Original Article

Coping Skills Training and Acceptance and Commitment Therapy for Symptom Management: Feasibility and Acceptability of a Brief Telephone-Delivered Protocol for Patients With Advanced Cancer

Jennifer C. Plumb Vilardaga, PhD, Joseph G. Winger, PhD, Irene Teo, PhD, Lynda Owen, PhD, Linda M. Sutton, MD, Francis J. Keefe, PhD, and Tamara J. Somers, PhD

Department of Psychiatry and Behavioral Sciences (J.C.P.V., J.G.W., F.J.K., T.J.S.), Duke University Medical Center, Durham, North Carolina, USA; Lien Centre for Palliative Care (I.T.), Duke-NUS Medicine School, Singapore; and Duke Cancer Network (L.O., L.M.S.), Durham, North Carolina, USA

Abstract

Context. Patients with advanced cancer face a life-limiting condition that brings a high symptom burden that often includes pain, fatigue, and psychological distress. Psychosocial interventions have promise for managing symptoms but need additional tailoring for these patients' specific needs. Patients with advanced cancer in the community also face persistent barriers—availability of interventions in community clinics as well as financial and illness-related factors—to accessing psychosocial interventions.

Objectives. The aim of the present study was to assess the feasibility and acceptability of telephone implementation of Engage, a novel brief combined Coping Skills Training and Acceptance and Commitment Therapy protocol, for reducing symptoms and increasing quality of life in community patients with advanced cancer.

Methods. Adult patients with advanced cancer receiving care in the community received Engage, four 60-minute manualized telephone sessions delivered by a trained psychotherapist and completed pretreatment and post-treatment assessments.

Results. Engage was feasible, achieving 100% accrual ($N = 24$) of a heterogeneous sample of patients with advanced cancer, with good retention (88% completed). Acceptability was demonstrated via satisfaction (mean 29 of 32; SD 2), engagement (95% attendance), and use of skills. Secondary analyses pointed to reductions in pain interference, fatigue, psychological distress, and improvements in psychological acceptance and engagement in value-guided activity after treatment.

Conclusion. Engage, our brief novel combined Coping Skills and Acceptance and Commitment Therapy intervention, demonstrated initial feasibility and acceptability when delivered over the telephone and increased access for community clinic patients with advanced cancer. Future research will assess the comparative efficacy of Engage in larger randomized trials. J Pain Symptom Manage 2019;■:■−■. © *2019 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.*

Key Words

Acceptance, coping skills, pain, advanced cancer, palliative care

---

Address correspondence to: Jennifer C. Plumb Vilardaga, PhD, Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, 2200 West Main Street, Suite 340, Durham, NC 27705, USA. E-mail: jennifer.plumb.vilardaga@duke.edu

Accepted for publication: September 6, 2019.

0885-3924/$ - see front matter
https://doi.org/10.1016/j.jpainsymman.2019.09.005

Introduction

Patients with advanced cancer face a life-limiting disease that brings a high symptom burden, including pain, fatigue, and psychological distress.[1] Pain and fatigue are pervasive,[2,3] persistent,[4] and reduce functioning and overall quality of life for many patients with advanced cancer.[5] Psychological distress also commonly arises in the context of advanced cancer,[6] stemming from coping with symptoms as well as concerns related to death, dying, and improving quality of life. There are limitations to medical treatment of these symptoms, including limited responsiveness and intolerable side effects.[1,7]

Clinical guidelines are clear that quality-of-life improvement is the key focus for palliative care and that quality of life should include attention to physical, social, psychological, and spiritual functioning.[7] Psychosocial treatments are appropriate and needed in palliative care settings as they target reduction in symptoms, and some work has also addressed functioning in social, psychological, and spiritual life domains. Despite their appropriateness, such treatments are often underused in palliative care settings,[1,8,9] and there is room for enhancement of these interventions to better address social, psychological, and spiritual domains along with symptoms.

Cognitive behavioral therapy approaches, such as Coping Skills Training (CST) for symptom management, have been used to reduce symptoms such as pain and fatigue in patients with cancer.[10–15] Some amount of pain and fatigue may be able to be reduced or ameliorated for patients with advanced cancer through interventions such as CST, and reduction in symptom severity is an important aspect of overall quality of life for both patients[16] and providers.[7] However, some level of symptoms may not be able to be fully managed directly, particularly as pain and fatigue ultimately are expected to worsen toward the end of life.[17] Although important, symptom reduction is not sufficient for maintaining or improving overall quality of life for patients with advanced cancer. Rather, enhancing patients' ability to manage symptoms with a goal of decreasing symptom *interference* may therefore be particularly important for patients with advanced cancer.

Acceptance and commitment therapy (ACT[18]) is one transdiagnostic mindfulness-based approach to reducing symptom interference. ACT uses mindfulness or nonjudgmental awareness of uncomfortable experiences of thoughts, emotions, and body sensations to promote acceptance of experiences (thoughts, feelings, and body sensations) such as those likely to arise for patients with cancer as their disease progresses and end-of-life concerns arise.[19–23] ACT also promotes improvements in quality of life via active engagement in chosen activities guided by deeply held personal values across life domains (e.g., relationships, personal growth, health, spirituality) even in the presence of uncomfortable experiences.[24,25] Indeed, emerging evidence supports ACT for reducing psychological distress[26,27] and decreasing interference from fatigue[28] in patients with advanced cancer. However, ACT approaches for patients with advanced cancer have not yet successfully targeted pain severity or interference as part of an overall strategy for managing symptoms,[28,29] although this is one important area of physical quality of life.

A thoughtful integration of CST and ACT may therefore best serve patients with advanced cancer as there are strengths in both approaches. CST promotes reduction of symptoms (i.e., pain, fatigue) where some improvement is possible and warranted, and ACT promotes acceptance of experiences that cannot be remediated or controlled (such as those in the context of worsening symptoms and end-of-life concerns) while also promoting consistent engagement in value-guided activity.[30] Such a combination may seem to conflict, as there are important theoretical and philosophical differences between these approaches. For example, CST is change oriented (e.g., changing thoughts and feelings to be more positive or balanced, reducing symptoms), whereas ACT is acceptance oriented (e.g., supporting nonjudgmental awareness of experience however it arises).[25] Despite these differences, there has been a call to return to a more functional behavioral approach to achieving outcomes, which supports combining techniques from traditionally different approaches in service of similar functional goals.[30] A coherent functional behavioral analysis of patients' multisymptom burden, in the context of end of life, can lead to an integration of components from CST and ACT. Particularly, components of these approaches can be meaningfully integrated when they serve the same functionally defined outcomes, such as experiencing some symptom reduction and improving quality of life.[31]

CST can provide both cognitive (addressing negative thoughts) and behavioral (strategic pacing of activity) tools for increasing activity via some reduction in the barriers (the presence of pain, fatigue, and psychological distress) to engaging in these activities. ACT also teaches mindful observation and acceptance of thoughts (e.g., worries about physical functioning changes and/or end of life), feelings (e.g., distress, anxiety, low mood), and body sensations (e.g., physical pain, fatigue) that are likely to be present because of a life-limiting illness, furthering a reduction in symptom interference. Personal values work in ACT also allows patients to discuss personal meaning in life, particularly in the context of a terminal illness. Elements from both CST (e.g., strategic pacing of activity) and ACT (e.g., acceptance of uncomfortable experiences) mutually support flexible engagement in activities directed by personally meaningful values across domains of life, even as some symptoms (i.e., pain and fatigue) increase and physical functioning declines toward the end of life. These two approaches together uniquely and explicitly address bothersome symptoms, reduce symptom interference, and address social, psychological, and spiritual aspects of life.

Interventions addressing these issues also have the greatest reach when they are accessible to patients with advanced cancer. Many extant psychosocial interventions are burdensome (e.g., delivered in person during nine to 12 60–90 minutes' sessions) or are not available in community clinics where many patients receive their care.[26,27,32] When available, financial, transportation, and illness factors can further limit access to psychosocial care.[32–34] Brief treatments and those delivered via telephone and mHealth can increase access to care for patients with advanced cancer.[35,36]

Taking into account the particular needs of patients with advanced cancer, our team developed a novel combined CST and ACT intervention: Engage. In an effort to reduce treatment burden, Engage is brief, with four 45–60 minutes' sessions. Our initial feasibility and acceptability randomized pilot tested Engage delivered in person vs. wait list control to patients with advanced breast cancer ($N = 85$) living close to major medical centers in the U.S. ($n = 40$) and Singapore ($n = 45$).[37] Results demonstrated high feasibility and acceptability (i.e., successful accrual, engagement, and completion), and Engage participants showed greater improvement on pain interference, fatigue, and distress (I. Teo, PhD, unpublished data, 2019).[37] However, reach was somewhat limited. Thirty percent of those choosing not to participate and 60% of noncompleters cited reasons of distance, travel, or illness. Together, these results highlight the need for increasing access to this promising intervention for those unable to attend in-person visits.

Therefore, the present study delivered Engage via telephone to a heterogenous sample of patients with advanced cancer ($N = 24$) living in communities far from major medical centers, in an effort to increase access. As a small pilot open trial, the primary aim of the present study was to report the feasibility and acceptability of delivering Engage via telephone. Our secondary aim was to report indicators of change in pain, pain interference, fatigue, distress, psychological acceptance, and valued-activity engagement over time.

Methods

This study was approved by the Institutional Review Board, recruitment procedures complied with Health Insurance Portability and Accountability Act guidelines, and this study was registered with clinicaltrials.gov (https://clinicaltrials.gov/ct2/show/NCT03285633).

Procedures

Patients with advanced cancer served by three outpatient cancer treatment facilities in central North Carolina, U.S. (those who lived more than 60 miles away from academic medical center and two rural community cancer treatment clinics) were recruited to participate in the study. Inclusion criteria were adults aged 21 or older, with a primary diagnosis of advanced cancer (Stage IV or Stage IIIB for lung cancer). Exclusion criteria included inability to read or speak English and a hearing impairment preventing telephone communication. Potentially eligible participants were identified by electronic medical record search, oncologists gave permission to contact patients for recruitment, and interested patients reporting at least one symptom of pain, fatigue, and distress conducted consent remotely.

Participants completed baseline and post-treatment assessments remotely and received four 45 minutes' telephone treatment sessions. A session-by-session treatment manual and accompanying patient workbook were developed by the authors based on prior work.[15,37–39] The study therapist was a licensed psychologist with more than 10 years of experience, trained in both ACT and CST by lead developers of these interventions, and had previous experience using these interventions with patients with advanced cancer on other studies. Telephone sessions were guided by a written treatment manual, audio recorded, and informally checked for fidelity by a senior researcher. The study therapist was located at Duke University Medical Center, and participants were in their homes. Participants received a study workbook and a handheld audio player for listening to the mindfulness exercise at home. Participants were compensated $20 for each completed assessment.

Treatment Intervention

Engage was developed by combining elements from CST and ACT. Skills acquisition was via experiential learning and rehearsal; skills were practiced in session, strengthened with examples from participants' own life, and reinforced in assignment of homework practice between sessions. Homework was reviewed and troubleshooted each session and assigned cumulatively, building on previously learned skills.

Session 1: Biopsychosocial-Spiritual Model of Health. Psychoeducation about the biopsychosocial-spiritual model of health and well-being[40] was presented, and participants shared their experience of symptoms and concerns about end of life. ACT personal values were defined as guiding principles that support living with meaning and purpose, and participants identified one personal value. Mindfulness was presented as one means of coping with participants' identified psychological barriers (thoughts, feelings, and body sensations) to living in line with this value *and* practiced in session.

Session 2: Value-Guided Activity Planning. The CST skills of psychoeducation about pain and fatigue and the activity rest cycle were presented. The activity rest cycle promoted increasing engagement in important physical activities throughout the day by taking strategic rest breaks so as not to exacerbate pain or fatigue. ACT personal values exploration continued across important life domains and specific measurable actions serving these values were generated. Continuing to engage in valued activity even if pain and/or fatigue increased was highlighted, and the activity rest cycle was presented as one way to do so. Participants also generated numerous ways to live in line with values (e.g., actions in line with a value of connecting with nature include walking outside, spending a few minutes a day in the sunshine, or having a plant by the bed) so as to support valued activity engagement even with illness-related functional decline.

Session 3: Coping With Negative Thoughts. Both CST and ACT skills were used to identify negative thoughts and reduce thought barriers to engagement in valued activity. The CST skills of psychoeducation about common negative thinking patterns in the context of advanced illness were presented. Patients then used CST skills of increasing awareness of their own difficult thoughts and practiced taking perspective on their thoughts (e.g., "What am I missing in seeing things this way?" or "Would I say that self-judgmental thought to a loved one?"). Participants also used the ACT skill of defusion (defined as reducing entanglement with thoughts), exploring how thoughts do not lead to actions, and actions can be guided by values rather than dictated by thoughts. They practiced saying, "I am having the thought that …" as a means of simply observing thoughts as passing experiences. Participants practiced selecting actions guided by values, predicting possible thought barriers that might arise and planned to practice either getting perspective or simply observing thoughts as they engaged in their chosen value-guided activity at home.

Session 4: Skills Integration. Problem-solving use of skills and planning for continued skill use even if functioning decreased was discussed. When desired, participants explored values-guided actions as they related to end-of-life choices.

Measures

The primary outcomes of the study were feasibility and acceptability of the program. Feasibility was measured by recruitment rate, accrual, and retention. Acceptability was assessed via treatment engagement ($\geq$75% session attendance, use of skills) and client satisfaction. The Client Satisfaction Questionnaire 8[41,42] included items such as, "How satisfied are you with the amount of help you received?" and "To what degree did the program teach you skills that are helping you to better manage your symptoms?"

Secondary outcomes were assessed at preintervention and postintervention using well-validated measures. Higher values reflect worse outcomes on all measures. Pain severity was assessed with the Brief Pain Inventory.[43,44] Patients reported their pain during the last seven days at its worst, least, average, and now, on a scale from 0 (no pain) to 10 (pain as bad as you can imagine). Pain interference was assessed with the Pain Disability Index.[45,46] Patients reported how much pain had interfered with daily activities (e.g., work, sleep) during the past seven days, on a scale from 0 (does not interfere) to 10 (completely interferes). Fatigue was assessed by the Patient-Reported Outcomes Measurement Information System Fatigue Short Form.[47,48] Patients reported on their fatigue during the past seven days, including the severity level, how much they were bothered by their fatigue, and the amount fatigue interfered with daily living. Responses are on a scale from 1 = not at all to 5 = very much. Psychological distress was assessed by the Hospital Anxiety and Depression Scale.[49] Patients reported their anxiety and depressive symptoms during the past seven days. Responses are on a scale from 0 to 3 with anchors that vary based on the question prompt. Mindfulness and psychological acceptance was assessed using the Acceptance and Action Questionnaire-II.[50] Patients reported about their level of accepting their emotional experience (e.g., "I worry about not being able to control my worries and feelings") on a scale from 1 = never true to 7 = always true. The Acceptance and Action Questionnaire-II has commonly been used as a process of change measure and is often related to, or predictive of, important changes in symptom severity.[22,51] Psychological well-being was assessed using the Bull's-Eye Values Survey.[52,53] Patients are asked to write about their personal values or guiding principles for living life with meaning and purpose across domains of relationships, education/work/community, leisure, and health/well-being, and to rate how successful they have been living in line with these values in the last month. A visual of a dartboard is provided, and responses were coded in this study ranging from 1 = a perfect bull's-eye and great success living in line with a value to 14 = very far away from living in line with a value. This is a process of change measure assessing improvements in psychological well-being and has demonstrated utility in other behavioral medicine populations.[52,53]

Analysis Plan

Descriptive statistics were used to characterize the primary feasibility and acceptability outcomes. Changes from preintervention to postintervention on secondary outcomes were examined using paired-samples t-tests. We computed effect sizes using Hedges' g_{av}, which provides a conservative effect size estimate for studies with a small sample and repeated-measures design. However, given that this was a pilot feasibility study, these analyses were exploratory and should be interpreted cautiously.[54]

Results

Feasibility

Study staff mailed recruitment letters to 122 adults with advanced cancer at three sites. Thirty-two (26%) potential participants responded to the recruitment letter and were mailed informed consent materials, and 24 (100% accrual) completed the consent process during a six-month period. See Table 1 for demographics.

Table 1
Demographics

Age, mean (SD)	
Range: 35–82	66 (10.8)
Gender, *N* (%)	
Male	17 (71)
Female	7 (29)
Race/ethnicity, *N* (%)	
White	18 (75)
African American	6 (25)
Hispanic	1 (4)
Other: Middle Eastern	1 (4)
Partner status, *N* (%)	
Married	18 (75)
Domestic partner/living together	1 (4)
Single/divorced	5 (21)
Education, *N* (%)	
Less than high school	2 (8)
High school diploma	4 (17)
Some college	9 (37)
College degree	5 (20)
Graduate degree	2 (8)
Cancer type, *N* (%)	
Prostate	8 (34)
Colorectal	4 (17)
Non-small cell lung	3 (13)
Small cell lung	2 (8)
Upper gastrointestinal	2 (8)
Renal	2 (8)
Breast	1 (4)
Appendiceal	1 (4)
Gallbladder	1 (4)
Time since diagnosis, *N* (%)	
Within the last two years	10 (42)
Two to four years ago	6 (25)
More than four years ago	6 (29)
Not reported	1 (4)
Initial/recurrence, *N* (%)	
Initial cancer diagnosis	19 (79)
Recurrent cancer diagnosis	4 (17)
Not reported	1 (4)

Retention was high with 88% ($n = 21$) completing the study; attrition was due to participants being lost to contact ($n = 2$) and death ($n = 1$). Twenty-three participants completed baseline assessments, and 21 participants completed both baseline and post-treatment assessment measures. Two percent of the data were missing for those completing both baseline and post-treatment assessments.

Treatment Acceptability

Patients rated high levels of satisfaction with the study (mean 29; SD 2; a score of 32 reflects the highest possible satisfaction), with 87% of participants stating they would return for a refresher of program skills in the future, and 87% reporting the program was quite or very helpful for managing their symptoms. Engagement in treatment was high: 95% of participants who began intervention sessions completed all four sessions ($n = 21$ of 22), with one participant completing only one session, and all the remaining participants completing all four sessions. The most used skills at post-treatment were the activity rest cycle, cognitive coping skills, and value-guided action planning (more than three days per week). See Table 2 for details.

Secondary Outcomes

Exploratory analyses suggested that secondary outcomes (i.e., pain-related interference, fatigue, psychological distress, acceptance, and value-based action) improved, although changes were generally small (i.e., $g_{av} < 0.50$). The largest improvement was for values-based action in the categories of work ($g_{av} = 0.21$) and health ($g_{av} = 0.41$). As noted previously, these analyses should be interpreted cautiously as this study was a small single-arm feasibility trial that was not powered to detect clinically meaningful effects (Table 3).

Discussion

In this study, we described the initial testing of telephone-delivered Engage, a brief novel combined CST and ACT interventions for patients with advanced

Table 2
Use of Skills After Treatment

Days Used in the Last Week	Mindfulness (Audio-Guided)	Mindfulness (Self-Guided)	Activity Rest Cycle	Coping With Thoughts	Value-Guided Action Planning
	n (%)				
0	4 (17)	4 (17)	—	—	1 (4)
1–2	6 (26)	4 (17)	3 (13)	5 (21)	9 (39)
3–4	6 (26)	6 (26)	7 (30)	7 (30)	11 (48)
5–6	2 (9)	2 (9)	4 (17)	7 (30)	4 (17)
7	1 (4)	3 (13)	5 (22)	—	1 (4)

cancer to target symptom management and increase mindful acceptance of uncomfortable experiences while increasing engagement in value-guided activity as a means of improving quality of life. Engage delivered via telephone to community patients demonstrated feasibility. Moreover, participants found the combined protocol an acceptable approach to coping with pain, fatigue, and distress as measured by of satisfaction, engagement, and use of skills. Exploratory analyses indicate that measures of pain and pain interference, fatigue, distress, acceptance, and engagement in valued activity changed in the expected directions. Although the effect sizes were generally small, we consider any improvement from preintervention to postintervention noteworthy for these seriously ill patients as many patients with advanced cancer experience worsening symptoms over time.[55] Future work is needed to verify this hypothesis using a randomized clinical trial. Taken together, both the format and the content of Engage shows promise for improving symptom management in patients with advanced cancer who experience multiple symptoms while also facing end-of-life concerns.

To increase the reach of the intervention, we recruited patients in community clinics and living far from major medical centers and delivered the intervention by telephone. Telephone implementation of our brief protocol allowed patients to receive this intervention from their homes, removing barriers of in-person treatments such as illness and travel. Successful recruitment and retention of a heterogenous sample of patients with advanced cancer across sites may indicate a high level of generalizability to other community cancer clinics.

Participants also reported that the program was quite helpful for managing their symptoms and lends support to our combined CST and ACT protocol. Participants' high level of engagement in the program provides preliminary support for the program as a whole and specifically highlights the acceptability of the activity rest cycle, cognitive coping skills, and value-guided activity planning skills.

Table 3
Secondary Outcomes at Preintervention and Postintervention

		Score Mean (SD)		Mean Difference and 95% CI					
Measures	*N*	Preintervention	Postintervention	Difference (Postintervention−Preintervention)	Lower	Upper	t (df)	*P*	g_{av}
BPI-severity	19	1.96 (2.09)	1.76 (2.40)	−0.20	−0.78	0.38	−0.71 (18)	0.48	0.09
PDI	18	18.11 (17.09)	15.83 (12.59)	−2.28	−7.10	2.54	−1.00 (17)	0.33	0.15
PROMIS-Fatigue	20	54.47 (9.07)	53.73 (9.18)	−0.74	−4.84	3.37	−0.38 (19)	0.71	0.08
HADS-Anx	20	7.25 (5.09)	6.65 (3.87)	−0.60	−2.31	1.11	−0.74 (19)	0.47	0.13
HADS-Dep	19	5.68 (3.96)	5.05 (3.27)	−0.63	−2.02	0.76	−0.95 (18)	0.35	0.17
AAQ-II	20	17.05 (10.35)	15.80 (10.45)	−1.25	−4.55	2.05	−0.79 (19)	0.44	0.12
Val-Sum	19	3.36 (1.59)	3.07 (1.77)	−0.29	−1.33	0.75	−0.58 (18)	0.57	0.17
Val-Work	19	3.21 (1.96)	2.79 (1.81)	−0.42	−1.57	0.73	−0.77 (18)	0.45	0.21
Val-Leisure	19	3.21 (1.78)	3.11 (1.88)	−0.11	−1.27	1.06	−0.19 (18)	0.85	0.05
Val-Relations	19	3.21 (2.07)	3.37 (2.41)	0.16	−1.08	1.39	0.27 (18)	0.79	−0.07
Val-Health	19	3.79 (1.69)	3.00 (2.03)	−0.79	−1.95	0.38	−1.42 (18)	0.17	0.41

df = degrees of freedom; BPI-Severity = Brief Pain Inventory-Pain Severity subscale; PDI = Pain Disability Index; PROMIS-Fatigue = Patient-Reported Outcomes Measurement Information System-Fatigue Profile Short Form; HADS-Anx = Hospital Anxiety and Depression Scale-Anxiety Subscale; HADS-Dep = Hospital Anxiety and Depression Scale-Depression Subscale; AAQ-II = Acceptance and Action Questionnaire-II; Val-Sum = Bull's-Eye Values Inventory-Sum Score; Val-Work = Bull's-Eye Values Inventory-Work Subscale; Val-Leisure = Bull's-Eye Values Inventory-Leisure Subscale; Val-Relations = Bull's-Eye Values Inventory-Relationship Subscale; Val-Health = Bull's-Eye Values Inventory-Health Subscale.

Not specified = 18–20 for pairs of scores because of missingness. Effect sizes are Hedges' g_{av} for paired samples, which is interpreted similarly to Cohen's d (i.e., 0.2 = small, 0.5 = medium, 0.8 = large effects). Higher values represent worse scores on all measures.

An integration of skills from CST and ACT appears to have been beneficial for patients. Although CST and ACT traditionally have differing theories and approaches, in this study, we tailored our combined intervention to help patients meet the same functional goal of improving overall quality of life. CST and ACT are most divergent in the role of cognition in the development, maintenance, and amelioration of psychological distress; however, cognitive strategies from both approaches (i.e., cognitive change, cognitive defusion) have shown promise in reducing psychological distress.[56] It is possible that these differing approaches when combined thoughtfully may serve a shared goal of reducing thought barriers to engagement in valued activity. Efforts to reduce symptoms such as pain[30] can be useful under some circumstances, particularly when patients are facing end of life, and symptoms (such as severe pain) prevent engagement in value-guided activity, but it is not recommended to continue to use strategies to manage symptoms when continued attempts to do so takes individuals further away from living with meaning and purpose.[30] Ongoing research with patients with advanced cancer can answer questions as to the best way to support the shared functional goals of improving overall quality of life with treatment strategies from ACT, CST, or their combination, and under which circumstances.

To our knowledge, this was the first examination of a brief telephone-delivered intervention for community patients with advanced cancer that combined symptom management skills from CST and mindful acceptance of uncomfortable experiences and increasing value-guided activity engagement from ACT. Future studies will need to continue testing this intervention in larger randomized trials of community patients with advanced cancer, with further follow-up.

Future research should increase access to psychosocial interventions for patients with advanced cancer to improve quality of life across domains. If found efficacious in larger trials, delivery of Engage via telephone or videoconferencing in other community clinics using highly trained therapists located far from where patients get their care are next steps. Training community clinic staff (e.g., nurses, social workers) to deliver Engage in person or via telehealth will further support this important goal.

Disclosures and Acknowledgments

This work was supported by the Palliative Care Research Cooperative Group funded by National Institute of Nursing Research (U24NR014637). The second author's work was supported by the American Cancer Society (130526-PF-17-054-01-PCSM). The authors declare no conflicts of interest.

References

1. Dans M, Smith T, Back A, et al. NCCN Guidelines insights: palliative care, version 2.2017. J Natl Compr Canc Netw 2017;15:989–997.

2. van den Beuken-van Everdingen M, de Rijke J, Kessels A, et al. Prevalence of pain in patients with cancer: a systematic review of the past 40 years. Ann Oncol 2007;18:1437–1449.

3. Butt Z, Rosenbloom SK, Abernethy AP, et al. Fatigue is the most important symptom for advanced cancer patients who have had chemotherapy. J Natl Compr Cancer Netw 2008;6:448–455.

4. Foster C, Wright D, Hill H, Hopkinson J, Roffe L. Psychosocial implications of living 5 years or more following a cancer diagnosis: a systematic review of the research evidence. Eur J Cancer Care (Engl) 2009;18:223–247.

5. Montazeri A. Quality of life data as prognostic indicators of survival in cancer patients: an overview of the literature from 1982 to 2008. Health Qual Life Outcomes 2009;7:102.

6. Mitchell AJ, Chan M, Bhatti H, et al. Prevalence of depression, anxiety, and adjustment disorder in oncological, haematological, and palliative-care settings: a meta-analysis of 94 interview-based studies. Lancet Oncol 2011;12:160–174.

7. Ferrell BR, Twaddle ML, Melnick A, Meier DE. National Consensus Project clinical practice guidelines for quality palliative care guidelines, 4th edition. J Palliat Med 2018;21:1684–1689.

8. Narayanan V, Koshy C. Fatigue in cancer: a review of literature. Indian J Palliat Care 2009;15:19–25.

9. Hackett J, Godfrey M, Bennett MI. Patient and caregiver perspectives on managing pain in advanced cancer: a qualitative longitudinal study. Palliat Med 2016;30:711–719.

10. Sheinfeld Gorin S, Krebs P, Badr H, et al. Meta-analysis of psychosocial interventions to reduce pain in patients with cancer. J Clin Oncol 2012;30:539–547.

11. Dalton JA, Keefe FJ, Carlson J, Youngblood R. Tailoring cognitive-behavioral treatment for cancer pain. Pain Manag Nurs 2004;5:3–18.

12. Tatrow K, Montgomery GH. Cognitive behavioral therapy techniques for distress and pain in breast cancer patients: a meta-analysis. J Behav Med 2006;29:17–27.

13. Syrjala KL, Jensen MP, Mendoza ME, et al. Psychological and behavioral approaches to cancer pain management. J Clin Oncol 2014;32:1703–1711.

14. Keefe FJ, Abernethy AP, C Campbell L. Psychological approaches to understanding and treating disease-related pain. Annu Rev Psychol 2005;56:601–630.

15. Keefe FJ, Abernethy AP, Wheeler J, Somers TJ. Psychological interventions for cancer pain. In: Bruera ED, Portenoy RK, eds. Cancer pain assessment and management. Cambridge University Press, 2010.

16. McCaffrey N, Bradley S, Ratcliffe J, Currow DC. What aspects of quality of life are important from palliative care patients' perspectives? A systematic review of qualitative research. J Pain Symptom Manage 2016;52:318–328.e5.

17. Clark K, Smith J, Lovell M, Currow DC. Longitudinal pain reports in a palliative care population. J Palliat Med 2012;15:1335—1341.

18. Hayes SC, Strosahl KD, Wilson KG. Acceptance and commitment therapy: The process and practice of mindful change, 2nd ed. Oakland, CA: New Harbinger Publications, Inc., 2011.

19. Fashler SR, Weinrib AZ, Azam MA, Katz J. The use of acceptance and commitment therapy in oncology settings: a narrative review. Psychol Rep 2018;121:229—252.

20. Shennan C, Payne S, Fenlon D. What is the evidence for the use of mindfulness-based interventions in cancer care? A review. Psychooncology 2011;20:681—697.

21. Dindo L, Van Liew JR, Arch JJ. Acceptance and commitment therapy: a transdiagnostic behavioral intervention for mental health and medical conditions. Neurotherapeutics 2017;14:546—553.

22. Graham CD, Gouick J, Krahé C, Gillanders D. A systematic review of the use of Acceptance and Commitment Therapy (ACT) in chronic disease and long-term conditions. Clin Psychol Rev 2016;46:46—58.

23. Hulbert-Williams NJ, Storey L, Wilson KG. Psychological interventions for patients with cancer: psychological flexibility and the potential utility of Acceptance and Commitment Therapy. Eur J Cancer Care (Engl) 2015;24:15—27.

24. Dahl J, Plumb JC, Stewart I, Lundgren T. The art and science of valuing in psychotherapy: Helping clients discover, explore, and commit the valued action using acceptance and commitment therapy. Oakland, CA: New Harbinger Publications, Inc., 2009.

25. Hayes SC, Levin ME, Plumb-Vilardaga J, Villatte JL, Pistorello J. Acceptance and commitment therapy and contextual behavioral science: examining the progress of a distinctive model of behavioral and cognitive therapy. Behav Ther 2013;44:180—198.

26. Feros DL, Lane L, Ciarrochi J, Blackledge JT. Acceptance and Commitment Therapy (ACT) for improving the lives of cancer patients: a preliminary study. Psychooncology 2011;22:459—464.

27. Rost AD, Wilson K, Buchanan E, Hildebrandt MJ, Mutch D. Improving psychological adjustment among late-stage ovarian cancer patients: examining the role of avoidance in treatment. Cogn Behav Pract 2012;19:508—517.

28. Mosher CE, Secinti E, Li R, et al. Acceptance and commitment therapy for symptom interference in metastatic breast cancer patients: a pilot randomized trial. Support Care Cancer 2018;26:1993—2004.

29. Serfaty M, Armstrong M, Vickerstaff V, et al. Acceptance and commitment therapy for adults with advanced cancer (CanACT): a feasibility randomised controlled trial. Psychooncology 2019;28:488—496.

30. McCracken LM, Carson JW, Eccleston C, Keefe FJ. Acceptance and change in the context of chronic pain. Pain 2004;109:4—7.

31. Hofmann SG, Hayes SC. The future of intervention science: process-based therapy. Clin Psychol Sci 2019;7:37—50.

32. Hawley P. Barriers to access to palliative care. Palliat Care 2017;10. 1178224216688887.

33. Kadan-Lottick NS, Vanderwerker LC, Block SD, Zhang B, Prigerson HG. Psychiatric disorders and mental health service use in patients with advanced cancer. Cancer 2005;104:2872—2881.

34. Weinberger MI, Bruce ML, Roth AJ, Breitbart W, Nelson CJ. Depression and barriers to mental health care in older cancer patients. Int J Geriatr Psychiatry 2011;26:21—26.

35. Bakitas M, Lyons KD, Hegel MT, et al. Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the project ENABLE II randomized controlled trial. JAMA 2009;302:741—749.

36. Somers TJ, Abernethy AP, Edmond SN, et al. A pilot study of a mobile health pain coping skills training protocol for patients with persistent cancer pain. J Pain Symptom Manage 2015;50:553—558.

37. Teo I, Plumb Vilardaga J, Phang F, et al. Behavioral symptom management for patients with advanced breast cancer: the feasibility and acceptability of a cross-cultural intervention. In: Poster Presented at Annual Meeting of the Association for Behavioral and Cognitive Therapies. San Diego, CA, 2017.

38. Somers TJ, Klleher SA, Westbrook KW, et al. A small randomized controlled pilot trial comparing mobile and traditional pain coping skills training protocols for cancer patients with pain. Pain Res Treat 2016;2016: 2473629.

39. Villatte JL, Vilardaga R, Villatte M, et al. Acceptance and Commitment Therapy modules: differential impact on treatment processes and outcomes. Behav Res Ther 2016;77: 52—61.

40. Sulmasy DP. A biopsychosocial-spiritual model for the care of patients at the end of life. Gerontologist 2002; 42(Suppl_3):24—33.

41. Attkisson CC, Zwick R. The client satisfaction questionnaire. Psychometric properties and correlations with service utilization and psychotherapy outcome. Eval Program Plann 1982;5:233—237.

42. Attkisson CC, Greenfield TK. The UCSF client satisfaction scales: I. The client satisfaction questionnaire-8. In: The use of psychological testing for treatment planning and outcomes assessment: Instruments for adults, Vol. 3, 3rd ed. Mahwah, NJ: Lawrence Erlbaum Associates Publishers, 2004:799—811.

43. Cleeland C, Ryan K. Pain assessment: global use of the brief pain inventory. Rehabil Oncol 1995;13:29—30.

44. Bennett MI. The Brief Pain Inventory: revealing the effect of cancer pain. Lancet Oncol 2009;10:1020.

45. Tait RC, Chibnall JT, Krause S. The pain disability index: psychometric properties. Pain 1990;40:171—182.

46. Chibnall JT, Tait RC. The pain disability index: factor structure and normative data. Arch Phys Med Rehabil 1994;75:1082—1086.

47. Cella D, Riley W, Stone A, et al. The Patient-Reported Outcomes Measurement Information System (PROMIS) developed and tested its first wave of adult self-reported health outcome item banks: 2005—2008. J Clin Epidemiol 2010;63:1179—1194.

48. Lai J-S, Cella D, Yanez B, Stone A. Linking fatigue measures on a common reporting metric. J Pain Symptom Manage 2014;48:639—648.

49. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand 1983;67:361—370.

50. Bond FW, Hayes SC, Baer RA, et al. Preliminary psychometric properties of the acceptance and action questionnaire—II: a revised measure of psychological inflexibility and experiential avoidance. Behav Ther 2011;42:676—688.

51. Hayes SC, Luoma JB, Bond FW, Masuda A, Lillis J. Acceptance and commitment therapy: model, processes and outcomes. Behav Res Ther 2006;44:1—25.

52. Lundgren T, Luoma JB, Dahl J, Strosahl K, Melin L. The Bull's-Eye Values Survey: a psychometric evaluation. Cogn Behav Pract 2012;19:518—526.

53. Lundgren T, Dahl J, Hayes SC. Evaluation of mediators of change in the treatment of epilepsy with acceptance and commitment therapy. J Behav Med 2008;31:225—235.

54. Leon AC, Davis LL, Kraemer HC. The role and interpretation of pilot studies in clinical research. J Psychiatr Res 2011;45:626—629.

55. Tang ST, Liu LN, Lin K-C, et al. Trajectories of the multidimensional dying experience for terminally ill cancer patients. J Pain Symptom Manage 2014;48:863—874.

56. Larsson A, Hooper N, Osborne L, Bennett P, McHugh L. Using brief cognitive restructuring and cognitive defusion techniques to cope with negative thoughts. Behav Modif 2016;40:452—482.