A pilot test of a mindfulness-based communication training to enhance resilience in palliative care professionals

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ABSTRACT

Although many providers enter palliative medicine with the intention of helping others, working in this practice also entails that providers will be repeatedly exposed to the pain, trauma, and the death of their patients. These experiences may threaten the values of providers and evoke a range of avoidant coping behaviors that potentiate distress and erode the quality of care provided. This manuscript reports pilot findings from Aware Compassionate Communication: An Experiential Provider Training Series (ACCEPTS) for Palliative Care Providers that is informed by Mindfulness-Based Interventions and principles of Psychological Flexibility Theory. Providers participated in a group-based 8-week, 10-session training series that emphasized mindfulness and acceptance-based interventions as applied to the needs of those working with the chronically ill and dying. The program included formal meditation practice, communication role plays, and value clarification exercises. Participants completed measures of distress (i.e. Depression, PTSD, and Burnout), and potential mechanisms of change (i.e. cognitive fusion and experiential avoidance) at pre-training, mid-training and post-training. Significant reductions were observed in cognitive fusion (posttreatment $d=-.54$, $p < .05$), depressive symptoms (posttreatment $d=-.64$, $p < .01$), depersonalization (posttreatment $d=-.83$, $p < .01$), PTSD Re-experiencing (posttreatment $d=-.34$, $p < .01$). Results indicated that ACCEPTS is an acceptable and feasible intervention for providers that may enhance well-being. More research is needed to assess cognitive fusion as a potential mechanism of change in the program

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1. Introduction

Medicine offers many opportunities for personal and professional growth. While the decision to enter medical training is informed by diverse values, many individuals desire to care for others, gain respect, and engage in the scientific study of health and healing (McManus, Livingston, & Katona, 2006). However, providers who care for the chronically ill and dying in the specialties of palliative care and hospice repeatedly encounter the pain, trauma and death of their patients (Levy, 2000). As providers empathize with these patients, their own traumatic stress symptoms, burnout, and avoidant coping styles may detract from their own well-being and may interfere with their provision of patient-centered care. This manuscript reports the outcomes of a pilot study of Aware Compassionate Communication: An Experiential

Provider Training Series (ACCEPTS) for Palliative Care Providers. ACCEPTS is informed by principles of mindfulness and is tailored to the needs of providers who work with patients receiving palliative and hospice care with the aims of enhancing psychological flexibility and communication.

Patient interactions provide the nexus at which patient and provider well-being converges. Beneficence tends to be the prevailing ethic and value in medicine (Taylor, 2013), and providers are strongly motivated to care for their patients (McManus et al., 2006). Just as patients look to their palliative care providers for support and comfort in the midst of pain (Gerhart, Sanchez Varela, Burns, Hobfoll, & Fung, 2015), palliative care professionals can find a sense of satisfaction as they attend to their patients' needs, provide comfort and alleviate distress (Stamm, 2002). When providers are skilled in communication and patient care they identify underlying concerns, provide effective care, receive gratitude from patients and families, and are buffered from distress (Stamm, 2002).

When patients are in pain, physical decline or facing decisions

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about ending life sustaining care, providers also experience levels of emotional distress (Figley, 2002; Jenkins, & Baird, 2002; Najjar, Davis, Beck-Coon, & Doebbeling, 2009) including burnout (i.e. emotional and physical exhaustion), and secondary traumatic stress (IsHak et al., 2009; Deary, Watson, & Hogston, 2003). Burnout may affect 62 percent of palliative care clinicians (Kamal et al., 2014). Up to 78 percent of Hospice nurses in one sample reported compassion fatigue, a form of vicarious trauma akin to Posttraumatic Stress Disorder (PTSD) (Abendroth, & Flannery, 2006; Figley, 2002). Similar symptom profiles of burnout, depression, and traumatic stress symptoms have been discussed in social workers, physicians, and psychotherapists (Adams, Boscarino, & Figley, 2006; Figley, 2002; Huggard, 2003).

Psychological Flexibility theory suggests that efforts to pursue deeper values of beneficence and compassion may be constrained or eroded if individuals habitually avoid their subjective experiences, or adopt inflexible beliefs (Hayes, Strosahl, & Wilson, 2012). Experiential avoidance, the process of negatively evaluating thoughts and emotions and attempting to avoid, escape or suppress them may paradoxically increase distress (Hayes et al., 2012). Many poor communication behaviors observed in medicine—including changing the topic of conversation (Baranowsky, 2002) or simply spending less time with patients (Najjar et al., 2009)— could potentially serve experientially avoidant functions because they reduce contact with distressing events. Following stressful encounters, providers may also continue to relive difficult aspects of the communication (Baranowsky, 2002; Ptacek, Fries, Eberhardt, & Ptacek, 1999). Providers who have difficulty shifting their attention from difficult encounters or negative beliefs about their performance may be said to be engaging in cognitive fusion, or the tendency to take thoughts to be literally true. Ultimately, the routine stress and trauma of palliative care coupled with these processes may lead to a downward spiral of distress, disrupted communication and general detachment from values of compassion and beneficence (Gysels, Richardson, & Higginson, 2004; McManus et al., 2006).

2. Intervening on provider distress

An array of strategies has been recommended to help medical providers cope with trauma and stress. These strategies have included meaning-centered interventions (Fillion et al., 2009), music therapy (Hilliard, 2005) and arts-based approaches, along with workflow, communication, and quality improvement interventions (Linzer et al., 2015). Huggard (2003) points to personal and professional strategies such as awareness, psychotherapy, self-care, and work-life balance along with organizational interventions aimed at reducing workplace stressors and promoting support and respect in the workplace. A review of the relevant literature concluded that communication training and mindfulness would be critical components to future research and intervention (Kearney, Weininger, Vachon, Harrison, & Mount, 2009). Providers may also benefit from experiences that help them clarify their value systems as medical providers, in particular the inherent value of connecting with their patients at a humanistic level (Horowitz, Suchman, Branch, & Frankel, 2003).

Mindfulness-based interventions offer promising avenues for enhancing the well-being of medical providers (Cohen-Katz, 2004; Krasner et al., 2009). Mindfulness refers to a nonjudgmental awareness of momentary experiences including sensation, emotion and cognition (Kabat-Zinn, 1994; Roemer & Orsillo, 2009). A mindful approach to observing momentary experience may help to normalize both pleasant and uncomfortable experiences that are commonly evoked by professional caregiving, and may also reduce judgmental reactions to those events. As such,

mindfulness-based communication interventions are promising in the context of palliative care as they may enable providers to be more aware and accepting of their personal experiences with patients, and to develop the capacity to engage in effective care and communication even in the presence of their own distress (Anthony, & Vidal, 2010; Hayes et al., 2012; Krasner et al., 2009). Krasner et al. (2009) found that mindfulness-based communication training for primary care physicians was associated with significant improvements in well-being, burnout and mood. Similar improvements in burnout have been observed in a number of pre-to-post tests of mindfulness for medical providers (Fortney, Luchterhand, Zakletskaia, Zgierska, & Rakel, 2013; Goodman & Shorling, 2012). Although the emerging literature is promising, less is known about the use of mindfulness-based interventions for palliative care professionals who routinely encounter patient death and trauma.

Enhancing mindfulness may also support communication and the provision of patient care. Mindful communication refers to the process of actively and attentively engaging with patients (Anthony and Vidal, 2010). Whereas many patient interactions may become routine, mindfulness encourages providers to listen attentively, and consider the unique needs of the patient as they unfold in the context of the present moment. Targeted communication training provides professionals with flexible skill sets to address common patient concerns. As providers learn to communicate effectively with patients they develop a sense of control and mastery for being present with patients in suffering. The experience of approaching and reducing patient suffering, activating family systems and exploring patient values be directly and deeply rewarding to providers, sufficiently so to counteract their competing urges to avoid, silence or shutdown. To reinforce these caring behaviors in the midst of adversity provides may also benefit from clarifying their values and finding deeper meaning in the provision of care.

3. The ACCEPTS intervention

The ACCEPTS intervention was developed as a multimodal program with an emphasis on using mindfulness and communication training to reduce distress among palliative care professionals while simultaneously enhancing communication and engagement with provision of care. The program was primarily informed by principles of mindfulness-based interventions, and augmented with value clarification exercises consistent with broader Psychological Flexibility Theory to help providers to clarify, re-engage and commit to values. A group format was used to harness opportunities to improve communication among providers. This included directed exercises to engage with peers, express common reactions to patient trauma, and listen to the reactions shared by others. Sitting meditation was the primary mindfulness exercise emphasized during the group. These exercises were also augmented by contemplations of events with the intention of cultivating nonjudgmental awareness of thoughts, emotions, and sensations commonly elicited in the course of medical practice. Finally, brief didactics and role plays were utilized to strengthen skills in commonly used communication strategies such as reflective listening. The primary study hypothesis was that participation in the group would be associated with reduction in provider mental health symptoms as evidenced by measures of depression, burnout and PTSD symptoms.

4. Material and methods

4.1. Participants and procedure

The study protocol was approved by the Institutional Review Board at Rush University Medical Center. Participants were recruited through emails to local palliative care and Hospices services that together employed over 200 palliative care providers. Twenty-one individuals responded to the email and enrolled in the program. Of the 21 participants, 17 were female and four were male. The mean age was 53 years (Range 28–63 years). Providers worked in a variety of professional roles including five physicians, 10 nurses, and four social workers. Two participants listed their profession as other. Three held bachelor's degrees, 10 held masters' degrees, seven held doctorates, and one held a professional degree. Seventy-one percent were married. Eighty-one percent worked full-time or more. Four participants left the program citing confusion about the goals of the program as they had expected to enroll in a Mindfulness-Based Stress Reduction program that did not emphasize experiences in palliative care.

4.2. Measures

Participants provided the demographic information above and a pre-training packet prior to enrollment in the training program. A mid-training packet was completed at week 4 (session 5) by 13 of the 17 participants (76%) and a post-training packet was completed at week 8 (session 10) by 11 of the 17 participants (65%). Fourteen of the 17 participants (82%) completed at least one of the mid-training or post-training packets. Due to time constraints participants completed measures on site. In a few cases participants completed mid and post treatment questionnaires outside of session. Participants who completed final packets averaged attending 7.5 sessions (SD=1.5).

4.2.1. The Acceptance and Action Questionnaire Version II (AAQ-II: Bond et al., 2011)

The AAQ-II is a 7-item self-report measure of experiential avoidance, the tendency to reduce or eliminate private experiences at the cost of pursuing valued life outcomes. The AAQ-II is a revised version of the AAQ-I (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996), the original measure of experiential avoidance. Versions of the AAQ have demonstrated convergent validity with other measures of psychopathology. Sample items on the AAQ-II include "I'm afraid of my feelings", and "My thoughts and feelings do not get in the way of how I want to live my life". The AAQ-II has demonstrated internal consistency reliability and convergent validity in prior studies (Bond et al., 2011) and in the current pilot (α=.83–.88).

4.2.2. The Cognitive Fusion Questionnaire (CFQ; Gillanders et al., 2014)

The CFQ is a 7-item measure designed to assess Cognitive Fusion, that is, the tendency for thoughts to be perceived as true and distressing. Example items include: "I get so caught up in my thoughts that I am unable to do the things that I most want to do", and "I get upset with myself for having certain thoughts". Validation studies have demonstrated that the CFQ is internally consistent ($\alpha > $=.88) and is significantly associated with distress and depression in community, occupational and mental health settings. Internal consistency for the total scale was adequate in the current pilot (α=.91–.97).

4.2.3. The Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996)

The BDI-II assesses cognitive, affective, and physiological depression symptoms. Participants respond to 21 items in which they select one of four statements that most reflect their symptoms. An example item offers the following options: "I do not feel particularly guilty" I feel bad or unworthy a good part of the time" "I feel quite guilty", or "I feel as though I am very bad or worthless". The scale has demonstrated internal consistency and convergent validity in a number of studies Internal consistency for the total scale was adequate in the current pilot (α=.82–.92).

4.2.4. Maslach Burnout Inventory (MBI; Maslach, & Jackson, 1981)

The Maslach Burnout Inventory is a 22-item measure of occupational burnout. It measures three components of burnout including emotional exhaustion, depersonalization, and personal accomplishment. An example item is "I feel depressed at work". The measure is significantly associated with job satisfaction among physicians (Rafferty, Lemkau, Purdy, & Rudisill, 1986). In the current sample, internal consistency was adequate for the emotional exhaustion (α=.70–.89) and depersonalization subscales (α=.69–.86). The personal accomplishment scale demonstrated adequate internal consistency at the pre-training assessment (α=.83), but not at the mid and post-training assessments (α=.23–.47). It is possible that evaluations of personal accomplishment may have diverged as a result of mindfulness training that focuses on reducing judgmental and evaluative cognitions. Given the inconsistency in this scale, changes over the course of training were not assessed. Diagnostic cut-scores were not utilized as their use with the MBI is controversial, and some cut scores have been arbitrary (Schaufeli, Bakker, Hoogduin, Schaap, & Kladler, 2001).

4.2.5. The PTSD Symptom Checklist (PCL-C; Weathers, Litz, Herman, Huska, & Keane, 1994)

The PCL-C was used to assess posttraumatic stress symptoms for both screening and assessment purposes. Measured items address core symptoms of PTSD, including intrusive thoughts and memories, avoidance of trauma-related places, people, or thoughts, hyperarousal and hypervigilance, and numbing. Internal consistency for the total scale was adequate in the current pilot (α=.91–.95).

4.2.6. Mindfulness Practice Log

Participants were asked to record the number of minutes they practiced mindfulness exercises between each session. Participants were provided with a structured log to keep for personal use. Participants reported on their practice habits at the mid and posttreatment assessments.

4.3. Procedure

The ACCEPTS intervention was delivered in group format over the course of eight weeks in October and November 2014. The results here are from a single pilot group. The program was informed by other mindfulness-based interventions including a curriculum for professionals working in end-of-life care that was developed previously by Dr. Mitchell Levy (see O'Reilly, 2013 for more information). The current program included two half-day (4 h) weekend training sessions. One half-day session began the program and the second half-day occurred at the end of the program. Eight weekday (1.5–2 h) sessions were conducted in the intermediate time. Consistent with the prior studies of mindfulness-based communication interventions, each of the 10 sessions included didactic content, experiential mindfulness practice, and discussion. These multiple modes of training were used to support skill acquisition.

A licensed psychologist and a palliative care physician led the training with support from five meditation instructors. The five

meditation instructors volunteer at a local meditation center and were selected based on having past experience working in medical settings. The instructors underwent training with the senior author who has conducted mindfulness workshops for medical providers. The role of the mindfulness instructors was to provide more personalized instruction to group participants. This included instruction in sitting meditation with an emphasis on basic practices of attending to the breath and posture, and observing thought and emotion with a nonjudgmental awareness. Group leaders and instructors debriefed after each session to monitor the well-being of participants and to calibrate and standardize small group instruction and activity.

Didactic content included exploration of the biopsychosocial model of stress, burnout, and avoidance (Hayes, & Smith, 2005; Roemer, & Orsillo, 2009). Avoidance of emotional and cognitive content is known to magnify distress (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Given the sometimes habitual nature of avoidance, it is not always noticed consciously. Therefore, the model was provided. Mindfulness, acceptance and value-based action are repeatedly presented as a framework for maintaining openness to experience and healthy engagement in professional and personal values (McCracken, & Yang, 2008). Readings and published vignettes were presented to demonstrate the use of effective coping even in the presence of emotionally difficult medical work. For example, mindful and validating communication was demonstrated by a role-playing vignette in which a patient had lost a friend to a traumatic care accident (Martell, Dimidjian, & Herman-Dunn, 2010, pp. 55–56). Distress aroused when reality conflicts with one's values was illustrated with a reading from Chödrön (2008) Comfortable with Uncertainty and also by an article on intercultural palliative care (Gunaratnam, 2007). The emphasis was on showing that meaning and satisfaction are enhanced when one can approach one's work in the terms of the present moment.

With regard to structure of the weekly sessions, each session began with 10–15 min of introductions and review. Difficult emotions elicited by professional caregiving were discussed within the group. Rather than promoting clinical problem solving, each of these conversations was introduced as an opportunity to practice expression of common reactions to stressful events and to listen attentively to the distress of others who were participating in group. Participants then broke up into small groups to engage in sitting meditation with meditation instructors. These small group sessions lasted approximately 30 min. Participants were instructed to gently acknowledge cognitions and emotions that come into awareness and to return attention back to awareness of the breath. The meditation instructors also provided brief practical guidance on meditation practice. For example, some participants asked for advice about how to sit with proper posture while meditating to limit tension and pain.

Following meditation, participants returned to the larger group to contemplate and discuss the topic of the day (see Table 1 for an overview of content). Contemplations were framed to facilitate nonjudgmental awareness of cognition and emotion. Whereas mindfulness is generally used to refer to a process of generalized observation of unfolding experience, contemplation refers to an intentional focus on cognitive content (Chiesa, & Malinowski, 2011). Contemplative exercises were chosen to provide participants with experience considering aspects of palliative care that might otherwise be avoided or evaluated negatively. For example, participants were asked to imagine their own funeral. Participants were then guided to observe their thoughts and emotional reactions, and attend to the possibility of covert avoidance such as directing one's attention to less evocative thoughts.

With regard to specific content and structure of the sessions the program began with a half-day session (session 1). Participants

Table 1
Session themes and contemplations.

Session	Themes and contemplations
1	• Welcome and Introductions • Death and Medicine • Introduction to Mindfulness
2	• Mindfulness of the present moment • Contemplating Impermanence
3	• Contemplating your own death/funeral • Values
4	• Committed Action
5	• Cultural Competence • Tension between Patient and Provider Values
6	• Working with silence
7	• Mindful Communication • Listening Skills
8	• Mindfulness in organizations • Mindfulness of difficult emotions
9	• Mindfulness of difficult emotions • Family meetings
10	• Walking Meditation • Leaves on a stream exercise • Wrap up and review

Each session included sitting meditation instruction, and difficult clinical experiences were discussed.

completed informed consent and pre-treatment measures. The session then began with introductions and a brief rationale for the program to address provider stress and communication difficulties. Participants were encouraged to share their interests in pursuing mindfulness training. A didactic presentation on the state of dying in medicine was presented, with an emphasis on the role of avoidance of reminders of death in medicine and contemporary American culture more generally (Kubler-Ross, Wessler, & Avioli, 1972; Levy, 2000). The principle and practice of mindfulness was introduced in order to help providers foster awareness of the multitude of experiences evoked through work in palliative medicine. Following an introduction to sitting meditation, participants broke up into dyads for listening exercises. In each dyad, participants took turns solely listening or solely speaking for five minute regarding their experiences with death and impermanence in medicine. Participants were instructed to bring into awareness a situation that involved a sense of impermanence, their own funeral, and a change in a relationship in sessions two and three.

Sessions three, four and five specifically target the role of values and commitment within the context of palliative care. Participants were encouraged to contemplate their legacy and values (session 3), to consider how values could be engaged with committed action on the job (session 4), and to note the dissonance created when patient and provider values are not in alignment (session 5). For instance in session three values were introduced, and participants were encouraged to contemplate their own funeral and to consider what values would be espoused in their eulogy. The purpose was to help providers clarify what is most important to them so that behavior could be directed toward those values.

Themes and contemplations from sessions 6, 7, 8 and 9 targeted the intersection of mindfulness and communication more specifically. Participants discussed the difficulty of work with silence and the tendency for clinicians to fill conversational space with talking (Session 6). Active listening skills were presented as the embodiment of mindfulness in communication when clinicians are able to nonjudgmentally observe and reflect the emotions of a patient (Session 7). Sessions 8 and 9 discussed common experiences of frustration, anger, and helplessness evoked in large organizations and in stressful family meetings. Emphasis was placed on cultivating an awareness of these stressful emotions, noticing tendencies to avoid, and taking a mindful approach to

Table 2
Study outcomes.

Outcome	Pre-training M (SD)	Mid-training M (SD)	Pre-to-mid change Cohen's d	Post-training M (SD)	Pre-to-post change Cohen's d	B	SE	p
Mechanisms								
Cognitive Fusion	22.76 (9.75)	21.15 (6.56)	−.19	17.67 (8.92)	−.54	−2.34	.98	.025
Experiential Avoidance	19.38 (7.65)	16.25 (5.91)	−.45	17.36 (6.27)	−.29	−1.35	.73	.075
Psychiatric Symptoms								
Depression	7.95 (8.62)	5.46 (6.10)	−.33	3.55 (4.50)	−.64	−2.26	.89	.007
PTSD Total	26.33 (8.64)	25.23 (8.65)	−.13	25.09 (9.41)	−.13	−.85	.64	.197
Re-experiencing	7.81 (2.76)	6.23 (2.63)	−.59	6.82 (2.99)	−.34	−.67	.25	.011
Avoidance	9.81 (4.14)	9.47 (2.96)	−.09	10.00 (5.76)	.04	.19	.55	.727
Hyper-arousal	8.42 (3.74)	8.69 (4.30)	.06	7.54 (1.97)	−.29	−.54	.37	.157
Burnout								
Depersonalization	13.52 (6.43)	10.31 (4.87)	−.56	8.82 (4.77)	−.83	−2.61	.70	.001
Emotional Exhaustion	29.50 (8.54)	24.31 (9.38)	−.58	24.27 (6.21)	−.70	−2.07	1.09	.073

M=Mean, SD=Standard Deviation, B=Unstandardized Model Coefficient, SE=Standard Error. Cohen's d values represent standardized mean changes from pre-to-mid training, and pre-to-post training, respectively.

observing emotion. The final session focused on a review of the session content covered in the previous 9 sessions. Walking meditation and leaves on a stream exercises were conducted to provide participants with additional mindfulness-based techniques to broaden their repertoire of practices. The program concluded with a discussion of participant experiences, and their plans for ongoing utilization of mindfulness practice.

After reviewing each theme or contemplation, follow-up discussion provided a context in which providers were able to practice acceptance, valuing, and a nonjudgmental attitude while communicating with their fellow participants. These accepting and compassionate interchanges helped to reinforce benefits of mindfulness practice.

5. Calculation

All data were analyzed using SPSS version 19 (IBM, 2010). Descriptive statistics were utilized to characterize the study variables. The study hypotheses were tested using mixed models with Maximum Likelihood (ML) estimation to manage missing data and make full use of available data. The analysis began with all available data from all 21 participants. Mixed models with time-varying covariates (i.e. measured at each of the three assessment points) were used to test the hypothesis that cognitive fusion and experiential avoidance would demonstrate significant cross-sectional associations with mental health outcomes such as PTSD and depression symptoms. Finally, change in mechanisms and mental health outcomes were tested with mixed models. To assess change, a time variable was coded as follows in order to estimate a slope of change in symptoms over the course of the study: Baseline=0, Mid Treatment=1, Posttreatment=2. To assess for the impact of attrition these same analyses were repeated after excluding the four participants who left the program (i.e. data from 17 participants were analyzed). All significant effects remained after exclusion of these participants, so the original models with all 21 of the original participants were reported. Cohen's d was calculated based on mean differences between pre-training and post-training assessments to provide estimates of effect size.

6. Results

At baseline, the mean PCL score was 26.33 (SD=8.64) which falls within the at-risk range for PTSD symptomatology in primary

care settings (Bliese et al., 2008). The mean BDI-2 depression score was 7.95 (SD=8.64) indicating minimal symptoms of depression. Of note, none of the providers endorsed suicidal ideation on the BDI-2 (Beck et al., 1996). At the end of the program, participants reported practicing mindfulness 6 times per week (SD: 1.9, Range: 2–7 practice sessions) for an average of 22 min (SD:13.6, Range 15–60 min). Thus, in total, participants averaged approximately 141 min of practice per week (SD: 110.2, Range: 40–420 min).

The associations of proposed mechanisms of change including cognitive fusion and experiential avoidance with mental health outcomes were also tested. Cognitive fusion and experiential avoidance were entered as time-varying (i.e. measured at each assessment period) covariates in the prediction of PTSD, depression, and depersonalization symptoms. As such, unstandardized regression coefficients represent the cross-sectional relationship between independent and dependent variables aggregated over the three assessments. These tests were conducted to assess whether cognitive fusion and experiential avoidance were associated with overall levels of depression, PTSD, and depersonalization. Cognitive fusion was significantly associated with PTSD (B=.32 SE=.13, p=.015) and depression (B=.57 SE=.10, p < .001), but not depersonalization (B=.04 SE=.11, p=.746) when assessed cross-sectionally. Experiential avoidance was significantly associated with PTSD (B=.45 SE=.14, p=.003) and depression (B=.71 SE=.12, p < .001), but not depersonalization (B=.00 SE=.14, p=.981) when assessed cross-sectionally. This pattern of results suggests that providers were experiencing low to significant levels of PTSD and that these symptoms were significantly associated with cognitive fusion and experiential avoidance.

6.1. Change in proposed mechanisms, and psychiatric symptoms, and burnout

Outcome data including descriptive statistics, mixed model coefficients, and effect sizes are reported in Table 2. There was a significant reduction in cognitive fusion over the course of the program. The pre-treatment to post-treatment difference in means was consistent with a medium effect size. There was a non-significant reduction in experiential avoidance, and the pre-treatment to post-treatment difference in means was consistent with a small effect size.

A significant reduction in BDI-2 depression symptoms was observed, and pre-treatment to post-treatment difference in means was consistent with a medium effect size. A significant

reduction was observed on the PCL PTSD Re-Experiencing Sub-scale. The pre-treatment and post-treatment difference in means was consistent with a small effect size. A significant reduction was observed in depersonalization, and pre-treatment to post-treatment difference in means was consistent with a large effect size. There was a non-significant reduction in emotional exhaustion, and the pre-treatment to post-treatment difference in means was consistent with a medium effect size. There were no statistically significant changes in PTSD total scores, PTSD avoidance, or PTSD hyperarousal scores.

7. Discussion

This study investigated preliminary outcomes of mindfulness-based communication training for providers working in the field of palliative care. Providers in this setting are vicariously exposed to death and trauma on a routine basis, events that many individuals spend much of their lives avoiding. Training in mindfulness was provided to enhance provider engagement in communication and personal values even in the presence of their own discomfort and distress. Results suggest that participants were highly amenable to mindfulness practice, and on average engaged in approximately 20 min of mindfulness exercise each day. Over the course of the program, participants reported significantly lower levels of cognitive fusion. Providers also reported lower levels of depression, and re-experiencing symptoms of PTSD. A large effect was also observed with regard to reductions in work related depersonalization.

These preliminary results provide evidence that ACCEPTS is a feasible and acceptable training intervention for providers working with the chronically ill and dying in palliative care settings. Additional research is needed, but the current results imply that the intervention may have enhanced providers' ability to acknowledge and observe difficult or upsetting cognitive content without believing or acting upon such thoughts. Providers were also less prone to symptoms of depressed mood and reported fewer symptoms of re-experiencing trauma.

Additional research is needed to help determine the precise mechanisms of change (see Kazdin (2007) and Levin, Hildebrandt, Lillis, and Hayes, (2012) in the ACCEPTS protocol so that interventions can be streamlined and delivered within the time constraints faced by many palliative care physicians. Future research with larger samples is needed to explore the role of Cognitive Fusion, the tendency to take one's upsetting thoughts to be true and to behave accordingly, as a potential mechanism of change. Cognitive Fusion is directly targeted by sitting meditation instruction as participants are instructed to repeatedly foster a nonjudgmental awareness of cognition and to redirect attention to the breath and posture. Through repeated practice participants gain perspective into the transient and associative nature of cognition, and the tendency of the mind to wander, and found thoughts to be less believable and upsetting. Furthermore, it is notable that significant reductions were also observed in outcomes related to difficult cognitive content including PTSD re-experiencing symptoms and depersonalization in the presence of patients. To the extent that participants were able to observe thoughts without becoming reactive, they may have been less likely to re-experience traumatic stress, and felt more psychologically present when caring for patients.

Contrary to expectations, the post-treatment reduction in Experiential Avoidance was small but non-significant. Similarly, overall PTSD, Avoidance and Hyperarousal, and Emotional Exhaustion were not significantly lower over the course of the study. This lack of finding may be attributable to statistical limitations presented by the small sample size. Another possibility is that meditation exercises may have taken the function of avoidance among some participants and diluted effects. For instance, meditation may be confused with positive thinking exercises (Kabat-Zinn, 1994), or used with the goal of escaping distressing affect. Therefore, the future iterations of the program could be enhanced with additional acceptance exercises designed to increase behavioral flexibility in the presence of distress. In addition to repeated use of emotionally evocative contemplation exercises, metaphors based on welcoming and willingly experiencing distress could be provided (Hayes et al., 2012). It should also be noted that the utility of avoidant responding depends upon the context in which it occurs (Vos & De Haes, 2007). At times, mindfully disengaging from aversive or traumatic events may promote resilience as providers have time to replenish depleted resources such as rest and social support, and limit exposure to further trauma.

Study findings add to a growing literature on the application of mindfulness-based intervention for individuals exposed to traumatic stress (Frewen, Rogers, Flodrowski, & Lanius, 2015; Goldsmith et al., 2014). Whereas some researchers have expressed concern that mindfulness-based intervention could potentiate increases in PTSD symptoms (Lustyk, Chawla, Nolan, & Marlatt, 2009), theoretical work within Psychological Flexibility Theory, and emerging empirical evidence suggests that mindfulness-based approaches may be an important aspect enhancing resilience among individuals exposed to trauma (Dutton, Bermudez, Matas, Majid, & Myers, 2013). Exposure-based therapies have been the treatment of choice for PTSD, and more research is needed to determine if mindfulness interventions function similarly to more traditional exposure protocols (Baer, 2003). Long-term follow up is needed to determine more distal outcomes of mindfulness in the palliative care setting. Whereas over the short-term mindfulness was associated with reduction in distress, the impact of repeated traumatic stress may be additive and multiplicative (Gerhart, Canetti, Hobfoll, in press), and it is unclear if enhanced awareness of patient trauma could mitigate or potentiate the accumulation of discomfort over time. Additional self-care practices along with organizational interventions that enhance control and manage workloads may support provider resilience and prevent traumatization (Back, Steinhauser, Kamal, & Jackson, in press).

The results of this study should be interpreted within its strengths and limitations. The current sample included a diverse mix of providers working with patients in palliative care. Although many participants reported symptoms of PTSD, the self-report tool is not diagnostic of PTSD. Limitations of the study include a small sample, and reliance on a pre-post design. In addition the majority of the sample was female and it is unclear how the program may generalize to non-female participants. Further replication with larger samples is needed to determine the generality of these results. Given the complexity and demands of a medical career, not all participants were able to complete assessments, and several participants left the program. Similar levels of participant attrition have been observed in other mindfulness programs in other populations (Crane, & Williams, 2010). Brief workshops, and electronic interventions may hold promise for delivering this training in a more accessible manner and thereby enhance recruitment and retention. Although the vast majority (82%) were able to provide some follow-up data on their response to training, attendance data was not available for all participants. Future studies should collect this information to better quantify adherence, fidelity, and dose-response relationships for the program. The majority of participants completed assessments at the location where the intervention was conducted immediately prior to the initial session, and immediately following the mid-treatment and post-treatment sessions. Future research should utilize assessments conducted outside of the intervention location to reduce demand characteristics that could introduce biased reporting of outcomes. Finally,

the study measures captured generally negatively valenced content, and more research is needed to determine how mindfulness may foster awareness of compassion satisfaction, or the benefits derived from caring for and connecting with others (Stamm, 2002).

Results of the current study can also inform further exploration of mechanisms of change in resilience programming for palliative care professionals (Kazdin, 2007). Correlational analysis suggested that Cognitive Fusion and Experiential Avoidance were associated with mental health symptoms among participants. However, the current study was underpowered to conduct prospective mechanism of change analyses. For example, latent difference score models have supported the detection of mechanisms of change in other contextual behavioral interventions, but were computed with a larger sample of data (Berking, Neacsiu, Comtois, & Linehan, 2009). A larger sample is needed to thoroughly investigate how change in psychological flexibility constructs may facilitate subsequent improvement in mental health symptoms (Hayes et al., 2006; Kazdin, 2007).

Given the ubiquity of death and trauma in the setting of palliative care, additional research is needed to determine how resilience can be enhanced among palliative care professionals. The current study was conducted in a cohort of volunteers who attended sessions away from their worksite. Medical professionals face many demands on their schedules. To ensure that training can reach a broader audience more research is needed to determine how mindfulness and other initiatives can be integrated into the day-to-day practice of palliative care.

8. Conclusions

Providers working in the field of palliative care may be at-risk for heightened exposure to traumatic stress that in turn may impact the provision of patient-centered care. ACCEPTS, brief group-based mindfulness training, and was associated with significant reductions in distress among palliative care providers.

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