Compassion Training for Hospital Chaplain Residents: A Pilot Study

By

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B.A. Philosophy, Neuroscience, and Psychology
Washington University in St. Louis
2014

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Abstract

Objective: Healthcare providers experience high rates of burnout. Provider burnout includes feelings of emotional exhaustion and ineffectiveness associated with prolonged exposure to patients' suffering. Hospital chaplains are relied on to provide spiritual, social, and emotional support to acutely distressed patients, and may be particularly susceptible to burnout. The purpose of the current study is to examine the effectiveness of incorporating compassion meditation training into a clinical pastoral education (CPE) curriculum to reduce burnout and negative emotional symptomology among hospital chaplain residents.

Methods: A longitudinal, quasi-experimental design was used to examine the impact of Cognitively-Based Compassion Training (CBCT®), a group-delivered compassion meditation intervention in reducing adverse mental health outcomes, including burnout. Hospital chaplain residents (n = 15) were assigned to participate in a CBCT intervention in the fall of their CPE program or a waitlist comparison group that received CBCT in the spring of their CPE program. We assessed depression, anxiety, stress, burnout, secondary trauma stress, and compassion satisfaction at four-time points: baseline, immediately after the intervention group received CBCT, 4-month follow-up before the waitlist group received CBCT, and after the waitlist group received CBCT.

Results: Compared to the waitlist comparison group, chaplains assigned to CBCT reported significant decreases in burnout and anxiety; though, the effect was not maintained at 4-month follow-up. Other outcomes did not differ significantly post-intervention but were trending in the expected direction. Secondary analyses that collapsed the intervention and waitlist group into a single group pre-post design indicated that CBCT training was associated with significant decreases in depression, anxiety, burnout, and secondary trauma stress, and increases in compassion satisfaction.

Conclusions: Findings support the hypothesis that group-delivered compassion meditation training incorporated into CPE is effective for reducing burnout and anxiety among hospital chaplain residents, although it may be necessary to continue CBCT throughout residency to sustain effects.

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Chapter 1: Introduction

Medical providers including physicians, nurses, and students in healthcare professions experience high rates of burnout and depression (Liselotte N Dyrbye, Thomas, & Shanafelt, 2006; Hinderer et al., 2014; Sorenson, Bolick, Wright, & Hamilton, 2016). The experience of burnout is comprised of several factors including emotional exhaustion, depersonalization (treating patients like objects), and ineffectiveness (Maslach, 2003; Maslach, Schaufeli, & Leiter, 2001). Burnout has significant implications for the health and wellbeing of both providers and patients (Haas et al., 2000; Shanafelt, Sloan, & Habermann, 2003). Provider burnout is associated with increased risk of depression, anxiety, and substance abuse (Liselotte N Dyrbye et al., 2008; Shanafelt et al., 2012).

Patients of providers experiencing burnout report lower satisfaction (McHugh, Kutney-Lee, Cimiotti, Sloane, & Aiken, 2011; Vahey, Aiken, Sloane, Clarke, & Vargas, 2004), inferior care and longer recovery times (Firth-Cozens & Greenhalgh, 1997). Providers who report burnout are more likely to make medical errors and are at increased risk for malpractice (Chen et al., 2013; Linzer et al., 2009; Shirom, Nirel, & Vinokur, 2006). While the exact link between provider burnout and poor patient outcomes is not fully understood, it may be explained by deficient empathy and decreased social-emotional functioning resulting from prolonged provider stress (Del Canale et al., 2012; West et al., 2006). Research shows that empathy significantly declines throughout medical training and clinical practice (Bellini & Shea, 2005; Hojat et al., 2009; Neumann et al., 2011). By the third year of medical school, nearly 50% of students report symptoms of burnout (Liselotte N Dyrbye, Thomas, Huschka, et al., 2006; Shanafelt et al., 2003). Explanations for the rise in burnout and decline in empathy include coping strategies –

such as depersonalization and emotional numbing – developed in response to prolonged exposure to patients' suffering (Neumann et al., 2011; Newton, Barber, Clardy, Cleveland, & O'Sullivan, 2008; Shapiro, 2008).

Significantly less is known about the experience of burnout or empathy among hospital chaplains and hospital chaplain trainees. Although the role of hospital chaplains is not always well defined and their role varies across hospital systems (Carey et al., 2016), hospital chaplains operate as members of the healthcare team who provide spiritual consults to patients in distress (Galek, Flannelly, Koenig, & Fogg, 2007; Idler, Grant, Quest, Binney, & Perkins, 2016). An estimated 50-64% of hospitals in the U.S. include hospital chaplains (Cadge, Freese, & Christakis, 2008). The number of chaplain visits varies significantly by hospital. One study reported that chaplain referrals were made for 39 patients per 1000 patient stays (Fogg, Flannelly, Weaver, & Handzo, 2004), while another different hospital estimated that 60% of patients were visited by a chaplain (Cadge, Calle, & Dillinger, 2011).

Hospital chaplains, like their medical counterparts, are also exposed to prolonged experiences of patient suffering. Pain, anxiety, depression, and loss are among the problems for which patients are commonly referred to a hospital chaplain (Fogg et al., 2004; Vanderwerker et al., 2008). Frequent interactions with patients experiencing acute distress as well as perceived lack of control are factors associated with an increased risk for burnout and secondary trauma stress (often defined as 'compassion fatigue') resulting from interpersonal interactions with a traumatized individual (Charles R Figley, 2013; Pines & Maslach, 1978; Sinclair, Raffin-Bouchal, Venturato, Mijovic-Kondejewski, & Smith-MacDonald, 2017; Slocum-Gori, Hemsworth, Chan, Carson, & Kazanjian, 2011). As such, hospital chaplains may be susceptible to experiences of burnout and secondary trauma stress (STS). Some preliminary findings suggest

that hospital chaplains may not be as susceptible to burnout compared with physicians and nurses (Galek, Flannelly, Greene, & Kudler, 2011; Hotchkiss & Lesher, 2018). Because hospital chaplains are an understudied population, more research is needed to evaluate the prevalence of burnout and STS among hospital chaplains.

Previous literature suggests that participation in contemplative programs (including mindfulness and compassion mediation programs) may buffer against burnout in caregiving professionals (Krasner, Epstein, Beckman, & et al., 2009; J Mascaro et al., 2016). Factors that contemplative programs aim to promote, such as self-compassion and perceived social support, appear to be protective against burnout among caregiving professionals including physicians, nurses, and chaplains (Alkema, Linton, & Davies, 2008; Galek et al., 2011; Hotchkiss & Lesher, 2018; Olson & Kemper, 2014; Raab, 2014).

The current study examines the effectiveness of a specific compassion training program – CBCT® (Cognitively-Based Compassion Training) – among a population of hospital chaplain residents who are in training to become chaplains who will perform spiritual consults within hospital settings. The analysis for the study was informed by the CBCT Integrative Model that identifies the core skills developed in CBCT and hypothesizes their interaction and directionality (Ash, Harrison, Pinto, DiClemente, & Negi, 2018). See the CBCT Integrative Model and table of key constructs in Appendix A and B. The CBCT Integrative model describes the process by which CBCT training promotes intrapersonal skills (*e.g.,* attention, meta-awareness, and self-compassion) and interpersonal skills (*e.g.,* identification, empathy, and compassion) (Ash et al., 2018). The model posits that these two pathways are mutually reinforcing, but this model has yet to be tested.

The primary aim of this study is to test the feasibility of CBCT® to reduce burnout and negative emotional symptoms among hospital chaplain residents. As is hypothesized in the CBCT Integrative Model, compassion training is expected to lead to improvements in personal wellbeing. A secondary aim of the current study is to assess if any benefits associated with CBCT training are maintained at four-month follow-up. This research has several implications for the broader field of public health. CBCT is a safe, low-cost, health promotion intervention which has previously been shown to improve depression and other health indicators in a variety of populations including college and medical students, breast cancer survivors, adolescents in foster care, and previous suicide attempters (Dodds et al., 2015; Gonzalez-Hernandez et al., 2018; LoParo, Mack, Patterson, Negi, & Kaslow, 2018; J Mascaro et al., 2016; Pace et al., 2009; Pace et al., 2013). This is the first study to test CBCT in a population of hospital chaplain residents. CBCT has the potential to not only benefit the chaplain residents who are receiving CBCT training, but there may also be downstream benefits for the patients who receive spiritual health consults. From a health services perspective, CBCT may potentially optimize patient-provider interactions as well as highlight the importance of spiritual and social-emotional care within the domain of modern medicine.

Chapter 2: Literature Review

This chapter will examine several dimensions relevant to the current study including an overview of the role of the hospital chaplain and existing research on the impact of hospital chaplaincy on patient outcomes. The chapter will also review current research on burnout and professional quality of life among chaplains. Some findings show that contemplative practices, including mindfulness and self-compassion, reduce burnout among caregivers. This section will explore the landscape of contemplative practices and conclude with an overview of CBCT training and research on its benefits.

The Role of Hospital Chaplains

Chaplains are considered to be members of the clergy, but they often work in secular institutions such as hospitals, military organizations, or prisons (Idler et al., 2016). While chaplain training can be rooted in a religious tradition, the responsibilities of chaplains extend beyond the purview of religious consultations. A large-scale study examining reasons for chaplain referrals found that patients were most frequently referred to a chaplain for emotional issues (30% of referrals), followed by spiritual issues (19.9% of referrals) (Vanderwerker et al., 2008). Common problems for which a patient might be referred to a hospital chaplain include anxiety, depression, and pregnancy loss (Fogg et al., 2004).

Patient populations vary by hospital, but an increasing number of patients in the United States do not identify with a particular religious organization (Cooperman, Smith, & Ritchey, 2015). Despite declines in religious affiliations, an estimated 27% of U.S. adults report that they are “spiritual” but not “religious” (Lipka & Gecewicz, 2017). The Association for Professional Chaplains (APC) endorses the following definition of spirituality coined by Puchalski and colleagues,

> Spirituality is the dynamic and intrinsic aspect of humanity through which persons seek ultimate meaning, purpose, and transcendence, and experience relationships to self, family, and others, community, society, nature, and the significant or sacred. Spirituality is expressed through beliefs, values, traditions and practices. (Puchalski, Vitillo, Hull, & Reller, 2014, p. 887)

Chaplains have defined their role as meeting the spiritual needs of patients (Cadge et al., 2011). Historically, support for hospital chaplaincy was rooted in the view that medicine alone cannot address the spiritual concerns that often arise among the seriously ill (Abbott, 2014). While chaplaincy training and practice continue to evolve, it maintains a focus on patient-centered spiritual care. Currently, professional chaplains receive training in the following competency areas: (1) integration of theory and practice, (2) professional identity and conduct, (3) practical skills, and (4) organizational leadership (ACPE, 2018). There are several governing bodies that oversee professional chaplaincy certification including the Association of Professional Chaplains, the American Association of Pastoral Counselors, and the ACPE Standard for Spiritual Care and Education (2018).

Chaplaincy training and practice have traditionally centered on the use of patient case-studies (Handzo et al., 2008). There is an increasing call, however, to align chaplaincy work with evidenced-based practices (Burton, 2002; Fitchett, 2002; O'Connor, 2002). This shift towards research-informed practice may reflect the evolving role of chaplains within the healthcare team (Idler et al., 2016). Several studies have now attempted to describe the primary components of a chaplain consultation. A study by Handzo and colleagues (2008) examined data from 30,955 recorded chaplain visits across 13 healthcare institutions in New York. Findings showed that the most common intervention employed was empathic listening which occurred in 71% of visits;

other common strategies used were emotional enabling (15.3% of visits) and life review (11.7% of visits) (Handzo et al., 2008). Similarly, Massey and colleagues (2015) utilized chart data, focus groups with practicing chaplains, and direct observations to create a taxonomy of chaplain-related activities. Primary activities identified included aligning a care plan with patients' values, preserving patient dignity and respect, and showing care and concern (Massey et al., 2015).

Emerging evidence suggests that chaplaincy services have significant effects on patient outcomes. Chaplain visits reduce patient anxiety (Bay, Beckman, Trippi, Gunderman, & Terry, 2008), spiritual distress (Iler, Obenshain, & Camac, 2001), and lead to higher patient satisfaction (Marin et al., 2015; Pesut, Sinclair, Fitchett, Greig, & Koss, 2016). Findings from a study examining death and hospice rates of 3585 hospitals in the U.S. found significantly lower rates of in-hospital deaths and higher rates of hospice enrollments among hospitals that employed chaplains on staff compared with those that did not (Flannelly et al., 2012). This finding is consistent with prior research indicating that patients are more likely to elect for hospice care instead of aggressive inpatient treatments when their spiritual needs are met (Balboni et al., 2011; Balboni et al., 2010). These findings are also consistent with Massey et al.'s (2015) conclusion that a primary function of chaplaincy work is to align a patients' care plans with their values.

Research on chaplaincy is growing. Recently, new scales such as the Patient Reported Outcome Measure of Spiritual Care (PROM) have been developed to specifically assess patient outcomes resulting from chaplaincy care (Lobb, Schmidt, Jerzmanowska, Swing, & Thristiawati, 2018; Snowden & Telfer, 2017). The development of such scales represents a shift from primarily descriptive research to more objective measures assessing clinical impacts. Snowden and colleagues (2017) point out that scale development is a necessary step towards more

generalizable chaplaincy research that will lend itself to increased implementation of evidence-based practices.

Chaplain Wellbeing

Given that chaplains regularly interact and consult with patients in high distress, it is important to consider what ramifications this may have for the chaplains' personal wellbeing. There is robust evidence that caregivers and those in helping professions are at increased odds for developing burnout or secondary trauma stress (STS) (C. R. Figley, 2002; Pines & Maslach, 1978; Sinclair et al., 2017). Burnout and secondary trauma stress are related but distinct constructs. Burnout is characterized by emotional exhaustion, depersonalization, and ineffectiveness (Maslach, 2003; Maslach et al., 2001). In contrast, STS is conceptualized as specifically resulting from interacting with someone who has been traumatized (C. R. Figley, 2002); this construct is sometimes referred to as "compassion fatigue" (Jenkins & Baird, 2002). Both burnout and STS are associated with depression and anxiety disorders (Ahola et al., 2005; Hakanen, Schaufeli, & Ahola, 2008), but the rates of onset for burnout and STS may differ. Burnout has been shown to manifest relatively slowly over time (Maslach & Florian, 1988), while STS symptoms may develop quickly – and can at times be traced to a single incident (Fingley, 1995). In a sample of professional chaplains, burnout (but not STS) was significantly associated with number of years worked, and STS (but not burnout) was associated with number of hours worked per week (Galek et al., 2011). This difference may reflect differing mechanisms leading to the development of burnout and STS. Nevertheless, both constructs are considered important when assessing overall professional quality of life (Stamm, 2010).

Only a handful of studies have examined burnout and STS among chaplains. Preliminary evidence suggests that chaplains do not experience high rates of burnout or STS. One cross-

sectional study that assessed professional quality of life among a convenience sample of 1299 professional chaplains found that chaplains reported low burnout and STS; in both categories, chaplains scored in the bottom quartile compared with normed data of the general population (Oliver, Hughes, & Weiss, 2018). Similarly, low levels of burnout and STS were reported among a population of 217 VA chaplains (Yan & Beder, 2013). Several factors may contribute to these findings. In both studies, chaplains also reported high levels of compassion satisfaction – which is defined as the emotional satisfaction resulting from doing one's job (Oliver et al., 2018; Stamm, 2010; Yan & Beder, 2013). Previous literature supports that compassion satisfaction and perceiving one's work as meaningful are inversely associated with burnout (Craig & Sprang, 2010; Martins Pereira, Fonseca, & Sofia Carvalho, 2011; Sprang, Clark, & Whitt-Woosley, 2007). A recent study examined factors which predicted burnout among chaplains observed that compassion satisfaction, secondary trauma stress, mindful self-care, demographics, and organizational factors accounted for 83.2% of the variance in burnout (Hotchkiss & Lesher, 2018). Of these factors, self-compassion, purpose, and mindful self-awareness had the strongest protective effects against burnout (Hotchkiss & Lesher, 2018). This finding is consistent with other research showing that self-care practices including self-compassion and mindfulness are correlated with lower burnout and higher provider wellbeing (Alkema et al., 2008; Olson & Kemper, 2014).

Compassion Training

There is a robust array of literature outlining the positive mental and physical health benefits associated with contemplative practices including mindfulness and compassion training programs (Galante, Galante, Bekkers, & Gallacher, 2014; Hofmann, Grossman, & Hinton, 2011; Zessin, Dickhauser, & Garbade, 2015; Zhang et al., 2017). Over the last twenty years, research

on meditation has increased exponentially. In 2000, 10 peer-reviewed articles were published on mindfulness; comparatively, 692 peer-reviewed articles were published on mindfulness in 2017 (American Mindfulness Research Association, 2018). It should be noted, however, that the programs which inform meditation research vary in their techniques and approaches. Many of programs which have been subject to the most research are secular, mindfulness programs like Mindfulness-Based Stress Reduction (MBSR) (Grossman, Niemann, Schmidt, & Walach, 2004; Kabat-Zinn, 2013). In MBSR, participants engage in attention practices to cultivate a state of non-judgmental, present moment awareness known as mindfulness (Kabat-Zinn, 2013). In contrast to mindfulness-based practices, many compassion-training programs aim to engender increased compassion for self and others through a process of reflection and cognitive-reframing. Participants are often instructed to reflect on the ways others have helped them as motivation for developing more compassionate intentions. In these contexts, compassion is generally defined as the ability to notice the suffering of others and the wish to alleviate such suffering (Goetz, Keltner, & Simon-Thomas, 2010; Negi, 2005; Strauss et al., 2016). Some evidence supports that compassion training can actually alter neural responses to the suffering of others (Desbordes et al., 2012; Weng et al., 2013).

The current study assesses the effectiveness of one specific type of compassion-training program: CBCT (Cognitively-Based Compassion Training). The CBCT training protocol was developed and based on the philosophical tenants of the Indo-Tibetan tradition (Negi, 2005). The CBCT protocol was created in 2005 at Emory University. It was inspired by the Buddhist practice of *lojong* (mind training) but was specifically adapted for secular audiences (Ozawa-de Silva, 2011). As is illustrated in the CBCT Integrative Model, CBCT training targets the development of three principal outcomes: resilience, compassion, and wellbeing (see Appendices

A and B) (Ash et al., 2018). The training consists of a foundational practice followed by six modules: (I) Attentional Stability and Clarity, (II) Insight into the Nature of Mental Experience, (III) Self-Compassion, (IV) Cultivating Impartiality, (V) Gratitude and Affection, and (VI) Empathetic Concern and Engaged Compassion. Each module includes a guided meditation. Appendix C includes a summary of the practice focus for each module. As illustrated in the CBCT Integrative Model, the first three modules target intrapersonal skills including attentional control, meta-awareness, dereification (the ability to distinguish thoughts from reality), and self-compassion. These skills are expected to lead to greater resiliency – the ability to recover from adverse life experiences without lasting harm (Tugade, Fredrickson, & Feldman Barrett, 2004). The last three modules target interpersonal skills including identification, gratitude, affection and empathy that are expected to foster increased compassion.

The proposed mechanisms delineated in the CBCT integrative model have yet to be tested empirically. Existing CBCT research has primarily assessed changes in a variety of health outcomes after participation in training. Findings indicate that CBCT training reduces depressive symptoms (Desbordes et al., 2012; Dodds et al., 2015; J Mascaro et al., 2016) and inflammation related to psychosocial stress (Pace et al., 2009; Pace et al., 2013). CBCT training has also been shown to improve empathic accuracy (J Mascaro, Rilling, Negi, & Raison, 2013) which is defined as the ability to accurately recognize the mental state of another person (Ickes, 2009). Mascaro and colleagues (2016) evaluated the impact of a CBCT intervention among medical students and found that students randomized to CBCT reported significant increases in compassion and reductions in loneliness and depression compared with controls. In this study, change in compassion score was most significant among participants who reported high levels of depression at baseline. This suggests a potential association between improvements in

intrapersonal skills (in this case, depression and psychological wellbeing) and compassion as is posited in the CBCT Integrative Model.

In summary, hospital chaplains play an important role on the health services team by providing spiritual consultations and emotional support to patients. In this capacity, hospital chaplains do not appear to show the same prevalence of burnout and STS compared with their medical counterparts. Nevertheless, more research is needed to characterize the hospital chaplain population. The current study assesses the professional quality of life of hospital chaplain residents, and examines the feasibility of CBCT to reduce burnout and negative emotional symptomology. Prior research indicates that mindfulness and compassion training are protective against burnout symptoms. Furthermore, the CBCT Integrative Model postulates that the intrapersonal and interpersonal skills that CBCT targets are mutually reinforcing. The current study tests this hypothesis by assessing if compassion training leads to improvements in burnout and personal wellbeing among hospital chaplain residents.

Chapter 3: Methods

Participants

Participants were recruited through purposive sampling from the Spiritual Health Chaplain Residency Program at Emory University. An Emory researcher met with groups of chaplain residents in-person to provide study information and obtain written informed consent. To be included in the study, participants had to be enrolled as a chaplain resident through Emory Spiritual Health. There were no additional exclusion criteria. 16 participants enrolled in the study. Prior to group assignment, one participant withdrew from the CPE program. Eight participants were assigned to the CBCT intervention group, and seven participants were assigned to the waitlist comparison condition.

Study Design and Procedures

This pilot study employed a quasi-experimental, waitlist comparison design. Data was collected at four time points during fall 2017 and spring 2018. Following recruitment and voluntary consent to participate, all participants completed a set of baseline assessments. Participants were then assigned to take CBCT in the fall (the intervention group) or continue standard pastoral education as usual (the waitlist comparison group). Assignments were based on logistical factors related to participants' schedules; assignments were not based on interest or personal characteristics of the participants. After completing the CBCT intervention, all participants completed post-intervention assessments. Participants in the waitlist comparison condition completed assessments on the same schedule as those in the CBCT intervention. All participants repeated the same battery of assessments at 4 month follow-up. The waitlist condition then received CBCT training. After the waitlist group completed CBCT training, all participants completed a fourth and final round of post-intervention assessments. See study

schedule in Appendix D. The University Institutional Review Board approved all study procedures. Signed informed consent was obtained from all participants prior to enrolling in the study. Participants created a personalized ID number to protect their anonymity.

Intervention

The CBCT training included four full-day sessions offered once per week. CBCT classes were taught by two certified CBCT instructors – one of whom was also a hospital chaplain. Class sessions included didactic information, group discussion, and guided meditations. To supplement class instruction, participants were given audio recordings of guided meditations and requested to meditate outside of class for 15 minutes per day. The training also included follow-up group phone calls led by the CBCT instructors. In total, eight follow-up phone calls occurred twice a month for four months. Follow-up calls included reflection on supplemental readings (such as poems or short stories), a guided meditation, and group discussion. The waitlist comparison condition received standard of care clinical pastoral education (CPE) training.

CBCT is designed to engender increased compassion for a wider group of people through a series of meditation exercise and reflective practices (Negi, 2005). The CBCT course content consists of a foundational practice followed by six practice modules (Ash et al., 2018). The content of each module is described below:

(A) Foundational Practice: participants aim to generate feelings of safety and appreciation by placing their attention on a moment of nurturance – often, a memory when they felt cared for or secure.

(B) Module I. Attentional Stability and Clarity: participants learn basics of meditation, including attentional control in which participants are instructed to place their focus on the sensations of breathing.

(C) *Module II. Insight into the Nature of Mental Experience:* participants familiarize themselves with their own mental activity by non-judgmentally observing their present moment experiences (*e.g.,* thoughts, feelings, and sensations).

(D) *Module III. Self-Compassion:* participants cultivate a compassionate disposition toward themselves by relating to difficulties or imperfections from a broader perspective.

(E) *Module IV. Cultivating Impartiality:* participants cultivate a mindset of increased equanimity by reflecting on the ways in which everyone, including strangers and difficult people, share a desire for happiness.

(F) *Module V. Gratitude and Affection:* participants broaden their circle of concern beyond their immediate networks of family and friends by reflecting on the intended and unintended benefits that others provide; generating appreciation and affection.

(G) *Module VI. Empathetic Concern and Engaged Compassion:* participants culminate the practice by considering others' vulnerabilities and strengthening the motivation to see them free from suffering.

Measures

All participants completed a battery of self-report questionnaires at baseline and 3 additional time points post-intervention. Study-questionnaires took approximately 20-30 minutes to complete. Questionnaires assessed characteristics related to personal wellbeing, resilience, and interpersonal skills. The following measures were administered to participants at all four time points during the study: (1) the Depression and Anxiety Stress Scale (Lovibond & Lovibond, 1995), (2), the Professional Quality of Life Scale (Stamm, 2010), (3) The Mental Health Continuum Short Form (Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011), the

School-Burnout Inventory (Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009), the Spiritual Meaning Scale (N. Mascaro, Rosen, & Morey, 2004), and the Jefferson Scale of Physician Empathy (Hojat, Vergare, Isenberg, Cohen, & Spandorfer, 2015). For the purpose of this thesis, analyses are limited to the Depression and Anxiety Stress Scale and the Professional Quality of Life Scale.

Depression and Anxiety Stress Scale

The Depression and Anxiety Stress Scale (DASS) is a 42 item measure that assesses depressive symptomology over the previous week (Lovibond & Lovibond, 1995). The DASS contains the following three subscales: depression, anxiety, and stress. An example item includes, "Over the past week, I found it difficult to relax." Responses are provided on a four point Likert scale ranging from "did not apply to me at all" to "applied to me very much, or most of the time." Scores are coded according to the three subscales and result in a final composite score. In the current study, the DASS had high internal reliability; across the four waves of assessment; Cronbach's alpha (α) ranged from .89-.93. Internal consistency was also high for the depression subscale (α = .91 - .94) and for the stress subscale (α = .75 - .88). The anxiety scale demonstrated lower internal consistency (α = .52 - .85). For a complete list of Cronbach's alphas by specific measure and assessment time point, see Appendix E.

The Professional Quality of Life Scale

The Professional Quality of Life Scale (ProQOL) version 5 is a 30 item scale which measures three dimensions related to professional quality of life over the previous 30 days: compassion satisfaction, burnout, and secondary trauma stress (STS) (Stamm, 2010). An example compassion satisfaction item is, "I feel invigorated after working with those I help." An example burnout item is, "I feel trapped by my job." And an example STS item is, "I am

preoccupied with more than one person I help." Responses are given on a five point Likert scale ranging from "never" to "very often." The compassion satisfaction scale showed the highest internal reliability (α = .90 - .94). There was also adequate reliability for the burnout scale (α = .74 - .85) and good reliability for the STS scale (α =.81 - .89).

Data Analysis Methodology

The data were analyzed using SPSS (Version 25). Statistical significance was evaluated at the 0.05 level. The Shapiro-Wilk test was used to assess data normality. The following outcome measures showed a non-normal distribution: depression (p=.001), anxiety (p=.009), and compassion satisfaction (p=.022). All other outcome measures were found to be normally distributed. As such, a combination of non-parametric tests and parametric tests were used for analysis. Descriptive analyses were conducted to characterize the study sample. Independent t-tests and Mann-Whitney U tests were used to assess whether any variables of interest differed between groups at baseline. No differences were observed. Repeated measures analysis of variance (ANOVAs) were used to assess the primary aim of whether there were group by time interactions in response to CBCT training. For outcomes that showed statistically significant group by time interactions, additional repeated measures ANOVAs were used to assess if changes were sustained at a 4-month follow-up. Finally, to maximize power to evaluate changes in response to CBCT training, secondary analyses were conducted for exploratory purposes by collapsing data collected immediately pre and post-CBCT from the intervention group (Time 1 and Time 2) and the waitlist condition (Time 3 and Time 4) into a single group pre-post design. Paired t-tests and Wilcoxon Signed Rank Tests were used to assess within-group changes in all measures.

Student Contributions

The student researcher has worked in collaboration with the Laboratory for Lifestyle Science led by Dr. Jennifer Mascaro in the Department of Family and Preventative Medicine at Emory University. The student researcher actively participated in weekly lab meetings. The student researcher is also the first author of the CBCT Integrative Model that provides the theoretical framework for the current study. For the current study, the student researcher developed the analysis plan, performed all statistical analyses, created tables and figures, and was first author of the corresponding manuscript.

Chapter 4: Manuscript

Group-Delivered Compassion Meditation Training for Hospital Chaplain Residents: A Pilot Study

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Abstract

Objective: Healthcare providers experience high rates of burnout. Provider burnout includes feelings of emotional exhaustion and ineffectiveness associated with prolonged exposure to patients' suffering. Hospital chaplains are relied on to provide spiritual, social, and emotional support to acutely distressed patients, and may be particularly susceptible to burnout. The purpose of the current study is to examine the effectiveness of incorporating compassion meditation training into a clinical pastoral education (CPE) curriculum to reduce burnout and negative emotional symptomology among hospital chaplain residents.

Methods: A longitudinal, quasi-experimental design was used to examine the impact of Cognitively-Based Compassion Training (CBCT®), a group-delivered compassion meditation intervention in reducing adverse mental health outcomes, including burnout. Hospital chaplain residents (n = 15) were assigned to participate in a CBCT intervention in the fall of their CPE program or a waitlist comparison group that received CBCT in the spring of their CPE program. We assessed depression, anxiety, stress, burnout, secondary trauma stress, and compassion satisfaction at four-time points: baseline, immediately after the intervention group received CBCT, 4-month follow-up before the waitlist group received CBCT, and after the waitlist group received CBCT.

Results: Compared to the waitlist comparison group, chaplains assigned to CBCT reported significant decreases in burnout and anxiety; though, the effect was not maintained at 4-month follow-up. Other outcomes did not differ significantly post-intervention but were trending in the expected direction. Secondary analyses that collapsed the intervention and waitlist group into a single group pre-post design indicated that CBCT training was associated with significant decreases in depression, anxiety, burnout, and secondary trauma stress, and increases in compassion satisfaction.

Conclusions: Findings support the hypothesis that group-delivered compassion meditation training incorporated into CPE is effective for reducing burnout and anxiety among hospital chaplain residents, although it may be necessary to continue CBCT throughout residency to sustain effects.

Keywords: Burnout; Secondary Trauma Stress; Compassion Meditation; Group-Delivery; Chaplains.

Introduction

Medical providers, including physicians, nurses, and students in healthcare professions, experience higher rates of burnout and negative emotional symptomology compared to age-matched cohorts.[1-3] The experience of burnout encompasses several factors including emotional exhaustion, depersonalization (treating patients like objects), and ineffectiveness.[4,5] Provider burnout is associated with increased risk of depression, anxiety, and substance abuse.[6,7] Moreover, provider burnout impairs clinical care; patients of providers experiencing burnout report lower satisfaction and longer recovery times.[8-10] Providers who report burnout are more likely to make medical errors and are at increased risk for malpractice.[11-13] While the link between provider burnout and poor patient outcomes is not fully understood, it may be partially explained by impaired empathy and decreased social-emotional functioning resulting from prolonged provider stress.[14,15] Research shows that empathy significantly declines throughout medical training and clinical practice.[16-18]

Significantly less is known about the experience of burnout among hospital chaplains who, as members of the healthcare team, provide emotional and spiritual care to distressed patients.[19,20] While chaplain training can be rooted in a religious tradition, the responsibilities of chaplains extend beyond the purview of religious consultations. Increasingly, hospital chaplains address broader social and emotional dimensions of care.[21,22] Pain, anxiety, depression, and loss are among the problems for which patients are commonly referred to a hospital chaplain.[21,23] Frequent interactions with patients experiencing acute distress as well as perceived lack of control are factors associated with an increased risk for burnout and secondary trauma stress (often defined as ‘compassion fatigue’) resulting from interpersonal interactions with a traumatized individual.[24-27] As such, hospital chaplains may be particularly susceptible to

experiences of burnout and secondary trauma stress (STS). While less is known about burnout and STS among chaplains, one study observed that number of years worked was positively associated with burnout, while frequency of consultations with patients who experienced trauma was positively associated with STS.[28]

Preliminary evidence suggests that meditation-based interventions may mitigate burnout symptoms among healthcare professionals.[29-31] Meditation is accepted as an effective practice to reduce stress and enhance wellbeing.[32,33] While most research on meditation has examined mindfulness-based practices,[33] increasingly researchers have examined the efficacy of compassion-based practices, which focus on engendering increased compassion for self and others. Previous research suggests that participation in compassion-based meditation interventions can alter neural responses to the suffering of others.[34,35] While few studies have directly examined the effectiveness of compassion-based meditation interventions to reduce burnout among healthcare providers, one study observed that physicians participating in a 12-week 'Heartfelt Meditation' course reported less burnout and enhanced wellbeing.[30]

The current study examines the effectiveness of Cognitively-Based Compassion Training (CBCT®), a secular compassion-training intervention implemented in group settings.[36] CBCT has been shown to reduce depressive symptoms[35,37] and inflammation attributable to psychosocial stress.[38,39] CBCT appears to also improve empathic accuracy,[40] defined as the ability to accurately recognize the mental state of another person.[41] Among a sample of medical school students, CBCT was associated with increased compassion and decreased loneliness and depression.[42] This finding was most pronounced among medical students who reported high levels of depression at baseline, suggesting that CBCT may buffer against common declines in empathy during medical training.[42]

Together, these data indicate that CBCT might hold promise as an effective addition to chaplaincy training programs to reduce burnout and STS. To examine the effectiveness of CBCT for preventing burnout and negative emotional symptomology among hospital chaplains in training, we conducted a longitudinal, quasi-experimental waitlist control study. Group-delivered CBCT was systematically integrated into an accredited clinical pastoral education (CPE) program which provides a year of full-time training to hospital chaplain residents. To our knowledge this is the first study of its kind to test the effectiveness of compassion-based meditation when systemically integrated into an education curriculum for hospital chaplains. The primary aim of the study was to test the initial effectiveness of CBCT in reducing burnout and negative emotional symptomology. A secondary aim of this study was to assess if any benefits associated with CBCT were sustained at 4-month follow-up.

Materials and Methods

Participants

Following approval from the Emory University Institutional Review Board, participants were recruited from an accredited CPE program that recently incorporated CBCT into its education curriculum. All chaplain residents in the CPE program were enrolled in CBCT, but residents were not required to participate in the research described here. The inclusion criterion was enrollment in the CPE program as a hospital chaplain resident. There were no exclusion criteria.

Study Design

This pilot study employed a quasi-experimental design. Data were collected at four time points, beginning in August 2017 and extending through April 2018. See **Figure 1.** Following recruitment and signed consent, participants completed a set of baseline assessments.

Participants were then assigned to receive CBCT in the fall (the intervention group) or continue standard CPE as usual (the waitlist comparison group). Assignments were based on logistical factors related to participants' schedules; assignments were not based on preference or personal characteristics of the participants. After the intervention group completed CBCT, all participants completed post-intervention assessments. Participants in the waitlist group completed assessments on the same schedule as the CBCT intervention. All participants repeated the same assessments at 4-month follow-up. The waitlist group received CBCT training in the spring. After the waitlist condition received CBCT training, all participants completed a fourth and final assessment. Throughout, CPE program instructors and administrators were blind to all study processes.

Intervention

The CBCT training included four full-day sessions offered once per week over the course of one month. CBCT classes were taught by two certified CBCT instructors, one of whom was also a CPE educator. Class sessions included didactic information, group discussion, and guided meditations. To supplement class instruction, participants were given audio recordings of guided meditations and requested to regularly meditate outside class, though adherence was not monitored. Training also included one-hour follow-up group phone calls led by the CBCT instructors, which occurred twice a month for four months (8 total) after classes were completed. Follow-up calls included reflection on supplemental readings, guided meditation, and group discussion. The waitlist comparison group received standard CPE training, and met for group-delivered staff-support sessions of the same duration as the CBCT sessions. They also had commensurate staff-support phone calls twice a month for four months.

CBCT is designed to engender increased compassion for a wide group of people through

a series of meditation exercises and reflective practices.[36] The CBCT course content consists of a foundational practice followed by six practice modules. The modules build iteratively, beginning with basic mindfulness skills and progressing to analytical practices in which CBCT participants actively analyze the ways in which they interact with self and others. The content of each module is described below:

(H) *Foundational Practice:* participants aim to generate feelings of safety and appreciation by placing their attention on a moment of nurturance – often, a memory when they felt cared for or secure.

(I) *Module I. Attentional Stability and Clarity:* participants learn basics of meditation, including attentional control in which participants are instructed to place their focus on the sensations of breathing.

(J) *Module II. Insight into the Nature of Mental Experience:* participants familiarize themselves with their own mental activity by non-judgmentally observing their present moment experiences (*e.g.,* thoughts, feelings, and sensations).

(K) *Module III. Self-Compassion:* participants cultivate a compassionate disposition toward themselves by relating to difficulties or imperfections from a broader perspective.

(L) *Module IV. Cultivating Impartiality:* participants cultivate a mindset of increased equanimity by reflecting on the ways in which everyone, including strangers and difficult people, share a desire for happiness.

(M) *Module V. Gratitude and Affection:* participants broaden their circle of concern beyond their immediate networks of family and friends by reflecting on the intended and unintended benefits that others provide; generating appreciation and affection.

(N) *Module VI. Empathetic Concern and Engaged Compassion:* participants culminate the practice by considering others' vulnerabilities and strengthening the motivation to see them free from suffering.

Measures

Depression and Anxiety Stress Scale

The Depression and Anxiety Stress Scale (DASS) is a 42-item measure that assesses depressive symptomology over the previous week.[43] The DASS contains three subscales, each with 14 items: depression, anxiety, and stress. Responses are provided on a four-point Likert scale ranging from "did not apply to me at all" to "applied to me very much or most of the time." Scores are coded according to the three subscales where higher scores indicate higher levels of symptoms. At baseline, the Cronbach's α for each subscale indicated satisfactory internal reliability: depression $\alpha = .92$, anxiety $\alpha = .85$, and stress $\alpha = .84$.

The Professional Quality of Life Scale

The Professional Quality of Life Scale (ProQOL) version 5 is a 30-item scale which measures three dimensions related to professional quality of life over the previous 30 days: compassion satisfaction, burnout, and STS.[44] Responses are provided on a six-point Likert scale ranging from "never" to "very often." Scores are coded according to the three subscales where higher scores indicate higher levels of compassion satisfaction, burnout, and STS. At baseline, Cronbach's α indicated satisfactory internal reliability for each subscale: compassion satisfaction $\alpha = .90$, burnout $\alpha = .84$, and STS $\alpha = .81$.

Statistical Analyses

The data were analyzed using SPSS (Version 25). Statistical significance was evaluated at the 0.05 level. The Shapiro-Wilk test was used to assess data normality. The following

outcome measures showed a non-normal distribution: depression (p=.001), anxiety (p=.009), and compassion satisfaction (p=.022). All other outcome measures were found to be normally distributed. As such, a combination of non-parametric tests and parametric tests were used for analysis. Descriptive analyses were conducted to characterize the study sample. Independent t-tests and Mann-Whitney U tests were used to assess whether any variables of interest differed between groups at baseline. No differences were observed. Repeated measures analysis of variance (ANOVAs) were used to assess our primary aim of whether there were group by time interactions in response to CBCT training. For outcomes that showed statistically significant group by time interactions, additional repeated measures ANOVAs were used to assess if changes were sustained at a 4-month follow-up. Finally, to maximize power to evaluate changes in response to CBCT training, secondary analyses were conducted for exploratory purposes by collapsing data collected immediately pre and post-CBCT from the intervention group (Time 1 and Time 2) and the waitlist condition (Time 3 and Time 4) into a single group pre-post design. Paired t-tests and Wilcoxon Signed Rank Tests were used to assess within-group changes in all measures.

Results

Sixteen participants enrolled in the study. Prior to group assignment, one participant withdrew from the CPE program. While chaplain residents were not required to participate in the study, all chose to do so. Eight participants were assigned to the intervention group that received CBCT in the fall unit of the CPE curriculum. Seven participants were assigned to the waitlist comparison condition, which received the standard CPE curriculum during the fall CPE unit and initiated CBCT in the spring CPE unit. Demographic data are summarized in **Table 1**. The mean age of participants was 38 years. The majority were women (66.7%), black (53.3%), and married

(53.3%). About half (53.7%) of participants had prior experience with meditation before enrolling in the current study. Attendance at CBCT sessions was high as it was a mandatory component of the CPE curriculum.

Groups did not differ significantly at baseline with respect to outcome measures: depression (p=.397), anxiety (p=.536), stress (p=.413), compassion satisfaction (p=.536), burnout (p=.324), and STS (p=.862). The results for outcome measures assessed at baseline (Time 1) and immediately after the intervention (Time 2) are presented in **Table 2**. There were not significant effects of group or time for any outcome measure. There were significant group by time interactions for anxiety ($F(1,13)=5.173$, $p= .041$, partial $\eta^2=0.285$) and burnout ($F(1,13)=5.860$, $p=.031$, partial $\eta^2=0.311$), indicating that participants in the CBCT group reported a significant decline in anxiety and burnout compared to those in the waitlist group. There were no group by time interactions for depression ($F(1,13)=2.813$, $p=.216$, partial $\eta^2=0.115$), stress ($F(1,13)=1.965$, $p=.184$, partial $\eta^2=0.131$), compassion satisfaction ($F(1,13)=.182$, $p=.677$, partial $\eta^2=0.014$), or STS ($F(1,13)=2.952$, $p=.109$, partial $\eta^2=0.185$), although mean differences within the CBCT group did change in the expected direction.

Table 3 summarizes results of the analyses assessing whether immediate effects of CBCT were maintained at follow-up. There were no significant effects of group, time, or group by time interaction when data from the 4-month follow-up (Time 3) were included in the analysis. Results for anxiety approached statistical significance ($F(2,12)=1.358$, $p=0.056$, partial $\eta^2=0.199$).

Given the small sample size, we were underpowered to detect any but the largest effect size changes in outcome measures. Therefore, on an exploratory basis, analyses were conducted that combined pre-CBCT and post-CBCT data for the intervention group (Time 1-Time 2) and

waitlist condition (Time 3-Time 4). See **Table 4** and **Table 5**. Mean scores significantly decreased from pre-CBCT to post-CBCT for depression (Z=-2.427, p=0.015), anxiety (Z=-2.156, p=0.031), burnout (t(14)=3.873, p=0.002), and STS (t(14)=2.987, p=0.010). Mean scores significantly increased from pre-CBCT to post-CBCT for compassion satisfaction (Z=-2.173, p=0.030). Significant differences were not observed for stress (t(14)=1.042, p=0.315).

Discussion

The current study examined whether group-delivered CBCT incorporated into chaplaincy training can be effective in decreasing burnout and negative emotional symptomology. Results show that hospital chaplain residents assigned to a CBCT intervention reported significant decreases in burnout and anxiety immediately following training compared with a waitlist comparison group. This finding suggests that group-delivered compassion meditation training may help protect against burnout in a population of healthcare providers at risk for burnout as a result of stress from frequent interactions with highly distressed patients. Although results should be taken as preliminary given the small sample size, they derive additional potential importance from the fact that this is the first study we are aware of to examine the impact of integrating a compassion-meditation intervention into a training program for hospital chaplains.

While other outcome measures including depression, stress, compassion satisfaction, and STS, did not significantly differ between groups, observed numerical differences trended in the expected direction. Given these trends, it is likely that the study was underpowered to detect all but large-effect size changes in these areas. Secondary analyses, based on combining pre- and post-CBCT data from both groups, suggest that the intervention produced signficant reductions in depression, anxiety, burnout, and STS, as well as significant increases in compassion satisfaction. While this analysis does not account for potential placebo effects, it does suggest

that group-delivered CBCT may broadly promote mental health and compassion satisfaction. Future trials should evaluate this finding among a larger sample.

In the intervention group, improvements in burnout and anxiety were not maintained at 4-month follow-up. Several explanations might account for this finding. The CBCT course was much more intensive than the episodic follow-up phone calls that occurred in the months following training completion. Study findings suggest that this follow-up delivery modality was ineffective for sustaining the initial observed effects of CBCT. Alternatively, some of the benefit derived from the CBCT intervention may have resulted from feelings of social support or stress-relief related to the group-delivered CBCT experience, and it is possible that a more prolonged "dose" of group-based CBCT would promote more enduring therapeutic effects. It is also possible that CBCT trained chaplains stopped practicing meditation with the same frequency once the course was complete and practice was no longer regularly encouraged. A previous study using a CBCT intervention found that practice frequency was associated with increased hopefulness and decreased anxiety.[45] Future trials should measure and evaluate meditation practice time during and after the CBCT intervention.

It should also be noted that both the intervention and waitlist comparison group reported low levels of depression, anxiety, stress, and burnout compared with normed data of medical school students[3,46] as well as normed data from the general population.[44,47] While there are relatively few studies examining the wellbeing of hospital chaplains, this finding is consistent with two prior studies indicating that hospital chaplains reported low levels of burnout.[48,49] One explanation for this effect may be that hospital chaplains generally find their work to be fulfilling. One study found that chaplains exhibit high levels of compassion satisfaction,[50] and previous literature indicates that compassion satisfaction and perceiving one's work as

meaningful are inversely associated with burnout.[51-53] Importantly, despite the potential for floor effects due to high wellbeing at baseline among the current sample of hospital chaplain residents, there were still significant decreases in burnout and anxiety for those assigned to CBCT compared with the waitlist comparison group. This suggests that CBCT can have benefit, even for those who already exhibit relatively high wellbeing.

This study had several limitations that warrant mention. First, because the study was a pilot effort, sample size was small, which resulted in limited ability to detect any but large-effect size between-group differences. Second, due to logistic constraints, chaplains could not be randomly assigned to study conditions. Finally, all outcome measures were self-reported and potentially susceptible to social-desirability bias. Within psychological research broadly, as well as research specific to contemplative practice and compassion, there is an increasing call for more naturalistic and objective methods for measuring compassion and wellbeing.[54,55]

This study also had several notable strengths. The longitudinal, quasi-experimental design allowed for assessment of follow-up effects. Additionally, the study had low attrition compared with other pilot studies testing compassion meditation interventions.[42,56] This effect is likely attributable to the fact that CBCT was integrated as a mandatory component of the CPE curriculum, though participation in the research was not required.

Conclusions

The results of the current study suggest that group-delivered compassion meditation training can be effective at reducing burnout and anxiety among hospital chaplain residents. While the current study did not directly test feasibility or acceptability, CBCT appears to provide an effective, group-delivered intervention that can be incorporated into existing CPE training programs. Future studies should continue to test the feasibility and acceptability of incorporating

CBCT into education curricula in other healthcare disciplines. In addition, future trials should evaluate the extent to which CBCT training affects patient-provider interactions and ultimately patient outcomes.

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Tables and Figures

Figure 1: Study Schedule

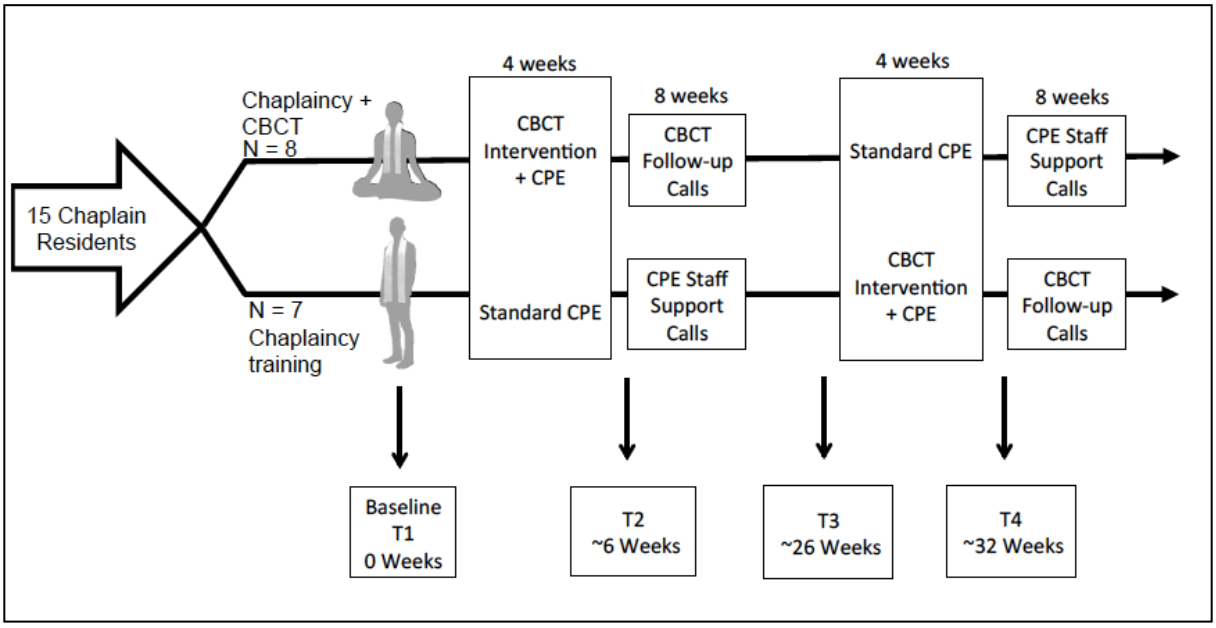

Table 1: Demographics

Variable	Category	Total (n=15)	Intervention Group (n=8)	Waitlist-Control (n=7)
Gender	Female	10 (66.7%)	4 (50%)	6 (85.7%)
	Male	5 (33.3%)	4 (50%)	1 (14.3%)
Age (years)[a]		38.02	33.4	43.3
Race	White	3 (20%)	2 (25%)	1 (14.3%)
	Black	8 (53.3%)	4 (50%)	4 (57.1%)
	Asian	3 (20%)	2 (25%)	1 (14.3%)
	Other	1 (6.7%)	0	1 (14.3%)
Martial Status	Single	3 (20%)	2 (25%)	1 (14.3%)
	Single, divorced	1 (6.7%)	0	1 (14.3%)
	Single, living with someone	1 (6.7%)	0	1 (14.3%)
	In a relationship	1 (6.7%)	1 (12.5%)	0
	Married	8 (53.3%)	4 (50%)	4 (57.1%)
	Widowed	1 (6.7%)	1 (12.5%)	0
Meditation	Yes	8 (53.3%)	7 (87.5%)	1 (12.5%)
Experience	No	7 (46.7%)	5 (71.4%)	2 (28.6%)

[a] Values are means.

Table 2: Main Outcomes

Comparison of main outcomes for CBCT intervention and waitlist condition between Time 1 and Time 2 assessments

Measure	Time	CBCT Intervention (mean)	Waitlist (mean)	$F_{interaction}$	df	P value	Partial Eta Squared
Depression (DASS)	T1	4.8	3.4				
	T2	2.5	3.7	2.813	1,13	.216	.115
Anxiety (DASS)	T1	4.3	2.4				
	T2	1.1	3.1	5.173	1,13	.041*	.285
Stress (DASS)	T1	7.9	5.9				
	T2	6.8	8.0	1.965	1,13	.184	.131
Compassion Satisfaction (ProQOL)	T1	42.5	42.3				
	T2	44.1	43	.182	1,13	.677	.014
Burnout (ProQOL)	T1	20.1	17.3				
	T2	18.0	18.3	5.860	1,13	.031*	.311
Secondary Trauma Stress (ProQOL)	T1	20.5	21.0				
	T2	17.9	21.3	2.952	1,13	.109	.185

*P<0.05.

Table 3: Follow-up Results

Comparison of outcomes between assessments at baseline (T1), post-intervention (T2), and follow-up (T3)

Measure	Time	CBCT Intervention (mean)	Waitlist (mean)	$F_{interaction}$	df	P value	Partial Eta Squared
Anxiety (DASS)	T1	4.8	3.4				
	T2	2.5	3.7				
	T3	3.1	3.6	1.358	2,12	.056	.199
Burnout (ProQOL)	T1	20.1	17.3				
	T2	18.0	18.3				
	T3	19.8	19.4	1.753	2,12	.193	.119

Table 4: Secondary Analyses (Non-Parametric)
Non-parametric assessments of within group change from combined pre and post CBCT intervention data from CBCT intervention group (T1-T2) and waitlist group (T3-T4)

Measure	Time	Mean	Z	P value
Depression (DASS)	Pre	4.3		
	Post	2.7	-2.427	.015*
Anxiety (DASS)	Pre	3.9		
	Post	1.8	-2.156	.031*
Compassion Satisfaction (ProQOL)	Pre	42.5		
	Post	44.9	-2.173	.030*

*P< 0.05.

Table 5: Secondary Analyses (Parametric)
Parametric assessments of within group change from combined pre and post CBCT intervention data from CBCT intervention group (T1-T2) and waitlist group (T3-T4)

Measure	Time	Mean	t	df	P value
Stress (DASS)	Pre	7.1			
	Post	5.9	1.042	14	.315
Burnout (ProQOL)	Pre	19.8			
	Post	17.8	3.873	14	.002**
Secondary Trauma Stress (ProQOL)	Pre	21.2			
	Post	18.9	2.987	14	.010**

*P< 0.05.
** P≤ 0.01.

Chapter 5: Public Health Implications

This chapter will discuss the study findings and their public health implications. Specifically, this chapter will discuss (1) strengths and limitations of the current study, (2) the potential reach and impact of systematically incorporating CBCT training into CPE training, (3) how CBCT training may affect patient-provider interactions, (4) a shift towards evidence-based chaplaincy practices, and (5) recommendations for future research.

Discussion

The current study examined whether group-delivered CBCT incorporated into chaplaincy training was effective in decreasing burnout and negative emotion symptoms. Results show that hospital chaplain residents assigned to a CBCT intervention reported significant decreases in burnout and anxiety immediately following training compared with a waitlist comparison group. This finding suggests that group-delivered compassion meditation training may help protect against burnout in a population of hospital chaplain residents at risk for burnout as a result of stress from frequent interactions with highly distressed patients. Although these results should be taken as preliminary given the small sample size, they derive additional potential importance from the fact that this is the first study the author is aware of to examine the impact of integrating a compassion-meditation intervention into a training program for hospital chaplains.

While other outcome measures of depression, stress, compassion satisfaction, and STS, did not differ significantly between groups, observed mean changes trended in the expected direction. Given these trends, it is likely that the study was underpowered to detect all but large effect-size changes in these areas. Secondary analyses, based on combining pre- and post-CBCT data from both groups, suggest that the intervention produced significant reductions in depression, anxiety, burnout, and STS, as well as significant increases in compassion

satisfaction. While these analyses do not account for potential placebo effects, they does suggest that group-delivered CBCT may broadly promote mental health and compassion satisfaction. Future trials should evaluate these findings in a larger sample.

In the intervention group, improvements in burnout and anxiety were not maintained at 4-month follow-up. Several explanations might account for this finding. The CBCT course was much more intensive than the episodic follow-up phone calls that occurred in the months following training completion. Study findings suggest that this follow-up delivery modality was ineffective for sustaining the initial observed effects of CBCT. Alternatively, some of the benefit derived from the CBCT intervention may have resulted from feelings of social support or stress-relief related to the group-delivered CBCT experience, and it is possible that a more prolonged "dose" of group-based CBCT would promote more enduring therapeutic effects. It is also possible that CBCT trained chaplains stopped practicing meditation with the same frequency once the course was complete and practice was no longer regularly encouraged. A previous study using a CBCT intervention found that practice frequency was associated with increased hopefulness and decreased anxiety (Reddy et al., 2012). Future trials should measure and evaluate meditation practice time during and after the CBCT intervention.

Very few studies of interventions aimed to reduce provider burnout have also studied post-intervention effects. In a systematic review of interventions to prevent or reduce physician burnout, West and colleagues (2016) discuss that it is still unknown whether interventions to reduce burnout require intermittent re-exposure to sustain potential benefits. Given that burnout is understood as a result of ongoing workplace stressors, it is reasonable to expect that continual boosters may be required to maintain intervention effects.

In the current study, it should also be noted that both the intervention and waitlist comparison group reported relatively low levels of depression, anxiety, stress, and burnout at baseline compared with normed data of medical school students (Liselotte N Dyrbye, Thomas, & Shanafelt, 2006; Liselotte N. Dyrbye et al., 2014) as well as normed data from the general population (Henry & Crawford, 2005; Stamm, 2010). While there are few studies that examine the wellbeing of hospital chaplains, this finding is consistent with two prior studies indicating that hospital chaplains reported low levels of burnout (Oliver et al., 2018; Yan & Beder, 2013). One explanation for this effect may be that hospital chaplains generally find their work to be fulfilling. One study found that chaplains exhibit high levels of compassion satisfaction (Hotchkiss & Lesher, 2018), and previous literature indicates that compassion satisfaction and perceiving one's work as meaningful are inversely associated with burnout (Craig & Sprang, 2010; Martins Pereira et al., 2011; Sprang et al., 2007). Importantly, despite the potential for floor effects due to high wellbeing at baseline among the current sample of hospital chaplain residents, there were still significant decreases in burnout and anxiety for those assigned to CBCT compared with the waitlist comparison group. This suggests that CBCT can have benefit, even for those who already exhibit relatively high wellbeing.

Strengths and Limitations

This study had several limitations that warrant mention. First, because the study was a pilot effort, sample size was small, which resulted in limited ability to detect any but large effect-size between-group differences. Second, due to feasibility constraints, chaplain residents could not be randomly assigned to study conditions; however, the two groups did not differ significantly at baseline with respect to any study measure. Finally, all outcome measures were self-reported and potentially susceptible to social-desirability bias. Within psychological research

broadly, as well as research specific to contemplative practice and compassion, there is an increasing call for more naturalistic and objective methods for measuring compassion and wellbeing (J Mascaro, Darcher, Negi, & Raison, 2015; Zaki & Ochsner, 2012). Future research should attempt to incorporate behavioral measures, such as experience sampling, to investigate outcomes beyond self-report measures.

This study also had several notable strengths. The longitudinal, quasi-experimental design allowed for assessment of follow-up effects. Additionally, the study had low attrition compared with other pilot studies testing compassion meditation interventions (Gonzalez-Hernandez et al., 2018; J Mascaro et al., 2016). Low attrition is likely attributable to the fact that CBCT was integrated as a mandatory component of the CPE curriculum, though participation in the research was not required. The implications of systematically incorporating CBCT into a healthcare education curriculum will be discussed below.

Public Health Implications

CBCT in Healthcare Education

This the first study of its kind to assess the effectiveness of CBCT when systemically integrated into an existing educational curriculum. While participation in the current research was voluntary, CBCT training is a mandatory component of CPE for all hospital chaplain residents at Emory. This has sigificant implications regarding the potential reach and impact of the program. It is expected that CBCT training may not only affect individual-level factors pertinent to the hospital chaplain resident but also impact social norms and organizational culture within the Spiritual Health Department at Emory.

Prior to this project, CBCT courses have been offered on a voluntary basis. It is expected that those who elected to participate in a CBCT course likely had a personal interest or

motivation that informed their decision to enroll in CBCT. Prior research on CBCT may have been susceptible to selection bias as those who choose to participate in CBCT courses and research may have distinct characteristics that differentiate them from the general population. This raises several questions: (1) who benefits the most from CBCT training? And (2) do those who may benefit the most from CBCT training elect to participate? A study examining the impact of a self-compassion intervention on smoking cessation found that those who were high in self-critism and low in readiness to change exhibited the most benefit (Kelly, Zuroff, Foa, & Gilbert, 2010). Previous research by Mascaro and colleagues (2016) found that among a population of medical students participating in a CBCT intervention, those who had the highest levels of depression at baseline experienced the most benefit. While there is not enough literature in this area to determine conclusively which populations benefit the most from compassion training, these findings do suggest that those experiencing negative emotions or poor mental health may experience the largest gains. If this is the case, it will be important for future research to study whether efforts to systemically integrate CBCT training into education curricula extend the reach of who receives training.

Incorporating CBCT into CPE training holds the potential to not only extend CBCT to a broader audience, but it may also lead to organizational impacts. Social ecological models emphasize that health behaviors and outcomes are dependent on mutliple levels of influence, including individual factors such as attitudes, knoweldge, and beliefs, as well as larger social and envionmental factors (Sallis, Owen, & Fisher, 2015; Stokols, 1992). Ecological approaches posit that different levels of influence (*e.g.,* individual, social, communal, societal) are dynamic and interactive (Stokols, 1992, 1996). Thus, contextual forces may influence invididaul behavior and vice versa. Within the field of the health promotion, interventions that target muliple levels

of influence are expected to have larger impacts on health outcomes and behavior (Golden & Earp, 2012).

By systematically incorporating group-delivered CBCT training into the CPE curriculum at Emory, the CBCT intervention may influence the ways in which hospital chaplain residents interact with others in the department. While the current study did not directly test this hypothesis, there is some literature which suggests that repeated demonstrations of compassion in the workplace can lead to shifts in organizational culture (Lilius et al., 2008; Madden, Duchon, Madden, & Plowman, 2012; Rynes, Bartunek, Dutton, & Margolis, 2012). In addition, prior research indicates that social support from both co-workers and superviors is associated with reduced odds for burnout (Aronsson et al., 2017). Thus, if CBCT improves interactions between hospital chaplain residents, or between residents and supervisors, there could be organizational implications.

Optimizing Patient-Provider Interactions

The current study finds that CBCT training improves burnout and negative symptomology among hospital chaplain residents. Improvements in burnout may also impact the interactions between chaplain residents and their patients. As previously discussed, patients who receive care from providers experiencing burnout report lower satisfaction (McHugh et al., 2011; Vahey et al., 2004). Emerging research also indicates that provider warmth and assurance may moderate treatment efficacy (Howe, Goyer, & Crum, 2017; Leibowitz, Hardebeck, Goyer, & Crum, 2018). It is possible that improvements in burnout and negative emotional symptoms may allow chaplain residents to exhibit greater attention and empathy towards patients. The CBCT Integrative model proposes that CBCT training targets intrapersonal skills (*e.g.* attention, emotional regulation, resilience) and interpersonal skills (*e.g.* empathy, affection, and

compassion); and the model posits that these two pathways are mutually reinforcing (Ash et al., 2018). If this hypothesis were confirmed, it would indicate that CBCT training may improve patient-provider interactions and thereby improve overall quality of care.

The Laboratory of Lifestyle Science at Emory University is currently pursuing this line of inquiry by studying the impact of CBCT training on chaplain-patient interactions as well as corresponding patient outcomes. Spiritual Health at Emory University in partnership with the Center for Contemplative Science and Compassion-Based Ethics has developed a program known as Compassion Centered Spiritual Health (CCSH). CCSH is a framework to guide chaplain-patient interactions, and it is informed by the principles of CBCT (Shelton, Harrison, Grant, & Negi, 2019). As such, the Emory CPE program now includes training in CBCT as well as CCSH. Research is currently being conducted to examine whether the combination of CBCT and CCSH training impacts the interaction between chaplain residents and patients. Specifically, chaplain-patient interactions are recorded to assess for qualitative differences between those trained in CBCT and CCSH compared with those who received CPE as usual. This line of research will provide a foundation for understanding whether compassion training can improve patient-provider interactions.

Evidence-Based Chaplaincy

Currently, there is limited research addressing best practices within chaplaincy and chaplaincy training (Jankowski, Handzo, & Flannelly, 2011; Montonye & Calderone, 2010). Improving the evidence-base of best practices for chaplains is of importance to public health. While hospital chaplains may represent a small proportion of healthcare professionals, they interface with a large number of hospital patients and staff. In 2017, it was estimated that hospital chaplains within the Emory Healthcare system provided over 120,000 consults to

hospital patients and staff (Grant, G., personal communication, 2019). Given the high number of consultations provided by hospital chaplains, it is of critical importance to understand best practices for chaplaincy such that consultations can provide maximum benefit to patients and staff.

Within the domain of Spiritual Health, there is also an increasing call to identify shared practices across diverse faiths as well as to better align chaplaincy work with evidenced-based practices (Burton, 2002; Fitchett, 2002; O'Connor, 2002). CBCT may serve as an ideal evidence-based, health promotion intervention that is accessible to those of any or no faith traditions. CBCT is a secular program that was specifically designed to be acceptable to those of any or no faith tradition. Compassion is considered to be a core value across religious traditions (Dalai-Lama, 2011). As such, CBCT's emphasis on compassion may provide a unifying framework that is acceptable to chaplain residents coming from a diversity of faith traditions.

While findings from the current study suggest that CBCT is a beneficial component of CPE training, further research should examine factors related to successful implementation including the acceptability and sustainability of incorporating CBCT into CPE training. Given that the current study found that the benefits of CBCT were not maintained at 4-month follow-up, it will be important for future research to examine questions related to adequate dosage. To date, there is little research across compassion training interventions regarding ideal training length (Skwara, King, & Saron, 2017). In order to assess this question, programs and corresponding research should consider innovative means for providing refresher sessions including not only additional in-person boosters but also technology-based methods such as mobile apps. Future studies should also consider including qualitative approaches such as focus groups to better understand the unique needs and circumstances of hospital chaplain residents

and their experiences engaging with CBCT. Such research could inform modifications to program length and design as well as lay the groundwork for wide-scale implementation of CBCT into hospital chaplain residency programs.

Conclusion

The findings from the current study should be viewed in the context of a small pilot study whose generalizabilty may be limited. Nevertheless, the results indicate that CBCT reduces anxiety and burnout among hospital chaplain residents, a finding which has important public health implicaitons that warrant further research. Future trials should evaluate the robustness of these study findings in a larger sample of hospital chaplain residents. In addition to replicating current study procedures with a larger sample, future research should assess the degree to which CBCT training affects organizational culture and patient-provider interactions as well as the feasibility of incoporating CBCT into curricula for other healthcare professionals who may be at greater risk for burnout. The current study found that CBCT is a relatively feasible behavioral intervention that targets individual wellbeing. If future research finds that CBCT training affects not only the individuals trained but also their wider social and organizational network, then the public health implications on patient health and wellbeing may well be greater.

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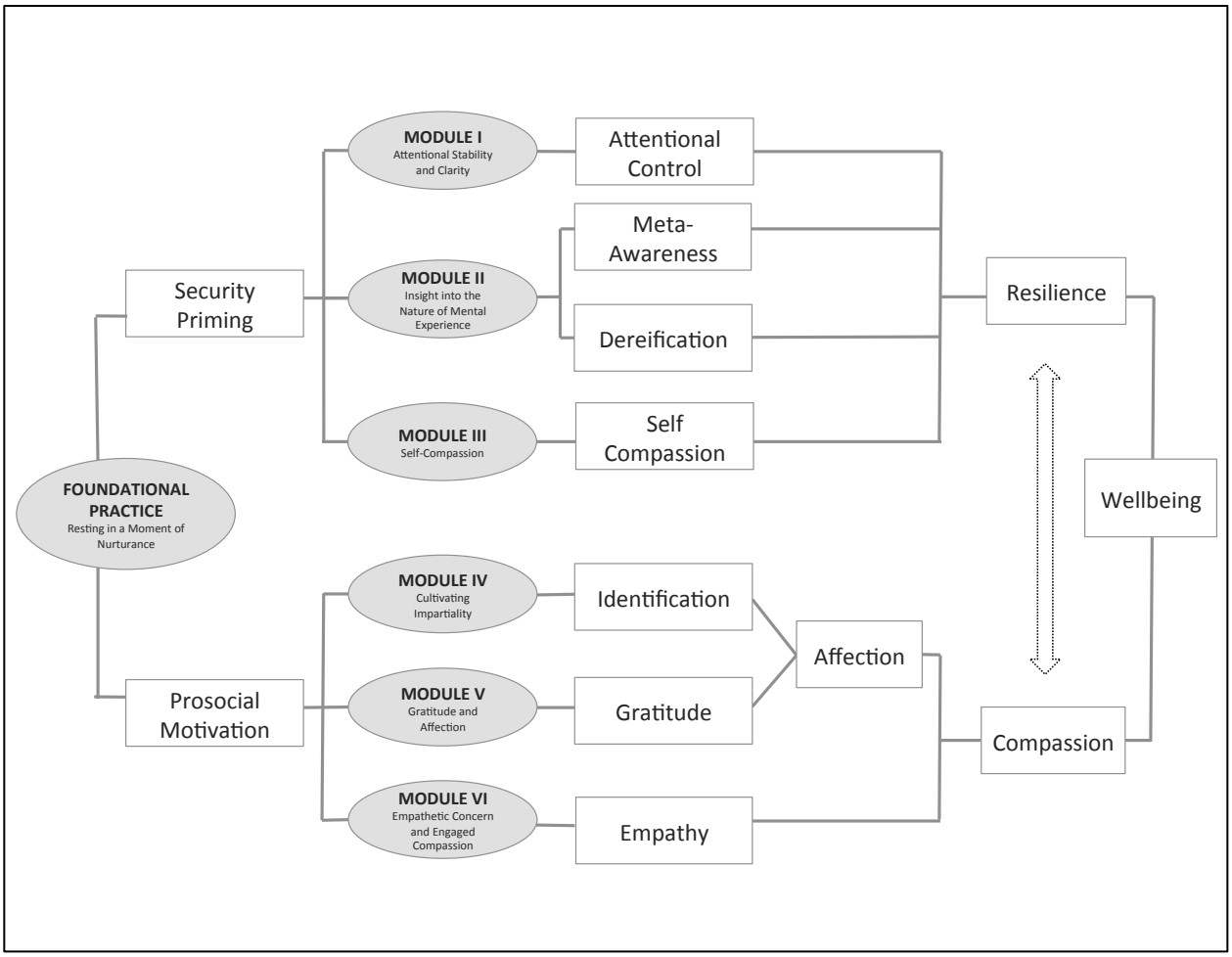
Appendices

Appendix A: CBCT Integrative Model



Appendix A: CBCT Integrative Model. Reprinted from "A Model for Cognitively-Based Compassion Training: Theoretical Underpinnings and Proposed Mechanisms" by M.Ash, T. Harrison, M. Pinto, R. DiClemente, and L.T. Negi, 2018. Submitted for publication to the Journal for Social Theory & Health.

Appendix B: CBCT Skills and Outcomes

	Construct	Definition
Intrapersonal	Security Priming	The experience of remembered feelings of safety and care
	Attentional Control	The ability to sustain focus on object of interest
	Meta-Awareness	The ability to notice what one is thinking and feeling
	Dereification	The ability to distinguish thoughts from accurate representations of the world
	Self-Compassion	Feelings of kindness and acceptance directed at oneself
Interpersonal	Pro-Social Motivation	The desire to engage in behavior that is beneficial to others
	Identification	The process of viewing others as similar to oneself
	Gratitude	Positive feelings directed toward others based on the recognition of received benefits
	Affection	Feelings of warmth, closeness, and connection directed toward others
	Empathy	The ability to understand what another person is feeling and/or thinking
Outcomes	Resilience	The ability to recover from stressful or adverse experiences without lasting harm
	Compassion	A sensitivity to the suffering of others coupled with the desire to alleviate it
	Wellbeing	A state of positive psychosocial health

Appendix B: CBCT Skills and Outcomes. Reprinted from "A Model for Cognitively-Based Compassion Training: Theoretical Underpinnings and Proposed Mechanisms" by M.Ash, T. Harrison, M. Pinto, R. DiClemente, and L.T. Negi, 2018. Submitted for publication to the Journal for Social Theory & Health.

Appendix C: CBCT Practice Overview

CBCT Modules	**Practice Topic**
Resting in a Moment of Nurturance	The value of kindness
I. Attentional Stability and Clarity*	The sensations of the breath
II. Insight into the Nature of Mental Experience*	The present moment experience
III. Self-Compassion	Personal ups and downs from a broader perspective
IV. Cultivating Impartiality	Others' shared desire for wellbeing
V. Appreciation and Affection	Interdependence
VI. Empathic Concern and Engaged Compassion	Others' vulnerabilities

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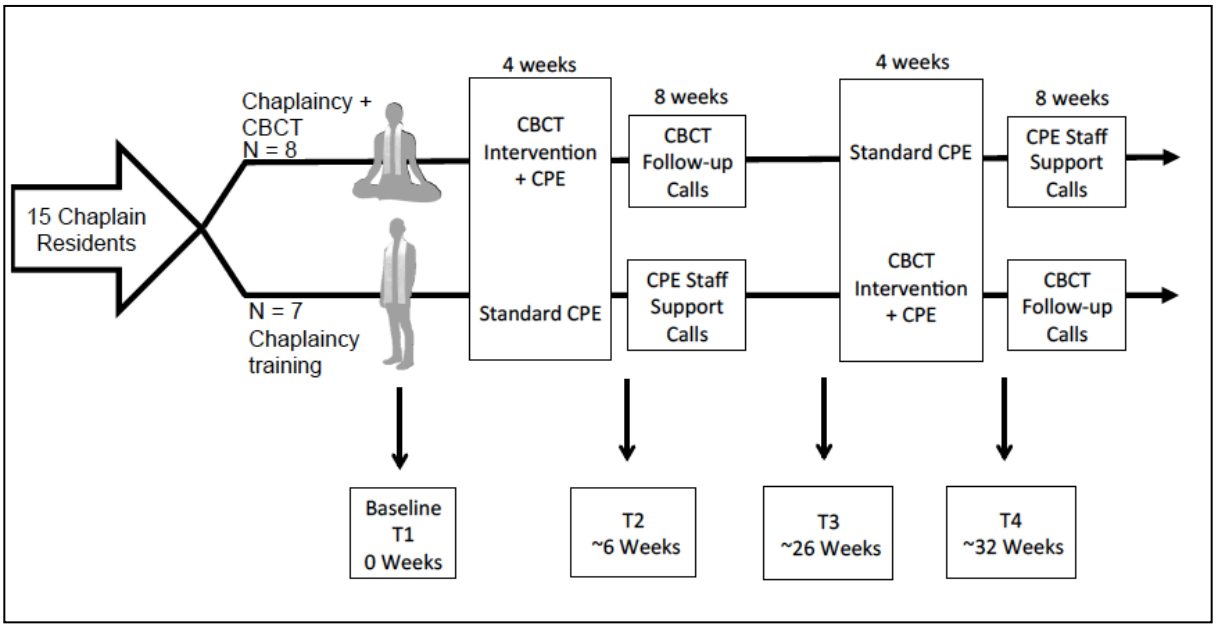
Appendix D: Study Schedule



Appendix E: Cronbach's Alpha Scores by Measure

Measure	α Time 1	α Time 2	α Time 3	α Time 4
Depression, Anxiety and Stress Scale (DASS)	.92	.89	.93	.93
DASS Depression	.92	.93	.91	.94
DASS Anxiety	.85	.53	.52	.53
DASS Stress	.84	.75	.88	.87
Professional Quality of Life Scale (PROQOL)				
Compassion Satisfaction	.90	.90	.94	.94
Burnout	.84	.85	.74	.77
Secondary Trauma Stress	.81	.88	.86	.89