
<th>Author</th>
<th>Design</th>
<th>Sample</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corsentino, et al. 2009</td>
<td>Longitudinal Survey</td>
<td>2938 adults over 65 in N. Carolina</td>
<td>NA</td>
<td>More interrelationships and stimualtion associated with reduced cognitive decline</td>
</tr>
<tr>
<td>Van Citters &amp; Bartels 2004</td>
<td>Cochrane Systematic Review</td>
<td>12 studies</td>
<td>Community Psychosocial Interventions</td>
<td>All studies reported improved depressive symptoms</td>
</tr>
<tr>
<td>Rabins et al. 2000</td>
<td>Prospective RCT</td>
<td>945 adults 60 and older</td>
<td>Screening group and control</td>
<td>Screening helps to reduce psychiatric symptoms and prevent higher levels of symptoms</td>
</tr>
</tbody>
</table>

Community
- Enhanced community treatment reduces anxiety symptoms, worry, depressive symptoms, and improved mental health-related quality of life.
- Mental health screening for elders helps providers to identify treatment needs and improve outcomes.
- More frequent religious attendance is associated with reduced cognitive decline.

Dietary Supplements
- A dietary supplement, also known as food supplement or nutritional supplement, is a preparation intended to supplement the diet and provide nutrients, that may be missing or may not be consumed in sufficient quantity in a person's diet.

Evidence Overview

<table>
<thead>
<tr>
<th>Author</th>
<th>Design</th>
<th>Sample</th>
<th>Intervention</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malouf, Grimley &amp; Areosa 2008</td>
<td>Systematic Cochrane Review</td>
<td>8 RCT</td>
<td>Folic Acid with or without B12</td>
<td>No evidence that folic acid with or without vitamin B12 improves cognitive function of unselected elderly people with or without dementia</td>
</tr>
<tr>
<td>Isaac, Quinn &amp; Tabet 2008</td>
<td>Systematic Review</td>
<td>2 RCT's</td>
<td>Vitamin E</td>
<td>No evidence of Vit. E effect.</td>
</tr>
</tbody>
</table>

Spirituality
- Inner path enabling a person to discover their being and the "deepest values \ meanings by which people live.
- Considered an integral aspect of religion.
Evidence Overview

- No RCT's, Difficult to do
- Observational reports and questionnaires

Religion Summary

- Religion as a factor in helping elders cope with stressful life events and medical illnesses (Koenig et al., 1992; Levin, 1995).
- Religiousness associated with less severe depressive symptoms
- More frequent religious attendance is associated with reduced cognitive decline

Remaining Interventions

- Reiki - Reduces ALZ - no tests on depression
- Pet Therapy
  - 2 studies
  - One positive and one showed no effect

Grief

- Bowlby's (1980) on attachment and separation.
- Research has identified psychiatric syndromes with relationships to mortality, bereavement-related behaviors, and dementia (Harwood, 2001)

Bereavement

- Abnormal reaction to the stress of loss and the challenges of adaptation
- Correction of cognitive distortions associated with insecure attachment styles
- Predispose to complicated grief

Grief

- Normative process of movement
- Linked with successful coping and resolution of a loss
**Bereavement (cont)**

- 40% meet criteria for MDD within a month of the death.
- At 12 months 15% are depressed and
- At 2 years, 7% (Hensley PL 2006)

**Bereavement**

- With medications, depression symptoms improve more than bereavement Hensley 2006
- Interpersonal psychotherapy

**Bereavement RX**

- Remission for nortriptyline plus interpersonal psychotherapy was 69%
- Nortriptyline, 56%
- Interpersonal psychotherapy, 29%

**Conclusion**

- A variety of non pharmacological interventions exist with demonstrated effectiveness in reducing and managing depression in the elderly.
- Many interventions focus on proactive interventions
- More complex issues of bereavement may need pharmacological support.

**Non pharmacological Assistance**

- A variety of non pharmacological interventions exist with demonstrated effectiveness in reducing and managing depression in the elderly.
- Many interventions focus on proactive interventions
- Several have significant impact on the magnitude of psychopharmacology used

**Nursing Staff Interventions**

- 1. Remove TV from the bedroom.
- 2. Ensure hands and feet are not cold at HS;
  - Suggest feet soaks, warm socks, bath.
  - Ensure that bedroom is not overly hot.
- 3. Review sleep time versus time in bed and
4. Set later bedtime, and strict wake time for mild sleep restriction.
5. Make clock not visible in bedroom.
6. Ensure that environment is free of noise and is dark at night.
7. Have routine in place to void immediately before bed.
8. Dose diuretics earlier in the day if possible.

EBP Summary

1. AD and other dementias require behavioral interventions first and then medications to treat moderate to severe disturbances.
2. Nonpharmacological therapy may be inadequate in many patients.
3. Pharmacological options are hindered by poor balance of efficacy and safety.

3. Better response of atypical antipsychotics for dementia patients without psychosis but adverse effects are serious.
4. Meta-analysis, found that haloperidol was beneficial for dementia patients with aggression, not free of adverse events— but not for general agitation (i.e., wandering, verbal agitation, etc.).

5. There is no FDA-approved indication for a drug to treat psychosis or agitation in persons with dementia.
6. More RCTs in dementia patients with psychosis and/or agitation for atypical antipsychotics (aripiprazole, olanzapine, quetiapine, and risperidone) and for haloperidol.

7. RCTs examining antipsychotics for agitation and/or psychosis in dementia suggest a modest effect compared to placebo.
8. Individual trials have yielded negative results.
9. CATIE-AD trial suggested side effect burdens may negate clinical effectiveness.
10. Mortality is significantly higher with atypical antipsychotics than with placebo with dementia.
11. The FDA black-box warning identifies the risks of atypical antipsychotics.
12. Risk difference is 1–2% over 8–12 weeks.
13. In addition to acute and subacute adverse effects such as excessive sedation, postural hypotension, and falls.
Evidence Based Needs

- Future, prospective trials of adequate duration (i.e., at least 8-12 weeks) and of sufficient power are needed
- Systematic studies and compilations of studies of non-pharmaceutical studies
- Use calculated effect sizes
- Focusing of all data

References

- Pinquart, M., & Duberstein, P. R. (2024). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2025). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2026). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2027). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2028). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2029). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2030). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2031). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2032). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2033). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2034). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2035). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2036). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2037). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2038). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2039). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2040). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2041). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2042). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2043). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2044). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2045). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2046). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2047). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2048). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2049). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2050). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2051). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2052). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]
- Pinquart, M., & Duberstein, P. R. (2053). Treatment of anxiety disorders in older adults: A meta-analytic comparison of psychotherapies and pharmacotherapy. [Save Reference]