Promoting **REsilience after STroke** in the survivor/caregiver Dyad (RESTored)

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Background

• Stroke is the leading cause of long-term adult disability
• Depressive symptoms post-stroke occur in 30-50% of survivors and caregivers
  • Emotional well-being is interdependent in couples
  • Interventions aimed at couples after stroke are insufficient

• Sustaining well-being in both partners is important for engagement in rehabilitation and community re-integration
• **Resilience** is crucial in maintaining well-being
Enhancing Resilience through Positive Psychology Interventions

- Promote psychological strengths and resources to increase well-being
- Promote positive emotions - the “building blocks” of resilience
- Typically aimed at individual

Figure 1. Broaden-and-build theory

Positive emotions

Building enduring personal resources (e.g. social support, resilience, skills)

Enhanced well-being, health

Novel thoughts, activities, relationships

broadening

Produces more experiences of positive emotions, creating upward spiral
Intervention

- 8 weeks, self-administered
- Complete activities individually
- Activities selected based on improving depressive symptoms

### PPI Activities

<table>
<thead>
<tr>
<th>Expressing gratitude</th>
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<tbody>
<tr>
<td>Practicing acts of kindness</td>
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<tr>
<td>Fostering relationships</td>
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<tr>
<td>Focusing on the positive</td>
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<tr>
<td>Savoring</td>
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<tr>
<td>Working toward a goal</td>
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<tr>
<td>Spirituality</td>
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</table>

#### 1. GRATITUDE

**GRATITUDE** is a felt sense of wonder, thankfulness, and appreciation for life. There are many things, both large and small, in your life that you might be grateful for. These might be:

- particular supportive relationships (e.g., your spouse, a close friend, or even your pet)
- sacrifices or contributions that others have made for you (e.g., your teacher, neighbour, or doctor)
- things about your life such as your advantages (e.g., being creative, smart)
- opportunities (e.g., having an education, different interests)
- circumstances (e.g., living near the mountains, enjoying the landscape or city on your way to work)

**RESEARCH** shows that people who are consistently grateful are happier, more hopeful about their lives and even report better physical well-being. Appreciation of good things in life bolsters self-worth and helps when dealing with stressful life events. Being thankful motivates helping others, thereby building and strengthening social bonds. It prevents people from taking good things in life for granted, and prevents negative feelings, such as envy, bitterness, anger or greed.

**EXERCISE**

Choose any of these to do on your own (can change week to week):

- Keep a list, scrap of paper or post-its on your refrigerator, or bathroom mirror with all the experiences, accomplishments and persons that you are thankful for in your life. Every week add at least one more thing that you can be thankful for to this list. Think about why you are grateful and how your life has been enriched.

- Choose a time of the day (when getting up, over lunchtime, before bedtime) to record things that you are currently grateful for in your life. Keep a paper or electronic journal and add 3-5 things that happened during the week that you are thankful for. These can be very mundane things, such as the warm breeze while being outside or having a nice chat with a friend, or magnificent things such as passing an important test or getting a very nice compliment from a significant person.

- Express your gratitude directly – by phone, e-mail, letter or face-to-face - to another person who had been especially kind and caring to you but whom you never properly thanked!

**To do together:**

- Share your list or journal of blessings and things you are grateful for with a “gratitude partner”, you may discuss the contents and let that person know to prompt and encourage you if you lose motivation or simply forget to do the exercise.

**Add your own idea(s):**
## Participant Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Survivor (n = 11)</th>
<th>Caregiver (n = 11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, n (%)</td>
<td>6 (55)</td>
<td>5 (45)</td>
</tr>
<tr>
<td>Age, mean years (SD)</td>
<td>55.8 (18.0)</td>
<td>55.9 (16.6)</td>
</tr>
<tr>
<td>Relationship length, mean years (range)</td>
<td>28.5 (3-65)</td>
<td></td>
</tr>
<tr>
<td>Depression (PHQ-9), mean (SD)</td>
<td>7.3 (5.3)</td>
<td>4.0 (3.7)</td>
</tr>
<tr>
<td><strong>Stroke Characteristics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time since stroke, mean years (range)</td>
<td>2.9 (0.6-5)</td>
<td></td>
</tr>
<tr>
<td>Stroke type:</td>
<td></td>
<td></td>
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<tr>
<td>Ischemic, n (%)</td>
<td>8 (73)</td>
<td></td>
</tr>
<tr>
<td>Location:</td>
<td></td>
<td></td>
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<tr>
<td>Left hemisphere, n (%)</td>
<td>4 (36)</td>
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</tr>
</tbody>
</table>

**Survivor Characteristics**

- Minimal: 30%
- Mild: 50%
- Moderate: 10%
- Severe: 20%

**Caregiver Characteristics**

- Minimal: 50%
- Mild: 40%
- Moderate: 10%
- Severe: 10%
10 couples completed the program (92% retention).
Participants engaged in activities for at least 6 out of 8 weeks.

<table>
<thead>
<tr>
<th>Feedback Survey</th>
<th>Stroke Survivor</th>
<th>Partner Caregiver</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall benefit of the intervention (0-4)</td>
<td>3.1 (.6)</td>
<td>2.9 (.6)</td>
<td>3.0 (.6)</td>
</tr>
<tr>
<td>Negative effects related to the intervention (0-4)</td>
<td>0.8 (1.0)</td>
<td>0.7 (.8)</td>
<td>0.7 (.9)</td>
</tr>
<tr>
<td>Positive effects related to the intervention (0-4)</td>
<td>3.3 (.5)</td>
<td>3.0 (.6)</td>
<td>3.2 (.6)</td>
</tr>
<tr>
<td>Satisfaction with the intervention (0-4)</td>
<td>3.3 (.7)</td>
<td>3.0 (.7)</td>
<td>3.2 (.7)</td>
</tr>
</tbody>
</table>
Preliminary Pilot Results

• Post-PPI, **depressive symptoms significantly decreased** \((p<.02)\)
  • 70% of participants report less depression

• Depressive symptoms **continued to improve at follow-up** \((p<.02)\)
  • 70% of survivors and 85% of caregivers either continued to improve or maintained mood at 3-month follow-up

• Other findings:
  • Improvement in **overall QOL** \((p=.004)\)
  • Survivors report less interference of stroke with **meaningful activities** engagement \((p=.01)\)
"... I was surprised that I’m very grateful to be alive... showing gratitude for others, for my wife, for my child, for my family... you can get stuck in this hole where everything is about you, and I was, am sick of that hole. So, doing the activities, it helped me tremendously. “ (Survivor)

“I think just how easy it was to use everything in my daily life. [...] I just saw a hummingbird out my window, and that just brightened my day. Just little things like that. And the savoring, I loved the savoring part. Because our world is so busy, and it’s go go go all the time, finding those little moments of yay! It’s just, it makes you slow down. And then you see it everywhere.” (Caregiver)

“We didn’t just say, ok we’re at 15 minutes we’re done... we’d stay up a little bit later to spend that extra time together. It wasn’t, ok we did our homework, back to busy life. We savored those times that we did activities together. And I know that he valued that time.” (Caregiver)
Conclusions...

• The PPI is feasible for implementation with couples coping with stroke sequelae.

• Preliminary results suggest PPI may be effective for improving mood, engagement in meaningful activities, and quality of life in couples post-stroke.

• Limitations

• This represents a promising first step in a novel dyadic approach to promote resilience in this population.
Thank you:

Our participant couples

Collaborators: Cindy Berg, Beth Cardell, Justin MacKenzie, Jennifer Majersik, Maija Reblin, Lorie Richards

U of U Clinics: Life Skills Clinic Neurology Stroke Clinic Rehabilitation & Wellness Clinic Stroke Rehabilitation Clinic

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