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Application of Problem Solving Therapy for Late-Life Anxiety

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Cognitive behavioral therapy for anxiety has demonstrated lower efficacy in older compared with younger adults. Yet, few other evidence-based options for late-life anxiety have been examined. This case series aimed to demonstrate the application of Problem Solving Therapy (PST) to older adults with anxiety disorders building on PST's strong empirical support for treating late-life depression. PST was implemented to treat three older primary-care patients diagnosed with anxiety disorders. We present treatment outcomes and discuss the feasibility and acceptability of using PST to treat these patients. Implications and lessons learned from these patients are discussed to inform further development of PST to better meet the needs of older patients suffering from late-life anxiety.

Many older adults suffer from anxiety disorders. It is estimated that these disorders afflict 3.2% to 14.2% of older adults (Bryant, Jackson, & Ames, 2008). If left untreated, anxiety can lead to serious negative outcomes in older adults, including health care overutilization, increased risk of depression, poorer quality of life, greater medical morbidity, and greater risk of cognitive impairment (Cairney, Corna, Veldhuizen, Herrmann, and Streiner, 2008; Calleo et al., 2009; Katon, Lin, & Kroenke, 2007; Petkus et al., 2016; Wetherell et al., 2004). This public health need, considering current and future upsurges in the number of older adults (65+) in the U.S. and worldwide, underscores the necessity for available empirically supported treatments for late-life anxiety (Colby & Ortman, 2014).

The evidence base with older adults has mainly concentrated on cognitive behavioral therapy (CBT) for treating anxiety. Generally, CBT is not as efficacious for anxiety as it is for depression in older adults (Karlin et al., 2015). Further, the efficacy of the "C" in CBT for late-life anxiety has been questioned with mean controlled effect sizes of .90 for relaxation training alone versus .33 for CBT that incorporates relaxation skills training or .00 for CBT without relaxation training (Thorp et al., 2009). While meta-analytic reviews generally demonstrate a significant, moderate effect of .44 to .66 for CBT for late-life anxiety relative to treatment-as-usual or waitlist, these effect sizes drop to .06 to .20 when compared with an active control, such as supportive therapy, medication management, discussion groups, quiet time for self-reflection, and psychoeducation (Gould, Coulson, & Howard, 2012; Hall, Kellett, Berrios, Bains, & Scott, 2016; Kishita & Laidlaw, 2017; Thorp et al., 2009). Taken together, the state of empirically supported treatments for anxiety in older adults warrants the examination of new CBT options or protocols, particularly those with more of a behavioral emphasis and less of a cognitive focus, such as Problem-Solving Therapy (PST).

PST, which falls under the broader category of CBT, is an evidence-based approach that teaches patients skills to increase their ability to solve everyday problems more effectively and thus experience less psychological distress and mental health symptoms (Nezu, Nezu, & D'Zurilla, 2007). Across the lifespan, PST has particularly compelling support for treating depression (e.g., Alexopoulos et al., 2011; Areán et al., 2008; 2010; Ciechanowski et al., 2004; Nezu et al., 2007) with one meta-analysis finding a very large effect size for PST in treating late-life depression relative to active and placebo controls (Kirkham, Choi, & Seitz, 2016). Remarkably, PST for depression has comparable if not greater efficacy in older adults than younger adults—with higher effect sizes in older (1.15) versus mixed-age populations (.40 and .83 reported previously; Kirkham et al., 2016). PST's efficacy in depression also extends to older populations suffering from disability, cognitive dysfunction, or both issues (Kirkham et al., 2016).

In addition to depression, emergent literature suggests PST's potential in treating anxiety or in reducing the likelihood of developing an anxiety disorder. In a small clinical trial of PST for adults with generalized anxiety disorder (GAD), participants exhibited statistically significant clinical improvements in their frequency of worry (Cohen's d = 1.49), and the severity of their anxiety

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(Cohen's $d = 0.55$) symptoms from baseline to posttreatment with 62.5% (5/8) remitted at posttreatment and 100% remitted by 6-month follow-up (Provencher, Dugas, & Ladouceur, 2004). In addition, PST reduced the risk of developing anxiety and depressive disorders in community-dwelling visually impaired older adults with 46% of those in a control condition developing an anxiety or depressive disorder compared with 29% in stepped care that included PST (Van der Aa et al., 2015). PST also led to a fourfold reduction in the odds of developing GAD among primarily older post-stroke patients relative to a placebo medication, with 5.7% of those in PST developing GAD versus 18.4% in the placebo condition (Mikami et al., 2014). Despite this emerging support for PST for treating anxiety in adults, and preventing anxiety in older adults, studies examining PST for treating late-life anxiety in primary care patients have not been conducted, especially for GAD, one of the most prevalent late-life anxiety disorders (Beekman et al., 1998; Gum, King-Kallimanis, & Kohn, 2009). This research to date supports late-life GAD as more difficult to treat than adult anxiety, and likely more difficult to treat than older adults at-risk but not currently symptomatic for GAD. Further, while PST has potential for efficaciously treating late-life GAD, it is also unknown if this challenging treatment population can tolerate a treatment that requires them to articulate the concrete aspects of their worries contextualized into real-life problems. Given the discrepant effect sizes of CBT for anxiety versus depression in older adults, evidence that CBT protocols without cognitive therapy might be more efficacious with late-life anxiety, and the fact that behavioral skills training but not cognitive therapy remain an essential component of PST, the feasibility and preliminary efficacy of PST as applied to late-life GAD is warranted. In this article, we describe the PST model and its application in three older adults with anxiety disorders (GAD or Anxiety Disorder NOS). We then describe how these cases can inform the future development of PST to meet the needs of older adults suffering from late-life anxiety.

Problem-Solving Therapy

The PST model focuses on improving a patient's ability to cope with stressful life problems—from ongoing everyday problems to major life events (D'Zurilla & Nezu, 2006). It draws empirical support from studies demonstrating that ineffective problem-solving creates higher levels of stress over time by exacerbating the extent to which daily problems lead to negative emotion states such as anxiety (Ciarrochi & Scott, 2006). Problem-solving behaviors have been shown to mediate and moderate the relationship between stressors and anxiety (Kant et al., 1997; Nezu, 1986). Consequently, more effective problem-solving behaviors are hypothesized as a mechanism leading to positive mental health outcomes in this treatment modality (Ciarrochi & Scott, 2006; Nezu, Wilkins, & Nezu, 2004). While traditional CBT protocols sometimes include a session on problem solving, the goals and process of PST focus expressly on problem-solving skills throughout treatment. As with other CBT protocols used with older adults, PST-PC includes greater use of external aids and slower pacing than in PST protocols for younger adults to accommodate any age-related changes in attention and processing speed. Other than the inclusion of behavioral activation, only for those patients reporting clinically significant depressive symptoms, skills training is centered on the problem-solving process.

The cases described herein include three older patients with anxiety disorders who participated in PST in a Veterans Health Administration primary care setting. Because we expected substantial multimorbidity in our targeted patients due to the risk factors of late-life anxiety (Gould, O'Hara, Goldstein, & Beaudreau, 2016) and Veteran status (Agha, Lofgren, VanRuiswyk, & Layde, 2000), treatment followed a PST for Primary Care or PST-PC manualized protocol (Hegel & Areán, 2003) selected for its support for use with other older patient populations with multimorbidity (Harpole et al., 2005). In the largest conducted late-life depression clinical trial, PST-PC was developed for delivery by healthcare professionals and paraprofessionals in primary care who may or may not have dedicated mental health training, and thus includes more scripting of didactic material than other PST protocols (Unützer et al., 2002). Like other PST protocols for late-life depression, PST-PC primarily focuses on teaching the steps to problem-solving with worksheets to facilitate learning. PST protocols standardly teach the problem-solving process in either seven or five steps. The chunking of the process into five steps has been preferred in protocols where the steps are slowly introduced across the first five sessions. In contrast, in PST-PC, all steps are taught in the first session and reviewed thereafter, thus allowing for retention of the problem-solving process in seven steps as used in other late-life depression protocols (e.g., Alexopoulos, Raue, & Areán, 2003).

Briefly, the first session consisted of psychoeducation about mental health symptoms, an introduction to and rationale for PST, generating a list of problems the patient currently experienced and the steps to effective problem solving. In all sessions, the therapist reviewed and practiced the problem-solving steps with a problem identified by the patient. Problem-solving steps include defining the problem (1) and goal (2), generating alternative solutions (3), a cost-benefit analysis of the solutions (4) before selecting a solution(s) (5) and concrete plan to implement the solution (6). At the beginning of the second session and each subsequent session, the patient evaluated their satisfaction with the

solution they implemented since the last session (7) (Hegel, Dietrich, Seville, & Jordan, 2004). If the patient deemed the outcome unsatisfactory, they could return to a previous problem-solving step, for instance to redefine the problem to further clarify what it is (further simplifying), revise the goal to something more achievable, generate more solutions, or pick a different solution on the original list. In some instances, patients will encounter problems for which there is no solution, i.e., the patient cannot solve the problem by directly acting on it. Thus, learning which parts of a problem require acceptance and management of negative feelings about the problem, i.e., emotion-focused coping, and which parts are amenable to change, i.e., problem-focused coping, is important. When a solution is solved to satisfaction, patients are asked to reward themselves and acknowledge their accomplishment of having successfully solved the problem, thus reinforcing their use of this adaptive approach. The last session included relapse prevention through review of how to apply the problem-solving skills to anticipated upcoming problems or ongoing issues.

Method

Patient Enrollment

VHA primary care clinic providers referred the patients to the intervention study for suspected GAD. The Mini International Neuropsychiatric Interview 5.0.0 (M.I.N.I.; Sheehan et al., 1998) corroborated a DSM-IV and ICD-10 diagnosis of GAD for each patient prior to treatment during an in-person interview. Eligible patients were at least 60 years old; proficient in English to participate effectively in treatment sessions; met criteria on the M.I.N.I. for GAD, or subthreshold GAD (Anxiety Disorder NOS) based on fewer than the required number of symptoms but reporting of functional impairment due to worry or concerns. We excluded patients who meet criteria for current psychotic symptoms, current Alcohol or Substance Dependence, Bipolar Disorder (I or II) on the M.I.N.I.; who had a history of dementia in their electronic medical records; or scored < 24 on the Mini Mental State Exam (Folstein, Folstein, & McHugh, 1975). Patients on a current, stable dose of their psychotropic medications were eligible. All three patients were in their 80s with at least a high school education. To mask patient identity, demographic information beyond sex is omitted, and some details of the cases have been altered.

Assessment and Treatment Protocol

Stanford University School of Medicine Institutional Review Board approved this human subjects protocol. Patients received no monetary compensation, but participated in the assessments and treatment free of charge. The patients in this case report provided their written and oral informed consent before participating in 8 sessions of PST and completing a 1.5-hour psychiatric and cognitive assessment at baseline and posttreatment. As part of this consenting process, patients agreed to have information shared in a published case report with the understanding that the report would mask or omit identifiable information to ensure their confidentiality. The first PST session lasted 90 minutes, and subsequent sessions lasted 60 to 75 minutes on average. Patients completed measures of specific anxiety-related symptoms during Sessions 1, 3, 5, and 8 to track these symptoms over the course of treatment.

Treatment was delivered by a doctoral-level psychologist (SAB) with expertise in CBT with older patients, trained in the delivery of PST-PC to proficiency through familiarity and ease with the user-friendly manual, online training available including video review (http://impact-uw.org/) and additional consultation and supervision from a licensed clinical psychologist in a geriatrics clinic with expertise in behavioral treatments, including PST. To ensure maximum adherence to the protocol, the therapist implemented treatment based on the PST-PC manualized protocol, using the same session-by-session agenda with all patients, which centered on the application of the problem-solving steps for a new problem each week. Adherence and competence checks were conducted through weekly review of sessions with the licensed psychologist, including audio review for select sessions, in order to maintain the highest level of fidelity with the treatment protocol.

Measures

We collected information on demographics and psychotropic medication use for anxiety through patient self-report and medical record corroboration. After determining patient eligibility based diagnostic inclusion and exclusion criteria on the M.I.N.I. (Sheehan et al., 1998), the clinician administered the Structured Interview Guide for Hamilton Anxiety Rating Scale (HAM-A; Shear et al., 2001) to assess the patient's anxiety severity. The Structured Interview Guide for HAM-A provided descriptive anchors to help with frequency and severity ratings for anxiety symptoms and a structured guide that improves the reliability of the HAM-A. Each of the 14 items receives a score indicative of no symptoms, mild, moderate, or severe corresponding to 0 to 4. HAM-A total scores range from 0 to 56 with an average of 8.48 in healthy older adults from the community (Beck, Stanley, & Zebb, 1999). A benchmark of ≥ 40% reduction from baseline to posttreatment indicated clinically significant improvement on the HAM-A as used in previous anxiety clinical trials, including one with older adults (Rollman et al., 2017). The excessiveness and uncontrollability of worry

was assessed using the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990), a 16-item self-report. Norms indicate an average PSWQ total score of 28.9 in healthy older community samples (Beck, Stanley, & Zebb, 1995). We set the minimal clinically important difference on the PSWQ at an 8.5-point decrease from baseline to posttreatment, a benchmark of clinical significance used in other late-life anxiety clinical trials (e.g., Stanley et al., 2009). A Reliable Change Index further corroborated our findings of minimally clinically important differences on the HAM-A and PSWQ (Jacobson & Truax, 1991).

Patients also self-reported on other issues common in GAD, such as the presence of depressive symptoms on the 15-item Geriatric Depression Scale (GDS; Sheikh & Yesavage, 1986). Older community samples have endorsed an average of 2.83 symptoms on the 15-item GDS (Andrew & Dulin, 2007). Additionally, patients rated their functional disability from health conditions from mental or physical problems on the World Health Organization Disability Assessment Schedule–Version II (WHODAS-II; World Health Organization, 2004). Norms for community older adults average a total score of 5.7 (Andrews, Kemp, Sunderland, Von Korff, & Ustun, 2009). In addition, patients rated their sleep quality and issues commonly associated with sleep apneic events during the past month on a subset of 5 items from the Pittsburgh Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989).

To examine whether participants experienced a change in their rational problem-solving behaviors from baseline to posttreatment, patients completed a rational problem-solving scale consisting of a subset of items from the Social Problem-Solving Inventory–Long Form (SPSI-LF; D'Zurilla, Nezu, & Maydeu-Olivares, 2002). The rational problem-solving subscale further decomposes into the specific problem-solving steps: Problem Definition & Formulation (PDF), Generation of Alternative Solutions (GAF), Decision Making (DM), and Solution Implementation and Verification (SIV). These subscales (PDF, GAS, DM, and SIV) correspond, respectively, with PST steps of defining the problems and goals (steps 1 and 2), generating solutions and weighing options (steps 3 and 4), selecting a solution and specifying a plan of action (steps 5 and 6), and carrying out the plan and evaluating satisfaction with the outcome (step 7).

Lastly, the clinician assessed baseline cognitive control and memory performance to determine if these abilities related to any qualitative difficulties patients had with learning or implementing the material. Patients also completed a posttreatment cognitive assessment to confirm the absence of cognitive issues; this report omits those results because change in cognitive functioning was not an expected treatment outcome. The cognitive control abilities assessed included attention and working memory (Digit Span; Weschler Adult Intelligence Scale–3rd edition, WAIS-III; Wechsler, 1997), inhibitory ability (Stroop Test–Victoria Version, interference condition; Regard, 1981) and verbal fluency (Delis-Kaplan Executive Function System, DKEFS-Letter Fluency subtest; Delis, Kaplan, & Kramer, 2001). Learning and delayed verbal memory (Rey Auditory Verbal Learning Test, RAVLT; Rey, 1958) were also measured.

PST Protocol

The PST-PC protocol was originally developed for the treatment of late-life depression. Because PST is a transdiagnostic approach individualized to the patient's problems and needs, and this protocol was already adapted to older primary-care patients, only minor adaptations to the protocol were necessary prior to implementation: changing "depression" to "anxiety" or "anxiety and worry" and omitting discussion of activity scheduling in participants endorsing minimal depressive symptoms in addition to their anxiety. Other than psychoeducation, behavioral activation and problem-solving skills, no other CBT skills were introduced (i.e., no cognitive restructuring or exposure) because the main interest was to determine if problem-solving skills on their own yielded a therapeutic benefit for anxiety. In this protocol, the therapist introduced the treatment rationale, provided psychoeducation about mental health symptoms, and reviewed the problem-solving steps in the first session. Thereafter, the therapist reviewed the problem-solving steps weekly with the participant by working through each of the steps using the participant's problem as an example. Patients received a binder with a patient manual and problem-solving practice sheets. They completed weekly homework, implementing a solution to a problem they selected during the previous treatment session and rating their satisfaction with the solution outcome at the start of the next session. If they experienced any difficulties implementing the solution, this informed future attempts at solving the problem. If the patient did not attempt to implement their solution, barriers to completing the assignment were discussed to determine if the problem and goals needed to be redefined, resulting in completion of a new problem-solving worksheet. Or, if they lacked key information or resources needed to implement the solution, the patient enacted a plan of how they could get the information or resources needed, or they generated new alternative solutions.

The therapist followed a session agenda shared with patients on the dry-erase board at the beginning of each session, and reviewed the material extensively with patients in session to ensure that they understood the materials.

Case Example 1

Relevant History

Mr. P was a male Veteran referred to treatment due to "worrying" leading to functional impairment. He had several chronic medical conditions, including Type II Diabetes mellitus, hypertension, and atrial fibrillation. His medications included several for high blood pressure, but no psychotropic medications. He met criteria for subthreshold GAD (Anxiety NOS) due to functional impairment that resulted from his worry symptoms. He had no other current Axis I disorder. He reported experiencing symptoms of Social Phobia Disorder in the past at a level of severity and frequency indicative of a possible lifetime history of social phobia. He denied functional impairment or excessive distress due to social phobia during the baseline interview.

Baseline Assessment

Anxiety and Depression

Mr. P reported mild symptoms of anxiety (HAM-A = 17) and worry (PSWQ total = 30), minimal depressive symptoms (GDS-15 = 3).

Overall Health and Function

He rated his overall health in the past 30 days as "bad" and reported mild to moderate difficulties in several activities (e.g., walking a long distance, taking care of household responsibilities) due to health conditions. He reported that these difficulties made it so he was totally unable to carry out usual activities 3 days a month and that he had to reduce or cut back on activities an additional 3 days a month. He rated his sleep quality overall as "fairly good" but reported that "less than once a week" he had trouble sleeping because he could not breathe comfortably; and on the GAD module of the M.I.N.I. reported that most of the time he had nighttime wakening where he can't get back to sleep because "his mind gets away." He reported in the past month having trouble sleeping due to difficulty breathing "less than once a week," but no other sleep apneic symptoms.

Problem-Solving Skills

Regarding problem-solving skills, he reported relative strengths in the earlier stages of the problem-solving process, including defining problems and generating alternative solutions (above norm averages), but a relative weakness in implementing the later stages of decision-making and solution implementation and verification (at norm group average).

Cognition

He demonstrated average inhibitory ability and above average verbal fluency performance relative to norm averages. He had a relative weakness in attention and working memory, performing in the low average range. He exhibited average to high performance in learning (i.e., learning over trials, immediate and delayed memory).

Treatment Process

Session 1

An initial problems list was generated in the first session. The patient reported eight problems, many of which were due to physical health or issues relevant to aging. These problems were then ranked from most to least important: (1) weight and exercise, (2) eye problems, (3) circulation issues, (4) feeling self-conscious in social situations, (5) arthritis pain, (6) limited finances, (7) dissatisfaction with appearance due to being overweight, and (8) concerns about memory. The problem he chose to work on the first session was weight problems and the need to exercise. Following the seven steps of PST, he defined the problem as lack of exercise with resulting health issues. He stated his goal was to exercise more regularly, which he broke down into specific exercises. With guidance from the therapist, he identified nine solutions to this problem, rated the pros, cons, and feasibility of each solution. He chose to implement the solutions of walking or an alternate exercise each evening.

Sessions 2–7

At the start of the next session, he indicated that he felt he took steps toward addressing the problem by selecting a solution that fit his lifestyle. He reported that physical limitations and weather posed obstacles to implementing his daily exercise plan, but that he might address these issues by establishing a routine. Despite these physical limitations, he was motivated throughout treatment and made concerted efforts to practice the implementation of a solution to a problem he identified using the seven problem-solving steps.

A recurrent problem of focus in many sessions (2, 3, 4, 6, and 8) was difficulty taking risks in social situations and dissatisfaction with limited social interactions. Other sessions focused on improving sleep habits (Session 5) and addressing the issue of limited finances (Session 7). Across these sessions, as he worked on the problem of limited social interactions, he made slow and steady progress: first making himself aware of opportunities to be more social (e.g., in activity groups, hobbies, public events), then exploring those options in person, making decisions about selecting social interactions of an intellectual nature, and experimenting with putting himself in different social situations more often. He reported that implementing the steps helped him to get more "exposure" to social situations. Across sessions, he continued to implement his solution to exercise daily as a weight loss strategy.

Session 8

In the last session, Mr. P reported that learning problem-solving skills helped him to better identify workable problems and to make time to plan activities to meet his goals. While exercise was an important goal for him, he ranked increased social involvement as the most important change he achieved, followed by regular exercise, healthful dietary changes (including smaller portions, less fatty food), and financial stability.

Results

Anxiety and Depression

The posttreatment assessment revealed that Mr. P continued to meet criteria for subthreshold GAD. He experienced a 5-point reduction in his anxiety on the Hamilton Anxiety Scale and a 1-point increase in his worry severity score on the PSWQ (see Figures 1 and 2). His worry symptoms peaked in Sessions 2 and 3 but returned to baseline levels by posttreatment assessment. Despite a 1-point increase in his depressive symptoms on the GDS, his symptoms remained in the normal range (see Figure 3). Neither his HAM-A or PSWQ met the threshold of a minimal clinically important difference at posttreatment; however, given his low reported symptom severity at the start of treatment, and his increasingly reported approach rather than avoidance of problems, he appeared to derive meaningful benefits from treatment.

Overall Health and Function

There was a slight improvement in self-reported health from baseline to posttreatment, and no improvement in his physical functioning (see Figure 4), though the therapist noted a qualitative improvement in his daily functioning based on his increased ability to approach rather than avoid problems. He gave inconsistent reports regarding sleep quality throughout treatment, but consistent reporting of nighttime wakening (i.e., unable to get back to sleep most nights), suggestive of ongoing sleep problems that did not change during treatment.

Problem-Solving Skills

He rated similar rational problem-solving abilities from baseline to follow-up, which were above the norm abilities at baseline. He reported that he found the PST skills useful and planned to continue to use them going forward.

Case Example 2

Relevant History

Mr. Q, a male Veteran, was referred to treatment due to issues with worry and other generalized anxiety symptoms that he believed was causing insomnia. He reported chronic fatigue since open-heart triple bypass surgery nearly a decade prior. The patient was not taking any psychotropic medications, but was taking several medications daily, including a nebulizer treatment and numerous vitamins supplements. The patient met criteria for GAD and for a recurrent major depressive disorder (MDD).

Baseline Assessment

Anxiety and Depression

The patient reported mild to moderate symptoms of anxiety (HAM-A = 23) and worry (PSWQ total = 39) and, despite a current diagnosis of recurrent MDD, endorsed minimal depressive symptoms (GDS-15 = 3).

Overall Health and Function

He rated his overall health in the past 30 days as "moderate" (which corresponds with "fair") and reported mild to moderate difficulties in standing for long periods,

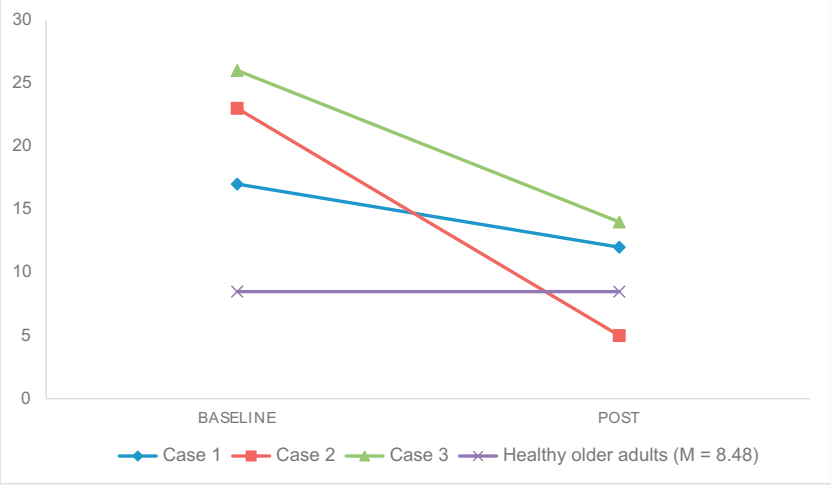

Figure 1. Baseline and posttreatment anxiety symptom severity (0-56; HAM-A total score).

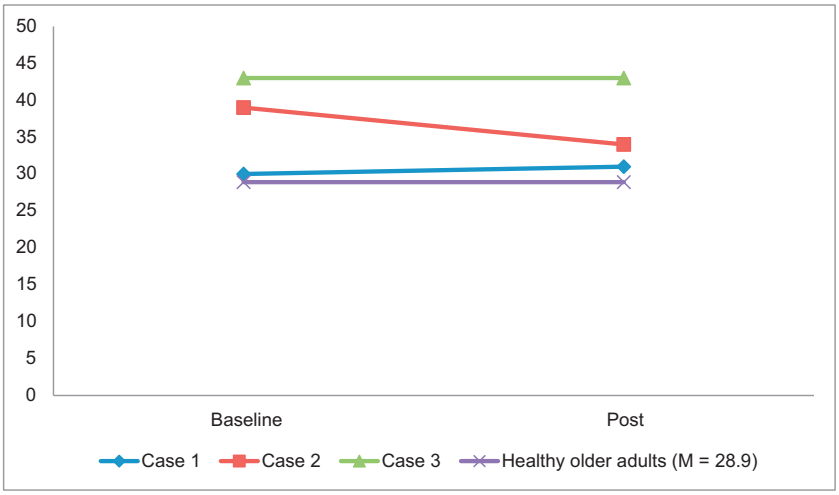

Figure 2. Baseline and posttreatment worry symptom severity (20-80; PSWQ total score).

learning a new task, being emotionally affected by health problems, concentrating for 10 minutes, getting dressed, and day-to-day work. Severe difficulties in walking a long distance and taking care of household responsibilities were reported. He indicated that these difficulties made him totally unable to carry out usual activities 3 days a month and that he had to cut back or reduce activities an additional 3 days a month. He rated his sleep as "fairly good," but reported some occasional nights of restless sleep, which he attributed to poor sleep habits. He denied experiencing any sleep apneic symptoms in the past month.

Problem-Solving Skills

At baseline, he reported average abilities in defining problems, decision making, and implementing and verifying solutions, but a relative strength in generating alternate solutions, which was above the norm average for his age group.

Cognition

He exhibited cognitive performance in the average range for attention and working memory, inhibitory ability, verbal fluency, and a relative strength in delayed verbal memory, in which he scored in the high average range.

Treatment Process

Session 1

An initial problems list was generated in the first session. The patient reported three problems and ranked them as follows (from most to least important): (1) stressful and

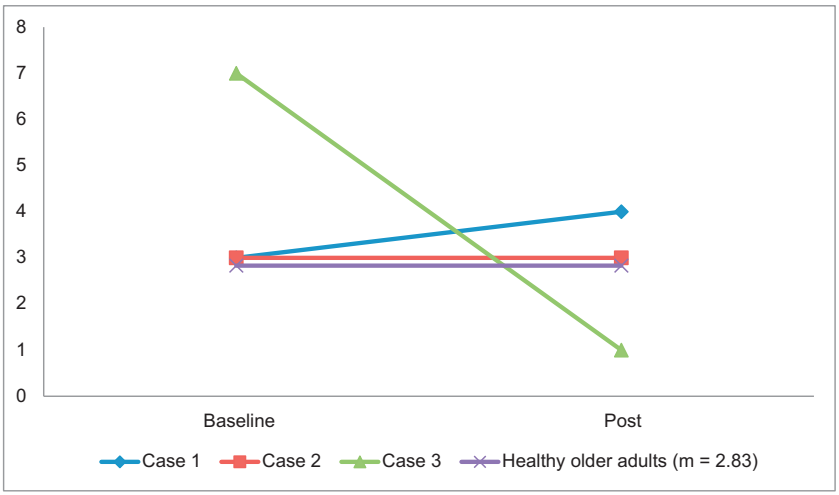

Figure 3. Baseline and posttreatment presence of depressive symptoms (0-15; GDS).

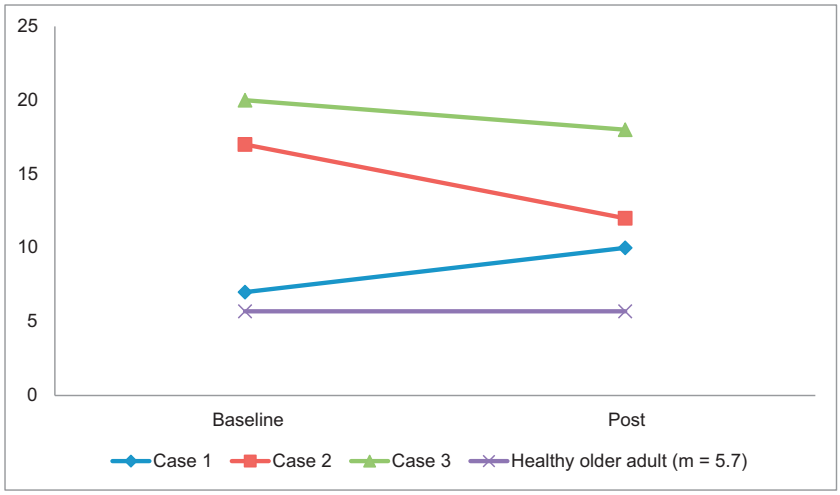

Figure 4. Baseline and posttreatment functional disability severity (0-48; WHODAS II total score). *Note.* Higher scores = more functional impairment. Scale recoded from original 5-point Likert-type scale of 1 to 5, to 0 to 4 to allow for comparison with WHODAS 2.0 norms for health older adults.

time-consuming responsibility of assisting a sick friend, (2) burden of managing two properties, and (3) financial problems. He chose to work on the first problem, which was rephrased to "no time to self" and with the goal of making time to read the paper more often. He generated 10 solutions to this problem, but added an 11th solution when rating the pros, cons, and feasibility of each solution. He selected the solution of "watching less TV" as the solution to implement.

Sessions 2–7

At the start of the next session he indicated that he found more time to read the paper, and felt better because his strategies also helped him accomplish a little more in general. During the first half of treatment the patient alternated between focusing on setting limits with his sick friend in Sessions 2 and 4 and focusing on his own personal goals such as more exercise in Session 3. He had some success with setting limits with his friend, but had more difficulty meeting his goal of increased exercise. He reported that he overexerted himself and thus substantial time was spent focusing on strategies for promoting moderation when engaging in exercise during Session 4. In Sessions 5 through 7, the problems discussed were more focused on the patient's own health rather than setting boundaries with his friend, including: wanting more time to relax (Session 5); needing to update his medication list (Session 6); and going to bed too late (Session 7). The patient had good success with solving these health-related problems using the problem-solving steps.

Session 8

In the last session, the patient indicated that the problem-solving steps became more automatic and helped him sort out things and change some habits, which he found beneficial. The patient described the problem-solving skills as "time-consuming" though planned to continue practicing the problem-solving skills for future problems.

Results

Anxiety and Depression

The posttreatment assessment revealed that Mr. Q made marked improvements in his anxiety, as shown in Figure 1. He no longer met criteria for GAD or MDD. He experienced an 18-point reduction in anxiety on the HAM-A, a 5-point reduction in worry on the PSWQ, and a 2-point reduction in depressive symptoms on the GDS-15 (see Figures 1, 2 and 3). His HAM-A, but not his PSWQ, met the threshold of clinically significant improvement. His worry symptoms spiked in Session 2 but decreased by Session 3 and generally continued at this level until the end of treatment.

Overall Health and Function

He reported fair health, which was unchanged since baseline. He experienced some worsening in standing for long minutes, yet improvement in completing household responsibilities and getting dressed. His physical functioning improved slightly (see Figure 4). Despite occasional sleep difficulties throughout treatment, he reported overall "very good" sleep with no sleep difficulties by the last session and post-assessment, due in large part to addressing his inconsistent sleep schedule during Session 7: thus, his improvement in sleep could be attributed to the treatment.

Problem-Solving Skills

Although he rated his rational problem-solving skills similarly at baseline and posttreatment, he described the

treatment as "an awakening process that makes you think it out a little better," suggesting that he had a better sense of how to approach life problems rather than simply feeling overwhelmed by them. He further stated that PST helped him change habits, and in doing so, experienced benefits in his ability to cope with everyday problems.

Case Example 3

Relevant History

Mrs. R, a female caregiver to a veteran, had recently completed CBT for anxiety. She had been taking a stable dose of an SSRI for several months prior to treatment to manage her caregiver stress. She made some gains in CBT, though at posttreatment, still reported symptoms consistent with a diagnosis of GAD and subthreshold depression. She also reported a moderate level of functional disability in physical functioning in the past month due to both emotional and physical health problems. She sought treatment because she continued to feel "overwhelmed" by her caregiving situation and her own declining health and associated physical pain. She reported her primary problem was stress related to caregiving for her seriously medically ill and cognitively impaired husband.

Baseline Assessment

Anxiety and Depression

Mrs. R reported moderately severe anxiety (HAM-A = 26), elevated worry (PSWQ total = 43), and elevated depressive symptoms (GDS-15 = 7).

Overall Health and Function

She rated her overall health in the past 30 days as "moderate" (fair) and endorsed severe disability in walking a long distance and mild disability in several others (e.g., taking care of household responsibilities) due to health conditions. She reported that these difficulties did not make it so she was totally unable to carry out usual activities but she had to reduce or cutback on activities 12 days a month. Additionally, she reported "fairly good" sleep quality in the past month, but with persistent sleep problems in the past week. She denied experiencing any sleep apneic symptoms in the past month.

Cognition

She demonstrated superior abilities in delayed memory, attention and working memory, and verbal fluency. She exhibited a relative weakness, however, in inhibitory ability in which she performed in the average range.

Problem-Solving Skills

Regarding baseline problem-solving skills, she reported abilities consistent with others in her age group but with relative weaknesses in defining problems and decision making.

Treatment Process

Session 1

The patient identified eight problems, many due to physical health or issues relevant to aging, and ranked them as follows (from most to least important): (1) household clutter, (2) disorganized paperwork, (3) difficulty making time to read (pastime), (4) going to bed too late, (5) trouble slowing down to attend to body pain or tension, (6) trouble keeping a regular bathroom schedule/incontinence, (7) tardiness to appointments due to caregiving responsibilities, (8) difficulty making time to write (a pastime). As her top-ranked problem, she chose to work on the issue of clutter. The nature of this problem was not consistent with an issue of clinical hoarding, but rather an organizational and time issue. She found this problem particularly overwhelming, indicating that "everywhere I look there's something that needs to be taken care of" in the house, so that she often did not know where to begin her decluttering efforts. She reported that no other person was part of the problem. Though organization was part of the issue ("Things are not where they belong"), the bigger issue was having "too much stuff" balanced by a reluctance to discard everything due to the effort it would take to do so. She decided to set the goal of creating one uncluttered room. She identified several challenges in the situation, namely, learning to let go of trying to do it all at once and her limited free time as a caregiver. When asked to break down the goal further, she identified three smaller zones within the room to narrow her decluttering efforts. She then restated the goal to eliminate clutter in a specific part of the room. She identified several options to meeting the goal; ultimately, after weighing the benefits and disadvantage of each, decided she needed to first assess the extent of the clutter in that part of the room later that evening and to "come up with a plan" on where to put things she wanted to save. She would then go through the clutter on a different day.

Sessions 2–7

Mrs. R attempted to implement her plan to tackle a specific area of clutter, but was not satisfied with the results initially citing time to herself as a major obstacle in Sessions 2 and 3. In making this realization that time was going to be a major obstacle, she came up with options that would take less of her time, including hiring a helper to assist with clean up. By Session 4, she made very good progress on this problem, having tackled half of a box, and rating her satisfaction a "7" on a scale from 0 (*not at all satisfied*) to 10 (*completely satisfied*). She continued to implement the problem-solving steps throughout treatment, which resulted

in a combination of hiring a helper and setting aside small, focused bursts of time for circumscribed clean-up tasks. Later sessions (4, 5, 6, and 7) with the therapist focused on new problems, namely, limited time to herself, going to bed too late, and trouble prioritizing activities.

Session 8

By the last session, Mrs. R indicated that her problems felt more manageable because she was getting more sleep by going to bed earlier and seeing progress in reducing household clutter. The solution she implemented to reduce clutter (i.e., hire an assistant) later served as a solution for making time for herself to write or read by having the assistant's help with other small household tasks. In working through the sleep issue, she discovered that difficulty with meal preparation delayed the bedtime routine, which reduced her sleep. She enacted a more regular meal schedule which then increased the nights that she was meeting her goal of 8 or more hours of sleep.

Results

Anxiety and Depression

The posttreatment assessment indicated that Mrs. R responded to treatment as her GAD and subthreshold depression remitted, but she still met criteria for Anxiety NOS (subthreshold GAD). Her anxiety score on the HAM-A dropped 12 points, from moderate to mild severity (see Figure 1); no decrease in worry was reported (0-point change; see Figure 2). As with Mr. Q, her HAM-A met the threshold of a meaningful clinical improvement, but her PSWQ did not. Her worry symptoms peaked midtreatment —and slowly fell to baseline levels by posttreatment. She endorsed 6 fewer depressive symptoms on the GDS-15 (see Figure 3).

Overall Health and Function

She reported minimal, if any, improvement in physical functioning on the WHO-DAS-II (see Figure 4), though overall she reported less avoidance for everyday problems. Her report of "fairly good" sleep quality remained constant throughout all assessment points, though she reported improved sleep due to going to bed earlier as part of her plan during treatment. Thus, as with Mr. Q, she used the treatment to target improvements in sleep.

Problem-Solving Skills

Mrs. R did not rate improvements in her rational problem-solving behaviors from baseline to follow-up, although at baseline she reported rational problem-solving behaviors already at norm. Although she was previously exposed to problem-solving skills in one of the sessions of CBT protocol prior to starting PST, she indicated that the problem-solving skills did not seem to stick until she had focused practice as part of the PST protocol. This is particularly noteworthy considering her superior cognitive abilities. She reported, however, that CBT prior to starting PST was useful, particularly regarding relaxation skills, which were not part of the PST-PC protocol. Though her worry symptoms did not show much improvement, it is possible that with a longer follow-up period and continued problem-solving skills practice, her worry symptoms may have dropped as her coping skills improved due to getting more sleep and increased ability to handle problems that arose in her everyday life as a caregiver.

Patient Feedback, Acceptability, and Tolerability

The clinician solicited patient feedback regarding the materials provided throughout treatment, namely, the homework sheets. Improvements to the practice sheets based on participant feedback resulted in larger print, fewer words, and removal of clip art, which patients described as distracting. In addition, patients reported experiences with the treatment indicative of its acceptability. Patients cited both the practical approach espoused by the PST model, and the individualized nature of sessions in the implementation of the skills to their problems as highly liked. Patients also indicated a high likelihood they would continue to use the problem-solving skills in their lives.

We based our assessment of tolerability of the treatment on ability for the patient to attend and engage in at least 50% (4 or more) sessions in full—the minimum number of sessions in which this protocol has been delivered in previous clinical trials that could be expected to benefit the patient. All patients were able to complete a full session once started, particularly when the details of their problems, which typically cause them significant worry, were discussed in detail during the problem solving process.

Therapeutic Process and Observations

The therapist experienced unique challenges implementing the protocol with these older patients with anxiety disorders. The most salient issue was patient distractibility due to their substantial anxiety and worry. This was true despite the highly structured environment implemented across all sessions: a clear agenda, redirection to the materials as needed, and frequent use of the dry-erase board and hand-outs to maximize patient focus and learning. The therapist often completed the worksheets for the patients in session to free up the patient's attention to focus solely on implementing the process of working through the problem-solving steps. To complete the problem-solving worksheets in a thorough manner, and to check in about progress on the previous session's progress, sessions lasted 60 to 75 minutes on average.

Further, all patients learned effectively how to go through the seven problem-solving steps, but had difficulty recalling them without the aid of a worksheet.

This was not a cognitive issue per se as all had average to superior cognitive abilities on the select cognitive battery. Interestingly, though, patients did begin to write down lists or other plans, in addition to the sheets throughout treatment, as a useful strategy to reinforce their ability to implement what they worked on during the previous sessions.

Future Directions and Conclusions

Despite the potential of PST for treating anxiety, this transdiagnostic approach has not been implemented to treat late-life anxiety disorders such as GAD. This case study series demonstrates that a problem-solving approach was acceptable and tolerable with three older patients, two with GAD and one with subthreshold GAD. It also highlights the preliminary feasibility and potential for PST to reduce anxiety symptoms among such patients, especially those with significant multimorbidity. Because of this multimorbidity, patients in this case series frequently identified health and physical problems as sources of anxiety and worry. Because of the extensive multimorbidity documented in community older adults with elevated anxiety symptoms (Gould, et al., 2016), and the tendency for older adults to worry more about their health than do younger people (Bower, Wetherell, Mon, & Lenze, 2015), this case series also informs the potential feasibility of PST for community older adults with GAD. All three patients reported lower anxiety symptom severity from baseline to posttreatment assessment, with two patients meeting the threshold of clinically meaningful improvements in anxiety. Incidentally, those same two patients also experienced improvements in their sleep duration, a problem they both tackled during treatment, suggesting that treatment also led to improvements in their sleep. Finally, while all three patients reported improved everyday functioning due to decreased avoidance of problems, functional disability scores did not improve after treatment, though notably two of the cases reported relatively low functional disability at baseline.

A recent critical review hypothesized the potential for older adults to have a lower ability to tolerate distress in treatment due to an age-related tendency to favor positive over negative emotions (Jayasinghe et al., 2017). And, daily problems, the primary focus of treatment sessions in PST, constitute a substantial source of chronic worry and distress for older adults with GAD. Despite these potential age-related challenges, this initial report demonstrates the potential for such older adults to engage effectively in problem-solving skills training without a focus on these problems becoming too overwhelming for them. Overall, the patients demonstrated an ability to engage in treatment within the context of highly structured sessions and therapist support in completing the worksheets. To maximize the ability of older adults with anxiety disorders to engage in treatment, this case series implicates the potential utility of integrating emotion regulation skills training in PST for late-life anxiety for improved attention and present focus in the face of internally distracting worry. This could include but is not limited to relaxation or mindfulness techniques as currently offered within some contemporary problem-solving intervention protocols (Nezu, Nezu, & D'Zurilla, 2013; Tenhula et al., 2014). Ideally, these skills would be taught to patients early in treatment to facilitate their focus from the start, and applied during times when they felt overwhelmed during the problem-solving process within sessions and between session practices, and incorporated as a potential solution to managing a difficult, emotionally charged problem. An example of this might be to have the patient engage in 5 minutes of diaphragmatic breathing or mindful meditation, for example, prior to implementing a solution that might be anxiety-inducing, such as tackling clutter in a part of a room, which produced overwhelming anxiety for Mrs. R. She had previously learned relaxation skills in CBT prior to enrolling in PST; however, she did not employ them during PST as a means to improve her problem-solving ability because no such instruction was provided by the therapist. Without integrating these skills into a PST protocol, in most cases, older patients with GAD will not automatically use them. Had these skills been presented as part of the PST package, it is possible Mrs. R and others might have had even greater improvements in anxiety. Given the strong empirical evidence for relaxation skills alone as an efficacious means of reducing anxiety in late-life GAD (Ayers, et al., 2007), we conclude that future PST protocols implemented with older patients with anxiety disorders should include relaxation or other emotion regulation skills as a core component prior to learning the problem-solving steps and implemented throughout treatment to increase the depth and efficiency of their ability to engage in problem solving.

So, why did two older patients with GAD experience a meaningful improvement in anxiety but not in their worry? The paradoxical function of worry in GAD might provide an answer. Newman and Llera (2011) have proposed that worry functions *to maintain a negative mood state* in GAD to avoid drastic shifts in the experience of more negative emotion. PST increases engagement and reduces avoidance behaviors. It does not explicitly target worry. But through greater flexibility and approach to problems, and less sustained experiencing of anxiety, worry might be less relied upon as a coping strategy as older patients with GAD learn to tolerate and let go of not being in a persistent negative emotional state. Future studies implementing a longer follow-up than measured in the current study would be poised to determine if such improvements in worry emerge with long-term use of adaptive problem solving skills.

Remarkably, patients rated their rational problem-solving skills as within normal limits for their age group during the baseline assessment, despite noted deficits in how they each were handling current problems in their lives. This could explain why little if any change in their self-reported rational problem-solving skills occurred from baseline to posttreatment: patients may have lacked insight about their weaknesses in rational problem-solving abilities at the baseline assessment. Nonetheless, another possibility is that older adults with GAD have an intact underlying ability to engage in rational problem solving, but this ability is thwarted by their negative views about their ability to solve their problems—a construct considered distinct from worry (Robichaud & Dugas, 2005a). This negative orientation to life problems in persons with GAD has been proposed as a critical mechanism of change in PST based on associations between worry symptom severity and negative problem orientation in adults (Robichaud & Dugas, 2005b). While we did not collect this information, future studies examining PST in older patients with GAD should include either the full SPSI-R, which includes a negative problem orientation subscale (D'Zurilla, et al., 2002), or the standalone Negative Problem Orientation Questionnaire (Robichaud & Dugas, 2005a).

Furthermore, while patients found the PST skills to be useful, each patient had some difficulty recalling the seven problem-solving steps without the aid of a handout, despite none having cognitive impairment. The therapist completing the form for patients during the session facilitated learning by allowing the patient to focus on learning the skills in session and then taking the completed problem-solving worksheets home to review. Another strategy might be to adopt a PST protocol in which materials chunk the problem solving into fewer steps for easier memory retrieval, or to provide other external aids to facilitate their use (e.g., pocket-sized laminated cards with the steps as has been done in other PST protocols; Tenhula et al., 2014).

We observed no discernible advantages or disadvantages of baseline cognitive control and memory abilities on the treatment outcomes of these three patients. While Mr. P's low average attention and working memory at baseline could explain his lack of clinically significant improvement in anxiety, he also had milder anxiety symptoms than the other two patients, giving him less room to improve on the HAM-A. While this initial case series selected for patients free of cognitive impairment, PST has had strong support for treating late-life depression with executive dysfunction (e.g., Alexopoulos et al., 2003; 2011) or with mild or major neurocognitive disorders (Kiosses et al., 2015), suggesting the potential for PST to be beneficial in other late-life mental health populations such as GAD with executive dysfunction or other cognitive impairments. Protocol adaptations for executive dysfunction have included more sessions than used in the current protocol (e.g., 12 sessions vs. 8 sessions in PST-PC), and for patients with global cognitive impairment, inclusion of a caregiver as a support person in treatment assisting the patient in their implementation of problem-solving skills between sessions. Future studies of PST for late-life anxiety could potentially benefit from the inclusion of samples with greater variability of baseline cognitive abilities as these factors could moderate treatment outcome given empirical evidence that poorer set-shifting and mental flexibility predicted better treatment response in either PST or supportive therapy (Beaudreau, Rideaux, O'Hara, & Areán, 2015). Though PST does not necessarily target GAD, current cases described in this report provide some initial support indicative of PST as tolerable among older adults with anxiety disorders and with potential to lead to clinically significant reductions in anxiety symptoms in older primary care patients. This is suggestive of PST's possible application to other internalizing problems or subthreshold late-life mental health issues due to general life stress. In sum, this case series illustrates the potential for further development and testing of the problem-solving therapeutic approach for older adults suffering from anxiety disorders.

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