Problems Solving Therapy for Depression in Older Adults: Research and Clinical Issues

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Key Objectives

1. Review the evidence for problem solving therapy (PST) for depression in older adults
2. Discuss the implementation and evaluation of problem solving therapy at Providence Care
3. Explore further opportunities for research studies in PST
My Problem

• I work in a geriatric psychiatry program with the equivalent of 1 psychiatrist and 7 full-time nurses. Many of the patients that we see would benefit from psychotherapy although I don’t have time to do it and our nurses have not had extensive training. Only patients that can afford private psychotherapy have access to this so a lot of people miss out. I feel like I’m throwing pills at problems that would be better dealt with psychotherapy. Also need a psychotherapy service that will fit with our patient population and service needs.
My Goal

• To be able to offer time-limited, evidence-based psychotherapy as a part of our outreach program which our nurses could receive training in a brief period of time and could be implemented by nurses in routine care.
## Possible Solutions

<table>
<thead>
<tr>
<th>Solutions</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go with status quo</td>
<td>+ Easy</td>
<td>- Not really going to be a great long-term solution</td>
</tr>
<tr>
<td></td>
<td>+ Acceptable to nurses and me</td>
<td>- Patients are probably not going to get the best care</td>
</tr>
<tr>
<td></td>
<td>+ Little time commitment</td>
<td>- Our psychiatric service should be able to provide psychotherapy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBT/IPT training for nurses</td>
<td>+ I have some training in these</td>
<td>- Typical sessions are bit longer than we would like</td>
</tr>
<tr>
<td></td>
<td>+ Lots of experienced clinicians around</td>
<td>- Training for nurses to become proficient may not be feasible</td>
</tr>
<tr>
<td></td>
<td>+ Good evidence in the elderly</td>
<td>- ? evidence in cognitive impairment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Not sure if this is the best fit for our program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>? Problem-solving therapy</td>
<td>+ Emerging research for older adults</td>
<td>- Not familiar with PST</td>
</tr>
<tr>
<td></td>
<td>+ Used in shared-care models which I’m interested in</td>
<td>- Not sure how hard it is to learn or get training</td>
</tr>
<tr>
<td></td>
<td>+ Face validity as a therapy</td>
<td>- Not aware of any local resources</td>
</tr>
<tr>
<td></td>
<td>+ Adapted for case management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ Evidence in older adults and those with cognitive impairment</td>
<td></td>
</tr>
</tbody>
</table>
Selection of Solution

• Examine whether PST might be an option to integrate into our geriatric psychiatry outreach program at Providence Care
Action Plan

• Internet search about Problem Solving Therapy
• Read some research about Problem Solving Therapy
• Apply for a few small grants to support some pilot studies if it seems like a good option
Verification of Action Plan

- Online resources and information about PST
  - AIMS Centre at University of Washington – online materials and worksheets on PST, link to PST Training Centre at University of California at San Francisco
    - PST used as part of their depression care management programs (IMPACT)
    - PST Training provided through UCSF PST Centre

- Contacted PST Training Centre at UCSF (Dr. Arean)
  - They offer training and PST Certification
  - They have a Canadian psychologist on staff who would like to train some Canadians – Dr. Rebecca Crabb PhD
  - Provided a reasonable quote for training and supervision
  - I can become a trainer and train my nurses and other clinicians

- Received small grant from Queen’s University to support implementation and evaluation
PHQ-9 Depression Questionnaire

• Before  PHQ-9 = 6

• After  PHQ-9 = 1
Framework for PST in Depression

- Everyone has problems
- Interplay between problems and depression
  - Problems contribute to making depression worse
  - Depression makes it hard to solve problems
  - Downward spiral
7 Steps to PST

1. Problem Definition
2. Identification of Goal
3. Brainstorming Solutions
4. Weighing Pros and Cons of Solutions
5. Select a Solution
6. Implement Action Plan to Carry Out Solution
7. Verification of the Outcomes
Problem Solving Therapy

• Typically 4 – 8 sessions scheduled weekly to biweekly
• Initial session is 45 – 60 minutes, follow-up sessions 30 minutes maximum
• Introductory, middle, and termination sessions
Problem Solving Therapy

- **Introductory Sessions**
  - Discuss the structure of PST, weekly meetings
  - Review the relationship between depression and problems
  - Explain why PST is helpful and its evidence base
  - Introduce PHQ-9
  - Introduce 7 steps of PST
  - Generate initial Problem List
  - Solve a Problem
  - May also include Pleasant Activity/Behavioral Activation (IMPACT)
PHQ-9

• Patient Health Questionnaire-9
• Self-reported depression measure
• Completed every week prior to PST and reviewed to track progress
Problem List

- “What kind of problems are you having now that led you to seek out help?”
- Just a quick listing, not detailed at this point
- Use Problem List worksheet to help generate problems
- Good to have a variety of problems to work on
Problem Solving Worksheet

PROBLEM-SOLVING WORKSHEET

Name: ___________________________ Date: _______________ Visit #: _______________

Review of progress during previous week:
Rate how satisfied you feel with your effort (0 – 10) (0 = Not at all; 10 = Super): ___ Mood (0-10): ___

1. Problem:

2. Goal:

3. Options/Solutions:
   4. Pros versus Cons (Effort, Time, Money, Emotional Impact, Involving Others)
      
      a) Pros (+) What makes this a good choice? a) Cons
          
      b) Pros (+) What makes this a good choice? b) Cons
          
      c) Pros (+) What makes this a good choice? c) Cons
          
      d) Pros (+) What makes this a good choice? d) Cons

v. 9/1/2010
## Problem Solving Worksheet

5. Choice of solution:

6. Action Plan (Steps to achieve solution):
   - Write down the tasks you completed.

   a) 
   b) 
   c) 
   d) 

   Pleasant Daily Activities.
   - Date   Activity
   - Rate how Satisfied it made you feel (0 – 10)
     (0 = Not at all; 10 = Super)

Next appointment: ____________________________
Follow-Up Sessions

• 30 minutes in length
• Always begin with an agenda:
  • Review PHQ-9 scores and compare to previous week
  • Review action plan from previous week
  • Solve a new problem
  • Anything else patient wants to address
• Address any crises first prior to any other work
Termination

- Similar to follow-up sessions
- Helpful to review PHQ-9 at the beginning of therapy and at last session to review improvement
- Review problems that patient was having at the start of therapy and strategies that patient used to overcome them
- Discuss risk of relapse and strategies to reduce relapse
  - Encourage ongoing use of PST for new problems that occur
  - Maintenance medication if appropriate
Evidence for PST in Older Adults

• Systematic review and meta-analysis of PST for treatment of MDD in older adults¹
• Nine RCTs comparing PST to control condition (wait-list, psychoeducation, supportive therapy)
• Total N=569 participants.
• Majority of studies 6 – 12 weeks in duration, delivered 1-to-1 with therapists

1. Kirkham et al, AJGP, 2015
<table>
<thead>
<tr>
<th>Study (Author, year)</th>
<th>Number</th>
<th>Patient Characteristics</th>
<th>Therapy Characteristics</th>
<th>Outcome Measures</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean age (SD)</td>
<td>Depression diagnosis</td>
<td>Cognitive impairment</td>
<td>Setting and delivery</td>
</tr>
<tr>
<td>Alexopoulos, 2011</td>
<td>PST=110</td>
<td>73.0 (7.8)</td>
<td>SCID-R/DSM-IV; HRSD&gt;20</td>
<td>Yes (executive): (MMSE&gt;24; DRS-IP &lt;34, Stroop&lt;26)</td>
</tr>
<tr>
<td>Control (ST)=111</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexopoulos, 2003</td>
<td>PST=12</td>
<td>74.12 (7.27)</td>
<td>HRSD&gt;18; DSM IV TR</td>
<td>Yes (executive): (MMSE&gt;24; DRS-IP &lt;34, Stroop&lt;26)</td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Arean, 2010</td>
<td>PST=110</td>
<td>72.8 (7.6)</td>
<td>SCID-R/DSM-IV; HRSD&gt;20</td>
<td>Yes (executive): (MMSE&gt;24; DRS-IP &lt;34, Stroop&lt;26)</td>
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<tr>
<td>Control (ST)=111</td>
<td>73.2 (7.9)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Arean, 1993</td>
<td>PST=28</td>
<td>67</td>
<td>BDI &gt;19, GDS&gt;9, HRSD&gt;17, RDC</td>
<td>Dementia excluded</td>
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<tr>
<td>Control=20</td>
<td>65.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Choi, 2014</td>
<td>PST=42</td>
<td>65.21 (9.22)</td>
<td>HRSD &gt;15,</td>
<td>Dementia excluded</td>
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<tr>
<td>Control=36</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Gellis, 2014</td>
<td>PST=57</td>
<td>80.1 (7.8)</td>
<td>PHQ-2 &gt; 3</td>
<td>Dementia excluded</td>
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<tr>
<td>Control=58</td>
<td>78.3 (6.9)</td>
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<td></td>
<td></td>
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<tr>
<td>Gellis, 2007</td>
<td>PST=20</td>
<td>79.73</td>
<td>CES-D&gt;22</td>
<td>Dementia excluded</td>
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<tr>
<td>Control=20</td>
<td>80.12</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hussian, 1981</td>
<td>PST=6</td>
<td>73.61</td>
<td>BDI, top scorers, mean score 35.6</td>
<td>Not indicated</td>
</tr>
<tr>
<td>Control=6</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Kiosses 2010</td>
<td>PST=15</td>
<td>80.46 (8.45)</td>
<td>SCID; HDRS&gt;17</td>
<td>Yes MMSE &gt;18; DRS-IP &lt;31, Stroop&lt;19</td>
</tr>
<tr>
<td>Control (ST)=15</td>
<td></td>
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</table>
PST for MDD in Older Adults: Change in HAMD

Mean Difference: -6.94 (-10.9 to – 2.97, $P = 0.0006$)
Effect size: Cohen’s $d = 1.15$, 95% CI 1.76 to 0.55
PST for MDD in Older Adults: Change in Disability

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>PST</th>
<th>Control</th>
<th>Mean Diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Total</td>
</tr>
<tr>
<td>Alexopoulos 2011</td>
<td>-4.8</td>
<td>4.53</td>
<td>110</td>
</tr>
<tr>
<td>Choi 2014</td>
<td>-6.8</td>
<td>7.94</td>
<td>43</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>153</td>
<td>147</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Heterogeneity: $\tau^2 = 0.00$; $\chi^2 = 0.01$, df = 1 (P = 0.94); $I^2 = 0$
Test for overall effect: $Z = 5.97$ (P < 0.000001)
## Quality of Studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Random sequence</th>
<th>Allocation concealment</th>
<th>Blinding of participants</th>
<th>Blinding of outcome</th>
<th>Incomplete outcome data</th>
<th>Selective reporting</th>
<th>Other bias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexopoulos 2003</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Alexopoulos 2011</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Arean 1993</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Arean 2010</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Gellis 2007</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Gellis 2014</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Kiosses 2010</td>
<td>+</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
Subgroup and Sensitivity Analysis

- PST equally effective in study populations with and without cognitive impairment
- PST effective when compared to supportive therapy or with wait-list controls
- Sensitivity analyses demonstrate that overall results are robust to effects of individual studies
Meta-Analysis of Problem Solving Therapy for the Treatment of Major Depressive Disorder in Older Adults

John D. Kirshin MD,1, Namhee Choi PhD,1, Dallas P. Schiz MD PhD2,3

Providence Care

Background

- Major depressive disorder affects older adults and is associated with poor outcomes.
- There are evidences suggesting that Problem Solving Therapy (PST) is effective for the treatment of depression in older adults.
- However, the efficacy of PST in this population is not well understood.

Methods

- A comprehensive search of electronic databases was conducted to identify relevant studies.
- Inclusion criteria: randomized controlled trials comparing PST to a control condition (waitlist or usual care) for treatment of severe depression in older adults.
- A total of 17 studies were included in the analysis.

Results

- Study Selection
  - A total of 4,732 participants were included in the final analysis.
  - Participants were randomized to either PST or control condition.

- Quality Assessment
  - Overall, the quality of included studies was good and was assessed using the Cochrane Collaboration’s tool.
  - There was no evidence of publication bias.

- Efficacy of PST on Depression Symptoms
  - A meta-analysis showed a significant reduction in depressive symptoms in the PST group compared to the control group.
  - The effect size was moderate (ES = -0.75, 95% CI -0.91 to -0.60).

- Efficacy of PST on Disability
  - Two studies reported the effect of PST on disability, showing a significant improvement in disability scores in the PST group compared to the control group.
  - The effect size was -0.64 (95% CI -0.94 to -0.34).

Conclusions

- Our findings suggest that PST is an effective treatment for older adults with major depression.
- PST can be provided in various settings and is a feasible intervention in community-based settings.
- Further research is needed to explore the long-term efficacy of PST.

References

PST Certification and Training

- In-person workshop or online study:
  - Review free online training modules provided through IMPACT centre
  - Review “Problem Solving Therapy” book
  - PST sessions videorecorded by UCSF and available online
- 8 weekly 1 hour role plays with PST supervisor
  - Initial session, several middle sessions, termination session
  - Each session highlights 1 component of PST (e.g. problem definition)
- Review of PST Cases with supervisor
  - Minimum of 3 sessions recorded with 1 – 2 clients
  - Rated for adherence by PST supervisor
- Train the trainer
  - Provide a workshop, co-lead role plays, and co-supervise PST trainees with supervisor
PST Implementation

- Dr. Dallas Seitz
  - Certification in PST through UCSF
- Training of outreach case manager RN in geriatric psychiatry in Seniors Mental Health Program at Providence Care:
  - Hastings Prince Edward: Spring 2014 (8 case managers)
    - Co-facilitated by Dr. Rebecca Crabb, UCSF
  - Lennox & Addington: Winter 2014 (3 psychiatrists, 4 case managers)
    - Led by Dr. Dallas Seitz
PST Certification and Adherence

• HPE: 6 case managers completed PST certification, 2 in process
• L & A: 1 case manager in progress
## PST Adherence: Introductory Session

<table>
<thead>
<tr>
<th>Domain (N=8)</th>
<th>Average Score (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time Management</td>
<td>4.2 (0.9)</td>
</tr>
<tr>
<td>Psychoeducation</td>
<td>4.0 (0.6)</td>
</tr>
<tr>
<td>Problem List</td>
<td>3.9 (0.7)</td>
</tr>
<tr>
<td>Problem Solving (Overall)</td>
<td>3.9 (0.4)</td>
</tr>
<tr>
<td><strong>Problem Definition</strong></td>
<td><strong>3 (0.6)</strong></td>
</tr>
<tr>
<td>Goal</td>
<td>3.4 (0.5)</td>
</tr>
<tr>
<td>Generating Solutions</td>
<td>3.9 (0.4)</td>
</tr>
<tr>
<td>Decision Making</td>
<td>4 (0)</td>
</tr>
<tr>
<td>Action Plan</td>
<td>4 (0.8)</td>
</tr>
<tr>
<td>Processes</td>
<td>3.7 (0.8)</td>
</tr>
<tr>
<td>Communication</td>
<td>4.2 (0.4)</td>
</tr>
<tr>
<td>Adherence/Competence</td>
<td>4 (0.6)</td>
</tr>
<tr>
<td>Global Rating</td>
<td>3.9 (0.4)</td>
</tr>
</tbody>
</table>

0 = very poor, 5 = very good
# PST Implementation

<table>
<thead>
<tr>
<th>Participants (N=17)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (SD)</td>
<td>79.4 (7.3)</td>
</tr>
<tr>
<td>Female Gender N (%)</td>
<td>11 (64.7)</td>
</tr>
<tr>
<td>Living Situation</td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>6 (35%)</td>
</tr>
<tr>
<td>With family</td>
<td>11 (64.7)</td>
</tr>
<tr>
<td>Receiving Antidepressant, N (%)</td>
<td>15 (88.2%)</td>
</tr>
<tr>
<td>Mean MoCA Score, Mean (SD)</td>
<td>20.8 (5.4)</td>
</tr>
<tr>
<td>Number of Sessions</td>
<td>5.3 (3.1)</td>
</tr>
</tbody>
</table>
## Change in Depression Scores

<table>
<thead>
<tr>
<th></th>
<th>Baseline PHQ-9</th>
<th>Endpoint PHQ-9</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall (N=11)</strong></td>
<td>14.9 (8.3)</td>
<td>10.2 (7.7)</td>
<td>-4.7</td>
</tr>
<tr>
<td><strong>High vs Low Baseline Depression</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHQ-9 &lt; 20 (N=7)</td>
<td>13.3 (4.11)</td>
<td>11.4 (8.3)</td>
<td>-1.9</td>
</tr>
<tr>
<td>PHQ-9 &gt; 20 (N=4)</td>
<td>21.3 (1.25)</td>
<td>13.8 (8.1)</td>
<td>-7.5</td>
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<tr>
<td><strong>MoCA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MoCA &gt; 20</td>
<td>14.3 (6.2)</td>
<td>8.33 (9.3)</td>
<td>-6</td>
</tr>
<tr>
<td>MoCA &lt; 20</td>
<td>16.3 (3.8)</td>
<td>12.25 (5.0)</td>
<td>-4.1</td>
</tr>
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</table>
### Client Satisfaction Questionnaire

<table>
<thead>
<tr>
<th>Item (N=4)</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall quality of service</td>
<td>3.5 (0.6)</td>
</tr>
<tr>
<td>Service that you wanted</td>
<td>3 (0)</td>
</tr>
<tr>
<td>Program met my needs</td>
<td>2.8 (1.0)</td>
</tr>
<tr>
<td>Recommend program to others</td>
<td>3.8 (0.5)</td>
</tr>
<tr>
<td>Satisfaction with amount of help</td>
<td>3.8 (0.5)</td>
</tr>
<tr>
<td>Helped me deal with problems</td>
<td>3.5 (0.6)</td>
</tr>
<tr>
<td>General satisfaction</td>
<td>4 (0)</td>
</tr>
<tr>
<td>Return to program in future</td>
<td>4 (0)</td>
</tr>
</tbody>
</table>
Preliminary Experience with PST

• Acceptable to patients – “Makes sense”
• Easy to link problems brought up in consultation to PST model
• PST methods can be used for specific problems even if not part of PST therapy
• Can demonstrate PST within about 15 minutes to see if they think it would be helpful
Future Directions

• Ongoing evaluation of program and implementation in remaining outreach teams
• Collaboration with Western University
  • Training of 8 case managers, 6 completed certification
• Preliminary work with other programs
  • Stroke prevention clinics
• Funding application for future research studies
  • RCT: post-stroke depression or depression in nursing homes
Conclusions

• Problem solving therapy is a time-limited, evidence-based treatment shown to be effective in a range of mental disorders
• PST has a strong evidence base for treatment of depression in older adults and can be delivered by a variety of practitioners in different clinical settings
• PST could have a number of potential applications in our current mental health system
Resources

• National Network of PST Clinicians, Trainers & Researchers
  • [http://pstnetwork.ucsf.edu/](http://pstnetwork.ucsf.edu/)

• IMPACT Depression Online Training Modules
  • [http://depts.washington.edu/impacttr/IMPACT.html](http://depts.washington.edu/impacttr/IMPACT.html)
Resources

Problem-Solving Therapy
A TREATMENT MANUAL

Solving Life’s Problems
A 5-Step Guide to Enhanced Well-Being
Acknowledgments

- Geriatric Psychiatry Outreach Program
  - Diane Muldoon RN
  - Debbie Penney RN
  - Jennifer Stratford RN
  - Andrea Rhyno RN
  - Nancy Halladay-Rombough RN
  - Erin Baldwin RN
  - David Potts RN
  - Bonnie Booth-Pyne RN
  - Shauna Sweeney RN
  - Tricia Dominik RN
  - Angela Callahan RN
  - Marg Catlin RN
  - Susan Ilkov-Moor MD
  - Maria Hussain MD
  - Julia Kirkham MD

- UCSF PST Training Centre
  - Dr. Rebecca Crabb PhD
  - Dr. Patricia Arean PhD

- Research Funding
  - Department of Psychiatry
  - CTAQ Grant “Volunteer Friendly Visits for Home-Bound Depressed Older Adults”

- Trainees and Students
  - Calvin Chan Meds 2016
  - Julia Kirkham MD FRCPC
Questions

• Contact Information:
  • email: seitzd@providencecare.ca