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Problem-Solving Training for VA Integrated Primary Care Providers: Real-World Outcomes

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Mental and behavioral health concerns are common among primary care patients, yet patients are often unwilling to seek specialty mental health services. Integrated primary care services offer the opportunity

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to improve access and engagement in care, effectively manage symptoms, and enhance prevention efforts. While evidence-based transdiagnostic interventions such as Problem-Solving Therapy have demonstrated effectiveness in managing many of the common mental and behavioral health concerns that primary care patients report, its format is incompatible with the brief, 1-to-1 care format typical of integrated primary care services. This article discusses the adaptation and implementation of a problem-solving treatment for the primary care setting used within the Department of Veterans Affairs. Results of a national program evaluation are presented using the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) program evaluation framework. Findings indicated that 84.5% of providers who enrolled in Problem-Solving Training in Primary Care (PST-PC) completed the program, and 78.2% of veterans who received PST-PC during the observation period completed the full 4-session protocol. Statistically and clinically significant improvements were observed in depressive symptoms, suicidal ideation, general distress, and perceived resilience (Cohen's d range = 0.30–0.74) for the cohort of veterans who completed treatment. Exit survey responses showed that the protocol was well-received by both patients and providers, though modest evidence of long-term drift (e.g., inconsistent use of protocol handouts, use of protocol subcomponents vs. the full treatment course) emerged. Implications for future research and considerations to improve long-term fidelity and program sustainability are discussed.

Public Significance Statement
This study suggests that a brief treatment, PST-PC, is feasible, effective, and capable of addressing diverse clinical concerns, such as depression or psychological distress typical of patients in primary care.

Keywords: primary care, veterans, problem-solving, depression, primary care behavioral health

Primary care patients commonly report distress and impaired functioning attributable to a wide array of psychological and physical symptoms, such as anxiety (Kroenke, Spitzer, Williams, Monahan, & Löwe, 2007), depression (Oslin et al., 2006), post-traumatic stress (Magruder et al., 2004), and chronic pain (Kerns, Otis, Rosenberg, & Reid, 2003). Despite the prevalence of these mental and behavioral health concerns, patients are often unwilling to accept or follow through with referrals for mental health (MH) services (Orleans, George, Houpt, & Brodie, 1985; Van Voorhees et al., 2003; Von Korff & Myers, 1987). An increasing number of healthcare systems, such as the Veterans Health Administration (VHA), are therefore embedding psychologists and other behavioral health providers in primary care clinics to help address this gap in services (Possemato, Shepardson, & Funderburk, 2018; Wray, Szymanski, Kearney, & McCarthy, 2012).

VHA's primary care–mental health integration (PCMHI) provides a unique blend of service providers: care managers, who provide telephone-based services typically delivered in the collaborative care model (Oslin et al., 2006); and colocated collaborative care (CCC) clinicians, who function similar to behavioral health consultants in the popular primary care behavioral health integrated service delivery model (Varadarajan, 2018). Together, these components complement services offered by the primary care team. Embedded psychologists often fulfill CCC roles (39.6%, n = 597 psychologists as CCC providers in 2017; McCarthy & Brockman, 2017), dually serving as consultants to primary care team members and as direct patient care providers, thus enhancing access to services. Patient care services include assessment and brief intervention for patients who experience life stress and/or mild-to-moderate MH symptoms or behavioral health concerns (e.g., insomnia). Enhanced access is thought to be an essential component of this model (Dollar, Kearney, Pomerantz, & Wray, 2018). In order to maximize access, patient contacts are typically brief and time-limited (i.e., up to six, 15–30 min appointments; Dundon & Dollar, 2011; Hunter, Goodie, Oordt, & Dobmeyer, 2017). Interventions are focused on improving patient functioning, reducing symptoms, and linking patients to other resources (e.g., specialty care, community resources) when indicated. Given the nature of population healthcare, it is common for patients to present with multiple initial complaints (Gerber et al., 1992). For these reasons, a brief, transdiagnostic approach to treatment is ideal. To date, though, there are few evidence-based transdiagnostic treatment options that meet these criteria. There are, however, transdiagnostic treatment approaches that may be adapted to fit the demands of this model of care, such as problem-solving therapy (Nezu, Nezu, & D'Zurilla, 2013).

Problem-solving therapy is a flexible, skills-based psychotherapy that focuses on improving an individual's ability to cope with a variety of stressful life events (Nezu & Nezu, 2014). While problem-solving therapy does not require a specific MH diagnosis, a large body of literature supports its effectiveness in managing depression and anxiety symptoms (e.g., van Straten, Cuijpers, & Smits, 2008), posttraumatic stress (e.g., McDonagh et al., 2005), and suicidal ideation (Fitzpatrick, Witte, & Schmidt, 2005; Stewart, Quinn, Plever, & Emmerson, 2009), as well as various medical conditions, such as diabetes (Toobert, Strycker, Glasgow, Barrera, & Bagdade, 2002) and hypertension (García-Vera, Labrador, & Sanz, 1997). Because alternate versions of problem-solving therapy have already been successfully applied in various models of integrated primary care (e.g., Katon et al., 2004; Schreuders et al., 2007), it stands to reason that problem-solving therapy may also be a good fit for CCC providers.

Because the original problem-solving therapy format (i.e., up to twenty ~60-min appointments; Nezu et al., 2013) does not fit the

clinical practices of psychologists working as CCC providers, the purpose of this article is to describe the adaptation and implementation of a brief problem-solving treatment for CCC providers, referred to as Problem-Solving Training in Primary Care (PST-PC). PST-PC was specifically adapted to fit into the brief treatment model that is embraced within PCMHI as well as other integrated primary care settings, delivering content over four, 30-min weekly appointments. Using the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) program evaluation framework (Glasgow, Vogt, & Boles, 1999) as a guide, we also present the results of a summative evaluation of PST-PC program operations in order to better understand the provider and patient outcomes associated with PST-PC to date.

Method

PST-PC Development

Using two available applications of problem-solving therapy as a guide (i.e., The problem-solving therapy treatment manual [Nezu et al., 2013], and the group-based Moving Forward platform [Tenhula et al., 2014]), a workgroup of seven psychologists collaborated during the Spring of 2015 to adapt the treatment manual for PST-PC. The workgroup comprised clinical subject matter experts in problem-solving therapy, the PCMHI model of care, evidence-based practices within VHA, and research and program evaluation. Major format differences from the parent version of problem-solving therapy included: (a) abbreviation to four, 30-min individual sessions; (b) utilizing patient handouts at each appointment to assist in teaching and reinforcing concepts discussed; and (c) use of the web-based Moving Forward course as an optional adjunctive intervention to provide patients with added education, thought exercises, and at-home skills practice.

PST-PC continued to strive toward helping patients effectively cope with stressful events as in problem-solving therapy [Nezu et al., 2013] and included material from the three "toolkits" (e.g., problem-solving multitasking, "Stop, Slow Down, Think, Act," and planful problem-solving skills) used in Moving Forward [Tenhula et al., 2014], but PST-PC emphasized the skill building in each appointment. For instance, the first appointment provides education to the patient about the different types of problem solvers, then introduces the skills of "Externalize, Simplify, and Visualize" that can be helpful when becoming overwhelmed during problem solving. The second and third appointments discuss the importance of emotional regulation and introduces "Stop, Slow Down, Think, and Act." The final appointment reviews skills and discusses the importance of practicing the skills and preparing for future stressors.

Feedback from problem-solving therapy experts, including co-authors of the contemporary version of problem-solving therapy (Nezu & Nezu, 2013) and experts in Moving Forward (Tenhula et al., 2014), ensured content validity of the adapted protocol. In turn, feedback from experts in PCMHI and VHA evidence-based practice dissemination promoted ecological viability.

PST-PC Training Program

To be eligible for training in PST-PC, providers must be a permanent employee and working as a PCMHI provider in primary care. This led the professionals involved in the trainings to be primarily psychologists followed by social workers. Local managers and administrators solicited volunteer providers and prioritized attendance based on clinic needs. Applications were reviewed by the PST-PC program lead to identify candidates for each training. Five provider trainings were conducted from calendar years 2015–2017 following a consultant model, where providers initially received training followed by additional instruction as they delivered PST-PC with four patients through consultation. Therefore, training capacity was limited such that there was a maximum 6:1 ratio of trainees to consultants. For practical purposes, training was offered via in-person instruction as well as a virtual webinar format, though the content of each iteration was identical. The initial provider training was offered via a 2.5 day in-person seminar. Subsequent trainings offered a preparatory block of instruction via independent study (i.e., reviewing the Moving Forward web course and PST-PC manual, approximately a 4-hr time commitment), followed by a 2-day virtual training (webinar format). In order to be certified as a PST-PC provider, staff were required to: complete didactic training, including the pre/post provider evaluation survey; participate in at least 18 weekly, 1-hr group consultation phone calls; deliver the PST-PC protocol to at least four patients; and provide de-identified patient outcome data from pretreatment and posttreatment. The training described the PST-PC protocol as being appropriate for veterans who would benefit from short-term care within PCMHI, including presenting concerns such as chronic health conditions (e.g., diabetes management), adjustment disorders, or mild-to-moderate depression, anxiety, or posttraumatic stress.

Program Evaluation

Our program evaluation method was guided by the RE-AIM framework (Glasgow et al., 1999), which is a pragmatic approach to program evaluation that collects and summarizes data along five key dimensions: (a) ability to access an intended demographic (Reach); (b) a program's impact (Efficacy/Effectiveness); (c) uptake by providers (Adoption); (d) protocol fidelity associated with a program (Implementation); and (e) sustainability of individual and institutional gains (Maintenance; Glasgow et al., 1999). A summary of data sources can be found in Table 1. The program evaluation project was determined to be nonresearch due to its focus on quality improvement by the Syracuse VA Medical Center Institutional Review Board.

Measures and Materials

Provider and patient enrollment materials. Prior to enrollment, trainees submitted an application that detailed their professional backgrounds. During the consultative period, each was asked to provide demographics (e.g., age, gender) on patients who engaged in the protocol.

Patient-outcome measures. The PST-PC protocol includes:

Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001). The PHQ-9 is a nine-item measure of depression symptoms validated for use in primary care. Items ask patients to rate the perceived frequency of depressive symptoms such as feelings of hopelessness, poor appetite, and suicidal ideation on a 4-point Likert-type scale ranging from 0 (*Not at all*) to 3 (*Nearly*

Table 1
RE-AIM Data Sources

RE-AIM dimension	Data point(s)	Data source
Reach	• Number and provider specialty who attended and completed PST-PC training • PST-PC patient demographics	Provider report
Efficacy/Effectiveness	• Patient exit survey • Pre/Post patient measures • Patient Health Questionnaire-9 (PHQ-9): Total score, suicidal ideation item (Item 9), functional impairment item (Item 10) • Brief Resilience Scale (BRS): Total score • Outcomes Questionnaire-30 (OQ-30): Total score	Patient report
Adoption, Implementation, Maintenance	• Provider posttraining online survey	Provider report

every day). An additional item (Item #10) asks patients to rate mood-related functional impairment on a 4-point Likert-type scale ranging from 0 (*Not difficult at all*) to 3 (*Extremely difficult*). Responses to Items 1–9 are summed to produce a total score (range 0–27), with higher scores reflecting greater frequency and severity of depressive symptoms. Scores >9 are considered clinically significant, with scores of 10–14 rated as mild, 15–19 rated as moderate, and >19 rated as severe. A reduction of 2–4 points suggests a partial response to treatment, and a reduction of ≥5 points suggests clinically significant improvement (Kroenke et al., 2001). Internal consistency reliability was high in this evaluation (Cronbach's alpha = .83 at both pre- and posttest).

Outcomes Questionnaire for adults (OQ-30; Lambert et al., 2003). The OQ-30 is a 30-item measure of general MH disturbance over the previous week. Sample topics include feelings of life satisfaction, irritability, personal worthlessness, fearfulness, and loneliness. Items are rated on a 5-point Likert-type scale ranging from 0 (*Never*) to 4 (*Almost always*). Responses are summed to produce a total score, in which higher values reflect greater MH disturbance. A reduction of 10 points or more on the OQ-30 is considered a clinically significant improvement (Ellsworth, Lambert, & Johnson, 2006). Internal consistency reliability was very high in this sample (Cronbach's alpha = $.94_{pretest}$–$.95_{posttest}$).

Brief Resilience Scale (BRS; Smith et al., 2008). The BRS is a six-item measure of patients' perceived ability to endure and recover from challenging life events. Items are rated on a 5-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Three items are reverse-scored to reflect the items' negative valence. Ratings are averaged to calculate the total score, with higher scores reflecting greater perceived resilience. Internal consistency was adequate (Cronbach's alpha = $.83_{pretest}$–$.87_{posttest}$).

Patient exit survey. A 17-item patient exit survey (see Table 2) was administered to patients by PST-PC providers following their final appointment. Items queried patient opinions on program effectiveness, and were rated on four unique 5-point Likert-type scales that addressed general program components (nine items, rated from *very unhelpful* [1] to *extremely helpful* [5]); subjective

Table 2
Patient Responses Within Patient Exit Survey After Completing the Last PST-PC Appointment Obtained by Providers (n = 147)

Survey item	Mean	*SD*	% Perceived helpful (≥ 4 rating)
Rate the helpfulness of the time of appointments[a]	4.34	0.81	81.3%
Rate the helpfulness of the primary care office[a]	4.28	0.82	79.9%
Rate the helpfulness of the Stop, Slow-down, Think, Act[a]	4.18	0.83	77.1%
Rate the helpfulness of the planful problem solving hints[a]	4.07	0.83	71.3%
Rate the helpfulness of the problem-solving worksheets[a]	3.87	0.88	63.6%
Rate the helpfulness of the web course practice[a]	3.85	0.96	62.4%
Rate the helpfulness of the location of the program[a]	3.85	0.91	56.3%
Rate the helpfulness of the session handouts[a]	3.77	0.99	58.0%
			% Perceived Useful (≥ 4 rating)
Rate the usefulness of the session handouts[b]	3.74	1.10	65.7%
Rate the usefulness of the web course[b]	3.35	1.13	42%
			% Just Right
Rate the length of each session (30 minutes)[c]	3.67	0.87	40.3%
Rate the length of the overall program (4 sessions)[c]	3.44	0.75	59%
			% Agree or Strongly Agree
This program has helped me cope better with stressful problems[d]	4.28	0.77	82.2%
Because of this program, I feel more optimistic about the future[d]	4.20	0.85	78.8%
I would recommend this program to others[d]	4.13	0.81	74.8%
The clinician has been effective in helping me deal better with my problems[d]	4.08	0.84	75.3%
I am better able to reach my life goals as a result of this program[d]	3.87	0.92	64.4%

Note. Response choice rating scales: [a] *very unhelpful* (1) to *extremely helpful* (5); [b] *not at all* (1) to *very much* (5); [c] *much too long* (1), *a little too long* (2), *just right* (3), *a little too short* (4), *much too short* (5); [d] *completely disagree* (1) to *completely agree* (5).

outcomes and treatment satisfaction (five items rated from *completely disagree* [1] to *completely agree* [5]); treatment and session duration (two items rated from *much too long* [1] to *much too short* [5]); and the utility of supplemental web materials and patient handouts (two items rated from *not at all* [1] to *very much* [5]).

Provider posttraining online survey. In 2018, as part of a larger effort to continue to improve the quality of the training, an online posttraining survey was distributed to all providers (n = 174) who participated in the PST-PC training program. Nine-items emphasized quantitative indicators of adoption and implementation (e.g., total number of patients they delivered PST-PC to, fidelity to the PST-PC protocol). In addition, one qualitative item was also included to assess the types of presenting problems that providers used PST-PC to treat. Qualitative responses were organized into the following clinical themes according to concerns identified in Funderburk, Dobmeyer, Hunter, Walsh, and Maisto (2013): life stressors, depressive symptoms, anxiety, health problems, substance use, or anger. Fidelity and sustainability questions were rated on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Sixty-six providers completed the online survey (37.9% response rate), of whom data is reported for 48 (or 72.7%) who opted to provide their names, thus allowing the authors to verify their completion of PST-PC training program (i.e., didactic training, 18 weekly consultation calls, 4 consultation cases, and patient outcome data) and use the data for analysis.

Analysis

Descriptive statistics (means, *SD*, frequencies, percentages) and *t* tests or chi-square tests were used to examine between-groups differences on patients who completed PST-PC versus those who did not, as well as within-group comparisons to examine our a priori hypotheses of PST-PC impacting posttreatment outcomes (e.g., PHQ-9, BRS, OQ-30) compared to pretreatment. Repeated-measures multivariate analysis of variance (MANOVA) models were generated for the PHQ-9 total score and the mood-related functioning item. Descriptive statistics (percentages) were calculated to summarize responses on provider posttraining survey items.

Results

Reach

A total of 174 providers enrolled in PST-PC training from 2015 to 2017, with 147 (84.5%) completing all training requirements (e.g., didactics, data submission, consultation period) across training cohorts). Cohort completion rates ranged from 80% $_{\text{Cohort 2}}$–91.4% $_{\text{Cohort5}}$. The bulk of enrollees were psychologists (56.9%, n = 99) or social workers (37.4%, n = 65), with relatively fewer nurses (5.2%, n = 9) and psychiatrists (0.006%, n = 1). Training completion rates did not vary significantly by provider credential, $F(1, 129) = .84$, $p > .05$. VHA Staffing estimates from 2015–2017 suggest that between 1300 and 1600 individuals worked as PC-MHI providers (McCarthy & Brockman, 2017), suggesting that the 174 trainees included in this sample represent approximately 11–13% of unique providers who worked in VHA PCMHI during these years. The higher percentage of psychologists and social workers enrolled in this program is also consistent with staffing trends in the PCMHI program.

Six-hundred 64 veterans received PST-PC from program trainees during the observation period, with 78% (n = 519, 9.5% female, M_{age} = 48.92, SD = 14.98) completing the full four-session PST-PC protocol and providing pre- and posttreatment data. Patient demographics of the total sample (M_{age} = 48.0 ± 15.1, 20.9% female, 70.3% White) appeared to consist of a greater number of younger and female veterans compared to national VHA patient demographics (54% are >54 years of age, 7% female, 79% White; Adams et al., 2019). Veterans who completed all four sessions were more likely to be older (48.9 ± 15.0 vs. 43.6 ± 14.5 years, $F_{(1,622)} = 10.88$, $p < .001$, $R^2 = .02$) and male (82.8% vs. 69.1% female completion rate, $\chi^2_{(1)} = 9.13$, $p < .01$) than those who did not. Baseline PHQ-9 scores did not differ between those who completed all four sessions (M = 11.96, SD = 6.01) and those who did not (M = 12.59, SD = 6.07), $F_{(2, 663)}$ = 1.216, $p > .05$. The majority (64%) of patients reported clinically significant depressive symptoms at intake (29% mild, 25% moderate, and 11% severe symptoms).

Effectiveness

As shown in Table 3, statistically and clinically significant improvements were observed on all patient outcome measures (i.e., depressive symptoms, general distress, personal resilience). Results from the MANOVA model, which included both the total PHQ-9 score and mood-related functioning item (i.e., PHQ-9 item #10) showed statistically significant improvements in symptoms and functioning ($F_{(2, 503)} = 898.55$, $p < .001$; Wilk's $\Lambda = 0.56$, partial $\eta^2 = .77$). The majority (58.3%) of veterans who reported clinically significant depressive symptoms showed a meaningful improvement (i.e., ≥5-point reduction in total PHQ-9 score) at posttreatment, with another 19.3% showing a positive treatment response (i.e., 2 to 4-point reduction in PHQ-9 score; Figure 1). A

Table 3
PST-PC Patient-Reported Outcome Results (Effectiveness: N = 519)

Measure	Baseline mean (*SD*)	Posttreatment mean (*SD*)	*t* (*df*)	*d*
Depressive symptoms (PHQ-9)				
Total score	11.92 (6.02)	7.59 (5.67)	19.113 (518)	0.74
Suicidal ideation (Item # 9 score)	.33 (.66)	.16 (.47)	6.929 (518)	0.30
Functional impairment (Item # 10 score)	1.26 (.82)	.78 (.72)	13.742 (504)	0.62
Resilience (Brief Resilience Scale; BRS)	2.97 (.81)	3.28 (.86)	9.373 (513)	0.38
General mental health disturbance (Outcome Questionnaire-30; OQ-30)	50.11 (19.92)	37.90 (20.16)	16.011 (396)	0.61

Note. All tests were significant at $p < .001$. Clinically-significant symptom reduction is signaled by a 5-point or greater reduction in the PHQ-9 total score, and a 10-point or greater reduction in the OQ-30.

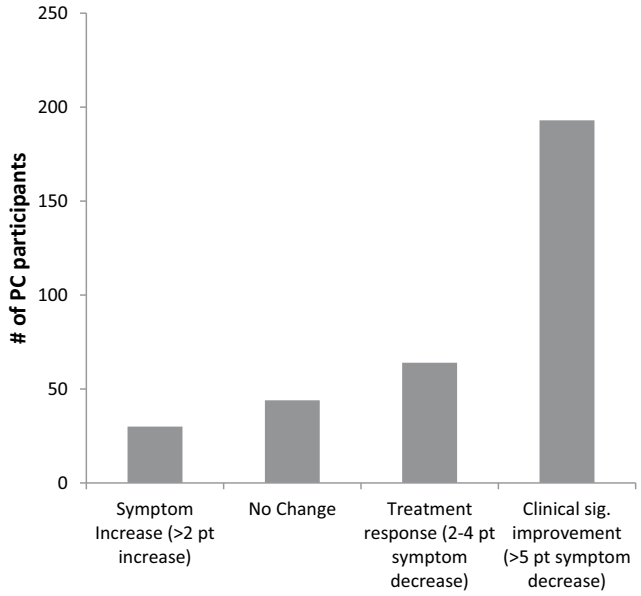

Figure 1. PST PC treatment response for $n = 331$ participants who reported clinically significant depression (per PHQ-9) at baseline.

minority (22.4%) of patients who reported significant depressive symptoms at baseline continued to report moderate to severe symptoms at posttest, with 9% reporting an increase in depressive symptoms. Of note, statistical improvements in the frequency of morbid/suicidal ideation (PHQ-9 Item # 9) was also observed: whereas 24% of veterans endorsed thoughts of death at the pretreatment assessment, only 10% endorsed such thoughts at posttreatment. Significant improvements in reports of general distress and perceived resilience were also observed, with 39.9% of patients demonstrating clinically significant improvement in OQ-30 ($M_{pre} = 50.11$, $SD = 19.92$; $M_{post} = 37.90$, $SD = 20.16$; $t_{(396)} = 16.011$, $p < .001$) and BRS scores ($M_{pre} = 2.97$, $SD = 0.81$; $M_{post} = 3.28$, $SD = .86$; $t_{(513)} = 9.373$, $p < .001$). Patient exit survey results also showed that veterans found PST-PC to be helpful in terms of better coping with stress ($M = 4.28$, $SD = 0.77$) and feeling more optimistic about the future ($M = 4.20$, $SD = 0.85$), among multiple other subjective outcomes. (see Table 2). Positive ratings were also observed with regard to the perceived helpfulness of the overall content of PST-PC within the handouts ($M = 3.77$, $SD = 0.99$) and the likelihood of recommending the treatment to others ($M = 4.13$, $SD = 0.81$).

Adoption

Forty-eight providers responded to the Provider Posttraining Sustainability Survey. Responses showed that a majority (83.3%, $n = 40$) endorsed continued delivery of PST-PC following training. Of those who responded continued delivery, PST-PC was reportedly delivered to an average of 3.31 ± 3.88 of 18.5 ± 8.64 patients per week. Most (54%, $n = 26$) reported utilizing PST-PC techniques with up to 25% of their patient contacts each week, while 29% ($n = 14$) reported using PST-PC techniques with more than 25% of patient contacts per week. Providers were most likely to report use of PST-PC when patients presented with life stressors ($n = 32$, 66.7%) or depression symptoms ($n = 23$, 47.9%) versus other presenting concerns (e.g., anxiety, health problems, substance use disorders, anger).

Implementation

As shown in Table 4, a majority of providers reported that they were comfortable using PST-PC (68%, $n = 45$) and generally continued to follow the original PST format (56%, $n = 37$), though some agreed that they found it necessary to tailor the protocol to better meet patient needs (50%, $n = 33$) or fit with their clinical practice (33%, $n = 22$). Observed patient barriers (e.g., low engagement, poor attendance) were generally rated as low. Central tendency was observed for ratings pertaining to use of handouts ($M = 3.54$, $SD = 1.11$), and use of modular PST-PC components (vs. the full protocol; $M = 3.31$, $SD = 1.11$). Providers typically described patient follow-ups as 1-week ($n = 421$, 37.4%) or 2-week ($n = 283$, 25%) intervals.

Maintenance

Five PST-PC provider trainings were offered across 3 training years in varying instructional formats (i.e., in-person trainings and virtual webinars). Four additional trainings were offered in 2018, reaching 73 new providers though data collection was not completed at the time of article preparation. Additional trainings are planned for 2019 with consideration for alternative methods to

Table 4
Provider Posttraining Online Survey Results (Adoption, Implementation, Maintenance; n = 48)

Survey item	Mean	*SD*	% Agree
Comfortable using PST-PC*	4.35	0.89	68%
I follow the original PST-PC format	3.83	1.04	56%
Patients come enough to complete PST-PC as originally designed*	3.67	0.93	50%
I use PST-PC handouts with patients	3.54	1.11	47%
Most patients engage in PST-PC*	3.50	1.01	45%
I use individual parts of PST-PC rather than the complete protocol	3.31	1.11	38%
I used PST-PC at first, but returned to other practice models over time	3.00	1.03	29%
I have to modify PST-PC to fit my practice	2.83	1.15	27%
After training, I have tailored PST-PC to my patient's needs	2.31	1.15	15%

Note. Response choice options were *Strongly Disagree* (1) to *Strongly Agree* (5).
* Items were reversed scored for consistency in the direction of the relationship.

train consultants as the number of available consultants determines the number of trainings at this time (J. Walker, PST-PC Training Program Coordinator; personal communication, April 3, 2019). The consistency of training since 2015 is demonstrative of VHA's ongoing institutional commitment to the PST-PC program, and evidence of program sustainability.

Discussion

A need exists for brief transdiagnostic treatments that can be delivered in integrated primary care. Results from this national program evaluation suggest that PST-PC is feasible, effective, and capable of addressing diverse clinical presentations that are typical in primary care, such as depression and general psychological distress. Patient-level data suggest that this treatment has been accessible to patients who are grossly representative of the larger population served by VHA with a high treatment completion rate. Furthermore, provider training data demonstrate a high likelihood of training completion (84.5%) once enrolled into the program.

Effectiveness data are largely consistent with previous research on problem-solving therapy-based interventions in veterans (e.g., Tenhula, et al., 2014) and civilian primary care patients with depression (Cape, Whittington, & Bower, 2010). Importantly, our observed effect sizes (d = .30 to .74) demonstrate that statistically and clinically meaningful changes in patient outcomes such as depressive symptoms, general psychological distress, personal resilience, and functional status were detectable across timepoints, even with the abbreviated dose of treatment that PST-PC offers. This low dose of treatment (i.e., 2-hr total over four sessions) also yielded a statistical improvement in the intensity of patients' suicidal ideation at posttreatment.

As non-VHA primary care clinics incorporate population screening protocols for depressive symptoms and suicidal ideation (O'Connor, Gaynes, Burda, Soh, & Whitlock, 2013; U.S. Preventive Services Task Force, 2004), effective clinical follow-up is needed to address suicide risk when it is detected. Beyond safety planning (Mann et al., 2005), few evidence-based options exist for integrated psychologists to manage suicide risk in primary care. While prior work has found other problem-solving therapy interventions effective in reducing suicidal ideation and suicide behavior (e.g., Hatcher, Sharon, Parag, & Collins, 2011; Stewart et al., 2009), the current program data suggest that PST-PC may also hold promise as an abbreviated treatment option for at-risk patients.

While a small percentage of patients evidenced worsened depressive symptoms, by far the most likely clinical outcome was a clinically significant improvement, seconded by evidence of a partial response to treatment. The observation that not all patients reached remission at posttreatment is not unexpected from a brief treatment and would signal a common clinical justification to alter treatment course, and potentially "step-up" to more intensive MH care following CCC contact. Previous research has shown that early engagement in integrated care increases the likelihood of future engagement with specialty care (Wray et al., 2012), and it is plausible that this finding could extend to PST-PC. Future research should examine whether this is the case.

Provider and patient data suggest that PST-PC is an acceptable practice with easily adopted skills. Providers reported comfort in using PST-PC, utility for a variety of presenting concerns, and felt that patients were engaged in the protocol. Evidence of patient acceptability is found in patient ratings of PST-PC components and the fact that patients who received this treatment were highly likely to complete the full four-session course. Nonetheless, there may be opportunities to optimize program outcomes by focusing on uptake of PST-PC as a more routine clinical practice, as well by improving providers' protocol fidelity and exploring why female veterans were less likely to complete the current treatment protocol than others.

It is encouraging to see evidence that provider survey respondents endorsed continued use of PST-PC given low adoption rates reported from training participants of other evidence-based treatments (e.g., Shafran et al., 2009), with some using PST-PC techniques with more than 25% of their patients per week. However, this finding needs to be considered within the context of the limited sample that responded since it does not capture responses from every PST-PC training participant. Given the high percentage (34–38%; Funderburk et al., 2013; Wray et al., 2012) of CCC patients who present with depressive and/or anxiety symptoms, this data suggests that PST-PC may serve as a viable method of addressing a prevalent clinical need.

Despite short-term evidence of adoption, it is possible that modifications may be needed to optimize long-term fidelity to the PST-PC protocol. On average, providers reported some ambivalence on sustainability survey items related to fidelity (e.g., providing PST-PC as originally intended, using subcomponents vs. the full protocol). Although a common observation when evaluating new treatments (Madson & Campbell, 2006; Miller & Rollnick, 2014), a lack of fidelity can inhibit an intervention's effectiveness. For instance, research has not yet identified the essential components of PST-PC that are linked to positive outcomes. Thus, untested modification may unintentionally undermine PST-PC's effectiveness. Future research is needed to better understand provider experiences during and after training, and to identify the best means of supporting providers in the posttraining period to ensure continued protocol fidelity.

The overall success of the program has resulted in continued institutional support. That similar successes were observed in terms of provider outcomes across presentation formats suggests that flexible methods of instruction can be used to establish foundational knowledge. While added time requirements of ongoing consultation (i.e., 18 hr posttraining) are a noteworthy consideration for both providers and consultants, relatively little infrastructure is required to facilitate the consultation process aside from standard conferencing and computing equipment. Such low resource demand is not likely a threat to long-term sustainability. From an organizational standpoint, future work is needed to examine the most efficient method, and sufficient quantity, of training to enhance spread while optimizing personnel resources.

General limitations of our methods are common to many large-scale evaluation efforts, such as limited data on total costs of implementing an intervention (e.g., total time and resource commitments) and limited data on long-term program maintenance factors. Limitations specific to this evaluation include the following: (a) Data were collected as part of a national program evaluation effort within the VHA. Though reliant on real-world clinical outcome data, the absence of a comparison group is noteworthy. A rigorously designed comparative effectiveness trial could provide greater certainty that the observed changes in patient-reported

outcomes are indeed attributable to treatment effects. (b) Data included were from providers who completed the training program. Although the attrition rate was low at 15%, this may have inadvertently biased the results and supports the need for additional research. (c) The collection of effectiveness data occurred while providers were involved in the consultation process. While consultation is an effective method to promote high-fidelity delivery of PST-PC, fidelity was not monitored in the same manner it might be in a controlled experiment. Additionally, because data were collected at a time when providers were receiving greater support than they would in usual clinical practice, we are unable to discern what treatment effects would be present under conditions more representative of usual care. (d) Because data collection relied upon providers to collect and relay deidentified patient datapoints, we cannot rule out the possibility of data reporting errors.

Despite these limitations, the amount of data gathered for this evaluation provides early but promising evidence for PST-PC yielding positive patient outcomes in terms of adoption, symptom reduction, functional improvement, treatment retention, and sustainability. This is vital as healthcare systems serving veterans and nonveterans alike need effective transdiagnostic treatments to deliver in integrated primary care settings. Future research and formative evaluation work are needed to determine the ways in which to optimize PST-PC content, training, and implementation, in turn maximizing systemic return on investment.

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