Mindfulness-Based Medical Practice: A Mixed-Methods Investigation of an Adapted Mindfulness-Based Stress Reduction Program for Health Care Professionals

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Abstract

The necessity of providing health care professionals with tangible tools to manage stress and safeguard their own well-being has become increasingly apparent. Rates of burnout in the helping professions are rising; the consequences of clinician distress for patient care have been highlighted in recent literature. Past research has examined the potential for Mindfulness-Based Stress Reduction (MBSR) to act as an adjunctive intervention for various clinical problems, including but not limited to chronic pain, for over 25 years. Presently, the applications of this program are burgeoning with health care professionals, for whom the intervention holds the promise of promoting both personal and clinical benefits. Past research has examined outcomes of MBSR in health care professionals such as burnout, empathy, perceived stress, as well as medical and psychological symptoms such as depression or anxiety. The current program of research sought to expand on existing research by examining positive psychological outcomes such as well-being, as well as potential mechanisms of change such as mindful attention, and self-compassion. Quantitative and qualitative methods were employed to provide a broad portrait of how change is experienced by health care professionals engaged in the program. This dissertation comprises three manuscripts that collectively contribute to the literature. The first manuscript provides a focused literature review, summarizing the empirical literature on MBSR for health care professionals specifically. The second manuscript utilized self-report measures to explore benefits of engaging in Mindfulness-Based Medical Practice (MBMP), an adapted version of MBSR for health care professionals which includes training in mindful communication. The program was completed by a sample of 51 physicians, psychologists, social workers, nurses, and other

health care professionals in two cohorts during the spring of 2008 and 2009. Findings provide initial evidence of the effectiveness of MBMP as demonstrated by significant decreases in perceived stress, and increases in mindful attention and awareness and self-compassion. Bootstrapped hierarchical regression analyses failed to reveal a moderating effect of either mindfulness or self-compassion on the negative relationship between perceived stress and well-being. The third manuscript presents a study which investigated participants' experiences of the 8-week course through focus group interviews (n = 27). A grounded theory analysis yielded a model highlighting unique change processes for practicing health care professionals in relation to enhanced awareness of perfectionism, self-criticism, and orientation to others. Participants described achieving personal outcomes such as changes in self-care attitudes and practices, as well as implications for clinical encounters with patients. This study provides one of the first in-depth qualitative investigations of practicing health care professionals' experiences of an MBSR program. Taken together, the three manuscripts provide a solid rationale for future research on the potential for MBSR to enrich the lives of health care professionals and the patients they serve.

Résumé

La nécessité de fournir aux professionnels de la santé les bons outils pour gérer le stress et améliorer leur mieux-être apparaît de plus en plus criante. Le taux d'épuisement des professionnels de la santé est en hausse et les conséquences de la détresse des médecins se réflètent également auprès des soins prodigués aux patients. Cette réalité est d'ailleurs largement documentée dans les récentes publications scientifiques.

Depuis plus de 25 ans, plusieurs recherches ont examiné le potentiel de Mindfulness-Based Stress Reduction (MBSR) qui consiste à prendre pleine conscience de son stress afin de le réduire. Ce programme agit comme un moyen d'intervention d'appoint devant plusieurs problèmes d'ordre clinique, incluant de façon non limitative la douleur chronique.

Actuellement, la mise en application de ce programme est en plein essor auprès des professionnels des soins de santé et les résultats leur apportent des avantages à la fois personnels et médicaux. Des recherches antérieures ont examiné les résultats du MBSR auprès des professionnels de la santé atteints d'épuisement, ou de leur attitude face à la perception du stress, de l'empathie, ainsi que des symptômes médicaux et psychologiques comme la dépression ou l'anxiété. Le programme actuel de recherche a cherché à s'étendre sur la recherche existante en examinant les résultats positifs psychologiques tels que le mieux-être, ainsi que les mécanismes potentiels de changement tels que l'attention consciente et l'autocompassion.

Des méthodes quantitatives et qualitatives ont servi à fournir un portrait général sur la façon dont le changement est vécu par les professionnels de la santé inscrits à ce

programme. Cette étude est documentée en trois ouvrages qui contribuent à enrichir la publication scientifique. Le premier ouvrage met en évidence à travers la publication scientifique un résumé des publications empiriques du MBSR particulièrement pour les professionnels des soins de santé.

Le second ouvrage a étudié des mesures d'auto-évaluation pour explorer les avantages de s'investir dans une version adaptée de MBSR soit le Mindfulness-Based Medical Practice (MBMP), qui comprend une formation en communication consciente. Le programme a été suivi par des médecins, psychologues, travailleurs sociaux, infirmières et autres professionnels de la santé par deux groupes au cours du printemps 2008 et 2009 (n = 51 [m1]). Les résultats ont prouvé l'efficacité de MBMP comme en témoignent la baisse significative du stress ressenti et une augmentation marquée de l'attention consciente et de l’autocompassion. Les analyses de régression hiérarchique avec un bootstrap ont omis de révéler l’effet modérateur de pleine conscience ou d’auto compassion sur la relation négative entre le stress perçu et le mieux-être.

Le troisième ouvrage a observé les expériences des participants à un cours de 8 semaines au moyen d'entrevues auprès de groupes cibles (n = 27). Une analyse théorique bien fondée a fait apparaître un modèle mettant en lumière des processus de changement particuliers chez les professionnels de la santé en fonction d’une sensibilisation accrue du perfectionnisme, l'auto-critique et de l'orientation envers les autres. Les participants ont exprimé avoir atteint certains buts personnels telle l’importance de prendre davantage soin d’eux-mêmes au niveau de l’attitude et du comportement, ainsi que durant les

rencontres cliniques avec les patients. Cette étude fournit une des premières enquêtes qualitatives en profondeur sur la participation des professionnels des soins de santé dans un programme MBSR. L’ensemble de ces trois ouvrages fournit une justification solide pour de futures recherches sur le potentiel de MBSR visant à enrichir la vie des professionnels de la santé et des patients qu'ils soignent.

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Contribution of Authors

The three manuscripts that comprise this dissertation are co-authored. I am the primary author on each, having completed the literature reviews, conceptualized each of the studies (generating overarching research questions, selecting instruments, and conducting data analyses), and written the dissertation document in its entirety. The first manuscript, published in *Complementary Therapies in Clinical Practice*, is co-authored by Drs. Patricia Dobkin, and Jeeseon Park who contributed substantive editorial comments and helped outline the structure of the document. The second manuscript is co-authored by Drs. Dobkin, Park, and Marilyn Fitzpatrick. The third manuscript is co-authored by Drs. Dobkin, Park, Fitzpatrick, and research assistant, Andrea Chen.

My doctoral co-supervisor, Dr. Park, served in an advisory capacity during the conceptualization, formulation of research questions, and writing phase of manuscript preparation of all three manuscripts. My second doctoral co-supervisor, Dr. Fitzpatrick, served in an advisory capacity, contributing her knowledge and expertise in the writing phase of manuscript preparation for manuscripts 2 and 3, and the data analysis of manuscript 3. Dr. Dobkin served in an advisory capacity during the conceptualization and instrument selection of manuscript 2, and provided extensive editorial support in the preparation of manuscripts 1 and 3. Andrea Chen was an active participant in the data analyses for manuscript 3, serving as an auditor at the open code phase of the grounded theory analysis.

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TABLE OF CONTENTS

List of Tables and Figures

List of Appendices

Introduction

Quebec's healthcare system has undergone extensive change over the past two decades. Increasing demands facing health care professionals include: heavy patient loads, limited control over the work environment, long hours, and organizational systems and structures that are undergoing constant transition (Pengelley, 2004). Such conditions have been linked to employee stress and burnout (West et al., 2006), and carry negative consequences for patient care. Physician burnout has been associated with lower patient satisfaction and longer patient-reported recovery time (Halbesleben & Rathert, 2008). Vahey et al. (2004) found that the overall level of nurse burnout was predictive of patient satisfaction. In Laschinger and Leiter'study (2006) that surveyed 8,597 nurses across Canada, high levels of nurse burnout were found to mediate the relationship between the work environment and patient adverse events (falls, infections, medication errors, and patient complaints). For mental health care professionals such as psychologists, burnout and depression have become widespread. Pope, Tabachnik, and Keith-Siegal (1987) surveyed psychologists through the American Psychological Association, and found that 60% admitted to having practiced when they viewed themselves as too distressed to be effective.

There is increasing interest in the health and well-being of health care professionals, within Canada, and internationally. The Canadian Medical Association (CMA) has published a policy paper on physician health and well-being (Puddester, 2001). It states, "Canada's healers were wounded, and in too many cases, they were dying" (p. 6). The CMA also made recommendations for physicians taking care of themselves and their colleagues. In 2005, the *Western Journal of Medicine* was entirely devoted to the topic of physician health and well-being (Yamey & Wilkes, 2001). The Faculty Wellness Program in the Faculty of Medicine, at the University of Ottawa was the first of its kind in Canada to act on the CMA recommendations. It

assists physicians individually and hosts workshops, seminars and provides a forum for presentations pertaining to stress and physician well-being (MacDonald & Davidson, 2000).

Concomitantly, calls for the development of self-care initiatives in the fields of nursing and psychology have also been made. Norcross (2000) has outlined formal guidelines of researched self-care strategies for psychotherapists, including engendering self-awareness, self-monitoring of distress levels, and making time for personal therapy when necessary. Numerous theoretical models of nursing practice include self-care as an essential component (Foster & Bennett, 1994). Shanafelt and colleagues (2003) proposed that self-care strategies among physicians may include: religious/spiritual practice and self-awareness, fostering meaningful relationships (including sharing feelings), limiting time at work, and developing a life philosophy. Consonantly, self-care strategies such as the development of self-awareness, self-monitoring, and self-regulation of emotion, have been demonstrated to foster resilience to stress and to enhance clinical efficacy in psychotherapists (Coster & Schwebel, 1997; Galantino, Baime, Maguire, Szapary, & Farrar, 2005).

The practice of mindfulness meditation has been proposed as an effective means of promoting self-care and wellness in clinicians, with the additional benefit of enhancing communication with patients and clients. Epstein's (1999) seminal article in *Journal of American Medical Association* entitled, "Mindful Practice" defined mindfulness as a logical extension of the concept of reflective practice, consistent with being present in everyday experience and open to all thoughts, actions, and sensations. He asserted that the goals of mindful practice are to be aware of one's own mental processes as well as what is occurring around oneself and thereby be able to act with compassion. Connelly (2005) used case studies to illustrate how being present and aware during a medical encounter is critical for efficient and

effective patient care, while McWhinney (1999) discussed the deleterious consequences when physicians have little insight into their own emotional responses when working with patients. In a review of research, Stewart (1995) elucidated the connection between effective physician-patient communication and patient health outcomes (i.e., emotional health, symptom resolution, functional status, and pain control). He argued that in order for optimal communication to occur, physicians must be "mindful" of themselves, the patient, and the context.

Mackenzie, Poulin, and Seidman-Carlson (2006) posited that the tenets of mindfulness are congruent with core values of nursing practice theory such as interconnectedness, self-awareness, sensitivity, and understanding. Beddoe and Murphy (2004) have described how the non-judgmental awareness fostered through mindfulness practice can enhance nurses' empathy towards their patients. Shapiro and colleagues (2007) asserted that the mindful development of self-compassion is particularly relevant to the fields of mental health; therapists lacking compassion towards themselves tend to be more critical and controlling towards their patients. Moreover, the capacity to attentively listen to and non-judgmentally "sit with" clients' strong and at times unpleasant emotions is often a crucial element of the psychotherapist's role (Gendlin, 1981; Warwar, Links, Greenberg, & Bergmans, 2008).

In addition to the many theoretically proposed benefits of mindfulness of clinician mindfulness surrounding self-care and wellness, and work with patients and clients, mindfulness practice has a number of practical benefits. The skills of mindfulness meditation are transportable (can be practiced anywhere), and are accessible to individuals across the lifespan regardless of age or physical mobility. Mindfulness presents a means of derailing the goal oriented automaticity common to professionals through a skill set designed to reconnect the individual to the present moment.

Against this backdrop, this program of research aims to explore the potential impact of an intervention aimed at fostering well-being and self-care in practicing health care professionals. Mindfulness-Based Stress Reduction (MBSR), which has been taught to patients as well as health professionals over the past 25 years, may have the potential to equip healers with tools to cope with stressful work environments. This program was chosen specifically because it represents the most widely researched means of teaching mindfulness in the West. It follows a standardized format and has stringent training requirements for instructors to ensure quality of intervention instruction. Originally targeted at clinical populations with chronic pain, MBSR is designed to be accessible to individuals with little or no previous knowledge of or experience with meditation practice. Moreover, the program has been adapted for use with training medical students, and has been used with clinicians as well. A small body of research on MBSR with clinician populations is growing, yet has been for the most part centered upon outcome driven, quantitative research. The current program of research seeks to explore potential mechanisms of change in this population, incorporating both quantitative and qualitative methods.

This dissertation was prepared in accordance with the guidelines put forward by the Faculty of Graduate and Postdoctoral Studies at McGill University. It includes three manuscripts that comprise a program of research exploring health care professionals' needs, experiences, and outcomes in relation to participation in a Mindfulness-Based Medical Practice (MBMP) program. Manuscript 1 provides a focused review of the literature on the applications of MBSR with health care professionals and trainees, as well as proposing future directions for research. While presented in separate manuscripts, the two studies presented in manuscripts 2 and 3 were conceived of as complementary components of an overarching mixed-methods design.

In study 1, self-report measures were administered at pre and post to explore outcomes associated with participation in MBMP for a mixed-group of 51 health care professionals who were recruited from the Montreal area. A variety of scales were used to capture symptoms of burnout, stress, and depressive symptoms, as well as positive outcomes such as well-being, in addition to potential mechanisms of change such as self-compassion and mindful attention. The results from this study provide information about the types of changes that can be observed in health care professionals engaging in the 8-week intervention. Its original contribution includes the inclusion of two measures of mechanism, and the inclusion of positive outcomes as well as those targeting symptom reduction. Expanding investigations of MBSR to include measures of positive psychological health has the potential to capture outcomes which have been overlooked by the majority of existing research on MBSR.

Manuscript 3 presents study 2, which extracted a grounded theory model of the necessary causal conditions, change processes, and outcomes associated with participation in the MBMP program. The study complements and expands upon the quantitative investigation of study 1, by eliciting direct feedback from participants of the program. Focus group interview questions emphasized the understanding of challenging or difficult aspects of the program, participants' reflections on changes (or lack thereof) in mindful attention, and self-compassion, as well as implications for their clinical work. This study offers an original contribution to existing knowledge on health care professionals' experiences of MBSR. To our knowledge, it is one of very few qualitative investigations with this population, and the only study employing a systematic grounded theory method.

Each of the three manuscripts contributes to the investigation and understanding of the challenges and benefits when providing MBSR to practicing health care professionals. This

program of research has the potential to convey valuable findings for program development, refinement, and future research with this particular population. The practice of mindfulness is not a panacea; it requires significant time and commitment on the part of participants, and can lead to feelings of emotional discomfort and distress, even in "healthy" populations such as health care professionals. Understanding how to refine and develop adapted programs of MBSR such as MBMP, is timely and important, particularly as the program becomes increasingly popular with health care professionals.

The three related manuscripts are presented in Chapters 2, 3, and 4. This document begins with a brief literature review on the history, development, and clinical application of MBSR in Chapter 1. Manuscript 1, presented in Chapter 2, provides a focused literature review on MBSR with health professionals. Empirical manuscripts 3 and 4 are comprised of an introduction and literature review, methods, results, and discussion sections. Chapter 5 provides a broad conclusion, integrating findings from both the quantitative and qualitative studies, and proposing general implications for practice and program development, training, and research. Some unavoidable redundancies may be apparent to the reader, as each manuscript addresses the same intervention, and manuscripts 2 and 3 concern data drawn from the same cohorts of participants.

CHAPTER 1

Review of Literature

Clinician Stress and Burnout

Initial investigations of burnout in healthcare professionals have largely focused upon so-called "occupational hazards" such as anxiety, depression, substance abuse, and heightened rates of suicide (Gunderson, 2001; Miller & McGowen, 2000; Shanafelt, Sloan, & Haberman, 2003). Potential causes have included demanding scheduling, lack of control over unpredictable work environments, sleep deprivation, vicarious trauma from the pain and suffering of patients, interpersonal factors (competitive workplace or training environments), intrapersonal factors (perfectionism, preexisting interpersonal or familial issues), lack of time for recreation and self-care, and financial pressures (Blocher, 1987; Cahir & Morris, 1991). The culmination of chronic stress-related outcomes, or "burnout", has been defined as "a state in which individuals expect little reward and considerable punishment from work because of a lack of valued reinforcement, controllable outcomes, or personal competence" (Meir, 1983, p. 899). Early work by Maslach and colleagues (1984) led to the development of a model of burnout specific to the helping professions which included three hallmarks: (a) emotional exhaustion, (b) depersonalization (a numbing or lack of empathy or connection with clients and or students), and (c) reduced sense of personal accomplishment.

The impact of stress and burnout upon health professionals' physical health has been documented in numerous studies. Fatigue, insomnia, heart disease, depression, obesity, hypertension, infection, carcinogenesis, diabetes and premature aging have been found in higher rates in individuals in the helping professions such as medicine, nursing, psychology, and social work as compared to base rates in the general population (Miller, Stiff, & Ellis, 1988; Neely, 2005; Spikard, Gabbe, & Christensen, 2002). Moreover, stress has been shown to significantly

dampen attention and concentration and detract from decision-making skills (Klein, 1997; Skosnik, Chatterton, Swisher, & Park, 2000). In preliminary investigations of burnout in doctoral level psychologists, 39.9% reported experiencing emotional exhaustion and 34.3% reported "depersonalizing" of clients (Vredenburgh, Carlozzi, & Stein, 1999). Further, depression, distinct from but related to burnout, is accepted as "a common occurrence in medical training" (Miller & McGowan, 2000, p. 968). Burnout has also been associated with decreased patient satisfaction as well as "suboptimal self-reported patient care" (Shanafelt et al, 2002). Even moderate levels of perceived stress have been found to diminish health care professionals' abilities to communicate effectively, convey empathy, and forge relationships with patients (Beddoe & Murphy, 2004; Enochs & Etzbach, 2004).

Links between Training and Burnout

In light of such findings, preventive efforts have focused upon trainees, particularly at the outset of training periods (Chandler, Bodenhamer-Davis, Holden, Evenson, & Bratton, 2001; Jain, Shapiro, Swanick, Roesch, Mills, Bell, & Schwartz, 2007). Professional training in medicine, nursing, and psychology is posited to be particularly stressful in light of the challenges inherent in initial attempts to apply theoretical classroom learning in the field, coupled with the novice sense of urgency to "do something to help" patients in distress (Chandler, Bodenhamer-Davis, Holden, Evenson, & Bratton, 2001). Such factors are compounded by performance and evaluation anxiety and rigorous academic and clinical schedules (Bradley, 1989). This transitional period commonly strains existing relationships with family and friends, resulting in a general reduction in the size of social networks (Faber, 1983, as cited in Truell, 2001).

Perfectionism and Self-criticism. Burnout has been linked to specific coping styles and attitudes towards the self. For example, Shanafelt, Bradley, Wipf, and Back (2002) found that

residents with the highest levels of burnout were more likely to report that they perceive that their personal needs were "inconsequential" (p. 2885). Wilcox (1992) found that residents displaying "alexithymic" traits, or the inability to recognize or describe one's emotions, were more likely to score higher on measures of burnout. Moreover, Christensen, Levinson, and Dunn (1992) found that physicians tended to experience inflated levels of distress when they made mistakes, and consequently were less willing to disclose mistakes to colleagues. Competitiveness and perfectionism fostered in medical training were cited as exacerbating distress surrounding clinical errors. In a study of surgeons, Shanafelt et al., (2011) found that perception of having made a major clinical error was associated with a "3-fold increased risk of suicidal ideation" (p. 57). Miller and McGowan (2000) credit the "culture" of clinical training as engendering self-critical and excessively self-sacrificing attitudes and practices in physicians.

> The culture of medicine is one in which perfectionism and "workaholic standards" rule the day. Many practice settings reward long hours and self-neglect. Physicians are encouraged to disregard themselves and deny their own needs. The process of medical education may enhance development of defense mechanisms that make it difficult to ask for help… Physicians become masters at delayed gratification. Many medical students and residents spend years coping with the high level of demand required in medicine, often harboring the expectation that later they will be rewarded with a happy, more balanced life. However, the task-oriented coping skills developed during training do not go away automatically after training… The goal-oriented approach leads to neglecting alternative sources of gratification or self-esteem; thus, after training,

> physicians may not have a way to find meaningful balance between work and other life activities (p. 970).

In light of the abovementioned findings, it is perhaps unsurprising that suicide rates in physicians have been estimated at ranging between 28-40 per 100,000 compared to 12.3 per 100,000 in the general population (Miller & McGowan, 2000). Shanafelt et al. (2011) found that 6.3% of surgeons who participated in a national survey of the American College of Surgeons reported having experienced suicidal ideation in the previous 12 months.

This scant attention directed to self-care during physician training is evident in the training environments of other health care professionals as well. Stark, Manning-Walsh and Vliem (2004) asserted that while "self-care is highly valued in nursing" the required nursing curricula did not leave time to include self-care and stress management skills. In psychology training programs, where self-care has been identified as an ethical responsibility of the clinician (Barnett, Baker, Elman, & Schoener, 2007), no formal guidelines have been proposed for integrating self-care into clinical training, and no standards exist for the remediation of students who are impaired (Schoener, 2005). Walsh and McCormak (1994) asserted that the lack of emphasis within clinical training programs upon the development of self-reflection or self-care skills, which are elemental to the practice of therapy, has led "the process of professionalization" (p. 225) to become antithetical to the recognition of self-care and support seeking in the face of distress.

Health Care Professionals' Well-being: Balance and Self-Care

Relative to the growing body of research examining distress and burnout in health care professionals, there has been a paucity of investigations focusing on the promotion of wellness. Taub and colleagues (2006) have called for the establishment of ethical guidelines surrounding

health and wellness in physicians, and for the medical profession as a whole to establish physician health programs. In a mixed-methods study, Weiner, Swain, Wolf, and Gottlieb (2001) found that physicians who engaged in wellness-promotion practices were more likely to have higher scores of global well-being. Wellness promotion activities and strategies were grouped into five categories that were consistent with a commitment to maintaining interests and activities outside of work: (a) relationships, or the ability to draw upon family, friends, and colleagues to deal with stress; (b) religion or spirituality; (c) self-care practices such as reading, eating well, attending counseling, exercising, and meditation; (d) strategies at work such as setting limits on hours and choosing work-related activities that are meaningful and satisfying, and (e) adopting a "balanced approach to life." Employing a mixed-method, Coster and Schwelbel (1997) conducted a study of "well-functioning" psychologists; clinicians who have an enduring quality of professional functioning over time notwithstanding personal and professional stressors. In the qualitative component of the study, the authors identified ten themes which were identified as central to the well-functioning of psychologists. These ten themes included: peer support, stable personal relationships, supervision, balance in life, affiliation with graduate training department or school, personal psychology, continuing education, stable family of origin, and coping mechanisms such as rest, relaxation, and spirituality. Participants also noted that having a realistic understanding of the "costs of impairment" such as ethical breeches, or loss of licensure re-enforced a commitment to maintaining well-functioning status. In the quantitative element of the study, 339 practicing psychologists answered a questionnaire designed to uncover what was deemed most important to well-functioning. Seven top-ranked items were identified as follows: self-awareness/self-monitoring, personal values, preserving a

balance between personal and professional lives, relationships with spouse and family, vacations, relationships with friends, and personal therapy.

Using a grounded theory methodology, Ratanawongsa, Wright, and Carese (2007) conducted a qualitative study to explore the well-being of residents. The authors generated a conceptual model wherein well-being was equated with finding balance between professional, family, social, spiritual, mental, and financial priorities. This balance was "redefined" and priority shifted towards professional satisfaction and accomplishment specifically during the residency period. The authors posited that a lowering of well-being was expected during training periods if professional practice became dissatisfying because sacrifices in other previously prioritized domains would consequently seem unjustified. The authors found that the acceptance of a temporary imbalance during the residency period, or "positive reappraisal", was a coping-strategy which allowed residents to modulate their emotional responses to the immutable stressors of training. However, they cautioned that accepting imbalance for longer-term periods could be deleterious, and that residents may require assistance in reestablishing balance once the finite residency period is completed.

Despite strong evidence revealing the need to address self-care strategies for coping with stress in health care providers, Christopher, Christopher, Dunnagan, and Schure (2006) note that clinical and academic training programs typically do not explicitly include such strategies; "[s]elf-care is typically presented to the student as an individual responsibility" (p. 496). Nonetheless, interest in health care providers' well-being is slowly emerging. As mentioned previously, the CMA published a policy paper highlighting the need to address how medical professionals could better care for themselves (Puddester, 2004). In Canada, the University of Ottawa responded to the CMA recommendations by instituting the Faculty Wellness Program

through their Faculty of Medicine; providing workshops and seminars on burnout prevention in health care professionals. Consonantly, Shanafelt and colleagues (2003) have posited a number of prevention strategies such as: self-care practices (development of self-awareness and spirituality), engendering collegial relationships where emotions can be expressed, placing limits on the hours spent at work, and engaging in the development of a coherent "life philosophy". Self-care strategies which have been correlated with effective coping with stress as well as enhanced clinical efficacy include: development of self-awareness, self-monitoring, and self-regulation (Coster & Schwebel, 1997; Galantino, Baime, Maguire, Szapary, & Farrar, 2005).

One means of cultivating such self-care skills in health care professionals is through engagement in mindfulness practice. While mindfulness interventions have been formally integrated into the curriculums of numerous medical and nursing training programs yielding positive results (Beddoe & Murphy, 2004; Jain, Shapiro, Swanick, Roesch, Mills, Bell, & Schwartz, 2007; Rosenweig, Reibel, Greeson, & Brainard, 2003; Shapiro, Schwartz, & Bonner, 1998), there have been relatively few published studies examining the outcomes of similar programs for currently practicing health care professionals.

History of Mindfulness Practice in North America

The practice of meditation has been traced to the Buddha in India approximately 2,500 years ago. In the late 1950s, Japanese traditions of Zen were introduced by Zen master Suzuki in North America. Since that time, different traditions of Buddhism and types of practices of meditation have gained popularity in the West, including the Tibetan tradition which has been disseminated by the Dalai Lama and Chogyam Trungpa, as well as Southeast Asian traditions popularized by Thich Naht Hanh. Presently, approximately 100 million individuals worldwide practice meditation (Tori, 2006; Walsh, 2001).

Over the past decade, there has been a building interest in the meeting of East and West in the field of psychology. Meditation in general, has become more and more mainstream with increasing coverage in the popular media including cover stories in publications such as *Time Magazine* and *Newsweek.* Meditation research has also become increasingly accepted in many sub-fields of psychology. In 2005, the Dalai Lama was the invited keynote speaker of the international conference for the Society of Neuroscience annual meeting. Affective neuroscientist Richard Davidson has forged a working relationship with His Holiness, creating a series of studies examining neuroplasticity: the changes in brain functioning that result from engaging in meditative practice. Social psychologist Paul Ekman has also researched the effects of meditation upon empathy and emotion recognition, while the National Institute of Mental Health in the United States is currently funding a number of major projects examining the integration of meditation into existing treatments for substance abuse, post-traumatic stress, and cancer. While many forces currently contribute to a cross-disciplinary zeitgeist across the fields of medicine, sociology, and anthropology, it is clear that psychologists especially have begun to attend to this trend from the perspectives of research and clinical practice.

Mechanisms of Mindfulness

Despite an abundance of outcome research demonstrating the promising outcomes related to the practice of mindfulness meditation and MBSR, the lack of consensus surrounding its mechanisms of change, may pose an obstacle to further advancement of knowledge in the domain. Without such clearly articulated mechanisms of action, the benefits of mindfulness have oft been equated with relaxation or dismissed for not holding any significant “value added” to behaviourally-based stress management programs. Bishop and colleagues (2004) posit the necessity of coherent operationalization of the current descriptive definitions of mindfulness in

order to advance research strategies with appropriate measurement techniques. They propose examining potential mediating and moderating variables, and assert that "… we must move toward a definition that is more precise and that specifies testable theoretical predictions for the purpose of validation and refinement" (p. 231).

Mindfulness as "Reperceiving": A Model of Mindfulness

Currently, few theoretical models exist to cohesively explain the relationships between the mechanisms that underpin mindfulness. Shapiro, Carlson, Astin, and Freedman (2006) have proposed that the construct of mindfulness can be understood through a tripartite model of axioms: intention, attention, and attitude. In line with Kabat Zinn's (1994) definition of mindfulness, this model encompasses three axioms of mindfulness including (a) Attention: simply paying attention, b) On purpose: doing so with intention, and (c) Attitude: in a particular way (i.e., embodying mindful qualities).

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Figure 1 Here
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Intention. Research has demonstrated the salience of intention and how it can impact outcomes associated with mindfulness practice. Shapiro (1992) found that with continued practice, meditation practitioners tend to change intentions over time. It is common for novice meditators to have practical and specific outcomes in mind when beginning practice relating to stress-management and symptom reduction. With experience, meditators often shift towards more abstract goals such as self-exploration, or self-liberation (transcendence). Shapiro demonstrated that self-reported outcomes of meditation practitioners were correlated with goals, and that meditators seemed to attain outcomes closely linked to the underlying intention for practice. For example, novices achieved self-regulation, while more experience meditators

tended to achieve self-knowledge and understanding or transcendence depending upon personal goals for practice. Sharprio, Carlson, Astin, and Freedman (2006) contend that "the inclusion of intention (i.e., why one is practicing) as a central component of mindfulness is crucial to understanding the process as a whole, and often overlooked" (p.376).

Attention. In this model, the development of attention, or the "observation of one's moment to moment, internal and external experience" is central to mindfulness practice. The ability to mindfully sustain attention provides a platform for other proposed mechanism such as non-judgmental awareness, and emotion regulation. Through the development of mindful attention, practitioners are able to focus upon particular phenomena for long periods of time, to shift attention from one object to another more skillfully, and to impede the often automatic elaborative and ruminative elaboration of thoughts and emotion (Shapiro, Carlson, Astin, & Freedman, 2006).

Attitude. The means through which attention is cultivated is as important as the act of attending itself. Mindful qualities such as curiosity, self-compassion, openness, and friendliness guide attention away from being critical, judgmental or harsh, towards an accepting and non-striving receptive stance.

These three axioms of mindfulness are thought to produce a shift in perception, which Shapiro and colleagues term *reperceiving*. Akin to metacognitive decentering, reperceiving refers to the developed capacity to disengage from "the drama of our personal experience" and to witness it in a more neutral and detached manner (Shapiro, Carlson, Astin & Freedman, 2006, p. 377). This process of strengthening the ability to "observe the self" provides a means through which to understand the contents of consciousness as separate from the self. As Shapiro and

colleagues (2006) aptly summarized, “if we are able to see it, then we are no longer merely it; i.e., we must be more than it” (p. 377).

MBSR Outcome Research Overview

Since its creation, MBSR has been subjected to in-house outcome monitoring at the University of Massachusetts (Kabat-Zinn, 1982) as well as numerous empirical investigations by researchers from outside (Kaplan et al., 1993; Kristeller & Hallett, 1999; Williams et al., 2001; Randolph et al., 1999). Initial investigations were of the general stress-reduction programs in hospital settings, as well as interventions targeting specific chronic medical conditions. Outcome measures have tended to be quantitative, and to examine variance in physical symptoms of stress as well as disease pathology. Presently, the foci of outcome measures have shifted away from physical health to include psychological variables such as cognition and emotion. As this trend continues, researchers are faced with the challenge of improving and expanding upon the self-report measures employed in early research, and tightening the research methodologies used to examine the increasingly popular intervention strategy.

Early quantitative studies of MBSR were primarily conducted using pre-post research designs with individuals suffering from chronic pain. Early studies conducted by Kabat-Zinn and colleagues examined the efficacy of MBSR with groups of patients coping with pain related to various medical conditions such as migraine, arthritis, cancer and stroke (Kabat-Zinn et al., 1985; Kabat-Zinn et al., 1987). Other researchers replicated these findings (Goldenberg et al., 1994; Randolf, Caldera, Tacone, & Greak, 1999) relying primarily on self-report measures of pain, sleep disturbance, medical symptoms, and psychological symptoms. A second wave of research on MBSR turned to interventions aimed at stress and anxiety. Using a pre-post methodology, studies found that MBSR was a promising intervention that maintained treatment

gains at three-year follow-up (Kabat-Zinn et al., 1999). The implementation of more rigorous between-group designs for the evaluation of MBSR became more common in the mid-1990s with interventions targeting specific medical diagnoses such as psoriasis, fibromyalgia, and cancer. Such research initiatives yielded promising findings demonstrating reductions in stress, mood and sleep disturbance, general medical symptoms, and pace of skin clearing (Carlson, Ursaliak, Goodey, Angen, & Speca, 2001; Goldenberg at al., 1994; Kabat-Zinn, et al., 1998; Speca, Carlson, Goodey, & Angen, 2000).

MBSR Process Research

The majority of research on MBSR has focused upon outcome measures. However, a number of recent studies have begun to explore the proposed "mechanism of mindfulness."

Quantitative. While the centrality of attention to meditative practice is universally accepted, there has been relatively little research regarding the impact of mindfulness on attention and/or executive functioning. Two controlled studies have examined the use of meditation interventions with children, yielding mixed findings, such as improvements in impulsivity but no significant changes on measures of selective attention (Arnold, 2001). Valentine and Sweet (1999) found that mindfulness meditation was superior to concentrative meditation in terms of enhancing sustained attention in an adult sample. However, the study utilized only one measure of attention. Further research is warranted, and creative exploration of appropriate measurement instruments will be important in future research. Mindful attention is a related construct, but not identical to 'traditional' definitions of attention used in psychology. Thus, traditional measurement techniques may not adequately capture "mindful attention."

Few studies have examined the interaction or relationship between non-judgmental awareness and mindfulness. Shapiro, Astin, Bishop, and Cordova (2005) innovatively employed

Neff's (2003) measure of self-compassion in a examining MBSR with health care professionals. This scale includes a subscale intended to capture individuals' tendency to engage in critical or judgmental self-appraisals which corresponds with individuals' capacity to engage in non-judgmental awareness. Self-compassion more broadly, is defined by Neff as "being open to and moved by one's own suffering, experiencing feelings of caring and kindness towards oneself, taking an understanding, non-judgmental attitude toward one's inadequacies and failures, and recognizing that ones' own experience is part of the common human experience" (p. 224). This construct is intertwined with mindfulness as being able to feel compassion for, and to not become over identified with feelings, one must first be able to observe feelings and thoughts as they arise without attempting to change or avoid them (Neff, 2003). Self-compassion refers to: "(a) extending kindness and understanding to oneself rather than harsh self-criticism and judgment; (b) seeing one's experience as part of the larger human experience rather than as separating and isolation; and (c) holding one's painful thoughts in balanced awareness rather than over-identifying with them" (Neff, 2003, p. 223). In their study of a mixed-group of practicing health care professionals, Shapiro et al., (2005) found that changes in self-compassion predicted positive changes in perceived stress, but not of overall satisfaction with life. Given the small sample size of the treatment intervention (n = 10), the authors called for future research surrounding self-compassion as a potential mediating mechanism.

Birnie, Speca, and Carlson (2010) conducted a study examining the impact of an MBSR program on self-compassion, empathy, symptoms of stress, and spirituality in a community sample (n = 51). Significant pre-post intervention changes were observed with paired t-tests on Self-Compassion Scale, the Mindful Attention and Awareness Scale, the Symptoms of Stress Inventory, the Profile of Mood States, the Functional Assessment of Chronic Illness Therapy-

Spiritual Well-Being, and the Interpersonal Reactivity Index. When change scores were examined, positive changes in self-compassion were correlated with changes in spirituality and mindfulness. Regression analyses yielded the finding that mindfulness significantly predicted 11% of the variance in self-compassion. The authors noted that results supported Neff's (2003) assertion that mindfulness is an important pre-condition of self-compassion, and moreover concluded that self-compassion is associated with positive psychological functioning and diminished negative affect.

A number of controlled studies have documented the enhancement of metacognitive functioning including awareness, flexibility, and attentional shift (Teasdale, Moore, Hayhurst, Pope, Williams, & Segal, 2002; Wells, 2000) increasing the empirical support for metacognition as a mental process which can be strengthened through mindful practice. Furthermore, a number of recent studies have supported the notion that mindfulness practice contributes to emotion regulation. Arch and Craske (2006) found that undergraduate students engaged in a daily 15 minute mindful breathing exercise reported significantly less emotional volatility on the PANAS, and an upward trend in terms of willingness to view slides containing aversive photographs. Similarly, Cameron, Booth, Schlatter, Ziginskas, and Harman (2007) found that in a sample of women recently diagnosed with cancer, engaging in a mindfulness intervention demonstrated significant decreases in emotion suppression and increases in self-reports of perceived sense of control and emotional well-being. Moreover, in a controlled study, neuroscientists Davidson and colleagues (2003) found that following participation in an MBSR program, healthy individuals demonstrated greater left-side anterior activation of frontal lobe functioning. Activity in this hemisphere is related to positive affect. Participants also demonstrated increased immune functioning post-intervention. Finally, recent research on mindfulness and stress has begun to

clarify the means through which mindful practice might influence stress reactions. In Jain and colleagues' (2007) study, it was demonstrated that when compared to a traditional somatic relaxation training intervention, an MBSR intervention reported to significantly lower levels of distractive and ruminative thoughts. The authors concluded that mindfulness meditation may be unique in its capacity to reduce rumination and distraction. This function is proposed as the mechanism through which perceived stress is reduced, as opposed to simple autonomic relaxation. Carmody and Baer (2007) used a measure specifically designed to tap qualities associated with mindful attention, the Five-Facet Mindfulness Questionnaire (FFMQ) to examine the importance of home practice and outcomes of mindfulness. The authors found that increases in mindful attention mediated the relationship between formal practice time and decreases in perceived stress and psychological symptoms, and increases in psychological well-being.

Despite initial evidence supporting proposed operalizations of mindfulness such as metacognition, emotion regulation, and in broad terms "relaxation"; there exists less empirical support for attention and non-judgmental awareness. Moreover, there have been few attempts to support the theoretical models employed to delineate these mechanisms and their interactions with one another, and outcomes. Bishop (2002) noted that the lack of evidence supporting the mechanism of attention is particularly problematic given the predominant Western psychological view that mindfulness is simply "attentional training". Bishop (2002) posited that construct validity could be achieved through investigations of "cognitive tasks that require sustained attention and attention switching, termination of elaborative processes, and awareness of stimuli" (p. 75), which might be borrowed from existing measures found in affective neuroscience. At the present time, findings from studies including neuropsychological measures have been mixed

surrounding the impact of participation in MBSR and attentional control (Anderson, Lau, Segal, & Bishop, 2007; Jha et al, 2007).

Meta-analytic analyses of the extant literature have also yielded promising results. Hoffman, Sawyer, Witt, and Oh (2010) conducted a meta-analytic review of 39 studies of Mindfulness-Based Therapy (MBT) which included both MBCT and MBSR for a range of medical and psychological conditions. The authors held an explicit focus on changes in anxiety and mood symptoms. Results indicated that MBT effect sizes were significantly larger than placebo, and effect sizes for reductions in anxiety and depression were 0.50 and 0.63 respectively (Hedges' *g*). The authors concluded that effectiveness of MBT for anxious and depressive symptoms appeared to be both strong and robust.

Grossman, Neimann, Schmidt, and Walach (2004) completed a meta-analysis which included 20 studies of MBSR for a range of clinical problems including pain, cancer, anxiety, and depression, in addition to "stressed non-clinical groups". Results from both controlled and uncontrolled studies indicated that effect sizes consistently fell in the moderate range for a range of outcome measures focusing on depression, anxiety, coping style, medical symptoms, sensory pain, and quality of life. The authors concluded that MBSR was a promising intervention for both clinical, and non-clinical populations; "mindfulness training might enhance general features of coping with distress and disability in everyday life, as well as under more extraordinary conditions of serious disorder or distress" (Grossman, Neimann, Schmidt, & Walach, 2004, p. 39).

Beyond expanding research on attention future studies (and measures) examining non-judgmental awareness are necessary to legitimize current operational definitions of mindfulness, such as Shapiro et al. (2006) which posits that such an attitude is central to mindful practice.

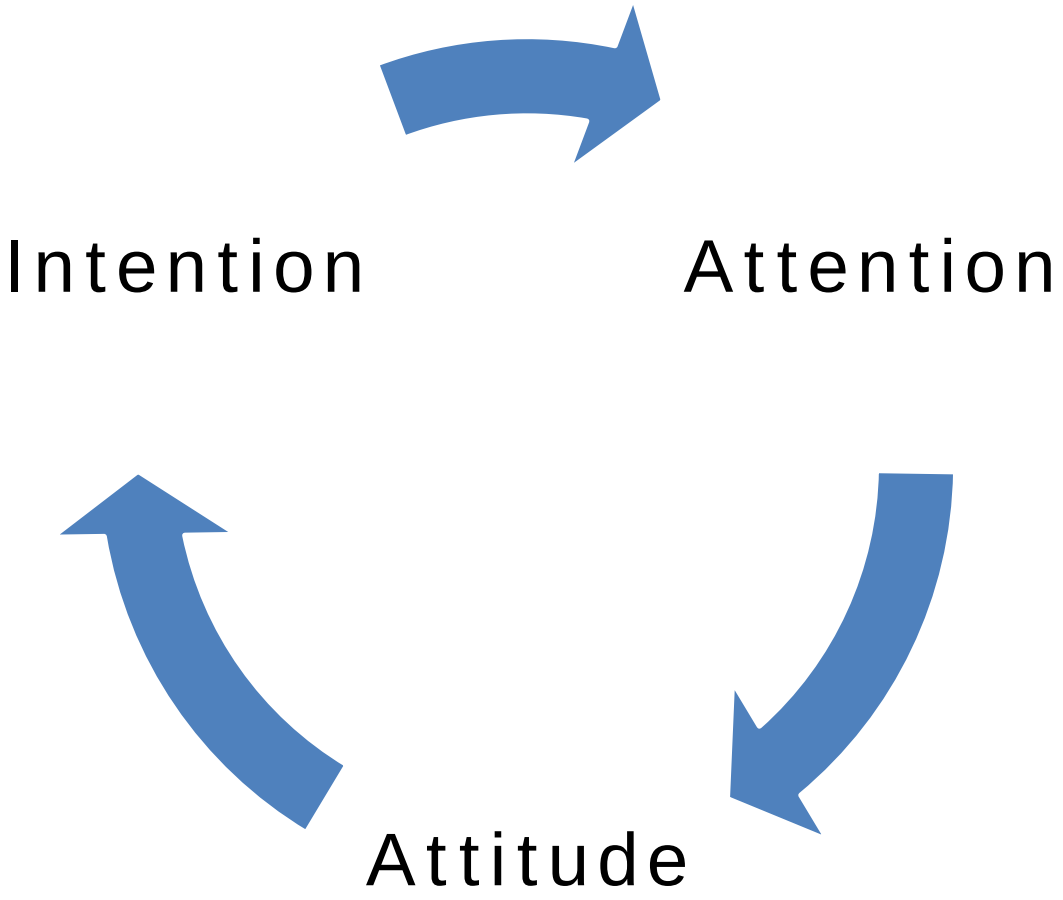
Moreover, studies with diverse outcome measures and mixed-methodologies capturing attention, non-judgmental awareness, metacognition, emotion regulation, and relaxation may also be warranted to further substantiate this theoretical model of the underlying mechanisms.

Directions for Future Research

In reviewing the literature of applications with clinical populations, a number of findings are both striking and promising. A recent meta-analysis revealed high mean completion rates (M= 85%) across studies as well as high rates of continued practice in follow-up studies (57-95% of individuals reported continued practice). These findings highlight that even individuals facing extreme stress and illness are both willing and able to continue their practice after the structure of the formal program is no longer provided (Baer, 2003). Further, in addition to providing individuals reprieve from symptoms, Shapiro, Astin, Bishop, and Cordova (2005) reported that the mental health professionals who participated in their study indicated that the program had a "significant positive impact" (p.172) on their daily lives. This meaning has yet to be explored with existing quantitative measures but might be captured through qualitative investigation. A combined approach including outcome and process variables is needed to elucidate the underlying mechanisms through which mindfulness can foster self-compassion and well-being. This may be achieved through the use of increasingly popular mixed-methods research designs, providing insight into relationships between variables through statistical analysis, while also attending to the lived experiences of the individuals who participate in MBSR. Despite the many limitations of the existing body of research, a recent meta-analytic review found that the preponderance of consistent and strong effect sizes across a range of samples "indicated that mindfulness training might enhance general features of coping with distress and disability in everyday life, as well as under more extraordinary conditions of serious disorder or stress"

(Grossman, Neiman, Schmidt, & Walach, 2004, p. 39). This promise of enhancing coping in the face of “every day stress” which is so common given the demanding nature of work in the helping professions, makes mindfulness a particularly useful skill in terms of fostering well-being in health care professionals.

Figure 1. Shapiro et al. Three Axioms of Mindfulness (2006)



CHAPTER 2

Cultivating Mindfulness in Health Care Professionals: A Review of Empirical Studies of Mindfulness-Based Stress Reduction (MBSR)

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Abstract

Demands faced by health care professionals include heavy caseloads, limited control over the work environment, long hours, as well as organizational structures and systems in transition. Such conditions have been directly linked to increased stress and symptoms of burnout, which in turn, have adverse consequences for clinicians and the quality of care that is provided to patients. Consequently, there exists an impetus for the development of curriculum aimed at fostering wellness and the necessary self-care skills for clinicians. This review will examine the potential benefits of Mindfulness-Based Stress Reduction (MBSR) programs aimed at enhancing well-being and coping with stress in this population. Empirical evidence indicates that participation in MBSR yields benefits for clinicians in the domains of physical and mental health. Conceptual and methodological limitations of the existing studies and suggestions for future research are discussed.

Keywords: Mindfulness meditation, health care professional well-being, clinician self-care, Mindfulness-Based Stress Reduction

Introduction

Burnout is endemic in healthcare professionals with over 40% of nurses reporting general occupational burnout, 28% of physicians endorsing two out of the three aspects of burnout, and up to 60% of psychologists admitting to having practiced at times when they viewed themselves as distressed to the point of clinical ineffectiveness (Bruce, 2005; Pope, 1987; Vahey, 2004). Numerous authors have noted that stress and burnout in health care professionals are associated with various physical health problems including: fatigue, insomnia, heart disease, depression, obesity, hypertension, infection, carcinogenesis, diabetes, and premature aging (Miller, Stiff, & Ellis, 1988; Spickard, 2002).

Burnout has been also associated with decreased patient satisfaction, "suboptimal self-reported patient care", and longer patient-reported recovery times (Shanafelt, 2002; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Carlson, Astin, & Freedman, 2006; Vahey, 2004). Moreover, stress has been shown to significantly reduce clinicians' attention and concentration, detract from decision-making skills, and diminish health care professionals' abilities to communicate effectively, to convey empathy, and to establish meaningful relationships with patients (Beddoe, 2004; Enochs, 2004; Skosnik, 2000).

In light of these findings, there has been a call for initiatives aimed at promoting the well-being of health care professionals. The practice of mindfulness meditation has been proposed as one means of engendering self-care with the additional benefit of enhancing communication with patients and clients for clinicians. In his seminal book, *Health Thy Self* , Santorelli (1999) discusses the potential for mindfulness to enrich the lives of clinicians as by providing a means of examining and caring and healing themselves. Anchoring his work with the myth of Chiron, Santorelli outlines the means through which mindfulness can promote

reciprocal learning and healing in clinical encounters and encourages health care professionals to use mindfulness to look unflinchingly at their own vulnerabilities in the process.

Epstein's (1999) widely cited article in the *Journal of American Medical Association* entitled, "Mindful Practice" defined mindfulness as a logical extension of the concept of reflective practice, consistent with being present in everyday experience and open to all thoughts, actions, and sensations. He asserted that the goals of mindful practice are to be aware of one's own mental processes as well as what is occurring around oneself and thereby be able to act with compassion. In one review, Stewart (1995) underscored the connection between effective physician-patient communication and patient outcomes (i.e., emotional health, symptom resolution, functional status, and pain control). He purported that in order for optimal physician-patient communication to occur, physicians must be "mindful" of themselves, the patient, and the context.

This article will provide an overview of the current literature pertaining to clinician's health and wellness. A review of empirical studies which have examined the impact of participation in mindfulness training will be presented. Finally, a critique of existing methods as well as implications for future research and practice will be provided.

Clinician Stress and Burnout

Initial investigations of burnout in health care professionals have largely focused upon so-called "occupational hazards" such as anxiety, depression, substance abuse, and heightened rates of suicide (Gunderson, 2001; Miller & McGowen, 2000; Shanafelt, 2003). Given these findings, attention has been extended to health care trainees, particularly at the outset of their training periods (Chandler et. al, 2001). Professional training in medicine, nursing, and psychology is posited to be particularly stressful in

light of the challenges inherent to the application of theoretical classroom learning in the field coupled with the novice's sense of urgency to "do something to help" patients in distress (Chandler et. al, 2001). Transitional training periods commonly strain existing relationships with family and friends, often resulting in the reduction of social support networks, which in turn reduces resources necessary for coping with the stress (Truell, 2001). The stressful nature of training programs notwithstanding, some scholars (Sharkley & Sharples, 2003) have posited that some individuals who pursue careers in the health care professions may have higher preexisting rates of depression and anxiety priming them to be reactive to demanding training periods from the outset.

Burnout has also been linked to specific coping styles and attitudes towards the self. For example, Shanafelt, Bradley, Wipf, and Back (2002) found that residents with the highest levels of burnout were the most likely to report that they perceived that their personal needs as "inconsequential" (p. 2885). Miller and McGowan (2000) point to the "culture" of clinical training as engendering self-critical and excessively self-sacrificing attitudes and practices in physicians. The authors explain that "task-oriented coping skills developed during training do not go away automatically after training . . . the goal-oriented approach leads to neglecting alternative sources of gratification or self-esteem; thus, after training, physicians may not have a way to find meaningful balance between work and other life activities" (p. 970). Ratanawongsa, Wright, and Carese (2007) supported this notion in a study showing that medical residents tend to prioritize professional accomplishment above familial, social, spiritual, mental, and financial needs. While residents interviewed deemed this a "temporary imbalance" for the finite

residency period, the authors warned that physicians may require assistance in reestablishing balance once training is completed.

Health Care Professionals' Well-being

Relative to the ample body of research examining distress and burnout in health care professionals, scant attention has been directed towards preventive interventions and the promotion of wellness. Taub and colleagues (2006) called for the establishment of ethical guidelines pertaining to health and wellness in physicians, and highlighted the need for the medical profession to take the initiative in establishing physician health programs. Weiner, Swain, Wolf, and Gottlieb (2001) found that physicians engaged in wellness-promotion practices, including practicing mindfulness, were more likely to report higher scores of global well-being. Coster and Scwelbel (1997) conducted a study of "well-functioning" psychologists; clinicians who have an enduring quality of professional functioning over time, notwithstanding personal and professional stressors. Self-awareness/self-monitoring, personal values, preserving a balance between personal and professional lives, maintaining meaningful relationships with spouse, family, and friends, vacations, and partaking in personal therapy were identified as means of maintaining psychological health and well-being.

Despite the numerous indications that self-care strategies need to be supported during training periods for health care providers, Christopher, Christopher, Dunnagan, and Schure (2006) note that clinical and academic training programs typically do not explicitly include such strategies; "[s]elf-care is typically presented to the student as an individual responsibility" (p. 496).

Definition of Mindfulness

Mindfulness practice has been proposed to reduce stress and burnout among health care professionals through a number of pathways linked to the tenants underlying the philosophy of practice. In the psychological literature, mindfulness has been defined in many ways, with various foci including cognition, awareness (metacognition), and emotion. Huss and Baer (2007) stated that one of the defining features of mindfulness is that "[p]articipants learn to observe these phenomena without evaluating their truth, importance, or value and without trying to escape, avoid, or change them" (p. 17). This tolerance of internal or external stimuli is described in many eastern languages as a general curiosity or openness, an "affectionate, compassionate quality within the attending, a sense of openhearted, friendly presence and interest" (Kabat-Zinn, 2003, p. 145). Furthermore, Brown and Ryan (2003) consider mindfulness to be an attribute of consciousness; they propose that consciousness encompasses both awareness and attention. When purposefully cultivated, mindfulness results in heightened awareness of inner and outer experiences through open, nonjudgmental, focused attention in the present moment. Brown, Ryan, and Creswell (2007) summarize facets of mindfulness from both eastern and western traditions as including: clarity of awareness, nondiscriminatory awareness, flexibility of attention and awareness, an empirical stance towards reality, present oriented consciousness, and stability or continuity of attention and awareness. Bishop and colleagues (2004) proposed that mindfulness, in contemporary psychological terms, could be defined as the self-regulation of attention, involving sustained attention, attention switching, and the inhibition of secondary processing.

For the purpose of this paper, Kabat-Zinn's (2003) operational definition of mindfulness will be used. He defines mindfulness as "the awareness that emerges through paying attention, on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment." (p. 145). Attention rests with various stimuli, including the breath, bodily sensations, perceptions (sights, sounds), as well as cognitions and emotions. To be mindful in the context of daily activity, one usually needs to formally learn how to be 'awake' or fully present in the 'now' (Tolle, 2004).

Meditation is a primary means through which mindfulness is cultivated (Finn, 2000; Walsh, 2001). Forms of meditation, such as transcendental or object focused meditation, tend to be distinguished in terms of: (a) the type of attention garnered, (b) the actions taken upon cognitive processes, and (c) the underlying goals of the practice (Walsh & Shapiro, 2006). Mindfulness is unique in that practitioners ultimately allow a state of "fluid attention" to emerge rather than maintain focus upon any specific object or mantra (i.e., sound). Cognitions are observed and accepted, as they are, without being manipulated. In mindfulness one lets go of expectations and goals, so as to de-condition the automaticity that typically dominates cognitive processing.

What is Mindfulness-Based Stress Reduction?

Mindfulness-Based Stress Reduction (MSBR) is a psycho-educational program developed by Kabat-Zinn and colleagues at the University of Massachusetts Medical Center. Spanning eight weeks, the program consists of weekly 2.5 hour-long classes and one "day of silence" in between the 6^{th} and 7^{th} weeks. Participants are taught various types of meditation practices, which they apply in class and at home to routine aspects of daily life such as eating, driving, walking, washing the dishes, and interacting with others

(Salmon et. al, 2004). Key elements of the program include: (a) the group format; (b) emphasis upon a non-goal orientation; (c) expectation of relief (or placebo effect); (d) sense of active engagement in the process and responsibility for outcomes; (e) demand characteristics (a significant time commitment and amount of home practice); (f) variation of meditation techniques (body scan, sitting and walking meditation, and hatha yoga); (g) didactic material (i.e., the relationship of stress to illness); (h) finite duration (long enough to practice skills, yet short enough not to become dependent upon group); and (i) a long-term perspective (continued practice is encouraged after the group is terminated) (Kabat-Zinn, 1982).

A number of controlled studies have demonstrated the efficacy of MBSR with a range of clinical populations for conditions such as chronic pain and other illnesses (e. g., cancer) as well as psychiatric disorders, such as generalized anxiety (Carlson, 2001; Kabat-Zinn, Wheeler, Light, Skillings, Scharf, Cropley, Hosmer, & Bernhard, 1998; Kaplan, 1993; Randolph, 1999; Speca, 2000; Williams, 2000). In the past decade, a relatively smaller number of studies have examined the application of MBSR with non-clinical populations, including health care professionals.

MBSR for Trainees and Clinicians in the Health Care Professionals

In this section, studies that examined the effectiveness of the MBSR on trainees and clinicians in the health care professionals will be reviewed. A summary of these studies is presented in Table 1.

Quantitative studies. Kabat-Zinn and colleagues have taught the MBSR to medical students at the University of Massachusetts for over two decades. Others have extended

this endeavor to include undergraduate student populations as well as other mental health professionals (Rosenzweig, 2003; Shapiro, Schwartz, & Bonner, 1998).

Pre-post design quantitative research on medical and premedical students who participated in an MBSR program demonstrated positive effects on self-report measures of psychological symptoms such as anxiety and depression, as well as increased ratings of empathy and spirituality (Astin, 1997; Rosenzweig, 2003; Shapiro, Schwartz, & Bonner, 1998). Similarly, Beddoe and Murphy (2004) piloted an MBSR program with undergraduate nursing students and found that participants demonstrated a significant increase in empathy following completion of the program. A recent randomized controlled study also conducted with nursing students, which shortened the MBSR program to four weeks, demonstrated significant decreases in symptoms of burnout and increased relaxation and life satisfaction, based on self-report (Mackenzie, 2006).

Also using a 4-week abbreviated version of the MBSR, Jain, Shapiro, Swanick, Bell and Schwartz (2007) conducted a three-arm randomized clinical trial with a mixed-group of students in training programs for medicine and nursing. They were compared to a wait-list control group and a group that received relaxation training. The participants in the mindfulness intervention and relaxation groups were equivalent in terms of decreases in distress. However, effect sizes for increases in positive affect were larger for the mindfulness meditation group. The mindfulness intervention also resulted in significant decreases in distracting and ruminative thoughts. The authors concluded that the effectiveness of the mindfulness intervention was partially mediated through reduction in ruminative thoughts, suggesting a unique contribution of the mindfulness intervention beyond relaxation.

In a recent uncontrolled study that examined the outcomes of a MBSR program with counseling psychology students (Christopher et. al, 2006) participants reported declines in negative affect, perceived stress, rumination, and state and trait anxiety. Significant increases in positive affect and self-compassion were also reported from the intervention group.

In addition, Grepmair and colleauges (2007) conducted an intriguing study examining outcomes in both trainees as well as their patients. The authors hypothesized that mindfulness training could potentially enhance required skills and qualities needed by psychotherapists such as, attention and vigilance to patients' non-verbal signals, self-awareness, and management of counter-transference. In a randomized clinical trial, the psychotherapists in training who were enrolled in the mindfulness condition received higher client evaluations on measures of therapeutic relationship, ability to solve problems, and to communicate clearly during sessions. Patients of the trainees in the mindfulness group also reported greater symptom reduction as indicated by self-report scales.

Shapiro, Astin, Bishop, and Cordova (2005) conducted a randomized controlled study (N=38) with health care professionals (physicians, psychologists, nurses, social workers, and physical therapists). Outcome measures included self-report measures of psychological distress and the Self-Compassion Scale (Neff, 2003). Results indicated that individuals in the experimental condition demonstrated significantly lower levels of perceived stress, and an increase in ratings of self-compassion (Shapiro, Astin, Bishop, & Cordova, 2005).

Qualitative studies. There is a relative paucity of published qualitative examinations of MBSR or mindfulness interventions with clinicians or trainees. Christopher, Christopher,

Dunnagan, and Schure (2006) conducted a qualitative investigation of the impact of taking a course that included mindfulness meditation practice upon counselling psychology students' self-care practices. Results suggested that students improved in domains such as interpersonal functioning and coping with stress. Participants also reported that they felt that the program had enhanced their clinical training. Despite the promising findings in this study, it should be stated that mindfulness practice was just one component of the course, which also included substantial didactic material unrelated to the standard MBSR protocol.

Insert Clinician Outcome Table About Here

Critique and Directions for Future Research

Despite the promising findings for both clinical and non-clinical populations, research on MBSR, and mindfulness more generally, has been limited by a number of conceptual and methodological issues. Many of the quantitative studies employed small sample sizes, and only one included an additional treatment comparison intervention in order to control for factors such as group support, home practice, or placebo effects. For example, the amount of time the participants spend in home practice is likely to vary significantly. Nonetheless, issues of 'dose' were not adequately addressed, as only two studies examined the relationship between the amount of practice and outcomes. This issue may be of particular importance in relation to mindfulness programs when offered to health care professionals, as preliminary research suggests that this population may be particularly likely

to have higher attrition due to time and scheduling issues (Shapiro, Astin, Bishop, & Cordova, 2005). Further, future research could examine the aspects of the program that are most difficult to adhere to (i.e., class attendance, time spent on daily home practice, or the exercises themselves).

While there is strong support for the remedial effects of MBSR upon stress, which was the initial target of the program, the underlying mechanisms of how this was achieved has not been by tapped by symptom focused outcome measures in clinical studies. This semeiotic perspective has neglected positive outcomes despite research linking meditative practice to self-actualization, empathy, tolerance of stress, autonomy, positive sense of control, morality, and spirituality (Shapiro, Schwartz, & Santerre, 2002). Further, only three of the studies reviewed included process measures to capture the mechanisms through which mindfulness practice may lead to outcomes. Almost all of the studies utilized self-report indices; few included adjunctive physiological measures such as salivary cortisol (Galantino, 2005). Future research may include multimodal assessment strategies such as physiological, neuro-hormonal, and cognitive measures.

Salmon and colleagues (2004) have suggested that greater attention should also be directed towards behavioural variables, such as adherence, in order to assess the frequency and intensity of mindfulness practice required to contribute to sustainable effects. In order to do this, a means of measuring both the quality and quantity of formal and informal meditation practice needs to be refined. Further, methodologies that combine process and outcome research, with both quantitative and qualitative methods may provide a richer understanding of the processes that lead to physical and psychological health outcomes (Dobkin, 2008).

A number of the studies reviewed have consisted of mixed populations of nursing, medical, and other mental health professionals, and students at various stages of training (i.e., pre-medical and medical residents). As the nature of training varies across and within disciplines of health care, research with more homogenous samples may be warranted in order to examine the specific demands and advantages of the program across groups in order to discern the benefits of introducing the program at specific stages of training.

A striking limitation in this arena pertains to the absence of research on potentially harmful or negative effects of mindfulness practice, despite documented reports by scholars and practitioners of this occurring (Shapiro, 1992; Walsh, 2001). Such an omission can reinforce the notion that MBSR programs are beneficial for everyone (Bishop, 2002). The few studies that have explored the potentially negative side effects of mindfulness found (albeit rarely) exacerbation of psychiatric symptoms, including depression and anxiety, as well as altered reality testing, grandiosity, unusual behaviour, euphoria, and even psychosis (Allen et. al, 2006).

Central to the philosophy of teaching mindful practice, is the notion that teachers embody mindful qualities themselves. For example, in order to become an instructor of Kabat-Zinn's (1982) MBSR program, instructors must go through intensive training over a number of years and be committed to maintaining their personal practice. Nevertheless, none of the studies reviewed explicitly addressed instructor training or experience, which may influence the effectiveness of mindfulness interventions (Grossman, 2004). Furthermore, Allen and colleagues (2006) cite the importance of instructor training in terms of handling challenges that arise, "the skill of the instructor in dealing with such eventualities may be important in determining whether they become valuable learning opportunities or,

alternatively, adverse events" (p. 290). Currently, therapist adherence scales exist for Mindfulness-Based Cognitive Therapy, as well as Mindfulness-Based Relapse Prevention for substance abuse (Chawla, Collins, Bowen, Hsu, Grow, Douglass, & Marlatt, 2010; Segal, Teasdale, Williams, & Gemar, 2002). Such measures provide insight into therapist skillfulness and fidelity to the treatment protocols. To our knowledge, no such measure currently exists for MBSR. As such, instructor training and treatment integrity are topics which warrant further attention in future studies of MBSR.

Conclusions

As the demands placed upon health care providers continue to mount, the interest in the applications of mindfulness training for this population is timely. Research suggests that mindfulness training can serve as a viable tool for the promotion of self-care and well-being. Despite the promising results of the existing body of literature, there remain many questions surrounding the mechanisms through which mindfulness training contributes to positive health related outcomes. Research initiatives with a combined focus upon process and outcome variables and diversified research methods (e.g., use of qualitative and physiological methods) are recommended. Moreover, the potential for positive outcomes of mindfulness training translating into improved patient care remains relatively unexplored.

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Study	N	Type Participant	Research Design	Treatment Group after drop out	Control Group(s) after drop out	Outcome Measures	Findings
Shapiro, Brown, & Biegel (2007)	64	Master's level counseling psychology students	Prospective non-random, cohort-controlled	n= 22 in intervention course that included MBSR	n= 32 in the two control courses	1- MAAS 2- Positive and Negative Affectivity Scale(s), 3- Perceived Stress Scale 4- State/Trait Anxiety Inventory 5- Reflection Rumination Questionnaire 6- Self-Compassion Scale	Stress, negative affect, rumination, and state and trait anxiety were decreased Positive affect and self-compassion were increased
Jain, Shapiro, Swanick, Roesch, Mills, Bell, & Schwartz (2007)	104	Full-time medical students, graduate nursing students, undergraduate premedical or pre-health students	Randomized controlled study	n= 27 Mindfulness Meditation program based upon MBSR, 4 - 1.5 hour sessions	a) n= 24, Somatic Relaxation (breathing, progressive muscle relaxation) b) n= 30 waitlist control	Pre-Intervention 1- Brief Symptom Inventory 2- Positive States of Mind Scale 3- Practice Log Pre and Post-Intervention 1- Daily Emotion Report 2- Index of Core Spiritual Experiences 3- Marlowe-Crowne Short Form	MBSR and Relaxation conditions had similar decreases in distress and increases in positive affect MBSR group yielded larger effect sizes for positive affect MBSR group had significant decreases in distractive and ruminative thoughts and behaviours Decreases in ruminative thoughts and behaviours are suggested as unique mediators of decreased distress
Shapiro, Astin, Bishop, & Cordova (2005)	40	Physicians, nurses, social workers, physical therapists, and psychologists	Randomized controlled study	n= 18 MBSR program	n= 20 waitlist control	1- Brief Symptom Inventory 2- Maslach Burnout Inventory 3- Satisfaction with Life Scale 4- Self-Compassion Scale	MBSR group had significant decreases in perceived stress, and increases in life-satisfaction and self-compassion
Galantino, Baime, Maguire,	84	Employees from a university	Pre-Post design	n= 69 Mindfulness		1- Profile of Mood States 2- Maslach Burnout Scale 3- Interpersonal Reactivity	Emotional exhaustion was decreased Mood was improved

Szapary, & Farror (2005)		hospital, both administrators and those involved in direct-patient care		Meditation program based upon MBSR, 8 – weekly 2 hour classes		Index 4- Salivary Cortisol	No changes found in empathy No changes in salivary cortisol were detected
Mackenzie, Poulin, Seidman-Carlson (2006)	30	Nurses and nurses aides from long-term and complex continuing care units	Randomized controlled study	n= 16 Mindfulness Meditation program based on MBSR, 4-weekly 30 minute sessions	n= 14	1- Maslach Burnout Inventory 2- Smith Relaxation Dispositions Inventory 3- Intrinsic Job Satisfaction subscale 4- Satisfaction with Life Scale 5- 13 Item version of Orientation to Life Scale (SOC)	Fewer symptoms of burnout were reported Relaxation and satisfaction with life were increased. No statistically significant improvements in sense of coherence, but increases in scores were observed on the SOC
Rosenzweig, Reibel, Greeson, Brainard & Hojat (2003)	302	2nd year medical students	Prospective, nonrandomized, controlled trial	n= 125	n= 152	1- Profile of Mood States (POMS)	Scores on total mood disturbance decreased significantly in MBSR group
Beddoe & Murphy (2004)	23	Undergraduate Nursing Students	Pre Post-test design, convenience sample	n= 16 8- week MBSR course		1- Derogatis Stress Profile 2- Interpersonal Reactivity Index 3- Homework questionnaire	Anxiety was significantly reduced Favorable downward trends were observed on measures of stress and overidentification
Young, Bruce, Turner, & Linden (2001)(Young,	30	Third-year nursing students	Non-randomized trial	n= 15	n= 15	1- SF-36 Health Survey 2- SCL-90-R 3- 13 Item version of Orientation to Life Scale (SOC)	Health related complaints decreased in both groups Psychological symptoms decreased in both groups, but significantly more in MBSR group

2001)							
Cohen-Katz et al (2005) (Cohen-Katz, 2005)	27	Nurses from an academic-community based hospital	Randomized controlled trial	n= 12	n= 13	1- Maslach Burnout Inventory 2- Brief Symptom Inventory 3- Mindful Attention Awareness Scale (MAAS)	Scores on 2 of the 3 subscales of the Maslach Burnout Inventory were decreased significantly more in the treatment group Changes were maintained at 3-month follow-up in the treatment group
Shapiro, Schwartz, & Bonner (1998)	78	Premedical & medical Students	Matched randomized design	n= 36 8- week MBSR program + didactic material and experiential exercises to develop mindful listening	n= 37	1- Empathy Construct Rating Scale 2- SCL-90-R 3- Depression subscale of SCL-90-R was used to assess depression 4- State-Trait Anxiety Inventory 5- Index of Core Spiritual Experiences- INSPIRIT 6- Daily journal 7- Evaluation packet	Reductions were found in state and trait anxiety Reports of psychological distress and depression decreased An increase was observed in overall empathy levels Spirituality increased

Bridging Manuscripts 1 and 2

As noted in manuscript 1, there is a small yet promising body of research on the applications of MBSR with health care professionals and trainees. However, a number of limitations characterize the existing research including the focus on symptom-based outcome measures. This has precluded development of a nuanced understanding of how MBSR may be beneficial to health care professionals, as well as the particular challenges and benefits that may arise when offering the intervention to this population. Moreover, the majority of investigations of MBSR with health care professionals have centered upon trainees, rather than practicing clinicians. While training periods are undoubtedly stressful and challenging it stands to reason that the difficulties faced by practicing health care professionals, who interact with patients and clients on a daily basis, may differ.

Building upon existing theory and research, study 1presented in manuscript 2 explores potential mechanisms of mindfulness; present moment attention and awareness, and self-compassion with the Mindful Attention and Awareness Scale and the Self-Compassion Scale, which may contribute to changes in well-being. It was of particular interest to include a measure of the construct of well-being as an outcome alongside measures of depression and perceived stress. In an effort to expand upon the existing literature, outcomes were not limited to symptom reduction alone. Study 1 explores both if and how well-being may be influenced by facets of mindfulness which have been shown to increase during MBSR. Specifically, study 1examined the potential moderating effect of mindful attention and self-compassion, on the negative relationship between perceived stress and well-being.

CHAPTER 3

Mindfulness-Based Medical Practice: Understanding the link between Mindfulness and Wellness in Health Care Professionals

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Abstract

In light of the detrimental impact of burnout upon clinicians and their patients, the identification of means through which the well-being of health care professionals can be fostered and protected is timely and important. The present study explores if and how Mindfulness-Based Medical Practice (MBMP), a program modeled after Mindfulness-Based Stress Reduction, can foster well-being and self-compassion in health care professionals. Physicians, psychologists, and other health care professionals enrolled in the 8-week MBMP program. Mindful communication exercises were also employed to demonstrate the integration of mindfulness in the clinical workplace. Results from paired-sample t-tests suggest that a range of health care professionals enrolled in MBMP can benefit from the program in terms of decreases in stress, and increases in mindfulness and self-compassion.

Review of Literature

Demands of Health Care

There is a growing body of research highlighting the necessity and importance of providing support and guidance for the development of regular self-care in health care professionals. The increasing demands facing health care professionals include heavy patient loads, little control over the work environment, long hours, and organizational systems and structures in constant transition (Pengelley, 2004). These conditions have been directly linked to employee stress and burnout (Walsh & McCormack, 1998) and carry negative consequences for patient care. Physician burnout has been associated with lower patient satisfaction and longer patient-reported recovery time (Halbesleben & Rathert, 2008). High levels of burnout in nurses have been shown to negatively predicted patient satisfaction (Vahey, Aiken, Sloane, Clarke, & Vargas, 2004). In Laschinger and Leiter's study (2006) of 8, 597 nurses across Canada, high levels of burnout mediated the relationship between the work environment and patient adverse events (falls, infections, medication errors, and patient complaints). Among psychologists 60% admitted to having practiced when they viewed themselves as too distressed to be effective (Pope, Tabachnik, & Keith-Siegal, 1987). Self-care initiatives in the fields of medicine, nursing, and psychology are clearly needed.

Applications of Mindfulness for Health Care Professionals

The practice of mindfulness meditation has been proposed as a means of promoting self-care and wellness and communication in clinicians. Epstein's (1999) seminal article on mindful practice suggested that awareness of one's own mental processes, the environment, and the context is a logical extension of reflective practice which can lead to compassionate action. McWhinney (1999) discussed negative effects such as avoidance, emotional distancing, over-emphasis on technical aspects of medicine, and callousness that can result when physicians have

little insight into their own emotional responses when working with patients. Similarly, Shapiro, Brown, and Biegel (2007) asserted that the development of self-compassion is particularly relevant to the fields of mental health; therapists lacking compassion towards the self tend to be more critical and controlling towards their patients. Beddoe and Murphy (2004) have described how the non-judgmental awareness fostered through mindfulness practice can enhance nurses' empathy towards their patients. Moreover, the capacity to attentively listen to and non-judgmentally "sit with" clients' strong and at times unpleasant emotions is often a crucial element of the psychotherapist's role (Gendlin, 1981).

Recent research has demonstrated how present moment awareness and communication can directly facilitate the physician patient encounter. Connelly (2005) used case studies to illustrate how being present and aware during a medical encounter improved patient care. In an empirical review, Stewart (1995) elucidated the connection between effective physician-patient communication and patient health outcomes (i.e., emotional health, symptom resolution, functional status, and pain control). He argued that in order for optimal communication to occur, physicians must be "mindful" of themselves, the patient, and the context. Grepmair and colleagues (2007) conducted a randomized controlled study of psychotherapy trainees which found that the patients of meditating trainees showed greater symptom reduction on the Symptom Checklist-90-Revised.

Mindfulness Defined

Walsh and Shapiro (2006) noted that there are common themes among the varying definitions of meditation across geographic regions, religious philosophies, and academic disciplines. Western definitions of meditation or mindfulness tend to understand the practice as a "self-regulation strategy with a particular focus on training attention" (Walsh & Shapiro, 2006, p.

228). Eastern traditions, also view meditative practice as a means of mental development, however, the primary focus is upon enhancing "calm, concentration… positive emotions such as love and joy" (Goleman, 1998, as cited in Walsh & Shapiro, 2006, p. 228). In the current psychological literature, mindfulness has been defined in many ways, with various foci including cognition, awareness (metacognition), and emotion. Huss and Baer (2007) have noted that another defining feature of mindfulness is that "[p]articipants learn to observe these phenomena without evaluating their truth, importance, or value and without trying to escape, avoid, or change them" (p. 17). This tolerance of internal or external stimuli is characterized in many eastern systems as a general curiosity or openness, an "affectionate, compassionate quality within the attending, a sense of openhearted, friendly presence and interest" (Kabat-Zinn, 2003, p. 145). Mindfulness practitioners are ultimately directed to strive for a state of "fluid attention" rather than holding a focus upon any specific object or mantra. Cognitions are accepted and observed, as they are, without the objective of manipulating them. The goal of mindfulness is to let go of goals so as to be able to experience the present moment and to be free from the automaticity that typically dominates daily cognitive processing.

For the purpose of this study, Kabat-Zinn's (2003) operational definition of mindfulness was adopted, wherein mindfulness is viewed as "the awareness that emerges through paying attention, on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (p. 5). In mindfulness meditation, attention is directed towards various stimuli, including the breath, bodily sensations, perceptions (sights, sounds), as well as cognitions and emotions. This definition was chosen because it is widely cited in current research, and pertaining elements of this definition align well with theoretical explanations of mindfulness which will be presented with the next section.

Mechanisms of Mindfulness

Despite the abundance of outcome research demonstrating the promising outcomes related to the practice of mindfulness meditation and MBSR, a relatively small number of studies have examined underlying mechanisms (Baer, 2003; Davidson, 2010; Dobkin, 2008). A limited number of studies have focused upon the effects of meditation with regard to positive psychological health in general, despite early research linking meditative practice to self-actualization, empathy, tolerance of stress, autonomy, positive sense of control, morality, and spirituality (Shapiro, Schwartz, & Santerre, 2002). Salmon and colleagues (2004) point to the overall bias in the research towards treatment of various pathologies, and symptom reduction, which "does not take into account the potential for meditative/contemplative practices such as mindfulness to promote more positive and broader states of psychological growth" (p. 444). Researchers have proposed that the "active ingredients" include: (a) attention, (b) metacognitive awareness, (c) non-judgmental awareness, (d) self-regulation of emotion, and (e) reduced stress (Baer, 2003; Bishop et al., 2004; Salmon et al., 2006; Shapiro, Carlson, Astin, & Freedman, 2006). Consistent with the Buddhist emphasis upon wholeness and connectedness, these constructs may be understood as interacting mechanisms of action.

Attention. Consciously attending to, controlling, or altering thought content are central to cognitive behavioural therapies or neuropsychological assessment tasks. Mindful attention, on the other hand, centers upon observation of mental phenomena (Salmon et al., 2006). Mindful attention involves "the self-regulation of attention, which involves sustained attention, attention switching, and the inhibition of elaborative processing" (Bishop et al., 2004, p. 233). Through this endeavor, practitioners develop their understanding of the fleeting nature of attention, as well as the sustained effort required to remain focused on the present moment.

Metacognitive awareness. Mindfulness meditation is analogous to metacognition, thinking about one's own thinking, in that can lead to increased awareness of the thinking process. First introduced by Flavelle (1979), metacognition has been widely researched in the fields of cognitive science and developmental psychology. The construct has been used to elaborate the problem solving strategies of children and expert adults such as: predicting, planning, monitoring, and self-correcting when necessary, and evaluating one's own performance (Shore, 2000). Teasdale and colleagues (2002) have posited the clinical salience of developing a "decentered" or disidentified metacognitive insight in relation to the automatic thoughts associated with depression. "[A] patient's perspective on thoughts and feelings of worthlessness might change from one in which they are experienced as 'reality by which I am condemned' to one in which they are experienced more as 'passing thoughts and feelings that may or may not have some truth in them'" (p. 276).

Non-judgemental awareness. In order to experience "detached awareness", mindfulness practitioners are instructed to actively cultivate a curious, compassionate, accepting attitude towards cognitive content, regardless of initial appraisals of valence. Non-judgmental awareness, "describes the capacity to distinguish and simply observe perceptual events, thoughts, evaluations, memories, and other mental events as they occur in the flux of awareness…in an essentially neutral manner, without elaboration or attribution of meaning" (Salmon et al., 2006, p. 437). It permits the individual to circumvent appraisals that lead to elaboration and evaluation that detract from full immersion in the present moment. This stance differs markedly from that of traditional cognitive behavioural techniques in which thoughts are judged as adaptive or maladaptive, modified or eradicated. Safran and Segal (1990) (as cited in Fresco, Segal, Buis, & Kennedy, 2007) termed this capacity to observe thoughts, and feelings which is one of the

proposed curative mechanisms of cognitive behavioural therapies (CBT) for depression and anxiety (Scherer-Dickson, 2004; Teasdale, Segal, & Williams, 1995; Toneatto, 2002; Wells, 2002). Depressed patients in both CBT and mindfulness-based cognitive therapy increase their capacity to decenter from depressogenic thoughts, (Fresco et al., 2007; Segal, Williams, & Teasdale, 2002).

Regulation of emotion. Mindfulness practice has been proposed as a means of facilitating emotion regulation in both clinical and non-clinical populations. A stance of non-judgmental awareness is believed to foster the development of "receptive attention", which is characterized by interest to new experience and novel stimuli, which appears to support the contact with and assimilation of feelings and new ideas" (Brown & Ryan, 2003, p. 823). The strategy of "observe only" (Lynch, Chapman, Rosenthal, & Linehan, 2006, p. 464) means that negative emotional states need not be feared or avoided once it is understood that they will inevitably pass. Langer and Moldoveanu (2000) posited that such an attitude can enable mindfulness practitioners to witness strong emotions and negatively valenced thoughts with less reactivity. Lynch, Chapman, Rosenthal, and Linehan (2006) further explain that mindfulness practice can enhance emotional regulation through the replacement of extant avoidance coping strategies, with "the new strategy of 'observe only'" (p. 464). Linehan (1994) has posited that such non-avoidant coping can strengthen one's tolerance to distress, that this is a key element of emotional regulation.

Stress reduction. Relaxation and lowered levels of perceived arousal are well documented outcomes of mindfulness practice. Numerous studies have been conducted with a wide range of clinical and non-clinical populations including individuals suffering from chronic pain, and recovering from cancer, as well as physicians and other health care professionals and

community populations (e.g., Astin, 1997; Hoffman, Sawyer, Witt, & Oh, 2010; Jain, Shapiro, Swanick, Bell, & Schwartz, 2004; Kabat-Zinn, 1982; Kabat-Zinn et al., 1985a; Randolph, Caldera, Tacone, & Greak, 1999; Rosenzweig, Reibel, Greeson, Brainard, & Hojat, 2003; Shapiro, Schwartz, & Bonner, 1998).

Shapiro, Oman, Thoresen, Plante, and Flinders (2008) conducted a randomized trial with students comparing MBSR with another mindfulness program which included teaching of focused or object focused meditation (Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). The results indicated that mindfulness mediated changes in perceived stress, and rumination, but did not predict changes in the positive outcome of forgiveness. Similarly, Shapiro and colleagues (2005) found that self-compassion predicted changes in perceived stress but did not have predictive power for increased life satisfaction in a mixed-sample of health care professionals. These two studies represent the only examinations of process mechanisms in a mindfulness-based intervention with a sample of health care professionals.

Despite initial evidence supporting proposed mechanisms of mindfulness such as metacognition, emotion regulation, and in broad terms “relaxation”, there have been few attempts to support the theoretical models that delineate these mechanisms and their interactions with one another. Moreover, there have been fewer investigations and less empirical support exists for attention and non-judgmental awareness (Baer, 2003). This study will focus on the latter, and explore how each variable may separately impact wellbeing.

Aims and Hypotheses

Few studies have examined the mechanisms of mindfulness in non-clinical populations. This is a particularly important issue as motivation for engaging in MBSR may be different in

non-clinical samples. The majority of research with non-clinical populations has been with medical students rather than those in clinical practice with patients (i.e., Astin, 1997; Rosenzweig, 2003; Shapiro, Schwartz, & Bonner, 1998).

The present study extends initial research demonstrating the potential value of MBSR beyond the training context to examine its value in decreasing stress among health care professionals in clinical practice. Given the pervasiveness of stress and inherently demanding nature of health care professions, this study aims to elucidate the relationships between perceived stress and wellness, relative to mindfulness. Two mechanisms that have been studied to a lesser extent to date, mindful attention to the present moment and non-judgemental awareness, will be explored along with their relationship to symptoms and well-being.

The hypotheses were as follows: 1) Mindfulness will be positively correlated with self-compassion and wellness, and negatively correlated with depression and perceived stress. 2) Self-compassion will be negatively correlated with perceived stress and depression, and positively correlated with well-being and mindfulness. 3) Significant changes in levels of burnout, depressive symptoms, perceived stress, wellness, mindfulness and self-compassion will be found in health professionals following participation in an 8-week MBMP program. 4) When mindfulness is high, following completion of the program, mindfulness will moderate the relationship between perceived stress and wellness. 5) When self-compassion is high, following completion of the program, there will be a buffering effect, reducing the negative relationship between perceived stress and wellness.

Method

An open trial pre- to post-treatment design was implemented over a two-year period, with data gathered in the spring of 2008 and 2009. Given that Mindfulness-Based Medical Practice is

a modified version of MBSR, the Stage Model of Behavioural Therapies (Rounsaville, Caroll, & Onken, 2001) was followed to examine the revision of traditional MBSR and MBCT with a new population (Ong, Shapiro, & Manber, 2008). Given the significant costs associated with randomized controlled trials, this framework suggests that examination of new interventions with a new population should proceed according to the following steps. (a) The treatment manual should be used with a relatively small number of cases without a control condition. (b) Outcome measures should be complemented with exploratory measures of potential mechanisms. (c) Qualitative data should be gathered in the form of focus groups to obtain feedback surrounding participants' experiences in the program.

Participants

Of the participants, 75% were female and 25% male with a mean age of 50.16 (Range = 29-82; *SD* =11.63). All participants spoke English; 49% identified French as their first language, 35% English, 2% Polish, 2% Japanese, 2% Italian, 2% Hungarian, 2% Spanish. Six percent identified as being fully bilingual from early childhood. Forty percent were physicians, 25% were psychologists, 8% were nurses, 4% were social workers, 4% occupational therapists, and 19 % identified as alternative health care providers (naturopathic physicians, massage therapists). Of these participants, 94% reported engaging in regular self-care practices such as exercise and other forms of recreation, while 35% identified having engaged in some form of meditation (e.g., sitting, mindful movement) prior to taking the program. Data were gathered in the spring of 2007 and 2008 from two cohorts of participants engaged in the 8-week program.

Measures

The Maslach Burnout Inventory- Human Services Survey (MBI-HSS) (Maslach, Jackson, & Leiter, 1996). Burnout was measured with the MBI-HSS. Burnout is generally

defined as “a state in which individuals expect little reward and considerable punishment from work because of a lack of valued reinforcement, controllable outcomes, or personal competence” (Meier, 1983, p. 899). The MBI uses a 7-point Likert scale, from 0 = *never* and 6 = *every day*. The MBI is a 22-item self-report questionnaire with three distinct facet scales designed to measure three components of burnout: emotional exhaustion, cynicism or depersonalization from patients, and sense of lowered professional efficacy or personal accomplishment. Items included in the emotional exhaustion facet include: “I feel used up at the end of the day”, “I feel fatigued when I get up in the morning and have to face another day on the job”. Items for the depersonalization facet include: “I’ve become more callous towards people since I took this job”, and “I don’t really care what happens to some recipients”. Items in the professional competence facet include: “I have accomplished many worthwhile things in this job” (reverse coding), and “I feel I’m positively influencing other people’s lives through my work” (reverse coding). The inventory is the most widely researched and employed measure of workplace burnout and has been used in numerous studies of health care professionals (Maslach, Jackson, & Leiter, 1996). Croanbach’s alpha for the emotional exhaustion subscale were .92 at pre-test and .90 at post-test, for the depersonalization subscale they were .60 at pre-test and .81 at post-test, and for the personal accomplishment subscale they were .73 at pre-test and .79 at post-test.

Center for Epidemiologic Studies Depression Scale (CES-D) (Radolff, 1977).

Depressive symptoms were measures with the CES-D. This questionnaire was developed to screen for depression in community populations. Responses to the CES-D have been demonstrated to represent four separate factors: Depressive Affect “I thought my life had been a failure”, Absence of Well-Being “I felt hopeful about the future” (reverse coding), Somatic Symptoms “I did not feel like eating; my appetite was poor”, and Interpersonal Affect “I felt that

people dislike me". Individuals' scores may range from 0 to 60 with higher scores indicating more symptoms consistent with depression. The CES-D uses a 4-point Likert scale from 0 = *rarely* and 3 = *most of the time*. The instrument is used as a screening measure and as a means of examining the potential impact participation in the program upon depressive symptoms. Scores above 15 are indicative of clinically significant depressive symptomatology. The CES-D has been researched with a wide range of clinical and non-clinical populations across cultures yielding strong internal consistency and short-term test-retest reliability (Fava, 1983; O'Rourke, 2005, Aneshensel, Clark, & Frerichs, 1983; Radloff, 1977; Ross & Mirowsky,1984). In this study, Croanbachs alpha for this study was .89 at pre-test, and .87 at post-test.

Perceived Stress Scale-10 (PSS-10) (MacAurthur & MacAurthur, 1999). Participants' perceived stress was measured with the PSS. This 10-item questionnaire is designed to measure an individual's sense that life events are overwhelming and not in their control. The scale has been demonstrated to consist of two factors; perceived distress "In the last month, how often have you found that you could not cope with all the things that you had to do?", and perceived coping "In the last month, how often have you dealt successfully with irritating life hassles?" Scores range form 0-40, higher scores indicate that the respondent is feeling that life is not manageable. Croanbach's alpha was reported as .83 at pre-test, and .87 at post-test.

Scales of Psychological Well-Being (SPWB) (Ryff, 1989). Participants' well-being was measured with the SPWB. The 54-item version of the Scales of Psychological Well-Being is one of the most widely used and researched measures of the construct of wellness. Ryff (1989) conceptualized well-being as a six faceted construct including self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Items for

each corresponding subscale include: “Being happy with myself is more important to me than having others approve of me”, “I often feel overwhelmed by my responsibilities” (reverse coding), “I have the sense that I have developed a lot as a person over time”, “I know that I can trust my friends, and they know they can trust me”, “My daily activities often seem trivial and unimportant to me” (reverse coding), and “In general, I feel confident and positive about myself”. Croanbach’s alpha for this study was reported as .87 at pre-test, and .93 at post-test.

Mindful Attention Awareness Scale (MAAS) (Brown & Ryan, 2003). This measure was chosen to examine the present-moment attention facet of mindfulness. The MAAS is fifteen-item single factor scale developed to reflect a present-centered attention to and awareness of all accessible events and experiences (i.e., internal and external events). An individual who scores high on this measure would be more likely to incorporate the practice of mindfulness (e.g., formal meditation) into their daily lives than an individual who scores low on this measure. Carlson and Brown (2006) have examined the psychometric characteristics of this measure with an oncology population and found that it was valid and has a single factor structure. Example of items include: “I find myself doing things without paying attention” (reverse coding), “I find it difficult to stay focused on what’s happening in the present” (reverse coding), and “I find myself preoccupied with the future or the past”. The scale is a 6-point Likert scale with 1 indicating *almost never* and 1 indicating *almost always*. The MAAS has also been found to be sensitive to individual differences and higher scores were found in individuals who practiced meditation regularly (Brown & Ryan, 2003). Croanbach’s alpha for this study was reported as .91 at pre-test, and .88 at post-test.

Self-Compassion Scale (SCS) (Neff, 2003). This measure was selected to explore changes in participant’s self-compassion and non-judgement. Self-compassion is defined by

Neff as "being open to and moved by one's own suffering, experiencing feelings of caring and kindness towards oneself, taking an understanding, non-judgmental attitude toward one's inadequacies and failures, and recognizing that ones' own experience is part of the common human experience" (p. 224). This scale was developed to measure: (a) the extension of kindness and understanding to the self; (b) the view that one's experience of suffering is not isolated but part of a larger human experience; and (c) the ability to hold painful feelings and thoughts without over-identifying with them. The SCS is a 5-point Likert scale with 1 indicating *almost never* and 5 indicating *almost always*. The scale has six factors: Self-Kindness "I'm kind to myself when I'm experiencing emotional suffering", Self-Judgement "When times are really tough, I tend to be tough on myself", Common Humanity "When things go badly for me, I see the difficulties as part of life that everyone goes through", Isolation "When I fail at something that's important to me I tend to feel alone in my failure", Mindfulness "When something painful happens I try to take a balanced view of the situation", and Overidentification "When I'm down I tend to obsess and fixate on everything that's wrong". Self-compassion total scores have been correlated with measures of psychological health such as the Life Satisfaction Scale (Diener, Emmons, Larson, & Griffin, 1985) (.45) and Rosenberg's Self-Esteem Scale (Rosenberg, 1965) (.59). Individuals high in Self-Compassion were shown to have better mental health outcomes and scores on the SCS were negatively correlated with those on the Beck Depression Inventory (Beckham & Leiber, 1985), (-.51) and the Speilberger Trait Anxiety Inventory (Speilberger, 1983) (-.65). Average scores hover around 3, while individuals high in self-compassion report scores in the range between 3.5-5. Croanbach's alpha for this study were reported as .94 at pre-test, and .91 at post-test.

Procedures

Recruitment. Health care professionals were recruited through word-of-mouth and the dissemination of electronic advertisements and flyers posted on bulletin boards in common areas throughout hospitals and clinics in the McGill University Health Centre. The flyers and emails described the intention of the course as a means to reduce stress, increase well-being, and introduce applications of mindfulness in the context of clinical practice. Fifty-six individuals responded, and fifty-one participated in the research. One participant opted not to participate in research protocol from the outset of the program, two participants withdrew from the program prior to the first session due to a health condition and schedule conflict, and two participants did not complete follow-up measures within the allotted time.

Screening procedures. Individuals who expressed an interest in taking the course attended a screening and orientation interview with one of the two program instructors. Inclusion criteria included having direct contact with patients and (a) being a current health care provider, (b) being 18 years of age or older, and (c) being able to partake in the course which was taught primarily in English[2]. Participants were screened for depression using the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977) and clinical interview. In the few cases wherein scores fell in the clinical range for depression, an in-depth clinical interview was conducted and referrals were made when necessary. Other exclusion criteria included active substance abuse, psychiatric diagnoses, and current suicidal ideation. None of the potential participants were excluded from the program based on these criteria.

Pre- and post-intervention measures were taken during the two week period leading up to the first class and the two week period following completion of the last class. Measures were provided in English to 34 participants in the program. French translations were provided to 17 participants. Translations were prepared by a professional translator and then back translated and

[2]This study was conducted in a region wherein the primary language is French.

corrected to ensure appropriateness by a French speaking physician who had taken the course previously and was familiar with the measures.

Mindfulness-Based Stress Reduction (MSBR) is a psycho-educational program developed by Kabat-Zinn and colleagues at the University of Massachusetts Medical Center. Spanning 8 weeks, the program consists of weekly 2.5 hour-long classes and one retreat day in silence between the 6th and 7th weeks. Participants are taught various types of meditation practices, which they apply in class and at home to routine aspects of daily life such as eating, driving, walking, washing the dishes, and interacting with others. Key elements of the program include: (a) the group format; (b) emphasis upon a non-goal orientation; (c) expectation of improvement (or placebo effect); (d) sense of active engagement in the process and responsibility for outcomes; (e) demand characteristics (a significant time commitment and amount of home practice); (f) variation of meditation techniques (body scan, sitting and walking meditation, and hatha yoga); (g) didactic material (i.e., the relationship of stress to symptoms); (h) finite duration (long enough to practice skills, yet short enough not to become dependent upon group); and (i) a long-term perspective (continued practice is encouraged after the group is terminated).

The Mindfulness-Based Medical Practice (MBMP) program is closely modeled after MBSR but includes role-plays and other exercises emphasizing interpersonal mindfulness aimed at helping clinicians to integrate mindfulness into working relationships with patients and colleagues. The program was taught by the same two instructors over two cycles, a PhD level psychologist, and a palliative care physician with a certification in family therapy. Both instructors had completed two levels of training through the University of Massachusetts Center for Mindfulness. One instructor had completed the third level of training including supervision by a certified MBSR instructor. Both instructors had piloted a version of the program with a

small group of 15 physicians prior to opening the program to the public. Participants received a home practice manual and 4 CDs created by the instructor to teach the following meditation practices: body-scan, sitting meditation, hatha yoga, and meditation involving visual imagery. At the end of each class, participants were asked to complete specific home practice exercises. Informal practice (awareness of breath; being mindful while engaging in various daily tasks) was also integrated into the home practice. Group discussions throughout the course focused on the practice itself and how it was being integrated into the participants' daily lives and work.

Data Analyses

Descriptive statistics for all study variables were calculated. To test the first and second hypotheses, Pearson correlations were calculated at baseline for depression (CES-D), perceived stress (PSS), mindfulness (MAAS), self-compassion (SCS), and wellness (SPWB). Paired-sample t-tests were conducted to examine changes from pre to post on both mechanism (MAAS and SCS) and outcome measures (CES-D, PSS, MBI and SPWB) for hypothesis three. To assess the relative magnitude of the treatment effect for each outcome and process variable, effect sizes (Cohen's *d*, Cohen 1988) (ES) were calculated. To test the fourth hypothesis, that mindfulness (MAAS) moderates the relationship between perceived stress (PSS) and wellness (SPWB), a formal test of moderation (Baron & Kenny, 1986) was conducted. Due to the relatively small sample size and the difficulty this creates for meeting the assumptions of regression analysis, a bootstrap (1000) resample procedure was conducted (Higgins, 2003; Mackinnon, Lockwood, Hoffman, West, & Sheets, 2002; Preacher & Hayes, 2008). To test the fifth hypothesis, that self-compassion (SCS) would moderate the relationship between perceived stress (PSS) and well-being (SPWB), a second bootstrap procedure was conducted.

Results

A correlation matrix for selected study variables at baseline is provided in Table 1. As predicted in hypothesis 1 and 2, mindfulness was positively correlated with self-compassion (r = .52, p< .01) and well-being (r = .63, p < .01), and negatively correlated with depressive symptoms (r = -.42, p < .01) and perceived stress (r = -.57, p < .01). Self-compassion was positively correlated with well-being (r = .72, p < .01), and negatively correlated with depressive symptoms (r = -.59, p < .01) and perceived stress (r = -.59, p < .01).

[Table 1 about here]

Descriptive statistics and differences from pre- to post measures are provided in Table 2 pertaining to hypothesis 3. Following Bonferroni corrections for multiple comparisons (α = .05 and 20 comparisons yielded a corrected p < .00255) perceived stress declined significantly (t = 3.70; p < .001). Significant changes in the process measures of mindfulness (t = -3.59; p < .001), and self-compassion (t = -4.16; p < .0001) were also observed. Significant increases in the facet scores of self-compassion were also observed: self-kindness (t = -4.38; p < 0.001), common humanity (t = -4.78; p < .0001), and isolation (reverse score) (t = -3.44; p < .001). No significant change was detected in the emotional exhaustion and depersonalization subscales of the Maslach Burnout Inventory, self-judgment and mindfulness subscales of the Self-Compassion Scale, as well as the SPWB. These findings may be related to insufficient statistical power.

[Table 2 about here]

Hierarchical regression models were used to explore hypotheses 4 and 5. A non-parametric sampling procedure, a bootstrap analysis, was employed to test the significance of potential indirect effects. Bootstrap analyses employ the original sample to generate a series of multiple replacement random samples which serve as a basis for repeatedly computing a given statistic (Mallinckrodt et al. 2006; Preacher & Hayes, 2008) using the Macro provided by

Preacher and Hayes for SPSS and resampling 1000 times for bootstrap estimates. Bootstrap analysis provides greater statistical power without the confine of assuming multivariate normality in the sampling distribution.

In the first step of the hierarchical regression [Model A] mindfulness was evaluated as a predictor of well-being. In the second step, main effects of mindfulness and perceived stress were explored. In the final step, the product term was entered as a potential predictor. The results displayed in (see Table 3) indicate that perceived stress demonstrated a negative effect on wellness ($\beta = -1.38$, $p < 0.50$) and mindfulness predicted wellness; ($\beta = 1.74$, $p < 0.49$). No moderation effect was observed in the interaction. As mindfulness increased, there was not a significant buffering effect from the interaction of perceived stress and wellness ($\beta = -0.04$, $p < 0.98$).

A formal test of moderation [Model B] was conducted to explore whether self-compassion moderated the relationship between perceived stress and well-being. Perceived stress was inversely related to wellness ($\beta = -2.63$, $p < 0.00$). Self-compassion predicted wellness ($\beta = 12.29$, $p < 0.02$). No moderation effect was observed in the interaction effect; as self-compassion increased, no buffering effect was observed in the relationship between perceived stress and wellness ($\beta = -0.39$, $p = 0.53$).

[Table 3 about here]

Discussion

The results of this study support existing research highlighting the benefits of a mindfulness-based intervention for practicing health care professionals. There were significant decreases in participants' perceived stress and significant increases in mindfulness and self-

compassion following the intervention. Upward trends in personal accomplishment and environmental mastery were also observed but were not statistically significant.

The absence of a significant increase in well-being in this particular sample may be due to a ceiling effect. While our sample reported average levels of perceived stress at baseline when compared to community samples, mean scores for psychological well-being were relatively high (M = 262) relative to those observed in a clinical sample (e.g., Carmody, Baer, Lykins, and Olendzki, 2009, M = 227).

Our failure to demonstrate significant moderation effects with process mechanisms is consistent with work by Shapiro et al. (2008), and Shapiro et al. (2005) wherein mindfulness failed to mediate changes in positive psychological outcomes- forgiveness and life satisfaction, respectively. One plausible explanation is related to the facets of mindfulness captured by the process measure. As noted by Shapiro and colleagues (2008), the MAAS measures the attention to present moment aspect of mindfulness exclusively. This measure does not aim to capture the "decentering" aspect of mindfulness; the non-judgmental, neutral observational quality (Fresco et al., 2007). Future research testing models involving mindfulness might include process measures such as the Experiences Questionnaire (EQ) (Fresco et al., 2007) which may capture decentering (the process of reperceiving), or more global and multifaceted measures of mindfulness such as the Five Facet Mindfulness Questionnaire (FFMQ) (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Further, a recent study examining mediation effect of mindfulness and reperceiving, created a composite of scores from measures of each, and found a partial mediating effect of the relationship between increased mindfulness/reperceiving and psychological symptom and stress change (Carmody, Baer, Lykins, & Olendzki, 2009). The authors reasoned that due to high correlations and likelihood of overlap between the two

constructs, using a composite variable was justified. Findings from this study may speak to the difficulty of attempting operationalize these constructs which may be non-orthogonal.

Another methodological issue is that the measures of mechanisms (mindful attention and self-compassion) were measured only at pre and post so that there was no opportunity to observe such mechanisms as they change over time. Our current investigation precluded any understanding of whether mindfulness or self-compassion, increases first, or whether they increase concomitantly. Having a temporal picture of how these variables change, and if this change is concurrent or sequential, would provide a valuable perspective on the "active ingredients of mindfulness".

The mean age of our sample (M = 50.16; *SD* =11.63) was older than in other studies examining MBSR with health care professionals, (M = 41.10; SD= 9.54) (e.g., Martin-Asuero & Garcia-Banda, 2009). Participants at a later stage in life and or career may have had less difficulty incorporating the daily home practice into their schedules as opposed to those early on in their career trajectories. Research on physicians has shown that workplace stressors (time pressure, fear of criticism, emotional pressure) are more prevalent in young physicians and decrease with experience (Simpson & Grant, 1991), and that stress related to juggling family commitments increases in the first 9 years following completion of medical school (Rovik et al., 2007). Members of our sample may have benefited from the decreased stress that is attributed to professionals beyond their first decade of practice. This may also have had implications for our low drop-out rate (1 out of 51) relative to rates which were as high as 44% in other studies of MBSR with health care professionals (e.g., Krasner et al., 2009; Shapiro et al., 2005).

Notably, participants in this study reported lower levels of burnout (emotional exhaustion and depersonalization) at intake than in other studies examining burnout in samples of health

care professionals (Krasner et al., 2009). Perhaps because of this, decreases on the MBI were not statistically significant. However, participant mean scores dropped from the "Moderate Burnout" range at baseline, to the "Low Burnout" range at post-test according to clinical cutoffs on the emotional exhaustion subscale. This change is important given the negative implications of burnout for clinicians and patients (Laschinger & Leiter, 2006). Moreover, calls for interpreting changes in measures of psychological outcomes according to clinical, rather than solely based on statistical significance, have been made (Jacobson & Truax, 1991).

Limitations and suggestions for future studies

Some of the characteristics of the participants may limit the generalizability of the results. While participants were relatively diverse in terms of type of health care profession, ethnicity, and language, the sample was predominantly female, as is generally typical of the gender distribution of individuals who elected to participate in other studies of health care professionals engaged in MBSR (Shapiro, Brown, & Beigel, 2007). Examining differential process or outcomes relative to gender differences may be warranted in future studies, particularly in samples of health care professionals wherein gender differences have been observed relative to experiences of stress (Hargreave, Petersson, & Kastrup, 2007). Participants had the means to pay for the intervention, or had employers willing to cover part or all of the cost associated with attendance. Additionally, 93% of participants reported having established regular "self-care" practices at the time of screening; 35% reported having some experience with meditation prior to engaging in the program. Despite these reports of having had some previous experience with mindfulness practice, participants in our study presented with comparable scores on the MAAS (M= 4.1) to those in adult community samples (M=4.2) (Brown & Ryan, 2009; personal communication).

The study lacked a control group leaving open the possibility that effects observed are due to regression towards the mean or spontaneous changes. Power issues related to the emotional exhaustion and depersonalization subscales of the Maslach Burnout Inventory, self-judgment and mindfulness subscales of the Self-Compassion Scale, as well as the Ryff scales of Well-being may have led to Type II errors in these findings.

Aside from constraints of generalizability and the small sample size, there were limitations related to the reliance on self-report measures. As Davidson (2010) noted, there is a need to establish whether self-report measures of mindfulness are congruent with results from more objective physiological or behavioural methods. Further, use of a multifaceted measure of mindfulness other than the MAAS could provide a more nuanced understanding of the mechanisms of mindfulness. Additionally, future studies would benefit from measuring adherence to assess how closely individuals followed homework assignments, and engaged in formal and informal practice outside of the class as time. Health care professionals have particularly reported difficulties incorporating home practice into their schedules and shown high rates of drop-out relative to this issue in other studies (Shapiro et al., 2005).

Participants self-reported decrease in sense of isolation and increased sense of common humanity, as reflected in these facets of the self-compassion scales, warrant further investigation. At this juncture, it remains unclear whether these changes may be attributed to mindfulness practice itself, or the group experience of the program, or both. While findings have been mixed, Imel, Baldwin, Bonus, and Maccoon (2008) found that group effects accounted for 7% of the variability in symptom reduction. The power of the group structure may have implications for the provision of follow-up groups, such as the one offered to physicians at the University of Rochester School of Medicine and Dentistry, yielding promising results (Krasner et al., 2009).

Future research might also examine the effects of mindfulness training upon interactions in the clinical context and explore how enhanced attention and metacognition influence well-being at longer-term follow-up.

Conclusions

Health care professionals currently face professional challenges that may compromise their physical and psychological health, wellness, and the care which they provide to patients. Learning to cope with the stressors of health care systems through mindfulness may be one means of enhancing self-compassion and lowering perceived stress. The skills of mindfulness meditation are transportable, and are accessible to individuals across the lifespan regardless of age or physical mobility. Initial findings suggest that the MBMP program shows promise as a means of helping individuals to lessen the impact of stressors and cultivate mindfulness and self-compassion. These qualities are not only personally beneficial but may influence patient care. Findings from this study support initiative to examine how MBSR can bring about positive changes in the lives of health care professionals and their patients.

Table 1. Changes on outcome and mechanism measures from pre to post (N=51).

Change in variable scores	Pre-Program	Post-Program				
	Mean (SD)	Mean (SD)	Difference	d value	t values	p values
Outcome Measures						
CES-D*	10.23 (7.55)	6.67 (6.61)	3.56	0.43	3.09	.003
PSS‡	14.88 (5.72)	12.22 (5.33)	2.66	0.52	3.70	.001
MBI-Emotion Exhaust†	19.31 (11.06)	16.94 (10.52)	2.37	0.28	2.00	.052
MBI-Personal Accomp†	40.31 (5.17)	42.22 (4.61)	-1.91	0.42	-2.95	.005
MBI-Depers†	4.59 (4.04)	3.59 (4.48)	1	0.29	2.07	.044
Ryff-Total‖	262.92 (24.25)	268.50 (27.08)	-5.58	-0.31	-2.22	.031
Ryff Autonomy‖	39.43 (6.77)	41.06 (5.81)	-1.63	-0.28	-1.96	.056
Ryff Environ Master‖	40.82 (7.99)	43.04 (7.03)	-2.22	-0.45	-3.13	.003
Ryff Personal Grow‖	48.92 (3.56)	48.33 (4.84)	0.59	0.155	1.06	.293
Ryff Positive Relation‖	45.20 (7.06)	45.24 (7.34)	-0.05	-0.01	-.05	.960
Ryff Purpose‖	44.90 (6.04)	45.51 (5.82)	-0.61	-0.14	-1.0	.323
Ryff Self-Accept‖	43.73 (6.61)	45.22 (6.13)	-1.49	-0.41	-2.07	.043
Mechanism Measures						
MAAS§	4.01 (0.83)	4.34 (0.64)	-0.33	-0.520	-3.59	.001
SCS Total↑	3.37 (0.68)	3.69 (0.55)	-0.32	-0.60	-4.16	.000
SCS Self-Kind↑	16.80 (3.93)	18.90 (3.78)	-2.10	-0.61	-4.38	.000
SCS Self-Judge↑	15.65 (4.66)	17.14 (3.82)	-1.49	-0.44	-3.04	.004
SCS Common Human↑	13.53 (3.60)	15.39 (3.18)	-1.86	-0.67	-4.78	.000
SCS Isolation↑	13.29 (3.47)	14.59 (3.26)	-1.30	-0.48	-3.44	.001
SCS Mindful↑	15.10 (3.02)	15.71 (2.49)	-0.61	-0.23	-1.59	.118
SCS Over-identify↑	12.96 (3.67)	14.04 (2.71)	-1.08	-0.35	-2.43	.019

*Center for Epidemiologic Studies-Depression mood scale; †Maslach Burnout Inventory; ‡Perceived Stress Scale; ‖Ryff Scales of Psychological Well-Being; §Mindful Attention Awareness Scale; ↑ Neff Self-Compassion Scale.
Bonferroni correction = α/n where α =.05 and n=number of tests (20) = .00255

Table 2.Pearson correlations between depressive symptoms, perceived stress, psychological well-being, mindfulness, and self-compassion at baseline.

Measure	1	2	3	4	5
1. CESD*	-	.72**	-.49**	-.51**	-.53**
2. PSS‡		-	-.57**	-.64**	-.62**
3. MAAS§			-	.61**	.51**
4. SCS Total↑				-	.60**
5. Ryff Total‖					-

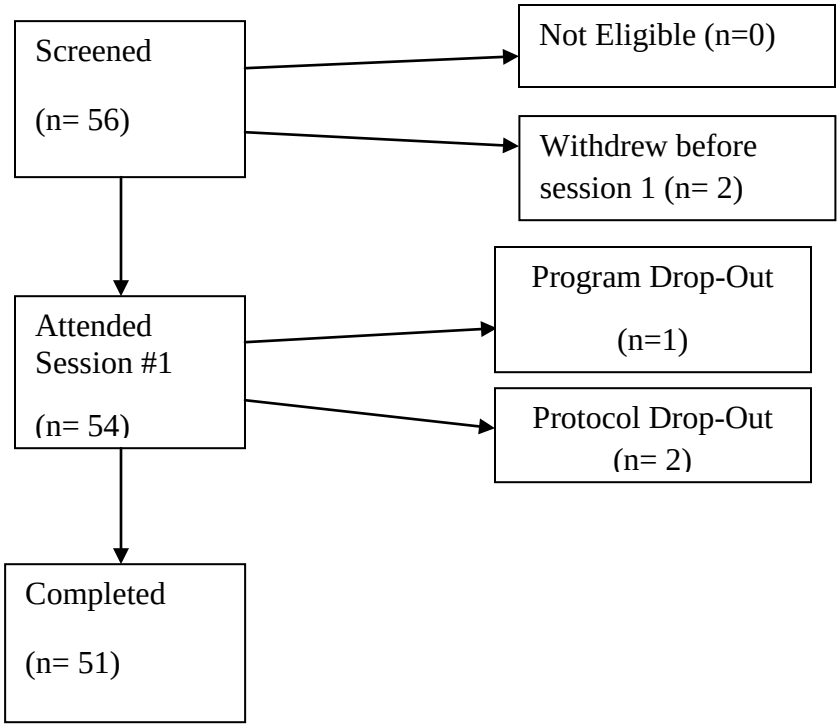
Note. *Center for Epidemiologic Studies-Depression; ‡Perceived Stress Scale; ‖Ryff Scales of Psychological Well-Being; §Mindful Attention Awareness Scale; ↑ Neff Self-Compassion Scale.
**p<.01 level (1-tailed).

Table 3. Hierarchichal Regression Analyses Showing Perceived Stress, Mindfulness, and Self-Compassion as Predictors of Well-Being.

Predictor	**Well-Being**	
	β	**p**
Model A		
1- Perceived Stress	-1.38	.50
2- Mindfulness	1.74	.499
3- Mindfulness x Perceived Stress	-.004	.97
Model B		
1- Perceived Stress	-2.63	.000
2- Self-Compassion	12.29	.016
3- Self-Compassion x Perceived Stress	.39	.530

Note. N = 51. p<.01 level

Figure 1. Participant Flow Chart



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Bridging Manuscripts 2 and 3

Early investigations of MBSR with health care professionals have yielded support for the promise of this intervention to reduce symptoms of depression, anxiety, and burnout, and to enhance self-compassion, and empathy. These findings indicate the promise of this program to bring about meaningful changes in this population. However, the mechanisms through which such changes occur and are maintained have yet to be fully elaborated in clinical and non-clinical samples. Results from study 1 reported in manuscript 2 suggest the potential of an adapted program of MBSR to lead to positive changes in mindful attention, self-compassion, and reduction in perceived stress in a mixed sample of health care professionals. However, the reliance upon quantitative self-report measures alone which pervades the existing body of research may obscure change processes unique to health care professionals. Clinicians may pursue MBSR with the intention not only of managing their own stressors, but also of becoming more present, attentive, and effective with the patients and clients whom they serve. Thus, study 2 presented in manuscript 3 explores the experiences of participants in the program, granting them the opportunity to describe its impact in their own words. A further objective of this study was to develop a working model of how change occurs in this intervention, elucidating conditions for change, the nature of such changes, and the outcomes associated with the process. A grounded theory analysis of focus groups was used to pursue these goals.

CHAPTER 4

Experiences of Health Care Professionals Enrolled in Mindfulness-Based Medical Practice: A Grounded Theory Model

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Abstract

There is relatively little qualitative research on the experiences of health care professionals in MBSR. This study developed a working model of how participants may experience change when participating in an adapted MBSR program for health care professionals. The model derived from the data demonstrated that participants echoed similar themes to those described by clinical populations engaged in MBSR, such as: the salience of the group experience and support, discovery of acceptance, as well as the realization that some degree of frustration and/or distress is part of learning and establishing a mindfulness practice (Dobkin, 2008; McKenzie, Carlson, Munoz, & Speca, 2006). Unique themes highlighted included becoming aware of perfectionism, and the automaticity of "other-focus" and the "helping or fixing mode". Qualitative findings illustrated the unique and multifaceted change processes undertaken by participants, who attributed enhancement in awareness of cognition, emotion, and interpersonal and behavioural tendencies and patterns to mindfulness practice scaffolded through participation in the group program. Participants indicated that these changes had implications across multiple domains: for themselves, family members, colleagues, as well as the patients whom they serve.

Introduction

Mindfulness-Based Stress Reduction, an approach pioneered by Kabat-Zinn and colleagues at the University of Massachusetts medical center in (1979), continues to grow in popularity, extending its original focus on chronic pain or illness to problems such as insomnia, alcohol and drug abuse, and eating disorders (Bowen, et al, 2009; Kristeller & Hallet, 1999; Ong, Shapiro, & Manber, 2008). The program is also increasingly being sought out by health care professionals. Physicians, psychologists, counselors, nurses and others are increasingly turning to mindfulness for a variety of reasons, and beginning to integrate its principles into training programs (Irving, Park, & Dobkin, 2009). Currently, thousands of health care professionals receive training through the University of Massachusetts affiliated workshops and retreats each year, while countless others engage in mindfulness training offered both within and outside of the auspices of University of Massachusetts and its affiliates.

Outcome research examining the impact of these programs on health care professionals and trainees has been promising, yielding intervention-related outcomes analogous to those found in clinical populations. Increases in self-reported positive affect and self-compassion, in addition to decreases in perceived stress, negative affect, anxious symptoms, and burnout have been observed in a number of controlled and uncontrolled studies (Reibel, Greeson, Brainard, & Hojat, 2003; Rosenzweig, Shapiro, Schwartz, & Bonner, 1998; Shapiro, Astin, Bishop, & Cordova, 2005; Shapiro, Brown, & Biegel, 2007). Implications extending to patient care have also been suggested. For example, Beddoe and Murphy (2004) found that participation in an 8-week MBSR program yielded promising results for nurses in terms of self-reported measures of empathy. In a randomized, controlled study, Grepmair and colleagues (2007) found that psychotherapy trainees who practiced Zen meditation for one hour each weekday received

significantly higher evaluations from individual psychotherapy patients. Patients treated in group and individual modalities by the meditating trainees also demonstrated significantly greater decreases in symptoms measured by the Symptom Checklist-90-Revised.

Analogous to the literature on clinical populations, research on mindfulness in health care professionals has largely focused on outcomes rather than the processes through which changes may come about. Recent quantitative studies examining mechanisms of change in health care professionals and trainees suggest that positive outcomes in clinicians are influenced by decreases in rumination (Jain, Shapiro, Swanick, Bell, & Schwartz, 2004; Martin-Asuero & Garcia-Banda, 2010). Greason and Cashwell (2009) examined the predictive relationships between self-reported counseling self-efficacy and mindfulness in 179 master's and doctoral counseling students. Using a multiple mediator path analysis, mindfulness was found to significantly predict counseling self-efficacy. Counselors' capacity to control their attention in session was found to be a mediator of this relationship. In a sample of actively practicing health care professionals, Shapiro and colleagues (2005) found that self-compassion predicted changes in perceived stress, but was not significantly related to increased life satisfaction. Oman, Richards, Hedberg, and Thoresen (2006) found that clinically significant increases in caregiver self-efficacy were mediated by adherence to passage meditation practice, following corrections for social desirability in a randomized controlled study with physicians, nurses, pastoral counselors, and other health care professionals. While innovative, and compelling in their elucidation of mechanisms and their relationship to outcomes, the abovementioned studies do not provide an overarching view of how such mechanisms may interact.

Accordingly, there is a dearth of published qualitative examinations of MBSR or mindfulness interventions with clinicians or trainees, which might shed light on these process

interactions. Mason and Hargreaves (2001) suggested that the evaluation of mindfulness interventions "should involve both quantitative and qualitative approaches to show both that it can work (using case studies and clinical trials), and how it works for participants adhering to the treatment" (p. 199).

In the literature on clinical applications of mindfulness, a small number of studies employing qualitative methods have suggested nuances in the processes leading to positive outcomes for clinical populations. McKenzie, Carlson, Munoz and Speca (2006) employed a qualitative design to explore recovering cancer patients' experiences of meditation and its impact upon their subjective well-being. A grounded theory methodology was employed to develop increased theoretical knowledge of patients' experiences and the mechanisms of mindfulness. Five major themes emerged from the data as central to increases in participants' well-being relative to their participation in MBSR. These included: (a) openness to change, (b) self-control, (c) shared experience, (d) personal growth, and (e) spirituality. In another study of women who had completed medical treatment for breast cancer enrolled in a MBSR program (Dobkin, 2008), content analysis of focus group discussions elucidated four central themes: (a) acceptance, (b) regaining and sustaining mindful control, (c) taking responsibility for what can change, and (d) a spirit of openness and connectedness. Notably, shared experience or connectedness, and the fostering of self-control through mindfulness, were common findings across both Dobkin's (2008) and McKenzie and colleagues' (2006) studies of cancer patients.

Abba, Chadwich, and Stevenson (2008) conducted a grounded theory study of participant experiences in a clinically modified mindfulness group program for individuals with psychotic symptoms, aimed at promoting "a mindful relationship with unpleasant voices, images, and paranoid thoughts" (p. 353). Results elucidated a three-stage process of change for individuals

engaged in the course, wherein awareness of intrusions was followed by an allowing attitude, which was followed by a sense of empowerment. Moss, Waugh, and Barnes (2008) provided an analysis of participant experiences in a community-based mindfulness training program. The program, based-upon MBSR was 20 weeks long and was presented to participants as a "facilitated self-help group" for a mixed-group of people facing issues such as depression, anxiety, chronic pain, and significant life stressors. Thematic analysis of individual interviews illustrated themes such as enhanced enjoyment in everyday life, positive impact upon distress, and furthering of resilience. Notably, the authors probed for participants' challenges while learning mindfulness; participants reported difficulties with grasping the concept and managing concentration.

Mason and Hargreaves (2001) employed grounded theory methods to elucidate the process of therapeutic change for individuals enrolled in in Mindfulness-Based Cognitive Therapy program. Analyses indicated that participant expectations of the program had a significant impact on early negative experiences during the course such as frustration and disappointment. "[T]hose with open and flexible expectations described fewer barriers and initial negative experiences than those with rigid, and highly optimistic ones" (p. 208). This small body of qualitative research highlights the potential of this research perspective to capture and illuminate change processes. Moreover, the pervasiveness of certain themes such as acceptance and awareness, across patient populations are apparent, in addition to unique processes depending upon sample characteristics and intention for engaging in the program.

As Shaprio, Carlson, Astin, and Freedman (2006) contend, intention for learning mindfulness is an important determinant of outcomes. They posit that intention is relevant to understanding the process of learning mindfulness which has been largely overlooked in the

current research. While quantitative outcome studies suggest that participation in a mindfulness program may have similar positive outcomes for health care professionals and clinical populations, the process by which this is achieved may not be analogous. Intentions for taking the course may vary, and mitigating circumstances may impact how mindfulness facilitates change and wellness. At the present time, within the small body of qualitative research on MBSR, there has been scant attention directed towards practicing health care professionals, and little is known about their intentions for engaging in the course, the outcomes they hope to achieve, or the processes through which this comes about. Moreover, while many of the existing qualitative studies have included a grounded theory method of data analysis, to our knowledge, very few have developed a model of how categorical themes derived from this analysis interact with each other (Abba, Chadwich, & Stevenson, 2008; Mason & Hargreaves, 2001).

The Present Study

The present study explores health care professionals' experiences in an adapted MBSR program. Mindfulness-Based Medical Practice (MBMP) is a program closely modeled after MBSR which includes role-plays and other exercises emphasizing interpersonal mindfulness. This innovation is aimed at helping clinicians to integrate mindfulness into working relationships with patients and colleagues. The program was taught by the same two instructors, a PhD level psychologist, and a palliative care physician with a certification in family therapy. Both have completed training through the University of Massachusetts Center for Mindfulness, one instructor having taken two levels of training, and the other three levels of training including supervision by a certified MBSR instructor. Both instructors had piloted a version of the program with a small group of 15 physicians prior to opening the program to the public. Participants received a home practice manual and 4 CDs created by one instructor to teach the

following meditation practices: body-scan, sitting meditation, hatha yoga, and meditation involving visual imagery. At the end of each class, participants were asked to complete specific home practice exercises. Informal practice (awareness of breath; being mindful while engaging in various daily tasks) was also integrated into the home practice. Group discussions throughout the course focused on the practice itself and how it was being integrated into the participants' daily lives and work.

The present study explored if and how participation in MBMP was perceived to be beneficial for health care professionals and the processes through which this may occur. The study also investigated potential challenges or negative side-effects of the intervention. A qualitative grounded theory methodology was employed to capture these phenomena from the participants' perspective. The grounded theory method provides a means through which to generate a theoretical framework surrounding particular phenomena of interest, in this case, the experiences and change processes of health care professionals enrolled in MBSR (Creswell, 1998). A focus group method was selected given the exploratory nature of the study and the goals of the investigation; the group discussion format provided a forum for participant feedback surrounding the program itself as well as the processes at work (Kruger & Casey, 2009).

Methods

Participants

Twenty-seven participants were recruited from individuals who took part in the Mindfulness-Based Medical Practice program offered through McGill Programs in Whole Person Care in two consecutive years. A series of six focus group interviews were conducted for 1.5 hours each with three to six participants per group. The program was offered to a diverse group of health care professionals due to interest and demand for the program which was

expressed across disciplines. Of the participants who provided demographic information (N=26), the mean age reported was 51 (Range = 23-82; *SD* = 12.2 years), 81% were female and 19% male. All participants spoke English; 36% identified French as their first language, 40% English, 4% Polish, 4% Japanese. Twelve percent identified as being fully bilingual from early childhood. Twenty-seven percent were physicians, 15% were psychologists, 15% were nurses, 8% were social workers, 8% counsellors, and 27 % identified as being complementary health care providers (naturopathic doctors, massage therapists). Of the participants who provided information surrounding goals for engaging in the program (n = 19), 68% indicated that they hoped to be able to learn skills that would enhance their clinical skills with patients and/or clients.

Procedures

Data were gathered from a series of six focus group interviews from two cohorts of MBMP participants in the three week period following completion of the course. The groups ranged in size from three to six participants each. Three were completed in June 2007 and three in June 2008. The focus group method provides a unique opportunity for members to prompt one-another, and to explore and expand-upon themes as they arise in discussion. However, this format can present the drawback of introducing pressure to conform or achieve consensus, or for more introverted participants to express opinions less frequently or fully. In light of these constraints the researcher explicitly named such challenges at the outset of the session, encouraged participants to express divergent opinions, and called-upon quieter members when appropriate.

Once consent had been obtained, participants were invited by email to sign-up for one of the scheduled focus group discussions led by the first author at their convenience. The

researcher followed a two-day training program in focus group moderation with an expert in the field prior to conducting the interviews, and followed the framework provided by Kruger (1998) to guide discussion through the use of probes, pauses, and questions. Participants were given the focus group questions orally and in a written handout, both in English and French. Participants were invited to respond to questions in whichever language they felt most comfortable. Of the 35 participants who consented to take part in the focus groups, 27 attended focus group interview sessions. Data collection was terminated and no further interview sessions were scheduled when repetitiveness of themes in the data became apparent, indicating an appropriate saturation point (Creswell, 2007).

Data Analysis

Digital audio-recordings of the focus group sessions were transcribed verbatim by a research assistant who had observed the sessions and were then checked by the first author for accuracy. French segments of the transcripts were translated by a professional translator, and reviewed for accuracy by a bilingual Francophone colleague.

The data analysis plan followed the steps outlined by Kruger (1998) including: (a) reading the transcripts in their entirety and searching for important general themes (open coding), (b) looking for emerging themes question by question, and through the transcript as a whole, (c) developing coding categories and applying them to the transcripts, line-by-line, (d) creating diagrams to illustrate themes and inter-relatedness or processes, (e) revisiting and reviewing sections of data which have been omitted, and (f) systematically reporting the results in relation to the research questions.

Within the fourth step, the process of coding included axial and selective coding, as well as theoretical sampling (Corbin & Strauss, 2008; Creswell, 1998; Fassinger, 2005). Axial coding

involves the continuous comparison of data segments across groups, and searching for similar ideas or themes, until the smaller categories are achieved. Consistent with the constant comparative analysis suggested by Strauss and Corbin (1990), a number of prompts were made to focus group questions in the second cohort based-upon responses and themes derived from data analyses of the first round of three focus groups. Once saturated categories had been identified in step 3, the relationships between them were hypothesized and illustrative diagrams created in step five. Axial coding includes specific categories of interest and explores potential causal relationships in relation to other derived categories. Selective coding was employed to create a coherent narrative, which entailed selection of a core category and detailing the relationships of other categories derived from other levels of analysis to the core category and to one another. Theoretical sampling was used to verify that the links between the central phenomena and categories were supported through evidence in the data.

The researcher also revisited the data to select illustrative segments, as well as negative cases, to further examine the structure of the proposed theory. Data were coded and reported "in ways which preserve the participants' own words" (Smith, 2003, p. 187). As such, embedded quotes are included in the reported results to illustrate categories and proposed phenomena.

Credibility of data

Several steps were taken to ensure the credibility of data to counterbalance potential challenges posed by the qualitative method. These included member checking, bracketing, and auditing.

Member checking. Focus groups possess high face validity due to the "believability of comments from participants" (Kruger, 1998, p. 32). However, there are limits to the transferability of results, given the small, self-selected group of individuals who chose to

participate. Moreover, the salient force of each unique group dynamic is expected to have a considerable impact upon what is self-disclosed by participants. For this reason, member-checking is particularly important when working with data gathered from focus group interviews (Carey & Smith, 1994). In order to preserve the meaning of participants' responses, summaries of responses to each research question were provided allowing participants to reflect upon, supplement, and clarify the content. Transcriptions of focus group sessions were sent to 2 of the focus group participants for their feedback during data analysis. The transcriber who was present during sessions took process notes of the participant interactions. Working with transcripts decontextualizes data in and of itself, and not attending to the group process can lead researchers to miss information influenced by consensus and censoring. Allowing participants the opportunity to provide individualized feedback, in addition to that which was provided in the group context is viewed as essential (Carey & Smith, 1994). Two participants, a physician and a psychologist, provided feedback on open, axial, and selective codes represented in the visual model.

Auditing. Auditing is a two level process, involving peer debriefing and inquiry auditing (Fassinger, 2005). Peer debriefing denotes a process wherein the codes, categories, and theorization of the data is checked and interrogated. For the purpose of this study, an independent peer reviewer was enlisted to survey the initial open coding of the data. The peer reviewer was a graduate level research assistant in counseling psychology, with a limited knowledge of the literature on MBSR. Consensus meetings were held by the first author and the peer reviewer for the initial open codes, which were adapted and refined accordingly. When divergent coding themes arose in the auditing results were discussed until consensus was achieved (Creswell, 1998). Inquiry auditing monitors the overall process and products of the

grounded theory approach. The second author acted as inquiry auditor, closely monitoring the overall process of data analysis at each stage. Discrepancies between the first author and inquiry auditor led to refinement or elaboration of codes.

Bracketing. The identity of the primary researcher and the auditor may have potentially impacted data collection and analysis and influence the way in which she moderated the focus groups. Creswell (1998) suggests the use of "bracketing", in which the researcher clearly states potential biases and assumptions relative to the phenomena being explored. For the purpose of this study, bracketing included reflections of the researcher's own personal experiences as a participant in MBSR and the benefits and challenges which she encountered in this process.

The primary researcher is a 33-year old Caucasian, bilingual, female doctoral student in counseling psychology. She has participated in MBSR training and felt that she benefited from the process both personally and as a clinician. She had established a regular yoga and intermittent meditation practice for approximately eight years prior to enlisting in a formal MBSR training program. She participated in an intensive condensed week-long retreat wherein the elements of the 8-week program were presented to a large group of health care professionals. She currently incorporates a mindfulness meditation into her daily schedule, and regularly integrates elements of mindfulness into her clinical work. She has had formal training in other mindfulness-based interventions such as Mindfulness-Based Cognitive Therapy and Dialectical Behavior Therapy, and has acted as a co-facilitator of a Mindfulness-Based Stress Reduction intervention for individuals with chronic illness. The primary researcher found that the development of her own clinical work had been facilitated by her experience with mindfulness. Specifically, by enhancing her ability to tolerate strong emotions within herself and those of the patients whom she works with. She expected that research participants would report the same.

The auditor is a 40-year-old female Korean counseling psychologist. At the time of this study, she was a faculty member in a counseling psychology program, but is currently working as a clinician at a university counseling center. She was exposed to various traditions of yoga and meditation practice in her upbringing in Korea. She has been maintaining a regular yoga and meditation practice in the past seven years. She has participated in a 8-week Mindfulness Based Stress Reduction (MBSR) program. She incorporates various elements of mindfulness-based approaches (e.g., MBSR, Mindfulness-Based Cognitive Therapy, Dialectical Behavior Therapy) into her clinical work. The auditor found that her practice of yoga and meditation helped her to be more attuned to her physical, emotional, and cognitive experiences and observe them in a less judgmental way. It also enhanced her ability to sit with difficult emotions in her personal life and in her clinical work. The auditor expected that similar experiences would be reported by participants of the study.

Results

Eighty-eight concepts arose from the interview data in the open coding phase of the analysis. Through axial coding procedures, open codes were grouped into 35 subcategories which fell into 6 overarching categories: the core category enhancement of awareness, mindfulness practices (informal and formal), internal and external context, group experience, mindful strategies, and consequences for self and others. Table 1 summarizes the frequency of these categories and subcategories expressed by each of the participants in the study. A conceptual model, illustrated in Figure 1, outlines the process of change characterized by the navigation of challenges largely facilitated through support stemming from the group experience. Selective coding procedures elucidated the relationships and interrelationships of categories and subcategories. Thematic elements of the major categories and subcategories are described

below, as well as convergence and divergence of participant experiences. Rich descriptions are provided with participant quotes to exemplify themes. Any potentially identifying information has been deleted to ensure participants' anonymity.

Central Experience - Enhancement of Awareness

The core category or central experience discussed by *all* participants who had taken part in the course was the *enhancement of awareness*. Aspects of awareness identified were multifaceted; a range of cognitions, sensations, emotions, and interpersonal patterns were described. Many participants discussed how awareness of their own tendency towards inattention or "mind wandering" had provided a starting or entry point for refocusing and noticing other aspects of themselves and their environment as illustrated in the following quote:

> I can definitely say yes. I can notice. I can watch my mind go off and go "Oh my mind is going off" and just bring it back, especially in emotional situations. I can watch my emotions and notice that if I'm talking, if I'm, If I'm engaged in them then I'm not in the present - I'm in my emotions. And when you realize that you just come right back (Participant 13).

Participants typically described becoming aware of a range of cognitions. As Participant 24 shared, one of the recurrent themes was related to awareness and insight into self-critical or judgmental attitudes:

> Since health care workers seek perfection… I wouldn't allow myself any mistake while meditating. I had to repeat to myself that I didn't have to be perfect.

Participant 6 echoed a similar sentiment, explaining that the course had helped her to become aware of her difficulty being compassionate towards herself, and her tendency to judge her own feelings and behaviour. Many participants expressed a new awareness of their own lack

of self-care, and poor attitudes towards taking care of themselves. Some participants also described becoming aware that they felt guilty when taking time for themselves, a requirement of the daily home practice of the MBSR program. In addition, many participants also noted that they became aware of behavioural tendencies linked to taking care of others and focusing on others first. For example, Participant 17 became more aware of the purpose that an "other-orientation" serves for her:

> It made me realize how good I am at listening to others… Also, that listening to others is kind of a way of *not* talking… when I was talking about something that was difficult in the group, as soon as my partner started to talk I forgot all the difficult thing that I was talking about. So I realized, this is a great way *not* to think of a difficult thing when you are focused on the other. And so that became very clear to me, that there may be a reason why I am such a good listener.

Causal Conditions - Mindfulness Practices

The establishment of a regular *mindfulness practice* was identified as necessary (a causal condition) to set the stage for enhanced awareness. The majority of individuals reported that this was their first experience of working to establish a regular, daily mindfulness practice. For others, mindfulness was not something new to them; they either had read about, or practiced some form of meditation in the past. Nonetheless, as Participant 5 pointed out, the program served as a "reinforcement", motivating him to re-connect with, deepen, and continue his mindfulness practice long after the program ended. For Participant 9, sustained practice helped her realize the benefits of mindfulness although she experienced the frustration of being unable to utilize mindfulness techniques consistently in everyday life.

Generally, formal and informal practices were differentiated in the descriptions given by participants. Formal practice refers to structured meditation exercises such as sitting and walking meditation, or mindful yoga. Informal practices refer to instances wherein mindfulness is woven into everyday activities. Participants discussed how formal practice made it easier to engage in informal practice. Some participants also discussed frustration and moments of self-criticisms when they were not able to complete formal home practice as assigned. A number of participants discussed how they adopted strategies over the weeks of the course to flexibly work mindfulness practices into their weekly schedules, such as shortening the time required for sitting meditation.

Context - Internal and External Landscape

Participants discussed at length the context within which mindfulness practices occurred; the internal landscape of their own minds and bodies, and the external landscape of their daily environments (home and work life). Internal landscapes were characterized by affective experiences, cognitions, and physical sensations. External landscapes were related to the structure and climate of home and work environments. While describing these internal and external backdrops within which mindfulness practice occurred, participants tended to speak about the challenges and barriers they experienced. Internal challenges ranged from discomfort, pain, inattention, to internal affective states such as anxiety or sadness, and boredom, frustration, and irritation, while other challenges were related to the transition of adjusting to a new practice or self-care strategy. For example, Participant 25 discussed her struggle adjusting to sitting meditation, which he experienced as passive, compared to other self-care activities such as exercise.

> Sports make me feel good right away. But what I found difficult is sitting meditation. I've never tried it, because it's too passive for me and I have a problem with being inactive because it brings out what's inside of me. And sometimes, emotions emerge without my being capable of explaining where they're from. It must come from a really deep part in me. If I keep meditating, more stuff will probably come out…. I just want to add… I realized that there were feelings in me, profoundly buried and that I didn't take care of them.

External barriers included busy schedules and home environments wherein it was difficult to find time alone. Also, a work environment that required acting in a manner identified as "counter to mindfulness" such as constant rushing and multitasking posed challenges. Participant 26 expressed frustration related to having a wish to be more mindful and less rushed with patients, while finding it difficult in her workplace.

> In fact we work for an institution. The institution wants this, or that. We are always thinking about the institution rather than the patient… I'm here for the patient. I'm really fed up.

Intervening Conditions - Group Experience

The group experience was an intervening condition between the context and core phenomena of awareness. Many participants referred to the scaffolding provided by the group structure and experience as facilitating persistence, and ways to navigate challenges inherent to practice, and awareness of challenging cognitive and affective content. A sense of support, and mutuality, appeared to be central to the facilitative aspect of the group experience. Also, internal challenges such as distractibility, boredom, and irritation were mitigated through group dialogues in which experiences were normalized by instructors and other participants. At the same time,

the group context was described as problematic because of its size. Some participants noted that they would have preferred to have more group discussion in a smaller sized group. Nonetheless, participants spoke about the supportive and encouraging tone and culture of the group sessions, as well as the importance of a sense of connection because they were with other health care professionals. Participant 22 discussed his experience of the context:

> To hear somebody in my professional sphere say "have compassion towards yourself" in one way or another, is very unusual. I'm used to hearing that from the Dalai Lama, or in the theoretical sense, and it doesn't hit home. To hear it in this context, it's a very powerful facilitator of the message and it's probably the deepest message I can think of… I had the sense that this is a group of people who know what it's like to be taking care of other people for a living and therefore there was a degree of a pre-existing understanding there. People have all kinds of projected fantasies on therapists, health providers, care providers and it would be very seductive to continue living in that projection… It's interesting. I anticipated (pause) there was a little trepidation, because here was a professional group. Is it going to be the usual sense of position taking and here are my credentials? I'm more experienced than you kind of thing. But it melted away very quickly.

Other participants also discussed the impact of having a multidisciplinary group composition, noting that this led them to feel less isolated in their professions, and to have more empathy for individuals in related professions other than their own. This sentiment is aptly expressed by Participant 1:

> Personally, I especially appreciated that we were all from different backgrounds and disciplines. It was interesting, because as much as it can be logical to yes have only

> doctors together to observe things, to go further, to dig deeper… it's also good for the doctors to realize that what it boils down to is a human being in front of another human being. That's the base, that's the common denominator here, it's more fundamental than having a PhD, or being a psychologist, a nurse, an acupuncturist, etc… so yes that's good too. I really wanted to say that I found it enriching and pleasant.

Other participants discussed their sense that the group had provided an opportunity to see that other health care professionals also struggled and suffered due to job related challenges. This is reflected in a quote by participant 26:

> It's a very non-judgmental practice; yoga and meditation. What I found particularly useful for my work is the realization that we share all the same issue. There is no space in our profession to actually do that, and that sort of breaks boundaries between different disciplines. . . I felt a lot of connection, a connection I didn't have before with my colleagues. I felt it was very important in terms of my relations with the others to have that, that interdisciplinary team, and seeing the difficulties that I feel that I project on to myself, like "Oh my God it's just me that feels this way."

Action and Interaction Strategies: Attention, Observation, Acceptance, and Change

Participants described a number of action and interaction strategies that arose from increased awareness, and were used to enhance communication, regulate emotions, and navigate awareness of both positive and negative aspects of the self, others, and the environment. Some of these strategies were recursive and led to further increased awareness. The breath was consistently cited as a transportable tool which could serve as an entry point that could be used to contain intense emotions such as anger or anxiety. A focus on breathing could also serve as a means of tapping into other strategies such as observation or shifting focus, which in turn could

lead to enhanced awareness. Participant 14 discussed her experience of using the breath as a means of checking-in with herself.

> The breathing exercise I mean, it wasn't like a new thing but I was applying it different way for sure . . . I think in terms of just checking-in with yourself often, you know. You know you could be doing it as an exercise but I find myself doing it as kind of like a way to check-in, you know, even when I'm walking, you know. Checking, looking, taking-in what's around me but also checking into my body, different parts of my body. We talk about awareness with our patients and so forth but really that we foster, you know awareness within ourselves in terms of our thinking, our body and what's around us. That's what makes the difference, yeah.

"Taking a step back" was also a strategy which was associated with moderating emotions, or circumventing impulses or "automatic" patterns or ways of responding to emotions. Many participants described a sense of being able to "take a step back" and observe a given emotion, thought, or set of circumstances. Participant 10 described how this had an impact on her capacity to notice and tolerate strong affect.

> I feel them faster and before they really start eating me up. What really helped me during the course is to kind of pull it out, look at it and think that it's going to pass. Not to feed it . . . the breathing when you step out of it. It just takes a few minutes.

Participant 12 discussed a similar sentiment, and elaborated how the act of observing emotions led to an increased awareness of how they change over time.

> I don't fuel it, I don't ruminate. I observe, I observe, I'm like in the act of observing the stress, observing my emotion, and it's surprising; the emotion subsides so much faster. So, then I feel good, and I feel better a lot faster, once the emotion has passed, I am

> conscious of the fact that my state of being has changed. I am now calm. Whereas before, if I was experiencing an emotion and it took some time to pass, well I wouldn't even notice that it was over. I would still drag that around with me, for hours! Now poof! It's over, it's over. It's like a storm! After it's done, it's over. And now after, I appreciate it! I feel so good now! That's the difference.

The strategy subcategories *attention* and *observation* were sometimes described as a means to an end in themselves. For other participants, attention and observation were pathways to new ways of being. The strategies of *acceptance* or *change* were possible responses to specific types of new or enhanced awareness. For example, awareness of a tendency to focus on others led to shifting focus to the self for some participants. Awareness of cognitive or behavioural avoidance led to turning towards challenge for others. Additionally, many participants described the experience of "taking a step back", which led to a sense of having more choices, including the options accepting or changing. Participant 2 described her thoughts surrounding the options of observing or making changes:

> It's really delicate . . . It's because sometimes there's the step back, but that doesn't mean that there is any action to take . . . and that action might not systematically be accepting what is. Sometimes there's an action to be taken in the way of change too. It's really delicate, it really is.

Consequences - Self and Others

Participants described wide ranging consequences linked to their participation in the course, and the establishment of a regular meditation practice. These included speaking with awareness in relationships with family members, colleagues, and in clinical encounters with patients. Some consequences were broad and general, while others were related to specific

action and interaction strategies which arose from awareness. For example, many participants differentiated between the practice of *doing/fixing* vs. *being* when working with patients, and how they had shifted to see both as viable possibilities. Participants 3 and 6 elucidated this change and discussed how it had impacted their attitudes and comportment in clinical encounters:

> Yes, certainly…I had always, had a hard time seeing what my role was, even though I was told we weren't fixing anything. I always felt that …my patients were coming to me to have something fixed, and that my expectation of myself was that I was supposed to *do* something. . . if they are not getting better then I'm not doing something. And I think I came to realize … part of my job, was to *be* there with patients, and that even though that sounds simple…I think that's what this kind of confirmed for me just being there in the present moment and with their experience is, is very powerful (Participant 3).
>
> It's a new territory for me in my everyday practice that, and I think I am able to listen better to what people have to say because I am trying to really just *be* there as opposed to "o.k. I have a role to play, I'm here to listen but I have to fix you". And I noticed that when I have this experience that even if something difficult happened there was a very empathetic interaction. I think I didn't have a plan that I came in with and I just … I just was present and that worked, by itself (Participant 6).

In the case of Participant 10, changes in his clinical encounters were first noted by his or patients.

> One day I had an encounter with a funny, non-observant, high-blood pressure patient (giggle) with whom I have a very good relationship with but I'm always "uurrrrrrrrhh". On that day he looked at me, it must have been the 6th or 7th week of the course and he, I

> greeted him in the office that day, I sat with him and started and he said "Where have you been? Boy you're very cool today" (group laughter) I was just "o.k. oh well". So I thought that was very interesting… I didn't have the same aggressiveness and stuff. It was totally unconscious. It was. I guess I was applying it, my body and attitude, yeah definitely.

Another outcome, related to the multidisciplinary composition of the group, was compassion for health care professionals from other disciplines, as described by Participant 16.

> It helped me bring out more compassion towards the doctors because I don't work, I don't have any doctors on my team and I get a lot of clients and the things they say about the doctors and I find it interesting to see how they get caught in that grind and in those difficulties. It touched me a great deal to see how difficult it is and I think that was important for me.

Outcomes for the health care professionals beyond the clinical context included increased self-compassion, changes in attitudes toward self-care, and an increase in self-care practices. Participant 25 described a shift in her attitudes towards self-care.

> I've felt better because up until now, I would take care of myself professionally speaking by prioritizing others, only then could I take care of myself. But now, the first thing I do is to take care of myself. Once I've taken care of myself, I can take care of others. This is a major change for me and above all, I feel more confident. I don't feel guilty for taking care of myself before anything else. I'm more connected with myself, with my feelings, with what I feel, and also, I accept the way things are more easily. I can deal with any kind of hysterical behaviour… that I can deal with. The only thing that remains is to accept myself the way that I am.

Participant 2 discussed the link between self-care and her functioning in the workplace.

> It will always have an impact because when I can't take care of myself I cannot take care of others. So when I'm tired, not listening, it's not very helpful and sometimes we just push ourselves…but a few times I just decided I'm going for a massage and that way I know next week I'll feel better. In the past, I would say "o.k. I don't have time for this". Now I think that if I'm feeling good I can be more attentive and I can really do my job much better, as simple as that.

Participants also described how the strategy of focusing on sensations led to enhanced awareness of pleasure and enjoyment in familiar activities. For participant 12, this led to a change in the way she experienced her walk to work.

> A very big change… I've discovered surprising emotions. Like the joy that comes from walking down the street, observing the trees, looking at the clouds. I've rediscovered beauty also. The present moment is like a song being sung.

A broadly reported phenomenon was an expanded sense of freedom or "having choices", or a freedom or flexibility from previous patterns of behaviour and attitudes as described by Participant 16. Participant 11 discussed her sense of feeling a freedom from her usual structure, and having mixed feelings about this. On the one hand she felt liberated from strict adherence to her usual schedule of activities, while on the other hand she noted a worry about changing a self-care routine based on exercise.

> I've noticed something that I'm not sure that I'm happy about it. Since I've taken the course I've stayed inside, stayed home without going out for the whole day a few times. *C'était un peu comme avoir la liberté de laisser aller,* (It was a little bit like having the freedom to let go, to let things go), just to let myself do what I was feeling like doing. As

> a result I wondered "Oh my god! If I don't keep up physical activity it's not going to be so good". But it is an evidence of a certain liberty, a certain freedom that I feel. That I didn't feel I had to run out and keep on moving, so but I think it's a manifestation of a certain freedom that I have allowed myself to experience and somehow I try to incorporate that into my life as well as the physical activity, which is certainly necessary as well.

A number of participants discussed their experiences of distress during the 8-weeks which they directly attributed to either the intensity of the course structure, or the amount of requisite meditation home practice. It is important to note that this distress was felt on a continuum ranging from mild discomfort to more intense anxiety. Participants 1 and 2 discussed how awareness of difficulties could initially increase distress.

> In fact, it's what comes just before progress, being more conscious of to what extent something's not working. So, you can then say oh I feel more distressed than before, but it's most probably the first step towards… "Oh, I'm not where I should be", professionally or in your relationship, or whatever. Then the reaction that comes after might not be a piece of cake, you know... (Participant 1)

> Or we discover that we are not what we thought we were. (Participant 2)

Participant 16 discussed his experience of feeling overwhelmed during and for a few hours following the "retreat day". For him, meditating for a long period was challenging because of an awareness of "tension", "jitteriness", and "nerves", which he found difficult to stay with for an extended amount of time. The intensity of his discomfort led him to seek support by discussing this experience with a fellow group member.

> I had the impression that my baggage… I'm still carrying my baggage. I don't know where, but things are changing but it's a bit unpleasant at times and it was difficult sometimes that day. I had a difficult day and I could to a point understand why people, if they feel lost at the level, worse than I was feeling, I think I could understand why they might kill themselves. I wasn't in that level, I was looking at myself, and it was o.k. … But it was very intense. That was a bad day but in the end it was o.k. I was accompanying myself during that day, but it was nice that it went away because at one point it was getting hard.

Finally, many participants discussed how dealing with difficult emotions that arose during individual meditation practice and during group sessions led to a shift in how they thought about strong emotions in themselves and others. Several participants discussed how a moment when one group member's experience of feeling overwhelmed by strong emotions in a session, led to the outcome of a shift in their attitudes regarding navigating strong emotions in others. Participants were instructed to drop into silence and observe their thoughts and feelings, as well as any urges to help or intervene.

> I also found it very effective in the sense that normalizing that emotions, strong emotions, intense emotions, are real they are going to happen. And like waves, they pass. Living it in the moment and the experience of it took something I know intellectually made it even more very powerful (Participant 18).
>
> Yes, as opposed to trying to analyze it, or say how we feel about the other person reacting. Because then it is not about that person anymore (Participant 20).
>
> It also sort of happened in a totally supportive and totally reinforcing environment, being embraced, it was a very special moment (Participant 22).

> There was that sense in the group that no matter what happened, it was going to be o.k. (Participant 19).
>
> The incident took place for me. I have to say I felt very supported of course… Because there was a point, I couldn't control my emotions. It was very upsetting for me, and I felt I had to kind of express it to the group… I felt they would have lots of questions like "what's going on with her?" I think the way it was handled, I couldn't have handled it better, you know, it was excellent. It relieved everything I was feeling, I felt o.k. "everything is normal". At the beginning, because of my nature, I felt very apologetic that I had taken time from everybody and this kind of stuff. But afterwards, (Instructors) just handled it as a normal thing, so "that's how you are feeling, it was really intense". And I'm glad that everybody else kind of you know benefited from that…So it was a very good experience for me in that respect. Although it didn't maybe seem like it (laugh) I know. I learned from it a lot. I thought about it a lot and I learned from it afterwards (Participant 21).

The example presented above illustrates the vicarious learning opportunities provided by the group format. The discussion between focus group members also highlights the supportive and respectful manner in which participants engaged one another in the focus groups, and the MBMP program itself.

[Insert Table 1 About Here]

A Model of Participants' Experiences

Axial coding procedures garnered categories that illustrated participants' experiences and their perceptions of the impact of the course. Through selective coding these categories were theorized as the central or core phenomena, causal conditions, the context, which was moderated

by intervening conditions, action/interaction strategies, and outcomes. Figure 1 depicts the relationships among these overarching theoretical categories.

Establishing a regular practice of informal and formal meditation brought about the central phenomena of enhanced awareness, which was identified by all participants in the study. The participants discussed experiencing an expanded and/or new awareness of aspects of their inner lives including thoughts (including self-criticism and expectations of perfection), emotions, perceptual experiences (pleasure and pain/discomfort), and capacity for attention (or lack thereof). They also identified enhanced capacity to take stock of behavioural and interpersonal patterns linked to caring for and focusing on others, to the detriment of themselves. Participants discussed challenges to establishing and maintaining a consistent meditation practice, particularly formal practices. These were described as being related to the preexisting nature of their minds and bodies, as well as the structure and climate of their everyday routines. The group experience was conceived as an intervening condition, which provided important opportunities for modeling from other participants and instructors, as well as support, normalization, and a sense of shared struggle and commonality due to the homogeneous nature of the group. This 8-week group experience, although temporary, was described as mitigating many of the challenges associated with the establishment of a regular meditation practice, which in turn encouraged participants to persist in the face of challenges, and to accept and tolerate some of the difficulties inherent to mindful inner work. New found or heightened awareness of both positive and negative phenomena resulted in utilization of skills and strategies such as anchoring in the breath, focusing, detached observation, turning towards challenges, allowing focus on the self, and acceptance. Consequences stemming from the course were elaborated for the participants themselves, as well as family members, colleagues, and the patients whom they

served. The experience of some distress (mild to intense) was described as an experience for some participants.

[Insert Figure 1 About Here]

Discussion

The process of change illustrated through the grounded theory analysis represents a model generally consistent with other scholars' conceptions of how positive outcomes come about through participation in MBSR. Notably, the model generated from this study appeared to be congruent with the axiom model of mindfulness posited by Shapiro and colleagues (2006), which comprises three interacting facets of Attention, Intention, and Attitude that collectively underpin mindfulness. However, this foundational model does not include an explicit sequential or temporal path for these interacting axioms. Participants in this study spoke at length about their experience of enhanced attention and awareness which was brought about through mindfulness practice, as well as the cultivation of an increasingly open, and self-compassionate attitude towards themselves. There was also some overlap observed when coding the data; it was often difficult to tease apart specific data chunks due to the relatedness of the core category of awareness, with action and interaction strategies such as *detached observation*; at time this led to necessary double-coding of data segments. Again, this finding is consistent with Shapiro and colleagues' (2006) assertion that complementary elements of mindfulness intersect.

Participants also discussed how specific types of awareness could lead to particular action and interaction strategies. For example, *awareness of inattention* led to focusing on senses for one participant. For another participant, awareness of a behavioural tendency to engage in focusing on others as a way to avoid focusing on the self, led to the strategy of *observe*, when this occurred. There was a recursive quality illustrated between a number of the action and

interaction strategies and the core concept of awareness. For example, the strategies of observation and focusing could feed back and lead to more enhanced awareness. In addition, participants descriptions of the *observe* action and interaction strategy appeared to overlap with the meta-mechanism of *reperceiving*, wherein a new, decentered relationship to cognitive and affective content becomes possible (Shapiro et al, 2006).

Also, results from the grounded theory model shared major themes with other qualitative investigations of participants' experiences in MBSR. As in other studies, the centrality and importance of the group experience, a sense of universality, as well as the salience of acceptance, and a sense of having options in the face of challenges were derived from this study (Dobkin, 2008; McKenzie, Carlson, Munoz, & Specca, 2006). Participants also identified that some degree of frustration was inherent to learning meditation which has been reported in other studies as well (Mason & Hargreaves, 2001; Moss, Waugh, & Barnes, 2008).

Notably, some experiences of intense emotional distress were reported by participants in this study. This finding is important to consider given the tendency of some health care professionals, to be *less* likely to seek help and support from professionals when severely distressed. Center and colleagues' (2003) report that physicians tend to shy away from reaching out when experiencing depression and suicidal ideation as they worry about discrimination relative to medical licensing and hospital privileges. Additionally, our analyses yielded the finding that many participants experienced feelings of guilt when making efforts to engage in basic self-care. For this reason, MBSR instructors may wish to be particularly explicit about the potential for distress while learning mindfulness. They may also wish to reassure participants about safeguards to confidentiality should they require additional support, and openly model and discuss appropriate help seeking behaviours, as an integral part of self-care.

Over half of participants in this study discussed the salience of group support, and a number reported that the experience had remedied a sense of professional isolation. Many participants of the study indicated a wish for some sort of follow-up with other health care professionals. Quinn and colleagues (2009) identified that 17% of physicians (across specialties) reported feeling isolated from colleagues. In a similar vein, Krasner and colleagues (2009) have demonstrated the viability of a 10-month "maintenance" mindfulness program for primary care physicians, providing a monthly follow-up meeting after the 8-week program. Based on these results, future research might examine isolation and the impact of MBSR on this experience in physicians and other health care professionals, and programmatic innovations such as drop-in or follow-up programs may be warranted.

Within the overarching model of change, it is important to note that there were considerable variations in participant experiences of change. Participants engaged in a variety of action and interaction strategies, and reported different outcomes related to these. As this study was exploratory, future research should verify the connections and relationships between type of awareness, strategies such as focus, observe, accept, and change, and particular outcomes for self-and others.

Limitations

Although this study presents new findings relative to participation in an adapted MBSR program for health care professionals, it carries a number of limitations relative to sampling procedures, participant selection, and researcher bias. Only 53% of participants from the overall sample of research participants engaged in the focus group interviews. It is possible that they may have had a different experience than those who chose not to, or were unable to participate. For example, participants may have been those with less job stress who had the flexibility to

attend focus group sessions held during working hours. Moreover, participants in the MBMP program were self-selected, and motivated to participate in the intervention having paid to take the course. As such, the applicability of the findings is limited to participants who are similarly motivated. Our findings highlight the potential for this type of program, when offered to a mixed-group of health care professionals, to lessen professional barriers and cultivate empathy and communication across the helping professions. This finding is particularly compelling in light of work in hospital settings which often requires collaboration on multi-disciplinary teams. However, it is possible that some health care professionals may have chosen not to enroll in the course due to a preference for more homogenous groups. Notably, the mean age of the participants (M = 51) in this course was somewhat higher than the mean age in other investigations of MBSR with health care professionals (Shapiro, 2005), potentially limiting the applicability of this model to clinicians at a different stage of life or career trajectory. Another limitation of the study concerns the issue that the principal investigator served as the primary focus group facilitator. While this provided the investigator with a rich perspective upon participants' experiences, it is also possible that the researcher's opinions may have had an impact on the content of focus group discussions, as well as the data analysis. Another potential issue relative to this study surrounds language translation. Efforts were made to translate transcriptions accurately; however, translated text is always an approximation of original text.

Implications for Theory, Practice and Research

The findings of this study carry a number of implications for building upon existing theories of change mechanisms in MBSR, as well as informing future research design. First, findings support the existence of subtle, but important nuances in change processes as experienced by this population. While a number of outcomes associated with the program were

parallel to those found in clinical populations, health care professionals emphasized the central nature of awareness of perfectionism, self-criticism, focusing on others, and the automaticity of a helping and fixing mode. For many participants, this awareness led to specific attitudinal and behavioural changes which were identified as significant and meaningful. It is possible that these findings would be obscured in research which exclusively relies upon self-report measures. Moreover, Shapiro and colleagues (2006) have highlighted the importance of *intention* for engaging in mindfulness practice, as it relates to outcomes. It is suggested that outcomes will accord with intention. In this population, 68% of participants indicated that a goal for taking the program was to enhance their clinical practice; to be more present, attentive, and compassionate with patients. This desire is aligned with the innovative aspects of MBMP; the emphasis upon mindful communication. To better understand how the changes in the attitude gets translated into actual changes in the communication, future research employing observer and patient/client ratings of clinical encounters may be of particular interest.

Participant reports surrounding significant behavioural and health related behaviours also warrant further investigation. To our knowledge, changes in self-care practices have not been investigated as an outcome related to MBSR in other studies. Our data indicate that not only were participants willing to work mindfulness into their repertoire of self-care skills, but that they also increased or made changes to other aspects of self-care; making time for breaks during the workday, setting limits in the workplace, and prioritizing self-care more generally. Future research might further investigate how participation in this type of intervention impacts other types of self-care, behavioural correlates, and whether such changes persist over time.

Relative to the phenomena of perfectionism, participants discussed how this tendency was implicated in meditation practice, for some leading to self-criticism and distress when

perfection or mastery was untenable in the early phase of learning a new skill set and way of being. The group context appeared to moderate this issue, raising the issue of the importance of the group structure for this population. Moreover, in light of the large number of participants who cited the salience of the group format, future research may also include analyses or measures aimed at examining the impact of group factors such as cohesion, member-to-member interactions, and their relationships to outcomes (Imel, Baldwin, Bonus, & Maccoon, 2008). Our findings suggest that both group effects related to vicarious learning, member-to-member interactions, as well as support and cohesion may have a particular power for health care professionals. Participants described not only the isolation which they experienced when faced with distress relative to the workplace; they also discussed the sense of stigma related to openly discussing such issues. While MBSR is not a support group, our findings clearly suggest that participants experience it as supportive. Health care professionals may not feel comfortable seeking support or professional help for many reasons such as stigma, or perceived consequences relative to reputation, or simply because they are accustomed to being in a helping role, rather than being a recipient of care. Participation in MBSR appears to provide a relatively non-threatening means of engaging in self-care in a supportive atmosphere with like-minded peers. Whatever their intentions for enrolling in this course, it appears that participants in the small qualitative investigation, seemed to benefit from the experience in ways they had not anticipated.

Table 1: *Characteristics of Participants*

Participant #	**Job Title**	**Years in current position**	**Age**	**Gender**	**Ethnicity**	**First Language**
1	Doctor	15	55	M	Canadian-French	French
2	Alternative Health	21	55	F	Caucasian	French
3	Cousenllor	6.5	30	F	Moroccan, Czech	English
4	Alternative Health	24	62	M	-	French
5	Social worker	7	65	F	Japanese	Japanese
6	Counsellor	10	43	F	Eastern European	Polish
7	Counsellor	20	62	F	-	English
8	Yoga instructor	2	34	F	-	French
9	Doctor	13	47	F	Caucasian	French
10	Doctor	-	33	F	Caucasian	French
11	Doctor	57	82	F	Canadian, Jewish	English
12	Psychologist	12	47	F	Caucasian	French
13	Alternative Health	6	31	F	Caucasian	English, French
14	Nurse	6 weeks	-	F	Caucasian	English
15	Psychologist	20	69	M	Caucasian	French, English
16	Nurse	2.5 years	29	F	Caucasian	English
17	Nurse	10	51	F	Mixed	English
18	Psychotherapist	18	59	F	-	English
19	Psychologist/Researcher	19 years; 15 years	54	F	-	French
20	Doctor	-	43	F	Caucasian	French, English
21	Nurse	-	55	F	Italian	Italian
22	Physician	30 years	56	M	-	English
23	Psychologist	18 years	46	M	French	French
24	Doctor	-	-	F	-	English
25	Doctor	22 years	47	F	French-Canadian	French
26	Social Worker	9 years	49	F	Latino	English
27	Psychologist	29 years	55	F	Irish	English

Table 2. *Categories, Subcategories, and Themes*

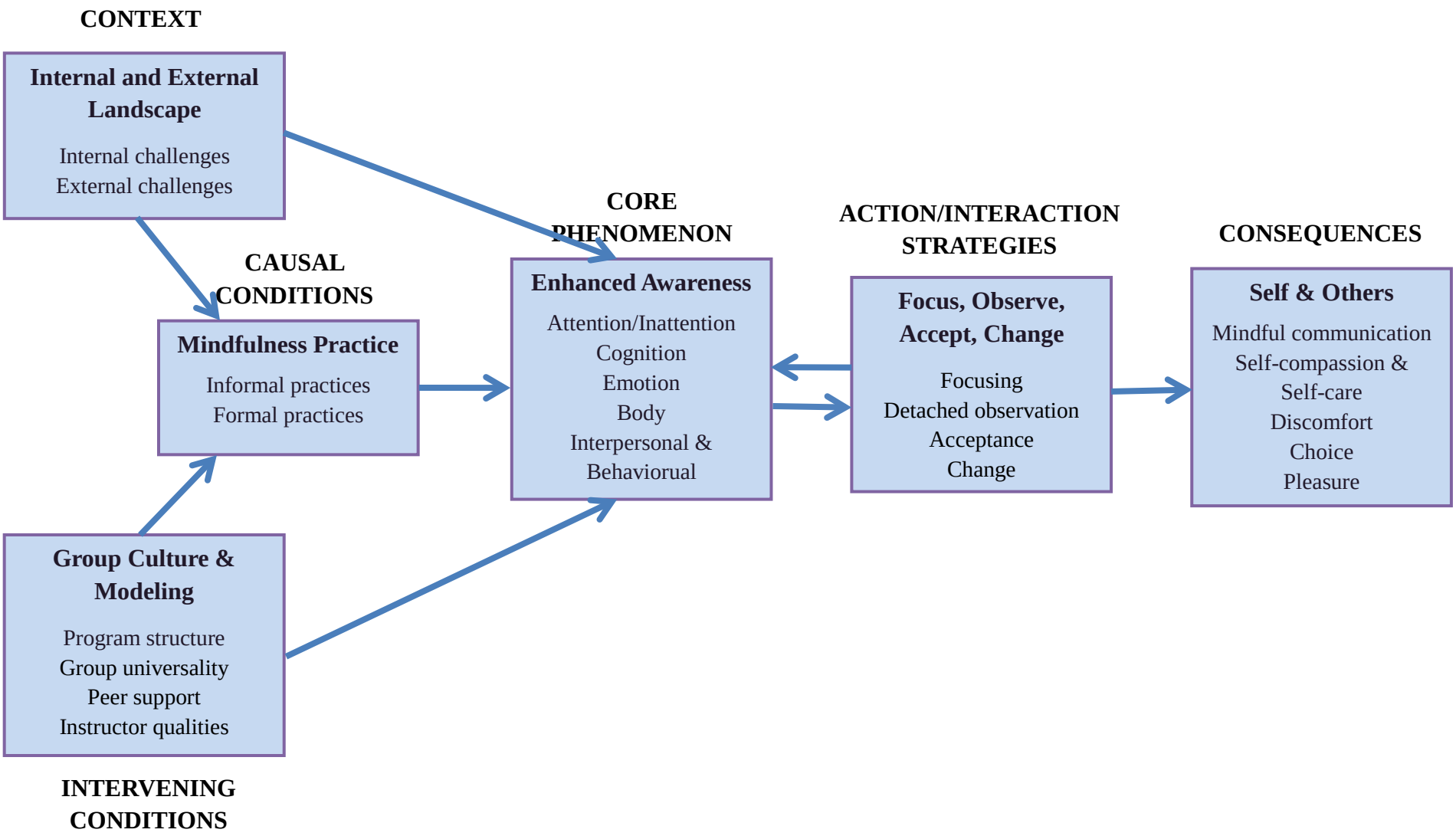
Categories	Subcategories	Themes
Mindfulness Practice	Informal practice	Mindfulness in every day experience (**N= 7**; 5, 6, 7, 12, 15, 16, 27)
	Formal practices	Specific home practices (**N= 9**; 1, 2, 4, 9, 14, 19, 23, 26, 27)
		Importance regular practice (**N= 7**; 1, 2, 8, 9, 7, 23, 24)
		Mindfulness as ongoing process (**N= 13**; 1, 2, 3, 5, 6, 7, 8, 9, 20, 22, 23, 25, 26)
Internal and External Landscape	Internal challenges	Strong/Unpleasant Emotion (**N= 7**, 7, 8, 16, 17, 23, 25)
		Pain/Discomfort (**N= 7**; 1, 6, 10, 14, 15, 16, 25)
		Boredom (**N= 4**; 1, 2, 3, 7)
	External challenges	Time and schedule issues (**N= 13**; 1, 2, 3, 5, 6, 7, 9, 10, 13, 15, 16, 17, 24)
		Mindless workplace and Colleague Stress (**N=4**; 6, 15, 16, 26)
Culture	Program structure	Facilitates commitment & motivation (**N= 6**; 5, 6, 8, 10, 14, 16)
		Negative Cases - Size (**N= 3**; 8, 15, 17)
	Group universality	Commonality (**N=13**; 1, 3, 4, 6, 7, 14, 15, 16, 20, 21, 22, 24, 26)

	Peer support	Support & Safety (**N= 8**; 2, 6, 7, 8, 15, 19, 20, 21)
	Instructor qualities	Direct Instruction (N=**2**; 1, 2) Modeling (**N= 2**; 21, 19)
Awareness	Cognitive	Non-specific awareness of thoughts (**N= 14**; 3, 4, 5, 6, 9, 11, 13, 14, 15, 16, 18, 19, 20, 22) Self-Criticism (**N= 7**; 3, 5, 6, 8, 9, 16, 18) Perfectionism (**N= 5**; 2, 15, 24, 25, 27) Attitudes towards self-care (**N= 10**; 6, 8, 9, 11, 14, 15, 16, 17, 21, 27)
	Affective	Negative (**N= 18**; 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 18, 17, 20, 25) Positive (**N= 6**, 9, 11, 12, 16, 22)
	Attention/Inattention	Awareness inattention and/or mind wandering (**N= 8**; 1, 4, 12, 13, 15, 22, 26, 27)
	Body	Pain/Discomfort (**N= 6**; 7, 8, 14, 16, 19, 22)

	Interpersonal & Behavioural	Reaction to strong emotion (**N= 9**; 2, 5, 13, 17, 18, 19, 20, 21, 22) Self-care (or lack thereof) (**N= 4**; 9, 13, 15, 16) Overdoing (**N= 5**; 5, 7, 8, 9, 27) Helping/fixing mode (**N= 4**; 3, 14, 20, 22) Other Focus (**N= 4**; 17, 18, 19, 21)
Focus, Observe, Acceptance, Change	Acceptance	Self (**N= 8**; 5, 18, 19, 20, 21, 25, 27) Surroundings (Others & Environment) (**N=3**; 2, 5, 11)
	Detached Observation	Taking a Step Back (**N= 9**; 2, 4, 10, 12, 13, 15, 16, 17, 24)
	Change	Turn towards challenge (**N= 7**; 6, 8, 11, 14, 17, 24, 27) Change Behaviour (set boundaries) (**N= 4**; 3, 4, 7, 8) Shifting away from other-focus (**N= 4**; 2, 10, 16, 25)
	Focusing	Breath (**N= 9**; 2, 4, 7, 8, 9, 10, 11, 15, 16) Focusing on senses (**N= 3**; 4, 16, 20)
Self & Others	Mindful communication	Family (**N= 4**; 1, 10, 11, 13) Patients and clients (**N= 21**; 1, 5, 7, 8, 9, 10, 11, 12, 15, 16, 17, 19, 22, 23, 24, 25, 27) Colleagues (**N= 2**; 15, 16)
	Self-compassion & Self-care	Self-Care Priority/Importance (**N= 7**; 3, 6, 9, 11, 14, 15, 25)

	Kindness towards self (**N= 8**; 6, 7, 9, 11, 12, 13, 15, 25) Other compassion (**N=2**; 16, 19)
Choice	Options/Tools: (**N= 7**; 5, 6, 11, 13, 15, 16, 20)
Pleasure	Noticing beauty (**N=3**; 12, 22, 26)
Discomfort or Distress	Living with awareness (**N= 13**; 1, 2, 4, 5, 6, 8, 10, 11, 12, 13, 15, 16, 20)

Figure 1. A Working Model of Health Care Experiences in MBSR



Appendix 1.
Focus Group Questions:

1. Tell me what you learned in the group with regard to self-care and wellness.
    a. Importance and priority*
    b. Time and scheduling*
    c. Implications for clinical practice*

2. Explain, if and how, you use the specific skills learned in the MBMP program to deal with every day stresses?
    a. Describe what you did.
        i. How might these differ from other skills you have used in the past?
    b. What did you notice?
    c. If no, why not?

3. Did you notice a change in your self-compassion?
    a. If yes, how do you think that came about?
    b. What did you notice?
        i. Self-kindness vs. Self-Judgment*
        ii. Common Humanity vs. Isolation*
        iii. Mindfulness vs. Over-identification*
    c. If this didn't change, why not?*

4. Did you notice a change in the depth of your mindfulness?
    a. If yes, how do you think that this came about?
    b. What did you notice in terms of:
        i. Your awareness of thoughts and thinking processes*
        ii. Your awareness of emotions, reactions to them, and ability to regulate them*
        iii. Your attention to the present moment*
        iv. Your capacity to feel relaxed*
    c. If this didn't change, why not?

5. Tell me about aspects of the MBMP program that were most challenging to you
    a. Homework practice*
    b. Type of meditation*
    c. Group context*
    d. Distress*
        i. Some studies have found that individuals may experience an increase in anxiety or particularly strong emotions while participating in MBSR. Did you experience any distress?

6. Do you apply mindfulness in your clinical practice?
    a. If yes, could you illustrate through a case example?
    b. If no, what gets in the way?

c. Could you see yourself using mindfulness with patients it in the future?

Closing:

Thank you very much for coming today. Before you go, did you feel that we missed asking about anything which was important to your experience of the program?

Please feel free to contact me should you have any additional feedback about the program in general or the focus group process.

*These questions and prompts were added to the second phase of data collection only.

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CHAPTER 5

Conclusion

Summary of Findings and Original Contributions to Research

A number of open and randomized clinical trials have demonstrated the efficacy of MBSR programs to promote positive outcomes relative to the psychological health of health care professionals and trainees. Such outcomes have included decreases in perceived stress, anxiety, depressive symptoms, burnout, as well as enhanced mood and positive psychological outcomes such as mindful attention and awareness, self-compassion, and well-being (Irving, Park, & Dobkin, 2009). However, past research has largely focused on outcomes as opposed to the mechanisms that underpin such changes in outcome. Moreover, much of the existing body of research has centered upon trainees, rather than practicing health care professionals in the field.

The present program of research sought to build upon existing research by investigating the potential mechanisms of change, challenges, and facilitative aspects of an MBSR program designed specifically for practicing health care professionals. First, a focused literature review was presented, summarizing existing research on the applications of MBSR with health care professionals in manuscript 1. This review drew attention to the paucity of qualitative research in this area, as well as to the relative lack of studies on practicing health care professionals as opposed to trainees. Manuscripts 2 and 3 that reported results of studies which provided two complementary perspectives, one quantitative, one qualitative, in a mixed-methods triangulation design. Building upon preliminary theories surrounding mechanisms of change (Shapiro et al., 2006), study 1 employed self-report measures to examine changes in outcome measures of burnout, perceived stress, and depressive symptoms, as well as measures of potential mechanisms; mindful attention and awareness, and self-compassion. In study 2, qualitative focus group interviews allowed participants to communicate in their own words, experiences

attributed to taking part in the course; perceived challenges and benefits, as well as impact upon their clinical practice. As such, the three manuscripts which comprise this document provide a cumulative contribution to the overall picture of how MBSR may benefit clinicians.

Results from study 1 replicated previous quantitative studies suggesting the capacity for MBSR to bring about statistically and clinically significant changes in outcomes related to psychological health for physicians, nurses, psychologists, and other health care professionals. In a mixed group of 51 practicing health care professionals, expected correlations were found at baseline between measures of burnout, stress, depressive symptoms, which were negatively correlated with mindfulness, self-compassion, and well-being. Interestingly, the measures of mechanism, mindfulness attention and self-compassion, were significantly correlated with one another, and were both highly correlated with psychological well-being. Changes from pre to post were observed in the predicted direction on measures of perceived stress, as well as self-compassion and mindfulness. These findings present a salient contribution to the field as they reinforce and extend existing findings which have demonstrated the promise of MBSR to enrich the lives of health care professionals. Our study is the first of its kind to examine MBSR with a multiculturally diverse and bilingual sample of practicing health care professionals. The study represents the first empirical investigation of the Mindfulness-Based Medical Practice program, which is based upon MBSR but has an adapted curriculum emphasizing the application of mindful communication in clinical settings. Additionally, trends consistent with clinically relevant decreases in burnout were also observed relative to emotional exhaustion.

Bootstrapped regression analyses failed to demonstrate that mindfulness or self-compassion served as significant moderators of the negative relationship of perceived stress upon wellbeing. As the first study to examine these potential moderators of well-being with a sample

of health care professionals, results from study 1 highlight the challenges of capturing underlying processes related to changes in outcomes through the lens of quantitative methods and self-report alone. This underscores the necessity of expanding the research strategies for capturing and evaluating changes related to mindfulness. One such alternate perspective is provided through the qualitative investigation presented in manuscript 3.

In the results presented here, participants voiced their perceptions of the MBSR program and its impact. Study 2 provided a working model of change based-upon participants' views of their own change processes during, and shortly after, the 8-week MBMP program. The model echoed similar themes to those described by clinical populations such as: the salience of the group experience and support, discovery of acceptance, as well as the realization that some degree of frustration and/or distress could be experienced as part of the learning process. Unique themes highlighted by health care professionals, included becoming aware of perfectionism, and the automaticity of "other-focus" and a "helping or fixing" interpersonal mode of being.

Some participants articulated a sense that changes in their self-compassion had been initiated in part through an awareness of a lack of self-compassion (judgmental and self-critical attitudes). However, many participants also reported a sense that this shift was a "work in progress", which they expected would continue after the 8-week course. This finding was consistent with quantitative changes observed in self-report measures, but elaborated with the addition of participant narratives.

Implications for Practice and Training

There are a number of implications that stem from these results for the provision of MBSR to health care professionals. First, issues relative to the time commitment were highlighted in this study; a number of participants discussed the difficulties they had completing

the requisite amount of formal mindfulness home practice. Some participants also discussed that this led them to feel guilty, while others described it as a "wake-up call" with regard to their own lack of self-care. Moreover, some participants reported adapting the home practice to meet their needs, shortening it, or favouring certain types of home practice such as walking meditation, and informal meditation practices which were reported as more easily incorporated into their daily routines. Given research which has suggested that duration of home practice is linked to change in outcomes, including informal practices (Carmody & Baer, 2007), program developers may wish to examine the amount of home practice assigned for this particular population.

Next, findings from the qualitative study suggested that group effects may be pertinent for health care professionals. Although consistent with qualitative findings on MBSR with clinical populations, this outcome is not consistent with the majority of quantitative research on MBSR which has failed to demonstrate significant group effects. Due to the significant proportion of participants who discussed the power of the group format, and how this mitigated feelings of isolation relative to distress, the potential for follow-up groups to provide continuation of this supportive element is apparent. The monthly "maintenance phase" such as those provided to primary care physicians in the program at the University of Rochester (Krasner et al., 2009) could be an effective strategy.

Additionally, the small number of participants who reported experiencing significant distress relative to participation in the program is compelling, and warrants further discussion. Participants of this program were carefully screened and oriented to the intensive nature of the program. Nonetheless, two individuals in the focus group sessions discussed having felt overwhelmed with emotion while attending a group session. Both individuals sought and/or received necessary supports in response to their distress (either through discussing their

experiences with a peer or receiving support directly from one of the instructors). Research has demonstrated that physicians as a group may be less likely to seek appropriate support and intervention when facing psychological distress. This finding resonates with our finding that many participants reported feeling guilty or resistant towards prioritizing self-care. Our findings suggest that even this "healthy, non-clinical" population may experience some degree of discomfort or distress as a result of the intensive nature of the program and/or the awareness developed about the self. Instructors providing MBSR to health care professionals may wish to address this phenomenon directly and ensure that support from instructors, and/or resources outside of the program, are readily available.

Findings from this study of practicing health care professionals resonate with findings from research conducted with training medical students surrounding self-care and burnout. In a grounded theory study conducted by Ratanawongsa, Wright, and Carese (2007), medical residents were found to accept conditions of work-life imbalance as a means of coping with the often immutable stressors inherent to training. The authors concluded that when training periods end, residents may require assistance reestablishing balance, and should be encouraged not to accept such work-life imbalance for long-term periods. Interestingly, in this sample, common themes described by participants included enhanced awareness of a lack of self-care and tendency towards overdoing.

Directions for Future Research

The combined results from study 1 and study 2 lead to suggestions for future research. While qualitative findings suggest that participants may have varied in their adherence to home practice, there was no systematic investigation of this variable. Future studies with health care professionals may benefit from including a measure of adherence, particularly in light of early

findings that this population may be particularly at risk for drop-out due to difficulty accommodating the time commitment of the program (Shapiro et al., 2005).

Qualitative results wherein participants highlighted the importance of the group structure and sense of universality it provided, in addition to quantitative findings which reflected significant decreases in participants' scores of isolation and increases of common humanity, warrant further exploration. Currently, it remains unclear whether these changes may be attributed to mindfulness practice itself, the group experience, or both. While findings have been mixed, Imel, Baldwin, Bonus, and Maccoon (2008) found that group effects accounted for 7% of the variability in symptom reduction. The power of the group structure may have implications for the provision of follow-up groups.

In line with this suggestion, participants also reported the salience of instructor qualities and modeling as relevant to the positive impact of the group experience. MBSR is clearly presented as psycho-educational program, which is not intended to approximate psychotherapy or a support group. Accordingly, there have been relatively few investigations of how instructor qualities or the therapeutic alliance impact participant outcomes. As MBSR continues to proliferate with various clinical and non-clinical populations, the appropriate training requirements for instructors, as well as issues of treatment adherence/integrity, have been identified as salient (Chawla, Collins, Bowen, Hsu, Grow, Douglas, & Marlatt, 2010; Crane, Kuyuken, Hastings, Rothwell, & Williams, 2010). Moreover, adherence scales currently exist for Mindfulness-Based Cognitive Therapy and Mindfulness-Based Relapse Prevention designed to capture the "unique and essential" aspects of such mindfulness-based interventions (Chawla, Collin, Bowen, Hsu, Grow, Douglas, & Marlatt, 2010; Segal, Teasdale, Williams, & Gremar, 2002). No such measure exists for MBSR at this time. Including measures of alliance and

assessment of instructor skillfulness in future studies could elucidate these relatively unexplored phenomena and provide insight into factors which may contribute significantly to positive outcomes shedding light onto mechanisms which are “essential but not unique” as well (Segal et. al., 2001).

Qualitative findings also suggest that health care professionals enrolled in MBSR have noted changes in their clinical encounters. Future research combining clinical and patient self-reports, as well as observer ratings would greatly strengthen the argument that mindfulness has the potential to enrich not only clinicians, but their patients as well and would enhance motivation to practice for a group of professionals who are dedicated to helping. Moreover, in light of participants’ discussion of change as a “work-in progress”, longer term follow-up is warranted to explore how participation in the course may contribute to outcomes over time.

Participant reports relative to health related behaviours also warrant further investigation. To our knowledge, changes in self-care practices have not been examined as an outcome related to MBSR in other studies. Our data indicate that not only were participants willing to work mindfulness into their repertoire of self-care skills, but that they also increased or made changes to other aspects of self-care; making time for breaks during the workday, setting limits and the workplace, and prioritizing self-care more generally. Future research might consider how participation in this type of intervention impacts other types of self-care, and whether changes persist over time. Moreover, the inclusion of behavioural health indices such as number of health related incidents, or absences from work, could provide a compelling means of measuring the impact of participation in this type of program, including economic outcomes.

Finally, the relationships found in the grounded theory analysis, could be further tested and refined through quantitative methods. At the present time, we are unaware of self-report

measures that would map-on to the action/interaction strategies of “turn towards change” and “acceptance”. Moreover, the subtleties of how these changes unfolded over time were not fully elucidated in our focus group discussions. Future investigations may employ individual interviews to build upon the broad model provided in study 2. The use of the focus group method for data analysis appeared to yield an acceptable “big picture” of how change is initiated and experienced by participants in the program, however, individual interviews may provide more detailed information refining derived categories and their interrelationships.

Results from the quantitative arm of the study yielded data that highlights the potential challenges of capturing mechanisms of change with self-report outcome measures which are offered at pre- and post- program alone. Future studies which include measures of process at numerous time points would likely present data with a greater potential for examining how interrelated mechanisms may change over time, and interact with one another. This temporal limitation was also reflected in our qualitative study, wherein data was gathered only once the program had been completed, requiring participants to rely on memory to speculate on how they saw changes occur over the course of the program. Future qualitative research might also probe participant experiences at various time points, for example, through weekly journaling exercises.

Finally, another obstacle when using self-report measures to capture mechanisms in a multiculturally and linguistically diverse setting such as Montreal, surrounds the lack of instruments which have been validated in other languages. As mentioned above, MBSR and adaptations of this program are offered internationally. Currently, many of the most reliable and valid measures used in North American studies have yet to be translated and validated in other languages. Future programs of research will benefit from engaging in the development of measures with sound reliability and validity in a variety of languages.

Summary

MBSR, and adaptations of MBSR such as Mindfulness-Based Cognitive Therapy, and Mindfulness-Based Cognitive Therapy-Insomnia, have been demonstrated as powerful adjunctive programs for a range of clinical population. The promise of such programs to bring about meaningful changes in the lives of health care professionals has been indicated through quantitative outcome research, in both open and randomized studies. The current program of research sought to explore the potential benefits associated with participation in an adapted MBSR program; Mindfulness-Based Medical Practice. A mixed-methods design was employed to examine potential mechanisms of change, as well as participants' lived-experiences relative to participation in the program. These included perceived challenges and benefits attributed to undertaking the intensive 8-week program, as well as implications of mindfulness for themselves, and their clinical work. Findings support the promise of the adapted version of the program, which included an emphasis upon mindful communication. Results from self-report measures gathered at pre- and post- program, as well as focus group interviews, suggest the potential for this program to impact participants' mindful awareness, compassion towards the self, and levels of perceived stress. Qualitative findings highlighted the unique and multifaceted change processes undertaken by participants, who attributed experiencing enhancement in awareness of cognition, emotion, and interpersonal and behavioural tendencies and patterns. Participants indicated that these changes had implications across multiple domains; for themselves, relations with family members, colleagues, as well as the patients whom they serve.

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APPENDIX A.

RECRUITMENT LETTER
Mindfulness-Based Stress Reduction for Health Care Professionals
Quantitative Study

Dear Participant:

This letter is to invite you to be part of a research study on the outcomes of participation in the Mindfulness-Based Medical Practice program for health professionals. The Mindfulness-Based Medical Practice program offered through McGill Programs in Whole Person Care is designed to encourage participants to access their innate resources and abilities to respond more effectively to stress. This is achieved through intensive training in mindfulness meditation and its integration into clinical work.

This research initiative aims to enhance our current understanding of how participation in the program can impact health and coping. Participation involves completing self-report measures that look at variables such as: burnout, perceived stress, depression, medical symptoms, sense of wellness, self-compassion, and mindfulness. Results will contribute to the growing body of research demonstrating a wide range of health and psychosocial benefits of MBSR training for health professionals. Results will also allow us to monitor and improve our own program based upon your feedback.

If you are interested in participating, please read the attached consent form and/or contact the researchers with any questions.

Julie Anne Irving, Doctoral Candidate, McGill University Counselling Psychology Program, 514-398-2892 or julieanneirving@mail.mcgill.ca

Dr. Jeeseon Park, Assistant Professor, Faculty of Education, McGill University Counselling Psychology Program, 514-398-3452 or jeeseon.park@mcgill.ca

APPENDIX B.

RECRUITMENT LETTER

Mindfulness-Based Stress Reduction for Health Care Professionals
Focus Group Study

Dear Participant,

This letter is to invite you to be part of a research study on the outcomes of participation in the Mindfulness-Based Medical Practice program for health professionals. The Mindfulness-Based Medical Practice program offered through McGill Programs in Whole Person Care is designed to encourage participants to access their innate resources and abilities to respond more effectively to stress. This is achieved through intensive training in mindfulness meditation and its integration into clinical work.

This research initiative aims to enhance our current understanding of how participation in the program can impact health professionals ability to cope with everyday stresses and challenges inherent in clinical practice. Participation will involve taking part in a focus group discussion where topics will include your experience of the program and how you have integrated mindfulness into your clinical practice. Results will contribute to the growing body of research demonstrating a wide range of health and psychosocial benefits of MBSR training for health professionals. Results will also allow us to monitor and improve our own program based upon your feedback.

If you are interested in participating, please read the attached consent form and/or contact the researchers with any questions.

Julie Anne Irving, Doctoral Candidate, McGill University Counselling Psychology Program, 514-398-2892 or julieanneirving@mail.mcgill.ca

Dr. Jeeseon Park, Assistant Professor, Faculty of Education, McGill University Counselling Psychology Program, 514-398-3452 or jeeseon.park@mcgill.ca

APPENDIX C.

Demographic Information Sheet

1. Date of Birth: _____

2. Sex:

a) Male
b) Female

3. Job Title: _____

4. Years in the current position: _____

5. Ethnicity / ies: _____

6. Nationality / ies: _____

7. Religious Affiliation(s): _____

8. First Language:

a) English
b) French
c) Other (_____)

9. Languages Spoken:

a) English
b) French
c) Other (_____)
d) Other (_____)

10. Please list which self-care practices, if any, are you currently engaging in to deal with daily and work related stresses? [Examples include: Exercise, healthy diet, regular sleep, scheduled vacations, yoga (or other forms of mindfulness exercise), muscle relaxation, prayer]

11. What are your goals, if any, for participating in this program?

APPENDIX D. **Maslach Burnout Inventory**

How often:

0	1	2	3	4	5	6	
Never	A few times	Once a month	A few times	Once a	A few times	Every	a year or
less	or less	a month	week	a week	day		

How often
0-6

_____ 1. I feel emotionally drained from my work.

_____ 2. I feel used up at the end of the day.

_____ 3. I feel fatigued when I get up in the morning and have to face another day on the job.

_____ 4. I can easily understand how my recipients feel about things.

_____ 5. I feel I treat some recipients as if they were impersonal objects.

_____ 6. Working with people all day is really a strain for me.

_____ 7. I deal very effectively with the problems of my recipients.

_____ 8. I feel burned out from my work.

_____ 9. I feel I'm positively influencing other people's lives through my work.

_____ 10. I've become more callous towards people since I took this job.

_____ 11. I worry that the job is hardening me emotionally.

_____ 12. I feel very energetic.

_____ 13. I feel frustrated by my job.

_____ 14. I feel I'm working too hard on my job.

_____ 15. I don't really care what happens to some recipients.

_____ 16. Working with people directly puts too much stress on me.

_____ 17. I can easily create a relaxed atmosphere with my recipients.

_____ 18. I feel exhilarated after working closely with my recipients.

_____ 19. I have accomplished many worthwhile things in this job.

_____ 20. I feel like I'm at the end of my rope.

_____ 21. In my work, I deal with emotional problems very calmly.

_____ 22. I feel recipients blame me for their problems.

APPENDIX E.

Center for Epidemiologic Studies Depression Scale (CES-D)

Paticipant I.D.: _____ **Date:** _____

Instructions: Below is a list of ways you might have felt or behaved. Please indicate how often you felt this way during the past week.

0 = rarely or none of the time *(less than 1 day)*
1 = some or little of the time *(1-2 days)*
2 = occasionally or a moderate amount of the time *(3-4 days)*
3 = most or all of the time *(5-7 days)*

		Rarely or none of the time *(< 1 day)*	**Some or little of the time** *(1-2 days)*	**Occasionally or a moderate amount of the time** *(3-4 days)*	**Most or all of the time** *(5-7 ays)*
1.	I was bothered by things that usually don't bother me.	0	1	2	3
2.	I did not feel like eating; my appetite was poor.	0	1	2	3
3.	I felt that I could not shake off the blues even with help from my family or friends.	0	1	2	3
4.	I felt that I was just as good as other people.	0	1	2	3
5.	I had trouble keeping my mind on what I was doing.	0	1	2	3
6.	I felt depressed.	0	1	2	3
7.	I felt that everything I did was an effort.	0	1	2	3
8.	I felt hopeful about the future.	0	1	2	3
9.	I thought my life had been a failure.	0	1	2	3
10.	I felt fearful.	0	1	2	3
11.	My sleep was restless.	0	1	2	3
12.	I was happy.	0	1	2	3
13.	I talked less than usual.	0	1	2	3
14.	I felt lonely.	0	1	2	3
15.	People were unfriendly.	0	1	2	3
16.	I enjoyed life.	0	1	2	3
17.	I had crying spells.	0	1	2	3
18.	I felt sad.	0	1	2	3
19.	I felt that people dislike me.	0	1	2	3
20.	I could not get "going".	0	1	2	3

APPENDIX F.

Perceived Stress Scale (PSS)

Participant I.D.: _____ **Date:** _____

PSS-10

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate ***how often*** you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way, rather indicate the alternative that seems like a reasonable estimate.

For each question choose from the following alternatives.

0 = never
1 = almost never
2 = sometimes
3 = fairly often
4 = very often

1.	In the last month, how often have you been upset because of something that happened unexpectedly?	0	1	2	3	4
2.	In the last month, how often have you felt that you were Unable to control the important things in your life?	0	1	2	3	4
3.	In the last month, how often have you felt nervous and stressed?	0	1	2	3	4
4.	In the last month, how often have you felt confident about your Ability to handle your personal problems?	0	1	2	3	4
5.	In the last month, how often have you felt that things were going your way?	0	1	2	3	4
6.	In the last month, how often have you found that you could not cope with all the things that you had to do?	0	1	2	3	4
7.	In the last month, how often have you been able to control irritations in your life?	0	1	2	3	4
8.	In the last month, how often have you felt that you were on top of things?	0	1	2	3	4
9.	In the last month, how often have you been angered because of Things that happened that were outside of your control?	0	1	2	3	4
10.	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

APPENDIX G.

Scales of Psychological Well-Being

The following set of questions deals with how you feel about yourself and your life. Please remember that there are no right or wrong answers. Indicate the number that best describes your present agreement or disagreement with each statement.

Strongly Disagree	Disagree Somewhat	Disagree Slightly	Agree Slightly	Agree Somewhat	Strongly Agree
1	2	3	4	5	6

AUTONOMY

____1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.

____2. My decisions are not usually influenced by what everyone else is doing.

____3. I tend to worry about what other people think of me.

_____4. Being happy with myself is more important to me than having others approve of me.

____5. I tend to be influenced by people with strong opinions.

____6. I have confidence in my opinions, even if they are contrary to the general consensus.

____7. It's difficult for me to voice my own opinions on controversial matters.

____8. I often change my mind about decisions if my friends or family disagree.

____9. I judge myself by what I think is important, not by the values of what others think is important.

ENVIRONMENTAL MASTERY

____1. In general, I feel I am in charge of the situation in which I live.

____2. The demands of everyday life often get me down.

____3. I do not fit very well with the people and the community around me.

____4. I am quite good at managing the many responsibilities of my daily life.

____5. I often feel overwhelmed by my responsibilities.

____6. I generally do a good job of taking care of my personal finances and affairs.

____7. I am good at juggling my time so that I can fit everything in that needs to get done.

____8. I have difficulty arranging my life in a way that is satisfying to me.

____9. I have been able to build a home and a lifestyle for myself that is much to my liking.

PERSONAL GROWTH

____1. I am not interested in activities that will expand my horizons.

____2. I don't want to try new ways of doing things--my life is fine the way it is.

____3. I think it is important to have new experiences that challenge how you think about yourself and the world.

____4. When I think about it, I haven't really improved much as a person over the years.

____5. I have the sense that I have developed a lot as a person over time.

____6. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.

____7. For me, life has been a continuous process of learning, changing, and growth.

____8. I gave up trying to make big improvements or changes in my life a long time ago.

____9. There is truth to the saying you can't teach an old dog new tricks.

POSITIVE RELATIONS WITH OTHERS

____1. Most people see me as loving and affectionate.

____2. Maintaining close relationships has been difficult and frustrating for me

____3. I often feel lonely because I have few close friends with whom to share my concerns.

____4. I enjoy personal and mutual conversations with family members or friends.

____5. I don't have many people who want to listen when I need to talk.

____6. It seems to me that most other people have more friends than I do.

____7. People would describe me as a giving person, willing to share my time with others.

____8. I have not experienced many warm and trusting relationships with others.

____9. I know that I can trust my friends, and they know they can trust me.

PURPOSE IN LIFE

____1. I live life one day at a time and don't really think about the future**.**

____2. I tend to focus on the present, because the future nearly always brings me problems.

____3. My daily activities often seem trivial and unimportant to me.

____4. I don't have a good sense of what it is I'm trying to accomplish in life.

____5. I used to set goals for myself, but that now seems like a waste of time.

____6. I enjoy making plans for the future and working to make them a reality.

____7. I am an active person in carrying out the plans I set for myself.

____8. Some people wander aimlessly through life, but I am not one of them.

____9. I sometimes feel as if I've done all there is to do in life.

SELF-ACCEPTANCE

____1. When I look at the story of my life, I am pleased with how things have turned out.

____2. In general, I feel confident and positive about myself.

____3. I feel like many of the people I know have gotten more out of life than I have.

____4. I like most aspects of my personality.

____5. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.

____6. In many ways, I feel disappointed about my achievements in life.

____7. My attitude about myself is probably not as positive as most people feel about themselves.

____8. The past had its ups and downs, but in general, I wouldn't want to change it.

____9. When I compare myself to friends and acquaintances, it makes me feel good about who I am.

APPENDIX H.

Mindfulness Attention Awareness Scale (MAAS)

Day-to-Day Experiences

Participant I.D.: _____ **Date:** _____

Instructions: Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what ***really reflects*** your experience rather than what you think your experience should be. Please treat each item separately from every other item.

1 = almost always
2 = very frequently
3 = somewhat frequently
4 = somewhat infrequently
5 = very infrequently
6 = almost never

1.	I could be experiencing some emotion and not be conscious of it until some time later.	1	2	3	4	5	6
2.	I break or spill things because of carelessness, not paying attention, or thinking of something else.	1	2	3	4	5	6
3.	I find it difficult to stay focused on what's happening in the present.	1	2	3	4	5	6
4.	I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.	1	2	3	4	5	6
5.	I tend not to notice feelings of physical tension or discomfort until they really grab my attention.	1	2	3	4	5	6
6.	I forget a person's name almost as soon as I've been told it for the first time.	1	2	3	4	5	6
7.	It seems I am "running on automatic", without much awareness of what I'm doing.	1	2	3	4	5	6
8.	I rush through activities without being really attentive to them.	1	2	3	4	5	6
9.	I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.	1	2	3	4	5	6
10.	I do jobs or tasks automatically, without being aware of what I'm doing.	1	2	3	4	5	6
11.	I find myself listening to someone with one ear, doing something else at the same time.	1	2	3	4	5	6
12.	I drive places on 'automatic pilot' and then wonder why I went.	1	2	3	4	5	6
13.	I find myself preoccupied with the future or the past.	1	2	3	4	5	6
14.	I find myself doing things without paying attention.	1	2	3	4	5	6
15.	I snack without being aware that I'm eating.	1	2	3	4	5	6

APPENDIX I.

(Self-Compassion Scale)

HOW I TYPICALLY ACT TOWARDS MYSELF IN DIFFICULT TIMES

Please read each statement carefully before answering. To the left of each item, indicate how often you behave in the stated manner, using the following scale:

Almost never				**Almost always**
1	**2**	**3**	**4**	**5**

_____ 1. I'm disapproving and judgmental about my own flaws and inadequacies.

_____ 2. When I'm feeling down I tend to obsess and fixate on everything that's wrong.

_____ 3. When things are going badly for me, I see the difficulties as part of life that everyone goes through.

_____ 4. When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world.

_____ 5. I try to be loving towards myself when I'm feeling emotional pain.

_____ 6. When I fail at something important to me I become consumed by feelings of inadequacy.

_____ 7. When I'm down and out, I remind myself that there are lots of other people in the world feeling like I am.

_____ 8. When times are really difficult, I tend to be tough on myself.

_____ 9. When something upsets me I try to keep my emotions in balance.

_____ 10. When I feel inadequate in some way, I try to remind myself that feelings of inadequacy are shared by most people.

_____ 11. I'm intolerant and impatient towards those aspects of my personality I don't like.

_____ 12. When I'm going through a very hard time, I give myself the caring and tenderness I need.

_____ 13. When I'm feeling down, I tend to feel like most other people are probably happier than I am.

_____ 14. When something painful happens I try to take a balanced view of the situation.

_____ 15. I try to see my failings as part of the human condition.

_____ 16. When I see aspects of myself that I don't like, I get down on myself.

_____ 17. When I fail at something important to me I try to keep things in perspective.

_____ 18. When I'm really struggling, I tend to feel like other people must be having an easier time of it.

_____ 19. I'm kind to myself when I'm experiencing suffering.

_____ 20. When something upsets me I get carried away with my feelings.

_____ 21. I can be a bit cold-hearted towards myself when I'm experiencing suffering.

_____ 22. When I'm feeling down I try to approach my feelings with curiosity and openness.

_____ 23. I'm tolerant of my own flaws and inadequacies.

_____ 24. When something painful happens I tend to blow the incident out of proportion.

_____ 25. When I fail at something that's important to me, I tend to feel alone in my failure.

_____ 26. I try to be understanding and patient towards those aspects of my personality I don't like.

APPENDIX J.

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Title of Research: Mindfulness-Based Stress Reduction for Health Professionals 2008-Quantitative
Funded by: Social Sciences and Humanities Research Council Canada, Doctoral Award

Researchers: Julie Anne Irving, Doctoral Candidate, McGill University, (514) 398-2892 julie.irving@mail.mcgill.ca
Supervised by Dr. Jeeseon Park, Assistant Professor, McGill University, (514) 398-3452 jeeseon.park@mcgill.ca

Purpose of the research: Canadian health professionals currently report high levels of stress and burnout. Researchers at McGill University seek to explore the potential benefits of participation in a Mindfulness-Based Stress Reduction (MBSR) program for health professionals. The MBSR program is designed to teach health professionals how to better cope with daily stresses as well as a number of the specific challenges inherent in clinical practice.

Procedures: At the start and the end of the MBSR program, you will be asked to complete several questionnaires that ask for demographic information as well as questions about your stress, moods, medical symptoms, wellness, self-compassion, and mindfulness. These questionnaires will take about 30 minutes to complete. You will be asked to fill out the following questionnaires: *Maslach Burnout Inventory- Human Services Survey (MBI*); *Center for Epidemiologic Studies Depression Scale (CES-D)*; *Ryff Scales of Psychological Well-Being (SPWB)*; *Perceived Stress Scale (PSS)*; *Mindful Attention Awareness Scale (MAAS); Self-Compassion Scale (SCS).*

Risks: You may experience some emotional discomfort as questionnaires touch upon subjects such as depression, anxiety, and work related stress and burnout. You are free to refrain from answering any questions.

Benefits: You may or may not benefit from participating in this research. Potential benefits may include increased awareness and understanding of your own moods, stress, self-compassion, and self-care practices. We hope that the information obtained in this study will enable us to better understand how MBSR can benefit health professionals.

Confidentiality: All information you give during this study will be kept confidential. It will not be labeled with your name but with a code number. Your name will not be disclosed outside of the researchers conducting the study Julie Anne Irving, Dr. Jeeseon Park and instructor Dr. Patricia Dobkin. All information obtained through the study (consent forms, questionnaires, and demographic forms) will be stored in a locked cabinet at McGill University Department of Educational and Counselling Psychology for 5 years and then will be destroyed. Consent forms will be stored separately from the coded questionnaires. The McGill University Research Ethics Board- II may access the data for quality assurance and monitoring purposes.

The results of this study will be disseminated at academic conferences, as well as in a doctoral dissertation and academic journals. For these purposes, all data will be aggregated ensuring the anonymity of participants. Upon completion, results of the investigation will be made available to all participants upon request.

Voluntary Participation: Your participation in this study is voluntary. Refusal to participate in this research will have no bearing on your eligibility to take part in the MBSR program. You are free to withdraw at any time. You have the right to ask questions at any time and may also refuse to answer any questions on the questionnaires.

Costs: You will not be reimbursed for your participation in this study.

Contact Information: You may contact the individuals identified below if you have any questions regarding the study or your participation in it.

Julie Anne Irving, Doctoral Candidate, McGill University Counselling Psychology Program 514-398-2892 or julieanneirving@mail.mcgill.ca

Dr. Jeeseon Park, Assistant Professor, Faculty of Education, McGill University 514-398-3452 or jeeseon.park@mcgill.ca

Dr. Patricia Dobkin, Associate Professor, MBSR Instructor, McGill Programs in Whole Person Care 514-398-2298 patricia.dobkin@mcgill.ca

The study has been explained to me and my questions have been answered to my satisfaction. I agree to participate in this study.

Name (please print)_____

Signature_____
Date_____

APPENDIX K.

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

FOCUS GROUP STUDY

Title of Research: Mindfulness-Based Stress Reduction for Health Professionals 2008-Qualitative
Funded by: Social Sciences and Humanities Research Council Canada, Doctoral Award

Researchers: Julie Anne Irving, Doctoral Candidate, McGill University, (514) 398-2892 julie.irving@mail.mcgill.ca
Supervised by Dr. Jeeseon Park, Assistant Professor, McGill University, (514) 398-3452 jeeseon.park@mcgill.ca

Purpose: You are invited to participate in a focus group discussion surrounding your experiences as a participant in the Mindfulness-Based Stress Reduction program for health professionals. The goal of the project is to explore the potential benefits derived from participating in the program and the processes through which such benefits are incurred. Themes discussed will include the elements of the program which were more or less helpful, as well as how participation may have impacted your ability to cope with everyday and work related stresses.

Procedures: Should you decide to participate, we will arrange a time and place to meet with a small group of about 4 to 8 other individuals (who have also participated in the MBSR program). In the group everyone will be asked and given a chance to describe their experiences of the program. The group meeting will last approximately 2 hours including short breaks. In the group meeting a facilitator will audiotape and take notes of the proceedings. Your participation in this study is completely voluntary. You are free to refrain from answering any questions and may leave the session at any time without penalty.

Risks: You may experience some emotional discomfort as discussion topics will include work related stress and burnout. You are free to refrain from answering any questions.

Benefits: You may or may not benefit from participating in this research. Potential benefits may include increased awareness and understanding of your own moods, stress, self-compassion, and self-care practices. We hope that the information obtained in this study will enable us to better understand how MBSR can benefit health professionals.

Confidentiality: Audiotapes will be transcribed at a later date, and the opinions of participants will be summarized and aggregated into themes in the analysis. Participant names will not be included in the transcripts; instead each participant will be assigned a numerical code. Consent forms will be stored separately from the transcribed data, both in locked file cabinets at McGill University. Only the researcher will have access to consent forms and data. All information obtained through the study (consent forms, tapes, and transcripts) will be stored at the McGill University Department of Educational and Counselling Psychology for 5 years and then will be

destroyed. The McGill University Research Ethics Board- II may access the data for quality assurance and monitoring purposes.

To ensure anonymity and confidentiality, only aggregated data will be reported, no identifying information will be published. After the focus group has been transcribed, the tapes and list of names and codes will be destroyed. We do not anticipate any risks or discomfort to participants from participating in the study. We will emphasize to all participants that comments made during the focus group should be kept confidential. Nonetheless, it is possible that some participants may repeat comments outside of the group in the future. As such, we encourage you to answer questions openly and honestly but to remain aware of the potential limits to confidentiality.

The results of this study will be disseminated at academic conferences, as well as in a doctoral dissertation and academic journals. For these purposes, all data will be aggregated ensuring the anonymity of participants. Upon completion, results of the investigation will be made available to all participants upon request.

Voluntary Participation: Your participation in this study is voluntary. Refusal to participate in this research will have no bearing on your eligibility to take part in the MBSR program. You are free to withdraw at any time. You have the right to ask questions at any time and may also refuse to answer any questions on the questionnaires.

Costs: You will not be reimbursed for your participation in this study.

Contact Information: You may contact the individuals identified below if you have any questions regarding the study or your participation in it.

Julie Anne Irving, Doctoral Candidate, McGill University Counselling Psychology Program 514-398-2892 or julieanneirving@mail.mcgill.ca

Dr. Jeeseon Park, Assistant Professor, Faculty of Education, McGill University 514-398-3452 or jeeseon.park@mcgill.ca

Dr. Patricia Dobkin, Associate Professor, MBSR Instructor, McGill Programs in Whole Person Care 514-398-2298 or patricia.dobkin@mcgill.ca

Conditions of Participation

- I understand the purpose of this study and how much time my participation will entail.
- I understand the risks and benefits associated with participating.
- I understand that my participation in this study is completely voluntary and that I am free to refrain from answering any questions and can withdraw at any time.
- I understand the means by which confidentiality will be maintained during this project, and any limits to confidentiality due to the group format.
- I understand the anticipated uses of the data with respect to the communication and publication of the results.

Name (please
print)_____

Signature_____
Date_____