POST-STROKE DEPRESSION: NON-PHARMACOLOGICAL TREATMENTS

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OBJECTIVES

- To have a better understanding of post-stroke depression etiology, diagnosis and treatment options
- To identify best tools for screening and diagnosing depression
- To have a better understanding of non-pharmacological treatments for post-stroke depression
- To identify main steps in problem-solving therapy
DISCLOSURE

• I have no actual or potential conflict of interest in relation to this presentation.
POSTSTROKE DEPRESSION RATES

- 15%
- 33%
- 67%
- 85%
PREVALENCE AND IMPACT

• The most recent meta-analysis of 61 cohorts including 25,488 patients (15) reported that 31% of patients developed depression at any time point up to 5 years following stroke. ¹
  - Stroke survivors with depression have less recovery from functional impairments.
  - 3.4 times more likely to die during the first 10 years following stroke.

COMMON RISK FACTORS FOR PSD¹

• Genetic
• Medical and Psychiatric History
• Stroke Characteristics and Lesion Location
• Functional and Cognitive Impairment
• Social Support
CHALLENGES IN RECOGNIZING PSD²

• Cognitive changes
• Hard to share feelings
• Natural reaction to stroke
• Stroke symptoms overlapped depression symptoms
• Aphasia

Gilchrist (2016) turning Best Practice into the Practical: poststroke Depression
PATIENT ACCOUNT

• “I remember being angry and sad at times. I don’t think I realized that my life was going to be so changed. I got frustrated easily and would get mad and cry about things that I used to do so easily. Everything seemed to take me so long, like putting on my seatbelt, unlocking a door, getting dressed, putting make up on and spreading butter on toast, all of which looked awkward.”

• “Right after the stroke, people would say that I would soon be back to doing what I was doing before stroke. I think I also believed that I would wakeup and life would be how it used to be. People would say that they couldn’t even tell that I had a stroke. I tried to explain to them that conversationally I speak well, minus a few mispronounced words, but my brain inside is affected.”

POSTSTROKE DEPRESSION STIGMA

• A major barrier to seeking treatment.\(^4\)

• Study: 248 adults with depression (Age: 60-93)
  • High scores on depression scale (PHQ-9)
  • 56% never sought treatment
  • 60% of those who sought treatment, their last visit was over a year ago (Connor et al, 2010)

POST-STROKE DEPRESSION PATHOPHYSIOLOGY

2 main Theories:

• Psychological reaction

• Brain lesion and subsequent changes in neurotransmitters

BRAIN LESION

• Left frontal and basal ganglia
• Size of the lesion
  • Conflicting results
VASCULAR DEPRESSION HYPOTHESIS

- White matter hyperintensities and silent cerebral infarctions were associated with a higher rate and greater severity of late-life-onset depression
NEUROTRANSMITTER HYPOTHESIS

• Monoamine disruption
• Lesions decrease the bioavailability of serotonin, dopamine and norepinephrine
• Glutamate
Proinflammatory cytokines including IL-1 and TNF- were elevated in the hippocampus and striatum which might be the critical areas of mood disorder and increase infarction size and oedema formation.
NEUROGENESIS HYPOTHESIS

- decreased neurogenesis and hippocampal volume in patients or animal models with depression
- low Brain-derived neurotrophic factor (BDNF) level is also associated with PSD
- Antidepressants could enhance the neurogenesis of hippocampus.
POSTSTROKE DEPRESSION
HOW TO RECOGNIZE

• Sense of hopelessness that disrupts one’s ability to function
• Sleep disturbances
• Radical change in eating patterns leading to weight loss/gain or malnutrition
• Lethargy
• Social withdrawal
• Irritability
• Fatigue
• Self-loathing or poor self esteem
• Suicidal thoughts
• a major depression-like episode must have depressed mood or loss of interest or pleasure along with four other symptoms of depression lasting 2 or more weeks.
DIAGNOSTIC AND SCREENING TOOLS

- DSM-V
- CES-D (Center for Epidemiologic Scale Depression)
- Beck Depression Inventory
- GDS (Geriatric Depression Scale)
- HDRS (Hamilton Depression Rating Scale)
- PHQ-9 (Patient Health Questionnaire)
DSM-V

• **5 (or more) of the following symptoms** have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.
  
  • Note: Do not include symptoms that are clearly attributable to another medical condition.
1. Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful). (Note: In children and adolescents, can be irritable mood.)
2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation.)
3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. (Note: In children, consider failure to make expected weight gain.)
6. Insomnia or hypersomnia nearly every day.

5. Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down).

6. Fatigue or loss of energy nearly every day.

7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).

8. Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others).

9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide.
BEST PRACTICE GUIDELINE TOOLS RECOMMENDED

• Recommend first line tools
  • HADS
  • GDS
  • PHQ-9

• Additional tools to consider
  • CES-D
  • BDI-II
TREATMENTS

- Pharmacological
- Non-Pharmacological
Geriatric Depression Scale Short Form

Choose the best answer for how you have felt over the past week:

1. Are you basically satisfied with your life? YES / NO
2. Have you dropped many of your activities and interests? YES / NO
3. Do you feel that your life is empty? YES / NO
4. Do you often feel bored? YES / NO
5. Are you in good spirits most of the time? YES / NO
6. Are you afraid that something bad is going to happen to you? YES / NO
7. Do you feel happy most of the time? YES / NO
8. Do you often feel helpless? YES / NO
9. Do you prefer to stay at home rather than going out and doing new things? YES / NO
10. Do you feel you have more problems with money than most people? YES / NO
11. Do you think it is wonderful to be alive? YES / NO
12. Do you feel pretty worthless the way you are now? YES / NO
13. Do you feel there is nothing you can do about what is happening to you? YES / NO

Answers in bold indicate depression. Score 1 point for each bolded answer.

A score > 5 points is suggestive of depression.
A score > 10 points is almost conclusive of depression.
A score > 5 points should warrant a follow-up comprehensive assessment.

See [https://www.mentalhelp.net/consumer/gds5.html](https://www.mentalhelp.net/consumer/gds5.html)
This scale is in the public domain.

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Hospital Anxiety and Depression Scale (HADS)

Task the box beside the reply that is closest to how you have been feeling in the past week. Don’t think too long over these replies: you don’t need to be immediate.

<table>
<thead>
<tr>
<th>D</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not at all “awards up”</td>
</tr>
<tr>
<td>2</td>
<td>Most of the time</td>
</tr>
<tr>
<td>3</td>
<td>A lot of the time</td>
</tr>
<tr>
<td>4</td>
<td>Occasionally</td>
</tr>
<tr>
<td>5</td>
<td>Not at all</td>
</tr>
</tbody>
</table>

I still enjoy things I used to enjoy:

1. Not at all
2. Very little
3. Usually
4. Quite often
5. Most of the time
6. Nearly all of the time
7. All of the time

I get a sort of frightened feeling like something awful is about to happen:

1. Not at all
2. Very little
3. Usually
4. Quite often
5. Most of the time
6. Nearly all of the time
7. All of the time

I can laugh and see the funny side of things:

1. All of the time
2. Nearly all of the time
3. Most of the time
4. Occasionally
5. Not at all

I find it difficult to concentrate:

1. Not at all
2. Very little
3. Usually
4. Quite often
5. Most of the time
6. Nearly all of the time
7. All of the time

Scoring:

Total score: Depression (D) _______ Anxiety (A) _______

0 - 7 = Normal
8 - 10 = Borderline abnormal (borderline case)
11 - 21 = Abnormal (case)

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PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME: ________________ DATE: ____________

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Not at all | Several days | More than half the days | Nearly every day
---|---|---|---
1. Little interest or pleasure in doing things 0 1 2 3
2. Feeling down, depressed, or hopeless 0 1 2 3
3. Trouble falling or staying asleep, or sleeping too much 0 1 2 3
4. Feeling tired or having little energy 0 1 2 3
5. Poor appetite or overeating 0 1 2 3
6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down 0 1 2 3
7. Trouble concentrating on things, such as reading the newspaper or watching television 0 1 2 3
8. Moving or speaking so slowly that other people could have noticed; or the opposite—being so fidgety or restless that you have been moving around a lot more than usual 0 1 2 3
9. Thoughts that you would be better off dead, or of hurting yourself 0 1 2 3

(Hospital professional’s: For interpretation of TOTAL, please refer to accompanying scoring card.)

TOTAL: 

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**try this:**
### GERIATRIC DEPRESSION SCALE (GDS)

Choose the best answer for how you have felt over the past week:

1. Are you basically satisfied with your life? **YES** / **NO**
2. Have you dropped many of your activities and interests? **YES** / **NO**
3. Do you feel that your life is empty? **YES** / **NO**
4. Do you often get bored? **YES** / **NO**
5. Are you in good spirits most of the time? **YES** / **NO**
6. Are you afraid that something bad is going to happen to you? **YES** / **NO**
7. Do you feel happy most of the time? **YES** / **NO**
8. Do you often feel helpless? **YES** / **NO**
9. Do you prefer to stay at home, rather than going out and doing new things? **YES** / **NO**
10. Do you feel you have more problems with memory than most? **YES** / **NO**
11. Do you think it is wonderful to be alive now? **YES** / **NO**
12. Do you feel pretty worthless the way you are now? **YES** / **NO**
13. Do you feel full of energy? **YES** / **NO**
14. Do you feel that your situation is hopeless? **YES** / **NO**
15. Do you think that most people are better off than you are? **YES** / **NO**

### HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS)

#### I feel tense or 'wound up':
- Most of the time
- A lot of the time
- From time to time, occasionally
- Not at all

#### I still enjoy the things I used to enjoy:
- Definitely as much
- Not quite so much
- Only a little
- Hardly at all

#### I get a sort of frightened feeling as if something awful is about to happen:
- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn't worry me
- Not at all

#### I can laugh and see the funny side of things:
- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all

#### I feel cheerful:
- Not at all
- Not often
- Sometimes
- Most of the time

#### I feel as if I am slowed down:
- Nearly all the time
- Very often
- Sometimes
- Not at all

#### I get a sort of frightened feeling like 'butterflies' in the stomach:
- Not at all
- Occasionally
- Quite often
- Very often

#### I have lost interest in my appearance:
- Definitely
- I don't take as much care as I should
- I may not take as much care
- I take just as much care as ever

#### I feel restless as I have to be on the move:
- Very much indeed
- Quite a lot
- Not very much
- Not at all

#### I look forward with enjoyment to things:
- As much as I ever did
- Rather less than I used to
- Definitely less than I used to
- Hardly at all

#### I get sudden feelings of panic:
- Very often indeed
- Quite often
- Not very often
- Not at all

#### I can sit at ease and feel relaxed:
- Definitely
- Usually
- Not often
- Not at all

#### I can enjoy a good book or radio or TV program:
- Often
- Sometimes
- Not often
- Very seldom

### PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? (use ‘*’ to indicate your answer)

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep, or sleeping too much
4. Feeling tired or having little energy
5. Poor appetite or overeating
6. Feeling bad about yourself... or that you are a failure or have let yourself or your family down
7. Trouble concentrating on things, such as reading the newspaper or watching television
8. Moving or speaking so slowly that other people could have noticed. Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual
9. Thoughts that you would be better off dead, or of hurting yourself
Antidepressants
  ◦ Side effects esp. cardiovascular
  ◦ Other medical conditions
  ◦ Takes time to build blood level
  ◦ Drug-drug interaction
NON-PHARMACOLOGICAL TREATMENTS

• Cognitive and behavioral interventions
• Music Therapy
• Exercise
• rTMS
• Other (yoga, Tai chi, light therapy, Meridian acupressure)
We believe that cognitive therapy might have more lasting effects because it equips patients with the tools they need to learn how to manage their problems and emotions," *

• Pharmaceuticals, while effective, offer no long term cure for the symptoms of depression. For many people, cognitive therapy might prove to be the preferred form of treatment.\text{“}* 

*ROBERT DERUBEIS, PROFESSOR AND CHAIR OF PENN’S DEPARTMENT OF PSYCHOLOGY
WHAT IS PROBLEM SOLVING THERAPY?

• Evidence-based
• Cope with difficulties in life and take the initiative to solve everyday problems.
• Cognitive behavioral theories
WHAT IS PROBLEM-SOLVING THERAPY?
NEGATIVE PROBLEM SOLVING APPROACH

• The problem is seen as:
  ▪ Significant threat to one's daily life.
  ▪ Lack confidence in their ability to solve problems.
  ▪ Frustrated, upset, and avoid to tackle the issue.
  ▪ Inability to regulate the negative emotion reactions can greatly affect the ability to solve problems positively.
POSITIVE PROBLEM SOLVING APPROACH

The problem

- Challenge,
- Not a threat.
- Solvable.
- Continuous effort and perseverance.
- Determination and action.
Problem Solving

1. Define Your Problem

Before you define a problem, it might feel vague or confusing. Writing out your problem will help to organize information, see it from new angles, and identify the most important issues.

When and where does your problem occur?
Problem Solving

1) Define Your Problem
Before you define a problem, it might feel vague or confusing. Writing out your problem will help to organize information, see it from new angles, and identify the most important issues.

When and where does your problem occur?

What are the causes of your problem?
Think about all the possible causes. Consider your own behavior, as well as external factors.

Define your problem.
Be as clear and comprehensive as possible. If there are many parts to your problem, describe each of them.

2) Develop Multiple Solutions
Write down at least three solutions to your problem. Without thinking about alternative solutions, we often get stuck on what worked in the past, or the first idea that comes to mind. There are usually many solutions to a problem, and our first ideas aren’t always the best.
1. DEFINE YOUR PROBLEM

Before you define a problem, it might feel vague or confusing. Writing out your problem will help to organize information, see it from new angles, and identify the most important issues.

• **When and where does your problem occur?**

• **What are the causes of your problem?**
  • Think about all the possible causes. Consider your own behavior, as well as external factors

• **Define your problem.**
  • Be as clear and comprehensive as possible. If there are many parts to your problem, describe each of them.

**TIP:** If you find it difficult to separate your emotions from the problem, try to complete this step from the perspective of an impartial friend.
2. DEVELOP MULTIPLE SOLUTIONS

Write down at least three solutions to your problem. Without thinking about alternative solutions, we often get stuck on what worked in the past, or the first idea that comes to mind. There are usually many solutions to a problem, and our first ideas aren’t always the best.
3. ASSESS YOUR SOLUTIONS AND CHOOSE ONE

• Begin by throwing out any solutions that are obviously ineffective or impractical. Next, look at your remaining solutions, and determine which ones are the most likely to be successful by examining them in-depth. This can be done by examining the strengths and weaknesses of each solution.

• During this stage, you might come up with new solutions, or find that a combination of multiple solutions is better than any one idea.
**TIP:** If you’re having a hard time thinking of strengths and weaknesses for each solution, ask yourself these questions:

- Is this a short-term or long-term solution?
- How will this solution affect other people?
- How likely am I to follow through with this solution?

<table>
<thead>
<tr>
<th>Solution</th>
<th>Strengths</th>
<th>Weaknesses</th>
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4. IMPLEMENT YOUR SOLUTION

To ensure you follow through with your solution, it’s best to think of how and when it will be implemented. Without doing so, solutions that are difficult might be avoided, or they can slip your mind when the time comes.

• When will you implement your solution?
  • Some solutions can happen at a specific time (e.g. “2:00 PM on Saturday”), while others require something unpredictable to happen (e.g. “when I get angry”). Fill in the relevant section below:
<table>
<thead>
<tr>
<th>My solution can be scheduled...</th>
<th>My solution is in response to something...</th>
</tr>
</thead>
<tbody>
<tr>
<td>When will you implement your solution? Be specific.</td>
<td>How will you know when to use your solution?</td>
</tr>
<tr>
<td>How will you remember to follow through with your solution?</td>
<td>List specific warning signs, triggers, or other specific events that will tip you off.</td>
</tr>
</tbody>
</table>

**TIP:** If your solution requires a lot of time or effort, try to break the process into small steps. It’s easier to follow through with several small steps, rather than one giant task.
5. REVIEW

Finally, after implementing your solution, you will review what worked and what didn’t. Even if your problem was a one-time situation, there are often broader lessons to be learned. Take a moment to reflect on your problem and how you handled it.

In what ways was your solution effective?

In what ways was your solution not effective?

If you could go back in time, what would you change about how you handled the problem?

What advice would you give to someone else who was dealing with the same problem?
CASE STUDY 1-PARKINSON DISEASE

PATIENT

• 83-year-old Caucasian woman with Parkinson Disease (P.D.)
  • Major depressive disorder (MDD) based on DSM V
  • Onset 5 years ago with gradual worsening over this interval.
  • Denied Suicidal ideation
  • No prior history of treatment for depression.
  • Non-ambulatory and has resided in a long-term skilled nursing home for several years.
  • Claims mild memory difficulties; other cognitive difficulties were denied.
• Hypertension

• CT scan: generalized prominence of the ventricles and sulci consistent with generalized atrophy. Additionally, areas of low attenuation were reported in periventricular and subcortical areas without evidence of cortical infarction, hemorrhage or mass lesion.

• Medications: docusate (250 mg), prilosec (20 mg), hydralazine (50 mg), Depakote 500 mg, carbidopa–levodopa (25 mg/100 mg), gabapentin (300 mg), furosemide (40 mg).
COGNITIVE ASSESSMENT

• Mild impairments on measures of executive function and memory.
DEPRESSION SEVERITY

- The Hamilton Depression Rating Scale
- The Montgomery Asberg Depression Rating Scale (MADRS)
INTERVENTION

• 12 one-hour sessions with a licensed therapist following a structured PST protocol.

• No antidepressant was noted during or follow up.
FIRST SESSION

• 1st session: relationship between depression and PST skills.
• List: as “I feel lonely,” “I’m bored,” “I’m too dependent on others”.
  ▪ Identified most important problem
  ▪ Generate solutions
  ▪ Decide on the best solution
SUBSEQUENT SESSIONS

• As therapy progressed P.D. became more familiar with the steps of PST and reported that she felt progressively “more in control” of her health.

• By session #7, she reported that she was able to apply her problem solving approach independently in many situations, such as finding a safe and effective method of transferring herself from her wheelchair to the toilet in order to void independently, as well as identifying the need for, and steps to obtain, an amplified phone.

• She utilized these successes to develop increased activity planning, such as participating more consistently in daily activities offered at her residential facility including yoga and art classes, and reconnecting with friends by phone.
CONCLUSION OF THERAPY

• P.D. completed 12 sessions of PST and at the conclusion of her treatment she no longer met criteria for major depressive disorder based on DSM-IV criteria (assessed by a licensed therapist with a structured clinical interview).

• Assessments of depression severity at 1-month and 6-months post treatment indicated treatment gains were maintained.

• P.D. attributed improvements in mood status to learning that even “big problems can be broken down into more workable pieces”.

CASE STUDY 2

- K.D. was a 60-year-old married female who lived with her husband of many years.
- She suffered from a number of chronic medical conditions, including fibromyalgia, migraines, and gastrointestinal complaints.
- At the time of intake, K.D. was taking an antidepressant medication. She met diagnostic criteria for dysthymia and major depression, recurrent based on the structured clinical interview for *DSM-IV*.
- She had all nine *DSM-IV* depressive symptoms and all seven dysthymia symptoms at her initial interview.
CASE STUDY 2 (CONT.)

• At her initial assessment, K.D. reported feeling depressed all her life; she had one previous suicide attempt by taking an overdose of pills. In a psychiatric evaluation 2 years earlier, she had defined her problem this way:

  • “I cannot handle perceived rejection. It makes me feel worthless, sad, then angry, then depressed. I believe it stems from childhood.”

• She noted this was progressively worsening in later life. She had a long history of psychotherapy and treatment with antidepressants, none of which she had found helpful.
• Prior to the first session of PST-PC, the therapist educated K.D. about the cognitive-behavioral approach to treatment and the here and now focus of the intervention.

• K.D. came to the initial PST-PC session with a list of problems. These were vaguely defined and complex. For instance, the initial problems on the list were procrastination, rejection, not getting out enough, being overweight, and watching too much TV.

• The therapist explained the seven problem-solving steps to the patient by first walking her through the problem-solving worksheet, and then taking one of K.D.’s problems and helping her to use the seven steps to solve it. K.D.’s initial choice was to work on procrastination, and the therapist helped K.D. break down the problem into definable and concrete terms.
CASE STUDY 2 (CONT.)

• She decided to begin with papers in the dining room and office for the past year.

• The therapist then worked with K.D. to identify her goal and the obstacles to meeting her goal, which was thinking it all had to be done at once rather than working on it in parts.

• In generating solutions, she encountered difficulties, saying, “If I knew what to do, I would have done it already.”

• This reaction to the brainstorming is not uncommon in chronically depressed patients, who typically feel helpless.

• When encouraged to think how other people would approach the problem, however, K.D. was able to begin generating a list of solutions.
CASE STUDY 2 (CONT.)

• Building on her success with problem definition and solution generation, K.D. had little trouble weighing the pros and cons of each solution. She encountered difficulty with identifying steps to implement the chosen solution. When the therapist asked her what steps she would take to implement her plan, K.D. initially said “to just do it”.

• In order to develop a more specific plan, the therapist helped her specify times, days, and ways to implement her plan. K.D. indicated it was particularly helpful to think of the plan as small steps to the goal.

• By detailing the specifics of what she would need to do in order to implement her solution, K.D. felt more confident in her ability to solve her paperwork problem.
CASE STUDY 2 (CONT.)
PREVIOUS TREATMENTS/MEDICATIONS

• During the prior 2 years, K.D. had been seen in psychiatric clinic for medication management with a variety of antidepressant medications, and she attended individual and group therapy. The groups were classes to teach cognitive skills to handle depression and anxiety. She found the information interesting but was unable to apply it to her life problems. She reported no sustained relief in depressive symptoms from therapy or medications.

• In addition to chronic depression, K.D. had limited skills to alter current life problems, thus contributing to her depression. Given the chronic course of her depression, the patient, provider, and therapist decided to initiate a course of fluoxetine since a previous trial on it was brief and at a lower dose.

• During the four weeks of medication only, K.D. met with the therapist, who provided supportive counseling. She had a partial response to the medication after 4 weeks but was still feeling depressed and hopeless. After a discussion about further treatment options, K.D. agreed to begin a course of PST-PC.
• At the next session (#3), K.D. reported she had successfully implemented her plan, and wanted to begin focusing on more complex tasks for example, her weight and house cleaning. PM had retained the skills she learned in.

• The first session and, during the next two sessions, required only modest prompting and assistance from the therapist. With each problem in these initial sessions, K.D. was able to implement her solutions.

• However, rather than focusing on her successes with PST-PC, K.D. would focus on past failed attempts at improvement and her expectation that at some point she eventually would sabotage her recovery from depression.

• Rather than explore the past failures or attempt to directly challenge her negative and hopeless thinking, the therapist would redirect K.D. to focus on her current accomplishments.

• By the fourth session, K.D. was able to implement the problem-solving process with greater ease and discuss decision making more effectively and with less assistance.
• K.D. also was able to see how solving smaller problems had a positive effect on solving larger problems. For instance, consolidating her household chores with her TV time resulted in having more spare time with her husband, which in turn resulted in an improved relationship with him.

• K.D. also began to focus on her accomplishments, rather than worrying about what tasks she had not accomplished. She selected a motto for herself that she felt helped eliminate procrastination: “Do it now!”

• K.D. indicated that having a written plan from the sessions and repeated successes with the model motivated her to tackle her more complex problems, in contrast to the start of treatment, when she felt no hope for change.
CASE STUDY 2 (CONT.)

• By the fifth session, K.D.’s Patient Health Questionnaire score (PHQ-9, a nine-item depression inventory) had decreased from the severely depressed to the mildly depressed range. She also reported her sleep was improving, her interest in activities was increasing, and her sense of hopelessness was dissipating.

• Because of K.D.’s success in therapy, she and the therapist began to tackle emotionally complicated problems, namely K.D.’s reaction to perceived rejection and her misattribution of the behavior of others.

• Prior to initiating PST-PC, PM had discussed these problems vaguely and felt little control over situations, which caused her to become emotional.
CASE STUDY 2(CONT.)

• At this point in therapy, K.D. could now discuss her rejection concerns in the here and now, rather than focusing on past rejections. She also was more adept at breaking down and defining her problems with rejection. K.D. broke this problem into two domains: her behavioral/emotional reactions to being rejected, and her tendency to interpret other people’s behavior as rejecting.

• K.D. decided to approach her reaction to feeling rejected first. In the course of defining this problem, K.D. revealed that when she felt someone was rejecting her, she would engage in self-injurious behavior (e.g., hitting her- self). This was a long-standing problem that had not responded to treatment in the past. In attempting to solve this problem, K.D. specified her goal was to stop harming herself when she felt rejected.
• K.D. again experienced difficulty generating solutions, initially indicating she should forgive the person for rejecting her. However, as she began to brainstorm solutions, she was able to move from potentially unfeasible solutions to using more concrete strategies, such as behavioral distraction (i.e., engaging in a competing activity, such as cleaning the house or exercising).

• Encouraged by her previous successes, K.D. was able to implement these solutions and reported she was no longer hitting herself.
CASE STUDY 2 (CONT.)

• In sessions 6 and 7, K.D. was able to begin addressing her interpretation of others’ actions as rejection. In discussing the antecedents of her self-injurious behavior, she was able to recognize that her pattern of hurting herself never led to resolution of the problem but only increased her negative feelings about herself and others. She recognized that ignoring her feelings of rejection would be only marginally successful, in that while she was no longer hitting herself, she still felt quite hurt by perceived rejections. This led to angry interactions with her husband for not recognizing her pain even when she had not told him what upset her. Her expectation was that her husband of many years should know what she wants and what bothers her, and thus felt that if she was upset with him, he must have hurt her intentionally. Her goal was to change how she interpreted and reacted to these situations.
CASE STUDY 2 (CONT.)

• She discussed a number of solutions, such as not commenting or telling herself “it isn’t important” as well as considering the other person’s feelings and resolving the problem with the person.
CASE STUDY 2 (CONT.)

• In the end, K.D. chose to actively resolve problem situations through assertive communication and by getting more information about the other person’s point of view. This change in her interpersonal behavior resulted in an improved relationship with her husband and less negative feelings about herself. At subsequent sessions she stated, “I think now before I speak to my husband and consider if this will make things better or worse.”

• This is an excellent use of decision-making guidelines (stage 4) in the immediate moment.
• In spite of this progress, K.D. experienced an increase in depression symptoms after six sessions. Her explanation for the exacerbation of symptoms was that she had visitors from abroad and was the only person at home who spoke their language. She found this stressful, but believed she was coping better than she would have before PST-PC. She problem solved to take two days off during the visit and allow others to entertain the guests.
By the last session of acute phase PST-PC (session 8), K.D. was having fewer arguments with her husband and getting more positive attention from him. She continued to work on her rejection sensitivity issues as they affected her in the here and now.

She stated that when she watched a program about child abuse or other painful childhood experiences, she would revert to experiencing her own pain and wanted her husband to comfort her. Her first thought was to turn off the program, but as she analyzed this she realized she needed a way to turn off her reaction as well. Her solution was to start a journal to write down the good things in her current life, including the fact that she is a lovable person and could have love and attention from her husband as a woman rather than as a hurting child.
• By the end of the year of treatment, K.D. demonstrated that her new skills were well established and she was no longer putting off problems.

• Her statements included, “I know it works” and “Finding solutions became a part of me.” When she had an exacerbation of fibromyalgia, she stated, “I know it will get better.” She also found that the structure of the PST-PC sessions helped her stay on task.
• So there would be resolution of problems, stating, You made me work it.
• K.D. also reported an improved relationship with her husband following her treatment. Through problem solving, K.D. learned that to get the support she wanted from her husband, she needed to tell him her expectations.
• Her husband corroborated that she no longer expected him automatically to know her needs, was less angry, and dealt with frustration better than before treatment. He said she handles everything that comes her way without flying off the handle.
CASE STUDY 2(CONT.)
MAINTENANCE PST-PC SESSIONS

• Over the next 40 weeks, KD received monthly maintenance sessions.
• During this time, K.D. continued to use her problem-solving skills independently. She had eight monthly follow-up sessions to maintain and build on her new skills and continued to follow up on problems that had been discussed earlier, such as her rejection sensitivity and interpersonal skills. She also occasionally presented a problem-solving worksheet to discuss how she independently solved a new problem.
• During this maintenance period, her PHQ-9 scores remained low, indicating only mild depressive symptoms. Her only residual depressive symptoms were overeating and fatigue. K.D.’s husband verified her improvement.
<table>
<thead>
<tr>
<th>Difficulty</th>
<th>Potential solution(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem(s) are complex and the patient feels they don’t know where to start</td>
<td>The patient can break the problem(s) into a number of smaller problems that they might find easier to conceptualize</td>
</tr>
<tr>
<td>Difficulty is not a problem to be solved but a unhelpful thinking pattern</td>
<td>Use different cognitive interventions such as CBT (cognitive restructuring)</td>
</tr>
<tr>
<td>Goal(s) unclear</td>
<td>Avoid moving directly from problem identification to solutions, ‘missing’ goal setting through enthusiasm to get the problem solved</td>
</tr>
<tr>
<td>The patient is unable to suggest any solutions (brainstorming)</td>
<td>Use probe questions to help the patient consider potential solutions</td>
</tr>
<tr>
<td>The patient’s solution is unrealistic and unlikely to succeed</td>
<td>Use questions to help the patient recognize this difficulty</td>
</tr>
<tr>
<td>The patient plan is vague</td>
<td>Encourage the patient to develop as much detail about the plan as possible</td>
</tr>
</tbody>
</table>
WHAT IS FUNCTIONAL MAGNETIC RESONANCE IMAGING (FMRI)

• Technology
• Safety
BIOLOGICAL MARKERS

Impact of problem solving therapy on brain circuitry in post-stroke patients.
REFERENCES

- Gilchrist (2016) turning Best Practice into the Practical: poststroke Depression
THANK YOU FOR PAYING ATTENTION!