THE EXPERIENCE OF UNIVERSITY STUDENTS IN CULTIVATING

MINDFULNESS:

WHAT HELPS AND HINDERS

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ABSTRACT

This study explored the experience of university students in cultivating mindfulness. University students face many unique academic, financial, social, and personal stressors in the pursuit of their educational goals. The literature suggests that the nature of mental health is changing for today's students, with increasing prevalence, chronicity, complexity, and severity of psychological issues. University counselling centres serve a growing number of students with severe psychological problems, many presenting in crisis and requiring immediate response. This consistent rise in clients seen by centres, compounded with stretched resources and budgetary concerns, is causing many centres to incorporate different treatment modalities to address these challenges. Outcome research suggests that mindfulness is a beneficial intervention with university students, especially in reducing symptoms of stress, anxiety, and depression. However, there is limited qualitative research on the experience of university students in cultivating mindfulness, and no known published research on what facilitates and challenges students who participate in a mindfulness-based intervention as part of treatment at a university counselling centre.

Fourteen participants were interviewed about what helps and hinders their cultivation of mindfulness. All participants had completed a Mindfulness-based Stress Reduction group as part of treatment through their university counselling centre. The Enhanced Critical Incident Technique was used to analyze the interviews, which produced 390 total incidents, with 195 helping incidents, 130 hindering incidents, and 65 wish list items. These incidents and wish list items were grouped into 19 categories. The 11 helping categories are Mindfulness Practice, Mindfulness Group, External Environment, Personal Strategies, Benefits of Mindfulness, Routine, Mindfulness Concept, Social Support, External Reminders, Inspirational Others, and Stress. The five hindering categories are Disruptions, Time, Tired, Emotion and Anxiety, and

Interpersonal Relationships. The three wish list categories are Space, Resources, and Cultural Shift. The findings suggest that mindfulness practice and the influence of the mindfulness group are important factors for students' cultivation of mindfulness, as well as external context, personal factors, and the influence of others outside of the mindfulness group.

PREFACE

This dissertation research is an original, unpublished, independent product of the author, L. Mills; and was approved by the University of British Columbia Behavioural Research Ethics Board on November 25, 2014 (UBC Ethics Certificate number H14-02039).

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DEDICATION

In your light I learn how to love. In your beauty, how to make poems.

You dance inside my chest, where no one sees you, but sometimes I do,

and that light becomes this art.

~Rumi

Thank you for being my light.

CHAPTER 1: INTRODUCTION

"If we hope to go anywhere or develop ourselves in any way, we can only step from

where we are standing. If we don't really know where we are standing... We may only go in

circles..." *- Jon Kabat-Zinn*

Thirty-four years have passed since Jon Kabat-Zinn's (1982) seminal study on

mindfulness with chronic pain patients, which helped to transport the concept and practice of

mindfulness from its traditional Buddhist roots into the landscape of mainstream medicine and

psychology (Kabat-Zinn, 1982, 2003). Since that article, mindfulness has been adopted into

western psychology and has been clinically applied outside of any particular philosophical or

religious tradition (Kabat-Zinn, 2011). Mindfulness is currently used in many therapeutic

programs (e.g. Mindfulness-based Stress Reduction, Mindfulness-based Cognitive Therapy) to

treat a diverse set of medical and psychological issues (Chiesa & Malinowski, 2011; Davis &

Hayes, 2011). Overall, empirical research has shown increasing evidence for the positive

benefits of mindfulness practice on psychological health and wellbeing, and the clinical efficacy

of mindfulness-based interventions (Kabat-Zinn, 2003; Davis & Hayes, 2011).

My experience with mindfulness began with my own meditation practice; however, my

understanding of the concept, theory, and practice deepened as I began to learn how to use it

therapeutically with my clients. As I incorporated mindfulness into my work, I started to witness

shifts in my clients that they attributed to their mindfulness practice. They would describe

feeling calmer, with more perspective and fewer symptoms. They felt less stressed and

distracted, and were able to concentrate on their academic work. As a student myself, I could

internally relate to these changes, as I had first-hand knowledge of the benefits of mindfulness in

my own life. Both my work with clients and my own experience with mindfulness ignited my

interest in mindfulness research. I had a strong comprehension of the positive outcomes of

mindfulness, but I wanted to learn more about the process of mindfulness practice and how

students' experience this process, especially with regard to what factors help them and challenge

them. Through this study, I have a better understanding of students' experiences of mindfulness,

and believe that the findings positively contribute to the growing body of knowledge on

mindfulness.

1.1 Definition of Terms

Mindfulness. Mindfulness arose in Buddhism approximately 2,600 years ago as a

spiritual way of understanding the nature of the mind and reducing psychological suffering

(Grossman & Van Dam, 2011). Since the 1970s, mindfulness has been appropriated by western

psychology and shown to be an effective intervention for the treatment of various mental health

concerns (Shapiro & Walsh, 2003).

The literature has different ways of considering mindfulness with little consensus on a

singular definition. Jon Kabat-Zinn, one of the pioneers of mindfulness as a therapeutic and

medical intervention, defines mindfulness as "the awareness that emerges through paying

attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience

moment to moment" (Kabat-Zinn, 2003, p. 145). Kabat-Zinn's definition drove western

mindfulness research until Bishop and colleagues (2004) proposed an operational definition of

mindfulness to facilitate future research and encourage the further development of theory. The

authors offer a definition of mindfulness composed of two components: 1. "self-regulation of

attention so that it is maintained on immediate experience, thereby allowing for increased

recognition of mental events in the present moment" and 2. "adopting a particular orientation toward one's experience that is characterized by curiosity, openness, and acceptance" (Bishop, Lau, Shapiro, Carlson, Anderson, Carmody,…Devins, 2004, p. 232). Since this influential article, researchers have continued to discuss the concept of mindfulness, debating its primary components and mechanisms of change (Shapiro, Carlson, Astin, & Freedman, 2006). Further complicating the debate is that mindfulness can be referred to in the literature as inherent mindful awareness (i.e. big "M" mindfulness), or as an intentional practice that encourages mindful awareness (small "m" mindfulness); in other words, mindfulness can be considered as a trait or a state (Brown, Ryan, & Creswell, 2007; Germer, Siegel, & Fulton, 2005; Shapiro & Carlson, 2009).

There is still no single, unified definition of mindfulness in the current literature; however, consistent themes found in most definitions are intention, awareness, and acceptance, as well as paying attention to the present moment and having an open, non-judgmental attitude (Bishop et al., 2004). Therefore, for the purposes of this study, mindfulness is defined as an intentional awareness of one's moment-to-moment experience with an attitude of non-judgment and acceptance.

Mindfulness-based interventions. Mindfulness in psychology is most often cultivated through mindfulness-based interventions (Kabat-Zinn, 2011). Mindfulness-based interventions can be defined as treatment programs that include discussions of mindfulness conceptualizations and practices to cultivate mindfulness (Baer, 2003).

Cultivation of mindfulness. Mindfulness literature considers the cultivation of mindfulness as involving formal meditation practice (e.g., sitting meditation, body scan, walking meditation) and informal practice (e.g., bringing awareness to the present moment experience of

daily activities; Germer, 2005; Kabat-Zinn, 1990, 2003; Mikulas, 2015). Both formal and informal practice encourage the focus of awareness on the internal experiences occurring in each moment, including body sensations, thoughts, and emotions, as well as attention to aspects of the environment (e.g., sounds; Kabat- Zinn, 1990). Participants are invited to observe the present moment with an attitude of non-judgmental acceptance. Stimuli that enter their awareness are observed but not evaluated or elaborated (Brown & Ryan, 2003). In this way, the cultivation of mindfulness is an open, accepting, and nonjudgmental observation of the ongoing stream of internal and external stimuli as they arise (Kabat-Zinn, 1990).

It is important to note that the literature interchanges terminology when referring to cultivating mindfulness, using such terms as engaging in mindfulness, practicing mindfulness, and using mindfulness. This study also interchanges terminology to represent cultivating mindfulness, and considers the cultivation of mindfulness as using formal and informal mindfulness practices to bring intentional awareness to one's moment-to-moment experience with an attitude of non-judgment and acceptance.

Mental Health. For the purposes of this study, mental health is defined using the definition put forth by the government of Canada: "The capacities of each and all of us to feel, think, and act in ways that enhance our ability to enjoy life and deal with the challenges we face. It is a positive sense of emotional and spiritual well-being that respects the importance of culture, equity, social justice, interconnections, and personal dignity" (Government of Canada, 2006).

1.2 Statement of the Problem

The importance of mental health on both a global and individual level cannot be overestimated. The World Health Organization (2012) has reported that untreated mental health disorders account for 13% of the total global burden of disease. Depression is the "third leading cause of disease burden, accounting for 4.3% of the global burden of disease," and the WHO currently predicts that by 2030 depression will be the "leading cause of disease burden globally" (WHO, 2012, p.1). The social and economic impact of mental health is varied and widespread, including homelessness, incarceration, discrimination and civil mistreatment, unemployment and poverty (severe mental illness is associated with a 90% unemployment rate), and lack of education (WHO, 2012). Individuals with mental health disorders have higher mortality rates. For example, people with major depression have an overall increased risk of mortality that is 1.4 times greater than that of the general population. Furthermore, mental health problems in children and youth are of concern because of their high prevalence and the accompanying disabilities and issues of safety (WHO, 2012). In Canada, just over 87,000 young people between the ages of 12 and 19 were diagnosed with a mood disorder such as depression, bipolar disorder, mania or dysthymia in 2009. In 2012, that number had risen to nearly 112,000 (Statistics Canada, 2012). Just under 316,000 Canadians aged 15 to 24 had a major depressive episode within the previous 12 months, and for bipolar disorder, that number stood at 109,967 (Statistics Canada, 2012). Overall, in 2012, 2.8 million Canadians aged 15 and older (10%) reported symptoms consistent with at least one of the following: major depressive episode, bipolar disorder, generalized anxiety disorder, and abuse of or dependence on alcohol or drugs. At some point over the course of their lifetime, 1 in 3 Canadians (9.1 million people) will have met the criteria for at least one mental health or substance use disorder (Statistics Canada, 2012).

Research has shown the prevalence of mental health issues as higher within the university population than age equivalent community populations (Erdur-Baker, Aberson, Barrow, & Draper 2006; Kitzrow, 2003; Storrie, Ahern, & Tuckett, 2010). In a comprehensive study by Blanco (2008), the overall rate of mental health and substance use disorders in college students age 18 to 24 was higher than their non-college attending peers. Indeed, university students face many unique academic, financial, social, and personal stressors in the pursuit of their educational goals (Iarovici, 2014). These stressors can challenge existing coping skills and resilience, and negatively impact mental health.

Traditionally, university student mental health has been considered within the context of normal transition and developmental concerns (Houston, 1971). However, it appears the nature of mental health is changing for today's university students (Kitzrow, 2003; Prince, 2015). Three recent large-scale studies (American College Health Association, 2013, 2015; Center for Collegiate Mental Health, 2015; Healthy Minds Study, 2015) have shown that student mental health challenges are wide-ranging and negatively impacting academic and social functioning. The American College Health Association (ACHA) study conducted in 2013 found that 56% of Canadian students felt overwhelming anxiety and 37.5% felt depressed to the point where it was difficult to function. The Healthy Minds Study (HMS, 2015) found that 20% of U.S. students surveyed screened positive for any symptoms of depression, 12% screened positive for major depression, 20% screened positive for anxiety, and 8% screened positive for severe anxiety. The findings showed that in the past four weeks, 28% of students reported that "emotional and mental difficulties" had negatively impacted their academic performance on at least one day, with 13% reporting six or more days (HMS, 2015, p. 7). Nineteen percent of students surveyed reported use of psychiatric medication in the last year, and 32% reported that they have been diagnosed

with a "mental disorder" by a mental health practitioner or doctor (HMS, 2015, p. 7). The

Center for Collegiate Mental Health (CCMH, 2015) found that 49% of Canadian and U.S.

students surveyed had attended counselling for mental health concerns, 33% had taken

medication for mental health concerns, and 10% had been hospitalized for mental health

concerns. The study also reported that 38% of students had experienced a traumatic event

(causing intense fear, helplessness, or horror), 27% had felt the need to reduce their alcohol or

drug use, and 33% had seriously considered attempting suicide (with 9.5% attempting). Across

the three studies, an average of 3% of students attempted suicide, 17% seriously considered

suicide, and 17% had engaged in intentional self-injury (from a total 139,741 students surveyed

from 203 institutions). Of the students surveyed in all three studies, an average of 20% reported

seeking counseling support (ACHA, 2015; HMS, 2015; CCMH, 2015).

Longitudinal research also shows an increase in the prevalence, severity and chronicity of

the psychological issues faced by students (Erdur-Baker et al., 2006). Hunt and Eisenberg

(2010) conducted a review of the literature and found that mental health concerns are highly

prevalent on college campuses and that the prevalence of more severe mental health issues seems

to be increasing. They suggest that the overall increase in prevalence could be attributed to an

increase in help-seeking behaviour as opposed to an increase in incidence. However, they note

that although more students are seeking services than in the past, there are still many students

who are not pursuing clinical support for their challenges. This finding of low help-seeking

behaviour among the university population is repeated in the research (e.g. Blanco, 2008; Downs

& Eisenberg, 2012; Eisenberg, Gollust, Golberstein, & Hefner, 2007; Markoulakis & Kirsh,

2013). This suggests that many more students may be suffering with mental health issues than

what is currently being reported in the research.

Studies have shown that students are reporting the lowest levels of emotional health in 25 years (Iarovici, 2014; Prince 2015). With mental health being strongly linked to university students' academic success (ACHA, 2013; Locke, Hayes, Crane, Schendel, Castonguay, & Boswell, 2009; Schneiderman, Ironson, & Siegel, 2005), it is apparent that this is a pressing issue and that universities must ensure that students receive support with mental health challenges. This is especially true given literature that suggests university students represent a population where effective treatment, prevention initiatives, and early diagnosis may improve mental health and enhance the quality of their lives over the long-term (Eisenberg, Hunt, & Speer, 2012; Nordberg, Hayes, McAleavey, Castonguay, & Locke, 2013).

University counselling centres are tasked to fully support the academic goals and personal wellbeing of students by providing comprehensive mental health services. Campus counselling centres are successful in helping students, especially in terms of academic performance and remaining in school (Center for the Study of Collegiate Mental Health, 2009; Turner and Berry, 2000); however, counselling centre directors are reporting several trends that have been challenging (Gallagher, 2014). In the National Survey for Counseling Center Directors (NSCCD; Gallagher, 2014), over 94% of directors agree that there has been a continued increase in students with severe psychological problems, with 86% of directors reporting a steady increase in the number of students who are already on psychiatric medication when they arrive on campus. Many students are presenting in crisis and requiring immediate response by counselors. Directors reported that 52% of their centre's clients have "severe psychological problems" (p. 5, Gallagher, 2014). Further, although a majority of students may not be seeking mental health treatment, there has still been a consistent rise in number of clients seen by counselling centres over the last 10 years (Kitzrow, 2003; CCMH, 2014). The increases in mental health severity and demand for services are taking place in the context of stretched

counselling centre resources (Gallagher, 2009, 2012). Most centres provide free services, and centre directors are reporting that budgetary issues have become increasingly stressful (Gallagher, 2014). Furthermore, a majority of counselling centres report concerns about adequate resources (Gallagher, 2012, 2014), with the most pressing issue being the need for more staff (Smith, Dean, Floyd, Silva, Yamashita, & Durtschi, 2007; Gallagher, 2014).

The combination of the above challenges has forced many counselling centres to devise creative ways to manage their growing caseloads (Gallagher, 2012). For example, reducing the number of sessions for non-crisis clients to offset the increasing overall number of clients (Gallagher, 2014). Group counselling has also become more important as clients who are not in critical need of individual help are moved into groups to manage waitlist and resource challenges. For example, in larger universities, 43% of non-crisis students were moved into groups (Gallagher, 2012, 2014). Moreover, the NSCCD survey showed that 78% of directors indicated stress reduction programs as essential for addressing suicidal behaviour (Gallagher, 2014). Recent research seems to confirm this indication. For example, Regeher, Glancy, and Pitts (2013) conducted a meta-analysis on interventions to reduce stress and improve wellbeing in university students. Findings showed that mindfulness-based approaches were effective in reducing the effects of stress on university students, including decreased levels of anxiety, depression, and physical stress responses. The authors stated:

> Given the high rates of stress-related mental health problems reported by university students, universities are advised to examine means to provide opportunities for a larger number of students to access these (mindfulness) interventions….the favorable outcomes benefit not only individual students, but have the potential to provide wide-spread benefits to universities in terms of both enhancing student experience and reducing health service costs. (p. 10)

This study suggests that universities should make mindfulness-based interventions widely available to students in an effort to address the rising mental health concerns on campuses while

enabling counselling centres to reach larger groups of students without further stretching limited budgets and resources.

Over three decades of research has provided growing evidence that mindfulness can be an effective intervention for a range of psychological and medical conditions with various populations (Baer, 2003; Khoury, Lecomte, Fortin, Masse, Therien, Bouchard…Hofmann, 2013; Shapiro, Brown, & Astin, 2011). A number of reviews detail the positive mental health outcomes, including enhanced overall well-being, reduced psychological symptomology, increased emotion regulation, decreased emotional reactivity, reduced stress, and improved interpersonal relationships (Baer, 2003; Davis & Hayes, 2011; Gotink, Chu, Busschbach, Benson, Fricchione, & Hunink, 2015; Grossman, Niemann, Schmidt, & Walach, 2004; Walsh & Shapiro, 2006).

Several studies on mindfulness have been conducted with university students (e.g., Bamber & Schneider, 2016; Bergen-Cico, Possemato, & Cheon, 2013; Shapiro, Brown, Thoresen, & Plante, 2011; Shapiro, Schwartz, & Bonner, 1998). The majority of this research is quantitative in nature, very few use clinical university samples (i.e., students who are receiving treatment for mental health concerns), and there is no known published research on mindfulness interventions used in university counselling centres with a clinical student population.

Furthermore, there are few qualitative studies exploring students' use of mindfulness, and these studies have been focused on the outcomes of mindfulness (Smith, Graham & Senthinathan, 2007) rather than understanding the process of mindfulness or how the student experiences and cultivates mindfulness. Recently, there has been a call in the literature for further qualitative inquiry into the practice of mindfulness (Sauer, Walach, Schmidt, Hinterberger, Lynch, Büssing & Kohls; 2012; Shapiro, 2009). Authors argue that since the

practice of mindfulness is based on inner experience, then there is a need to explore it from the perspective of the practitioner: "Given that mindfulness is an experiential phenomenon and that the target of mindfulness-training is a person's experience of their thoughts, feelings, and bodily sensations, it is important to ask about people's experience" (Allen, Bromley, Kuyken, & Sonnenberg, 2009, p. 414). Grossman (2008) also suggests that mindfulness should be assessed through qualitative inquiry, in order to inform assessment measures and to understand the complexity and richness of the construct and practice of mindfulness. Qualitative research might also help further elucidate the underlying mechanisms of change that lead to the positive outcomes being observed in the current literature. This is especially important given that the process of mindfulness could be experienced differently by each individual (Allen et al., 2009).

There is currently no known published qualitative research on what helps and hinders the cultivation of mindfulness with a clinical student population, specifically students who participate in a mindfulness-based intervention as part of treatment at a university counselling centre. This study aimed to not only move toward filling this gap in the literature, but also to uncover how students experience and cultivate mindfulness from their own perspective.

1.3 Purpose of the Study

The purpose of this study is to explore the experience of university students in cultivating mindfulness, specifically what factors help and hinder their cultivation of mindfulness.

1.4 Research Question

The central research question for this study is what facilitates university students' cultivation of mindfulness and what hinders their cultivation of mindfulness?

CHAPTER 2: LITERATURE REVIEW

In order to explore university students' cultivation of mindfulness, it is first important to understand the current context of university students, as well as the conceptual and empirical foundations of mindfulness. In this chapter, I will first review the current literature with regard to university students, university student mental health, and university counselling centres. I will then give an overview on mindfulness, and review mindfulness-based interventions, effectiveness research, and methodology. I will finish with a discussion of mindfulness and university students.

2.1 University Students

In 2014, nearly 2 million students were enrolled in Canadian postsecondary institutions, a number which has been steadily increasing over the last 10 years (Statistics Canada, 2014). In a survey of 18,144 randomly selected undergraduate students from 36 Canadian universities, the Canadian University Student Survey (CUSC, 2015) found that the typical undergraduate student is a 22-year-old, single, English-speaking female. Currently, female students outnumber males, with women accounting for 56% of the national enrollment total compared with 44% for men (Statistics Canada, 2014). 90% of students are Canadian citizens, a quarter self-identify as a member of a visible minority, and 5% self-identify as Aboriginal (CUSC, 2015). Students are generally split between living with parents, guardians, or relatives, and living in rented accommodations (either on or off-campus). Just over 40% of students report that at least one parent has completed some type of post-secondary education, while about 16% would be considered a first-generation student (CUSC, 2015).

More than half (56%) of students attending a Canadian postsecondary institution are enrolled in programs at the bachelor level or above (Statistics Canada, 2014). A majority of students study full-time and most commonly major in Biological or Physical sciences (20%), Arts and Humanities (19%), Business (16%), and Social Science (16%), with an average grade just below a B+ (CUSC, 2015). About 60% of students plan on completing post-secondary education beyond a bachelor's degree. On average, students began their post-secondary education four years ago, but started at their current institution about three years ago, suggesting that some students have studied at previous institutions. Students spend an average of 32 hours per week on academics, evenly split between time spent in class (about 15 hours) and outside of class (about 17 hours) (CUSC, 2014). Over half of postsecondary graduates (52%) had successfully completed a program at the bachelor level or above (Statistics Canada, 2014), and 25% of students reported that they have interrupted their post-secondary education at some point (CUSC, 2015).

In addition to academics, almost 60% of students are currently employed, working an average of 18 hours per week (CUSC, 2015). About a third of working students reported that their employment has had a negative impact on their academics, especially full-time students working more than 20 hours per week. With both academics and employment, the average student spends about 41 hours per week either working or studying. Additionally, many students are involved in community service or volunteer activities, with over half reporting that they spend an average of 4 hours in a typical week volunteering either on or off-campus. Finally, in addition to academic, work, and volunteer activities, about 10% of students have children (CUSC, 2015).

Students indicate that they experience some level of financial stress, with about 60% of students report at least some academic debt, with 20% owing more than $20,000 (CUSC, 2015). As students progress in their studies, this debt level increases. Seventy five percent of students report being concerned that they will not have enough funds to complete their degree, including 26% who are very concerned (CUSC, 2015).

It is clear that university students have responsibilities and stresses that stretch beyond their studies. Academic pursuits exist within the context of their lives, and various forces can challenge academic success. Mental health is a challenge that is of great concern to both the university students who struggle with their own mental health, and to the university counselling centres that are charged with supporting them.

2.2 University Student Mental Health

University students face many challenges as they transition and adapt to university life. One of the biggest challenges is managing stress, which can be defined in the literature as perceiving a situation or event to be beyond a person's coping resources (Bamber & Schneider, 2014; Lazarus & Folkman, 1984). Research shows that university students are consistently exposed to high levels of stress from academic demands, interpersonal relationships, financial pressures, and personal responsibilities (Kraft, 2011). Britz and Pappas (2010) surveyed 124 undergraduate freshmen enrolled in a general education course on the sources of stress and the magnitude of stress. Over half of the students surveyed reported high levels of perceived stress (52%) and high frequency of stress (50.8%). Similarly, in a seminal study by Toews and colleagues (1993), 662 medical graduate students were given the Social Readjustment Scale, the Symptom Checklist 90, and a stressor questionnaire to assess levels of stress. Results showed

that all three groups were experiencing higher levels of perceived stress than the norm on all three measures for a non-psychiatric population (Toews, Lockyer, Dobson, & Brownell, 1993). Exposure to stress negatively impacts the academic success of university students, with a recent survey of Canadian undergraduate and graduate students showing stress to be the most commonly reported barrier to academic performance, and almost half (46%) of all students feeling "overwhelming stress" (p. 6, American College Health Association, 2013). In the ACHA (2015) survey, 45% of students surveyed reported that academics were 'very difficult' to handle, and 53.5% reported their stress as above average or extreme. Thirty percent identified stress as the primary reason they performed poorly in a course, exam, or project (ACHA, 2015).

Stress also has adverse effects on the psychological health of university students (Schneiderman, Ironson, & Siegel, 2005). For example, Dusselier and colleagues (2005) surveyed 462 undergraduate residence hall students on contributors to stress, including personal, health, academic, and environmental stressors. Results showed that 67% of students who reported depression and anxiety reported that they experienced stress more frequently (Dusselier, Dunn, Wang, Shelley, & Whalen, 2005).

Not only is stress linked to academic performance and mental health, there is a strong connection between academic success and mental health. The Center for Collegiate Mental Health (CCMH; 2009) reviewed clinical data gathered through the Counseling Center Assessment of Psychological Symptoms (CCAPS), which was completed by over 28,000 students receiving mental health services at 66 institutions. The authors found that "students who struggled with symptoms related to depression and anxiety also tended to report struggling with academics" (CCMH, 2009, p. 14). Further, higher levels of academic distress were related to lower GPA scores (CCMH, 2009). In a more recent study, the American College Health

Association (ACHA; 2013) surveyed 34,039 students from 32 Canadian universities about their physical and mental health. Results showed that 17% of Canadian students surveyed indicated that their academics were negatively impacted in the last 12 months by depression, and 28% by anxiety. Over half (56%) of all students labeled academics as "traumatic or very difficult to handle" (p. 12, ACHA, 2013).

The mental health of university students appears to be a significant component of their academic performance and success (Kessler, Foster, Sauder, & Stang, 1995; Iarovici, 2014). Traditionally, student mental health has been defined within the context of transition, adjustment and developmental challenges (Houston, 1971; Prince, 2015). However, authors contend that the research over the last 15 years is evidence that the mental health of university students is increasingly more complex, prevalent, and severe (Hunt & Eisenberg, 2010; Kitzrow, 2003; Kraft, 2011; Markoulakis & Kirsh, 2013; Prince, 2015).

There have been three large-scale, comprehensive studies conducted in the last 3 years, which detail the current state of mental health on campuses in North America. As described above, the ACHA surveyed 34,039 randomly selected Canadian students from 32 participating academic institutions across Canada. Students reported experiencing the following within the last 12 months: hopeless (54%), overwhelmed (89%), mentally or emotionally exhausted (87%), lonely (64%), sad (68%), so depressed it was difficult to function (37.5%), and overwhelming anxiety (56%). Just over 1% attempted suicide, and 10% seriously considered suicide. Almost 7% had engaged in intentional self-injury. In the prior 12 months, 20% of students had been diagnosed or treated by a professional for a mental health related concern.

The Healthy Minds Study (HMS, 2015) surveyed 16,074 randomly selected U.S. students from 17 participating universities. The study found that 20% screened positive for any

symptoms of depression, 12% screened positive for major depression, and 8% screened positive for severe anxiety. Eighteen percent of students reported non-suicidal self-injury and 10% reported suicidal ideation, both within the past year. Sixteen percent had engaged in binge drinking at least once in the last two weeks, with 14% binge drinking more than 3 times in the last two weeks. Almost a quarter (22%) of students had gone to therapy in the last year, and 10% report that they were currently in therapy. Psychiatric medication was used by 19% of respondents in the last year, with 13% currently taking medication.

Finally, the Center for Collegiate Mental Health (CCMH, 2015) summarized data gathered through the standardized Counseling Center Assessment of Psychological Symptoms (CCAPS) survey during the 2014-2015 academic year. Students completed the CCAPS survey before counselling sessions, and this data was submitted to CCMH by 139 university counselling centres. The data described 100,736 students seeking mental health treatment through over 770,000 appointments. Students reported the following: 49% had been to counselling, with 16% attending counselling after starting university; 33% had taken medication for mental health concerns, 10% had been hospitalized for mental health concerns, 25% had purposely injured themselves without suicidal intent, 33% had seriously considered attempting suicide, 9.5% had made a suicide attempt, 38% had experienced a traumatic event (causing intense fear, helplessness, or horror), and 27% had felt the need to reduce their alcohol or drug use. Further, a supplemental CCMH survey examined change in institutional enrollment and counselling centre utilization over the last 6 years. Data from 93 institutions showed "on average, the growth in number of students seeking services at counseling centers (+29.6%) was more than 5x the rate of institutional enrollment (+5.6%). Further, the growth in counseling center appointments (+38.4) is more than 7x the rate of institutional enrollment" (p. 2, CCMH, 2015).

Overall, the above studies emphasize the prevalence of mental health concerns in large university samples, as well as outline the multitude and severity of psychological challenges found on university campuses. Longitudinal studies also detail the trend of mental health concerns in the university population. Zivin, Eisenberg, Gollust, and Golberstein (2009) gathered longitudinal data on the mental health concerns of university students and their related help-seeking behaviour. The authors surveyed 763 undergraduate and graduate students in 2005 and again in 2007 using the Patient Health Questionnaire-9 to measure depression and anxiety, the SCOFF to measure disordered eating, and a unique survey to measure self-injury, suicidality, and help-seeking behaviour. The study found that over half of the students surveyed (52%) suffered from at least one mental health problem, with 60% of those who had elevated scores in 2005 still having similar scores in 2007. Of those students who had elevated scores at both times in the study, only 26% received treatment for their difficulties. The results suggest not only the prevalence but also the persistence of mental health challenges in a university student population. The authors conclude that more students may have serious mental health problems that persist over time, and that these students may not necessarily be pursuing clinical support for their challenges. The longitudinal results from their study suggest that the low levels of perceived need for help and use of services are persistent phenomena (Ziven et al., 2009). Although help-seeking behaviour may be increasing with mental health education and anti-stigma campaigns on college campuses (Kitzrow, 2003; Kraft, 2011), the authors warn that a significant proportion of students are still not seeking or receiving mental health treatment. This claim is consistent with several reviews of the literature on the help-seeking behaviour of university students (Eisenberg, Hunt, & Speer, 2012; Hunt & Eisenberg, 2010; Markoulakis & Kirsh, 2013). These authors contend that a majority of students with mental health challenges are not seeking services. In

addition, the Healthy Minds Study (2015) reported that only 33% of students who had indicated clinical symptoms of anxiety and/or depression were receiving therapy and/or medication.

A study of a counselling centre's archival clinical information for 13,257 university student clients suggests that mental health issues are becoming more complex, chronic, and severe (Benton, Robertson, Tseng, Newton, & Benton, 2003). The percentage of students seen each year with depression doubled over a 13 year time period (from 21% to 41%), and the percentage tripled for students who were seriously considering suicide or had attempted suicide (from 3% to 10%). The percentage of students with stress and anxiety had also increased over the same 13-year period (from 35% to 64%), stabilizing at high levels toward the end of the study (above 60% for the prior 6 years; Benton et al., 2003). Erdur-Baker et al. (2006) analyzed the data from three large-scale studies across 6 years from 50 U.S. university counselling centres. One nonclinical (n=2718) and two clinical samples (n=5,370) completed the Presenting Problems List measure in 1991, 1994, and 1997. The authors found similar results to Benton et al. (2003). Results showed moderate evidence for the increase in the severity of students' presenting problems over time, with increases between data sets appearing for academic concerns, relationships and adjustment issues, and depression and romantic relationships issues. There were also differences in chronicity between the data sets, with students reporting longer problem chronicity, especially for academic and depression and romantic relationship problems. The authors concluded that within the 6-year time span of the three data sets, it seemed students were presenting with more severe, long-term, chronic problems (Erdur-Baker, Aberson, Barrow, & Draper, 2006). Finally, the CCMH (2015) survey found that over the past five years, students are reporting increased distress with regard to depression, anxiety, and social anxiety. The survey also found the lifetime prevalence rate for non-suicidal self-injury has increased from 21% to

25% in the last five years, and the lifetime prevalence rate for serious suicidal ideation has increased from 24% to more than 33% in the last five years. These studies seem to suggest further evidence for the claim that the severity and chronicity of students' presenting problems has been increasing over time.

It is still unclear as to definitive reasons underlying the increase in the severity, prevalence, and chronicity of university students' mental health concerns. Erdur-Baker et al. (2006) give several potential explanations that are echoed by other authors (Eisenberg, Hunt, & Speer, 2013; Gallagher, Gill, & Sysko, 2000; Iarovici, 2014; Kitzrow, 2003; Markoulakis & Kirsh, 2013). The first explanation is that university centre staff members have become more proficient at assessment and diagnosis and are therefore uncovering more psychopathology. Another possibility is the decreasing stigma of mental health services, as new generations of students are perhaps more comfortable in seeking help and disclosing their issues. This could account for more students engaging in treatment when they might not have done so previously. Another explanation is that the increase in the severity and chronicity represents real change. Some reasons for this possible change are societal issues (e.g. family dysfunction and instability, decreased frustration tolerance, poor interpersonal attachments, exposure to violence, earlier onset of drug and alcohol use, more access to and consequent worry over global concerns); the average age of onset for many major psychological disorders is within the age range of undergraduate students (e.g., anxiety, schizophrenia, mood disorders) (Kitzow, 2003); and finally, the effectiveness and increased use of psychiatric medications has made it possible for more students with psychological issues to attend university when they previously would not have been able to manage both academic and mental health demands (Gallagher et al., 2000).

In summary, one of the most profound challenges to a university student's academic success is mental health, which is becoming more complex, severe, and prevalent. Furthermore, mental health issues are persisting over time, and while more students seem to be seeking treatment than in the past, a significant number still do not pursue services. The research literature suggests that greater mental health severity and complexity will require more resources and support services (Benton et al., 2003; Kitzrow, 2003; Prince, 2015). The existing increases in help-seeking behaviour among students will also build demand for further services. University counselling centres are on the front line in meeting these demands, as they are one of the main sources of support for university students struggling with mental health.

2.3 University Counselling Centres

University counselling centres were initially created to help students with normal developmental and vocational needs, and focused primarily on individual testing, advising, and counselling (Iarovici, 2014). However, they have now evolved into a comprehensive mental health service to help support students attain their academic goals. Centres provide a range of services, including individual and group therapy, psychoeducational workshops, crisis intervention, outreach programming, and consultation to staff, faculty, and administrators (Benton et al., 2003).

The National Survey of Counseling Center Directors (NSCCD) conducts large-scale surveys of counselling centre directors in the U.S. and Canada in order to track current trends in university counselling centres (Gallagher, 2014). In the most recent survey, 275 centres reported on a cumulative 3.3 million students who were eligible to receive counselling services at their institutions, with an average ratio of 1 counsellor to 2,081 eligible students (Gallagher, 2014). In

the last 12 months, 11% of eligible students sought individual or group counselling, and an additional 30% were seen by counselling centre staff through outreach services (e.g., workshops, orientations, presentations). One of the most significant trends observed by the NSCCD is the increase in student pathology, with 94% of centre directors reporting increases in "severe psychological problems" over the last 5 years (p. 5, Gallagher, 2014). This includes anxiety disorders (89%), crises requiring immediate response (69%), psychiatric medication issues (60%), clinical depression (58%), learning disabilities (47%), sexual assault on campus (43%), and problems related to earlier sexual abuse (34%) (Gallagher, 2014).

Another trend is the growing complexity of presenting problems and the increase in serious psychological issues. Directors reported that approximately 52% of centre clients have severe psychological problems, up from 16% in 2000 (Gallagher, 2014; Gallagher et al., 2000). Of these students, 8% are so seriously impaired that they cannot remain in school, or can only do so with extensive psychological and psychiatric support. In schools over 15,000, percentages are higher at 59% with severe problems and 9% unable to remain in school or requiring extensive help (Gallagher, 2014).

Client hospitalization and use of psychiatric medicine has also risen. Ninety percent of centres hospitalized students for psychological reasons, with an average of 1.5 students hospitalized per 1000 students. In the last year, 14% of centre clients have been referred for psychiatric evaluation and 26% are on psychiatric medication (an increase from 20% in 2003, 17% in 2000, and 9% in 1994) (Gallagher, 2014). According to the survey, 86% of directors believe that there has been a steady increase in the number of students arriving on campus that are already on psychiatric medication.

A final trend in counselling centres is the rise in crisis services and crisis management provided to students (Gallagher, 2012, 2013). In 2013, 73% of centre directors reported an increase in crises requiring immediate response, causing directors to expand crisis services, decrease the number of counselling sessions with clients who are not in crisis, and increase staff training (Gallagher, 2013). Patterson and Kline (2008) affirm that students who are experiencing mental health issues may not seek out support from counselling centre staff until they are in crisis, needing academic letters of support, and/or are no longer able to manage daily activities. In addition to the challenges of meeting the above changes, university counselling centres are also currently facing budgetary restrictions and a lack of resources (Bishop, 1995; Gallagher, 2012; Prince, 2015). Most centres provide free services, with only 4.7% of centres surveyed charging a fee for service, and 40% receiving partial or full funding through a mandatory student tuition fee (Gallagher, 2014). According to the 2013 NSCCD survey, 60% of directors reported that budgetary issues have become increasingly stressful and the majority of directors (66.2%) reported concerns about the growing demand for services without adequate resources (Gallagher, 2013). In a study by Smith et al. (2007), 113 randomly selected university counsellors (non-administrators) were surveyed to discover the most pressing issues in counselling centres. Findings show that 96% of counsellors surveyed reported caseload demand as the most pressing issue, with the most common response being the need for more staff to accommodate this demand (Smith, Dean, Floyd, Silva, Yamashita, & Durtschi, 2007). Counselling centres continue to experience problematic waiting list challenges, causing them to find creative solutions, including less frequent appointments, uncompensated overtime for staff, more frequent external referrals, and using triage sessions (Gallagher, 2013; Smith et al., 2007). Another solution is adopting a brief therapy model, with 30% of centres reporting limited number of

counselling sessions and 43% reporting no specified session limit but promoting their centre as a short-term counselling service (Gallagher, 2014). The demand for group counselling opportunities is also increasing, with more clients being moved into groups to alleviate waitlists and free up space for clients in crisis (Gallagher, 2012, 2013; Smith et al., 2007).

Despite increased demand within the confines of a limited budget and stretched resources, counselling centres are still successful in supporting and treating students with mental health concerns. In the NSCCD survey, 65% of centre clients reported that their counselling experience helped them to remain in school, and 64% stated that counselling helped with their academic performance (Gallagher, 2014). Locke et al. (2009) used pre- and post-therapy data from over 1500 students who received treatment from university counselling services, and found that students had statistically significant decreases for depressive symptoms and suicidal ideation. These results were consistent in students who reported high levels of depressive symptoms. Turner and Berry (2000) reviewed 377 counselling centre records and found that counselling positively impacted retention rates when compared to the retention rates of students at the university who did not seek treatment. Choi, Buskey, and Johnson (2010) surveyed 78 student clients with pre-intake and post-termination surveys, including The Outcome Questionnaire, to measure how counselling helped them cope with personal issues and facilitate academic performance. Results indicated that counselling had a direct positive effect on academics for students who received treatment. Overall, these studies suggest that counselling centres have an important role in the mental health and academic success of university students.

Although the above studies show that university counselling centres provide treatment that is effective for students with regard to academic performance and retention, few studies exist on the interventions used by university counselling centres to treat the mental health of university

students (Baez, 2005). Further, the majority of existing empirical evidence with university populations is based on nonclinical samples, particularly undergraduate psychology student volunteers (Baez, 2005).

In summary, counselling centres play an increasingly vital role on university campuses, as the mental health issues of students grow more complex, severe, and prevalent. Counselling centres successfully support students with these issues, despite facing numerous challenges, including the need for more group opportunities for students. This is a significant need given that research has shown group counselling, and specifically mindfulness-based group interventions (e.g., MBSR, MBCT), to be effective in reducing psychological symptomology and increasing wellbeing in university students (Regeher et al., 2012; Shapiro, Brown, & Astin, 2011; Wyatt, Harper, & Weatherhead, 2014). The following sections will discuss mindfulness in general, as well as the use of mindfulness-based interventions with university students.

2.4 Mindfulness

Mindfulness arose in Buddhism approximately 2,600 years ago as a way of understanding the nature of the mind and reducing suffering (Germer, 2005). In the Pali-language, the words *Sati* and *Sampajana* form the concept of mindfulness as it is known in the West (Shapiro, 1984). Together, *Sati* and *Sampajana* mean awareness, circumspection, discernment, and retention (Shapiro & Carlson, 2009). Theravadin scholar and monk Bhikkhu Bodhi integrated these multiple terms of mindfulness into one meaning: remembering to pay attention to what is happening in one's immediate experience with care and discernment (Bodhi, 2011; Wallace & Shapiro, 2006). Mindfulness is considered both a process in terms of mindful practice, as well as an outcome in terms of mindful awareness. Both mindful practice and

awareness are tools that help us to know the mind, shape the mind, and achieve freedom from the mind (Kabat-Zinn, 2005). Mindful awareness can also be referred to as big "M" mindfulness, which is a way of being and a natural human capacity or trait. It is a way of relating to all experience in an open, receptive way without wanting anything to be different from what it is. It is a way of accepting what is here and now without reaction, evaluation, judgment, or conceptual overlays (Shapiro & Carlson, 2009). Big "M" mindfulness, often referred to as trait mindfulness, is inherent in all of us but is often lost underneath deep conditioning and ingrained patterns (Kabat-Zinn, 2005; Shapiro & Carlson, 2009; Wallace & Shapiro, 2006). To counteract conditioning and patterns, one can engage in practice that trains the mind in the innate capacity of mindful awareness. Mindful practice is also called little "m" mindfulness, or the intentional pursuit of mindful awareness (big "M" mindfulness) (Shapiro & Carlson, 2009). It is the conscious development of mindfulness skills, including maintaining attention, reducing reactivity, nurturing an attitude of acceptance, kindness and compassion, and enhancing the ability to disidentify from one's idea of the self. Through the practice of being mindful of body sensations, emotional states, thoughts, and other mental content, an individual develops their awareness and capacity for mindfulness (Shapiro & Carlson, 2009). This capacity to be mindful allows the individual to explore the mind and expand wellbeing (Siegel, Germer & Olendzki, 2009).

Although mindfulness is most often associated with Buddhism, mindful awareness or consciousness has been recognized by many religious, philosophical, spiritual, and psychological traditions as an important aspect of wellbeing (Kabat-Zinn, 1994; Shapiro, Oman, Thoresen, Plante & Flinders, 2008). Inspired by the spiritual tradition of mindfulness, Jon Kabat-Zinn (1982) introduced and popularized mindfulness practice and research in western medicine and

psychology. He saw mindfulness as a universal quality of attention that could be effectively applied within a medical context (Kabat-Zinn, 1990). Kabat-Zinn is credited with one of the first applications of mindfulness in treatment, with the development of the Mindfulness-Based Stress Reduction (MBSR) program at the University of Massachusetts Medical Center (Kabat-Zinn, 1982). Since then, mindfulness has been adopted by western psychology and adapted to clinical practice in order to help clients increase awareness of and respond to negative mental processes, emotional distress, and maladaptive behavior (Bishop, 2002; Davis & Hayes, 2011). Mindfulness, as it is clinically utilized, has migrated away from its religious and cultural origins, which some scholars argue has stripped it of its inherent richness and its unique spiritual goals of 'being' and liberation from the mind (Baer, 2003; Grossman, 2011; Walsh & Shapiro, 2006). Kabat-Zinn (2011) explained that he chose to present mindfulness in a secular fashion, in a way that would make sense to western clients and be accepted by the western medical and psychological communities. However, this translation of mindfulness theory and practice into a modern psychological context has resulted in a dynamic and yet complicated discussion of what exactly is encompassed in the concept of mindfulness.

Conceptualizations of mindfulness. Mindfulness has been described as a concept that is both simple and difficult to encapsulate (Brown & Ryan, 2004). Consequently, there is currently no consensus in the literature on a singular definition of mindfulness, although most authors agree that it is necessary to have a unified operational definition of the term for theoretical and research purposes (e.g., Bishop, 2002; Bishop et al., 2004; Dimidjian & Linehan, 2003).

Jon Kabat-Zinn (1982) was the first in western medicine and psychology to define mindfulness, describing it as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment"

(Kabat-Zinn, 2003 p. 145). According to his definition, during mindfulness, people intentionally observe thoughts, feelings, sensations and distractions and allow them to pass through awareness, while accepting these non-judgmentally without identifying and reacting to them (Bishop et al., 2004).

Although Kabat-Zinn's definition is widely accepted and cited in the literature, it is also regarded as a simplified articulation of an otherwise rich and multifaceted concept. Bishop et al. (2004), in an aim to build on Kabat-Zinn's definition, offer a consensus definition of mindfulness as self-regulation of attention on the present moment and an orientation of curiosity, openness, and acceptance toward one's experience in the present moment. Self-regulation of attention is the ability to maintain attention and concentration on mental activities in the present moment for prolonged periods of time. It requires the skill of attention switching, or the ability to redirect one's attention back to the experience of the here-and-now. The second component of the definition involves an attitude of openness, curiosity and acceptance of present moment experience without trying to achieve a particular outcome. In a state of mindfulness, external and internal stimuli are observed as events in the mind, without over-identifying with them, elaborating on them, or reacting to them in an automatic, habitual way. This disidentified state of self-observation is thought to introduce a space between perception and response. Thus, mindfulness enables an individual to respond to their experience more reflectively as opposed to reflexively. This is acknowledged as a tool for acquiring insight into the nature of one's mind (Bishop et al., 2004).

Shapiro and colleagues (2006) argue that Bishop et al.'s (2004) proposed definition underestimates the role of intention (Shapiro et al., 2006). The authors posit a three-component conceptualization that emphasizes intention as the underlying reason as to why a person engages

in mindfulness practice. This perspective is also built from Kabat-Zinn's definition, which includes the practitioner's intention and motivation (Kabat-Zinn, 2003). Shapiro and colleagues describe the three components as intention, attention, and attitude. Intention is the initial purpose for practicing meditation, which is individually based, "dynamic and evolving" (Shapiro et al., 2006, p. 376). Attention refers to the focusing of the mind on specific aspects of experience in each moment and suspending interpretation. Finally, the component of attitude includes cognitive-affective mindfulness qualities (e.g., kindness, compassion, and openheartedness) that support the cultivation of intention in mindfulness practice. Shapiro et al. (2006) also posit that training in mindfulness can lead to an increased ability to *reperceive*, or deidentify from one's moment to moment experience in a manner that leads to positive outcomes including greater well-being, decreased anxiety, and increased self-compassion (Orzech, Shapiro, Brown, & McKay, 2009).

In the development of their Five Facet Mindfulness Questionnaire (FFMQ), Baer and colleagues (2006) analyzed existing measures of mindfulness in an attempt to identify its core components (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). The authors found five distinct factors: 1. Observing or noticing internal and external experiences (e.g. physical sensations, cognitions, emotions, sights, sounds, and smells); 2. Describing or labeling internal experiences with words; 3. Acting with awareness (i.e. attending to one's present activities rather than behaving mechanically or on autopilot); 4. Nonjudging of inner experience (i.e. not evaluating or being critical toward external and internal stimuli); and 5. Non-reactivity to inner experience (i.e. abstaining from impulsive or automatic reactions to one's thoughts and emotions). This conceptualization is similar to those discussed above, with the addition of labeling internal experiences (e.g. "this is restlessness").

In summary, western researchers have primarily considered mindfulness to be an individual, internal skill or ability.   Most authors emphasize the need to include attention and attitude in the conceptualization of mindfulness. Currently, all definitions of mindfulness include some attentional component, and almost all definitions include an attitude of acceptance and non-judgment. However, mindfulness has still not been unified as a singular construct or definition in the literature. A similar disagreement exists in the discussion of the mechanisms of mindfulness that lead to psychological benefits.

Mechanisms of mindfulness. Studies on mindfulness have shown evidence of the positive influence it has on psychological health and wellbeing, and the literature seeks to understand the mechanisms that underlie these positive effects (Baer, 2003; Brown, Bravo, Roos, & Pearson, 2015; Brown, Ryan, & Creswell, 2007; Leary & Tate, 2007; Shapiro et al., 2006). The main proposed therapeutic change mechanisms cultivated through mindfulness are: attention to present-moment experience; exposure; adopting an accepting stance; emotion-regulation and self-management; de-identifying with mental content (reperceiving); and fostering an open, patient, non-judgmental, and curious attitude with oneself and one's world (Baer, 2003; Brown et al., 2007; Holzel, Carmody, Vangel, Congleton, & Yerramsetti, 2011; Shapiro et al., 2006).

Shapiro et al. (2006) consider attention in mindfulness as crucial to the psychological healing process. They define attention as observing your personal experience, and "suspending all the ways of interpreting experience and attending to experience itself, as it presents itself here and now" (Shapiro et al., 2006, p. 4). Holzel and colleagues (2011) also contend that emerging evidence in neuroscience using functional magnetic resonance imaging shows that mindfulness meditation can alter the brain's physical structure and functioning, specifically in brain regions associated with attention and interoceptive awareness. These authors contend that the findings of

structural brain changes support the view that attention is an underlying mechanism of mindfulness meditation (Holzel et al., 2011).

Exposure as it relates to mindfulness can be defined as allowing oneself to experience thoughts, emotions, and sensations as they arise, whenever they arise (Baer, 2003; Brown et al., 2007). For example, a mindfulness practitioner would allow themselves to be present with and feel a painful physical sensation, as opposed to immediately reacting to it (e.g., shifting position) or avoiding it (e.g., taking medication). Repeated exposure to difficult thoughts, emotions, and sensations through mindfulness allows practitioners to experience them with greater objectivity and less reactivity. Practitioners learn that negative emotions, thoughts, or body sensations will eventually pass and that they do not need to be feared or avoided (Baer, 2003). This ultimately leads to the extinction of maladaptive responses and avoidance behaviours, and the reduction of mental distress and suffering that would normally be induced by the unpleasant thoughts, emotions, or sensations. Authors posit that exposure may be the mechanism underlying the success of mindfulness with chronic pain patients, as it may lead to experiencing pain without reactivity (Baer, 2003; Brown et al., 2007; Holzel et al., 2011; Shapiro et al., 2006).

Acceptance is another underlying mechanism of change discussed in a majority of the conceptual and empirical mindfulness literature. Acceptance, as it relates to mindfulness, is defined as the ability to experience things as they are without defense and without struggling against them (Baer, 2003; Brown et al., 2007; Shapiro et al., 2006). Almost all authors agree that the basic practice of mindfulness includes the acceptance of both painful and pleasant thoughts, sensations, and emotions without attempting to change, escape, or avoid them (Baer, 2003, Shapiro et al., 2006). If a person can nurture acceptance toward themselves, others, and their experiences, then they are less likely to adopt denial or avoidance behaviours and strategies in an

attempt to change or avoid unpleasant thoughts, emotions, or sensations. Hayes, Strosahl, and Wilson (1999) include acceptance as a core component of psychological flexibility in acceptance and commitment therapy (ACT), arguing that an increase in acceptance is an important mediating factor of therapeutic change in ACT (Hayes, Luoma, Bond, Masuda and Lillis, 2006).

Learning to respond to and reduce emotional reactivity through mindfulness can promote self-management (i.e. the use of a range of coping skills) and emotion regulation (Baer, 2003; Van Dam, Hobkirk, Sheppard, Aviles-Andrews, & Earleywine, 2014). Goleman (1995) posited a link between mindfulness and emotional intelligence, or the regulation of emotions in ourselves and others. Schutte and Malouff (2011) propose that emotional intelligence is a mediator between mindfulness and higher positive affect and psychological wellbeing. Neuroscience has also supported the connection between mindfulness and emotion regulation showing through functional magnetic resonance imaging that mindfulness meditation can reduce the neural reactivity in certain regions of the brain (e.g., the amygdala)(Farb, Segal, Mayberg, Bean, McKeon, Fatima, & Anderson, 2007; Lazar et al., 2005; Way, Creswell, Eisenberger, and Lieberman, 2010). These authors argue that lowering neural reactivity can increase the ability to use emotion regulation strategies.

Shapiro and colleagues (2006) posit that 'reperceiving' is the overarching mechanism that leads to change and positive outcomes in mindfulness. They define reperceiving as the ability to de-identify with, or decenter from, mental content so that the present moment is experienced with greater clarity and objectivity. The ability for objectivity toward one's internal and external experiences is at the center of mindfulness practice (Shapiro et al., 2006). The authors argue that reperceiving is a meta-mechanism in that it is not only beneficial in itself, but also precedes most other mechanisms that may underlie mindfulness and its beneficial outcomes.

For example, through reperceiving, a person is able to objectively witness emotional states without reactivity (i.e. emotion regulation). Shapiro et al. (2006) also contend that reperceiving facilitates other benefits of mindfulness such as values clarification and cognitive, emotional, and behavioral flexibility.

Baer (2003) also discusses cognitive changes similar to the idea of reperceiving, specifically a decentered attitude toward one's thoughts and feelings by labeling them as 'just thoughts' or 'just feelings' as opposed to true reflections of reality. Teasdale and colleagues (1995, 2000) also refer to decentering as an important mechanism of change in terms of negative thought patterns, rumination, and recurrent depressive episodes (Teasdale, Segal, & Williams, 1995; Teasdale, Segal, Williams, Ridgeway, Soulsby, & Lau, 2000). Williams (2010) stated that this decentering is "seeing something as it is, without further elaboration, for example seeing thoughts as mental events … rather than seeing them as having meaning for the integrity of the self" (p. 4).

Finally, fostering an open, patient, and curious attitude with oneself and one's world is a key component of mindfulness (Baer, 2003; Kabat-Zinn, 1990). This attitude is considered crucial to practice so that a person does not judge or condemn their inner experience (Shapiro et al., 2006). Attitude, or how we pay attention, "may be consequential in cultivating health…on multiple levels" (Shapiro et al., 2006, p. 639). Emerging studies are suggesting the importance of attitude with regard to self-compassion; however, it is still unclear at this point whether self-compassion is a positive outcome of mindfulness or if, in fact, it is a mediator of change in mindfulness-based interventions (Shapiro, Astin, Bishop & Cordova 2005; Shapiro et al., 2007). Additional research is needed to empirically show that attitude is a mechanism of mindfulness that leads to positive psychological change.

There is one known meta-analysis in the literature that examines the underlying mechanisms of mindfulness that lead to positive mental health outcomes. Gu and colleagues (2015) were the first to systematically review 30 years of mediation studies on the mechanisms of mindfulness in MBSR and MBCT. They conducted a meta-analysis of 20 studies using structural equation modeling in an effort to identify possible mechanisms, evaluate the evidence for each of these mechanisms, and determine their impact on psychological wellbeing and positive clinical outcomes. Results showed consistent, strong evidence for emotional and cognitive reactivity as a mediating mechanism, as well as moderate, consistent evidence for mindfulness, rumination, and worry as mediating mechanisms. Further, Sobel tests demonstrated that both mindfulness and rumination were statistically significant in mediating the effects of MBSR and MBCT on clinical outcomes (e.g., anxiety, depression, stress, and mood). This study provides support for the underlying mechanisms of exposure, specifically to ruminating thoughts and worries, as well as emotion regulation, with regard to decreased reactivity. The authors also comment that the mediator of mindfulness lends support to the mechanisms of attention and acceptance. It is important to note that the authors identified methodological limitations in all of the studies, and therefore cautioned against any rigorous conclusions and encouraged further research to build on the current body of literature (Gu, Strauss, Bond, & Cavanagh, 2015). Mindfulness authors agree with this recommendation, given the limited research and existing confusion and disagreement in the literature about exact mechanisms of change (Baer, 2003; Bishop et al., 2004; Brown et al., 2015; Van Dam et al., 2014).

Cultivating mindfulness. Meditation has been a documented practice for over 2500 years, having been traced back to Egypt and the construction of the first pyramid around 2650

B.C. (Goleman, 1976; Loori, 1999). Meditation can be conceptualized as a family of techniques that consciously attempts "to focus attention in a non-analytical way and an attempt not to dwell on discursive, ruminating thought" (Shapiro, 1984, pg 6). Meditation has a strong cultural history and has been practiced by a multitude of societies over time (Gunaratana, 2002). Further, contemplative practice is at the foundation of most forms of religion (e.g., prayer and meditative practices in Hinduism, Sikhism, Buddhism, Judaism, Taoism, Islam/Sufism, and Christianity; Loori, 1999). Goleman (1976) describes various types of meditation techniques found across traditions, including relaxation meditation, yoga, Sufi whirling dervish, tai chi, and mantra repetition.

Within Buddhism, two types of meditation are practiced: *samatha,* or concentration meditation, and *vipassana,* or insight meditation (Gunaratana, 2002; Siegal et al., 2009). Mindfulness has been traditionally cultivated through the practice of *vipassana*, using sitting meditation (Gunaratana, 2002). Sitting meditation involves sitting in a relaxed upright position with eyes closed while intentionally maintaining attention on a particular object, typically beginning with awareness of the physical sensation of the breath as it enters and leaves the body (Hanh, 1976, 2008). In this way, the breath serves as an anchor, used to connect and re-connect with the experience of the present moment (Kabat-Zinn, 1994). Meditators notice any thoughts, feelings, physical sensations, or other internal or external stimuli that may arise, and are encouraged to observe and accept these stimuli with an attitude of non-judgment, openness, and curiosity. They then gently bring their attention back to the breath. This process of noticing the mind wander and refocusing on the breath happens as many times as is necessary (Kabat-Zinn, 1994). Meditators are encouraged not to blame themselves when the mind has strayed and to label the thoughts and feelings (e.g., worrying or sadness) to allow for objectivity and acceptance

(Kabat-Zinn, 2003). In this way, their automatic emotional and thought responses are slowed down, and they are able to respond in a more conscious, deliberate manner. Sitting mindfulness meditation is usually practiced for 10 to 45 minutes and can be guided by a facilitator, an audio recording, or be self-guided by the individual in silence (Kabat-Zinn, 1994).

Two other common formal mindfulness practices include the body scan and walking meditation (Kabat-Zinn, 1990, 1994). The body scan is a 45-minute exercise in which participants are asked to lie down with their eyes closed and bring their attention to different body parts one at a time. Similar to sitting mindfulness meditation, each time attention drifts away to thoughts, feelings and sensations, the practitioner notices these nonjudgmentally and brings attention back to the body (Kabat-Zinn, 1990, 1994). Walking meditation involves focusing the attention on the movements of the body while walking. Meditators are encouraged to become aware of the individual movements and physical sensations of walking, to notice when the mind wanders, and to refocus on the present moment experience of walking. During the walking meditation, meditators typically walk at a slow, intentional pace with their arms hanging comfortably at their sides, or are held loosely together in front of the body. Siegel et al. (2009) note that walking meditation can be helpful for those who feel agitated or unsettled, and can serve as a stronger anchor to the present moment than the breath or the mind (Kabat-Zinn, 1990, 1994).

Although mindfulness is often considered synonymous with meditation, and mindfulness has been traditionally cultivated through formal meditation practice, it is important to note that mindfulness can also be cultivated through informal practice (Kabat-Zinn, 1990, 2003). For example, approaches from formal meditation practice can be used to cope with daily challenges, such as focusing on the breath in times of stress or anxiety. Informal mindfulness can also be

practiced by cultivating presence, or bringing awareness to the present moment and focusing on the details of what is being experienced (Mikulas, 2015). Cultivating presence can happen in any moment, for example you can notice the soap lather while taking a shower, the colors of the leaves while walking to work, the sensation of chewing while eating lunch, the tone of your voice while talking with a friend, or the temperature of the water while doing the dishes. More often than not, a person will engage in these simple, daily activities in a mechanical way. Our typical mental state is usually mindless, either focused on memories of the past or fantasies of the future (Germer, 2005; Kabat-Zinn, 2003). By fully attending to these tasks, we can practice cultivating mindfulness and bringing our mind and body back to the present of our moment-to-moment experience (Kabat-Zinn, 1994). Gunaratana (2002) states that by practicing mindfulness in your daily life, "you will learn for the first time what is truly happening to you, around you, and within you" (p. 32).

Kabat-Zinn (1990) considers both formal and informal mindfulness practices as necessary to cultivate mindfulness (Kabat-Zinn, 1982, 1990). He states the purpose, if there is one at all, is to experience what is present in each moment (Kabat-Zinn, 1996). In the Buddhist tradition, cultivating mindfulness is achieved through meditation, which naturally gives rise to an embodied knowledge, as opposed to a conceptual or intellectual understanding; which in turn leads to freedom from suffering (Olendzki, 2005). In psychology, the goal of cultivating mindfulness is to increase voluntary control over mental and emotional processes, thereby fostering general wellbeing as well as specific capacities such as concentration (Walsh & Shapiro, 2006).

Mindfulness in therapy. In the past 30 years, mindfulness has grown in interest in Western psychology (Carmody, 2009; Khoury et al., 2013; O'Driscoll, 2009). In general, the

literature on mindfulness considers unpleasant mental, emotional and physical states as an inevitable part of life that cannot always be avoided, and that acceptance of these states is important to mental health (Davis & Hayes, 2011; Kabat-Zinn, 2003). Unlike other therapeutic approaches, which typically attempt to reduce or eliminate unwanted conditions of body and mind, mindfulness encourages awareness of the present moment, and observation of all sensations, thoughts, and emotions with nonjudgment and acceptance (Baer & Krietemeyer, 2006).

Mindfulness can be seen as a component in many current therapeutic interventions, and some authors position mindfulness as a common factor across therapeutic approaches, forming a central role in all therapeutic work (Martin, 1997; O'Driscoll, 2009; Shapiro & Carlson, 2009). Germer (2005) posits three ways mindfulness is incorporated into therapy: therapist mindfulness, mindfulness-informed psychotherapies, and mindfulness-based psychotherapies. Therapist mindfulness refers to approaches that are influenced by a therapist's own practice in mindfulness meditation (e.g. incorporating mindfulness techniques into more traditional theoretical orientations). Mindfulness-informed psychotherapies are based on a framework that is informed by theories of mindfulness and Buddhist psychology (e.g., Acceptance and Commitment Therapy). Mindfulness-based psychotherapies are rooted in mindfulness and the teaching of mindfulness practice to clients (e.g., Mindfulness-based Stress Reduction; Germer, 2005). The following section will discuss the most common mindfulness-informed and mindfulness-based interventions.

2.5 Mindfulness Interventions

Mindfulness interventions are treatment programs that include mindfulness conceptualizations and practices (Baer, 2003). They have gained recent popularity in both research and practice because of the rising evidence of their clinical effectiveness (Baer, 2003; Hofmann, Sawyer, Witt, & Oh, 2010). Most of the empirical research on the clinical use of mindfulness focuses on five main mindfulness-informed and mindfulness-based interventions (Baer, 2010): Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, & Wilson, 1999; 2003), Relapse Prevention (RP; Marlatt, 1994; Marlatt & Gordon; 1985), Dialectical Behavior Therapy (DBT; Linehan, 1993), Mindfulness-Based Cognitive Therapy (MBCT; Teasdale, Segal, & Williams, 1995), and Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982). This section will provide a description of the aspects of mindfulness in each of the above interventions.

Acceptance and Commitment Therapy. Acceptance and Commitment Therapy (ACT; Hayes, et al., 1999) is a mindfulness-informed intervention based on contemporary behaviour therapy and can be adapted to treat a variety of psychological disorders. It has been implemented in both individual and group therapy formats, and incorporates several mindfulness strategies and concepts (Hayes, et al., 1999). ACT teaches clients to release their attempts to control or change thoughts and feelings, and instead to observe them in a non-judgmental way and accept them as they occur. Clients are encouraged to view thoughts and emotions as separate from themselves, recognizing that thoughts and feelings do not represent reality. For example, they might say, "I am having a thought/feeling right now that I am sad and alone" as opposed to "I am a sad, lonely person." Once clients realize that thoughts are not necessarily

true and learn to accept them, they are able to change their behaviour to be in accordance with what they value (Hayes et al., 2003).

Relapse Prevention. Relapse Prevention (RP; Marlatt & Gordon, 1985) is a mindfulness-informed intervention based on cognitive behavioural therapy and used as an intervention to prevent relapse in clients struggling with substance abuse. RP teaches acceptance of the present moment as a constantly changing experience, and regards addiction as the inability to accept the present moment and thereby constantly seek a future high (Marlatt, 1994). RP uses mindfulness skills to help clients cope with urges. The metaphor of urge surfing teaches clients to consider their urges as ocean waves that will build, surge, and subside. They ride each urge as it appears and learn to accept these urges as normal responses, as opposed to fighting them or trying to eliminate them. Mindfulness allows clients to observe and accept urges without judgment, and manage them more adaptively (Marlatt, 1994; Marlatt & Gordon, 1985).

Dialectical Behavior Therapy. Dialectic Behavioral Therapy (DBT: Linehan, 1993) is a multi-component mindfulness-informed treatment program for borderline personality disorder and other complex mental health disorders (e.g., chronically suicidal patients, persistent depressive disorder). DBT was founded on a dialectical worldview of opposing forces, specifically acceptance and change (Baer, 2010; Linehan, 1993). Clients learn to accept themselves and their situations as they are, while simultaneously working to change their behaviour and environment. DBT is a skills-based intervention that consists of group skills training, individual therapy, and telephone consultation. The individual therapist acts as a coach for the client, while the group leader teaches DBT skills and assigns and reviews weekly homework. The skills training group is divided into four separate modules (mindfulness skills, interpersonal effectiveness skills, emotion regulation skills, and distress tolerance skills) that are

taught for eight weekly 2.5-hour sessions. Linehan (1993) discusses mindfulness as one of the tenets of DBT and distills it down to a set of pragmatic skills. These skills are taught first and then reviewed at the start of each of the other three modules. The mindfulness skills consist of observing, describing, participating, taking a nonjudgmental stance, focusing on one thing at a time, and being effective. DBT includes short mindfulness exercises (usually around 5 minutes in length) during the skills training group, and encourages clients to practice these exercises outside of the group, without specifying a prescribed length of time. Clients are also instructed to engage in mindfulness practice during daily activities (Linehan, 1993).

Mindfulness-based Cognitive Therapy. Mindfulness-Based Cognitive Therapy (MBCT; Teasdale, Segal, & Williams, 1995) is a manualized, mindfulness-based program centered on the premise that the attentional skills of mindfulness can help to prevent the relapse of major depressive episodes. Teasdale and colleagues (1995) posit that clients who have had a major depressive episode are more vulnerable to subsequent episodes, and that this relapse happens when clients experience any mild dysphoric mood, and depressive thinking patterns are triggered. MBCT is an eight-week intervention that teaches clients a detached or decentered view of their thoughts, emotions, and bodily sensations. Clients use mindfulness to notice thought distortions that lead to depressive feelings, observe them without judgment, and accept them as impermanent and separate from themselves, instead of as a part of who they are or as an accurate reflection of reality (Baer, 2003, 2010). This is considered to protect against relapse as it prevents the escalation of dysphoric thoughts into rumination and negative thought patterns. MBCT is based on MBSR (Kabat-Zinn, 1982) and is of similar length and content to MBSR (Baer, 2003). It utilizes didactic instruction, formal mindfulness practice, discussions, and frequent formal and informal meditation homework (Teasdale et al., 1995). It differs from

MBSR in that it also discusses the etiology of depression, includes the development of a relapse prevention plan, and incorporates cognitive therapy techniques (Baer, 2003).

Mindfulness-based Stress Reduction. Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1982) is the most researched mindfulness intervention and its effectiveness studies are a fundamental basis for the incorporation of mindfulness into other treatment programs and therapies (Kabat-Zinn, 2011). MBSR is a mindfulness-based intervention, originally developed by Jon Kabat-Zinn (1982) within a medical context as a stress reduction program for patients with chronic pain, stress related disorders and other medical diagnoses (Kabat-Zinn, 2003). Kabat-Zinn designed MBSR as a structured 8-10 week group intervention where up to 30 participants meet weekly for 2-2.5 hours, and attend an additional full-day silent mindfulness meditation. Each group session is dedicated to didactic instruction on the concepts and foundations of mindfulness, as well as guided mindfulness meditation practice. Participants are also assigned homework, including daily formal and informal mindfulness practice. Formal mindfulness practice consists of the meditations learned in the group session (e.g., sitting meditation, body scan, walking meditation) and participants are expected to set aside 45 minutes for daily practice. Participants are also expected to engage in informal mindfulness practice in their daily lives. MBSR teaches participants to become aware of thoughts, emotions, and bodily sensations that arise, without being pulled into their content or stories. Participants learn to focus attention on certain anchors (e.g. the breath or the movement of the body) and maintain moment-to-moment awareness with an attitude of openness, curiosity, and non-judgment. Participants are encouraged to notice when their attention has drifted, observe where the mind has gone (i.e. the content/nature of the thoughts, memories, or feelings) and gently bring attention back to the present moment and the anchor of focus (Kabat-Zinn, 1990).

MBSR is rooted in Kabat-Zinn's definition of mindfulness, with the core purpose being to increase present moment awareness, deepen insight, and accept one's experience with nonjudgment, which ultimately leads to positive outcomes (Kabat-Zinn, 1982; 2003). Bishop (2002) states that the goal of MBSR is to teach people "to approach stressful situations 'mindfully' so they may respond to the situation instead of automatically reacting to it" (p. 72). MBSR aims to use formal and informal practice to teach mindfulness skills that can be applied in everyday life in order to alleviate psychological distress (Carmody & Baer, 2008, 2009; Kabat-Zinn, 1990). A growing body of empirical research provides support of MBSR as an effective intervention for reducing distress and enhancing wellbeing in individuals with a variety of medical and psychological conditions (Bishop, 2002; Davis & Hayes, 2011).

2.6 Mindfulness Effectiveness Research

Jon Kabat-Zinn brought mindfulness into the scientific arena by manualizing mindfulness through his MBSR program, and making it possible to carry out controlled and replicable outcome studies of mindfulness (Baer, 2006). MBSR is the most researched mindfulness intervention and paved the way for mindfulness to be incorporated into other treatment interventions, and thus further researched (Chiesa & Malinowski, 2011). This section will review the literature on the effectiveness of mindfulness interventions, specifically meta-analyses of quantitative outcome research, and the small body of qualitative studies.

Meta-analyses. As the interest and use of mindfulness continues to grow, the body of research is also expanding, with research topics ranging from physical and mental health, neuroplasticity and immunity, and relationship and work satisfaction (Dimidjian & Segal, 2015).

This section will review meta-analyses that consider studies on psychological health with clinical populations.

Two early meta-analyses were carried out by Baer (2003) and Grossman, Niemann, Schmidt, and Walach (2004). Baer (2003) conducted a meta-analysis of 18 studies investigating the effects of MBSR and MBCT with clinical populations. Similarly, Grossman and colleagues (2004) conducted a meta-analysis of 20 empirical studies that investigated the health benefits of MBSR. It is important to note that only studies using MBSR and MBCT interventions were included in both meta-analyses, as dialectical behaviour therapy, acceptance and commitment therapy, and relapse prevention studies did not clearly separate the behaviour change interventions from the mindfulness-based interventions. Therefore, results from these studies would not be directly attributable to mindfulness interventions alone (Baer, 2003; Grossman et al., 2004).

Baer (2003) found effect sizes aggregated across psychological and physical health measures at program completion that ranged from 0.15 (chronic pain patients) to 1.65 (binge eating disorder patients), with a mean overall immediate effect of 0.59 when weighted by sample size. Effect sizes at follow-up ranged from 0.08 (chronic pain patients) for 2 to 12 months after program completion to 1.35 (anxiety patients). The overall mean follow-up effect size was 0.59, the same overall effect documented upon program completion. Grossman et al. (2004) found similar mean immediate effect sizes of 0.50 each for the mental and physical health indices measured. Considered together, both of studies found moderately strong positive effects for both physical and psychological health, suggesting that mindfulness-based interventions may benefit people suffering from chronic pain, fibromyalgia, cancer, heart disease, anxiety, binge eating disorder, psoriasis, borderline personality disorder, major depressive disorder, and stress (Baer,

2003; Grossman et al., 2004). Results of both of these studies also suggest that, on average, the moderately strong positive effects of MBSR at the completion of the program remain stable for months following the program, and are the same regardless of random assignment and use of comparison controls.

More recently, Hofmann, Sawyer, Witt, and Oh (2010) conducted a meta-analysis based on 39 studies of mindfulness-based interventions for anxiety and mood symptoms in clinical samples. Effect sizes in the overall sample suggest that mindfulness-based interventions are moderately effective in improving anxiety and mood symptoms. However, in clinical populations with anxiety and mood disorders, mindfulness-based interventions were associated with robust effect sizes of 0.97 and 0.95 for improving anxiety and mood symptoms, respectively. The observed effect sizes were unrelated to publication year, treatment length, or study quality, and data suggests that the effects were maintained at follow-up (with a median follow-up period of 12 weeks). These results support the effectiveness of mindfulness-based interventions, particularly MBSR and MBCT, in improving symptoms of anxiety and depression across a relatively wide range of severity and even when these symptoms are associated with other disorders, such as medical problems (Hofmann et al., 2010).

Khoury et al. (2013) conducted an effect-size analysis to evaluate the efficacy of mindfulness-based interventions. They reviewed 209 studies and found effect-size estimates as moderately effective in pre-post comparisons (0.55), in comparison with waitlist controls (0.53), and when compared with other active treatments (0.33), including other psychological treatments (0.22). The authors found that mindfulness-based interventions did not differ from traditional cognitive-behavioural therapy/behavioural therapies (−0.07) or pharmacological treatments (0.13). Khoury et al. (2013) concluded that the results from the study suggest that mindfulness-

based interventions are an effective treatment for various psychological issues, and are especially effective for reducing anxiety, depression, and stress.

Finally, in the most recent meta-analysis, Gotink and colleagues (2015) conducted a systematic review of 23 meta-analyses of random control trials (RCTs) using MBSR and MBCT interventions. The reviewed meta-analyses included 115 unique RCTs with an aggregate total of 8,683 clinical participants, including 4,276 participants with "various psychological problems" (p.5, Gotink, Chu, Busschbach, Benson, Fricchione, & Hunink, 2015). The authors performed a random effects meta-analysis and found that MBSR and MBCT were effective when compared to treatment as usual and wait list controls. Specifically, these mindfulness interventions significantly improved symptoms of depression (with an effect size of 0.37) based on 5 reviews (N=2814); anxiety (0.49) based on 4 reviews (N=2525); and stress (0.51) based on 2 reviews (N=1570). The authors concluded that the evidence from the 23 reviewed meta-analyses suggests that MBSR and MBCT can help to alleviate depressive and anxiety symptoms as well as decrease perceived levels of stress (Gotink et al., 2015).

Overall, the reviewed meta-analyses of the effectiveness of mindfulness-based interventions suggest moderately strong, immediate and long-term positive effects on mental and physical health in controlled and uncontrolled studies.

Qualitative research studies. The above meta-analyses suggest the positive effects of mindfulness in over 30 years of quantitative outcome studies. Indeed, most of the research to date has been quantitative in nature, with the qualitative studies in the mindfulness literature significantly fewer in number. This is especially the case with published qualitative studies on mindfulness with a clinical population, as most studies focus on psychology and counselling graduate students, or on nonclinical community populations (Malpass, Carel, Ridd, Shaw,

Kessler, Sharp, Bowden & Wallond, 2012; Wyatt, Harper, & Weatherhead, 2014). However, qualitative studies are beginning to increase, especially as the demand grows for a conceptual and theoretical understanding of mindfulness and the mechanisms that effect positive change. A review of the literature on the experiences of adult participants of mindfulness-based interventions indicates several common themes across qualitative studies: group influence, increase in awareness, shifts in attitude, perceived positive outcomes, and changes in personal relationships (Allen, Bromley, Kuyken, & Sonnenberg, 2009; Finucane & Mercer, 2006; Fitzpatrick, Simpson & Smith, 2010; Griffiths, Camic, & Hutton, 2009; Himelstein, Hastings, Shapiro, & Heery, 2012; Kerr, 2013; Mackenzie, Carlson, Munoz, & Speca, 2007; Mason & Hargreaves, 2001; Monshat, Khong, Hassed, Vella-Brodrick, Norrish, Burns, & Herrman, 2013; Morone, Lynch, Losasso, Liebe, & Greco, 2012; Proulx, 2008; Smith, Graham, & Senthinathan, 2007; Stelter, 2009).

Overall, group specific factors played an influential role in participants experiencing mindfulness-based interventions as beneficial. Participants discussed groups as offering a supportive environment where they felt comfortable sharing their individual experiences with mindfulness (Allen et al., 2009; Mackenzie et al., 2007). Participants considered the group experience to be validating, normalizing, and helpful (Griffiths et al., 2009). Participants also found that the group environment facilitated their connection with other group members (Proulx, 2008). Further, group support was seen as helpful in creating a sense of belongingness in the group (Fitzpatrick et al., 2010). Finally, participants stated that being a part of the group helped them feel accountable for completing their homework. For example, participants reported that the group format increased their motivation to do their daily meditation practices at home (Finucane & Mercer, 2006).

Awareness is another theme common throughout the studies. Participants reported increased levels of awareness (Griffiths et al., 2009; Himelstein et al., 2012), with the ability to notice their thoughts and view them more clearly (Morone et al., 2012; Stelter, 2009). Other participants stated that they could identify triggers more easily (Mackenzie et al., 2007; Morone et al., 2012), as well as observe distressing emotional patterns and begin to work through these in a more intentional way (Stelter, 2009).

Many participants reported a change in attitude, especially with regard to adopting an attitude of acceptance (Himelstein et al., 2012; Griffiths et al., 2009; Proulx, 2008; Smith et al., 2007). Some participants described a general shift in perspective (Morone et al., 2012), while others stated that they had experienced more flexibility and openness (Finucane & Mercer, 2006; Mason & Hargreaves, 2001), and greater self-worth and confidence (Monshat et al., 2013). Participants also reported a heightened sense of empowerment, self-agency and control as a result of mindfulness meditation (Kerr, Josyula, & Littenberg, 2011; Monshat, et al., 2013). One study explains this as participants having more control over their symptoms (Allen et al., 2009), while another describes it as participants feeling empowered by using mindfulness as a way to self-regulate their emotions, control their behaviours, and change to a more positive perspective (Mackenzie et al., 2007).

The majority of participants in the reviewed qualitative studies indicated that they experienced at least one perceived positive impact of mindfulness. The most cited positive impact was a decrease in symptoms attributed to engaging in mindfulness. This included decreased anxiety and rumination (Stelter, 2009), reduced stress (Griffiths et al., 2009; Morone et al., 2012), decreased impulsive and self-destructive behaviours (Proulx, 2008), and improved overall wellbeing (Stelter, 2009). In a study by Finucane and Mercer, 2006, two participants

reported returning to the workforce after a year due to the decrease of their symptoms, one participant reported complete alleviation of all depressive symptoms, and one participant reported the successful cessation of smoking. Another positive effect of mindfulness treatment was an improvement in coping skills (Mackenzie et al., 2007), with participants reporting that they were able to change patterns of coping by decreasing avoidance and rumination, and accepting negative thoughts and emotions without reactivity (Fitzpatrick et al., 2010). Other participants reported that mindfulness led to increased self-care, feeling more relaxed, intentionally applying mindfulness in everyday tasks, having more energy, and improved sleep (Finucane & Mercer, 2006; Mason & Hargreaves, 2001; Smith et al., 2007).

A final theme involves an improvement in the nature and quality of personal relationships experienced by participants (Allen et al., 2009; Morone et al., 2012). Better communication skills were cited (Mackenzie et al., 2007), along with stronger boundaries (Proulx, 2008), and a deeper sense of empathy and connection (Mackenzie et al., 2007; Proulx, 2008).

In addition to the thematic commonalities, participants also experienced common challenges with regard to their experience with mindfulness-based interventions. The most common struggle was described as wanting to find the correct way to practice mindfulness, which often led to frustration and confusion (Kerr, 2013; Mason & Hargreaves, 2001). Another struggle was the tension between acceptance and expectations or desire for an outcome (Allen et al., 2009; Mason & Hargreaves, 2001). Finally, participants found it challenging to maintain prolonged meditation because of physical discomfort (Finucane & Mercer, 2006), difficulty concentrating (Griffiths et al., 2009), and lack of motivation (Allen et al., 2009).

Two recent meta-analyses review the existing qualitative research on mindfulness and support the above themes. Malpass and colleagues (2012) conducted a meta-ethnography of

qualitative, peer-reviewed studies on the "patient experience of MBSR or MBCT" (p. 61, Malpass et al., 2012). Participants in the included studies reported both physical and psychological concerns. The authors synthesized 14 studies, and described the participants' experience of the mindfulness process. Similar to the above themes, the authors found that participants reported increased awareness of their current coping strategies, and a changing relationship to their current cognitive and emotional struggles through acceptance. Authors also found that participants gained new understanding of the role that mindfulness can play in helping them to cope with their symptoms (Malpass et al., 2012).

Wyatt and colleagues (2014) reviewed qualitative studies that focused on the experience of "individuals with mental health difficulties" attending group mindfulness-based interventions (p. 216, Wyatt et al., 2014). Fifteen qualitative, peer reviewed studies were analyzed using a thematic synthesis approach. The authors found eight analytical themes, which included prior experiences and expectations, normalizing and the supportive process of the group, relating differently to thoughts and feelings, acceptance, a sense of control and choice, relationship with self and others, struggles, and awareness. The authors concluded that the reviewed qualitative studies reveal how participants engage in mindfulness and how they use it to "renegotiate their relationship with their mental health difficulties," especially with regard to the awareness and acceptance of their thoughts and emotions (p. 224,Wyatt et al., 2014). The authors also found that participants appreciated the flexibility of mindfulness practice, and found that learning mindfulness in a group setting was helpful because of the validation and support received from peers.

The qualitative studies on mindfulness complement the quantitative research, and lend greater detail and understanding to the outcomes of mindfulness. This qualitative data also

enhances current theories and conceptualizations of mindfulness, as well as articulates the challenges of engaging in mindful practice (Allen et al., 2009). Finally, results from the qualitative studies inform possible future research by identifying emerging themes (e.g., group effect and enhancement of interpersonal relationships).

Although both quantitative and qualitative studies show the positive impact of mindfulness-based interventions, it is important to also discuss adverse effects. Shapiro (1992) studied 27 long-term adult meditators (length of practice ranging from 1.4 to 8.7 years), to examine the effects of mindfulness meditation. Results showed that although participants reported significantly more positive than negative effects of mindfulness meditation, 62.9% reported at least one adverse effect from meditation, including relaxation-induced anxiety and panic, increases in tension, boredom, less motivation, pain or discomfort, confusion and disorientation, feeling 'spaced out', depression, increased negativity, being more judgmental, and feeling addicted to meditation (Shapiro, 1992). A more recent meta-analysis by Goyal and colleagues (2014) reviewed 41 randomized controlled trials with a cumulative 2,993 participants. They found that mindfulness meditation programs had a moderate effect on anxiety (0.40), depression (0.32), and pain (0.33), and had no effect on positive mood, attention, substance use, eating, sleep, and weight. Additionally, they reported that only 10 trials had a low risk of bias, and that they "did not find any evidence to suggest that these meditation programs were superior to any specific therapies they were compared with" (p. 27, Goyal, Singh, Sibinga, Gould, Rowland-Seymour, Sharma…& Haythornthwaite, 2014).

In summary, it is clear that research on mindfulness and mindfulness-based interventions is promising; however, continued investigation is needed on the effectiveness of interventions, the process of mindfulness and the experience of practitioners, and any possible negative impacts

of mindfulness practice. This is especially true given the methodological limitations and overarching research challenges of current research.

2.7 Mindfulness Methodology and Research Challenges

In this section, I will discuss the quantitative measures and qualitative methodologies used to investigate mindfulness in the existing literature. I will then address the common methodological limitations of mindfulness studies, followed by a discussion of the overall challenges to mindfulness research.

Quantitative measures. Most recent quantitative studies utilize a formal measure of the construct of mindfulness. These measures assess mindfulness using different conceptualizations and definitions; and are based on various underlying mechanisms attributed to the salutary effects of mindfulness-based interventions (e.g., attention, attitude). Currently, the most common measures of mindfulness in the literature are: The Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003); The Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004); The Toronto Mindfulness Scale (TMS; Lau, Bishop, Segal, Buis, Anderson, & Carlson, 2006); and The Five Factor Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006).

The Mindful Attention Awareness Scale (MAAS). The MAAS (Brown & Ryan, 2003) is a 15-item instrument measuring the general, trait tendency to be attentive to and aware of the present moment in daily life. It uses a single factor structure supported by factor analysis, with a reported internal consistency of .82 (Brown & Ryan, 2003).

The Kentucky Inventory of Mindfulness Skills (KIMS). The KIMS (Baer et al., 2004) is a 39-item, multi-factor instrument that also measures a general, trait tendency to be mindful in

daily life. It is based largely on Linehan's (1993) conceptualization of mindfulness in DBT, and does not require experience with meditation. The KIMS assesses four components of mindfulness: observing external and internal stimuli, describing or labeling observed stimuli, acting with awareness in the present moment, and accepting without judgment. Internal consistencies range from .76 to .91 for the four subscales, and factor analyses supports the four-factor structure (Baer et al., 2004).

Toronto Mindfulness Scale (TMS). The TMS (Lau et al., 2006) is a 13-item, two-factor instrument that measures a person's capacity to invoke a mindful state. It assesses mindfulness along two factors: curiosity (awareness of present moment experience with an attitude of curiosity toward internal and external stimuli), and decentering (awareness of present moment experience with distance or disidentification rather than engagement or over-identification with external and internal stimuli). The TMS is the only current measure of state mindfulness, and is intended to be used immediately following a mindfulness meditation experience. The authors (Lau et al., 2006) report internal consistency of .93 and .91 for subscales. Exploratory and confirmatory factor analyses supports the two-factor structure.

The Five Factor Mindfulness Questionnaire (FFMQ). The FFMQ (Baer et al., 2006) was derived from a factor analysis of existing inventories measuring general, trait mindfulness in daily life. Thirty-nine items were chosen from these inventories by selecting the items with the highest loadings for each of the following factors of mindfulness: observing external and internal stimuli, describing or labeling observed stimuli, acting with awareness in the present moment, nonjudging or acceptance of observed stimuli, and nonreactivity to inner experience. Internal consistencies range from .83 and .95 for the subscales (Baer et al., 2006).

Qualitative methodologies. Qualitative studies in the literature use a variety of methodological approaches, with the most common being grounded theory, narrative inquiry, content analysis, phenomenology, and interpretative phenomenological analysis. Several studies are mixed method and incorporate a qualitative interview and thematic analysis.

A central topic of discourse in the qualitative literature is the need for more qualitative inquiry in order to give a more holistic view of mindfulness, including informing conceptualization and mechanisms of change (Allen et al., 2009; Monshat et al., 2013). There is also a call to shift the focus of qualitative research from the outcomes of mindfulness to a deeper understanding of the mindfulness process as well as how individuals experience using mindfulness (Allen et al., 2009; Grossman, 2008).

Methodological limitations. Many studies on mindfulness have significant methodological flaws that limit the ability to draw any strong conclusions on mindfulness practice or the effectiveness of mindfulness-based interventions (Davidson & Kaszniak, 2015). Many quantitative studies do not use control groups (e.g., wait-list, TAU- therapy as usual using psychological approaches) or specific, structured treatment comparison groups (e.g., relaxation interventions, cognitive behavioural therapy). This makes it difficult to attribute post-treatment gains specifically to mindfulness-based interventions, and to compare results with alternative treatments (Baer, 2003; Grossman et al., 2004). Some studies also report small sample sizes, which limits the adequate detection of medium-to-large treatment effects, as well as generalizability (Sauer, Walach, Schmidt, Hinterberger, Lynch, Büssing, & Kohls, 2015).

Other critiques argue that many quantitative studies do not address participant drop out or variable home practice compliance; do not use appropriate statistical calculations or empirically validated measures; and neglect to evaluate the clinical significance of the intervention outcomes

(Baer, 2003; Bishop, 2002; Davidson & Kaszniak, 2015; Grossman et al., 2004). Moreover, there also exists the likelihood that the effectiveness of mindfulness-based interventions is more related to the type of participants that volunteer rather than the intervention itself (Baer, 2003; Grossman et al., 2004; Sauer et al., 2015).

Authors contend that the potential for selection bias is true in qualitative studies as well, where participants may have unique characteristics or other factors that set them apart from a normative sample and motivate them toward both learning mindfulness and sharing their experiences (Fitzpatrick et al., 2010; Mackenzie et al., 2007; Malpass, et al., 2011; Mason & Hargreaves, 2001; Stelter, 2009). There are several other limitations to the qualitative studies on mindfulness. Outside of member-checking to confirm participants' results, there is little secondary auditing or validation of the data (Stelter, 2009). Some studies did not adhere to their specified methodology, or did not adequately describe important aspects of the research design (e.g., data saturation, reflexivity in the analysis, theory construction based on data analysis) (Malpass et al., 2011; Smith et al., 2007). Furthermore, although using a qualitative design, many studies continue to focus on the outcomes of the intervention, directing participants more toward sharing about the effects of treatment as opposed to the process or experience of using mindfulness (Malpass et al., 2011; Proulx, 2008; Stelter, 2009). Finally, most studies are conducted after the completion of treatment, with very few studies that gather data at multiple time points during an intervention (Kerr, Josyula, & Littenberg, 2011).

A final methodological issue is maintaining the integrity of treatment, and is apparent across both quantitative and qualitative studies. More often than not, studies do not describe the training standards for facilitators of the interventions, including details about qualifications, experience, and supervision received (Baer, 2003; Carmody & Baer, 2009; Sauer et al., 2015).

Therefore, there is ambiguity concerning adherence to the intervention program, level of experience, rigour of training, and supervision of practice; all of which impact the confidence in findings for these studies.

Challenges. Methodological issues are compounded by overarching challenges involved in researching mindfulness. One of the most salient issues is how to accurately and effectively measure mindfulness, especially in the absence of a consensus on definition and underlying mechanisms (Bishop et al., 2004; Coffey, Hartman, & Fredrickson, 2010; Davidson & Kaszniak, 2015). There are inconsistencies in describing the components and processes of mindfulness, which has led to the development and use of multiple mindfulness measures that reflect and assess different characterizations of the construct (Bishop et al., 2004; Grossman, 2008). Yet most authors contend that without a consensus on an operational definition of mindfulness, it is not possible to investigate the processes and mechanisms of mindfulness, nor is it possible to create instruments capable of measuring it (Bishop et al., 2004). Existing measures identify components of mindfulness, and there is an assumption that these components are the main mediators leading to therapeutic change. This assumption may be premature given the ambiguity that persists in the literature (Mikulas, 2011; Davidson & Kaszniak, 2015; Dobkin & Zhao, 2011; Zvolensky, Feldner, Leen-Feldner, & Yartz, 2005). Furthermore, it is difficult to differentiate components that characterize the construct of mindfulness from likely outcomes of learning and practicing mindfulness (Shapiro et al., 2006; Zvolensky, et al., 2005). For example, attitude could be an essential ingredient of mindfulness or it could be a result of practicing mindfulness. A fundamental issue seems to be that existing measures have not demystified mindfulness in terms of its antecedents and outcomes (Brown et al., 2007; Davidson & Kaszniak, 2015; Sauer et al., 2013).

It could also be that mindfulness is too complicated to measure because of its very nature, even if there were an operationalized definition. In a qualitative study by Smith and colleagues (2007), participants had difficulty articulating how mindfulness had helped them. The authors consider that this could reflect the inherent challenge of conceptualizing and describing mindfulness (Smith et al., 2007). Grossman (2008) has argued that the intrinsic complexity and subjectivity of mindfulness does not easily lend itself to objective measurement. This difficulty may support the need for measurements beyond retrospective self-reports in order to fully understand the process of mindfulness. Currently, all mindfulness measures are self-report (Shapiro & Carlson, 2009). The majority of studies only use self-report assessment, and do not incorporate additional methods of assessment such as clinician feedback, behavioural observations, proxy reports, and neurological and physiological data (Grossman, 2008). Using other methods would allow for objective corroboration of self-report results, and increase the likelihood that the changes recorded through self-report measures are actually a reflection of mindfulness acquisition, rather than the limitations typically associated with self-report measures (e.g., social desirability bias) (Davis & Hayes, 2011; Grossman, 2008; Shapiro & Carlson, 2009).

Another challenge in the mindfulness research involves inconsistency across mindfulness-based interventions. Because the field of psychology has yet to come to a consensus on a definition and conceptualization of mindfulness, the instruction and practice of mindfulness can vary depending on the approach of the intervention and its theoretical underpinnings. Mindfulness-based interventions vary in methods used, teaching style, purpose, and emphasis of mindfulness practices (Baer, 2003). The argument can be made that outcome studies showing therapeutic changes could indeed be examining the efficacy of the intervention modality as opposed to mindfulness (Baer, 2006; Carmody, 2009). Therefore, it is difficult to

know if it is mindfulness alone that is leading to positive outcomes. For example, Shapiro and colleagues (2008) found that while sitting meditation did not predict changes in mindfulness (measured by the MAAS), participating in the MBSR program did. According to this study, there are other mediating factors at play. One possibility is group effects, which has been an emerging theme in the qualitative data (Allen et al., 2009; Finucane & Mercer, 2006; Fitzpatrick et al., 2010; Griffiths et al., 2009; Mackenzie et al., 2007; Proulx, 2008).

A final challenge discussed in the literature concerns the methods used to cultivate mindfulness. As previously stated, different interventions use different methods of teaching mindfulness, and engage participants in different mindfulness activities. It is unclear in the research whether informal mindfulness practice and/or formal mindfulness meditations are required for positive outcomes (Chiesa & Malinowski, 2011). Kabat-Zinn (1990) emphasized the need for formal meditations, stating that they provide the framework for cultivating mindfulness. Other authors state that mindfulness can be nurtured by any method that increases mindful awareness and an accepting attitude (Bishop et al., 2004; Hayes, 2005). There is growing evidence that formal meditation contributes to an increase in mindfulness and beneficial outcomes. Carmody and Baer (2008) examined the contributions of both formal and informal mindfulness practices in an 8-week MBSR group. Pre- and post- intervention measures were administered to 174 adults participants, and results showed that formal meditation practice (e.g., body scan, yoga, sitting meditation), but not informal practice, was related to increases in mindfulness and psychological wellbeing as measured by the FFMQ and the Scales of Psychological Well-Being, respectively. In contrast, Brown and Ryan (2003) surveyed 50 adult meditators to investigate specific aspects of practice that may promote mindfulness. Participants completed the MAAS and a brief survey regarding their formal mindfulness practice and

informal practice (e.g., whether mindfulness is carried into their daily lives). The authors determined that informal practice was related to increased mindfulness levels while time spent meditating was not related.

In summary, the limitations and challenges of mindfulness research continue to generate debate in the literature. It is apparent that contrasting findings indicate the importance of continued investigation into the cultivation of mindfulness. The literature is clear that mindfulness is important, but it still confounds what contributes to becoming more mindful (Dobkin & Zhao, 2011). The confusion has its roots in the complex nature of mindfulness and the difficulty of defining, conceptualizing, and measuring the construct. However, despite the limitations and challenges, mindfulness outcome research consistently shows moderately strong, immediate and long-term positive effects of mindfulness on anxiety, depression, and stress in controlled and uncontrolled studies (Baer, 2003; Gotink et al., 2015; Grossman et al., 2004; Hoffman et al., 2010; Khoury et al., 2013). Qualitative research suggests increased awareness and acceptance of thoughts and emotions, and increased awareness of how to cope with symptoms (Malpass et al., 2012; Wyatt et al., 2014). Researchers continue to assess the outcomes and components of mindfulness, given the potential of mindfulness-based interventions in helping with a multitude of issues across diverse populations. One of the populations that are poised to benefit greatly from mindfulness is university students.

2.8 Mindfulness and University Students

Much of the research done on the efficacy of mindfulness has been with clinical and non-clinical populations from the community. Fewer studies have been done with university student populations. The existing empirical research is mostly conducted with non-clinical

undergraduate student populations, and focuses primarily on outcome studies of mindfulness-based interventions, particularly Mindfulness-based Stress Reduction (MBSR) and Mindfulness-based Cognitive Therapy (MBCT)(e.g., Bergen-Cico, Possemato, & Cheon, 2013; Gallego, Aguilar-Parra, Cangas, Langer & Mañas, 2014; Jain, Shapiro, Swanick, Roesch, Mills, Bell, & Schwartz, 2007; Shapiro, Brown, & Biegel, 2007; Shapiro, Brown, Thoresen, & Plante, 2011; Shapiro, Schwartz, Bonner, 1998). This section will discuss empirical research that has examined the effects of mindfulness-based interventions on mental health and psychological wellbeing, including two reviews of outcome research on interventions for university students. Shapiro and various colleagues have conducted a large portion of the research in the area of university students and mindfulness. An early, seminal study on mindfulness and university students examined the short-term effects of MBSR on premedical undergraduates and medical students (Shapiro et al., 1998). Seventy-eight self-selected students were randomly assigned to an MBSR intervention group or a wait-list control group, and both groups were measured twice (before the intervention and again during a high stress academic period) using the Empathy Construct Rating Scale, the Hopkins Symptom Checklist 90, the SCL-90, and the State-Trait Anxiety Inventory. Results indicated that MBSR can effectively reduce state and trait anxiety, increase levels of empathy, and reduce overall psychological distress, including depression. These results were the first to suggest that MBSR is an effective intervention for a non-clinical student population (Shapiro et al., 2011). Later studies replicated these results, suggesting that MBSR has led to positive wellbeing, and reductions in stress, anxiety, and depression when used with non-clinical university student populations (Shapiro et al., 2007; Shapiro et al., 2011). More recently, Shapiro, Brown, and Astin (2011) reviewed four decades of empirical research on the use of mindfulness and meditation practice in higher education. They reported that mindfulness

supports academic performance and cognitive functioning (i.e., attention and information processing), builds stress resilience, and helps in the development of the 'whole person' (Shapiro et al., 2011).

Other authors have also investigated the mental health effects of mindfulness-based interventions. Bergen-Cico, Possemato, and Cheon (2013) examined the potential psychological health benefits of 119 self-selected undergraduate students participating in a brief (5-week) MBSR program that was integrated into an academic course. Participants were randomly assigned to the intervention group or to a control group, and both groups completed pre and post intervention measures (the Philadelphia Mindfulness Scale, the Kentucky Inventory of Mindfulness Scale, and the State-Trait Anxiety Inventory). Results showed significant increases in overall psychological health (as measured by mindfulness) among MBSR participants in comparison to the control group, with no significant improvement in trait anxiety. The authors deduced that a brief MBSR intervention can be beneficial for overall psychological health, but that longer, more traditional MBSR groups may be required to improve distress such as trait anxiety (Bergen-Cico et al., 2013). Jain and colleagues (2007) conducted a randomized controlled trial with 83 medical students, graduate nursing students, and premed undergraduates to investigate the effect of a one-month mindfulness intervention on reported psychological distress. Participants completed pre- mid- and post- intervention measures (Brief Symptom Inventory, Positive States of Mind Scale, and the Daily Emotion Report). The study found reduced psychological distress over time, including decreased distractive and ruminative thoughts and behaviours, as well as enhanced positive mood states over time (Jain et al., 2007).

Gallego and his colleagues (2016) examined whether an 8-session mindfulness intervention (based on MBCT) could effect significant changes in the manifestations of

depression, anxiety, and stress. The authors gave 41 first year students a pre and post-test using

the Abbreviated Depression, Anxiety and Stress Scales. The analysis of pre and post-testing

showed significant impact of the mindfulness intervention on stress (d=0.667), depression

(0.602), and anxiety (0.318). The authors concluded that "mindfulness training caused a

significant reduction in levels of depression, anxiety and stress" for the students in the study (p.

13, Gallego et al., 2016).

Two recent meta-analyses on interventions for university students substantiate the results

found in the outcome research. Conley, Durlak, and Dickson (2013) evaluated the effectiveness

of various interventions for students on a range of outcomes. The authors reviewed 83 controlled

intervention studies involving undergraduate, graduate, and professional students, focusing on

social and emotional skills, self-perceptions, and emotional distress. Results showed that

interventions incorporating supervised skills practice had a strong advantage over interventions

that did not include this component. Furthermore, within the interventions that had supervised

skills practice, mindfulness interventions were significantly more effective than each of the other

interventions (Conley et al., 2013). Regeher, Glancy, and Pitts (2012), conducted a meta-

analysis of 24 studies on interventions to reduce stress in university students. The authors found

that mindfulness interventions, along with cognitive and behavioral interventions, were

associated with decreased symptoms of anxiety and lower levels of depression (Regeher et al.,

2012). Results suggest that mindfulness interventions are effective in reducing stress in

university students, and the authors suggest that university counselling centres "provide

opportunities for a larger number of students to access these interventions" (Regeher et al., 2012,

p.10).

In comparison to the quantitative research, there are few known qualitative studies on mindfulness with university students. One study by Sears, Kraus, Carlough, and Treat (2011) explored the perceived benefits and doubts of 65 students in a mindfulness meditation intervention over the course of an academic semester. The authors conducted a content analysis of weekly questionnaires completed by the participants and found that a majority of students (84.7%) detailed at least one benefit and one doubt of meditation every week. Categories of benefits and doubts were developed based on grounded theory and recurring themes emerging from the data. The categories for perceived benefits of mindfulness were increased calmness, relaxation, or peace; increased attention and awareness, change in quality of thought, decreased anxiety and stress; improved clarity of thought; increased energy or spirits refreshed; and spirituality/oneness. The categories for perceived doubts were difficulty maintaining cognitive focus during meditation practice, questioning the worth of meditation, difficulty finding time and motivation to engage in home practice, and the capacity to engage in meditation (Sears et al., 2011). The authors concluded that experiencing doubt with regard to meditation is a common experience and does not prohibit experiencing the benefits. Another observation from the findings was the importance of changes in quality of thought, and the need for more research on how we pay attention as opposed to simply that we pay attention.

Hjeltnes and colleagues (2015) explored the experiences of 29 students at a university in Norway who participated in an MBSR program for academic evaluation anxiety. The authors used explorative-reflective thematic analysis methodology to develop five patterns of meaning with regard to how the MBSR group was helpful and not helpful in managing academic evaluation anxiety. The patterns were finding an inner source of calm, sharing a human struggle, staying focused in learning situations, moving from fear to curiosity in academic learning, and

feeling more self-acceptance when facing difficult situations (Hjeltnes, Binder, Moltu, and Dundas, 2015). The authors discussed the positive impact of the group-based mindfulness intervention for participants, not just in terms of academic evaluation anxiety, but also with respect to a deepening capacity for "inner calm" and self-acceptance, the influence of group processes on acceptance, and learning mindfulness to cope with other academic challenges.

In summary, university students strive to attain their educational goals in the face of many academic, social, and personal stressors that can tax their existing coping skills and resilience. An increasing number of students are experiencing complex and more severe mental health challenges as they try to meet the demands of university life. Many seek help from university counselling centres, which provide them with support and treatment so they can remain in school and enjoy academic success. However, these counselling centres are experiencing increasing demands with limited resources. They are often forced to find more creative and effective solutions to serve the growing needs of students, including moving non-crisis clients into groups. Mindfulness has grown in popularity over the last 30 years, and mindfulness-based interventions have proven to be effective treatment strategies for a number of physical and psychological issues. As the outcome research expands, these interventions are being used with a diverse set of populations, including university students. Research is limited on the salutary effects of mindfulness interventions with higher education populations, with the large majority of studies being quantitative in nature and carried out with non-clinical populations. Overall, these quantitative studies suggest that mindfulness-based interventions may enhance a student's ability to tolerate the many stresses of higher education by decreasing negative emotions, ruminations, and other psychological symptoms. There are few qualitative studies on mindfulness with university students, with most focusing on the outcomes of

mindfulness rather than the process of mindfulness or how students experience and cultivate

mindfulness. There is currently no known published qualitative research on what helps and

hinders the cultivation of mindfulness with a clinical student population, specifically students

who participate in a mindfulness-based intervention as part of treatment at a university

counselling centre. The aim of the present research study was to explore the experience of

university students in cultivating mindfulness using the enhanced critical incident technique

(ECIT). ECIT is a useful tool to research students' experience of mindfulness as it provides very

specific information on what factors facilitate and challenge the cultivation of mindfulness.

CHAPTER 3: METHODOLOGY

This chapter explains the research method and procedures I used to conduct the proposed study. I will begin with an overview of the research design, discussing the enhanced critical incident technique (ECIT) and its suitability for exploring the research question, "What facilitates university students' cultivation of mindfulness and what hinders their cultivation of mindfulness?" I will then describe participant recruitment and selection, data collection and analysis, representation of the findings, and delimitations. Finally, I will discuss rigour, as well as ethical concerns.

3.1 Research Design

Enhanced Critical Incident Technique. The enhanced critical incident technique (ECIT) is an extension of the critical incident technique (CIT), which was developed by John Flanagan in 1954. CIT originated from the research of the Aviation Psychology Program of the United States Army Air Forces during World War II, and was initially used to create a functional description of an activity and determine the critical factors needed for job success (Flanagan, 1954). CIT has since grown from a behavioural, task analysis approach involving direct observation into a qualitative research methodology involving retrospective self-report through in-depth interviews (Butterfield, Borgen, Amundson, & Maglio, 2005). It is used to explore a variety of subjects in many fields including nursing, education, marketing, social work, and industrial and organizational psychology. Woolsey (1986) related CIT to counselling and psychology, outlining the strengths of CIT as a research methodology to study psychological constructs and experiences. These strengths included the ability of CIT to uncover not only critical incidents, but also factual information, qualities, and attributes of a particular construct or

experience (Woolsey, 1986). CIT also has strength in its capacity to "explore differences or turning points" as well as "its utility as both a foundational/exploratory tool in the early stages of research, and its role in building theories or models" (Butterfield et al., 2005, p. 480).

There are several features of CIT that differentiate it from other qualitative methodologies: the focus on the critical incidents that facilitate or hinder an activity or the experience of an activity; its origins in organizational and industrial psychology; data analysis identifies incidents and creates categories that emerge from the data; and these categories are given operational definitions self-descriptive titles and are the basis of the CIT narrative (Butterfield et al., 2005; Butterfield, Borgen, Maglio, & Amundson, 2009).

Creating and discussing this categorization scheme is the primary purpose of CIT. Categories describe the critical incidents, while preserving the comprehensiveness, specificity, and validity of the incidents (Butterfield et al., 2009). A critical incident is defined as a human activity that is complete and real, that can be observed so inferences or predications can be made, and that significantly contributes to the outcome of an activity (Butterfield et al., 2005). CIT consists of five main steps: "(1) ascertaining the general aims of the activity being studied; (2) making plans and setting specifications; (3) collecting the data; (4) analyzing the data; and (5) interpreting the data and reporting the results" (Butterfield, 2005, p.477). CIT gathers rich and descriptive information on critical incidents from the perspective of the individual experiencing these incidents (Butterfield et al., 2009). CIT also considers cognitive, affective, and behavioral elements of critical incidents, including how incidents are handled and their perceived impact on the individual (Butterfield et al., 2005, 2009).

ECIT adheres to the traditional aspects of CIT but adds context, wish list items, and credibility checks. Contextual questions are included in the interview to provide background

knowledge and context within which CIT and wish list data can be understood (Butterfield, et al., 2009). It also allows for additional perspectives of the participants to provide information regarding the theoretical agreement with the current scholarly literature. Wish list items are included in order to gather data on the "people, supports, information, programs, and so on, that were not present at the time of the participant's experience, but that those involved believed would have been helpful" (Butterfield et al., 2005, p.267). Both critical incidents and wish list items are gathered with the same level of detail and weighted equally with regard to data analysis (Butterfield et al., 2009). Finally, nine credibility checks are added to augment the process of data analysis and increase the trustworthiness of the study. These credibility checks are audiotaping, interview fidelity, independent extraction of critical incidents, exhaustiveness, participation rates, placing incidents into categories, participant cross-checking, expert opinions, and theoretical agreement.

Suitability. CIT allows researchers to discover "effective and ineffective ways of doing something" by "looking at helping and hindering factors, collecting functional or behavioral descriptions of events or problems, examining success and failure, and determining characteristics that are critical to important aspects of an activity or event" (Butterfield et al., 2005, p.476). CIT reveals critical incidents, as well as facts, qualities, turning points, and experiences of a specific activity (Butterfield et al., 2009). It is particularly appropriate and useful in the early phases of research when there is little known about the incidents or factors involved in an activity or event (Butterfield et al., 2009). It is a systematic yet flexible approach that lends itself well to the exploratory nature of this study. The cultivation of mindfulness by a clinical university student population in a university counselling centre is a research topic that is in the exploratory stage, with little understanding of students' experiences and what encourages

and impedes them in this experience. Thus, the purpose of this study was to explore and gather data on the factors that help and hinder university students.

This study used Enhanced CIT (ECIT) by adding contextual information, wish list items, and credibility checks to the traditional facets of CIT. Contextual questions were added to the interview in order to gain background understanding for CIT and wish list data, specifically the participants' use of mindfulness, the initial concerns that brought the participants to the counselling centre, and whether they view themselves as mindful. Contextual questions also gathered participants' perspectives on the definition of mindfulness and the impact of mindfulness (Butterfield, et al., 2009). Wish list items were included in the interview to gather data on what would have been helpful for the participants that they did not have access to at the time. Finally, credibility checks augmented the process of data analysis and increased the trustworthiness of the study. These credibility checks are outlined in the rigour section.

3.2 Participants

Flanagan stated that in a CIT study the number of participants interviewed is determined by the number of critical incidents reported and whether the incidents represent adequate coverage of the activity being studied (Butterfield et al., 2005). Therefore, participant interviews continued until data exhaustiveness was attained and no new categories were needed (Butterfield et al., 2009). There were 14 participants in this study, who provided sufficient critical incidents and wish list items to reach the data exhaustiveness criterion.

Participant recruitment and selection. I received the support of Health and Counselling Services (HCS) at Simon Fraser University (SFU). To date, SFU has the only known authentic MBSR group in Canada that is run through a university counselling centre. The

MBSR group at SFU is available to SFU students who are referred by HCS counselling centre clinical staff. Decisions regarding referral are made based on the clinical judgment of the referring clinician; however, students must agree to commit to attending all of the group sessions and to engaging in the home practices.

Participant recruitment was made possible with the full cooperation of the Associate Director of Counselling at HCS. HCS sent recruitment emails to students who had participated in the centre's MBSR group. The recruitment email included the recruitment poster (Appendix A), and an email address where students were able to contact me directly if interested in participating. Multiple recruitment emails were sent over a total period of eight months.

Participation in the proposed study was based on self-selection. In order to participate in the study, participants had to self-identify as having attended an MBSR group at SFU and as having engaged in cultivating mindfulness. Further, participants had to be students at the time that they attended the MBSR group. Recruitment emails were sent to approximately 100 students, all of whom had participated in SFU's MBSR program since its inception in January 2013. Fourteen potential candidates were screened via email and all candidates met the selection criteria.

All participants were given a gift certificate as compensation for their participation in the study.

Participant demographics. Fourteen participants were interviewed for this study, with five identifying as male and nine identifying as female. The age range of participants was from 21 to 39, with the average age of 27 years old. Participants identified with the following ethnicity/race: Caucasian (6); Chinese (2); Columbian (1); Indian (1); Japanese (1). Three participants identified as: Indian/Caucasian; Vietnamese/Chinese; and Hispanic/ Caucasian. Five

participants were born in Canada and nine were born in the following countries: Columbia,

Finland, Greece, Mexico, Philippines, Russia, Taiwan, United States, and United Kingdom. Ten

participants spoke English as their first language, and four spoke English as their second

language (first languages identified as Mandarin, Russian, Greek, and Spanish).

Participants were both undergraduate and graduate students. Nine participants were

undergraduates at the time of the MBSR group, and five were graduate students. Four had been

graduated at the time of the interview. Participants studied in the following faculties: Applied

Sciences (1); Arts and Social Sciences (5); Environment (4); Health Sciences (1); and Science

(3). Ten participants were domestic students and four were international students.

3.3 Data Collection

Data was collected through one in-depth interview and a second, follow-up contact. All

interviews were conducted via Skype and were recorded, with hand-written notes also taken. All

interviews lasted between 60-90 minutes and were the primary source of data collection.

All participants received, reviewed, and signed the informed consent (Appendix B). At

the start of the interview, they each verbally confirmed consent and ensured that they understood

the purpose of the study, confidentiality and privacy, and their rights as research participants. In

the interviews, participants described in detail the reason for referral to the MBSR program, how

they define mindfulness, how mindfulness has impacted their mental health, and what factors

help and hinder their cultivation of mindfulness. Participants also shared wish list items,

elaborating on factors that they did not have which might be helpful to their cultivation of

mindfulness. A semi-structured interview protocol served as a standardized framework for each

interview and is included as Appendix C. At the end of the interview, participants were asked demographic data, which was used in the above description of the participant sample.

The interviews were followed by a second contact made via email (see Appendix D for a sample email). Through this contact, data that was collected from the primary interview was checked and validated by the participants. Details of this participant check are described in the rigour section.

3.4 Data Analysis

To prepare the data, audio recordings of the interviews were transcribed, and transcriptions were read through and organized. The critical incidents (CI) and wish list (WL) items were extracted from the data in batches of three interviews (Butterfield, et al., 2009). For the first interview, helping and hindering CIs and WL items were identified and categories were created based on patterns, themes, and similarities among the CIs and WL items (Butterfield et al., 2009). For each subsequent interview, helping CIs, hindering CIs, and WL items were identified and placed into existing categories. For those CIs and WL items that did not fit within existing categories, new categories were created.

Categories were modified, renamed, merged together, or broken apart in order to create a richer understanding of the research data, to reduce overlap, and to distinguish between categories. A self-descriptive title and operational definition were then given to each category. A significant consideration in the process of data analysis was the minimum participation rate standard set by Borgen and Amundson (1984) of 25% of participants identifying incidents that fit into a specific category. Three categories fell below the minimum participation rate. These

categories were kept to maintain the meaning of the data and to preserve the experience of the participant, and are detailed in Appendix E.

Data interpretation also included the following credibility checks: audiotaping, interview fidelity, independent extraction of CIs and WL items, exhaustiveness, participation rates, placing incidents into categories, participant cross-checking, expert opinions, and theoretical agreement (Butterfield et al, 2009). These credibility checks are addressed in detail in the following section.

3.5 Rigour

Trustworthiness is crucial in demonstrating rigour in qualitative research as the research audience is counting on this quality when basing decisions on the information provided (Haverkamp, 2005). This is especially relevant in qualitative research on mindfulness, given that most studies do not mention trustworthiness or the validation of data, aside from participant checking (Stelter, 2009). Trustworthiness and rigour were established in this study through the following nine credibility checks that are central to the Enhanced Critical Incident Technique (Butterfield et al., 2005).

Audiotaping. All interviews were recorded in order to accurately account for the participants' words and stories. Interview recordings were transcribed by the researcher, and data analysis and interpretation were done directly from those transcripts.

Interview fidelity. An independent judge, who has performed multiple CIT research studies over the last 10 years, reviewed 25 percent of the interview transcripts in order to ensure that the CIT methodology and the interview protocol were being followed, and that the researcher was not asking leading questions.

Independent extraction of CIs. A coder familiar with the CIT method independently extracted CIs and WL items from 25 percent of the interview transcripts selected at random (Butterfield et al., 2005). There was 100% agreement between what the coder and researcher considered critical incidents or wish list items, with the coder recommending that the researcher obtain more specific examples for 4 of the incidents. The researcher gathered these examples through the participant check.

Exhaustiveness. CIs and WL items and categories were logged in order to track the point at which exhaustiveness occurred, or when no additional categories emerged from the data. Exhaustiveness was reached at nine participants. Five more participants were interviewed to ensure no additional categories.

Participation rates. Categories were considered credible by calculating participation rates against the 25 percent criteria established by Borgen and Amundson (1984, as cited in Butterfield et al., 2009). Participation rates were calculated for each category and are reported in Table 1 in the Findings chapter.

Placing incidents into categories. Twenty-five percent of the CIs and WL items were randomly chosen and given to an independent judge who has in-depth knowledge of and experience with the CIT method. Each CI and WL item was then placed into existing categories. The initial agreement rate between the judge and the researcher was 89%. After receiving feedback and discussing the CIs and WL items in question, there was 100% agreement between the judge and the researcher.

Participant cross-checking. Each participant received a second contact email with a summary of the CIs and WL items extracted from his or her interview, including the corresponding categories and definitions. All 14 participants gave feedback via email and

provided input on the CIs, WL items, and categories. Five participants offered minor changes to CIs, three gave specific examples for incidents, and two provided two additional incidents with specific examples. These revisions were incorporated into the final findings. All participants stated that the summaries represented their experience.

Expert opinions. The categories were reviewed by two psychologists, who each have over 15 years of experience in the field of mindfulness theory, practice, and research. One expert is certified as an MBSR instructor and currently runs MBSR groups, both in the community and through a university counselling centre. The other expert runs the mindfulness program at a large university and facilitates mindfulness groups and workshops. Both experts are actively involved in mindfulness research. Categories were discussed and slight revisions were made on category names based on their feedback.

Theoretical agreement. Categories that emerged from the data are compared to the relevant scholarly literature in the Discussion chapter.

Methodological limitations. This study attempted to address the methodological limitations of qualitative mindfulness research that was discussed in the literature review chapter. Methodological limitations not addressed in the study are detailed in the Discussion chapter.

The study adhered to the described ECIT methodology and used the credibility checks described above to ensure a level of rigour that extended beyond participant-checking (Malpass et al., 2011; Smith et al., 2007; Stelter, 2009). It maintained the focus of the study on the participants' experience of cultivating mindfulness, as opposed to focusing on the MBSR intervention itself or the psychological outcomes of the intervention (Malpass et al., 2011; Proulx, 2008; Stelter, 2009). Finally, it upheld the integrity of the treatment intervention selected (Baer, 2003; Carmody & Baer, 2009; Sauer et al., 2015).

MBSR was selected as the intervention from which participants were recruited. There are only two known mindfulness-based intervention programs provided through a university counselling centre in Canada, one is the MBSR group at SFU and the other is an MBCT group at the University of Toronto. MBCT is an adaptation of MBSR using a similar format (i.e., an 8-week class with an all-day retreat) and class structure (i.e., psychoeducation, formal meditation and movement practices, group discussions, and daily home practices). However, MBCT replaces some of the mindfulness content of MBSR with a focus on cognitive approaches to negative thinking, with the goal of addressing recurrent depression (Kabat-Zinn, 2003; Teasdale et al., 1995). Because of the split purpose of MBCT, MBSR was the intervention of choice in an effort to maintain focus specifically on the cultivation of mindfulness.

As stated above, MBSR is a structured 8-week group program consisting of eight weekly classes that are 2.5-3.5 hours in duration as well as an all-day silent retreat during the sixth week of the program (7.5 hrs). Each class has a standard guideline that includes an overview of the class, the theme for the week, a class sequence, and home practice assignments (Santorelli & Kabat-Zinn, 2014). Facilitators undergo intensive training in MBSR through the Center for Mindfulness in Medicine, Health Care, and Society at the University of Massachusetts Medical School. They must also meet certain minimum qualifications including completion of a Master's degree in social sciences, health sciences, or a related field; sustaining three years of a daily mindfulness meditation practice; completing two silent mindfulness meditation retreats; completion of a seven day MBSR training; and completion of practicum and supervision trainings. It is also strongly recommended to receive ongoing supervision (Santorelli & Kabat-Zinn, 2014).

Two MBSR teachers have facilitated MBSR groups through HCS at SFU. One of these facilitators left HCS last year. Both facilitators met the above minimum requirements and are highly trained MBSR teachers. The current facilitator also receives ongoing supervision by a senior level certified MBSR teacher. Both facilitators followed the class guidelines provided in the MBSR Professional Education and Training manual in order to ensure adherence to the intervention (Santorelli & Kabat-Zinn, 2014).

3.6 Situating the Researcher

I have been consistently cultivating mindfulness since 2009, using both formal and informal practices. I have engaged in mindfulness independently and as a part of mindfulness groups, including MBSR. I have experienced positive effects from mindfulness and have found it to be helpful both in my daily life and during difficult times. I have been studying mindfulness since 2009, and began using mindfulness in 2013 as a therapeutic intervention when working with university students at university counselling centres. It is through this personal and professional lens that I have engaged in the current study, with my core belief being that cultivating mindfulness is a rewarding practice that can have a profound impact, but that it comes with many challenges. This belief is the driving force behind why I wanted to research what helps and hinders the cultivation of mindfulness.

3.7 Representation of Findings

Findings are represented through the generation of categories that reveal the larger meaning of the data. These categories are presented in the Findings chapter.

3.8 Delimitation

Delimitations were set to consciously narrow the focus of the study. The study included university students in British Columbia who have participated in an authentic MBSR group. Participants included students of any age, gender identity, year in university, degree, and field of study in order to open the study to the perspective of any university student who felt they were able to discuss and articulate what helped and hindered their cultivation of mindfulness.

3.9 Ethics

An ethical relationship between the researcher and the participant is vital in the qualitative research process (Haverkamp, 2005). There is a level of vulnerability for the participants, and the researcher is responsible for promoting their welfare and protecting them from any possible harm (Haverkamp, 2005). Given this responsibility, there were several ethical considerations related to the study. A comprehensive informed consent form (Appendix B) was provided to all participants. It clearly articulated the purpose and procedures of the study so that participants fully understood my intentions. It also provided details regarding confidentiality, and contact information for questions and concerns regarding participant rights.

I was aware of the possible harm factors for the participants throughout each interview, particularly that they might share confidential and sensitive information about themselves and/or other students in the MBSR group. This did not become a concern at any point in any of the interviews. Participants expressed that they understood the boundaries of confidentiality, and they did not disclose specific details about other students. Most participants stated that they appreciated the opportunity to share their experiences and that the interview was helpful for them.

Another significant ethical consideration was to validate my interpretation of the data. In order to ensure an accurate account of the participants' experiences of mindfulness, I brought the data and interpretations back to the participant. Fourteen participants reported that the true meaning of their experiences was represented, and they felt their statements were interpreted in an authentic way.

CHAPTER 4: FINDINGS

This chapter will discuss the contextual and critical incident findings of the study. The chapter will begin by reporting the contextual findings of the study, followed by the critical incidents and wish list items in the helping, hindering, and wish list categories.

4.1 Contextual Findings

All 14 participants contributed contextual information as part of the interview process, including their definitions of mindfulness, their use of mindfulness (i.e., past, current, planned future use), the initial concerns that brought them to the university counselling centre, the overall impact of mindfulness on these initial concerns, and whether they consider themselves to be mindful. Contextual questions were asked in order to gather background information for the critical incidents and wish list items, and to get the participants' perspectives in order to situate them within the current literature on mindfulness and university students, specifically with regard to definitions of mindfulness, initial concerns, and overall impact of mindfulness.

Definition of mindfulness. Participants were asked to give their own definition of mindfulness. Participants described mindfulness as "staying present," "acceptance," and "living life to the fullest."

All 14 participants defined mindfulness as "being in the present moment" and experiencing "present moment awareness." One participant explained it as "the moment to moment checking in and coming back to the present." It was described as "being really present and aware of what you're doing and what's going on around you and inside you." One participant expressed that mindfulness is being aware of her emotional landscape:

I think I would define mindfulness as trying to live in the now, whether that now brings up anger and frustration or whether it brings up 'hey this is a great moment I'm feeling really happy.' It's just kind of reflecting on, checking in on, where you are in terms of emotion.

Other participants focused on the present "awareness of your own thoughts." One participant stated, "I would probably say presence, just being fully engaged in the moment and not being taken away by your internal thoughts. It's just kind of like being there in the moment." Another added that mindfulness is being "truly present and aware at all moments rather than to be stuck in your head."

Many participants discussed the feelings that being present can create. For example, it can generate feelings of "peace," "stillness," and "calm." One participant stated:

I think it can act as a way of getting me sort of centered…I know whenever I get anxious or feeling like I am going to get a panic attack, I usually just drop whatever I am doing and then just try to… concentrate on breathing and think about breathing in the moment…it's a calming down thing. I will say like 10 out of 10 I will always feel calmer after that.

For another participant, being in the moment creates clarity, "It means being fully enriched in the present environment, and a lot of it is clarity. I associate clarity with mindfulness. I feel almost quite natural, I feel very human." For a third participant, "living in the present" can create a sense of gratitude for her life:

Instead of thinking, I'm going to have to do this tomorrow, I have to do that the next week or oh I had a bad experience with a friend… When you are living in the present, I feel like you kind of appreciate life more; whereas, if you're focused on something that's not happening right now, you just dwell on it.

In addition to presence, several participants also included acceptance in their definition of mindfulness. For example, one participant described mindfulness as "not trying to change anything, but sort of accepting how it is and being okay with it and trying not to judge yourself or the situation." Another participant also commented on accepting herself in painful and

uncomfortable moments, "It's not necessarily being comfortable in the moment, but being okay with whatever arises in the moment and not creating a whole story around it and creating suffering, making myself suffer." For these participants, mindfulness is allowing themselves to think and feel whatever "comes up in the moment" and to "be able to accept it with non-judgment."

Two participants added that mindfulness is "living your life to the fullest by taking in the experience you are having at the moment" and "living every moment without letting it just pass and realizing that it's gone…Making the best out of every day and every moment."

This final quote can summarize the overall definition that participants give mindfulness:

> I think more than a practice, it is kind of a philosophy and a way of living…It's an awareness of where you are in your life right now…and how you are feeling and what you're thinking and how all of those things integrate into you as a person. It's a coping mechanism for me, for stressful times or unhappy times. It's a tool that I use a lot for handling unpleasant emotions; but not only that, it's something that I use to really bring myself to the present so that I can enjoy the things that are good.

Use of mindfulness. Participants were asked about their past, current, and future use of mindfulness. When asked about their past history with mindfulness, participants reported an total average of 2.25 years of cultivating mindfulness (at the time of the interview). Nine participants indicated that they have been cultivating mindfulness since the start of their first MBSR group, with two participants having done two semesters of the MBSR group and two participants having done three semesters. Nine participants reported that the MBSR group was their first experience with mindfulness. Five participants have practiced mindfulness in some form previous to doing the MBSR group. One participant stated that she has been meditating since childhood as a part of her religion, but specified that she has been cultivating mindfulness for approximately four years.

Participants were asked if they currently cultivate mindfulness. All participants reported that they have continued to cultivate mindfulness since participating in the MBSR group. Ten participants continue to cultivate mindfulness using both formal and informal practice. Two participants cultivate mindfulness both formally and informally; however, a majority of their practice is informal. And two participants cultivate mindfulness using only informal practice.

Participants were also asked to rate their current use of mindfulness on a scale from one to ten, where one was low use and ten was high use. Participants rated themselves twice in the interview, once before beginning the critical incident section, and then again after the wish list section. Seven of the fourteen participants changed their initial rating, with five participants increasing their rating and two decreasing their rating. Seven participants did not change their rating, reporting that their initial assessment of their use of mindfulness was still accurate.

The participants with a change in rating conveyed that reflecting on mindfulness in the interview gave them perspective on how much they cultivate mindfulness in their lives. The participants who rated themselves higher indicated that it was because they realized that they were using it more than they had initially thought. One participant commented, "Reflecting on how I've used it and then reminding myself how I've incorporated it has made me realize that I use it a little bit more than what I originally thought. But also identifies some areas or ways that I could try to incorporate it more. That's why I didn't rate myself higher." Another participant noted that she had "more helping factors than hindering factors and my wish list is really tiny. I think I may actually realize the bigger picture." Finally, one participant recognized that he uses mindfulness "in a more informal way than I realized."

Both participants who rated themselves lower expressed that it was because they "want to have more mindfulness in my life" and they "feel like I can be more mindful and I would like to be more mindful."

Finally, participants were asked if they think they will continue to cultivate mindfulness. All participants indicated that they will continue to cultivate mindfulness, either formally or informally or both. One participant stated that she will cultivate mindfulness "forever," while another participant felt the interview inspired her to "want to do the formal practice a little more." Two participants indicated that they will be taking the MBSR group again.

Reasons for referral. Participants were asked to share the presenting concerns that had prompted them to seek out counselling, and how they were referred to the MBSR group.

Participants reported the following presenting concerns: mental health diagnoses (e.g., depressive disorders, anxiety disorders, eating disorders) (9); academic stress (6); grief (1); relationship issues with significant other (4); relationship issues with family and others (2); and physical health concerns/pain (2). Thirteen of the fourteen participants reported more than one presenting concern, with participants experiencing an average of three comorbid presenting concerns.

Eleven participants were referred to the MBSR group from a counsellor or psychologist at the SFU counselling centre. Three participants had been attending another group at the counselling centre and were referred to MBSR through the group facilitator.

Impact of mindfulness. Participants were asked how mindfulness has impacted their initial presenting concerns. Many participants reported that mindfulness has helped them to improve their symptoms:

> It prevents me from getting back to that stage again because I'm more aware of my thoughts and realizing that they're just thoughts, they're not reality…Just being more aware of the sensations and seeing the sensations for what they are rather than panicking the whole day…Right now I'm not feeling very well, but I'm not panicking because I know it's just a sensation and just being mindful helps me to prevent it from escalating. I haven't had any anxiety attacks other than the first day of the mindfulness program where I had a huge panic attack and had to leave the group. But after that the mindfulness really helped and I haven't had a panic attack since then because I've been able to be more in tune with my sensations and prevent it from escalating into a panic attack.

Other participants stated that mindfulness has improved their overall mood and outlook:

> Honestly I think just going through this whole process has really almost saved my life. Because I had just, I hit a wall, a big wall. I was not happy, like ever. I don't think that I was really ever happy. But now at my core I know that I'm just happy. I'm happier in general…The mindfulness is what put me over that wall…It just felt like my everyday life was closing on me. And I don't even think I really knew it. I wasn't even conscious of it…It (mindfulness) allowed me to just let everything go…I was able to let go of all of my anger…and mindfulness I think really helped me do that.

For other participants, mindfulness has helped give them awareness and perspective. One participant can recognize his "normal signs and what I do when I'm really stressed out." He knows he needs to "take a break from what I'm doing and go do something else to counter it." Another participant reflected that mindfulness has helped her "move from seeing things as black to seeing things like grayish towards white. So it has made me realize that first of all it's not the end of the world…and it has actually reminded me of gratefulness…and it has made me see things in perspective."

Almost all of the participants agreed that while their presenting concerns improved from cultivating mindfulness, their symptoms did not remit completely. However, these participants all commented that they are better able to accept them and cope with them as they arise. One

participant noted, "Sometimes I get so anxious about something that I need to have done, and I have to be okay with that…I think acceptance is good. It's still stressful at times but I do think I deal with it better." Another participant remarked on how mindfulness has helped her cope, in addition to decreasing symptoms:

> Here and there I'll get anxiety, but not to the same level that I did. I don't go from zero to a hundred. I'll go from zero to maybe seventy and then I can get myself down. I've talked myself down from panic attacks in public by doing this and that's pretty huge for me. I'm not needing the anxiety medication and I'm coming off one of my other meds for the first time since I was a teenager…I haven't gotten as depressed as I used to get, but when I do get down in the dumps I am able to not wallow in my misery and make it worse. I say okay this is a moment that I'm feeling now and I may not feel it in an hour, but I may feel it for the rest of the day too and that's okay, so what do I need to do to get through today.

One participant reflected that she still feels anxiety, but that "the mindfulness just helps me deal with it, like manage the symptoms more so I'm able to live a more normal life, so in that way it's helped a lot." Another participant noted the impact on coping with the "worries in my life," stating:

> It has changed how I respond to them and how long it takes me to work through them or work around them. I feel like I have a bit more of a reprieve rather than jumping from one stress to the next. I'm sort of you know, floating on a river where there's like stress ice bergs…I feel like I can stop the snowball effect. It used to be really, really bad and would throw me like so far on the catastrophic thinking. So I feel like I am pretty good with that. It's not like it's completely gone but I'd say it's been a really big help.

Another participant also shared she can cope with "the feelings themselves…They're not any less comfortable…It just makes me handle them better…It helps me overcome it in a quicker time."

Participants also discussed that mindfulness has helped them be more proactive with regard to their presenting concerns. For example, one participant has learned to use mindfulness as a "preventative measure" as opposed to a way of coping, "I do it before stress becomes a

problem rather than a response mechanism for stress. I'm in the habit of it so stressful situations

don't arise as often and I am better prepared to deal with them."

A final participant shared the general impact that mindfulness has had on his life:

> Just learning about like being non-judgmental helped with just a variety of things in life and being more accepting with one's own qualities and the qualities in others. So that I think impacted my interaction with people in general, and that could impact my school performance…I think I just in general became less worried about things. I just let things go a little bit more easily with the practice, and it was like a profound understanding of myself. I really like the idea of being aware of one's thoughts and feelings and then naming them and then trying to work on these things, whether they impact schooling or relationships or work or whatever…So I think it's more general what mindfulness can do, and I think what it did for me, was kind of like shift my thinking so much that you maybe just don't think about school as much or you want to take care of yourself more. You see, your priorities may change just from like being with yourself.

Mindful person. Finally, participants were asked if they had always considered

themselves to be a mindful person. One participant indicated always considering themselves to

be a mindful person. Thirteen participants reported that they have not always felt mindful but

have been "gradually shifting" into being a more mindful person. All of these participants

agreed that this shift is an "ongoing process" that they will continue to develop over time. Ten

participants reported that the MBSR group was the catalyst for the shift to being a mindful

person. One participant credited the initial group they attended at the SFU counselling centre.

And two participants attributed their shift to a particular experience. For example, one

participant stated:

> Well I think it's an ongoing process that I'm continuing to see myself change and become more and more of a mindful person…but something started to click last summer. I started getting a panic attack…and I was like 'I think this is a panic attack.' So it was then that I thought that I'm really starting to listen to myself. I'm listening to my body and I'm listening to what I'm needing in the moment and this is a big change…It's incredible.

4.2 Critical Incident Findings

Fourteen participants were interviewed in this study with a total of 390 critical incidents (CIs) and wish list (WL) items extracted from these interviews. There were 195 incidents that participants found to be helpful to their cultivation of mindfulness, 130 incidents that they found hindering to their cultivation of mindfulness, and 65 wish list items that they perceived would be helpful if they could have access to them. These helping and hindering incidents and wish list items were organized into 19 major categories determined by leading participation rates.

All helping, hindering, and wish list categories are represented in Table 1 on the following page. Helping, hindering, and wish list category tables will be presented at the start of each respective section. The 11 helping categories are represented in Table 2, the five hindering categories in Table 3, and the three wish list categories in Table 4.

This chapter will discuss the findings that have participation rates above the 25% criteria established by Borgen and Amundson (1984). These findings are bolded in the tables. Findings that fall below the 25% participation rate criteria are included in the tables (unbolded), but will not be discussed in this chapter. They can be found detailed in Appendix E.

Table 1. All Helping, Hindering, and Wish List Categories

Category	Helping			Hindering			Wish List		
	Participants	Participation Rate (PR)	Incidents	Participants	PR	Incidents	Participants	PR	Items
Helping									
Mindfulness Practice	**13**	**93%**	**33**	**7**	**50%**	**9**	0	0	0
Mindfulness Group	**12**	**86%**	**27**	2	14%	3	7	50%	12
External Environment	**10**	**71%**	**25**	**4**	**29%**	**5**	0	0	0
Personal Strategies	**10**	**71%**	**16**	2	14%	2	3	21%	4
Benefits of Mindfulness	**9**	**64%**	**11**	**4**	**29%**	**6**	0	0	0
Routine	**8**	**57%**	**16**	**6**	**43%**	**9**	0	0	0
Mindfulness Concept	**7**	**50%**	**12**	0	0	0	0	0	0
Social Support	**7**	**50%**	**11**	3	21%	3	7	50%	9
External Reminders	**5**	**36%**	**10**	2	14%	2	2	14%	2
Inspirational Others	**5**	**36%**	**8**	0	0	0	4	29%	4
Stress	**5**	**36%**	**6**	0	0	0	0	0	0
Personal Characteristic	3	21%	10	0	0	0	0	0	0
Social Influence	2	14%	2	1	1%	2	0	0	0
Hindering									
Disruptions	0	0	0	**13**	**93%**	**28**	0	0	0
Time	0	0	0	**11**	**79%**	**15**	2	14%	2
Tired	0	0	0	**9**	**64%**	**9**	0	0	0
Emotion & Anxiety	5	36%	8	**8**	**57%**	**19**	0	0	0
Interpersonal Relationships	0	0	0	**6**	**43%**	**10**	0	0	0
Feeling Good	0	0	0	3	21%	3	0	0	0
Wish List									
Space	0	0	0	**4**	**29%**	**5**	**10**	**71%**	**16**
Resources	0	0	0	0	0	0	**6**	**43%**	**7**
Cultural Shift	0	0	0	0	0	0	**4**	**29%**	**9**

Helping Categories. There were 11 helping categories. While these categories have helping, hindering, and wish list aspects to them, they are considered helping categories because they have the highest number of participants who cited helping incidents. The helping categories are illustrated in the table below. Findings that have participation rates above the 25% standard (Borgen & Amundson, 1984) are bolded in the table. Findings that fall below the 25% participation rate criteria are unbolded and will not be discussed in this section. They can be found detailed in Appendix E.

Table 2. Helping Categories

	Helping			Hindering			Wish List		
Category	Participants	Participation Rate (PR)	Incidents	Participants	PR	Incidents	Participants	PR	Items
Helping									
Mindfulness Practice	**13**	**93%**	**33**	**7**	**50%**	**9**	0	0	0
Mindfulness Group	**12**	**86%**	**27**	2	14%	3	**7**	**50%**	**12**
External Environment	**10**	**71%**	**25**	**4**	**29%**	**5**	0	0	0
Personal Strategies	**10**	**71%**	**16**	2	14%	2	3	21%	4
Benefits of Mindfulness	**9**	**64%**	**11**	**4**	**29%**	**6**	0	0	0
Routine	**8**	**57%**	**16**	**6**	**43%**	**9**	0	0	0
Mindfulness Concept	**7**	**50%**	**12**	0	0	0	0	0	0
Social Support	**7**	**50%**	**11**	3	21%	3	**7**	**50%**	**9**
External Reminders	**5**	**36%**	**10**	2	14%	2	2	14%	2
Inspirational Others	**5**	**36%**	**8**	0	0	0	**4**	**29%**	**4**
Stress	**5**	**36%**	**6**	0	0	0	0	0	0
Personal Characteristic	3	21%	10	0	0	0	0	0	0
Social Influence	2	14%	2	1	1%	2	0	0	0

Mindfulness Practice. The Mindfulness Practice category contains helping and hindering critical incidents, with 93% of participants (13) detailing 33 helping incidents and 50% of participants (7) detailing nine hindering incidents. In general, participants indicated mindfulness practice as important to their cultivation of mindfulness. Specifically, participants identified formal meditation, focusing on physical sensations and the breath, informal practice, mindful movement, and the flexibility of mindfulness practice as facilitating factors. Conversely, participants found that practicing formal meditation could be challenging. They described feeling bored and restlessness, and found the effort and hard work involved in meditation as hindering their motivation to continue to engage in cultivating mindfulness.

Participants described formal and informal practices that helped bring them into the present moment and engage in mindfulness. Many participants indicated formal meditation as helpful to their cultivation of mindfulness, specifically sitting meditations and the body scan. For example, one participant found that the loving kindness meditation helped her to "let go of that resentment and more be able to focus on the present." Another participant found it helpful to focus on empathy during sitting meditation. He would "imagine somebody or their face and wishing them well or seeing a good quality about them during the mindfulness," which would help him stay engaged in the meditation. One participant used visualization to help her engage in sitting meditation. For example, she would visualize "sitting by a stream and then leaves are falling down. I put the thought on the leaf and into the stream and the thought would just flow down on the leaf and disappear in the distance." This gave her "something to think about" and allowed her to incorporate her thoughts into the visualization. She also used visualization during the body scan meditation, which helped her stay engaged in the meditation, "When they are

saying focus on your knee, I imagine this light and then it's just moving on my knees…it just really helps me focus on keeping with the body scan." Another participant also mentioned the body scan as beneficial to her cultivation of mindfulness, describing it as a "mini vacation." She preferred to use a guided body scan meditation as it "makes a hard practice easier because you can free your mind from directing yourself…you just listen to someone say what to do and you do it." She found it comforting that she can "just rest in this awareness of nothing. I can just be here for this 15 minutes."

Participants also focused on the physical sensations they are experiencing in their bodies as a way to engage in mindfulness. For one participant, it was helpful to bring her attention to any physical discomfort she is feeling during meditation. For example, when she started having the physical symptoms of panic, she would do her best to "get comfortable in my body even though there is that uncomfortable sensation…try to think about that sensation as a sensation itself, that's not like forever…because you could like panic, like it could escalate to thinking that you are going to die or you are going to go crazy or something." It helped this participant to focus in on her physical sensations and see them as just sensations that will ultimately pass. This kept her engaged in the mindfulness meditation as opposed to escalating into a panic attack. Another participant used informal "body checks" throughout her day to "really gauge how I'm feeling…what I'm feeling physically" and to bring herself into the present. It also encouraged her to engage in a longer, formal meditation later in the day, "As soon as I start feeling something like a tight chest or something…it's like okay you better be doing something longer tonight."

Several participants spoke about actively bringing their attention to their breath to help them cultivate mindfulness. Participants used their breath as an anchor to the present moment

whenever they felt they need it. One participant shared that "the ability to come back to my breath throughout the session" helped her to stay engaged in the meditation practice. Another participant used his breath "as an anchor to become aware of all your sensations." Coming back to his breath helped bring him out of his ruminating thoughts and back into the present moment of the meditation. Participants also used their breath to cultivate mindfulness as they move through the day. For example, when one participant was upset or uncomfortable in a situation, she would focus on feeling her breath by putting her hands on her stomach and chest, "I just feel my ribs as I breathe out or if it seems socially inappropriate to do that, then I'll just really focus on my ribs expanding as I breathe and it's very centering…That's the main one that when I breathe then it centers me and brings me right into the moment." Another participant used her breath whenever she noticed the start of panic sensations in her body. She would "redirect (her attention) from the uncomfortable sensations to my breath…like breathing and how the oxygen goes in and out."

Participants spoke about using informal practice to cultivate mindfulness. One participant found it helpful to "really just focus on the task that I am doing." For example, she used mindfulness in the shower to help slow her thoughts down and focus on the present moment, "Just focusing on the lathering, the smell of the soap, the water coming down on you…I start off in the morning with a single thought and then it would pack my mind, so then in the shower I will slow things down and really concentrate on what I am doing." Another participant engaged in mindful eating and mindful cooking:

> I eat at least one meal per day mindfully. This has been so life changing for me and my husband…I actually started being more engaged and present with my food…I've been more engaged in real cooking, like mindful. Not just putting the ingredients into a pot or a pan or whatever and making food, but actually smelling the ingredients, touching them when I'm cooking…This has been amazing…It pleases me and makes me feel good that I'm doing that…I think it's the fact that I'm actually there, that my mind is not worrying

about the paper I have to write or working on the student's assignment or whatever…I feel that I'm actually there, I'm enjoying it and I get the opportunity to use all of my senses…And then I can actually remember that, and so if sometimes my husband asks me what did you do, how much salt did you put in or what is it that gives a strong or spicy taste, I know what it is. Not because I read it in the recipe, but because I actually can remember it because I felt it.

The participant was able to enjoy the moment through all of her senses, and was anchored to her present experience through this informal practice. Other participants used sensory observation of their surroundings to anchor themselves in the present moment. One participant explained that she would "visually observe" her environment to help "be in the present moment." She stated, "It (visual observation) can act as a facilitator…because it's sort of easy to concentrate on little things…being totally fascinated by say a leaf on the ground or something like that." Another participant observed her surroundings through touch in order to bring herself into the present moment. For example, she was in a driving lesson and was able to notice the sensation of her hands on the wheel, "I remember having a really hard time after my lesson…and (the facilitator) said to notice where are your hands on the wheel, what are you touching, and what is around you. Observe those things. And the next time I went, that helped me…something physical to anchor me."

Many of the participants discussed practicing mindful movement as helpful to their cultivation of mindfulness. One participant described doing yoga to help put her in "a more mindful state of mind." Other participants used exercise and walking to engage in mindfulness, with one participant sharing that she would go for five-minute mindful walks to "center" herself. She would "concentrate on my walking, my feet on the ground, and how it feels…I am not thinking about anything else than my feet touching the ground." She considered mindful walking as "a really valid and a good way of doing (mindfulness), especially if you really don't have space to meditate in." One participant discussed steady, repetitive motion as helpful:

> I do weeding and it's like this repetitive motion…I think I can link that to being very present…That's what it's created for me in the past…The motion is very steady I think…And you get into kind of like a certain pace and potentially if you've practiced mindfulness you can like kind of get into that state just by being aware of this stable pattern of movement. And that can kind of help you like feel aware without necessarily an intent to do it…It's kind of like access to that present state…Being in motion has been consistent for me with grounding me or helping me feel more present.

The repetitive pattern of movement helped him to engage in mindfulness and anchor to the present moment.

Finally, participants described how the flexibility of mindfulness practice was a facilitating factor. One participant found it helpful to think of mindfulness in broader, more flexible ways, such as using different modalities, "What has helped is changing the practice…connecting it to movement…showing that mindfulness doesn't necessarily have to be like this meditative thing, it could be a thing in motion too…It broadens the definition of how a person can be aware…(and) helped me broaden my understanding of how it can be practiced in different ways." The flexibility of mindfulness practice was similarly helpful for another participant who described informal practice as "easy to use and there is a lot of opportunity to use it." For example, when he was "walking down the hall between classes" or "riding the bus to campus," he was able to "just be in the moment and be aware of what's happening around me."

Participants also discussed the hindering aspects of mindfulness practice, specifically the difficulty of formal practice. Several participants described boredom and restlessness during formal practice, with one participant stating, "I can get bored…and I feel like I'm not giving it more attention. It's like I just kind of go through the motions and I don't feel as like present after like a meditation." Another participant noticed that she could "really struggle" with longer meditations, "The first 20 minutes, I feel quite calm. After 20 minutes, I get extremely bored and antsy and I don't like it. So basically that's when I stop." Another participant echoed this

when he described a long meditation in the MBSR group, "When you do it for a long time, you just get restless…And I guess what makes it challenging is just like being able to enjoy yourself after meditating for a long time." Another participant shared this sentiment of mindfulness as not being enjoyable, especially when meditation felt repetitive, "It's also discouraging, because at the end I feel I could have gotten more out of it. But because it was so similar to the last like ten times, I just want to kind of finish it, get it over with…and that's frustrating."

Other participants noted that formal practice could feel like a "chore" or an "energy commitment" that "feels like hard work." For example, one participant expressed:

> If it's meditating, it's like 'oh man do I have to do it?' And I should just think what do I gain from it…but (meditation) is hard because you need to be alert. It's doing nothing but it's doing everything. So for say five minutes even, let alone longer, it's just so hard…Essentially it feels like work because you are using your brain, it's just a very specific form of using it. The fact that you are constantly battling and shutting down constantly the thoughts in your mind that come there and distract you, that's the hardest part. And because you know that part is what's kind of crappy, it makes you say I'm going to pass (on meditating).

Another participant agreed with the effort that it took to meditate. She expanded on the energy commitment of meditating, "It takes a lot of energy to either not fall asleep or…to not let your thoughts just go off on this whole like stream or tangent where you start thinking about what you have to do next. It's always like rechecking." This negatively impacted her motivation to cultivate mindfulness because she could get deterred by "just knowing in the past how much focus I need to put into it."

Mindfulness Group. The Mindfulness Group category contains helping and hindering critical incidents as well as wish list items, with 86% of participants (12) detailing 27 helping incidents and 50% of participants (7) detailing 12 wish list items. The hindering incidents from

this category fell below the participation rate of 25%. They are not included in the following discussion of the category and can be found in Appendix E.

The overarching theme of this category is that participants found different aspects of the MBSR mindfulness group to be helpful while they were in the group, and would find it helpful if they still had access to attend different types of mindfulness groups, classes, or drop-in sessions, either on campus or in the community. Participants identified the following aspects of the MBSR group as helpful to their cultivation of mindfulness, and stated that these aspects had stayed with them after the group ended: other group members, the facilitator of the group, the group environment, the structure of the group, accountability to the group, and access to mindfulness resources in the group.

Most participants commented that the MBSR group is where they learned to cultivate mindfulness, and that they drew on the experiences from the group to help them continue to cultivate mindfulness. Eleven out of the twelve participants in this category identified the people in the group as important in their cultivation of mindfulness, whether it was the other group members or the facilitator. The other group members provided participants with support, understanding, and validation. The majority of these participants appreciated the stories that group members would share. One participant "found it interesting how other people were using mindfulness in their lives," and liked getting "other examples of where it could be used." Another participant felt that her experiences were normalized by other members of the group and she did not feel alone in her practice, "It was really nice to be in a group setting with other people who not only shared their experiences and gave me new ideas about looking at things or trying things, but also had shared similar experiences. You know to normalize things is so helpful. Knowing that I'm not crazy, I don't just do this stuff." Another participant had a

similar comment, "Having fellow students do the practice with you…because it kind of helps you like relax. It's kind of like a common cause or common problem. People face distress all the time. I mean it's not just you. Like when you realized that it's not just you then that helps because you can feel like you're not alone, like you're part of something." These participants felt connected to the other group members, and validated in their struggles. They experienced group as a community coming together to work on common concerns through mindfulness. The group members helped participants to reflect on new ideas and possibilities for practice, and motivated them to stay engaged in mindfulness in the group.

In addition to the other group members, participants commented on their group facilitator and described how this person helped them to cultivate mindfulness. One participant appreciated the facilitator's ability to "maintain a good, healthy group dynamic," and build a "trusting environment" within the group. He found it helpful that the facilitator was "consistent," "open," and "honest," and shared their own experiences so he could "kind of get to know the person too." Another participant also liked that the facilitator shared personal stories, "I thought the facilitator was fantastic…I like that they told us stories of how it has helped in their life." Other participants found the facilitator's teaching style to be helpful in cultivating mindfulness. For example, one participant commented that the facilitator "did a very good job of getting out of the way…They did a good job with just like bringing it back to the breath…clearly coming from a place of compassion and kindness and clearly aware of the group and also aware of like the power of their suggestions." Another participant liked how the facilitator "just let there be silence during the group…I think it gave time to reflect on what people had just said or what you had experienced and reflect upon what just happened and what did that mean, to try and kind of organize it in my head."

Participants elaborated on the importance of feeling comfortable with the other group members and the facilitator by expressing how this contributed to an overall positive group environment. Participants described the environment of the group as "nonjudgmental," "relaxed," and "open." They spoke about feeling a sense of safety and trust in the group, with one participant stating that the group environment was "a security, like a safety net." Another participant expressed that he felt trust had developed within the group:

> I think being in a group is helpful and people can share their experiences because there's like a bit of trust there. People are open to discussing what helped, how things went for them, and then I can relate to that. It's like you kind of open up a bit and it makes it safer to really engage in the activity…when the meditation happens.

Participants felt safe in the group, which allowed them to dive deeper into the mindfulness practices.

Along with the environment of the group, participants found the structure of the group to be helpful to their cultivation of mindfulness. For example, one participant appreciated that the group met at a set time every week, so she could count on "that specific time during the week that was devoted to (mindfulness)." Two participants commented on the formal structure within the group, specifically that most of the group time was dedicated to formal meditation. For one participant, attending the group was helpful because she was "forced to use" mindfulness because "that's what we do in the group." This motivated her to go to group, because if she "was alone and not in the group then I wouldn't do it." Another participant also found that having to do the formal meditations in the group was beneficial, specifically it reassured that she could sit through uncomfortable feelings. This allows her to stay engaged in mindfulness practice, even when it is a struggle for her, "What the formal practice taught me was to sit through uncomfortable feelings because for me I hate practice, it's very unpleasant for me most

of the time…So being forced to sit there for 2 1/2 hours every Wednesday night taught me to sit through something I don't like and I don't enjoy."

Four participants indicated that being accountable to the group motivated them to attend group sessions and do the assigned home practices. One participant stated that the group "held her accountable, which encouraged her to "keep going and practicing mindfulness." Another participant felt a sense of commitment to the group, the facilitator, and herself, "Making that commitment not only to yourself but to the group and to the group leader that definitely helps… just having the accountability to others…even if it's just me physically sitting in my seat in the group to show support." The participant made a commitment to the group and she didn't want to "let people down." This motivated her to go to class and engage in mindfulness. Another participant indicated that it was "helpful to commit to something" and that she "did (mindfulness) and went to class because I committed." A fourth participant echoed the above and added that his commitment helped him feel like he was not "wasting his time." It also helped him to think that the other group members were committed to the group as well, "Well just being in the program itself is going to make you more prone to do the exercises because you do have a commitment with the group, so that helped…I guess just knowing that other students are committed to doing it too, it's motivating to do it…because when we all come back the following week and share experiences like you want to be able to share yours."

Finally, one participant appreciated the resources she received from the MBSR group, specifically the guided meditation audio and the booklet. Both of these resources helped the participant remember the MBSR group and "relate to the feeling, have the feeling as if we were in class. So this helps a lot." She also found it helpful to "have readymade material…I don't have to search" and she can easily "go back to something that we've discussed."

In terms of wish list items, participants expressed their desire to have continued access to mindfulness groups, classes, and drop-in sessions on campus or in the community. Many wanted to return to different types of mindfulness groups. For example, one participant described wanting to attend a more "holistic" mindfulness group:

> What I would want for a wish list…would be not just to go to a group once a week and do mindfulness, because it's a whole life thing. To me, I want a group that encourages us to look at it all together, like doing mindfulness, building a social network, working out more, eating better, getting more sleep…I would want to be part of a mindfulness group that looked at it more holistically…Mindfulness is a cog in the wheel; it's one thing that will help, but I know I need more than just meditating every day.

Other participants identified wanting to go to a mindfulness group other than MBSR, with one participant explaining that she would like to learn "new lessons" and "different exercises than MBSR."

Other participants wanted the structure of a mindfulness group, specifically a "weekly formal group" with a "scheduled time" and lasting "like an hour and half to two hours."

Several participants felt that having more mindfulness classes and drop-in sessions on campus would help them to cultivate mindfulness. For example, one participant would like to have a mandatory mindfulness class to "help to get me to go and commit and do it." Another participant would find it helpful to have "more scheduled drop-ins. I've made use of the drop-ins before and this semester it just feels a little tight with my schedule…so more drop-ins would be nice."

External Environment. The External Environment category contains helping and hindering critical incidents, with 71% of participants (10) detailing 25 helping incidents and 29% of participants (4) detailing five hindering incidents. These participants found their external environments to be important to their cultivation of mindfulness. They asserted that there were

certain environments that were more conducive for mindfulness, including specific locations and natural environments. They also described being in certain environments where they had limited options other than mindfulness. Conversely, participants described feeling overwhelmed and uncomfortable in certain external environments, which proved challenging to their cultivation of mindfulness.

A majority of the participants in this category attributed a specific location to helping them cultivate mindfulness. Two participants reflected back on certain locations that helped facilitate mindfulness. One participant spent time in Thailand and expressed that many aspects of this environment encouraged mindfulness. For example, he described the Thai people as "very laid back," "friendly," and "just peaceful people and being around them I could just relax." He also emphasized that the concept of time in Thailand slowed his pace down and so he didn't have worry or rush, "What I often find when I'm meditating is that I think oh crap I only have 10 minutes now and what if I'm late, but there if you're late, you're late. You don't have to worry." Another participant shared about her experience at a weekend silent retreat and how she found that the environment there helped her to cultivate mindfulness, not just during the retreat, but also after coming home, "And really I think for the next couple of months after that, I was thinking about it a lot more and being able to be more mindful."

Other participants used specific locations on a regular basis to help them engage in mindfulness. One participant used a sensory deprivation tank and described the physical sensation and discomfort as aiding in her ability to be present, "You are in this like insane discomfort…But yet you kind of just float in it and you just be in it. And so that helps me to get into the mindfulness of it." For one participant, the interfaith meditation room on campus provided her with a "peaceful" and "quiet" environment where she felt comfortable to meditate.

Another participant found the den in her home to be the most conducive environment for her to practice mindfulness, "It has just enough space for me to roll out my mat, my yoga mat. So then I actually use that space for me… I do my body scans and meditation, mindful yoga…there are no windows, there are no distractions in there and there is a door I can shut." It was also convenient for her to use, especially when she was working from home. Another participant indicated that being at his parent's house helps in cultivating mindfulness because it has a "huge basement" where people rarely go and "it opens onto a green area which is really quiet and not a lot of cars go by."

Three participants relayed that being in a natural environment is conducive to mindfulness. One participant enjoyed being outdoors, "I'm a big hiker. Yesterday I went hiking and swam in a waterfall…I was fully engaged in the moment…It was informal mindfulness…I wasn't playing on my phone or distracted. I was swimming and I was just lying on my back and I could feel the water and I could see the sky and I was fully engaged in that moment." Another participant echoed the importance of nature when he elaborated on the beauty of English Bay:

> When you're in a beautiful area…it kind of forces you to stay in the moment because you don't want to lose that moment. You want to make sure you enjoy every bit of it. So you can kind of like disengage from your thoughts…like being in English Bay and just going there…and seeing that beauty just helps me stay present…And all the surroundings like the water, the mountains, the sand underneath your feet. There's just a lot to appreciate in the moment.

Another participant explained how the weather helped her be aware of the details of her surroundings and feel engaged in the moment, "On really crisp fall days I will find myself being aware of the coolness of the air on my cheeks. Or I'll find myself listening to my feet crunching the leaves. Or like the rain on my face. And then when it's sunny I'll go outside just to sort of purposefully be in that moment of sunshine and you know just feel it on my face." Being in the

natural environment helped all of these participants to be present in the moment and engage in informal mindfulness practice.

Finally, participants described being in certain environments where they had limited options other than mindfulness. For example, one participant was walking down the street when she started having a panic attack. She thought she would try to cultivate mindfulness because "having a panic attack in public it's not the nicest thing so it's like I might as well try it…I didn't have anything to lose." Another participant was feeling very ill in her home late at night and "felt like nothing else was going to help."

External environments also hindered participants' cultivation of mindfulness. They described feeling overwhelmed and uncomfortable in certain environments, which made it difficult for them to focus on mindfulness. One participant found it challenging to use mindfulness when she was experiencing panic while walking on a city street:

> I was just walking down the street. Meditating for me, it's not like the most comfortable, it's not the easiest thing to do. It can be really hard to get your mind out of really down, futile things and especially when you are in a city surrounded with stuff going on and then you are getting uncomfortable sensations within yourself. It was definitely a really challenging environment.

Another participant had a similar experience when in a driving lesson. She felt overwhelmed by "so much information, a lot of stimulus…and so the last thing you want to do is to be telling yourself to breathe." Another participant had difficulty cultivating mindfulness when she was on the bus because she felt "really uncomfortable among total strangers to close my eyes...I don't know how I could just concentrate on my breathing." She did not feel comfortable enough in that environment to get into a space of mindfulness.

Personal Strategies. The Personal Strategies category contains helping and hindering critical incidents as well as wish list items; however, the hindering incidents and wish list items from this category fell below the participation rate of 25%. They are not included in the following discussion of the category and can be found in Appendix E.

Seventy one percent of participants (10) described 16 helping incidents, with the central theme being that participants used individual strategies to allow them to engage in mindfulness practice. For example, several participants spoke about setting goals as instrumental in their cultivation of mindfulness. One participant found it helpful to set goals for himself with regard to formal practice, "If I know that I have set a goal that definitely helps. For example, if I say by next Sunday I will have meditated for 15 minutes every day, and that's my goal and I have a target, that helps." Another participant set a goal of practicing formal meditation for one minute every morning. She found it helpful to set a "very reasonable and attainable" goal so she can "build confidence upon that." Being able to accomplish her goal helped her to stay motivated in her mindfulness practice.

Participants also mentioned specific rituals that they would carry out before formal practice. One participant stated, "I have this little ritual. I light candles and I like to sit on my two pillows and it's a whole little thing that I do, and I put on my sweatshirt and make sure that I'm warm."

Participants also indicated that counselling has helped them to continue to cultivate mindfulness in their lives. For example, one participant went to a counsellor who incorporated mindfulness concepts into therapy, specifically awareness of physical sensations and body awareness. Practicing body awareness in her counselling sessions provided "support" for her mindfulness practice and helped her "keep it there as a tool." Another participant also credited

counselling as helping her keep mindfulness as a "tool" that she uses to cope, and putting her "in the headspace of remembering to use the tools that I have."

Two participants described a specific cognitive strategy that they used to cultivate mindfulness. They both spoke about making a "conscious decision" and a "conscious effort" to maintain a mindful state. For example, one participant was doing a walking meditation outside and was worried about people judging her. She made a conscious decision to not worry about what others might think of her, which helped bring her to focus back into the present moment and re-engage in the walking meditation, "I just purposely wiped away this thought of worrying what others might say…It was a conscious decision to not care what others would think of me."

Several of the participants expressed very individual strategies that they employ to cultivate mindfulness. One participant decreased her alcohol consumption so that she would not be "too tired to do my mindfulness." Another participant found that going to a sensory deprivation tank gave her the "dedicated time" that she needed to engage in mindfulness. She found it helpful that she could completely focus on mindfulness because "you know they're not going to let you go over time." Finally, one participant found that reading the Bible helped bring him into the present moment, "When I'm sitting and I'm reading the Bible, I'm present and I stop thinking…that helps get away from those "I" thoughts and helps me be mindful."

Benefits of Mindfulness. The Benefits of Mindfulness category contains helping and hindering critical incidents, with 64% of participants (9) detailing 11 helping incidents and 29% of participants (4) detailing six hindering incidents. These participants found that having evidence of the benefits of mindfulness would help them to cultivate mindfulness, but that questioning the benefits of mindfulness would impede their cultivation of mindfulness.

Participants found it helpful to have evidence that mindfulness works, whether it was remembering the benefits they had experienced from cultivating mindfulness in their own lives, or it was reading the scientific evidence that shows the benefits in general. Participants indicated that the benefits they had experienced from mindfulness were an important aspect of their cultivation of mindfulness. For one participant, knowing that mindfulness practice had helped her in the past served as a "reinforcement" and motivated her to continue practicing mindfulness. Another participant set aside time to engage in mindfulness because she knew she would benefit from it, "I give myself that time…I know I will benefit from taking the time out for myself. That's how I really think about mindfulness, when I do this for myself then I have been so much happier and I know that I have been happier and this is really helping me." For another participant, mindfulness had helped her to cope with her mental health concerns:

> Well the mere fact that I feel like it actually helps…It makes sense with a lot of the mental health problems that I've had. It provides sort of a solution for them. I had an eating disorder at some point, and it was really helpful too because it's very body centered, but then yet directing your thoughts elsewhere. So say my fear was that I can't eat this or that, or I can't eat because I'll get fat, but then centering your thoughts somewhere else helped me get over it. I would 100% say that one factor that helped me get over it was mindfulness.

A final participant felt encouraged by the effects of mindfulness on his academic performance. For example, he had noticed that his attention and concentration had improved, which made him "want to continue using it…I remember how much mindfulness has helped me and I think oh I really need this."

Participants credited the scientific evidence on mindfulness as helpful to their cultivation of mindfulness. One participant felt motivated by the science suggesting the effectiveness of mindfulness, "The fact that there is a lot of evidence to suggest that it does help and that it will help me in the same sense that exercise will help me. So I need to have that sort of motivation."

Another participant found it helpful to have read "some of the clinical research on MBSR" because the scientific evidence helps her "know that my time is not being wasted."

Hindering items in this category related to the questioning of the benefits of mindfulness. These participants felt at times like mindfulness was not working for them, and it was difficult for them to see the reward or to remember the benefits. For example, one participant found it challenging when she felt like she lost the benefits of mindfulness as soon as she was finished with her mindfulness practice:

> I will experience the benefits of mindfulness when I am in group and practicing, but as soon as I end the practice, sometimes I snap right back into where I was before…When I was in group last semester, I was going through a really rough time…and as soon as the group ends I just kind of went back to whatever I was feeling before the group started, which is usually pretty crappy….And even informal practice, I do informal practice like when I'm taking a shower and it's relaxing…but as soon as my practice ends I just lose the benefits.

Another participant had a related challenge whenever panic and strong emotion returned. She felt disempowered and doubted that mindfulness was working, "I thought I had gotten over a lot of things, like the panic…and to have some of those things come back and so quickly and so powerfully really made me feel less empowered than I had been feeling. It made me feel like maybe all my work really didn't pay off…Maybe mindfulness doesn't work."

Some participants conveyed being discouraged by the effort and length of time it would take to garner the rewards of mindfulness. One participant described meditation as "hard work for the reward…and your immediate state of calmness after meditating is only temporary." For example, after a meditation session, he was late to work and lost his wallet and felt like "all of the benefits that I just got in those 15 minutes of meditation just went to par because of what happened right after."

Routine. The Routine category contains helping and hindering critical incidents, with 57% of participants (8) detailing 16 helping incidents and 43% of participants (6) detailing nine hindering incidents. These participants described how routines impacted their cultivation of mindfulness. Specifically, participants reported how creating and adhering to a consistent routine of mindfulness practice helped them to get into a habit of regularly engaging in mindfulness, both formally and informally.   They also noted how changes in their personal and mindfulness routines hindered their cultivation of mindfulness.

Participants found it helpful to create a routine that "works best" for them and then adhere to it in a consistent way. One participant was more flexible and maintained a general time that she would engage in formal mindfulness practice, "I have a general time that I do it…usually in the late afternoon, early evening after I'm done doing work." Other participants found it more helpful to have a more structured routine, in terms of time and practice. One participant described his daily routine when he lived in Thailand, "I woke up at dawn…and I meditated before I did anything else and that structure and routine…just felt right." The routine helped him feel motivated to continue his mindfulness practice, noting he "wanted to do it" and he "looked forward to doing it." Another participant also developed a routine of meditating in the morning before starting work, "I go to my desk, I drop my stuff, and I immediately go and meditate first thing in the morning."

Having a routine of "consistent, daily practice" allowed participants to "build the habit" of cultivating mindfulness, both formally and informally. One participant stated that daily practice "gets you in the habit of coming to (mindfulness) as sort of default" and she was able to "fall back into" mindfulness whenever she was in challenging situations. Another participant commented that she had "trained" herself enough that mindfulness "will just come to me now

right away." When her thoughts would "speed up" and she would "get attached to everything," she would "right away just kind of slow it down, breathing, and doing a meditation." Similarly, another participant was able to automatically focus on her breath in a moment of panic, "This all happened in seconds…It was sort of like an automation. It's like it has become such a normal thing to start breathing deeper and thinking about your breathing and…you don't even deliberate, it's just a thing you do."

Routines also hindered participants' cultivation of mindfulness, specifically when there was a change in a personal or mindfulness routine. One participant changed his morning routine and found that this was "conflicting with the mindfulness in the morning." He was struggling to meditate and maintain his new morning routine. Another participant stopped drinking coffee, which impacted her ability to get up early and practice mindfulness:

> I would wake up in the morning, about 45 minutes earlier than my husband, and I would go to the den and do my formal practice until his alarm would go off. It was great, but I had coffee every morning and then at least another couple of cups during the day so I wouldn't fall asleep. Now that's difficult because I rarely drink coffee anymore…so I cannot wake up in the morning that easily and I cannot get up that easily. I just stopped trying to do my body scan in the morning because that doesn't work.

Another participant mentioned that when her daily routine was "thrown off," she could find it challenging to cultivate mindfulness. For example, if she did not eat at her regular times throughout the day, "When I don't eat it increases my anxiety a lot. I think it's one of the main triggers of my anxiety…it does make (mindfulness) harder."

Other participants noted that it was hindering when they fell out of their mindfulness routine. For example, one participant "lost the habit and stopped doing meditation for six months." He described it as challenging because he was "just back in that pattern of not doing it and it was hard to get back into it." Another participant also found it challenging when she was not in her regular mindfulness routine because it was easier for her to procrastinate and put off

formal practice, "Especially during the winter break between the semesters...If I don't do it each day, then I say I'll do it later...I'll do it 40 minutes tomorrow...For my formal practice, if I don't do it then it's easy to procrastinate and not do it and that goes on and on."

Mindfulness Concept. The Mindfulness Concept category contains only helping critical incidents, with 50% of participants (7) detailing 12 helping incidents. The central theme of this category is that participants found particular mindfulness concepts to be helpful and felt motivated to cultivate mindfulness whenever they would think about or remember the concepts. For example, several participants recalled a mountain metaphor that was discussed in the MBSR group. One participant explained:

> Last semester, we did a meditation where it was like you have to be the mountain…That kind of really spoke to me…not the actual meditation, but it's the notion of being a mountain in my life. I didn't really get much out of the meditation actually, it's sort of more like the concept that has helped me. So when I'm in my life and say when I'm in a stressful moving situation or something like that, I'm still me. I'm still a mountain, the environment can change, but I'm still me, you know? We're going to go on a trip to Europe and…I have trouble on the plane. But now…I think about the idea of the mountain and even though this is like a terrible, terrible environment for me on the plane, I'm a mountain and everything's fine and like things around me can change and whatever, but I'm fine…so like when I'm in different situations, the mountain metaphor becomes really useful for me.

Participants also resonated with the concept that thoughts and feelings are transient and will not last forever. One participant found it helpful to remember that whatever she was going through would pass:

> You can tell yourself that the present is continuous. It keeps going, so it will pass. Knowing that I'm sad or depressed right now, but you don't know the future…It makes me calm…So rather than thinking I am going to feel this way for the rest of day, I know it will pass. So I am just being in that moment and recognizing, acknowledging my feelings and knowing that it won't stay there forever. I have a lot of suicidal thoughts and it happens a lot at night. It usually keeps me up until as late as 6 am in the morning. But I try to remember the idea that it will pass. It's just a thought that I am thinking right

now and I am not going to do it, that it will all pass. Then I can focus on pulling myself back into the present.

For this participant, the idea that her painful thoughts and feelings would pass reassured her and brought her back into the present moment.

For some participants, the concept of self-compassion made cultivating mindfulness easier. One participant used the idea of self-compassion to be more caring toward herself and more mindful of her thoughts and emotions in the moment. In one particularly difficult moment, she was able to say to herself, "Here I am in this crazy situation and I'm having all of these reactions and experiences and my body is instinctually telling me to like really gear up and really protect myself. It caused me to be caring for myself…this is just an opportunity to really comfort myself or to just soothe myself."

For other participants, the concept of living in the present moment helped to facilitate mindfulness. One participant described "the idea that you are not supposed to go where you are not at that moment" as "one of the most helpful things with mindfulness for me." Another participant viewed the concept of staying in the present as building "the space to then not react upon, like, instincts or feelings…the space to process what's going on and what are my values and how do I want to go about working this out." She elaborated on a difficult situation with a family member, stating "I come home from work…and I'm feeling like quite frustrated because he tends to drink a lot and towards the night I feel like it's very hard to have a discussion…In that situation, I try to recognize how I'm feeling…I take that moment to recognize that frustration, which is a mixture of like anger and helplessness…I think by recognizing that, like remembering to bring myself to now and giving me some space, I just try to handle the situation differently so that it doesn't become a fight."

One final participant appreciated the concept of "storying", which helped her "to stop that downward spiral, the spiral of negative thoughts." In one particular instance of panic, she used "mindfulness to identify the emotions and not let it become a story. I was able to isolate it as an emotion and not like as a reality or a possible reality…Not making it worse."

Social Support. The Social Support category contains helping and hindering critical incidents as well as wish list items, with 50% of participants (7) detailing 11 helping incidents and 50% of participants (7) detailing 9 wish list items. The hindering incidents from this category fell below the participation rate of 25%. They are not included in the following discussion of the category and can be found in Appendix E.

Participants described the importance of receiving support and understanding from family members, significant others, friends, and other important people in their lives. These supportive others encouraged the participants in their cultivation of mindfulness. Participants also expressed desire to receive more social support in the form of mindfulness partners or a mindfulness community. This would help them feel understood, connected, and accountable to someone other than themselves.

Participants described people in their lives who provided support and understanding, which encouraged or allowed the participant to cultivate mindfulness. Several participants identified supportive family members as important to their cultivation of mindfulness. For example, one participant felt comfortable talking to her mother about her mindfulness practice because she "understands" and "shares similar values" around mindfulness, "My mom does tai chi on a regular basis…just having someone around who respects and understands the value I think that's helpful. Also someone that I can talk to about it if something comes up…I feel like

there's a connection there…we can speak on the same terms and know what we are talking about." Another participant appreciated her cousin because they could "talk about mindfulness and she's like let's go do meditation…so it's nice to have someone to do something mindful with…to have that commonality with someone."

Participants found the support of their significant others to be helpful. One participant indicated that her boyfriend also practiced meditation, so she felt "mutual support and understanding" with him. Another participant felt that her husband respected her cultivation of mindfulness by giving her the space and time she needs to engage in formal practice, "It helps me knowing that he's supportive. When I tell him that I need 45 minutes quiet time, so please no music, no anything, that's fine…he is always respectful and supportive."

Participants also spoke about the support they received from their friends. For example, one participant had a friend from a drop-in mindfulness class and they would "check in" with each other about mindfulness. It was helpful for her to have someone "who is on the same page" and who practiced formal mindfulness meditation. Another participant was comfortable talking to her friend about mindfulness without fear of judgment. She appreciated that even though her friend did not engage in mindfulness, she would ask questions and be curious about the participant's mindfulness practice. This helped the participant to reflect and "go through my train of thought of what I do." It "builds confidence" around her mindfulness practice, which in turn "helps to fuel it becoming more of a natural thing in my life to do."

Finally, participants mentioned other supportive people in their lives that encourage their cultivation of mindfulness. For one participant, it was her driving instructor "being a safety net for me" during her lessons, which allowed her to stay in the moment and not panic. Another participant is involved in a community group with supportive and like-minded people who

"encourage and incorporate mindfulness." This group of people helped him to stay motivated

and keep up with his mindfulness practice because he was regularly "learning from others and

surrounded by similar values."

Regarding the wish list, participants expressed desire for more social support, specifically

in terms of feeling supported by a mindfulness partner or a mindfulness community. They

conveyed wanting a mindfulness partner and described how helpful it would be to share their

mindfulness practice with another person. One participant would find it helpful to have "a friend

or someone to do it with…and then kind of talk about it afterwards." Similarly, another

participant would like a mindfulness partner who has taken the MBSR group, "I could talk about

it with the partner and we could share with each other our experiences and they would

understand. I mean I explained what I learned to my friends, but you kind of have to take the

course to really understand." She also shared that she would like a mindfulness partner for "the

accountability," but also because "things are more fun when you do them with other people."

Other participants echoed the desire for accountability through a mindfulness partner:

> What really helps me is being accountable to someone else. If I have someone else
> checking on me, okay did you do your practice today and holding me accountable for
> that. That is actually something I really need...I have experienced that before. Years ago
> in one of those seminars I mentioned, I was participating in a group for three or four
> months and…every night on Skype I would ask someone, the person that they had paired
> me with, I would ask them, 'Okay what did you do tonight, yesterday, did you do your
> practice?'…That's something that I really wish I had right now.

Participants believed that "doing it with someone else makes it feel like it's more important, it's

more of a priority because you're not only doing it for yourself, but you're also kind of their

person that is helping to enable them to do it…You don't want to let one another down."

Several participants spoke about being part of a mindfulness community. One participant

wanted to have "some sort of external, community connection" to help her "in terms of resources

and support." Another participant would like to be part of a community that regularly practices mindfulness. This would give him a chance to talk about his experiences and have mindfulness in common with others, "Knowing people who do mindfulness, like a community…then you have someone to talk to about what you have been getting from mindfulness, get some kind of insights and share it…because a lot of people don't do mindfulness and so you don't have anyone to talk to about it." A final participant wished that he had been able to form more friendships with the other members of his MBSR group as a way to build a mindfulness community or social group:

> I wish that it could have been more social after the group, or building more friendships…like a community…If people stay after the group and socialize, maybe have food or a potluck, or weekend day trips…I want a group that feels like a community, not just a bunch of individuals coming together for a short amount of time to meditate.

Being in a more social mindfulness community would allow him to share ideas and perspectives in a more informal way and have a social network of peers who also engage in mindfulness.

External Reminders. The External Reminders category contains helping and hindering critical incidents as well as wish list items; however, the hindering incidents and wish list items from this category fell below the participation rate of 25%. They are not included in the discussion of the category and can be found in Appendix E.

Thirty six percent of participants (5) reported 10 incidents of external reminders that helped them to cultivate mindfulness. These reminders included external objects, technology, and specific external triggers. Participants described external objects that reminded them to engage in mindfulness, such as one participant who wore a specific watch when she was "feeling like I just need a little bit more of a reminder." Two participants mentioned a laminated

meditation card that says 'Breathe' that was given to them as part of the MBSR group. Both participants indicated that when they see this card, it reminded them to engage in mindfulness.

Technology also served as reminders for participants to engage in mindfulness, with one participant using an app on his phone that helped him to set up a "daily structure" for his mindfulness practice by sending him daily reminders. Another participant followed a mindfulness page on Facebook that posted "mindfulness interruptors" which served as "a nice reminder to do a little more practice."

Participants also had specific external triggers that reminded them to engage in mindfulness. For example, taking a shower in the morning would trigger one participant to engage in informal practice, "It really reminds me oh you should do mindfulness now." Another participant found that people from the MBSR group would serve as triggers for her, specifically "thinking about them throughout the day would be a trigger for me like, Oh yeah she's from mindfulness so I should do something mindful."

Inspirational Others. The Inspirational Others category contains helping critical incidents and wish list items, with 36% of participants (5) detailing 8 helping incidents and 29% of participants (4) detailing 4 wish list items. Participants described role models, friends, teachers, or other mindfulness leaders who had inspired and motivated them to want to continue to cultivate mindfulness. Participants also stated that they wanted access to more inspirational figures, including mindfulness role models, mentors, and teachers.

It was important for participants in this category to have people to whom they could look up and who encouraged mindfulness through behaviour, success, example, and teachings. For example, one participant found inspiration in the books of Thich Nhat Hahn, a Buddhist monk

and mindfulness teacher. The detail of his mindfulness teachings and how he writes made it easier for her to cultivate mindfulness:

> I really enjoy his style of writing and I find that a lot of his words have helped me a lot in my life and also within the mindfulness practice that I have. His book "Peace is Every Breath" is basically mindfulness in a book. Just things he says like do a mindful activity like brushing your teeth, but the way that he says it so in detail, like be grateful for the water coming through the tap. The way he just describes it makes it so much easier to be mindful, because now you know how to be mindful while doing it. Like of course you would know, but naturally we forget because it is our natural instinct to think about other stuff. We've just been in that habit so long that we forget our natural way to be mindful right, to see things for what they are. So the way that he describes it just really helps me.

Two participants mentioned the facilitators of the MBSR group. One participant found his facilitator to be "a great role model" because this person "has done it for years and told us stories of how it has helped in their life and it was quite inspirational for me." The second participant was also inspired by her facilitator's stories about cultivating mindfulness. Hearing these stories helped remind her "that it can help me and it has helped other people so why not me?"

Participants also found inspiration through public figures, such as celebrities, business leaders, and "experts" who speak about their experience with mindfulness and their success in cultivating mindfulness. One participant looked to successful businesspeople who cultivate mindfulness, "If I know that a successful businessman or businesswoman uses mindfulness, then I think, well, they're very successful so why can't I use it…if they can do it then I can do it as well." He found that having these role models helped keep him motivated in his mindfulness practice.

Finally, participants considered certain friends to be sources of inspiration. For example, one participant had a friend who inspired him to want to cultivate mindfulness because he was hopeful that if he meditated, it would be possible for him to become more like his friend:

> One of my closest friends, I just find him inspirational in a lot of different ways. He gets things done, he is very efficient, he is good with time management, he is always very

happy and positive, he is always laughing, he dresses very well. I find him quite a role model in different ways. And I think perhaps if I meditate, I know that it makes me function better, so if I meditated maybe I would be more like him.

Another participant felt inspired to cultivate mindfulness when she was around one particular friend whose demeanor, perspective on life, and "how he carries out his work" made her feel "naturally more present. I'm able to be really in the now and not have great worries about the past or the future."

In terms of wish list items, participants expressed desire for access to more inspirational figures, including mindfulness role models, mentors, and teachers. One participant would like to have more role models who "were examples of people like me who have done it. I need to be confident that if I did it everyday it wouldn't completely change my personality. I just need to know it would help improve me not change me." Another participant would find it helpful if he had a mindfulness mentor, "Just someone to look up to…and perhaps know what is achievable through mindfulness…knowing how to incorporate different practices into my life aside from concentration in my studies, like where else could I apply it."

One participant wanted to hear a mindfulness teacher speak, specifically Thich Nhat Hanh. She stated, "Just being in the presence of someone that inspired me…would make a difference." For another participant, connecting with a mindfulness teacher, particularly her MBSR facilitator, would "be great in terms of encouragement and motivation sort of continuity."

Stress. The Stress category contains only helping critical incidents, with 36% of participants (5) detailing six incidents of stress helping them to cultivate mindfulness. Participants found that both increased levels of stress as well as decreased levels of stress positively impacted their use of mindfulness.

Some participants spoke about increased stress as triggering the need for mindfulness. One participant felt the more stressed she was, the more she needed mindfulness. For example, if she knew she would be having a busy day, she would set aside some time to meditate before she work in order to center herself and "feel more calm, and more concentrated." Similarly, another participant could "catch" himself when he is experiencing academic stress, which would trigger him to engage in mindfulness to "take a step back from (the stress)."

Other participants expressed that decreased levels of stress facilitated their use of mindfulness, with one participant stating that mindfulness was "easier to use" when "there's actually less stress…when life is a bit more predictable and things are stable." For example, it was easier for him to cultivate mindfulness when he had a decreased course load and "was able to like feel on top of things and not feel as stressed. I could be more consistent, like I had more energy it felt." Participants relayed that it was "easier to focus on (mindfulness)" when they were less busy and had fewer responsibilities because it was easier for them to relax and be present.

Hindering Categories. There were five hindering categories. While these categories have helping, hindering, and wish list aspects to them, they are considered hindering categories because they have the highest number of participants who cited hindering incidents. The hindering categories are illustrated in the table below. Findings that have participation rates above the 25% standard (Borgen & Amundson, 1984) are bolded in the table. Findings that fall below the 25% participation rate criteria are unbolded and will not be discussed in this section. They can be found detailed in Appendix E.

Table 3. Hindering Categories

	Helping			Hindering			Wish List		
Category	Participants	Participation Rate (PR)	Incidents	Participants	PR	Incidents	Participants	PR	Items
Hindering									
Disruptions	0	0	0	**13**	**93%**	**28**	0	0	0
Time	0	0	0	**11**	**79%**	**15**	2	14%	2
Tired	0	0	0	**9**	**64%**	**9**	0	0	0
Emotion & Anxiety	5	36%	8	**8**	**57%**	**19**	0	0	0
Interpersonal Relationships	0	0	0	**6**	**43%**	**10**	0	0	0
Feeling Good	0	0	0	3	21%	3	0	0	0

Disruptions. The Disruptions category contains only hindering critical incidents, with 93% of participants (13) reporting 28 incidents of disruptions as unhelpful in their cultivation of mindfulness. The central thread of this category is that participants' attention was drawn away from engaging in mindfulness through either distractions or interruptions.

The majority of participants in this category mentioned distractions as a "huge challenge" to engaging in mindfulness. Participants spoke about distractions as something unintentional or

unexpected "that pulls your mind away for a second and you have to bring it back." Most participants conveyed "frustration" when they are distracted by "loud" or "annoying" sounds during formal practice. For example, one participant found it difficult to meditate when she would hear "an emergency vehicle go by…It's distracting because I hate the sound." She also commented on hearing "people on the street yelling…And I think if I should call the cops. Should I end my meditation and call the cops?" Another participant was also distracted by noise such as her roommates watching television, "I have to wear ear plugs and I don't want to have to wear ear plugs when I am trying to do like a body scan or meditate." One participant found loud sounds during meditation to be "really distracting and even sort of anxiety inducing because they kind of intervene my quiet space that I have, like my personal space…Like I hate it when people have loud vehicles so that is one that just throws me off my orbit." A final participant spoke about the distraction of construction in her building, "Distraction…I think that's it is my major challenge. So for instance this morning I did the 25-minute body scan and I'm sure that for the first 5 to 10 minutes I was cursing at the workers working next door. They were fine people, they were doing their job I know, but it was constantly in my mind."

Participants also mentioned being distracted by going on the internet or social media. They described these moments of distraction as "almost automatic" where they were trying to engage in mindfulness and be present, but then would catch themselves "all of a sudden on Facebook." For example, one participant explained, "I might find myself... all of a sudden checking my email" or "go onto reddit or I have a bunch of stock websites I go to…and I didn't usually sit down intending to do that." He described these types of online distractions as "constantly creeping in."

Other distractions mentioned by participants included aspects of the MBSR group, with one participant distracted by the small space of the group. For example, he had a difficult time being mindful during a walking meditation because everyone was "so close together" and he was "worrying that you're not accidentally stepping on anyone. Thinking about things like that made it hard to focus on being mindful." Other participants were distracted by group members, "Sometimes just like the students…They may not be doing it intentionally, but because they move or something, then it's kind of distracting… It pulls me away from focusing on my breath." Another participant concurred when she said, "We are about 20 people in the room…at least one person will snore at some point. So that is enough to keep me there…thinking 'oh, why can't someone kick him.'"

Aside from distractions, several participants reported being disrupted by interruptions, or something that was imposed on the participant from someone or something else. One participant explained an interruption as having "to like stop meditating and actually do something and like come out of that state." Smart phones were one cause of interruptions for participants. For example, participants would be meditating and their phone would alert them to a message or email. One participant elaborated on how her phone interrupted her cultivation of mindfulness:

> When I'm trying to live my life mindfully, like informal practice, and I'm trying to go for a walk mindfully or just be mindful in my life and my phone keeps ringing…Like I have to worry about that sort of stuff…with like medical appointments and stuff like that…trying to organize medical appointments, sometimes it's like phone tag and stuff and I have to respond.

Other participants found that people interrupted them when they were engaging in formal practice. One participant described being interrupted by his family, "When I started the program (MBSR), I was meditating in the evenings and sometimes my parents would come in and I

would be interrupted." Another participant also mentioned her family interrupting her

meditations:

> My sister would come into the room while I was meditating and like start to talk to me and then like she thinks I'm sleeping so she would like turn off my thing…One time I was meditating and she thought I was sleeping so just like turned it off and I was like what do I do now…It was just a really big interruption.

Time. The Time category contains hindering critical incidents as well as wish list items;

however, the wish list items from this category fell below the participation rate of 25%. They

are not included in the discussion of the category and can be found in Appendix E.

Seventy-nine percent of participants (11) detailed 15 incidents of time as a hindrance to

cultivating mindfulness. Participants spoke about lack of time, time management, and time

pressure. The majority of participants in this category discussed not having enough time because

of the busyness of their schedules. Participants had multiple obligations, responsibilities, and

tasks to attend to in their day, and it was challenging "to fit mindfulness in." Many participants

struggled finding time for mindfulness because of school. One participant worried he would not

"have enough time to do everything if I put the mindfulness in." He stated, "It's just a feeling

sometimes like I could be getting a bunch of work off my plate at this point in time but I'm doing

this (mindfulness) instead…I could be studying." Another participant agreed stating, "It's

challenging…in terms of wanting that time to study…like what is it taking away from, that time

that I could be devoting to something else." One participant described having "two exams in one

week" and spending all of her time studying for both. She stated that when this happens, "I

definitely just completely take mindfulness out of the way." Another participant found he was

"consumed" by "studying and school" and so it was challenging for him to practice mindfulness.

Other participants were busy because of school as well as other obligations, which placed a demand on their time. For example, one participant stated, "It's always been like that where I've got a million things going on…like school and working…like making sure I'm taking shifts at work….and with everything for doing my masters, like making sure I'm going into the lab enough." Another participant echoed this when he explained his current schedule, "Like now I've been applying to my Master's program and so a combination of that and scholarships, then I have to go to work, and I'm learning Chinese." He commented that "it's harder to find time" when he has "a lot going on."

Some participants reported struggling with time management. Participants described "losing track of time" and then realizing they did not have time for mindfulness. One participant shared that "one day a week it's usually that time's gotten by and I need to go to bed…I lose track of time and before I know it I am ready for bed." Another participant would miscalculate the time it would take for her to accomplish a task:

> I always calculate the time I need for something wrong…I think something will take me half an hour, and it would most certainly take me 45 minutes. And that's how it goes every day…Last Sunday for instance…when I woke up in the morning I said okay, I'm going to work from about 10:00AM to 4:00 PM and then I'm going to prepare lunch…do my mindfulness practice while the kettle is cooking our food, and then have lunch. No, because I finished up working at around 8:00 PM….And at that point I was so tired, I just wanted to take a shower and go to bed.

This participant would also "let mindfulness slip by" when she was working from her office because she struggled to prioritize her time, "Most of the times I don't prioritize correctly…If I don't prioritize it then…it just finally slips…like when I have to go to the office…and I have to answer a bunch of emails, and then I'll say well I'll do it at noon. Then at noon something else comes up…and eventually I do a short version or not at all."

One participant spoke of time pressure and found it challenging when she was worrying about meeting time deadlines. For example, the pressure of moving in one day made it difficult to stay in the present moment:

> I guess with the time pressure it was a little bit harder, because when you're in the present that doesn't matter, but if there's a time limit, like deadline, you're always going off to the future time and you have to keep bringing yourself back. It's harder to stay in the present moment when there's a worry in the future that is sort of salient. It was harder to drag my mind back to the present.

Tired. The Tired category contains only hindering critical incidents, with 64% of participants (9) reporting nine incidents of feeling too tired or physically fatigued to cultivate mindfulness. Participants spoke about not getting enough sleep, and feeling too tired the next morning to engage in mindfulness. One participant detailed certain dreams that impacted her ability to get restful sleep. She expressed that it could be challenging for her to meditate in the morning because "I wake up and I'm already churning… and I'm tired." Another participant would choose to "go back to sleep" in the morning instead of meditating if he was feeling "sleep deprived." For a third participant, if he did not sleep well then it was "more difficult" for him to be mindful because he was "more emotional, more consumed in my thoughts when I'm tired."

Participants also indicated that they would be too tired at the end of the day to engage in mindfulness. One participant will choose to sleep after a tiring and frustrating day:

> I do it at the end of my workday…If it's been frustrating and I'm tired, I'm like screw it. I'm too tired to do it. That might happen once a week…it will be a choice of I don't want to….I was teaching Monday's this past semester. I'd get up on campus at 7:30 a.m. and then I wouldn't get home until about 5:00 p.m. and I'd just feel tired in my bones and frustrated with students. See you know four back to back classes and I'd just be like I need to have something to eat and lie down and fall asleep.

Another participant struggled to "check in" with herself when she was tired from her day, "I feel like I'm not able to refocus and check in and continually do that, so maybe it's better if I just take a nap."

Emotion and Anxiety. The Emotion and Anxiety category contains hindering and helping critical incidents, with 57% of participants (8) detailing 19 hindering incidents and 36% of participants (5) detailing eight helping incidents. These participants described emotion and anxiety as important factors in their cultivation of mindfulness. They felt hindered by negative patterns of thoughts and emotions as well as by specific fears and worries about their lives, their futures, their mindfulness practice, and other people. It was difficult for them to focus on the present and engage in mindfulness in these moments. Conversely, there were participants who found emotion and anxiety to be helpful to their cultivation of mindfulness because it would remind them to use mindfulness in an effort to cope with overwhelming emotion, strong emotional reactions, or increased anxiety.

Participants found that negative patterns of thoughts and emotions would hinder their mindfulness because it pulled their focus away from the present moment. One participant struggled with "living in her head" and falling into old thought patterns that caused her anxiety. She stated, "I can really go back to old patterns where about situations that I should have dealt with differently, or obsessing about something that really is just so small and trivial, but for whatever reason it makes me worry." Other participants noticed that it was easy to "fall back into old emotional patterns." For example, one participant had been seeing her father more often, which was triggering "all these old emotions, so if I am really not being mindful, I can just fall into old patterns….of anger and frustration." It was hard for her to cultivate mindfulness

because she realized "how challenging it is to break (the old patterns) even if you want to do it. I think this is how I lived my life for so long that there's a lot of resistance to want to not live my life that way and to not be mindful, even though I know it would help."

Participants also found that high levels of anxiety impeded their cultivation of mindfulness, specifically fears and worries about their lives, their futures, their mindfulness practice, and other people. One participant spoke about feeling a new anxiety over the transition into adulthood and the uncertainty of his future, and explained how it had been hindering his cultivation of mindfulness:

> I feel like it's so different and it's so like new that it's like mindfulness, the meditative mindfulness, like it kind of takes a backseat…I get like tension headaches…It also makes me, like I'm more easily irritated, or like I find myself doing something like being angry quite soon and then thinking about it or like reflecting on it almost like too late. And I surprise myself, like I'm surprised with getting just frustrated with somebody in public, like I don't like that someone's not moving fast when I'm walking along the street or something, or someone in a car. Things irritate me a lot quicker…and it's like the mindfulness is not there…I'm less patient…so that would impact informal practice because I've always tried to give people my time to the best of my ability, but I cannot do that as much right now. It's like I'm giving people my time and it's not necessarily with them, but…giving them my time by thinking things about them that I hope would help my relationship, as well as like interacting with them in like a kind way. But that's like also what's taking a back seat… So that's what has prevented me from doing it recently anyways… …waiting for it to stabilize or waiting for it to pass or something until I can like return to trying mindfulness.

Another participant described several experiences of getting "overwhelmed with panic" that "floods your brain and it's hard to think of anything else." Another participant worried that cultivating mindfulness would change his personality, "If I meditate an hour every day, I am scared that it would change me…and make me this cold-hearted mindful person who is just detached from everything." He also worried that if he regularly cultivated mindfulness "people would judge me…that I would come across as a stuck up hipster and I don't want that

association. I want to do mindfulness just to be my own individual, not to be this stereotypical person…or just because everyone says I should be doing it and everyone else is doing it."

Some participants found emotion and anxiety to be helpful to their cultivation of mindfulness. Participants spoke about moments when they felt overwhelming emotion, which triggered them to engage in mindfulness in order to help them observe their emotional landscape and regulate themselves. For example, one participant described feeling flooded with emotions during a driving lesson, and engaged in mindfulness to help regulate these emotions, "In the car I could feel all the emotion was building…mindfulness really helped me with that so that it didn't get out of hand." Another participant found that she would engage in mindfulness when she was having strong emotional reactions. For example, after learning that a close family member was in an accident, she realized she was having "all sorts of stormy emotional reactions to this" and that her family member "needs somebody who is composed or is able to sort of deal and be a strength for him." She practiced "a whole bunch of different (mindfulness) exercises…and sort of knew that it would be my anchor throughout that experience and it was…because it creates that pause between the action and the reaction…It creates a moment of productive hesitation." Other participants described how increased levels of anxiety triggered them to cultivate mindfulness. For example, one participant struggled with frequent panic attacks and found that "whenever I start to panic, it reminds me that I need to be mindful." Another participant was cued to use mindfulness as a way to cope when she was taking a national exam and felt "very big performance anxiety." Throughout the exam, she would "take a moment" and engage in "some deep breathing to cope."

Interpersonal Relationships. The Interpersonal Relationships category contains only

hindering critical incidents, with 43% of participants (6) describing 10 incidents of interpersonal

relationships that hindered their ability to cultivate mindfulness. Participants felt a sense of

responsibility or accountability to others, had conflicts with others, and found certain

interpersonal interactions to be challenging.

Several participants felt a responsibility or accountability to the people in their lives,

which hindered their cultivation of mindfulness. For example, one participant found it difficult

to continue with her meditation if she knew she was needed by her family, "If my mom's

needing me and I can't reply because I'm meditating, like that sort of thing is hard to deal with."

Another participant also felt a sense of responsibility to check his phone and "check in on

people" in case he needed to get back to someone. He felt he "can't just put my phone away and

not look at it because maybe some people would be disappointed I'm not getting back to them,

like my parents." For another participant, her family responsibilities had increased as she was

caring for an ill parent:

> I have a lot of family stuff going on…and that definitely makes it hard…So I've had to
> take up more of that responsibility…taking him to all of his appointments. So I have to
> put a lot on hold…because it's pretty much just me at this point taking him to all of his
> stuff and going to the hospital every day…I was trying to just manage all of it at the same
> time but something had to give.

She wanted to make more space for mindfulness in her life, but her responsibility to her family

took priority over "making enough time for myself." Another participant also prioritized others'

needs ahead of her own, stating that she had "always had that tendency to prioritize the tasks that

have to do with being accountable to others, not the tasks that have to do with being accountable

to myself." This included putting tasks for others over her mindfulness practice.

Participants experienced conflict with others to be hindering to their mindfulness practice. One participant discussed the challenge of maintaining a mindful state when "issues in the past get brought up, like family issues." He explained that "the most important people in your life, they're the ones who are the most prone to make you lose your mindfulness…if they do something that throws you off then it can be more difficult to be mindful." He also reflected on conflicts in his relationships with his peers. For example, he was "not seeing eye to eye" with some of his teammates, and this conflict made him "more emotional" and "not mindful." He stated, "It just deviates from like being there…and I just kind of get pulled into the problem." Another participant also noted that she had a hard time cultivating mindfulness when she was having conflict with another person. For example, when she called the parking office about a ticket she had received:

> I think I completely lose any sense of mindful awareness. I called the office and the lady answered the phone and…she sort of immediately went into this very like accusatory sort of language and very like angry and stuff. I noticed that I was getting upset…I realized my face is getting flushed and you know like recognize this sort of physical symptoms but it took a few minutes.

Finally, one participant described certain interactions with others as hindering her mindfulness. For example, one participant felt like she could not be fully present and in the moment with others "whenever there's like a lot of subtleties in conversation. Like if people are sort of alluding to something and then you're sort of on the one hand listening and on the other hand trying to read between the lines."

Wish List Categories. There were three wish list categories. While these categories have helping, hindering, and wish list aspects to them, they are considered wish list categories because they have the highest number of participants who cited wish list items. The wish list categories are illustrated in the table below. Findings that have participation rates above the 25% standard (Borgen & Amundson, 1984) are bolded in the table. Findings that fall below the 25% participation rate criteria are unbolded and will not be discussed in this section. They can be found detailed in Appendix E.

Table 4. Wish List Categories

	Helping			Hindering			Wish List		
Category	Participants	Participation Rate (PR)	Incidents	Participants	PR	Incidents	Participants	PR	Items
Wish List									
Space	0	0	0	**4**	**29%**	**5**	**10**	**71%**	**16**
Resources	0	0	0	0	0	0	**6**	**43%**	**7**
Cultural Shift	0	0	0	0	0	0	**4**	**29%**	**9**

Space. The Space category contains wish list items and hindering critical incidents, with 71% of participants (10) detailing 16 wish list items and 29% of participants (4) detailing five hindering incidents. Participants expressed desire for a conducive space to cultivate mindfulness. Specifically, participants in this category described wanting a place where they could go to engage in formal mindfulness practice, and where they could feel "comfortable," "relaxed," and "calm." This is because participants felt they currently lacked a dedicated space where they could engage in mindfulness, and found this to hinder their cultivation of mindfulness.

Many participants spoke about wanting a private space in their home that was dedicated to practicing mindfulness. One participant described it as "a consistent place and a consistent space so it's not just drop the pillows in the middle of the living room." Another participant made a similar comment, "The first thing that comes to mind is a space, like a dedicated space that wouldn't be interrupted whether it be physically interrupted or other distractions."

Five participants indicated wanting a place to practice mindfulness either on campus or in the community. One participant described a "Japanese garden" with "a Zen feel to it and a fountain running." She also imagined having access to a "Buddhist temple" or "a facility for mindfulness that has everything that you could wish for like a little fountain and a nice, big, spacious, quiet room where I can go whenever I wanted." A second participant would also like a place in the community near his house as well as a dedicated mindfulness room on campus. He described both places as providing "a comfortable space that's surrounded by greenery…A place where you go to where the norm is not talking, it wouldn't feel weird you're doing that…You don't have to battle your fear of other people looking at you doing this silent thing, which is not that bad but it's enough to be slightly uncomfortable sometimes…a space where I could go and I could expect not to be interrupted." The third participant described "a place you can go on campus…like a mindfulness room where you can kind of just relax if you're stressed out from school…just remove stress from your studies."

One participant would like to spend more time in nature because the "ambience promotes you to move inward, to get in touch with yourself more." She described the city as "everybody kind of going on with life and you have to stop and say 'oh yes I am getting in touch with myself now.' But nature can encourage that by itself." Two participants thought going on a silent retreat

would provide a conducive space for cultivating mindfulness, with one participant commenting that it would be "so nice to be in that space, to really be able to focus on the breath."

Other participants imagined what their mindfulness spaces would look like or have in them. All of these participants explained that the ambience of their spaces would be "quiet" and provide them with a feeling of "peace," "calm," "comfort," and "quiet." One participant thought it would help "to set up shrines with pictures and candles." He also wanted "greenery and statues." Another participant shared that she would set up her room with "candles so then it could be a welcoming room…so it feels like this is my safety place and I can go into my safe place in my head." For another participant, it would be important that her space be "clean, and uncluttered" with "a few different props, whether it be like a little bell or whatever…Just to kind of get you into that mood." A final participant conveyed excitement at the thought of "a little Zen corner that's nicely decorated, peaceful, clutter-free; a physical area to do mindfulness in. Then I would do it every day I think…because it's peaceful. And it's there; it's a physical thing reminding me. And it's a pleasant thing where I would want to be…and it's isolated, like it has one purpose."

Participants desired a conducive space because they felt they lacked a dedicated physical space to engage in formal meditation practice, which hindered their cultivation of mindfulness. For example, participants spoke about living with roommates and significant others, which made it "hard to do mindfulness" because there was not "enough space or quiet." One participant stated, "If I get up to do meditation then it's like do I do it in our bedroom or where do I go? I want to feel that I'm not distracted, not in the way, not going to create unnecessary difficulty in terms of meditation, like in the sense that if he gets up out of bed then I'll hear him and he'll probably walk past me if he's going out the door or something." Other participants mentioned

that they had trouble finding a dedicated space for mindfulness outside of their homes. For

example, one participant was challenged to find a quiet space on campus to practice mindfulness,

"I could go outside but it's a little cold and wet right now…Sometimes I do it in my car, but it's

a little cold…So not being able to find quiet spaces."

Resources. The Resources category contains only wish list items, with 43% of

participants (6) reporting seven wish list items of resources that would be helpful in cultivating

mindfulness, including financial resources, general mindfulness resources, and community

resources. The common element in this category was that having available resources would be a

catalyst for cultivating mindfulness.

Two participants would like access to more financial resources to attend groups and

retreats. One participant commented that as a student, she "can't afford to go to the retreats I

would want to do." The second participant would appreciate more available financial resources

so that she could afford to attend mindfulness groups. For example, she expressed desire for

"some type of funding through the government so that I could attend a group…if you want to do

more of a group guided thing then obviously there's a financial commitment there."

Two participants would like access to more general mindfulness resources. For example,

one participant would like "an easily accessible list" of mindfulness resources in the community

with information on "local mindfulness groups" and any free drop-in sessions. The second

participant would like to have "access to" and "knowledge of" different kinds of mindfulness

practices and activities to help give him new ideas, "Knowing about different mindfulness

practices and activities, just learning new ways of practicing…it puts a new twist on it, makes it

more interesting…(puts) a new perspective on it."

Finally, three participants wanted to include wish list items pertaining to what would be helpful for community members as opposed to what would specifically help them. They discussed wanting more people to have access to mindfulness resources, and to cultivate mindfulness in their lives, especially in communities where people would not typically be exposed to mindfulness or might not have the financial means to attend costly mindfulness groups. One participant expressed,

> I go to a couple other anxiety support groups and people are like 'where can I go and where is it free?' and I'm like 'I do it through my school,' but there's not really many in the community. So…not specifically for me but for other people, just making the program more accessible and more available and for free for people that are struggling.

Another participant shared this outlook, stating she would like "more mindfulness centers within the communities that aren't so expensive…I was really lucky that I got to take it for free through SFU, the best thing SFU has done for me throughout this career. But it would be nice if there were more open to the community, especially to people who don't have the resources to take the course." A third participant wanted "more outreach to tell people that might not seek it out themselves or might not be as internet savvy to find these things. I'm just thinking about my mom and dad, or people that might not normally encounter it so that they might make use of it…and also maybe free drop in classes in places that are short of that." He shared his belief that if more people cultivated mindfulness, then it would be "easier" for him to practice without social judgment.

Cultural Shift. The Cultural Shift category contains only wish list items, with 29% of participants (4) describing nine wish list items related to a social and cultural shift with regard to mindfulness. These participants would find it helpful, both for themselves and for society in general, if there were an embedded culture of mindfulness and if practicing mindfulness was an

accepted social norm. Participants in this category expressed desire for a cultural shift with regard to how western society views mindfulness. One participant felt the interpretation of mindfulness meditation in western culture had become "too secular" and "too cold and scientific." He spoke about wanting mindfulness to shift away from its current focus in western society:

> I would like to change it from a reductionist, scientific view of mindfulness in the West…In other cultures, they do meditation because it's deeply embedded in who they are and the culture, not because they read scientific journals and think what can I get out of mindfulness. But it would take a whole western world paradigm shift…so we could do meditation because we enjoy it. I wish as a society, we could do it because we enjoy it, not do it because you feel like you should. I'm a victim of this myself now. I do it because I know that the science says there is a good chance it will help me. But like in Thailand, I did it because I wanted to do it, for the enjoyment of it. It felt right. But when I do it now, it's more like 'I should do it because it will help me.'

He would find it more helpful to cultivate mindfulness if it was rooted in the culture and practiced out of enjoyment.

Other participants wanted a society that encourages and accepts mindfulness. One participant would find it helpful "having a society where mindfulness is the norm and that people openly accept mindfulness and practice mindfulness…overall, just a society that encourages mindfulness and the practice of mindfulness." Another participant discussed building mindfulness practice into the social structure, for example having specified mindfulness areas "like no cell phone zones" throughout the city and on campus so that mindfulness practice is encouraged. Another participant would like mindfulness practice to be incorporated into school, noting that she would have appreciated learning mindfulness earlier in her life, "I wish that I had learned it in elementary school and I think kids should. I think it makes a huge difference in the way that we function socially and the way we process things cognitively and our ability to function in school, so I wish I had had it way back then. I hope that it is introduced into schools."

CHAPTER 5: DISCUSSION

It is important to contextualize the findings of the study and consider the implications for research, theory, and practice. In this chapter, the findings are examined with regard to how they compare with the existing literature on mindfulness and university students. Implications for further mindfulness research, conceptualization, and practice are then considered. Finally, limitations of the study will be reviewed.

5.1 Comparison with the Literature

This section will begin by discussing the contextual and critical incident findings that are supported by the literature, as well as any distinctions of these findings from the literature. First, the contextual findings that can be compared with the literature will be discussed, specifically the definition of mindfulness, the impact of mindfulness, and university student mental health. This will be followed by the critical incident categories that can be compared with the literature, specifically Benefits of Mindfulness, Time, Mindfulness Practice, and Mindfulness Groups. Finally, this section will conclude with a discussion of how the current findings are supported by the existing literature on the mechanisms of mindfulness.

Contextual findings. The contextual findings fit within the existing mindfulness literature with regard to the definition of mindfulness and the impact of mindfulness. They also fit within the research on university students with regard to university student mental health.

Definition of mindfulness. The contextual findings show that the participants' definitions of mindfulness are supported by certain aspects of the definitions of mindfulness discussed in the literature, and consequently the definition of mindfulness used for this study.

Although there is no unified definition of mindfulness in the literature (Brown & Ryan, 2004), most authors agree that mindfulness comprises both presence and acceptance (Bishop et al., 2004; Shapiro et al., 2006). Presence is considered as attentional focus to momentary experience with the ability to sustain attention on the present moment by consistently redirecting attention back to the here-and-now (Bishop et al., 2004). All fourteen of the participants included presence in their definition of mindfulness. They described it as bringing their focus and attention to the present moment and being aware in the moment of their internal and external experiences. It is also interesting to note that throughout the interviews, participants would often use the terms 'presence' or 'being present in the moment' synonymously with cultivating mindfulness.

Six participants also mentioned acceptance along with presence in their definitions of mindfulness. They portrayed acceptance as accepting what arises in the moment, and not judging or being critical of themselves or the situation. This is in line with the operationalized definition put forth by Bishop et al. (2004), which included both focused attention on the present moment as well as acceptance with an open, non-judgmental attitude.

Five of the participants' definitions are similar to that of Jon Kabat-Zinn (2003), namely present moment awareness with a nonjudgmental attitude. This is not surprising given that it is also the definition used in the MBSR group, and nine of the participants reported that they had no mindfulness experience prior to the MBSR group.

In summary, it seems that present moment awareness is the most significant part of mindfulness for the participants in this study. Acceptance and non-judgment are also important to most of the participants. Overall, the participants' definitions of mindfulness were also in line

with the definition used for this study, which was defined as an intentional awareness of one's

moment-to-moment experience with an attitude of non-judgment and acceptance.

   Impact of mindfulness. The contextual findings in this study revealed the impact that

mindfulness has had on participants' initial presenting concerns. Participants reported a decrease

in symptoms, increase in coping, and a deeper awareness and perspective.

   A majority of the quantitative outcome research on mindfulness suggests the positive

impact of mindfulness. Most studies found that mindfulness interventions decrease symptoms of

anxiety, depression, and stress (Baer, 2003; Gotink et al., 2015; Grossman et al., 2004; Hofmann

et al., 2010; Khoury, et al., 2013). Studies with university students have similar results (Gallego

et al., 2016; Jain et al., 2007; Regeher et al., 2012; Shapiro et al., 2007; Shapiro et al., 2011). The

contextual findings from this study seem to reflect the current literature, with 13 out of 14

participants describing a perceived decrease in their symptoms related to anxiety, depression, and

stress.

   Participants also conveyed an increase in coping with their symptoms, which is consistent

with qualitative research (Malpass, et al., 2012; Mason & Hargreaves, 2001; Wyatt et al., 2014).

Participants in this study relayed that they still experience their symptoms, but are better able to

cope with them when they arise.

   Finally, qualitative research has found that mindfulness helps participants increase

awareness and recognition of distressing emotional and cognitive patterns (Griffiths et al., 2009;

Himelstein et al., 2012; Wyat et al., 2014). This awareness helped them to not engage in

automatic reactions; but rather, to begin to work through them in a clear and objective way

(Stelter, 2009). Several participants in the current study also identified increased awareness and

perspective as a significant impact of mindfulness. They can recognize their triggers and signs of distress, and cope with them in the moment.

University student mental health. The contextual findings in this study also seem to be supported by the existing literature on the complexity of mental health concerns for university students (Iarovici, 2014; Prince, 2015). Thirteen out of the fourteen participants reported more than one presenting concern at the time of referral to the MBSR group. Further, participants had an average of three comorbid presenting concerns. Sixty four percent of participants reported having diagnosed mental health disorders previous to seeking help at the university counselling centre. These diagnoses included depressive disorders (e.g., major depressive disorder, bipolar), anxiety disorders (e.g., generalized anxiety disorder, posttraumatic stress disorder, panic, agoraphobia, social anxiety), and eating disorders (unspecified). This is suggestive of the data found in the Healthy Minds study (2015), with 20% of students having been previously diagnosed by a mental health practitioner with a depressive disorder, 20% with an anxiety disorder, and 3% with an eating disorder.

Critical incident findings. This section will discuss the specific critical incident categories that can be either fully or partially supported by the existing mindfulness literature, specifically the Benefits of Mindfulness, Time, Mindfulness Practice, and Mindfulness Groups categories. The findings in the Benefits of Mindfulness and Time categories can be fully supported by the literature. The Mindfulness Practice and Mindfulness Groups categories have findings that can be partially supported by the literature, and findings that are distinct from the literature.

Benefits of Mindfulness. The findings in the Benefits of Mindfulness category can be fully supported by the existing literature. Published qualitative research speaks to the benefits of

mindfulness, with research studies finding that participants perceived mindfulness as having a positive impact on their symptoms (Griffiths et al., 2009; Morone, 2012; Proulx, 2008; Stelter, 2009), coping skills (Mackenzie et al., 2007), and overall wellbeing (Finucane & Mercer, 2006; Mason & Hargreaves, 2001; Smith et al., 2007). This helped participants view mindfulness in a positive light and want to continue cultivating mindfulness (Wyatt et al., 2014). Conversely, a challenge for participants in the existing research is questioning the benefits of meditation, specifically that meditation is not working for them. Participants in qualitative studies have reported that they doubt mindfulness is working in the absence of perceived immediate benefits, which made it difficult for them to find motivation to persist in cultivating mindfulness (Sears et al., 2011).

Participants in the current study also discussed how the benefits of mindfulness helped and hindered their cultivation of mindfulness (i.e., Benefits of Mindfulness category). Sixty-four percent of participants indicated that reminding themselves of the benefits motivated them to continue cultivating mindfulness, while 29% shared that at times they doubt that mindfulness is working and have difficulty seeing the rewards and remembering the benefits. They described it as frustrating, discouraging, and disempowering, and indicated that it hindered their motivation to continue engaging in mindfulness.

Time. The findings in the Time category can also be fully supported by the existing mindfulness literature. Participants in qualitative research studies have spoken about the challenge of finding time and prioritizing mindfulness practice (Finucane & Mercer, 2006; Sears et al., 2011). Participants in the current study echoed this challenge with 79% of participants detailing incidents where time hindered mindfulness (i.e., Time category). Specifically, they

spoke about the difficulty of cultivating mindfulness when they cannot fit practice into their busy work and school schedules, and when they struggle with prioritizing and managing their time.

Mindfulness Practice. The findings cited in the Mindfulness Practice category are partially supported by published mindfulness research. Participants in the current study conveyed that formal and informal practices are important elements of cultivating mindfulness. They described specific practices that facilitated their mindfulness, which are also relayed in the literature. Mindfulness has been traditionally cultivated through formal meditation practice, typically using sitting meditation (Gunaratana, 2002; Hanh, 1976, 2008). Authors underscore the need for formal sitting meditation, arguing that it provides the necessary scaffolding required for cultivating mindfulness (Carmody & Baer, 2008; Kabat-Zinn, 1990). All of the participants in this study indicated having used formal sitting meditation to cultivate mindfulness, with many participants identifying formal sitting meditation as a helping factor. They described it as a way to centre themselves and build awareness and acceptance of their emotions, thoughts, and physical sensations.

In addition to sitting meditation, many participants found it helpful to use other specific practices that they learned in the MBSR group, which are discussed in the MBSR literature (e.g., the body scan and walking meditation)(Baer, 2003; Kabat-Zinn, 1990, 1994, 2003). Several participants commented on the importance of walking meditation and other forms of mindful movement in their cultivation of mindfulness. In the literature, awareness and focus on specific movements and physical sensations are encouraged during mindful movement, and viewed as a strong anchor to the present moment (Baer, 2003; Segal et al., 2002). Participants agreed that bringing attention to their movements and to the experience of moving in certain ways helped

them to cultivate mindfulness. Participants accomplished this through mindful walking as well as other activities, such as exercise and weeding.

Many authors stress the importance of cultivating mindfulness through informal practice, specifically through presence and bringing focus back to the breath (Bishop et al., 2004; Brown & Ryan, 2003; Hayes, 2005; Kabat-Zinn, 1990, 2003). All of the participants in this study mentioned cultivating mindfulness through informal practice at some point in their interviews, with some reporting specific informal practices that they find helpful (e.g., mindful eating, mindful cooking, mindful showering). Participants found that bringing awareness to the present moment was a helpful part of informal practice, especially when they focused on the details of their daily tasks. For example, the participant who spoke about mindful cooking emphasized the importance of focusing on the small details of her meal preparation experience, such as the smell or texture of certain foods. Similarly, many participants included sensory observation of the present moment as helpful in facilitating mindfulness, such as noticing the cold air on their face or observing the details of a leaf on the ground as they walk down the street. This is in line with the literature, which encourages awareness of the present moment and focus on the details of the experience (Gunaratana, 2002; Mikulas, 2015). In this way, participants in this study cultivated mindfulness through their daily activities, and everyday tasks were experienced mindfully as opposed to automatically (Germer, 2005; Kabat-Zinn, 2003).

The literature on both formal and informal practice encourages using the breath as an anchor as a way to consistently connect and re-connect with the present moment (Kabat-Zinn, 1994, 2003). Several participants spoke about intentionally bringing their attention to the breath and using it as an anchor to the present moment. In formal practice, they focused on the breath to interrupt ruminating thoughts and disruptive emotions and physical sensations, and to re-

engage in the meditation. They used the breath informally throughout their day whenever they were facing a difficult situation and needed to bring themselves into the present moment.

Finally, qualitative research on mindfulness reveals that flexibility of practice is an important aspect of mindfulness (Mason & Hargreaves, 2001; Williams et al., 2011; Wyatt et al., 2014). Participants in these studies found certain practices more personally relevant than others, and felt encouraged that they could cultivate mindfulness using different practices and different lengths of practice that worked best for their own lifestyles (Wyatt et al., 2014). Several participants in the current study agreed that the flexibility of mindfulness is a facilitating factor in their effort to cultivate mindfulness. This was especially true as it relates to modality of practice (e.g., mindful movement), length of practice, accessibility of informal practice, and the focus of practice.

Although many of the findings in this study regarding mindfulness practice fit within the current literature, participants also reported unique data about mindfulness practice, specifically pertaining to the difficulty of mindfulness practice. In the qualitative literature, participants describe the difficulty of meditation, particularly physical discomfort (Finucane & Mercer, 2006), boredom and restlessness (Shapiro, 1992; Sears et al., 2011), and difficulty concentrating and maintaining focus (Griffiths et al., 2009; Sears et al., 2011). Half of the participants in the current study also indicated the difficulty of mindfulness practice, with several identifying boredom and restlessness during meditation, which fits with the above research. However, participants also described the difficulty of meditation in terms of the effort that it takes to meditate, specifically the energy commitment. They also described meditation as feeling like a chore. They stated that these difficulties resulted in not enjoying the meditation and feeling like they are going through the motions. Participants reported feeling frustrated, discouraged, and

exhausted by the effort of meditating. They often gave up or felt like it was a waste of time. Further, the knowledge that mindfulness meditation could be difficult negatively impacted their desire to engage in formal practice and made it more likely that they chose to not meditate.

Mindfulness Groups. The findings in the Mindfulness Groups category are also partially supported by the current literature. The qualitative mindfulness research reveals several connections to the findings in this study with regard to the group experience (i.e., Mindfulness Group category). The first is "the normative and supportive process of the group" (p. 220, Wyatt et al., 2014). Participants in a number of the qualitative studies described the beneficial effects of the group environment, specifically with regard to group cohesion and safety, supportive group members, and group format (Allen et al., 2009; Mackenzie et al., 2007; Wyatt et al., 2014). These research studies showed that group cohesion and safety helped the participants engage in the group and continue to attend the group sessions (Wyatt et al., 2014). Participants in the current study also noted the importance of feeling safety and trust in the group. Participants experienced the group as open and nonjudgmental, which allowed them to feel comfortable and safe to share their experiences with the group and to go deeper into their mindfulness practice.

In the qualitative literature, groups were also seen as a supportive environment, particularly because of supportive group members (Wyatt et al., 2014). Participants in Wyatt's study felt that other group members understood and supported their unique experiences. They also found that they shared common experiences, which helped normalize and validate the participants' accomplishments and challenges (Griffiths et al, 2009). This support and validation allowed group members to feel less distress and more connection with other group members, which encouraged them to continue cultivating mindfulness (Proulx, 2008; Wyatt et al., 2014).

Participants in the current study also conveyed their appreciation for the support of the other group members. They enjoyed hearing the experiences of the group members, and felt supported and validated when they would share their own stories. They also echoed the sentiment of feeling normalized in their experiences, with several participants mentioning how helpful it was for them to not feel alone in their practice. This increased their comfort level and allowed them to engage in mindfulness more freely. Participants felt united with the other group members in a common cause, which built a sense of community and connection.

Finally, the participants in qualitative research appreciated the group format because it held them accountable, which helped increase motivation to complete meditation homework, attend sessions, and engage in mindfulness during the group (Finucane & Mercer, 2006). Several participants in the current study also felt accountable to the group, and shared that this also motivated them to attend group sessions, support others, do the practices at home, and generally engage in mindfulness.

While the support of others in the group relates to the current literature on mindfulness, participants in the current study mentioned other factors with regard to groups that are unique, specifically the facilitator, the structure of the group, and the desire for more access to mindfulness groups. Participants expressed appreciation for the facilitator of their MBSR group, commenting that the facilitator's teaching style contributed to their cultivation of mindfulness. In particular, participants valued the facilitator's ability to maintain good group dynamics, to build trust and community, to hold space and silence within the group to allow for deeper reflections and more group sharing, and to lead the meditations. Participants also liked that the facilitators shared their own personal stories of mindfulness and how they cultivate it in their lives. This openness inspired many participants to consider their facilitator as a role model.

They could see how cultivating mindfulness has helped the facilitator, and so felt encouraged to continue in their own practice.

Participants also found the structure of the group as a helping factor because it gave them a specified time and place to engage in formal meditation. The participants who no longer had access to a mindfulness group felt this was a significant challenge to their continued cultivation of mindfulness. They described not having the group as disheartening and discouraging because it was solely up to them to continue with their mindfulness practice.   Half of the participants found being in a mindfulness group so helpful that they put it on their wish lists. Continued development of their mindfulness practice, along with the shared group experience, were the main drivers behind wanting to attend another mindfulness group or class. It is also important to note that participants wanted more accessible and affordable mindfulness groups available in the community, not for themselves, but for those who are not typically exposed to mindfulness or who might not have the financial means.

Mechanisms of mindfulness. Finally, the findings in the current study are supported in part by the existing literature on the mechanisms of mindfulness. The contextual findings that relate to the literature are the definition of mindfulness and the impact of mindfulness, and the critical incident categories that relate are Mindfulness Concept and Emotion and Anxiety.

Mindfulness authors agree that it is important to understand the mechanisms that underlie the positive effects of mindfulness found in the research; however, there is no consensus on what these mechanisms are (Baer, 2003; Brown et al., 2015; Shapiro et al., 2006). More qualitative research has been proposed as a way to gain deeper understanding into the mechanisms that mediate mindfulness (Allen et al., 2009; Grossman, 2008; Monshat et al., 2013). The findings from the current study suggest the importance of several mechanisms that the participants

identified as helpful in their cultivation of mindfulness. These mechanisms are attention, acceptance, exposure, and emotion regulation.

Attention is considered a crucial aspect in cultivating mindfulness, which in turn positively impacts psychological wellbeing (Shapiro et al., 2006; Holzel et al., 2011; Lazar et al, 2005). The research defines attention as observing and attending to your present experience without interpretation (Shapiro, 2006). As stated previously, all of the participants in the current study identified attention to the present moment in their definitions of mindfulness. Further, many participants noted attending to their present experience as helpful to their cultivation of mindfulness (i.e., Mindfulness Concept category). One participant emphasized it as the most important part of mindfulness in her experience, particularly bringing her attention to the moment without negative or positive evaluation or interpretation. Other participants acknowledged attention to presence as crucial to building awareness of thoughts, sensations, and emotions, and not getting influenced by them.

Acceptance is another underlying mechanism of mindfulness discussed in the majority of mindfulness literature, and is defined as the ability to allow whatever is happening in your present experience without attempting to change, escape, or avoid it (Baer, 2003). Almost all mindfulness authors agree that the acceptance of thoughts, sensations, and emotions is integral to cultivating mindfulness and to not developing maladaptive cognitive, emotional, or behavioural patterns (Baer, 2003, Shapiro et al., 2006). Most participants in the current study noted acceptance in their definitions and when discussing the impact that mindfulness has had on their current symptoms. Participants conveyed that accepting their symptoms as part of their experience helped them to cope and not engage with them in unhelpful ways. This is also in line with the qualitative research that noted the importance of accepting painful thoughts and

emotions with regard to managing symptoms, not engaging in maladaptive behaviours, and the participants' overall psychological wellbeing (Wyatt et al, 2014).

Exposure is discussed in the mindfulness literature as a way to pause and acknowledge difficult emotions, thoughts, or physical sensations that would normally elicit an automatic behavioural reaction (Baer, 2003). As a mechanism of mindfulness, it is argued that exposure allows someone to experience these strong emotions, thoughts, and sensations with objectivity, thus not triggering strong reactions or fear responses that lead to avoidance behaviours (Baer, 2003). Participants in this study referred to exposure in the Mindfulness Concept category, describing the transient nature of emotions, thoughts, and sensations. For example, several participants found that when they were exposed to a painful emotion, it was helpful to remind themselves that the emotion would not last forever and would eventually pass. This allowed them to continue engaging in mindfulness in the moment and refrain from having strong emotional and behavioural reactions (e.g., suicidal ideation, overeating, panic, spiraling into feelings of hopelessness).

Finally, similar to exposure, participants in the current study discussed experiencing strong emotion and anxiety as helpful because it triggered them to practice mindfulness in the moment and engage in emotion regulation (i.e., Emotion and Anxiety category). Emotion regulation is considered to be the ability to reduce reactivity and instead use a range of coping skills for the self-management of emotions (Baer, 2003; Van Dam et al., 2014; Gu et al., 2015). Participants were cued to use mindfulness in moments of high emotionality and anxiety in order to observe, accept, and regulate, as opposed to react. This helped them to get through difficult moments as they arose and to cope with painful emotions without exacerbating them. They described recognizing difficult thoughts and emotions as they experienced them, and building in

space or a pause before reacting to them. One participant described it as a space to process her experience in the present moment instead of reacting on instincts or old patterns of behaviour. However, while emotion and anxiety were helpful factors for some of the participants (36%) in the current study and fit within the existing literature on emotion regulation, the findings were also distinct from the literature. In fact, a larger percentage of participants (57%) indicated high levels of emotion and anxiety as a hindering rather than a helping factor. It was difficult for them to engage in mindfulness in difficult moments and therefore regulate their emotions. This distinction may suggest the complexity of emotion regulation as a mediating mechanism of mindfulness.

5.2 Unique Findings

In addition to the findings that were fully or partially supported by the literature, there were a number of contextual and critical incident findings that do not appear in the mindfulness literature. This may be explained at least in part by the fact that there is no known published research that has asked what helps and hinders university students' cultivation of mindfulness. This section will detail the contextual and critical incident findings that can be considered unique to what is known in the current body of literature on mindfulness.

Contextual findings. There were several unique findings within the contextual component of the data. All participants have continued to cultivate mindfulness in some capacity since participating in the MBSR group, and all participants, despite the challenges of mindfulness, reported that they want to continue cultivating mindfulness in the future.

Thirteen participants noted that it has been a gradual shift into becoming a more mindful person and that being mindful is an ongoing process that needs to be nurtured and developed

over time. Many participants commented that the process of reflecting on mindfulness in the interview gave them a deeper understanding and appreciation of the role of mindfulness in their lives.

Critical incident findings. The following critical incident and wish list categories do not appear in the published mindfulness literature and can be considered unique findings to the current study: External Environment, Personal Strategies, Routine, Social Support, External Reminders, Inspirational Others, Stress, Disruptions, Tired, Interpersonal Relationships, Space, Resources, and Cultural Shift. This section will begin with a discussion of the three salient elements that run through most of the unique categories, specifically the importance of external context, other people outside of the group, and personal factors. The importance of external context is apparent in the External Environment, Disruptions, and Space categories. The influence of others outside of the group is evident in the Social Support, Inspirational Others, and Interpersonal Relationships categories. The importance of personal factors is evident in the Personal Strategies, Routine, External Reminders, Stress, and Tired categories. This section will end with a brief discussion of the two remaining wish list categories that do not fit within the above elements.

External context. One element evident throughout many of the unique categories is the influence of external context on the cultivation of mindfulness. All of the participants in this study reported some external context as either helpful, hindering, or desired (i.e., External Environment, Disruptions, and Space categories).

Twelve out of fourteen participants identified an external environment that impacted their ability to engage in mindfulness. For example, participants described specific locations that were more conducive to cultivating mindfulness because they were private and quiet, and

allowed participants to feel more comfortable, relaxed, and fully present. Some participants mentioned certain environments they were in where they had limited options other than mindfulness. They felt like they had nothing to lose by trying mindfulness and found that it helped them in the moment.

There were certain external contexts that proved to be challenging to the cultivation of mindfulness. Participants described being overwhelmed and uncomfortable in their environment, which made it difficult for them to focus on mindfulness. Participants also found external disruptions to be a hindrance. For example, all but one participant noted distractions or interruptions as significant challenges to mindfulness. Participants found it frustrating to have their attention pulled away from their meditation practice and attributed most of their disruptions to not having a private, quiet space to engage in mindfulness. The majority of participants found the biggest disruption to be noise, while others identified it as other people. Further, 79% of participants noted the importance of having a conducive space for mindfulness practice, and 10 participants expressed desire for a conducive space to cultivate mindfulness, where the expectation would be silence, serenity, and solitude.

Influence of others. The influence of others outside of the group is also important to the participants' ability to cultivate mindfulness. Twelve of the 14 participants described the importance of social support and inspirational figures across the following categories: Social Support, Inspirational Others, and Interpersonal Relationships.

Social support both facilitated and challenged the cultivation of mindfulness for participants. Half of participants expressed gratitude for the support they received from friends and family. They identified the understanding and encouragement they received from supportive others as the most helpful aspect because it allowed them to engage in mindfulness without fear

of judgment. They felt connected to these sources of support because they could speak openly about their mindfulness practice and felt heard and respected. Overall, they felt encouraged to continue cultivating mindfulness. In contrast, many participants felt it was a challenge when they did not have any social support with regard to mindfulness. Participants expressed feeling alone, with few people to talk to and no one who would want to engage in practice with them. Participants also felt hindered if they were experiencing conflict in their interpersonal relationships. It was difficult for them to maintain focus on the present moment when they were experiencing strong emotional and physical reactions to the people closest to them. For these reasons, it is not surprising that half of the participants stated that they would want more social support in the form of a mindfulness partner or a mindfulness community with whom they could connect socially.

Along with supportive others, participants found inspirational others to be important. Many indicated they already had role models, teachers and friends who symbolized mindfulness, inspired them to cultivate mindfulness, and shared mindfulness stories and teachings. Others commented that they wish they could have access to inspirational figures to help keep them motivated in their practice.

Personal factors. The importance of personal factors is another element that is evident across several of the unique categories (i.e., Personal Strategies, Routine, External Reminders, Stress, and Tired). For example, seventy-one percent of participants identified their own individual approaches as helpful (i.e., Personal Strategies category), such as setting meditation goals and having personal rituals. Meditation goals helped participants build confidence, stay motivated, and follow through with scheduled meditations; while personal rituals helped participants to prepare for meditation, bring their focus back to the present moment, and feel

balanced. In addition to personal strategies, 43% of participants found it helpful to develop and adhere to a routine of mindfulness practice that worked best for them (i.e., Routine category). They indicated that creating their own routine ensured that they scheduled the time to engage in mindfulness, as well as provided a set structure. Participants also noted that their routine helped them to develop a habit of mindfulness, which made continuing to cultivate mindfulness easier and helped them to automatically engage in mindfulness throughout their daily lives.

Participants also cited certain external reminders as facilitating their cultivation of mindfulness (i.e., External Reminders category). They stated that these reminders worked for them personally in terms of helping prompt them to engage in mindfulness. Another trigger for participants was their level of stress (i.e., Stress category), with 36% identifying both increased and decreased stress levels as helpful because it motivated them to practice mindfulness.

There were personal factors that challenged participants as well, specifically feeling tired and having disruptions in their personal routines (i.e., Tired and Routine categories). Sixty-four percent of participants commented that it was difficult for them to cultivate mindfulness when they were too tired or physically fatigued, either from lack of sleep of from the activity of their days. With regard to routine, 43% of participants noted that when the routines that typically helped them to engage in mindfulness got changed or disrupted, it had negative consequences for the their mindfulness practice, especially formal meditation. It was more difficult for the participants to re-engage in their routines, which ultimately made it more difficult for them to maintain their mindfulness practice.

Resources and Cultural Shift categories. There are two remaining categories that do not fall into the above sections. The Resources and Cultural Shift categories are comprised of only wish list items, and convey the participants' desire for increased mindfulness, both for

themselves and for society in general. In the Resources category, participants wanted more resources that would allow them to continue cultivating mindfulness. They also wanted resources for those in the community who would not normally have access to mindfulness. In the Cultural Shift category, participants expressed their desire for mindfulness to become more rooted in Western culture. They wanted an increased acceptability of mindfulness within the social structure, so that more people would practice and mindfulness would become a social norm.

5.3 Implications for Further Research

This was an exploratory study about what helps and hinders university students in cultivating mindfulness, and was intended to raise questions and considerations to guide further research. This section will discuss possible avenues for future research based on the contextual and critical incident findings that are unique to the existing mindfulness literature.

Contextual findings. The unique contextual findings can encourage further research, specifically with regard to motivation. All of the participants stated that they would continue to cultivate mindfulness despite the hindering factors reported in the data. Staying motivated seems to play a role in sustaining mindfulness practice in the face of obstacles, but more research is needed to explore if there is a connection between motivation and cultivating mindfulness. Further, because of the nature of self-selection in the recruitment process, the participants in this study might be inherently more motivated or have had positive experiences with mindfulness. Therefore, in order to have a more robust understanding of whether people persist with mindfulness in spite of challenges, it might be helpful for future research to focus on those who

have had negative experiences with mindfulness or who have dropped out of mindfulness groups.

Critical incident findings. The critical incident findings in this study can stimulate possible ideas for further research. For example, the findings in the Mindfulness Groups category suggest the need for research on how the experience of being in a mindfulness group helps and hinders the cultivation of mindfulness. Specifically, the structure of the group and the facilitator of the group were findings unique to this study. This could encourage the questions, what is the role of the facilitator and does the impact of the facilitator depend on the particular mindfulness-based group (e.g., MBSR versus MBCT)? Similarly, was it the specific structure of MBSR that the participants' found to be helpful, or would the structure of any mindfulness group be helpful? Additionally, as this study only considered students who had participated in MBSR, further research is needed to explore what helps and hinders university students who went to other mindfulness groups (e.g., MBCT).

The importance of external context for participants was apparent across many categories in the findings of this study, and encourages ideas for further research. More research could lend insight into the impact of various environments, especially given that the majority of existing research focuses on the outcomes of mindfulness interventions typically carried out in a group or classroom environment. There is no known published research on how other environments might directly affect the outcomes of mindfulness, or how external context in general might influence the experience of cultivating mindfulness outside of the group setting. For example, many participants discussed disruptions as a challenge and expressed their desire for a dedicated place to practice mindfulness. Future research might consider how having access to a meditation room might impact the experience of cultivating mindfulness. Other possibilities include

exploring the role of natural environments in cultivating mindfulness, or the effects of different living situations on home practice.

The influence of others was also evident across the findings and could fuel further research, specifically how support from others outside of the group might impact mindfulness practice. The majority of participants in this study identified friends and family, mindfulness partners, and inspirational role models and teachers as important aspects to cultivating mindfulness. They also commented on how interpersonal relationships and dynamics can impede their mindfulness practice. The current body of research gives little attention to the influence of others on the cultivation of mindfulness or on the positive outcomes of mindfulness. It might be helpful to have further research into what role others play in a person's experience of mindfulness. This could be important for those who continue to practice mindfulness without a mindfulness group, as a number of participants in this study noted feeling alone and having no one with whom they could practice after finishing the mindfulness group. It could also be interesting to investigate the influence of others on outcomes of mindfulness-based interventions. For example, it is possible that having support outside of a mindfulness group might have mediating effects on the psychological gains that are reported by participants.

Finally, the findings related to personal factors could suggest further research. For example, in the Personal Strategies category, participants cited individual approaches that facilitated or hindered their cultivation of mindfulness. Many discussed setting goals as helpful to mindfulness and tied it to increased confidence, so it could be helpful to examine the correlation between goals and confidence and the effect on mindfulness. A further example could be in the Routine category, where participants described the importance of personal routines to sustaining a consistent mindfulness practice and building a habit of cultivating mindfulness.

This finding could stimulate further exploration into how routines help and hinder mindfulness, how a person builds and maintains a successful mindfulness routine, and the possible effects of a mindfulness routine on positive psychological outcomes. It is also important to determine if it is the routine itself that builds the habit of using mindfulness in difficult times, or if practicing formal meditation on a daily basis uncovers trait mindfulness (Kabat-Zinn, 2005; Shapiro & Carlson, 2009; Wallace & Shapiro, 2006). It might also be helpful to learn if there are specific mindfulness practices that make it easier to maintain a consistent routine. This could help drive further research into the benefits of different practices, which could in turn inform what practices are included in mindfulness groups and what interventions are used in clinical settings.

Additional areas for research. It would be worthwhile for future research to study the student experience of mindfulness on different university campuses, especially with students referred to mindfulness groups by their university counselling centre. In this way, we could see if similar findings were obtained or how findings differed. This could be helpful to provide further evidence of the importance of the larger categories mentioned above, as well as provide more information supporting or not supporting the smaller categories (e.g., the Stress or Cultural Shift categories) and the categories that fell below the 25% participation rate (see Appendix E).

5.4 Implications for Mindfulness Conceptualization

There is currently no consensus in the literature on the theoretical underpinnings of mindfulness; instead, authors posit differing conceptualizations of mindfulness, including definitions and fundamental mechanisms (Bishop et al., 2004; Brown & Ryan, 2004; Brown et al., 2015). Most authors agree that an operationalized definition and a unified understanding of the core mechanisms of mindfulness are needed in order to develop a theory of mindfulness that

can effectively inform research and practice (e.g., Bishop, 2002; Bishop et al., 2004; Dimidjian & Linehan, 2003; Gu et al., 2015). The findings from this exploratory study contribute to the existing conceptualization of mindfulness and encourage the development of theory, specifically regarding the definition of mindfulness and the underlying mechanisms of mindfulness.

Definition. The findings of this study support many of the definitions suggested by mindfulness authors (Baer et al., 2006; Bishop et al., 2004; Kabat-Zinn, 2003; Shapiro et al., 2006). Jon Kabat-Zinn (2003) defines mindfulness as awareness through paying attention in the present moment with an attitude of nonjudgment. Baer and colleagues (2006) added labeling internal experiences and non-reactivity to Kabat-Zinn's definition. Shapiro and colleagues (2006) suggested intention as crucial to mindfulness. Finally, Bishop et al. (2004) proposed a consensus definition of mindfulness that includes self-regulation of attention on the present moment and an attitude of curiosity, openness, and acceptance. The findings of this study can be imbedded within all of the above conceptualizations, with the majority of participants emphasizing presence, acceptance, and non-judgment as integral to their definitions of mindfulness. If these findings are combined with the agreement in the literature that mindfulness should include attention to the present moment and an attitude of acceptance and nonjudgment, it could suggest that these components are central to the conceptualization of mindfulness. This help could drive the development of a unified theory of mindfulness centered on presence and an accepting, nonjudgmental attitude.

Mechanisms of mindfulness. The findings in this study provide a deeper level of understanding into certain mechanisms of mindfulness, and lend support to the current views on what might mediate positive change. The main conceptualizations put forward in the literature are by Baer (2003), Brown and colleagues (2007), Shapiro and colleagues (2006), and Holzel

and colleagues (2011). Baer (2003) proposes the mechanisms of exposure, decentering, self-management, relaxation, and acceptance. Brown et al. (2007) adds nonattachment to the above mechanisms, while Hölzel et al. (2011) adds attention regulation, body awareness, and emotion regulation. Finally, Shapiro et al. (2006) posits emotional, cognitive and behavioural flexibility, and value clarification. Common mechanisms among all four conceptualizations are exposure and self-management or regulation. The findings in the current study also emphasized exposure and emotion regulation, implying the possible importance of these two mechanisms. The findings also support Baer's (2003) conceptualization of acceptance being a key underlying mechanism, as well as that of Hozel et al. (2011) in their assertion that attention plays a key role. Taken together, exposure, regulation (of emotion, cognition, and behaviour), acceptance, and attention might be at the heart of how mindfulness mediates psychological wellbeing. Based on the findings of the current study, a working theory might start with exposure and regulation as the core mechanisms of change, and further research could illuminate the extent to which acceptance and attention are also significant mechanisms.

5.5 Implications for Practice

Findings from the current study have potential implications for university counselling centres and mindfulness group facilitators in their work with students, as well as for university students themselves in their cultivation of mindfulness.

University counselling centres. The results of the study suggest students' overall positive experience with mindfulness. As such, mindfulness interventions could be a helpful treatment approach for university counselling centres. The first implication for centres that might want to incorporate mindfulness is the importance of practice. Participants found specific

practices to be most helpful in their cultivation of mindfulness, especially if they did them in a consistent, regular way. Therefore, it might be helpful for counselling centres to explore which practices work best for their clients and help them to set up a routine that feels attainable. It might also be helpful to encourage consistent informal practice, as participants found some form of informal practice to have facilitated their cultivation of mindfulness. Finally, it may be helpful to discuss the challenges of cultivating mindfulness and how clients might cope with these challenges.

The influence of others is another significant finding that might inform counselling centres, specifically, ensuring that clients have access to some level of continued social support in their mindfulness practice, whether this is from people in their lives, from others in a mindfulness group, or from a mindfulness community on or off campus. It might also be helpful to discuss what feels supportive for them (e.g., understanding, shared values, nonjudgment, practicing with someone). It might also be beneficial to discuss people who inspire clients, given that the participants in this study found role models, teachers, and other inspirational figures as helpful to their cultivation of mindfulness.

Another finding that might help counselling centres is the importance of the group for participants. Participants indicated that being a part of a mindfulness group was significant for them and most wished that they could still be in a mindfulness group. It is important to note that when discussing the helpful factors related to groups, participants were speaking specifically about the MBSR group. However, when discussing wish list items, participants indicated that they would like to be a part of any mindfulness group, and some mentioned that they wanted a group other than MBSR. This finding can hopefully encourage counselling centres to consider a mindfulness group for students, even if they do not have access to a trained MBSR facilitator. If

running a mindfulness group, it might be helpful for centres to consider the most important

aspects of the group for participants, which were group cohesion and trust, the support of other

group members, the structure of the group, and the experience and openness of the facilitator.

Another important note on groups is that participants wanted continued access to groups in the

community, and mindfulness resources in general. Therefore, it might be helpful for counselling

centres to have a resource available to students that lists local mindfulness and meditation

groups, as well as websites and other pertinent resources.

   Mindfulness group facilitators. Findings from this research could also have

implications for mindfulness group facilitators working with students. Similar to the implications

stated above for university counselling centres, facilitators could consider the specific

mindfulness practices that are the most helpful for group members and the challenges that group

members might be facing in their cultivation mindfulness. Facilitators might also consider

whether students are receiving support from others outside of the group, and discuss what type of

support feels the most helpful for them. It could also be beneficial to incorporate discussions on

inspirational figures; for example, significant mindfulness teachers and others who successfully

use mindfulness in their lives, as well as those the students find to be inspirational or who serve

as mindfulness role models for them.

   Given the importance of the group and the facilitator for the participants in the study, it

would likely beneficial for facilitators to consider the helping, hindering, and wish list findings in

the Mindfulness Group category. Again, it is important to note that participants were speaking

specifically about the MBSR group; however, these factors could pertain to other mindfulness

groups. For example, it could be important for facilitators to reflect on their teaching style and

how they are building cohesion and trust within the group. What seemed to be most helpful for

participants in this process was when group members shared their stories and experiences with each other, and when they felt understood and validated by others in the group. Therefore, facilitators might consider how they encourage support amongst group members during group discussions. It was also significant for many participants when the facilitator shared their own personal stories and their experience with mindfulness, and so facilitators could reflect on how comfortable and willing they are to be open and transparent within the group. Finally, it could be helpful to provide students with mindfulness resources throughout the group, as well as to provide them a list of local mindfulness groups at the end of the group.

University students. The findings in this study could have implications for students who are already cultivating mindfulness, or who are considering it. It could be helpful for them to explore what might facilitate and challenge mindfulness for them, and what might help them. In this way they could nurture the helping factors and find ways to address the challenges as they arise. Students might also consider the factors discussed by the participants in this study and how they resonate with their own experience. For example, there might be specific mindfulness practices that help them more than others, or personal strategies that impact their cultivation of mindfulness. They could consider the role of mindfulness groups and possibly join another group if it feels helpful for them. They could seek out friends, family, and others who support and understand their interest in cultivating mindfulness. And finally, they could consider which external contexts are most conducive to engaging in mindfulness and which are more challenging, and they might consider finding a dedicated space to practice mindfulness that is free from distractions and interruptions.

5.6 Limitations

As Simon Fraser University has the only known university counselling centre-based MBSR program in Canada, all participants were recruited from this university. Therefore, the findings of this study are particular to the students and the institution studied. However, many of the findings could be considered by other university counselling centres with the understanding that students from different universities with different presenting issues and different demographics may experience mindfulness in distinctive ways. For example, it is important to consider how age, cultural identity, and developmental stages might impact students' experiences of cultivating mindfulness at other institutions, and in general.

The study is also limited by its intentional focus on university students who self identify as cultivating mindfulness. This could have affected who decided to volunteer for the study, with the possibility that students who have had positive experiences with mindfulness and with the MBSR group were more willing and motivated to self-select.

The study is limited by its focus on students who had participated in an MBSR group. While several participants practiced mindfulness before the MBSR group, the majority had their first experience of mindfulness in the MBSR group. Therefore, the findings represent the experience of mindfulness through the lens of MBSR. Further, participants were from different MBSR groups at different times and with two different MBSR facilitators. Although MBSR is standardized and both facilitators were highly trained, credentialed, and supervised; there is inevitably variance concerning adherence to the standard MBSR program given the facilitators' differing styles and experiences with mindfulness. Therefore, different group experiences and different facilitators could have impacted the helping and hindering factors, particularly given the importance placed on the group and the facilitators by the participants.

In an intentional effort to be inclusive of all students who have cultivated mindfulness during or since the MBSR group, the study did not consider the length of time that participants have been practicing mindfulness, or the frequency of practice. The average length of time of practice was 2.5 years, with a range of 6 months to 11 years (one participant had been meditating since childhood). The frequency of practice was not directly asked of participants; however, many mentioned how often they cultivated mindfulness, which ranged from multiple times a day to sporadically across months. The study also included any participant of the MBSR group, with no specification on date of completion of the group. For this reason, some participants had just finished the group, some had finished the group one to two years ago, some were still in the group, and some had taken it multiple times. It is unknown how this, or how the length of time and frequency of practice, might have impacted the helping and hindering factors reported by participants. Future research might attain more in-depth knowledge regarding the influence of these factors.

Most authors agree that it is not possible to effectively study mindfulness without a unified, operational definition of mindfulness (Bishop et al., 2004). Therefore, an additional limitation of this study may be how the researcher conceptualized mindfulness and how congruent it is with others in the field of mindfulness, as well as how congruent it is with the participants. There were variations in how participants defined mindfulness, and it is important to consider how their individual conceptualizations influenced their experience of what helps and hinders their cultivation of mindfulness.

Methodological issues persist in mindfulness research with one of the most significant issues being how to accurately measure mindfulness (Grossman, 2008). Many authors argue that given the complexity and ambiguity in the process of cultivating mindfulness, there is a need for

measurements beyond retrospective self-reports, such as clinician feedback, behavioural observations, proxy reports, and neurological and physiological data (Grossman, 2008; Shapiro & Carlson, 2009). The current study only used retrospective self-reports, which limits the findings to what the participants could remember and articulate about their experience with mindfulness. The use of self-report could also increase the possibility of social desirability bias, with participants inflating the helpful factors and impact of mindfulness. With the inherent limitations of self-reports, more research is needed that explores the experience of mindfulness using other points of data point in addition to self-report.

5.7 Concluding Comments

This study garnered many useful insights into the experience of university students who cultivate mindfulness, which can contribute to and advance the continuing conversation on the impact of mindfulness on the mental health of students.

The following three quotes from participants are an effective and eloquent way to conclude this study on mindfulness:

> I think mindfulness is a way of thinking about things and trying to be able to be at ease with how things are right now. Do what I can to change things, but also realize that there are things that I can't change right now. I think it's really helped to help identify like what feelings are going on and just being able to kind of be okay with that….I think it definitely has facilitated and helped me cope…I'm definitely in a way better place than what I was four years ago or five years ago when (the symptoms) first started. I think I'm better able to identify if I'm starting to go down a path that is unhealthy and I think I'm better able to identify when I need help. I think just being able to accept that healing is going to be ups and downs, and I think mindfulness has helped me to feel that that's okay, that's part of the process.

> I always try to keep in mind that mindfulness isn't there to fix your problems…It in itself doesn't heal you, it helps you heal. So, I always knew just because you practice mindfulness doesn't mean you don't experience pain in your life…I think there's that

voice in my head saying I'm exactly where I was two years ago but then I realized I'm not where I was two years ago because this time I'm handling it better than before. I was in really bad shape in the beginning and this time as much as it is difficult, it is better than the first time.

I think more than a practice, it is kind of a philosophy and a way of living…It's an awareness of where you are in your life. It's an awareness of where you want to be going and how you are feeling and what you're thinking and how all of those things integrate into you as a person. It's a coping mechanism for me, for stressful times or unhappy times. It's a tool that I use a lot for handling unpleasant emotions but not only that, it's something that I use to really bring myself to the present so that I can enjoy the things that are good. It's completely changed my life and I really feel like not only am I healthier person because of it, but I feel like I'm a happier person…I think it changed my life.

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APPENDICES

Appendix A: Recruitment Poster

A Study Exploring University Students Cultivating

Mindfulness

The purpose of this research project is to give university students who have experienced using mindfulness an opportunity to describe their experiences. Specifically, it will explore what has helped and hindered the cultivation of mindfulness.

The investigators for this study are Dr. William Borgen, Counselling Psychology Department Head at the University of British Columbia; and Lauri Mills, doctoral student in Counselling Psychology at the University of British Columbia.

We would be interested in hearing your experience of mindfulness IF:

- **You have used or are currently using mindfulness**
- **You have participated in an MBSR group on campus**
- **You are willing to talk about your experience of mindfulness in a confidential 90-minute interview**

ALL PARTICIPANTS WILL RECEIVE A $25 AMAZON GIFT CERTIFICATE!

If you would like to participate, or would like further information about this study, please contact Lauri Mills.

Appendix B: Informed Consent

CONSENT FORM

"**The Experience of University Students in Cultivating Mindfulness: What Helps and Hinders**"

Principal Investigator:	Dr. William Borgen, Counselling Psychology Department Head University of British Columbia Department of Educational & Counselling Psychology, and Special Education
Co-Investigator:	Lauri Mills, Doctoral Student University of British Columbia Department of Educational & Counselling Psychology, and Special Education

This research is being conducted as part of Lauri Mills' graduate thesis project in the Counselling Psychology PhD Program at the University of British Columbia. The results of this research will be included in a doctoral dissertation that will become a public document in the University library once completed. The results of this research may also be published in appropriate professional and academic journals.

Purpose
The purpose of this research project is to give university students who have experienced cultivating mindfulness an opportunity to describe their experiences. Specifically, it will explore what has helped and hindered the cultivation of mindfulness.

Procedures
This study will require one interview and a follow-up contact, with a total time commitment of approximately two hours. The interview will be approximately 90 minutes long. During this interview, you will be introduced to the purpose of the study and upon giving your signed consent for participation, you will be asked to describe your experience of cultivating mindfulness in an open-ended question format. You will be invited to discuss events and experiences that made it easier or more challenging for you to cultivate mindfulness. During the final part of this first interview, you will be asked to provide demographic information about yourself. This interview will be recorded, transcribed, and given a code number to ensure confidentiality. Upon completion of the study all recorded audio files will be erased.

The follow-up contact will be a brief discussion on the initial findings and will take approximately 20-30 minutes. Specifically, you will be emailed a 1-2 page summary of the categories and themes that emerged from your initial interview. This will provide you the opportunity to review the summary, so that you can give input, feedback, and comments on the

content, meaning, and relevance of these categories and themes to your experience. Your feedback can be discussed via email or telephone, whichever is the most convenient for you.

Confidentiality
Any information identifying individuals participating in this study will be kept confidential. Only the principal investigator and co-investigator will have access to the data. Upon signing the informed consent, you will be given a code number to ensure the maintenance of confidentiality. Participants will not be identified by the use of names or initials in any reports of the completed study. All research documents will be kept in a locked filing cabinet in a locked office at the University of British Columbia. Computer data files will be password protected.

Compensation
You will receive a $25 Amazon gift certificate for your participation. You can withdraw your participation at any time and still receive the gift certificate.

Contact for Information About the Study
If you have any questions or would like more information about this study, you may contact Dr. William Borgen or Lauri Mills.

Contact for Concerns About the Rights of Research Subjects
If you have any concerns or complaints about your rights as a research participant and/or your experiences while participating in this study, contact the Research Participant Complaint Line in the UBC Office of Research Services.

Consent
Your participation in this study is entirely voluntary and you may refuse to participate or withdraw from the study at any time without prejudice of any kind.

Your signature below indicates that you have received a copy of this consent form for your own records. Your signature indicates that you consent to participate in this study.

_____   _____
Participant Signature   Date

_____
Printed Name of the Participant signing above

Thank you for your willingness to participate in this study.

Appendix C: Interview Protocol

Interview Guide: University Student Mindfulness

Participant #: _____   Date: _____   Interview Start Time: _____

Contextual Component 1
   Preamble: As you know, I am exploring the experience of university students in cultivating mindfulness. The purpose of this interview is to collect information about your experience with mindfulness and understand important factors that help and hinder your cultivation of mindfulness.

1. As a way of getting started, perhaps you could tell me a little bit about why you were referred to the mindfulness group (MBSR)?

2. You volunteered to participate in this study because you identified yourself as cultivating or having cultivated mindfulness. What does "mindfulness" mean to you?

3. On a scale of 0 – 10, where 0 is a low use of mindfulness, 5 is moderate, and 10 is a high use of mindfulness, where would you place yourself currently?

```
_____
  0    1    2    3    4    5    6    7    8    9    10
Low Cultivation        Moderate          High Cultivation
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Critical Incident Component 1

Transition to Critical Incident questions: You rated yourself as a 5-6 (or whatever the participant rated him- or herself in question 3 above).

1. Think about a specific experience of mindfulness that you had that stands out to you. It could have been in the group or outside of the group, during formal practice or during your daily life.
 a. Tell me what happened as completely as possible (e.g. situation leading up to MF moment, how you engaged in MF, details of the experience of cultivating MF, how long, what happened after).

 b. What helped you to cultivate or engage in MF in this experience? (Probes: What was the incident/factor? How did it impact you? Can you give me a specific example? How did the incident/factor help you? What would have been different if you had not had that?)

 c. Are there things that made it more challenging for you to cultivate MF in this experience? (Probes: What was the incident/factor? How did it impact you? Can you

give me a specific example? How did the incident/factor hinder you? What would have been different if you had not had that?)

Critical Incident Component 2

Summarize what has been discussed up to this point with the participant as a transition to the next questions: "We've talked about important factors that helped you cultivate mindfulness in a specific experience (name them), and some things that made it more challenging for you to cultivate MF in that experience (name them). Now we're going to talk about it more generally."

1. In general, what else has been important in helping you to cultivate MF? (Probes: What was the incident/factor? How did it impact you? Can you give me a specific example or time when you experienced that? How did the incident/factor help you? What would have been different if you had not had that?)

Helpful Factor & What it Means to Participant (What do you mean by ..?)	Importance (How did it help? Tell me what it was about .. that you found so helpful.)	Example (What led up to it? Incident. Outcome of incident.)

2. In general, what else has made it more challenging for you to cultivate MF? Alternate question: What other kinds of things have happened that made it more challenging for you to cultivate MF? (Probes: What was the incident/factor? How did it impact you? Can you give me a specific example? How did the incident/factor hinder you? What would have been different if you had not had that?)

Hindering Factor & What it Means to Participant (What do you mean by ..?)	Importance (How did it hinder? Tell me what it was about .. that you find so unhelpful.)	Example (What led up to it? Incident. Outcome of incident.)

Summarize what has been discussed up to this point with the participant as a transition to the next question:

Wish List Component

We've talked about what's helped you cultivate MF, both in a specific example and more generally, and some things that have made it more challenging for you to cultivate MF.

1. Are there other things that would helped you to cultivate MF? Alternate question: I wonder what else might have been or might be helpful to you? (Probes: What is the wish list item?

How would it impact you? Can you give me a specific example? How would this wish list item help your use of MF? What would be different if you had that?)

Wish List Item & What it Means to Participant (What do you mean by ..?)	Importance (How would it help? Tell me what it is about .. that you would find so helpful.)	Example (In what circumstances might this be helpful?)

Summary of the Incidents

1. Summarize the factors/incidents and wish list items that were reported (include examples given).

2. Ask the participant if the summary sounds accurate, and if they would like add new incidents/factors, or make any changes/additions to previously stated incidents/factors.

Contextual Component 2

Now that you've had a chance to reflect back on what's helped and hindered:

1. Where would you place yourself on the same scale we discussed earlier? The scale is from 0 – 10, where 0 is a low use of mindfulness, 5 is moderate, and 10 is a high cultivation of mindfulness, where would you place yourself?

    _____
    0   1   2   3   4   5   6   7   8   9   10
    Low Cultivation   Moderate   High Cultivation

    a. What's made the difference? (To be asked only if there is a difference in the first and second scaling question ratings.)

2. How has cultivating MF impacted the anxiety* that initially brought you to the MBSR group? (*insert whatever the participant indicated in question 1 from the "Contextual Component 1" section above).

3. Have you continued to cultivate MF since finishing the MBSR group?
    (Circle one)   Yes   No   Formal Practice   Informal Practice Both

4. Do you think you will continue cultivating MF?
    (Circle one)   Yes   No

5. Do you consider yourself to be a mindful person?
   (Circle one)   Yes   No

6. Have you always considered yourself to be a mindful person?
   (Circle one)   Yes   No

    a. If not, when did this change for you?

    b. What happened that changed this for you?

<u>Demographics Component</u>

Undergraduate/Graduate Student

Year in School

Full/Part Time Status

Field of Study/Major

Age

What gender do you identify with?

What race and/or ethnicity do you identify with?

Country of Birth

If not Canada, length of time in Canada, are you an international student?

First Language

Interview End Time: _____   Length of interview: _____
Interviewer's Name: _____

Appendix D: Sample Email for Follow-up Contact

Dear _____,

I hope you are doing well. Thank you once again for participating in my study! I really appreciated speaking with you, and hearing about your experiences using mindfulness. As we discussed, I have attached a summary of the helping, hindering, and wish list factors that you shared with me in the interview.

There are two parts for you to consider when you read through the summary. First, please review your summary for the following:

1. Do the definition, factors and wish list items seem accurate to you?
2. Can you see yourself in this summary/Does this sound like you?
3. Have I missed anything of importance?
4. Is there any information that you would like to revise or omit from any of the factors, wish list items, or from your definition?
5. Is there anything you would like to add to this summary?

 Second, you will notice that I have placed your experiences into categories (which are indicated at the end of each factor and wish list item). As you may know, part of the data analysis process is to create common categories based on your experiences, and the similar experiences of other participants. Please let me know if these categories resonate with you and adequately represent your experience by considering the following:

1. Does the category title and description make sense to you?
2. Does the category capture your experience and the meaning that the factor had for you?
3. From your perspective, are there any categories that do not appear to fit the factors?

The categories will be edited and adjusted accordingly, and your individual experiences will be integrated with those of the other participants.

Please let me know your thoughts at your earliest convenience. You can respond via email or we can speak on the phone or Skype. If you have any questions or would like more information or clarification, please don't hesitate to ask.

Thank you again and have a great day!

Lauri

Appendix E: Critical Incidents and Wish List Items Below 25% Participation Rate

The following helping (HE) and hindering (HI) critical incidents and wish list (WL) items fell

below the required 25% participation rate, and were therefore not discussed in the Findings

Chapter. They are included in this appendix for reference and to be inclusive of all participants'

experiences.

HE Category: Mindfulness Group

No Mindfulness Group (HI)

Fourteen percent of participants (2) reported three incidents of not having a mindfulness

group as hindering their cultivation of mindfulness. Participants found it challenging to not be in

a mindfulness group because the responsibility fell on them alone to continue cultivating

mindfulness. Specifically, it was difficult for participants to not have "that (group) that you set

the time aside to go to."   Having this scheduled time for group helped participants engage in

mindfulness, and "not having the structure of going to classes every week has made it more

difficult…Because you're guaranteed 2 ½ hours of some kind of mindfulness. Whereas now, it's

really just up to me."

HE Category: Personal Strategies

Other Personal Strategies (HI)

Fourteen percent of participants (2) detailed two incidents of using other strategies. This

hindered their cultivation of mindfulness because they preferred to use these strategies over

mindfulness, noting that they received similar benefits from these strategies to what they

experienced through mindfulness. For example, one participant found that he preferred reading to meditating. He stated, "Sometimes I just think I could be doing other things that relax me just as much, so for example reading…I know that if I had the choice of reading or meditating, I would always read every single time. Because I enjoy that and it relaxes me…It works in the same way as mindfulness."

Personal Strategies (WL)

Twenty one percent of participants (3) detailed four individualized strategies that they would like to develop and carry out in order to facilitate their mindfulness practice. For example, one participant would like to start her day with mindfulness to feel "more accomplished." Another participant spoke about "decluttering" her life. For example, she would find it helpful to keep her personal space clean and organized "because when you see mess or just things, it's like I don't want to think about it and that's the opposite of mindfulness."

HE Category: Social Support

No Social Support (HI)

Twenty one percent of participants (3) reported three incidents of not having social support as a hindrance to their cultivation of mindfulness. Participants in this category found it challenging to have no social support with regard to knowing others who practice mindfulness. For example, one participant feels alone in his practice because he did not know anyone else who engaged in mindfulness, "One thing that's a challenge is because I'm the only one I know who does meditation…I have very few people to talk to about it and no one to have the experience with. I can't say let's do two weeks of meditation a day together and then sit down and talk to

each other. So I am completely on my own." Another participant also felt alone in her practice, explaining that if she were "accountable to a partner or something it would be much easier" and attributing this as the reason she does not do formal practice, stating "I'd probably do it if someone did it with me."

HE Category: External Reminders

External Reminders (HI)

Fourteen percent of participants (2) reported two incidents of not having access to external reminders, which challenged their cultivation of mindfulness because these reminders served as cues for them to engage in mindfulness practice. One participant explained that "there are fewer things connected to mindfulness in my life now to remind me of it." The second participant found it difficult when she did not have a reminder on her phone because she would "forget or procrastinate."

External Reminders (WL)

Fourteen percent of participants (2) identified two types of external reminders that would help them remember to engage in mindfulness. For example, one participant wanted a reminder on her phone to "expedite the process of me having to take a step back…and I could be able to be more mindful in that moment."

HE Category: Personal Characteristics

Personal Characteristics (HE)

Twenty one percent of participants (3) reported 10 incidents of personality characteristics inherent to who they are, and that they would tap into these characteristics to help them cultivate mindfulness. For example, one participant described her personal drive to cultivate mindfulness as helping her "set aside time to practice and continually practice." Other participants spoke about being "open minded" and "alternative" as important characteristics for cultivating mindfulness because it opened them up to "alternative solutions" and "trying different things that could help."

HE Category: Social Influence

Societal Influence (HE)

Fourteen percent (2) of participants reported 2 incidents of societal influence facilitating the cultivation of mindfulness. For one participant, it was helpful that mindfulness is generally more socially accepted and that "more people are open to it." Another participant described a time when social conditioning was a strong deterrent for her during the onset of a panic attack, "A part of it was my instructor was a stranger. I don't know him. I don't want to have a break down in front of someone I don't know. So I think that social conditioning helped me keep it together…I think it helped me slow down with the mindfulness."

Social Expectations (WL)

One percent of participants (1) described two incidents of social expectations that hindered the cultivation of mindfulness. The participant described feeling frustrated that

"society is structured to be achievement based," to encourage "multitasking at work" instead of "mindful working," and to be focused on "future planning." She stated that these "social expectations" made it difficult for her to stay in the present moment and cultivate mindfulness.

HI Category: Time

Time (WL)

Fourteen percent of participants (2) indicated two wish list items relaying their desire for more time to cultivate mindfulness. Participants wanted to have the time in their schedules to do "more formal meditation" and "to do more things like (mindfulness) retreats."

HI Category: Feeling Good

Feeling Good (HI)

Twenty one percent of participants (3) reported three incidents of "feeling good" as a challenge to cultivating mindfulness. Participants felt "calm" and "happy," and so "forget about mindfulness" or did not feel like it is necessary. One participant stated, "If everything is good then why do you feel like you need to do this? That is the kind of thought that goes through my head…I think I am still working on that, that I'm doing this because this is the shift that I want to make in my life rather than this is what I'm doing as damage control."