

**The Use of Meditation and Mindfulness Practices
to Support Military Care Providers:
A Prospectus**

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Executive Summary

More than 20 years of empirical studies offers strong evidence that meditative and contemplative practices can aid in relieving the acute symptoms of compassion fatigue and burnout, including depression and anxiety, and physiological symptoms such as insomnia and a weakened immune system. Additionally, these practices help to cultivate cognitive and physiological capacities that support overall well-being and strengthen the resiliency of care providers.

Specifically, meditation practices can support individuals in developing five attributes that are key in preventing and treating burnout and compassion fatigue:

- 1) compassion and self-compassion
- 2) resilience
- 3) self-awareness
- 4) metacognition and attention
- 5) meaning

When considering the use of these practices with military care providers, planners should take into account:

- 1) the creation of a support system through the intervention
- 2) the importance of building trust and rapport with the participants
- 3) the timing of the intervention
- 4) presenting the material in a religious or a secular context

Finally, based on empirical studies and anecdotal remarks gathered through this literature review, it is probable that Soldiers will benefit by receiving improved care from military care providers who have been supported to develop greater skills in self-care and self-awareness.

PREFACE.....	3
I. INTRODUCTION	4
II. THE COST OF CARING: BACKGROUND AND CONTEXT	5
A. Burnout and Compassion Fatigue Among U.S. Military Care Providers	5
B. Burnout and Compassion Fatigue: Definitions and Correlates	6
C. Interventions for Burnout and Compassion Fatigue	6
III. MEDITATION AND MINDFULNESS: A PRIMER.....	9
A. Meditation and Mindfulness: Definitions	9
B. How Does Meditation Work?	11
1. Physiological mechanisms.....	11
2. Psychological mechanisms	13
C. Measuring the Mindfulness Construct.....	14
IV. REVIEW OF EMPIRICAL RESEARCH.....	15
A. Overview of Research on Meditation and Mindfulness	15
1. Contemplative Prayer.....	15
2. Mindfulness-based Stress Reduction.....	15
3. Other types of meditative practices.....	16
B. Research on Mindfulness and Meditation for Care Providers	17
1. Reduction in anxiety and depression	18
2. Reduction in other burnout symptoms.....	19
3. Empathy, compassion, and self-compassion	19
4. Impact on professional skills.....	20
V. DISCUSSION.....	27
A. How Meditation Can Support the Prevention and Treatment of Burnout and Compassion Fatigue.....	27
1. Compassion and self-compassion	27
2. Resilience.....	27
3. Self-awareness	28
4. Metacognition and attention	29
5. Meaning.....	30
B. Factors to Consider in Offering Meditation to Military Care Providers.....	30
1. Support system	30
2. Trust and rapport	31
3. Timing of the intervention.....	31
4. Religious versus secular presentation.....	32
VI. CONCLUSION.....	33
VII. REFERENCES	34
VIII. APPENDICES	45
A. Glossary of Terms.....	45
B. Bibliography: Articles on the use of contemplative practices with health care professionals and other care providers.....	46

PREFACE

by
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with
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“The disciplines should be freedom, not bondage.”
Tony Jones, *The Sacred Way*

Time and time again while deployed to a combat environment, I reflected on a phrase from Psalm 46, “Be still and know that I am God.” There is great spiritual power in quietness and stillness, and throughout the centuries many spiritual leaders have developed contemplative practices to experience this power. These practices are the foundation of this study. I am a Christian and cannot disassociate the focus or content of my contemplation from my practice, but I recognize that I can learn methods from others sources that can deepen my own practice.

If we are truly God’s creation, then there must be a part of us that God built for connecting and communicating with our creator. It is this part that lies at the core of contemplative and mindfulness practices. These practices form a discipline that allows us to communicate and connect even though we may not agree theologically.

The Four Rungs of Prayer or the *Practice of the Presence of God* are from medieval Catholicism. The Jesus Prayer and Centering Prayer come from Orthodox traditions, and the classic *The Kneeling Christian* comes from modern Protestantism. Yet all these classic works about prayer witness to similar contemplative practices, which have common ground with some non-Christian and non-religious mindfulness practices.

This study is not intended to change the theological orientation of the participants but rather to provide an opportunity for dialogue and learning. The purpose of this study is to provide contemplative and mindfulness resources, as well as background for training that will assist pastors and medical professionals who wish to integrate these practices into their work. This study explores the effect that these practices have on pastors and medical personnel as they perform their work in a combat environment.

I. INTRODUCTION

The purpose of this paper is to provide information that will aid the reader in assessing the potential of meditative practices as an intervention for decreasing burnout and compassion fatigue among U.S. military personnel.

Section II offers background on the problem of burnout and compassion fatigue among care providers in general, and specifically among military personnel who provide physical, psychological, and spiritual support services to Soldiers.

Section III is intended as a “primer” on meditative and contemplative practices. It will familiarize readers with these terms as well as with theories on why these practices have a positive effect on physiological and psychological well-being. This section also gives a brief overview of scales used to measure the concept of mindfulness in research studies.

Section IV reviews empirical studies of the impact of meditative practices on physical and emotional health, with an emphasis on studies of the use of meditation and mindfulness training for health care providers.

The paper concludes with a discussion of the relevance of the findings of these studies to the unique challenges faced by military care providers and chaplains.

Criteria for Considering Studies for this Review

The primary source for the articles summarized in Section IV-B (on the use of meditation with health care providers) is the “Mindfulness Bibliography” prepared for the Mindfulness Awareness Research Center, published in March 2008 on the Center’s website:
<http://marc.ucla.edu/body.cfm?id=38#Biblio>

This bibliography, compiled by John C. Williams and Lidia Zylowska, lists 35 articles and books in a subcategory titled “Health Care Providers.” The authors conducted searches on the PsycINFO, Medline, PubMed, and Cochrane databases. The citations include relevant peer-reviewed journal articles and books published between 1975 and February 2008.

This list was supplemented by a search conducted by this paper’s author. The PubMed database was searched using the keywords: “meditation,” “mindfulness,” “MBSR,” and “prayer” in combination with “caregivers,” “health care professionals,” and “resilience.” This search turned up an additional 11 articles on the topic, including articles published between March 2008 and October 2008. Articles that described the use of specific contemplative practices such as meditation, MBSR, and private/contemplative prayer were included in this review. Publication types included clinical trials, comparative studies, reviews, and letters to the editor. Articles about integrative medicine, and religion and spirituality in a general sense were excluded.

II. THE COST OF CARING: BACKGROUND AND CONTEXT

A. Burnout and Compassion Fatigue Among U.S. Military Care Providers

Post-traumatic stress disorder (PTSD) among combat Soldiers is a well-documented and researched phenomenon, particularly in the wake of extended conflicts in Iraq and Afghanistan (Hoge, Auchterlonie, & Milliken, 2006; Hoge et al., 2004; Schneiderman, Braver, & Kang, 2008). Yet the needs of care providers such as medical personnel and chaplains working in military theaters are often overlooked.

Helping professionals in general are at risk for stress-related psychological problems (Dryden, 1995; Stamm, 1995; Cochrane, 1997). The consequences of this stress are far-ranging, including depression, anxiety, and emotional exhaustion (Radeke & Mahoney, 2000); reduced self-esteem (Butler & Constatine, 2005); and decreased job satisfaction and burnout (Blegen, 1993; Rosenberg & Pace, 2006). Additionally, stress may negatively impact attention and concentration, leading to impaired effectiveness on the part of the care provider (Skosnik, Chatterton, & Swisher, 2000).

There are increasing indications that military personnel are suffering negative consequences of attending to the physical, emotional, and spiritual needs of Soldiers (Wilson, 2008). A report commissioned by the U.S. Army Surgeon General (MHAT-II, 2005) found that 33% of Behavioral Health (BH) personnel and Unit Ministry Teams (UMT), which includes chaplains, reported "high or very high" burnout. Primary Care (PC) providers, including physicians and other medical providers, reported an even higher rate of burnout at 37%. When asked if the stress of deployment impaired their ability to provide services, 15% of the BH and PC personnel agreed; 16% of the UMT personnel agreed.

The same report makes a clear recommendation to research and implement a program to address burnout and compassion fatigue:

"If one-third of our providers are impaired, our ability to intervene early and assist Soldiers with their problems may be degraded. In addition to studying Soldiers to better understand the products and processes of combat-induced trauma and deployment deprivation, it is vital to understand the processes of provider burnout in order to prevent and intervene in order to preserve the care in our caregivers" (p. 13).

Among military care providers, chaplains have a unique set of challenges to confront. Their job is to address the spiritual needs of Soldiers, but chaplains may themselves struggle with how to reconcile the brutal and apparently meaningless violence of war with their own faith and religious beliefs (Conant, 2007). Contributing to the high rate of burnout and compassion fatigue among chaplains may also be the shortage in their ranks (Stone, 2008; Kriegish, 2007). It is estimated that 2,700 chaplains minister to an active-duty force of 1.4 million, which translates to one chaplain for every 518 military service personnel (Conant, 2007).

B. Burnout and Compassion Fatigue: Definitions and Correlates

Burnout, commonly experienced as a consequence of increased workload and institutional stress, is characterized by depersonalization, emotional exhaustion, and a sense of low personal accomplishment (Rosenberg & Pace, 2006). Burnout, however, does not contain the element of trauma that is associated with compassion fatigue. Beaton and Murphy (1995) noted that those who work with people in extreme crisis are vulnerable to vicarious traumatization, which parallels the effects of combat exposure.

The term “compassion fatigue” was first used in a 1992 article about nurses who experienced exhaustion and other symptoms in the course of dealing with daily hospital emergencies (Joinson). In 1995, psychologist Charles Figley wrote extensively on the subject in his book, *Compassion Fatigue*. Figley used the phrase to describe the secondary traumatic stress that caregivers can experience as a result of working with patients recovering from traumatic events.

The symptoms of compassion fatigue are both psychological and physical. They include anxiety, depression, heightened irritability, hopelessness, anger, exhaustion, hypertension, gastrointestinal complaints, insomnia, and headaches, (Pfifferling & Gilley, 2000).

Hartsough and Myers (1985) identified five categories of stressors that contribute to care provider burnout: authority styles, chain of command, size of the crisis worker organization, role conflicts and ambiguities, and rank of the worker. Other potential contributing factors might be individual mental health, work demands, organizational norms, social support, and community expectations/reactions (Beaton and Murphy 1995).

Several studies make a connection between the number of hours spent working with trauma victims and the rate of care provider compassion fatigue and burnout (Taylor, Flannelly, Weaver, & Zucker, 2006; Flannelly, Roberts, & Weaver, 2005; MHAT-V, 2008). Specific to the military, the MHAT-V report (2008) found that “the number of months deployed was significantly related to both Primary Care personnel morale and their perceptions of declines in mental well-being attributable to events witnessed during the deployment” (p. 71).

A study of New York clergy who responded to the attacks of September 11, 2001, including chaplains, reinforced the findings related to the positive correlation between time spent with trauma victims and compassion fatigue (Flannelly et al., 2005). The number of hours that clergy worked with trauma victims each week was directly related to compassion fatigue among responders. Compassion fatigue also was positively related to the number of days that responders worked at Ground Zero.

C. Interventions for Burnout and Compassion Fatigue

A growing number of resources are available for caregivers who are experiencing burnout and compassion fatigue (see Pfifferling & Gilley, 2000; Figley, 2002) and more attention is being given to strategies that caregivers use to maintain their well-being. Some commonly suggested strategies are spending quality time alone, committing to better self-care habits such as nutrition and exercise, connection with family and friends (Pfifferling & Gilley, 2000).

One qualitative study on physician well-being identified five primary wellness-promotion practices: "relationships," "religion or spirituality," "self-care," "work," and "approaches to life" (Weiner, Swain, Wolf, & Gottlieb, 2001). While physicians who used any of these five practices showed increased well-being, the use of "approaches to life" (which included general philosophical outlooks such as maintaining a balance in life, being positive, simplifying one's life) was significantly associated with increased psychological well-being.

In what appears to be the first intervention to address compassion fatigue in a military setting, a pilot program was launched in 1996 for Canadian chaplains who were deployed during NATO and UN peacekeeping missions (Zimmerman, 2000). The program used principles of adult education and centered on a 4-day retreat with modules on symptoms, emotions, and cognitions common to PTSD victims. Participants reported an increased awareness of the negative impact of deployment stress, insight, closure, spiritual renewal, increased mutual respect, and a reduced sense of aloneness. The program has since become a concluding part of every Canadian chaplain's deployment when there is a potential for traumatic experience.

Within the U.S. military, increased efforts are being made to educate care providers about compassion fatigue and burnout, and ways to address them. Some examples:

- A Provider Resiliency Training (PRT) was launched by the U.S. Army in 2006. PRT includes a foundations segment addressing provider fatigue concepts, definitions, and markers; ways to develop strength based self-care plans; and advanced assessment tools (www.behavioralhealth.army.mil/prt/index.html).
- The U.S. Army Medical Department offers a course on compassion fatigue (see www.cs.amedd.army.mil/deployment2.aspx#)
- In 2008, the U.S. Army Institute of Surgical Research based in Fort Sam Houston, Texas, launched a program called "Care for the Caregivers." According to the program's director, Army Col. Kathryn Gaylord, the program will include regular seminars on topics such as grief, relaxation, nutrition, and exercise, as well as training in stress-management techniques. A "respite room" is also being built at the institute to serve as a retreat space for caregivers (Wilson, 2008).
- The Navy Fleet and Family Support program offered a workshop on compassion fatigue with a teacher of movement, breathing and visualization techniques inspired by the ancient Chinese martial art of *qigong* (www.breathofrelief.com/index.asp?PG=58).
- The Trauma Center in Boston is training clinicians to use yoga with veterans. The training includes a component on providing clinicians and other health care workers with self-care techniques, recognizing that "the work of being with severely traumatized clients on the path to healing is extremely challenging and requires special attention to one's own health and well-being." (www.traumacenter.org/training/Workshop2.php)

While a few of these interventions have made use of certain forms of contemplative practice (yoga and qigong), there appears to be much room to apply contemplative prayer, Mindfulness-based Stress Reduction (MBSR), and other meditative practices that have been successfully used with other populations. We will explore the potential of applying these practices to care providers in the remainder of this paper.

III. MEDITATION AND MINDFULNESS: A PRIMER

A. Meditation and Mindfulness: Definitions

Meditation and mindfulness practices have their source in both Western and Eastern religious and philosophical traditions, including Buddhism, Christianity, and Judaism. Meditation, as used in this paper, is an umbrella term that describes a wide range of contemplative practices, including contemplative prayer, *lectio divina*, mindfulness meditation, insight meditation (also called *vipassana*), Zen meditation (also called *zazen*), and movement meditations such as yoga and qigong. While these practices may differ in specific techniques, all types of meditation share the common goal of training an individual's attention and awareness to become more finely attuned to events and experiences in the present moment.

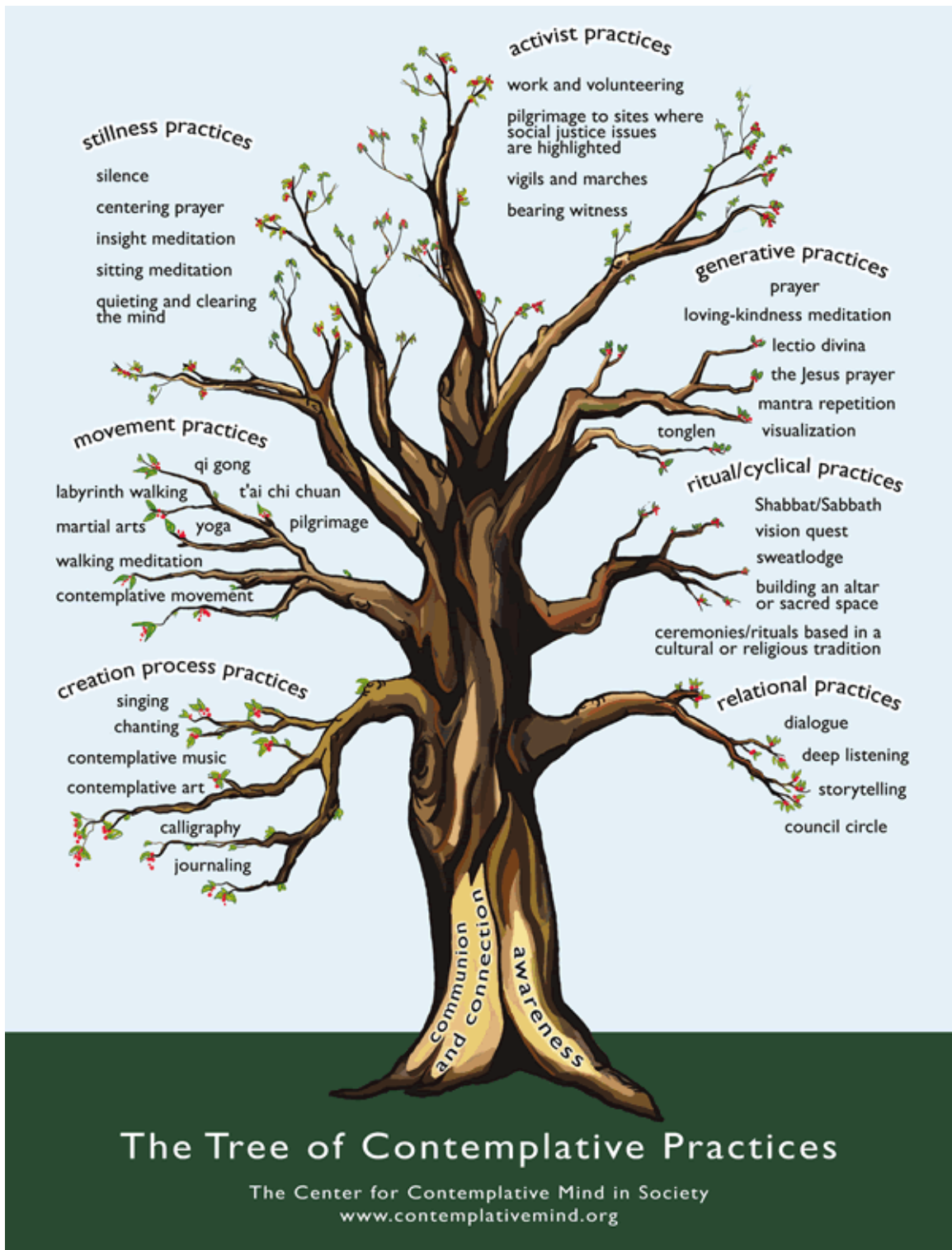
Please see the Center for Contemplative Mind in Society's "Tree of Contemplative Practices" on the following page for a visual representation of the various types of practices.

Mindfulness is a way of being, a way of seeing, a way of knowing. One definition describes mindfulness as a way of being in which one is highly aware and focused on the reality of the present moment, accepting and acknowledging it, without getting caught up in the thoughts that are about the situation or emotional reactions to the situation (Kabat-Zinn, 2005). There are a set of mindfulness practices that cultivate that way of being.

Kabat-Zinn (1996) and others (Shapiro, Schwartz, & Santerre, 2002; Melbourne Academic Mindfulness Interest Group [MAMIG], 2006) distinguish between meditation and relaxation training. Relaxation involves the pursuit of a particular psychophysical state of reduced autonomic arousal. In contrast, meditation is not a goal-directed activity, though it may result in similar physiological and psychological outcomes as those experienced as a result of relaxation techniques. The primary purpose of meditation is to cultivate a non-judgmental awareness of body and mind, and secondarily to learn how to witness events and experiences on a moment-to-moment basis. Meditation practices can also help to foster insights into one's habitual and reactive patterns of perceiving and behaving, thus facilitating change of these patterns.

Over the past two decades, there has been an increasing interest in how to apply contemplative practices to a diverse range of secular settings, including health care, education, business, and law (Duerr, 2004). One of the most widely used meditation techniques is Mindfulness-Based Stress Reduction (MBSR). The original MBSR curriculum was developed as an eight-week course at the stress clinic at the University of Massachusetts in 1979 by Jon Kabat-Zinn, who later established the Center for Mindfulness in Medicine. Since that time, over 17,000 participants have completed the course at over 240 medical centers, hospitals, university health centers, and clinics (from CFMM website www.umassmed.edu/content.aspx?id=41252).

Kabat-Zinn outlined seven foundations of mindfulness practice: (a) nonjudging—being aware of judging and reaction to inner and outer experiences; (b) patience—understanding and accepting that sometimes things must unfold in their own time; (c) beginner's mind—seeing everything as if for the first time; (d) trust—taking responsibility for being yourself and learning to listen to and trust your own being; (e) non-striving—realizing that there is no goal other than for you to be yourself; (f) acceptance—seeing things as they actually are in the



present; and (g) letting go—releasing thoughts, feelings, and situations that the mind seems to want to hold on to (Kabat-Zinn, 1990).

Throughout the course of an MBSR program, students are taught various techniques to cultivate mindfulness including: formal meditation (sitting or lying meditation); body scan; mindfulness of movement (walking meditation, yoga); “mini-meditation” moments throughout the day, e.g. breathing and awareness exercises to be used while washing dishes, driving a car, etc.

Contemplative prayer (CP), sometimes called centering prayer, also has potential for application to clinical situations. CP has its roots in early Christian monasticism. The purpose of CP is to clear the mind of rational thought in order to focus on the indwelling presence of God. In the wake of Vatican II, the writings of Thomas Merton (1971) and others helped to lead a movement to reclaim Christian contemplative traditions, which had been virtually lost after the Reformation of the 16th century. Later, William Menninger, Basil Pennington (1982), and Father Thomas Keating, Pennington, and Clarke (1978) distilled the practices and teachings of St. John of the Cross, St. Teresa of Avila, and other Christian contemplatives into the discipline of centering prayer. They also re-introduced Christians to the practice of *lectio divina*, a traditional Benedictine practice of prayer and scriptural reading intended to cultivate communion with God and to reflect upon the meaning of God's Word.

In 1984, Father Keating established Contemplative Outreach, Ltd. to provide a support system for those wishing to sustain their commitment to Christianity while developing these practices (see the organization's website at www.centeringprayer.com).

B. How Does Meditation Work?

How is it that meditation practice facilitates change? The following is an overview of the physiological and psychological mechanisms that are activated through meditation and contemplative practice.

1. Physiological mechanisms

Until relatively recently, scientists assumed that the neocortical and lower brain regions completed most of their development by early childhood. However, more recent research points to “neuroplasticity” – the ability of the adult brain to change in response to experience. This emerging theory posits that our brains are not immutably hard-wired, but rather can be shaped through experiences such as meditation and contemplative practices. One psychiatrist has called neuroplasticity “one of the most extraordinary discoveries of the twentieth century” (DoIDGE, 2007).

Through the use of functional magnetic resonance imaging (fMRI), electroencephalogram (EEG), and other technology, neuroscientists have begun to study the regions of the brain that are activated during the practice of meditation. They are finding that long-term meditation may actually alter the structure of their brains. These changes include alterations in patterns of brain function, changes in the cortical responses to visual stimuli, and alterations in the synchrony and amplitude of high-frequency oscillations (which may play a key role in connectivity in the brain) (Davidson & Lutz, 2007).

Through these studies, researchers are discovering that meditation can significantly increase activation in regions of the brain associated with positive affect, including the left-side of the anterior cortex (Davidson et al., 2003). This region of the brain is usually under active in depressed persons (Davidson, Cave, & Sellner, 2000; Davidson, Ekman, Saron, Senulis, & Friesen, 1990). In a study examining the EEG pattern generated during the practice of "Triarchic body-pathway relaxation technique" (TBRT), a form of ancient Chinese mindfulness-based meditation, Chan, Han, & Cheung (2008) found evidence to support that TBRT gives rise to positive emotional experience, accompanied by focused internalized attention.

Another study found that long-term meditators had lower activation in the amygdala in response to emotional sounds (Brefczynski-Lewis, Lutz, Schaefer, Levinson, & Davidson, 2007). The amygdala is a part of the limbic system that is associated with the processing of fear and aggression. The finding suggests that the long-term use of meditation practices may be associated with a significant decrease in emotionally reactive behavior (Davidson & Lutz, 2007).

Regions of the brain involved with empathetic responses are also impacted through the practice of meditation, according to a study by Lutz, Brefczynski-Lewis, Johnstone, and Davidson (2008). Buddhist monks practicing compassion meditation showed an increase in activity in the insula when they heard happy or distressed sounds. The insula is a structure near the front of the brain that detects emotions and translates them into physiological responses such as elevated blood pressure and heart rate. The findings support the role of the limbic circuitry in emotion sharing, which is a key component of empathy and compassion, and indicate that meditation may increase a person's sensitivity to others who are in need (Lutz et al., 2008).

The same study also found that the temporal parietal juncture became active during meditation, another area associated with the ability to perceive the emotional and mental state of others. Interestingly, this brain region was more active in meditators compared to non-meditators even when they were not practicing meditation.

A number of recent studies have found a connection between meditative practices and improved cognitive and attention skills (Jha, Krompinger, & Baine, 2007; Slagter et al., 2007; Kozasa, Radvany, Barreiros, Leite, & Amaro, 2008). Scientists measuring electrical activity with an EEG found changes in brain activity as subjects progressed deeper into meditative states. They observed an increase in alpha brainwaves, associated with focus and attention, and a decrease in delta brainwaves, linked to drowsiness (De LosAngeles et al., 2007).

Pagnoni, Cekic, and Guo (2008) used fMRI to investigate the neural correlates of conceptual processing during meditation in regular Zen practitioners and control subjects. Zen practitioners displayed a reduced duration of the neural response linked to conceptual processing in regions of the default network. The findings from this study provide a neurological basis to the claim that meditation training can help to free the mind from distractions, and may foster the ability to voluntarily regulate the flow of spontaneous mental activity.

There is also evidence that meditation may have an impact on the brain's gray matter. Holzel et al. (2008) investigated MRI brain images of 20 Vipassana meditators and compared the regional gray matter concentration to that of non-meditators. Meditators had greater gray

matter concentration in the left inferior temporal gyrus and right hippocampus, and also in the right anterior insula which is involved in interoceptive awareness.

2. Psychological mechanisms

Mindfulness training provides powerful cognitive-behavioral coping tools (Kabat-Zinn et al., 1992; Astin, 1997). While sharing some similarities with other cognitive interventions, one significant difference is that mindfulness-based approaches focus on attending to and altering cognitive processes rather than changing their content (Orsillo, Roemer, Block-Lerner, & Tull, 2004).

Some authors have suggested that mindfulness training allows one to develop alternative paradigms and therefore interpret experiences in new ways (Shapiro, Schwartz, and Bonner, 1998), so that, for example, a stressful situation may be perceived as an opportunity rather than a threat. Roemer and Orsillo (2003) call this “cognitive flexibility.”

Mindfulness-based Stress Reduction (MBSR) is also thought to cultivate self-regulation, which may contribute to positive changes in both physical and psychological health (Shapiro, Schwartz, and Bonner, 1998; Coffey & Hartman, 2008). In a psychological and educational context, the term “self-regulated” is used to describe a kind of learning that is guided by metacognition, strategic action (planning, monitoring, and evaluating personal progress against a standard), and motivation to learn (Winne & Perry, 2000; Perry, Phillips, & Hutchinson, 2006). People who have developed their self-regulatory capacities are better able to calibrate their emotions, and tend to attribute their successes or failures to factors within their control (Dweck & Leggett, 1988; Dweck, 2002). They usually exhibit a high sense of self-efficacy (Pintrich & Schunk, 2002).

It is this emotional regulation aspect of mindfulness that was found to be the most beneficial to patients with chronic depressive features, according to a study of patients with rheumatoid arthritis (Zautra et al., 2008). The study compared the group who received mindfulness training with a group of patients who received cognitive behavioral therapy or education only.

In an effort to create a model of mindfulness that more precisely defines the construct as well as describes how it works, Shapiro, Carlson, Astin, and Freedman (2006) proposed three components of mindfulness which function in an integrated way:

- **Intention:** The practice is being done for a purpose that the practitioner consciously chooses, such as reducing one’s stress.
- **Attention:** Paying attention in the present moment implies that one is able to maintain that focus, in the face of whatever may arise, including distressing internal or external experiences.
- **Attitude:** The way that one pays attention is as important as the act of attending. Kabat-Zinn (2003) notes that attention, in the context of mindfulness practice, will ideally have “an affectionate, compassionate quality...a sense of openhearted, friendly presence and interest” (p. 145). This implies that one develops the ability to pay attention without judgment.

According to Shapiro et al. (2006), when all three of these components are present, mindfulness can lead to “re-perceiving” – a fundamental shift in one’s perspective which can, in turn, lead to changing the way one chooses to respond to a situation.

C. Measuring the Mindfulness Construct

Historically, the primary intention of meditative practices has been to cultivate insight, wisdom, and compassion. As Baer (2003) notes, these are “concepts that may be appreciated by many people, yet difficult to evaluate empirically.” Recent work has been done to operationalize these constructs and to develop reliable and valid methods of measuring them.

Dimidjian and Linehan (2003) note that while clinical models that utilize mindfulness interventions have used variant terminology to describe key components, these descriptions have in common three activities: 1) observing, noticing, bringing awareness; 2) describing, labeling, noting; and 3) participating. Additionally, these activities are performed with three qualities: 1) nonjudgmentally, with acceptance; 2) in the present moment; and 3) effectively. Consequently, efforts to measure mindfulness have focused on these dimensions.

In the past decade, several tools have been developed to measure the mindfulness construct, including:

- Mindful Attention Awareness Scale (MAAS – Brown and Ryan, 2003)
- The Kentucky Inventory of Mindfulness Skills. Assessment (Baer, Smith, & Allen, 2004)
- Philadelphia Mindfulness Scale (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008)
- The Freiburg Mindfulness Inventory (FMI – Walach, Buchheld, Buttenmuller, Kleinknecht, & Schmidt, 2006)

Of these, the MAAS appears to have been utilized most frequently in empirical studies. The MAAS is a 15-item instrument used to assess the frequency with which an individual is openly attentive to and aware of present events and experiences. Mindfulness of both internal states and overt behavior is assessed using a 6-point Likert scale. One sample item: “I could be experiencing some emotions and not be conscious of it until sometime later.”

Several recent studies that have used the MAAS to document the impact of mindfulness practice include Cohen-Katz (2005), who found that scores on the MAAS increased significantly over an 8-week MBSR program, and Brown and Ryan (2003) who noted that increases in MAAS-assessed mindfulness were related to declines in mood disturbance and stress.

IV. REVIEW OF EMPIRICAL RESEARCH

A. Overview of Research on Meditation and Mindfulness

Several meta-analytic reviews of nearly three decades of research provide significant evidence that meditative and contemplative practices can help to enhance physical and psychological health (Baer, 2003; MAMIG, 2006; Grossman, Niemann, Schmidt, & Wallach, 2004; Praissman, 2008). Much of this research has focused on Mindfulness-based Stress Reduction (MBSR), but there are also indications that other forms of contemplative practice can be applied to a wide range of clinical problems with positive results.

1. *Contemplative Prayer*

Prayer, in general, can help to moderate or deter stressful reactions (Pargament & Brant, 1998), and people who pray frequently appear to suffer less psychologically or physically after a major stressor (McCullough & Larson, 1998). A recent study found that for patients confronting a life-threatening illness such as cancer, religious coping can be an important factor influencing their quality of life (Tarakeshwar et al., 2008).

Shadoan (2006a) and others (Finney, 1985; Treichel, 1992) have suggested that Contemplative Prayer (CP) can be an effective adjunct to Christian counseling. Richards and Bergin (1997) suggest that CP could be used in a range of clinical settings. Research indicates that CP may be effective in reducing anxiety and improving spiritual well-being (Levin & Chatters, 1998; Shadoan, 2006b), and in reducing depression (Shadoan, 2006b; Propst, 1996). It has also been used with problems of substance abuse, reducing risky behaviors, and increasing self-esteem (Larson, Swyers, & McCullough, 1997).

2. *Mindfulness-based Stress Reduction*

Studies on MBSR have been well developed over the past 25 years since the first study by Jon Kabat-Zinn in 1982, with increased levels of rigor in experimental protocol. A review of these studies shows reliable and reproducible effectiveness in reducing physiological and psychological symptoms, as well as developing positive mood states and behaviors. Follow-up and longitudinal studies indicate that MBSR participants often maintain significant improvements in physical and emotional symptoms and functional status after the intervention is over (Kabat-Zinn, Lipworth, Burney, & Sellers, 1987; Ma & Teasdale 2004; Miller, Fletcher, & Kabat-Zinn, 1995; Teasdale et al, 2000).

Physiological benefits

Physiological changes among participants in the MBSR program have included: reduced chronic pain (Kabat-Zinn, 1982, Kabat-Zinn, Lipworth, & Burney, 1985; Kabat-Zinn et al., 1987); improved immune function (Davidson et al., 2003; Moynihan et al., 2004; Carlson, Speca, Patel, & Goodey, 2003); decreased symptoms of fibromyalgia (Kaplan, Goldenberg, & Galvin-Nadeau, 1993); and improved sleep patterns (Shapiro, Bootzin, Figueredo, Lopez, & Schwartz, 2003).

Psychological benefits

A growing body of research suggests that the MBSR program has provided effective treatment for reducing stress and depression (Shapiro, Schwartz, & Bonner, 1998; Marcus et al., 2003;

Specia. Carlson, Goodey, & Angen, 2000), as well as anxiety (Reibel, Greeson, Brainard, & Rosenzweig, 2001; Roth & Creaser, 1997).

In one study of the effects of MBSR on adults with a lifetime diagnosis of mood disorder, researchers found significant reductions in ruminative tendencies, specifically in the areas of brooding and reflection (Ramel, Goldin, Carmona, & McQuaid, 2004). Chambers, Lo, & Allen (2008) found that participants who completed a 10-day intensive mindfulness meditation retreat demonstrated significant improvements in self-reported mindfulness, depressive symptoms, rumination, and performance measures of working memory and sustained attention, relative to a control group.

Mindfulness-based cognitive therapy (MBCT), a form of MBSR that incorporates cognitive strategies, has been found effective in reducing relapse in patients with major depression (Teasdale et al., 2000). In a small study to measure the impact of MBCT on generalized anxiety disorder, Evans et al. (2008) found significant reductions in anxiety and depressive symptoms from baseline to end of treatment. Yook et al. (2008) found that patients with anxiety disorder who received 8-week of MBCT showed significant improvement in sleep quality, and decreases in worry, anxiety, rumination, and depression, compared with baseline.

In addition to symptom reduction, there is evidence that meditation techniques, including MBSR, can cultivate qualities such as compassion, self-compassion, forgiveness, mindfulness, and spirituality.

Carmody, Reed, Kristeller, & Merriam (2008) found that MBSR participants showed significant increases in mindfulness and spirituality, which were associated with improvements in psychological and medical symptoms. One recent study of college graduates enrolled in an MBSR course found a correlation between participation in the meditation program and increased levels of forgiveness (Oman, Shapiro, Thoresen, Plante, & Flinders, 2008).

Research indicates that mindfulness may help to enhance the skills needed for successful interpersonal relationships. Carson, Carson, Gil, & Baucom (2004) found that participation in MBSR can have positive effects on interpersonal relationships. Recent research has also shown that dispositional mindfulness, measured with the Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2003), predicts a felt sense of relatedness and interpersonal closeness (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007) as well as more adaptive responses to social stress (Barnes et al., 2007; Creswell, Eisenberger, & Lieberman, 2007).

3. Other types of meditative practices

Research has indicated that practicing Transcendental Meditation (TM) techniques normalizes bodily functions, including reducing the heart rate, blood pressure, metabolism and vascular blood flow (Barnes, Treiber, Turner, Davis, & Strong, 1999; Barnes, Treiber, & Davis, 2001). Maclean et al. (1997) found that TM reduces the level of cortisol during non-stressful events, increases response during stress and quickens the return to baseline levels.

Other forms of meditation have also been found to have a positive impact on physical well-being. Manikonda et al. (2008) found that subjects with hypertension were able to decrease their heart rate and systolic and diastolic blood pressure after 8 weeks of contemplative meditation combined with breathing techniques (CMBT). Pace et al. (2008) examined the

effect of compassion meditation on innate immune, neuroendocrine, and behavioral responses to psychosocial stress. Their findings suggest that the practice of compassion meditation may reduce stress-induced immune and behavioral responses.

As with MBSR, other meditation practices also appear to support the development of interpersonal skills as well as social connection. Tloczynski and Tantriella (1998) examined the effects of Zen meditation on college adjustment. While anxiety and depressive symptoms significantly decreased in both meditation and relaxation groups as compared to the control group, only the meditation group showed a significant positive change in self-reported interpersonal relationship quality.

Hutcherson, Seppala, and Gross (2008) used a brief loving-kindness meditation exercise to find out if social connection could be created toward strangers in a controlled laboratory context. Compared with a closely matched control task, even just a few minutes of loving-kindness meditation increased feelings of social connection and positivity toward others on both explicit and implicit levels. These results suggest that this technique may help to increase positive social emotions and decrease social isolation.

B. Research on Mindfulness and Meditation for Care Providers

Several articles (Epstein 1999; Connelly, 1999; Connelly, 2005) note that the qualities developed by mindfulness practice – critical (yet non-judgmental) self-reflection, deep listening, and the ability to engage moment-to-moment—are essential to good physician care and judgment. Epstein (1999) makes the case that mindfulness can serve as the link between relationship-centered care and evidence-based medicine.

This natural affinity between mindfulness and health care has been the impetus for a number of initiatives to offer contemplative practices to care providers, including a program called “The Contemplative Mind in Medicine” which has been offered to first- and second-year medical students at the University of Massachusetts, Worcester, since 1985.

While the number of research studies on the use of meditation practices for health care providers is smaller than for other populations, the findings point to the same set of beneficial effects. Most relevant to this paper, the findings indicate that mindfulness training can be especially useful for reducing the stress and anxiety that lead to burnout and compassion fatigue in the helping professions.

This literature search identified 45 articles (including reviews and letters to the editor) on the use of meditation with health care professionals and care providers. See Appendix B for a list of these articles and the search criteria used to locate them. The range of this group included medical students, nurses, social workers, therapists, counselors, dentists, hospice care workers, caregivers for the elderly, and caregivers for children with chronic conditions.

The outcomes from the empirical studies in this group of articles fall into four main categories: 1) Reduction in anxiety and depression; 2) Reduction in other burnout symptoms; 3) Increases in compassion and self-compassion; and 4) Impact on professional skills. The most salient findings from these studies are summarized here, and in the tables that follow page 20.

1. Reduction in anxiety and depression

Shapiro, Schwartz, and Bonner (1998) examined the effects of an 8-week MBSR program on symptoms of anxiety and depression with 78 medical and premedical students in a randomized, wait-list controlled study. They found decreased levels of anxiety and depression in the MBSR group as compared to the wait-list control group. These findings were replicated when participants in the wait-list control group received the MBSR intervention.

Medical students at Thomas Jefferson Medical College have been offered MBSR since 1995 to help them improve their coping skills and reduce emotional disturbance. Rosenzweig, Reibel, Greeson, Brainard, and Hojat (2003) conducted a prospective nonrandomized cohort-controlled study and found that MBSR significantly lowered mood disturbance among second-year students who participated in the research.

In a pilot study of baccalaureate nursing students who participated in MBSR course, Beddoe & Murphy (2004) found that students significantly lowered their levels of anxiety at the end of the 8-week training. This was a pretest-posttest design with no comparison group. The students also used guided meditation audiotapes at home and completed journal assignments. The findings of the study also suggested that mindfulness may help to decrease the tendency to take on others' negative emotions.

A prospective, non-randomized, cohort-controlled study examined the effects of a MBSR course on stress and mental health symptoms in students in a master's level counseling psychology program (Shapiro, Brown, & Biegel, 2007). This semester-long, 10-week course followed the MBSR program model and included weekly instruction in a variety of mindfulness meditative techniques and home-based practice. Participants in the MBSR course showed significant pre-post declines in perceived stress, negative affect, rumination, state and trait anxiety, and significant increases in positive affect, compared to matched, cohort control participants taking didactic courses. MBSR participation was also associated with increases in self-reported mindfulness. This enhancement was significantly related to several of the beneficial effects of MBSR participation, including perceived stress, anxiety, and rumination.

Caregivers of children with chronic conditions were the subject of another study (Minor, Carlson, Mackenzie, Zemicke, and Jones, 2006). Forty-four caregivers participated in MBSR sessions, primarily mothers of children with special needs and various chronic conditions. At the start of the study, these caregivers reported very high levels of stress and mood disturbance. During the course of the 8-week program, these levels decreased significantly. There was an overall reduction in stress symptoms (measured by the Symptoms of Stress Inventory) by 32% and total mood disturbance (measured by the Profile of Mood States) was reduced by 56%.

Hassed, de Lisle, Sullivan, and Pier (2008) describe the development, implementation and outcomes of the Health Enhancement Program (HEP) for medical students at Monash University in Australia. The program includes mindfulness training, is experientially-based, and integrates with biomedical sciences, clinical skills and assessment. This study measured the program's impact on student psychological distress and quality of life. A cohort study performed on 148 first-year students measured effects of the HEP on various markers of well-being found improvements on all measures and reached statistical significance for reductions in the depression and hostility subscales.

2. Reduction in other burnout symptoms

Young, Bruce, Turner, VanderWal, and Linden (2001), using a nonrandomized comparison group, found that third-year BSN nursing students who participated in an MBSR course showed small to moderate effects in overall health, physical and psychological symptoms, and sense of coherence.

Cohen-Katz et al. (2005) gathered quantitative and qualitative data on the effects of Mindfulness-based Stress Reduction (MBSR) for nurses. They found that MBSR group participants reduced scores on 2 of 3 subscales of the Maslach Burnout Inventory significantly more than wait-list controls. Within-group comparisons for both groups pretreatment and post-treatment revealed similar findings. Changes were maintained at a 3-month post-treatment measurement.

In a study of health care professionals, Galantino, Bairne, Maguire, Szapary, and Farrar (2005) measured self-reported stress symptoms and salivary cortisol before and after an 8-week mindfulness meditation program. While there were no significant changes in the salivary cortisol level, they found a decline in emotional exhaustion, as measured by the Maslach Burnout Inventory, over the two time points. These findings suggest that the training was a factor in decreasing their stress level.

In a small, randomized pilot study conducted at a Veterans Administration hospital in California, health care professionals (including physicians, nurses, social workers, physical therapists, and psychologists) were offered an 8-week course in MBSR (Shapiro, Astin, Cordova, & Bishop, 2005). Compared with the control group, those who received the MBSR intervention reported decreased burnout, decreased distress, an increase in self-compassion, and greater satisfaction with life. Qualitative data collected from participants reinforced these findings, and indicated that the MBSR program had a significant overall positive impact on their professional and personal lives. In response to the question, "What Effects Did the MBSR Program have on your life?" one participant wrote: "[It] opened my mind to the destructive thought patterns I have and to various ways of addressing them."

A study by Mackenzie, Poulin, and Seidman-Carlson (2006) involved the development and evaluation of a brief 4-week mindfulness intervention for nurses and nurse aides. In comparison with 14 wait-list control participants, 16 participants in the mindfulness intervention experienced significant improvements in burnout symptoms, relaxation, and life satisfaction.

3. Empathy, compassion, and self-compassion

In perhaps the earliest study to look at how meditation might enhance professional skills of the care provider, Lesh (1970) found that counselors could reduce stress and anxiety through the use of Zen meditation, which also lead to greater compassion and empathy.

Echoing the findings from neuroscientific research on empathy described in the third section of this paper (see Lutz et al., 2008), three studies suggest that mindfulness training encourages empathic tendencies in health professionals. Shapiro et al. (1998) found that MBSR increased levels of self-reported empathy in premedical and medical students relative to wait-list controls. These results were maintained even during a stressful exam period. Another study

examined the effects of mindfulness training on a number of psychological variables in graduate counseling psychology students, including self-reported empathy and self-compassion (Shapiro et al., 2007). Counseling students who participated in a 10-week MBSR-based stress management course showed significant pre-post increases in empathic concern for others relative to a matched cohort control group. This study also showed that increases in MAAS-assessed mindfulness were related to these increases in empathy.

A study with health professionals (Shapiro et al., 2005) found that there were significant increases in self-compassion among subjects who participated in MBSR courses.

4. Impact on professional skills

A recent qualitative study conducted over four years with graduate level students in mental health, school, and family counseling found that participants in the 15-week MBSR course reported positive physical, emotional, mental, spiritual, and interpersonal changes and substantial effects on their counseling skills and therapeutic relationships (Schure, Christopher, & Christopher, 2008). Many students perceived positive effects on their relationships and stated an increased capacity for empathy and compassion. They also described an increased ability to be with clients in moments of silence or discomfort and not feel a need to control the situation because of their own anxiety.

Additionally, two studies of volunteers at a Zen Buddhist hospice program indicate that meditation practice can support emotional well-being, and also help to deal with fear of death (Bruce & Davies, 2005; Scherwitz, Pullman, McHenry, Gao, & Ostaseski, 2006).

While care providers benefit from meditation training, there is also evidence to suggest that the populations whom they serve may also benefit. In a study of caregivers for adults with multiple disabilities, Singh et al. (2004) found that those individuals whose caregivers had received 8 weeks of mindfulness training had a markedly higher level of happiness when compared to individuals with caregivers who did not receive the training. Grepmaier et al. (2007) found that the psychotherapists practicing Zen meditation had significantly higher evaluations on two measures of treatments results, clarification and problem-solving perspectives. They also demonstrated greater symptom reduction compared to patients of therapists in a control group.

Meditation and Mindfulness with Care Providers Summary of Selected Studies

Table I: Reduction in Anxiety and Depression

Author(s)	Population	Intervention	Design	Outcome measures	Findings
Shapiro, Schwartz, and Bonner (1998)	78 medical and premedical students	8-week MBSR	Randomized wait-list controlled study		Decreased levels of anxiety and depression among MBSR participants.
Rosenzweig, Reibel, Greeson, Brainard, and Hojat (2003)	140 second-year medical students	MBSR	Prospective non-randomized cohort-controlled study	Profile of Mood States	MBSR significantly lowered mood disturbance.
Beddoe & Murphy (2004)	16 BSN nursing students	MBSR	Pilot study; pretest-posttest design with no comparison group	Paired sample t tests to measure stress and empathy	Significantly lowered levels of anxiety; mindfulness may help to decrease the tendency to take on others' negative emotions.
Waelde, Thompson, and Gallagher-Thompson (2004)	12 female dementia patient family caregivers	6-session manualized yoga-meditation program (Inner Resources)	Pre-test, post-test		Pre/post comparisons revealed statistically significant reductions in depression and anxiety and improvements in perceived self-efficacy. Participants reported subjective improvements in physical and emotional functioning.

Shapiro, Brown, and Biegel (2007)	54 students in a master's level counseling psychology program	MBSR	Prospective non-randomized cohort-controlled	Mindfulness Attention Awareness Scale; Positive and Negative Affectivity Schedule; Perceived Stress Scale; Reflection Rumination Questionnaire; Self-Compassion Scale; State/Trait Anxiety Inventory	Significant pre-post declines in perceived stress, negative affect, rumination, state and trait anxiety, and significant increases in positive affect.
Minor, Carlson, Mackenzie, Zemicke, and Jones (2006)	44 caregivers of children with chronic conditions	MBSR	Pre-test, post-test	Symptoms of Stress Inventory; Profile of Mood States	Significant decrease in levels of stress and mood disturbance.
Hassed, de Lisle, Sullivan, and Pier (2008)	148 first-year medical students	Health Enhancement Program, includes mindfulness training	Cohort study	Depression, anxiety, and hostility subscales of the Symptom Checklist-90-R incorporating the Global Severity Index; WHO Quality of Life questionnaire	Improvements on all measures of well-being; statistical significance for reductions in the depression and hostility subscales.

Table II: Reduction in Other Burnout Symptoms

Author(s)	Population	Intervention	Design	Outcome measures	Findings
Young, Bruce, Turner, VanderWal, and Linden (2001)	Third-year BSN nursing students	MBSR	Non-randomized comparison group		Small to moderate effects in overall health, physical and psychological symptoms, and sense of coherence.
Cohen-Katz et al. (2005)	Nurses	MBSR	Randomized controlled trial	Maslach Burnout Inventory, qualitative data	MBSR group participants reduced scores on 2 of 3 subscales of the Maslach Burnout Inventory. Changes maintained at 3-month post-treatment.
Galantino, Bairne, Maguire, Szapary, and Farrar (2005)	64 health care professionals	8-week mindfulness meditation program	Prospective cohort study; Pre-test, post-test	Salivary cortisol level, Maslach Burnout Inventory, Profile of Mood States, Interpersonal Reactivity Index	No significant changes in the salivary cortisol level, but decline in emotional exhaustion, as measured by the Maslach Burnout Inventory.
Shapiro, Astin, Cordova, and Bishop (2005)	38 health care professionals (physicians, nurses, social workers, physical therapists, psychologists)	MBSR	Randomized controlled pilot study	Brief Symptom Inventory, Maslach Burnout Inventory, Perceived Stress Scale, Satisfaction With Life Scale, Self-Compassion Scale, and qualitative data	Decreased burnout, decreased distress, an increase in self-compassion, and greater satisfaction with life.
Mackenzie, Poulin, and Seidman-Carlson (2006)	30 nurses and nurse aides	4-week mindfulness intervention	Randomized controlled trial	Maslach Burnout Inventory, Smith Relaxation Dispositions Inventory, Intrinsic Job Satisfaction subscale from the Job Satisfaction Scale, Satisfaction With Life Scale, Orientation to Life Questionnaire	Participants in the mindfulness intervention experienced significant improvements in burnout symptoms, relaxation, and life satisfaction.

Table III: Impact on Empathy, Compassion, and Self-Compassion

Author(s)	Population	Intervention	Design	Outcome measures	Findings
Lesh (1970)	39 counseling students	Zen meditation	Pre-test, post-test, controlled study	Affective Sensitivity Scale, Experience Inquiry, Personal Orientation Inventory	The group that practiced zazen improved significantly in empathic ability compared to two control groups.
Shapiro et al. (1998)	78 medical and premedical students	8-week MBSR	Randomized wait-list controlled study		MBSR increased levels of self-reported empathy.
Shapiro, Brown, and Biegel (2007)	54 students in a master's level counseling psychology program	MBSR	Prospective non-randomized cohort-controlled	Mindfulness Attention Awareness Scale; Positive and Negative Affectivity Schedule; Perceived Stress Scale; Reflection Ruminations Questionnaire; Self-Compassion Scale; State/Trait Anxiety Inventory.	MBSR participants showed significant pre-post increases in empathic concern for others and self-compassion; study also found that increases in MAAS-assessed mindfulness were related to these increases in empathy.
Shapiro, Astin, Cordova, and Bishop (2005)	38 health care professionals (physicians, nurses, social workers, physical therapists, psychologists)	MBSR	Randomized controlled pilot study	Brief Symptom Inventory, Maslach Burnout Inventory, Perceived Stress Scale, Satisfaction With Life Scale, Self-Compassion Scale, and qualitative data.	Decreased burnout, decreased distress, an increase in self-compassion, and greater satisfaction with life.

Table IV: Impact on Professional Skills (including Resiliency)

Author(s)	Population	Intervention	Design	Outcome measures	Findings
Singh et al. (2004)	Caregivers for adults with multiple disabilities	8 weeks of mindfulness training			Individuals whose caregivers had received mindfulness training had a markedly higher level of happiness when compared to individuals with caregivers who did not receive the training.
Bruce and Davies (2005)	Zen Buddhist hospice program volunteers	Zen meditation	Interpretive study	Qualitative data.	Mindfulness fosters openness and supports letting go, and creating spaces for attending the living-and-dying process.
Staples and Gordon (2005)	451 healthcare professionals	Week-long program included didactic and experiential training in biofeedback, meditation, autogenics, imagery, and movement	Repeated measures analysis	Questionnaires, Existential Well-Being scale	Significant increase in the personal use of mind-body skills and the number of participants who were teaching their clients to use all modalities. Participants also had significantly higher life satisfaction scores after the program.
Steensma, Den Heijer, and Stallen (2006)	20 Dutch health sector workers	"Resilience Training," including meditation, yoga, and rational insights.	One-group-pretest-posttest design	Utrecht Coping List, Beck's Depression Inventory.	Trainees demonstrated improvements on effective coping styles and made less use of avoidance and passive reactions. Most trainees were reintegrated successfully in organizations.

<p>Scherwitz, Pullman, McHenry, Gao, and Ostaseski (2006)</p>	<p>46 Zen Buddhist hospice program volunteers</p>	<p>Zen meditation; 40-hour training program stressing compassion, equanimity, and mindfulness.</p>	<p>One-year longitudinal study of two volunteer cohorts.</p>	<p>Self-report FACIT spiritual well-being, general well-being, self-transcendence scale, and a volunteer coordinator-rated ZHP performance scale.</p>	<p>Volunteers had a high level of self-care and well-being at baseline and maintained both throughout the year; they increased compassion and decreased fear of death.</p>
<p>Grepmaier et al. (2007)</p>	<p>18 Psycho-therapists in training</p>	<p>Zen meditation</p>	<p>Randomized, controlled. (Therapeutic course and treatment results of 124 inpatients, who were treated for 9 weeks by 18 PTTs, were compared.)</p>	<p>Results of treatment assessed with: Session Questionnaire for General and Differential Individual Psychotherapy, Questionnaire of Changes in Experience and Behavior, the Symptom Checklist</p>	<p>Patients of psychotherapists practicing Zen meditation had significantly higher evaluations on clarification and problem-solving perspectives, and demonstrated greater symptom reduction compared to patients of therapists in a control group.</p>
<p>Schure, Christopher, and Christopher, (2008)</p>	<p>33 graduate level students in mental health, school, and family counseling</p>	<p>15-week MBSR course</p>	<p>Qualitative study; data analyzed using grounded theory principles.</p>	<p>Student journal entries</p>	<p>MBSR participants reported positive physical, emotional, mental, spiritual, and interpersonal changes and substantial effects on their counseling skills and therapeutic relationships.</p>
<p>Wilks and Vonk (2008)</p>	<p>304 caregivers for Alzheimer's patients</p>	<p>Private prayer</p>	<p>Comparative/ evaluative study</p>	<p>Questionnaire assessing a number of constructs, including caregiving burden; prayer frequency; use of private prayer as a means of coping; and perceived resiliency</p>	<p>Hierarchical regression analysis showed that caregiving burden and private prayer significantly influenced variation in perceived resiliency scores. Results from a regression equation series and path analysis provided support for prayer as a mediator between burden and perceived resiliency.</p>

V. DISCUSSION

The findings from the empirical studies reviewed in this paper indicate that meditative and contemplative practices can aid in relieving the acute symptoms of compassion fatigue and burnout, including depression and anxiety, and physiological symptoms such as insomnia and a weakened immune system.

Additionally, these practices help to cultivate cognitive and physiological capacities that support overall well-being. In short, the use of meditation appears to have great potential in the prevention and treatment of compassion fatigue and burnout, and in strengthening the resiliency of care providers.

A. How Meditation Can Support the Prevention and Treatment of Burnout and Compassion Fatigue

In this section, we look at five attributes that are important in the prevention and treatment of burnout and compassion fatigue, and explore how meditation practices can support the development of these attributes.

1. Compassion and self-compassion

Those who enter the helping professions are often motivated by a strong sense of compassion and empathy for others. However, Gilbert (2006) noted that compassion for self as well as for client may be an essential part of conducting effective therapy. Henry, Schacht, and Strupp (1990) found that therapists who lack self-compassion and who are controlling and critical of themselves tend to be more controlling and critical of their patients, and have poorer patient outcomes.

Self-compassion, a relatively new construct in psychology, has been defined as being kind and understanding toward oneself in instances of pain or failure; perceiving one's experiences as part of the larger human experience; and holding painful thoughts and feelings in balanced awareness rather than over-identifying with them (Neff, Rude, & Kirkpatrick, 2007).

As has been noted in this paper, there is both neuroscientific and psychometric evidence that meditation can help to cultivate empathy and compassion. But perhaps even more relevant for care providers, meditation practices (especially MBSR) can support the development of a stronger sense of self-compassion (Shapiro et al., 2005; Shapiro et al., 2007).

2. Resilience

Historically, researchers and clinicians have focused on dysfunctional reactions to trauma. The study of what makes some people better able to cope than others in the face of trauma and stress is relatively new and still in its early stages. Recent research has shown that close to 50% of people have been found to display "emotional resilience" across different types of potentially traumatic events, including bereavement, serious illness, and terrorist attack (Bonanno & Mancini, 2008). Some of the factors that promote resilience include person-centered variables (e.g., temperament, personality, coping strategies), demographic variables (e.g., male gender, older age, greater education), and socio-contextual factors such as supportive relations and access to community resources (Bonanno & Mancini, 2008).

This literature search located only three empirical studies on the relationship between contemplative practice and resilience. One study tested the effects of a resilience training program, which included meditation and yoga, on former health care employees who suffered from protracted illness due to stress or burnout (Steensma, Den Heijer, & Stallen, 2006). Trainees demonstrated improvements on effective coping styles and made less use of avoidance and passive reactions. Most were reintegrated successfully in organizations. A second study explored the efficacy of another training model, Strength-focused and Meaning-oriented Approach to Resilience and Transformation (SMART) (Chan, Chan, & Ng, 2006), to be used in crisis intervention. Components of the SMART model include yoga, meditation, and psycho-education to stimulate meaning reconstruction. Finally, Wilks and Vonk (2008) examined whether the coping method of private prayer could serve as a protective factor of resiliency among a sample of Alzheimer's caregivers. Findings indicated that private prayer could be an effective mediator between burden and perceived resiliency.

Even though few studies have been done on contemplative practices and resilience, it can be hypothesized that there is a positive association between the two. There is anecdotal evidence that mindfulness can cultivate emotional resiliency, and resilience is also associated with the ability to self-regulate one's emotions—a capacity which is strengthened by meditation practice (Shapiro et al., 1998; Coffey & Hartman, 2008). Hart (2007) postulated that “focus on virtuous or positive mental states, such as compassion, empathy, joy as opposed to anxiety and depression, may engender a more resilient affective style including a greater modulation of and faster recovery from stressful events” (p. 10).

3. Self-awareness

Baker (2003) suggests that self-awareness, self-regulation (coping), and an ability to balance self and others' interests are critical to managing stress in care providers. Of these, self-awareness is seen as fundamental to self-care (Baker, 2003; Norcross, 2000).

On a pragmatic level, self-care is a central aspect of the meditation experience. For example, participants in MBSR courses are invited to designate a time each day to stop what they are doing and to practice techniques that increase their awareness of their physical and emotional states. This acts as a kind of renewal time in the midst of busy lives and schedules.

These practices also support a deeper level of self-care in the form of self-awareness, and provide participants with tools to be less self-critical, and more compassionate, generous, and forgiving toward themselves (Cohen-Katz, Wiley, Capuano, Baker, and Shapiro, 2004).

As one learns to pay attention to one's thoughts through the practice of mindfulness, this counteracts the tendency to avoid or suppress negative or painful experiences. This suppression often leads to an increase in the very feelings that avoidant-coping individuals are hoping to control (Barlow, Allen, & Chote, 2004).

Body awareness is included in the matrix of self-awareness. There is consensus among neuroscientists and social scientists that the mind and body must both receive attention in order for successful recovery from PTSD symptoms (Porges, 1995; Scaer, 2005). Levine (1997) and Scaer (2005) have noted that mammals (including humans) who experience a traumatic

event must pass through their initial freeze response by neurological trembling. This trembling is what allows PTSD reactions to pass and to become functional again.

The body scanning component of MBSR can serve as a way for individuals who have been exposed to traumatic or stressful events, including care providers experiencing secondary trauma, to have an increased awareness of the sensations in their body, and to learn how to accept these sensations without judgment. This may support the positive processing of these physiological sensations rather than their repression.

4. Metacognition and attention

Research indicates that efforts to suppress thoughts or reduce the frequency of certain thoughts can have the opposite effect and increase the occurrence of those thoughts (Wegner & Smart, 1997). This tendency to “numb out” emotions and hyperarousal symptoms are strongly associated with individuals with PTSD (Flack, Hsieh, Kaloupek, & Keane, 2000), and it can be surmised extends to care providers with secondary trauma symptoms.

Individuals with PTSD have also been reported to have problems with their attention and memory (Bremner et al., 1993; Vasterling et al., 2006).

Metacognition is the process of monitoring one’s own thought process, including the focus of one’s attention. When one has developed the capacity for metacognition, there is more ability to “de-center” from thought, and to understand thought patterns as transient events rather than a direct representation of reality (MAMIG, 2006; Teasdale, 1999). This can result in a reduction of ruminative thought patterns, which have been linked to emotional distress and even have implications on cardiovascular health (Low, Stanton, & Bower, 2008).

Meditation has been found to be an effective way to develop both these areas – the “executive function” of metacognition that helps us to be more discerning in where we place our attention, and in attention itself.

Berceli and Napoli (2006), in a proposal to create a mindfulness-based trauma prevention program for social workers, note that mindfulness is a useful tool for regulating emotions, and encourages acceptance rather than avoidance of one’s experiences, and decreases rumination about past and future events.

Studies that indicate meditation can improve cognitive and attentive skills (see Jha et al., 2007) also have implications for emotional well-being. One of the long-term physiological effects of meditation may be that it improves a person’s ability to better attend moment-to-moment to the stream of external stimuli and reduces the tendency to “get stuck” on any one stimulus.

In essence, mindfulness allows for a “middle way” between avoiding painful thoughts and feelings, and dwelling on them incessantly. Meditation practices help us to develop an “internal observer” or “witness,” which aids us in being able to paying attention to negative or painful experiences, but to do so without self-criticism or judgment (Berceli & Napoli, 2006).

Authors from the Melbourne Academic Mindfulness Interest Group (2006) suggest that:

It may be that mindfulness training is able to help participants to be more aware of all the aspects of their personal recollections, rather than simply giving attention to the most emotionally salient ones, resulting in a lower likelihood of focusing on perceptions of personal failure and hopelessness that often lead to depression. (p. 289)

5. Meaning

Several authors, including Noonan and Tennstedt (1997) and McCann and Pearinan (1990) emphasize that the ability to attribute and reconstruct the meaning in caregiving is a critical factor in moderating vicarious traumatization. In the program offered to Canadian Forces chaplains, facilitators noted that one of the most important benefits was that participants had an opportunity to reflect on the meaning of their ministry in the face of combat-related violence (Zimmerman, 2000).

A physical therapy technician at the U.S. Army Institute of Surgical Research who treats wounded soldiers at the burn center summed it up like this: "It's difficult at times. But what keeps me going is the fact that I'm helping other people. As long as I keep my purpose, it keeps me above water" (Wilson, 2008).

Intention, the idea that contemplative practice is being undertaken for a purpose that the person chooses, is one of the three essential components of mindfulness (Shapiro et al., 2006). This intention can be used as a vehicle for care providers to re-discover the meaning in their work, and to consciously become aware of and re-assess what motivates them as they engage with their patients and clients.

B. Factors to Consider in Offering Meditation to Military Care Providers

Finally, four factors should be considered when assessing how to offer meditation as an intervention to military care providers: 1) Support system; 2) Trust and rapport; 3) Timing of the intervention; 4) Religious vs. secular presentation.

1. Support system

Empirical findings and anecdotal material indicate that on a fundamental level, the act of receiving education about the dynamics of compassion fatigue and being part of a support system can help to alleviate the stress of providing care in extreme situations. In a study of chaplains and other clergy who responded to the September 11th attacks in New York City, Flannelly et al. (2005) found that Clinical Pastoral Education tended to decrease compassion fatigue and burnout and increase compassion satisfaction.

A care provider based at the U.S. Army Institute of Surgical Research said, "Sometimes you need to talk to someone or relax with a group. I've sat down in a session, and it was soothing. There's a sense of comfort from being with other people who are going through similar experiences" (Wilson, 2008).

In spiritual traditions that use contemplative and mindfulness practice, the community context is often an integral part of teaching and practicing mindfulness (Dimidjian & Linehan, 2003). Mindfulness is usually taught in a group context, which may enhance its effects. The

quality of dialogue between the facilitator and students, and between the students themselves, is an important component of the MBSR course. During this dialogue, participants can practice nonjudgmental awareness as they learn to listen to one another in an open and compassionate way, without trying to solve others' problems or give advice. Saki Santorelli, Director of the Center of Mindfulness, has deemed this quality of presence combined with loving kindness as the "crucible of mindfulness" (1999).

By encouraging the development of support among the group and being aware of the potential of this group dynamic, program facilitators can optimize the positive effects of an intervention.

2. Trust and rapport

It is common for people to be more likely to accept a psychological intervention if they do not feel that their experience is being pathologized. For this reason, it is important to normalize the care provider's experience.

In a program offered to chaplains in the Canadian Forces who were deployed on peacekeeping missions, organizers placed a high value on developing trust and rapport (Zimmerman, 2000). Attendance was not mandatory but rather encouraged, and the program was advertised as a normal conclusion to stressful tours in order to guard against participants considering attendance as admitting to pathology. Participants were treated as colleagues, and no assessments for mental disorders were administered. Creating these conditions seemed to support the development of better rapport between participants and facilitators.

The approach taken by Dr. Joseph Bobrow, a clinical psychologist and founder of the Coming Home Project that offers mindfulness practices to returning vets, can be instructive. While addressing representatives of more than 100 troop-support organizations about compassion fatigue and burnout at the "America Supports You" national summit, Dr. Bobrow said, "We can anticipate this happening. It doesn't necessarily mean [that you have] a psychiatric disorder, just like post-traumatic stress is not necessarily a psychiatric disorder. In fact, it's the body, mind and soul's way of coping with an impossible situation" (Quigley, 2008).

3. Timing of the intervention

At what stage should the intervention be offered? In the Canadian program for military chaplains (Zimmerman, 2000), the intervention was offered post-deployment as a way to debrief one's experiences. On the other hand, educators have recognized that it is important to provide counselors with tools for self-care early in their careers and even while they are being trained (Baker, 2003; Brems, 2001; Kuyken, Peters, Power, & Lavender, 2003; Weiss, 2004). Shapiro and Biegel (2007) suggest that MBSR could potentially act to "inoculate" counselors and other mental health professionals against the stress of their profession at the beginning of their training time.

In all likelihood, the intervention will be useful whenever it is offered, and there will probably be practical and logistical reasons for scheduling it before, during, or after deployment.

The course content should be customized depending on when the intervention is offered to meet the needs of participants. For example, if military care providers are offered the course at

the end of their deployment, program facilitators may want to include some of the mindfulness-based trauma release exercises developed by Berceci and Napoli (2006).

4. Religious versus secular presentation

Participants in a meditation or mindfulness training group will most likely come from a plurality of religious (and non-religious) backgrounds. Consequently, it is important to consider how the material is presented and to take care to ensure that participants do not feel alienated.

Some have approached this situation by focusing solely on the stress-reduction aspects of meditation practice and removing all references to religion. Others try to strike a balance between stress-reduction goals while at the same time encouraging participants to become more aware of their intentions and the insights that may emerge from mindfulness practice (Duerr, 2004). Both approaches can help participants from diverse backgrounds to find a way to engage with the material.

However, some authors question if there may be a cost in over-secularizing mindfulness. Dimidjian & Linehan (2003) inquire if something essential is lost when mindfulness techniques are taught separately from their spiritual roots. They stress the importance of creating and maintaining dialogues with spiritual teachers like Father Thomas Keating and His Holiness the Dalai Lama who are skilled practitioners of techniques such as contemplative prayer and compassion meditation. This dialogue will be helpful in preventing “unnecessary reinvention of the wheel.”

Basically, the facilitator’s primary goal should be to create an atmosphere where both leaders and participants are able to listen to each other’s unique spiritual experiences without judgment and with full acceptance. This reinforces one of the core qualities of mindfulness itself: to practice awareness and attention, with openness and loving kindness.

VI. CONCLUSION

More than 20 years of empirical studies offers strong evidence that meditative and contemplative practices can aid in relieving the acute symptoms of compassion fatigue and burnout, including depression and anxiety, and physiological symptoms such as insomnia and a weakened immune system. Additionally, these practices help to cultivate cognitive and physiological capacities that support overall well-being and strengthen the resiliency of care providers.

Specifically, meditation practices can support individuals in developing five attributes that are key in preventing and treating burnout and compassion fatigue: 1) compassion and self-compassion; 2) resilience; 3) self-awareness; 4) metacognition and attention; and 5) meaning.

When considering the use of these practices with military care providers, planners should take into account: 1) the creation of a support system through the intervention; 2) the importance of building trust and rapport with the participants; 3) the timing of the intervention; and 4) presenting the material in a religious or a secular context.

Finally, based on empirical studies and anecdotal remarks, it is probable that Soldiers will benefit by receiving improved care from military care providers who have been supported to develop greater skills in self-care and self-awareness.

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VIII. APPENDICES

A. Glossary of Terms

Burnout: Emotional exhaustion commonly experienced as a consequence of increased workload and institutional stress.

Compassion: A deep awareness of the suffering of others, accompanied by a desire to alleviate their suffering.

Compassion fatigue: A state experienced by those helping people in distress, characterized by an extreme state of tension, vicarious traumatization, and physiological and psychological symptoms.

Empathy: The capacity to understand, be sensitive to, and feel what another is feeling; and the ability to communicate this sensitivity to the person.

Meditation: A term that describes a wide range of contemplative practices, including contemplative prayer, lectio divina, and mindfulness meditation. All types of meditation share the common goal of training an individual's attention and awareness to become more finely attuned to events and experiences in the present moment.

Mindfulness: A non-judgmental, receptive mind state in which individuals observe their thoughts and feelings as they are, without trying to suppress or deny them.

Resilience: The ability of an individual to maintain positive adaptation despite experiences of significant adversity.

Self-compassion: The capacity to extend compassion to one's self in instances of perceived inadequacy, failure, or general suffering. Neff (2003) postulates that self-compassion is composed of three components: self-kindness, common humanity, and mindfulness.

Self-awareness: An unbiased observation of one's inner experience and behavior.

Self-regulation: The ability to maintain stability of functioning as well as flexibility, and the capacity to change in new circumstances through continual feedback loops that connect all subsystems to the larger whole.

B. Bibliography: Articles on the use of contemplative practices with health care professionals and other care providers

The primary source for this list is the "Mindfulness Bibliography" prepared for the Mindfulness Awareness Research Center, published in March 2008 on the Center's website: <http://marc.ucla.edu/body.cfm?id=38#Biblio>. This bibliography, compiled by John C. Williams and Lidia Zylowska, lists 35 articles and books in a subcategory titled "Health Care Providers." It is based on PsycINFO, Medline, PubMed, and Cochrane database searches. The citations include relevant peer-reviewed journal articles and books published between 1975 and February, 2008.

This list was supplemented by a search conducted by this paper's author. The PubMed database was searched using the keywords: "meditation," "mindfulness," "MBSR," and "prayer" in combination with "caregivers," "health care professionals," and "resilience." This search turned up an additional 11 articles on the topic, including articles published between March 2008 and October 2008. Articles that described the use of specific contemplative practices such as meditation, MBSR, and private/contemplative prayer were included in this review. Publication types included clinical trials, comparative studies, reviews, and letters to the editor. Articles about integrative medicine, and religion and spirituality in a general sense were excluded.

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