

Training Residents in Problem-solving Treatment of Depression: A Pilot Feasibility and Impact Study

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Background and Objectives: *Primary care patients with depression may prefer or require a non-pharmacological treatment such as counseling. We investigated the feasibility of teaching family medicine residents an evidence-based brief counseling intervention for depression (Problem-solving Treatment of Depression for Primary Care [PST-PC]).* **Methods:** *Eleven residents over 3 consecutive years were provided a brief training program in PST-PC. Residents were evaluated for skill acquisition, changes in self efficacy, intentions to improve their care for depression, and post-residency integration of PST-PC into their daily practice.* **Results:** *Trainees met established criteria for competency to administer PST-PC. They improved to moderate-to-high levels of self efficacy for treating depression, including for their counseling skills, and in their intentions to improve their depression management. At up to 3 years post residency, 90% indicated they were using PST-PC, often in a modified form, and also for illnesses other than depression. They indicated they would recommend the training to new residents.* **Conclusions:** *The PST-PC training program evaluated in this study is feasible in residency training and appears to influence practice post residency. These findings warrant continued investigation of this training program with a larger sample of residents and evaluation of outcomes with depressed patients treated with PST-PC in real-world practice settings.*

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Depression is one of the most prevalent illnesses seen in primary care practice,¹ but patients may refuse or not respond to antidepressant medication and may be unwilling to accept referral to mental health professionals.^{2,3} Evidence-based counseling interventions exist, but due to their length and complexity, family physicians are not often trained to use them.⁴⁻⁸ Family physicians regularly provide pragmatic supportive counseling, such as planning pleasant activities,⁹ and are receptive to learning evidence-based counseling methods,¹⁰ but feasible treatment methods and training models are needed.

Problem-solving Treatment of Depression for Primary Care (PST-PC) is a brief intervention specifically designed for primary care that is effective for reducing depressive symptoms and increasing function among patients with major depression and possibly minor depression and dysthymia.¹¹⁻¹⁴ PST-PC has been shown to be equally effective when provided by nurses and

primary care physicians as by mental health professionals.¹³⁻¹⁵ PST-PC is comprised of seven treatment steps that are outlined in Appendix 1 and have been thoroughly described elsewhere.^{16,17} The full seven-step PST-PC treatment program is typically conducted in four to six 30-minute office visits. However, the capacity to deliver more brief modules makes it feasible for visits as short as 10–15 minutes.

The PST-PC training program used for research is time consuming.^{16,17} If PST-PC is to have an influence in family medicine, then a more feasible training model must be developed. We redesigned the PST-PC training model (Table 1) to be more suitable for a residency program and examined its feasibility and effect in terms of acquired skills, self efficacy in depression management, and reported routine use after training.

Methods

Study Design

Three consecutive classes of residents (n=11) were provided training by the first author during their second year of residency. Evaluation of residents' performance included videotape reviews of the two PST-PC role-play sessions, self-report questionnaires completed

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before and after training, and a post-residency follow-up survey at 2 to 4 years after training, as described below. Because the training program and assessment tools used in this project were part of normal curriculum development, informed consent procedures were not necessary. Trainees were instructed to not put their name on the survey to assure anonymity.

Measures

Problem-solving Treatment Skills. We measured PST-PC skills with the seven-item Problem-solving Treatment Adherence and Competence Scale (PST-PAC),^{16,17} rated by the trainer from a videotaped PST-PC session. The items assess the seven key problem-solving steps (Table 1) rated on a 5-point scale (0=very poor, 5=very good). Item seven (evaluating the outcome of homework assignments) was eliminated from the scale because it was not completed for the initial PST-PC session and therefore provided no basis for rating improvement between the two role-plays. An average score of ≥ 3 indicates a “satisfactory” performance. An independent PST-PC expert not involved with the family medicine residency also rated the videotapes.

Internal consistency checks¹⁸ were conducted on the six-item PST-PAC scale using ratings previously completed for 15 trainees, primarily nurses, from an earlier study.¹⁴ Cronbach’s alpha ranged from .83 to .89. The six items were also subjected to a principal components factor analysis with iterations, pairwise deletion for missing values, and varimax rotations. The analysis supported the internal consistency checks in that items one through six loaded on a common factor and accounted for 76.6% of the total variance.

Self Efficacy in Diagnosing and Treating Depression.

The Perceived Self Efficacy in Diagnosing and Treating Depression Scale¹⁹ is comprised of four items (alpha=.86) measuring four different aspects of diagnosing and treating depression: (1) I can diagnose depression, (2) I can treat depression with medication, (3) I can treat depression with counseling, and (4) Overall, I can manage depressed patients. Each item is rated on a 4-point scale (1=not confident, 2=somewhat confident, 3=mostly confident, 4=very confident). Items are summed and divided by the number of items in the scale. Scores ≥ 3 indicate that on average the trainee feels mostly confident in diagnosing and treating depression.

Intention to Change Care of Depressed Patients. The Intention to Change Care of Depressed Patients Scale¹⁹ is comprised of four items (alpha=.75) measuring how likely the person is to change the way he/she recognizes or manages depression in the next 6 months: (1) Ask patients about depression more often, (2) Use a depression screening instrument, (3) Use formal diagnostic criteria, and (4) Attend continuing medical education (CME) on depression. Each item is rated on a 4-

Table 1

Seven Week PST-PC Training Program for Family Medicine Residents

Week one: Didactic overview of PST-PC principles, procedures, and supporting empirical data.

Week two: Resident reads the PST-PC treatment manual.

Week three: Resident views videotape of the trainer demonstrating proper PST-PC procedures.

Week four: Resident role-plays and videotapes an initial PST-PC treatment session.

Week five: Resident and trainer meet for a review and feedback session on the initial PST-PC role-play.

Week six: Resident role-plays and videotapes a follow-up PST-PC treatment session.

Week seven: Resident and trainer meet for a review and feedback session on the second PST-PC role-play.

PST-PC—Problem-solving Treatment for Primary Care

point scale (1=unlikely, 2=somewhat likely, 3=very likely, 4=almost certain). Items are summed and divided by the number of items in the scale. Scores ≥ 3 indicate that trainees on average feel very likely to improve their care of depressed patients.

Problem-solving Training Post-residency Survey

(PSTS). The PSTS was designed by the authors to assess the manner in which trainees were using PST-PC skills in their practice post residency. The PSTS is comprised of three sections addressing (1) how well trainees remember the PST-PC skills and how helpful they have been for counseling depressed patients (two items rated on a 5-point scale where 0=not at all, 5=completely), (2) how often trainees have made use of the skills, in what manner, and with what types of problems (eg, how often they provide the full PST-PC intervention or modified versions for depression or other illnesses) (six items rated on a 5-point scale where 0=never, 5=always), and (3) whether they have provided the full scale or modified versions of PST-PC on at least two consecutive visits with depressed patients (yes or no), and if so, for what percentage of their depressed patients (four items; percentage chosen from choice of deciles, ie, 1%–10%, 11%–20%, etc). Additional questions asked whether they would recommend PST-PC training to new family medicine residents, whether they have mental health specialists on site or available in their community, and the number of patients they see in a typical week.

Results

Inter-Rater Agreement and Reliability for the PST-PAC

Inter-rater agreement per item for the PST-PAC (defined as agreement on the rating plus or minus 1 point) between the trainer and independent rater averaged 86%. Ratings also correlated highly between the two raters for both sessions (session 1: $r=.822, P=.007$; session 2: $r=.918, P=.001$). Based on these analyses, the averaged mean summary scores from the two raters were chosen as the final outcome measure of skill acquisition.

Problem-solving Treatment Skills Acquisition

Performance for each role-play averaged >3 for role-plays one and two. The mean value for session one was 3.78 (standard deviation [SD]=0.56), and mean value for session two was 3.48 (SD=0.89). The quality of role-plays one and two were not significantly different ($t=.82, df=10, P=.884$). A breakdown of mean summary scores per item is presented in Figure 1.

Self Efficacy and Intention to Change

Trainees reported improved self efficacy for treating depression from pre training to post training (mean pre-training score=2.75, SD=0.58; mean post-training score=3.41, SD=0.59; $df=10, t=-4.143$, two-tailed $P<.002$). Trainees also reported improved self efficacy specifically for counseling (mean pre-training score=2.00, SD=1.00; mean post-training score=2.91; SD=.94; $df=10, t=-3.63$, two-tailed $P<.005$), and increased intentions to improve their depression management (mean pre-training score =2.55, SD=0.39; mean post-training score=3.18, SD =0.50; $df=10, t= -6.53$, two-tailed $P<.001$).

PSTS

The PSTS was returned by the entire sample of trainees ($n=11$). We first examined whether the likelihood of using PST-PC would diminish with increasing numbers of years after residency, patients seen per week, and the availability of mental health professionals. Although the sample size was small, there were relatively even distributions for these variables (number of years post training: three trainees=1 year,

four trainees=2 years, four trainees=3 years; number of patient encounters per week: (four trainees <50 , three trainees ≥ 50 and <100 , four trainees >100 ; mental health practitioners on site=55%), thus justifying correlation analyses. There was, however, no significant correlation between any of these variables and the likelihood of using PST-PC.

Two trainees (18%) reported that they use the full PST-PC model (six to seven steps) during two or more consecutive visits for a minority of their depressed patients (mean=10%, SD=0). Eight trainees (72%) reported that they use a modified PST-PC model (three to four steps) on two or more consecutive visits for the majority of their depressed patients (mean=58%, SD=22%, range=20%–90%). Results for PSTS items relating to the frequency of using the full PST-PC model, or versions thereof, for depression and other illnesses are presented in Table 2.

The majority of trainees ($n=10, 91\%$) indicated they would recommend PST-PC training to new residents. One trainee responded in the negative to this question. It should be noted, however, given the small sample size in this study that this same trainee accounted for one response in each of the least endorsing categories per item in Table 2.

Discussion

We conducted a preliminary examination of the feasibility of a residency training program for a brief evidence-based counseling intervention for depression,

Figure 1

Residents' Mean Summary Scores Per Item From the Problem-solving Treatment Adherence and Competence Scale (PST-PAC)

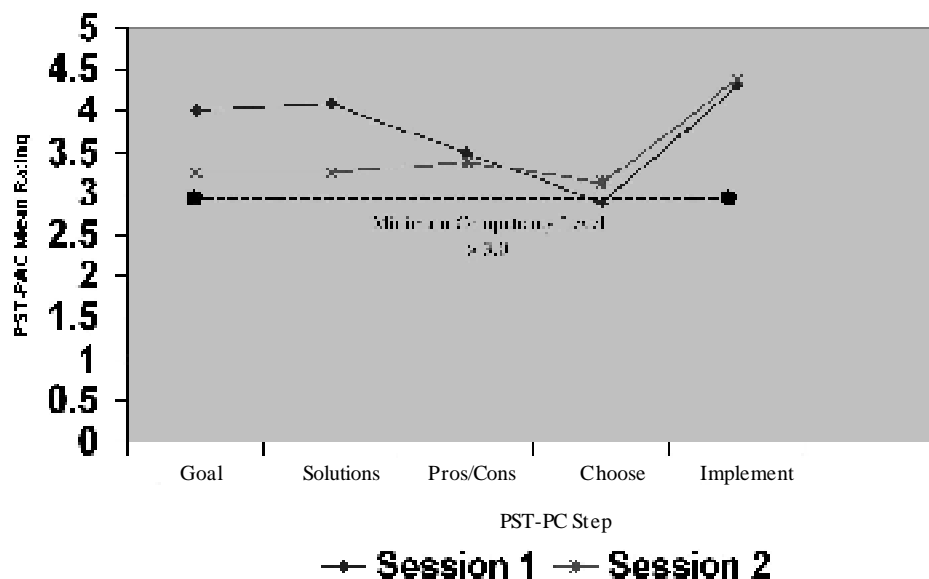


Table 2

Trainee Responses to the PSTS

<i>PSTS Item</i>	<i>Not At All– Very Little</i>	<i>Somewhat– A Good Bit</i>	<i>Most of It– Completely</i>
How well do you remember the PST skills?	18% (n=2)	55% (n=6)	27% (n=3)
How helpful are the skills for depressed patients?	18% (n=2)	64% (n=7)	18% (n=2)
<i>PSTS Item</i>	<i>Never– rarely</i>	<i>Sometimes– fairly often</i>	<i>Very often– always</i>
How often use full PST model (six to seven steps) for depressed patients?	36% (n=4)	64% (n=7)	0% (n=0)
How often use full PST model (six to seven steps) for other illnesses?	45% (n=5)	45% (n=5)	10% (n=1)
How often use modified PST (three to four steps) for depressed patients?	27% (n=3)	36% (n=4)	36% (n=4)
How often use modified PST (three to four steps) for other illnesses?	27% (n=3)	36% (n=4)	36% (n=4)
How often use very brief PST (one to two steps) for depressed patients?	27% (n=3)	45% (n=5)	27% (n=3)
How often use very brief PST (one to two steps) for other illnesses?	18% (n=2)	64% (n=7)	18% (n=2)

Percentage totals may not always be 100% due to rounding off of numbers.

PST—Problem-solving Treatment

PSTS—Problem-solving Training Post-residency Survey

PST-PC. After training, residents surpassed the minimum competency criteria for administering PST-PC. Their self-efficacy for treating depression also improved (mean post-training self-efficacy score=3.41, SD=0.59). As a point of comparison, these self-efficacy scores were at least comparable to scores of practicing family physicians who had attended a depression education program¹⁹ (mean self-efficacy score=3.20, SD=0.45). Trainees also reported that they intended to improve their depression management in the future. A substantial majority (91%) indicated that they would recommend PST-PC training to new residents.

At up to 3 years after residency, the majority of trainees report that they still remember the skills and are using them regularly. By and large they are using an abbreviated version of the seven-step PST-PC model, and they are not confining its use to depressed populations. This is not surprising to us, as in fact we encouraged them to find multiple uses for their skills to reinforce the learning and promote the transfer of these skills into their practice patterns.

This was a relatively low-intensity and low-cost training program requiring few resources from the residency program. Videotaping and viewing equipment are typically standard equipment in residency programs. Faculty time is minimal at 3 hours total. Training was conducted individually in this study, due to the conflicting schedules of the trainees, but it does not need to be so. In other research projects, we typically train in groups of up to six to eight members. Group-based training, in fact, offers the advantages of broader discussion and vicarious learning through interaction with other trainees. In addition, with group training, the trainees can

take turns playing the roles of therapist and patient and effectively double their exposure to the PST-PC procedures.

Limitations

Several limitations of this study should be noted. First, it was conducted with a small number of trainees and may have been underpowered to detect true changes. Second, it was conducted at one training site by an expert PST-PC trainer. The results may be different when tested with a larger sample of trainees in other settings with non-expert trainers.²⁰ Finally, some of the outcomes measured were derived from self-report instruments that may have been influenced by the demanding characteristics of a training environment.

Conclusions

This preliminary study suggests that PST-PC, a practical evidence-based counseling intervention, can feasibly be taught during residency training and that trainees continue to find it helpful in their future practices. Further evaluation of the training program with a larger number of trainees is warranted, as well as evaluating depression outcomes for patients treated with PST-PC by their physicians in real-world primary care settings.

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Appendix 1

The Seven Stages of PST-PC

Step 1: Defining the problem

Specific, feasible problem
Described in objective terms
Problem explored and clarified
Complex problem broken down

Step 2: Establishing realistic goals for problem resolution

Goal is objective
Described in behavioral terms
Goal is achievable
Follows directly from problem statement

Step 3: Generating multiple solution alternatives

Brainstorming is facilitated
Solutions come from patient
Withhold judgment

Step 4: Implementing decision-making guidelines

Cue for major themes at start
Consider pros and cons for self and others
Compare solutions as they are reviewed

Step 5: Evaluating and choosing the solution(s)

Deliberate, systematic process
Solutions satisfy the goals
Negative impact is limited

Step 6: Implementing the preferred solution(s)

Specific tasks are identified
Tasks are relevant to solution
Realistic behavior requirements

Step 7: Evaluating the outcome

Review all homework tasks
Exploration of failure
Reinforce problem-solving model
Review pleasant activity scheduling