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Calmly Coping: A Motivational Interviewing via Co-Active Life Coaching (MI-via-CALC) Intervention For University Students Suffering From Stress

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A thesis submitted in partial fulfillment of the requirements for the degree in Master of Science

CALMLY COPING: A MOTIVATIONAL INTERVIEWING VIA CO-ACTIVE LIFE COACHING (MI-VIA-CALC) INTERVENTION FOR UNIVERSITY STUDENTS SUFFERING FROM STRESS

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by

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Abstract

The purpose of this semester-long pilot study was to assess the impact of Motivational Interviewing via Co-Active Life Coaching (MI-via-CALC) on the stress management experiences of 30 full-time, English-speaking students aged 17-24 years. Participants' experiences were assessed quantitatively using the previously validated Perceived Stress Scale and Hospital Anxiety and Depression Scale (which is divided into Anxiety and Depression scales) at pre-, mid-, and post-intervention. Three one-way, repeated-measures ANOVAs were completed for each scale and statistically significant differences in stress reduction were found for all scales between pre-intervention to mid-intervention, and between pre-intervention to post-intervention; no statistically significant differences occurred between mid-intervention to post-intervention. Inductive content analysis of the qualitative interviews at pre-, mid-, and post-intervention revealed participants' positive experiences with the intervention. Methods were employed throughout to enhance qualitative data trustworthiness. MI-via-CALC is a promising approach for university students struggling with stress and additional research on a larger sample is warranted.

Keywords: Co-Active life coaching, Motivational Interviewing, MI-via-CALC, Stress, Mental Health, University Students

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Chapter I: Introduction

In 1939, the British government created the war propaganda slogan of *keep calm and carry on* (Lewis, 2004). In the past several years or so, this phrase has become inherently popular and can be seen in a plethora of memes on various social media platforms such as FaceBook®, Twitter, and Pinterest. The saying has seen a large resurgence, not only in its original wording, but also in numerous variations such as, *keep calm and study*, *keep calm and party*, *keep calm and shop*, and *keep calm and go to grad school*, to name but a few (Horan, 2012; Lewis, 2004). In today's technologically, quick-fix-driven (Riah, 2012; Urban Dictionary, 2014) world where people fall victim to living life as a juggling act (Goodman, 2014) – trying to find a healthy balance between school, work, recreation, and family – it begs the question: Can people really keep calm and carry on?

Currently, a hot-topic issue in the media, and in all areas of health science, is stress and mental health (New York Times, 2014; Schwartz & Kay, 2009). One of the main foci of stress and mental health is that of university and college students (Schwartz & Kay, 2009)[1]. Conventionally, student mental health has been understood within the context of the adaptability challenges students face when commencing higher education (Byrd & McKinney, 2012). However, college-related mental health problems have not only developed in complexity, but they have also increased in volume and severity (Byrd & McKinney, 2012; Levine & Cureton, 1998; University of California, 2006). In reality, university can be a tough place for students. Whether students are away from home for the first time, are having a hard time balancing classes, making time for friends and family, and maintaining a proper diet and exercise, university brings forth a wide array of challenges that individuals must learn to balance, all of

[1] NB: The United States refers to university as college. Thus, when presenting data, college and university may be used interchangeably. A Canadian college is equivalent to community college in the United States. Distinctions will be made when necessary.

which affect how students perform academically (Hammer, Grigsby, & Woods, 1998; Trockel, Barnes, & Eggett, 2000). Additionally, university is often experienced as a competitive place, and classes draw a striking parallel with a sporting arena: students 'battle it out' to see who can be harder, better, faster, smarter, and stronger (Schiffner, 2010) and attain the highest grade point average (GPA), in hopes of earning scholarships and jobs (Peggy Wakabayashi, Director of Residences at Western University, as told to Travis, 2011). With so much pressure placed on students, the previous five adjectives can affect the mental health of students, resulting in difficulty managing high levels of stress, specifically distress (i.e. negatively experienced stress[2]), which ultimately affects many aspects of a person's health (Dougall & Baum, 2001; Dougall & Baum, 2003; Marsland, Bachen, Cohen, Rabin, & Manuck, 2002; Segerstrom & Miller, 2004; Statistics Canada, 2001). Specifically, excess levels of stress have been linked to suppression of the immune system and acquiring the common cold, among other more deleterious health issues (Passer, Smith, Atkinson, Mitchell, & Muir, 2008). Due to the negative health ramifications of stress, it is imperative that the mental health of university students be studied, such that new and innovative approaches can be utilized to help individuals cope with stress and distress (Schwartz & Kay, 2009; Hunt & Eisenberg, 2010; Zivin, Eisenberg, Gollust, & Golberstein, 2009)

The Centre for Addiction and Mental Health (CAMH; 2012) suggests that one in five Canadians (20%) will be affected by mental illness over the course of his or her life – and mental illnesses include constructs such as anxiety, depression, and stress (CAMH, 2012). Further, less than a third of individuals receive sufficient help (Sunderland & Findlay, 2013). In 2011, it was reported that 23.6% of Canadians aged 15 and older stated feeling that most of their days were

[2] When the term 'stress' is used, people are often referring to 'distress'. Thus, these terms are used interchangeabley throughout this paper. A thorough defintion of 'stress' and 'distress' are provided in the "defintions and background" section of this paper.

'extremely or quite a bit stressful' (Statistics Canada, 2012). This number is an increase from the 22.3% reported in 2008 (Statistics Canada, 2012). Researchers have illustrated that the vast majority of university/college students experience moderate (77.6%) or serious (10.4%) stress and are most affected by stressors related to academics (i.e. exam grades and work load; Abouserie, 1994; Dixon & Kurpius, 2008). Further, a 2004 Canadian Campus Survey concluded that 47% of Canadian university students feel constantly under strain (Adlaf, Demers, & Gliksman, 2005). Further still, Ontario university students reported that the experience of mental distress significantly impacts their lives (American College Health Association [ACHA], 2009; 2013), of which 51% to 60% of students reported feeling hopeless; 33% to 43% revealed they felt so depressed they were not able to function; and 6% to 9% indicated that they had seriously considered suicide within the last 12 months (ACHA, 2009). In 2013, the ACHA conducted a national research survey among Ontario university students, and the executive summary of the survey was released, exclusively citing the results from Western University students (ACHA, 2013), the institution of particular interest for this thesis work. It was reported that 56% of Western students rated their overall stress levels as 'more than average' or 'tremendous' within the past 12 months; 33% of students reported that their academic performance was affected by stress; and 27% reported that their academic performance was impacted by anxiety (ACHA, 2013).

Stress is often highly correlated with depression (Anisman, Merali, & Stead, 2008; Dyson & Renk, 2006; MacGeorge et al., 2005; Magalhaes et al., 2010), and the most likely age group to have major depression are those between the ages of 15 and 24 years (Blazer, Kessler, McGonangle, & Swartz, 1994), which includes the typical age range of university undergraduate students (Statistics Canada, 2010). In 1995, Pace and Trapp reported that almost 25% of college

students described experiencing major depression. Furr, Westefeld, McConnell, and Jenkins (2001) reported that 53% of 1,455 college students classified themselves as being depressed since starting college and ascribed that depression to academics, loneliness, financial issues, and relationship problems. Additionally, 9% of these students reported having suicidal thoughts (Furr et al., 2001). The 2001 National College Health Assessment report revealed that during the year 2000, 76% of students felt 'overwhelmed', and 22% were unable to function as a result of feeling depressed (ACHA, 2001).

Instead of seeking appropriate mental health help, some students are turning to detrimental behaviours. For example, researchers in the United States suggest that 22% to 25% of college students have abused Adderall, a medication used to treat attention-deficit/hyperactivity disorder (Food and Drug Administration [FDA], 2011), but is deemed by students as the 'only-way-to-do-homework drug' (Low & Gendaszek, 2002; McCabe, Knight, Teter, & Weschler, 2005; McCabe, Teter, & Boyd, 2004; Urban Dictionary, 2013). Canadian statistics are less available with regard to the prevalence of students taking these specific stimulants. However, Barrett, Darredeau, Bordy, and Pihl (2005) found that 30% of McGill University students (n = 50) used drugs exclusively as study aids. In April 2011, McGill University posted survey results in *The National Post* indicating that 5.4% of students, out of 400, had used drugs as a cognitive enhancer (Blackwell, 2011; McGill University, 2011). Other studies claim that up to 11% of post-secondary students use Adderall and other drugs as study aids (Chang, 2013). According to the ACHA (2013), 9% of Western students admitted to using drugs that were not prescribed to them (4% of which were stimulants). Other detrimental behaviours included alcohol consumption and marijuana use, in which it was reported over a 30-day period that these things were used by 74.7% and 16.8%, respectively. With specific regard to the mental health section of

the ACHA (2013) report, Western students reported feeling the following within a 12-month period: (a) 51.1% felt things were hopeless; (b) 86.4% felt overwhelmed by all of the things they had to do; (c) 84.3% felt exhausted (not from physical activity); and (d) 56.1% felt overwhelming anxiety. Thus, with rates of mental illness – in addition to some of the reckless means being used to address challenges – rising, it is evident that an innovative approach to dealing with stress and distress among the university population is critical. One such approach that has demonstrated efficacy in previous unrelated studies, is motivational interviewing (MI; Rollnick & Miller, 1995) via Co-Active Life Coaching (CALC; Kimsey-House, Kimsey-House, Sandahl, & Whitworth, 2011; all terms described in "definitions and background" section of this document).

Purpose

The primary objective of this research study was to examine the impact of an MI-via-CALC intervention on the stress management experiences of full-time, English-speaking, undergraduate students, between the ages of 17-24 from Western University. A secondary purpose was to obtain information from the Certified Professional Co-Active Coaches (CPCCs), who provided the intervention, with regard to their experience coaching this age cohort, as well as coaching the topic area of stress among this specific age cohort. It was important to qualitatively gather information from the CPCCs in order to make inferences about future coaching studies.

Chapter II: Definitions and Descriptions of Stress

Stress

There are several different definitions of the term stress, especially when looking at specific areas in health and science. For the purpose of this intervention, stress will be defined within a biological and psychological framework. From a psychological perspective, stress is defined as a pattern of cognitive appraisals, physiological responses, and behavioural tendencies that occur as a result of a perceived imbalance between situational demands and the resources that are available to manage those demands (Passer et al., 2008). From a biological context, stress is an individual's physiological reaction to a stressor, such as an environmental condition or a stimulus (i.e. any event that requires adaptation; Cook, 2014; Holmes & Rahe, 1967; Sapolsky as told to Shwartz, 2007; Selye, 1956). Stress is the body's way of reacting to a change in the body's environment, caused by a stressor (a source of stress, a demand on an individual, or a change in the environment; Cook, 2014; Insel, Roth, Irwin, & Burke, 2012; National Research Council [NRC], 1992; NRC, 2008; Sapolsky as told to Shwartz, 2007; Passer et al., 2008). In order to respond to the stressor or stressful event, the body activates the sympathetic nervous system, which results in the 'fight-or-flight response' (where fight equates with confronting and managing the source of stress, and flight equates with retreating from it; Insel et al., 2012; Passer et al., 2008). Stress typically describes a negative or a positive condition that may impact a person's mental and physical well-being (Cook, 2014; Dougall & Baum, 2000; Marsland et al., 2002; NRC, 2008; NRC, 1992; Passer et al., 2008; Segerstrom & Miller, 2004; Selye, 1974; Selye, 1975).

Components of Stress

Eustress. In 1975, Hans Selye devised a model that separated the concept of stress into two distinct categories: eustress and distress. Eustress, or literally good stress, is a positive reaction to stress that is healthy, or provides a feeling of fulfillment or other positive feelings (Insel et al., 2012; Lazarus, 1966; Nelson & Simmons, 2004). Eustress is not defined by the type of stressor, but rather how one perceives that stressor (e.g. a positive challenge as opposed to a negative event; Le Fevre, Kolt, & Matheny, 2006). Eustress refers to a positive or pleasant response one has to a stressor, which is dependent on an individual's current feelings of control, environment, and the timing and the appeal of the stressor (Insel et al., 2012; Le Fevre et al., 2006). Potential indicators of eustress may include responding to a stressor with a sense of meaning, hope, or enthusiasm (Nelson & Cooper, 2005). Eustress has been positively correlated with life satisfaction and well-being (O'Sullivan, 2010).

Distress. When people refer to stress, they are most commonly referring to distress (NRC, 2008). Distress, or bad stress, is persistent stress that is not resolved through coping or adaptation. It is defined as an aversive state in which a person is unable to adapt completely to stressors and his or her resulting stress, and shows maladaptive behaviours (Carstens & Moberg, 2000; Moberg, 1987; NRC, 1992; NRC, 2008). People who suffer from constant distress are more likely to succumb to a mental or physical illness (Moberg, 2000; NRC, 1992; NRC, 2008; Sapolsky as told to Shwartz, 2007), and constant distress may lead to anxiety and/or depression (Anisman, Merali, & Stead, 2008; Rogge, 2012; Russ et al., 2012). Russ et al. (2012) discovered that across the full range of distress, there is a dose-response association between psychological distress and major causes of mortality. In general, people who suffer from distress are more susceptible to health issues (i.e. cardiovascular disease, cancers) that lead to death (Sapolsky as told to Shwartz, 2007). Because the term 'stress' is often used to refer to 'distress' (NRC, 2008),

both terms will be used interchangeably throughout this paper (i.e. where the term ‘stress’ is used, it is actually referring to ‘distress’).

According the Canadian Mental Health Association (CMHA; 2014b,c), the CAMH (2012), and the American Psychological Association (APA; Weir, 2012), stress is recognized as a mental health issue and illness. However, in comparison to more severe psychological disorders (such as schizophrenia), stress is considered an ‘acute’ form of mental illness. Stress is associated with mental illness for several reasons, the first being due to the manner in which the body reacts to stressors (Weir, 2012). When the body reacts to stressors, two systems are activated: the endocrine system, which produces stress hormones, such as cortisol, and the sympathetic nervous system, which manufactures other stress-related hormones, such as epinephrine and norepinephrine – the hormones responsible for the fight-or-flight response (Weir, 2012). The release of these chemicals (cortisol, epinephrine, and norepinephrine) impairs the function of the prefrontal cortex, which is where higher-level thinking occurs (Hamilton, 2012). Amy Arnsten, a neurobiologist at Yale University, explained that when these chemicals are released, individuals shift from being thoughtful to reactive, which can lead to anxiety and post-traumatic stress disorder (Hamilton, 2012). Further, the release of these hormones affects the body’s immune system, and if the body’s immune system is continuously compromised it can lead to physical illnesses (Weir, 2012). According to the CMHA (2014c), the manner in which an individual thinks about and reacts to certain events determines whether that individual deems that event to be stressful or fairly easy to manage. An individual’s reaction to stress can affect his or her mental and physical health, thus making it critical for individuals to learn how to effectively and efficiently cope with stress as it occurs (CMHA, 2014c).

As suggested by the CAMH (2010), chronic stress has the potential to become detrimental to the health and well-being of an individual. Overwhelming and prolonged stress increases the risks for a plethora of psychological and physical medical problems, such as: anxiety and depression, sleep problems, pain, muscle tension or other bodily complaints, substance use, headaches, gastrointestinal problems, immune system suppression, infertility issues, high blood pressure, cardiovascular disease, and stroke (CAMH, 2010). Unfortunately, psychological and physical ailments have a symbiotic relationship (i.e. they reinforce one another), increasing the effects of stress (CAMH, 2010). From the above noted discussion, it is clear that although stress is considered an 'acute' form of mental illness, as well as a normal and crucial component for certain aspects of life (refer to eustress above), chronic stress has the potential to cause a great deal of harm to an individual.

Anxiety and Depression

As previously mentioned, anxiety and depression are linked with stress (CAMH, 2010; Magalhaes et al., 2010). Thus, the current thesis write-up makes several mentions of anxiety and depression and therefore, definitions of each, along with its relationship to stress, are provided here.

Anxiety. Anxiety is defined as a natural human response that encompasses the mind and the body (Arkin & Rucks, 2007; The Nemours Foundation, 2013; Rector, Bourdeau, Kitchen, & Joseph-Massiah, 2008). It serves an important basic survival function, such that anxiety acts as an alarm system that is activated whenever a person perceives danger or threat (also known as the fight-or-flight response; Insel et al., 2012; Rector et al., 2008), and just like stress, anxiety can be beneficial in small doses (Arkin & Rucks, 2007; National Health Service [NHS], 2013). It is apparent from this definition that both stress and anxiety occur in a similar manner (i.e. in

response to a stressor, and the fight-or-flight response), but the difference is that anxiety is more akin to fear (NHS, 2013; Storrow, 1969). Additionally, anxiety is stress that persists even when a stressor is no longer present, whereas stress dissipates when the stressor is removed, or the individual learns to cope with the stressor (NHS, 2013).[3] Anxiety becomes an issue when the cognitive (focusing on the threat), physical (heart palpitations, increased heart rate, changes in breathing), and behavioural (engaging or refraining from certain behaviours) symptoms of anxiety are persistent and severe, such that anxiety causes distress in a person's life to the point that it negatively affects his or her ability to work or study, socialize, and manage activities of daily living (Arkin & Rucks, 2007; Rector et al., 2008). Severe anxiety symptoms include anxious thoughts (e.g. "I am losing control"), anxious beliefs (e.g. "I am weak"), and anxious predictions (e.g. "I am going to fail;" Rector et al., 2008). Other severe symptoms include excessive physical reactions (e.g. heart racing and shortness of breath), the avoidance of feared situations, avoidance of activities that prompt sensations similar to those experienced when anxious, subtle avoidances (behaviours that aim to distract the person, such as increased talking during periods of anxiety), and safety behaviours (habits that minimize anxiety and feel 'safer,' such as always having a cell phone on hand to call for help; Rector et al., 2008).

Depression. Whereas stress and anxiety can be beneficial in the appropriate amounts depression is more severe (NHS, 2013).[4] Depression is defined as being much worse than simple unhappiness or having the 'blues' (Bartha, Parker, Thomson, & Kitchen, 1999; CMHA, 2014a; CAMH, 2012; Storrow, 1969). Clinical depression is a mood disorder, which means that an individual's emotional state is aberrantly low or sad, and the individual is incapable of

[3] Stress and anxiety are often used interchangeably, and though both can be beneficial, anxiety is much more severe as it does not dissapear after the removal of a stressor, whereas stress does.

[4] Anxiety and depression appear to be complete opposites, but in actuality, researchers have revealed that both can be equally as debilitating, and thus, depression is not necessarily worse than anxiety; although it is worse than stress. Additionally, depression and anxiety often present themsevles as co-morbid disorders (Magalhaes et al., 2010).

independently elevating his or her mood (Bartha et al., 1999; CMHA, 2014a; CAMH, 2012; Storrow, 1969). The primary symptom of major depression is a sad, despairing mood that persists beyond two weeks and hinders an individual's performance at work, at school, or in social relationships (Bartha et al., 1999; CMHA, 2014a; CAMH, 2012). Depressed people may feel sad, anxious, empty, hopeless, worried, helpless, worthless, guilty, irritable, hurt, fatigued, or restless, in addition to experiencing loss of appetite, trouble concentrating, and problems sleeping (Bartha et al., 1999; CAMH, 2010). There is no simple answer as to the cause of depression, because several factors may play a part in the onset of the disorder (Bartha et al., 1999). These include, but are not limited to, a genetic predisposition, psychological or emotional vulnerability to depression, biological factors, and life events or environmental stressors (Bartha et al., 1999). Additionally, depression is known to generate stress, such that depression leads to increases in negative life events (Merrill & Joiner, 2007).

Health Coaching: Co-Active Life Coaching (CALC)

Health-related coaching is currently among the quickest emerging areas of research, as revealed in an annotated bibliography of 72 critically appraised health-related coaching studies, which illustrated that coaching approaches are effective in mitigating various health-related issues (Newnham-Kanas, Gorczynski, Morrow, & Irwin, 2009). Health coaching is defined as the practice of health promotion and health education within a coaching framework to enhance the well-being of patients/clients, and to enable the achievement of their health-related goals (Huffman, 2007; Palmer, Tubbs, & Whybrow, 2003). Health coaching works to provoke behaviour change through a structured, supportive partnership between the patient/client and the coach, permitting individuals to achieve optimum levels of health (Duke University Center for Integrative Medicine, 2013). As discussed by Grant (2003), life coaching has been used within

the mental health field. Further, Rock and Page (2009) have highlighted that "contemporary neuroscience is beginning to provide a scientific platform to support the practice of coaching" (p. 44). Though there are several types of health coaching, this thesis project focuses specifically on CALC (Kimsey-House et al., 2011). CALC has mostly been utilized primarily with respect to business coaching, but it is gaining acknowledgement in not only healthcare, but in broader life categories such as, goal setting, core values, envisioning the future, divorce, relationships, and greater self-awareness, among others (Betz, 2012). Although CALC is considered atheoretical and was founded on practice, it is important to recognize that it is supported by theories (e.g. social cognitive theory, theory of reasoned action, theory of planned behaviour, and self-determination theory) that, in addition to growing research studies evaluating its impact on a variety of health behaviours, help to position CALC as a suitable health intervention (Gorczynski, Morrow, & Irwin, 2008; Irwin & Morrow, 2005; Newnham-Kanas, Irwin, & Morrow, 2008; van Zandvoort, Irwin, & Morrow, 2008; van Zandvoort, Irwin, & Morrow, 2009).

CALC is a method of coaching wherein the coach and client are active collaborators. A designed alliance is created between two equals for the sole purpose of meeting the client's needs (Kimsey-House et al., 2011). The coach is not considered superior to the client in any way, and that together, the coach and client work toward making changes. CALC is built on the premise that the client is an expert in his or her life, and he or she is *Naturally Creative, Resourceful, and Whole* (*NCRW*). This means that the client is not broken in any way and is capable of finding his or her own answers to change, as well as being capable of making his or her own decisions and choosing his or her own actions (Kimsey-House et al., 2011). Complete information on CALC can be found in Kimsey-House et al. (2011).

Motivational Interviewing (MI)

Motivational interviewing, or MI, is a term coined by Rollnick and Miller (1995). The concept was created in the field of addiction in order to find constructive ways of responding to clients who were described as angry, resistant, defensive, and/or in denial (Rollnick & Miller, 2011). Described as "a directive, client-centered counselling style for eliciting behavior change" (Rollnick & Miller, 2002, p. 325), MI helps "clients to explore and resolve ambivalence" (Rollnick & Miller, 2002, p. 325). An evidence-based behaviour change approach, MI focuses on strengthening a person's motivation to change (Miller & Rollnick, 2013). It is described as a "collaborative, goal-oriented style of communication with particular attention to the language of change" (Miller, & Rollnick, 2013, p. 29). MI "is designed to strengthen personal motivation for and commitment to a specific goal by eliciting and exploring the person's own reasons for change within an atmosphere of acceptance and compassion" (Miller & Rollnick, 2013, p. 29). Because it is not a coercive process, MI separates itself from other behavioural change interventions (Miller & Rollnick, 2013). According to Rollnick and Miller (2011), MI concentrates on building constructive relationships between the interviewer and the client. The applied implication of MI is to see a client's ambivalence toward change – rather than label him or her as resistant – and work collaboratively to form a positive relationship that will permit the client's ambivalence or resistance to subside (Rollnick & Miller, 2011). MI is *not* a set of tools, but rather it is a technique and a way of being with people. This 'way of being with people' is most commonly referred to as a 'spirit' (Rollnick & Miller, 1995).

Criticisms of MI. Although it is theoretically sound and has demonstrated positive results in numerous studies, it is important to recognize that MI is often criticized for the challenge of converting its seven 'spirits' into practice (Hettema, Steele, & Miller, 2005; Mantler

et al., 2013; Mesters, 2009). Hettema et al. (2005) and Mesters (2009) suggest that even though the tenets of MI are often described in many research studies, the inconsistency in its application is most likely due to the varied, and thus inconsistent, training approaches. The inconsistencies in training have resulted in unpredictable degrees of MI's success. For example, in a study by Soria, Legido, Escolano, Yeste, and Montoya (2006), MI was associated with an 18.4% reduction in smoking rates, while another study only found a 5% reduction (Wakefield, Olver, Whitford, & Rosenfeld, 2004). According to Mantler, Irwin, and Morrow (2013), insufficient information was provided to the readers with regard to how the principles of MI were actually applied in each of these studies. Additionally, both studies failed to describe the training protocol of the MI counsellors (Mantler et al., 2013). Another concern acknowledged by Rubak, Sandboek, Lauritzen, and Christensen (2005), is a lack of crossover training and implementation of MI skills from non-clinical to clinical settings. The authors describe specific concerns about the variable ability of MI practitioners to transfer skills acquired from training into practice (Rubak et al., 2005). Speculation as to the lack of training and the inability of health professionals to skillfully apply the principles of MI has been cited as potentially problematic (Hettema et al., 2005; Miller & Mount, 2001).

OARS. There are several manners in which MI can be applied in order to overcome the aforementioned criticisms. Techniques that are utilized to put MI into practice are known as OARS: Open-ended questions, Affirmation of the person's strengths, Reflective listening (which is attentive listening to the client), and Summary (which is a means to reinforce camaraderie, ensuring the interviewer fully understands the client's discussion and displays interest in what the client feels) (Rollnick & Miller, 2011). The utilization of OARS permits clients to come up with their own answers, as the interviewer asks "questions that focus on discrepancies between

the current state of affairs and the individual's ideal self-image, desired behaviours, and desired outcomes" (Passer et al., 2008, p. 677). Allowing clients to produce their own answers and conclusions to their situation – as opposed to the interviewers providing the solutions – helps to motivate change among clients (Miller & Rollnick, 2002; Miller, 1995; Newnham-Kanas, Morrow, & Irwin, 2010).

MI-via-CALC

In addition to OARS (Rollnick & Miller, 2011), it is essential that a standardized application of MI be developed to ensure reliability and adherence with MI principles. In this regard, a study by Newnham-Kanas et al. (2010) found that MI-via-CALC contains all the tenets of MI, while at the same time having specific tools to put those tenets into action in practical ways. Furthermore, MI-via-CALC overcomes MI's inconsistent training, due to the fact that certified CALC providers engage in an extensive training program (five, three-day training courses, equating to over 100 hours, followed by a rigorous 25-week certification program) and concrete skills to facilitate the consistent implementation of core principles (Kimsey-House et al., 2011). It is important to note that the two concepts are not necessarily used in tandem; rather the approach of CALC is used, and MI is encompassed within CALC, hence, MI-via-CALC (Newnham-Kanas et al., 2010). Also important to mention is the fact that MI-via-CALC has demonstrated its efficacy as a tool for health-related behaviour change, and has been utilized in several studies demonstrating positive results (Mantler, Irwin, & Morrow, 2010; Newnham-Kanas, Morrow, & Irwin, 2011; Newnham-Kanas, Irwin, Morrow, & Battram, 2011; Pearson, Irwin, Morrow, & Hall, 2012; Pearson, Irwin, Morrow, Battram, & Melling, 2013; Pearson, Irwin, & Morrow, 2013; Mantler, Irwin, & Morrow, 2013).

Background on Mental Health: Statistics and Programs Related To Student Stress

Statistics Related To Stress

According to the CMHA (2002), more than 75% of Canadians report feeling very stressed at least once a month, and 43% feel this way a few times each week. In recent years, colleges and universities have reported unprecedented numbers of students in psychological distress (University of California, 2006). For example, 95% of campus psychological counselling centers surveyed in 2008 reported a significant increase in mental health issues among their students (Gallagher, 2008). Many of these institutions have also reported significant increases in students' utilization of counselling services (Berger, 2002; Goetz, 2002; Kitzrow, 2003; Voelker, 2003), the severity of symptoms (Kadison & Digeronimo, 2004; Levine & Cureton, 1998), and the duration of treatment (Levine & Cureton, 1998). While in university, students begin to form their identities and learn about a wide array of subjects. The (typically) four years spent in university can include a range of experiences, from positive to negative, from difficult to easy. Due to the large amount of time spent in school, students are subjected to many challenges such as increased workload, identity formation, jobs, new social situations, and contemplation of future careers (Ostrowski, 2012; Tambeau, 2011; University at Buffalo, 2014). Further, students spend anywhere from 14.3 to 30 hours per week studying outside of the classroom (McCormick, 2011; National Survey of Student Engagement, 2012), and testing is typically infrequent and covers large amounts of material (Baylor University, 2013). Combine that with extracurricular activities and familial obligations, and it becomes apparent that students may have difficulty managing all of their tasks effectively, leading to stress and distress. All of the aforementioned changes and challenges have the ability to affect how a student performs academically (Hammer, Grigsby, & Woods, 1998; Trockel, Barnes, & Eggett, 2000). Further, Gail Hutchinson, Director

of Psychological Services at Western University voiced concerns to *The Western News* that there has been "exponential growth in the demand" (Travis, 2011, para 4) for services on Western's campus. Hutchinson articulated that there has been a 20% increase in the number of students asking to see a counsellor in the past two years. Even after hiring an additional counsellor in 2011, there was a waitlist of more than 100 students. Hutchinson also conveyed that: "We'll hear students say 'I'm not getting the grades I want' and they honestly say, 'I don't want to live. I want to kill myself.' We just hear that in a way we never heard that to that level before" (Travis, 2011, para 8). It is evident from the statistics presented above (and throughout this thesis) combined with the firsthand experiences of university staff that there is a crucial need to develop a program that will enable students to alleviate and manage stress and distress.

Programs for Students Suffering From Stress

There are numerous student-specific stress management programs (ranging from individual counselling and psychological services to group therapy, workshops, and recreational activities) offered at the majority of – if not all – universities (Bradshaw & Wingrove, 2012; personal communication with several universities has led to this conclusion, as well as a search on the official websites of universities). The programs previously mentioned are all offered by Western University, which is the location of the current MI-via-CALC study. These counselling services are often free – or rather, they are built into the cost of tuition and covered under student health plans offered by the university. Recreational activities and group workshops are also often free of cost (such as free classes and group workouts at the recreational centre, an interactive mental health module available to all students, mindfulness and meditation workshops, and a psycho-educational workshop on stress and anxiety; Student Development Centre, 2014; Western Student Recreation Centre, 2014). However, some programs (such as the *Healthy Body*

Healthy Mind program) cost a fee (i.e. $20) where the money is paid upfront, but returned to the student after completing a certain number of sessions (Lear, 2014; Western Student Recreation Centre, 2014). Free workshops and counselling services are a huge benefit to students, as they provide appropriate care free of charge, providing accessible services to students in need (Western University Student Development Centre, 2009).

Counselling services offered by universities are highly utilized and valued by students. According to Western University's Student Development Centre (2009), data collected over several years – from administering the Service Evaluation Questionnaire – indicated that students view Psychological Services as a crucial component of their academic success and retention. The survey found that 86.6% of respondents who had used Psychological Services rated these services as moderately to very important in terms of improving or maintaining their academic performance (Western University Student Development Centre, 2009). Further, 59.5% of respondents indicated that Psychological Services were moderately to very important in terms of any decision to continue their education at Western (Western University Student Development Centre, 2009). Though these programs are undoubtedly positive in nature, an issue stems from the fact that they are often over-booked. In 2011, it was reported that there were 75-100 names on the waiting list for Western's Psychological Services at the Student Development Centre and another 30 in line at Student Health Services (Travis). It was also reported that prior to the hiring of a new psychologist in 2011, the waiting list was around 200 students (Travis, 2011). For the 2013-2014 school year, it was estimated that the wait to be seen took about three months. These university-provided services are evidently not enough for students to cope with stress, as is devastatingly apparent by the rising numbers of mental health issues – not only among university

students, but on a larger, more global scale, as well (Statistics Canada, 2012) – and the growing number of students on the waiting list.

Evidence supporting university programs. There have been numerous research studies that have looked at coping mechanisms regarding stress. Many of these studies demonstrate that the intervention of choice (whether it be yoga, relaxation therapy, mindfulness meditation, or exercise) have positive affects on the subjects (Bell, 2009; Carmody & Baer, 2008; Chiesa & Serretti, 2009; Chinaveh, Ishak, & Salleh, 2010; Deckro et al., 2002; Eberth & Sedlmeier, 2012; Galbraith & Brown, 2011; Milligan, 2006; Oman, Shapiro, Thoresen, Plante, & Flinders, 2008; Redwood & Pollak, 2007; Roberts & Danoff-Burg, 2010; Schure, Christopher, & Christopher, 2008; Simard & Henry, 2009; Woolery, Myers, Sternlieb, & Zeltzer, 2004). That is to say, the participants who took part in the stress-relieving interventions reported lower levels of stress after receiving the specific intervention. However, despite the fact that stress is a highly prevalent and disruptive illness, there appears to be a lack of literature when it comes to studies that observe specific stress coping mechanisms on the (university) student population. There have only been a handful of studies conducted on the university population (Chinaveh et al., 2010; Eberth & Sedlmeier, 2012; Milligan, 2006; Oman et al., 2008; Roberts & Danoff-Burg, 2010), with several of those studies focusing on graduate, medical, and nursing students specifically (as opposed to the general university population, or undergraduate students exclusively; Carmody & Baer, 2008; Galbraith & Brown, 2011; Redwood & Pollak, 2007; Schure et al., 2008; Simard & Henry, 2009).

Looking beyond university-provided programs. Although university-offered programs are highly positive entities in fighting the battle of student stress, they are, essentially, only one piece of the complex mental health puzzle. One must get to the root causes of what is driving the

stress – and/or impeding a student's ability to manage it – in order to effectively cope over the longer-term. In a book dedicated to stress management, the authors discussed the apparent gap between research and clinical practices for stress reduction techniques (Woolfolk, Lehrer, & Allen, 2007). The authors proposed "treatments are typically not adapted to individual cases but are uniform for all participants" (Woolfolk et al., 2007, p. 3). This insinuates that real-world applications of stress reduction methods are adapted for research studies to be standard for all participants, and further, some practitioners may also utilize treatment methods through a uniform method (Woolfolk et al., 2007). This sentiment highlights that the apparent lack of research on the subject presents a gap in the literature. But, this gap is an opportunity to further explore interventions for stress management, and explore these interventions in a more real-world setting.

Overcoming weaknesses in previously established programs. MI-via-CALC has the ability to overcome the weaknesses of the already-established stress programs and stress reduction techniques, in that an individual dictates what will be discussed in each coaching session, and which methods/techniques work best for him/her. Coaching occurs at a mutually agreed upon (and accessible) time between the coach and the client, ensuring that the needs of both parties are met (Kimsey-House et al., 2011). Coaching may also be done over the phone, providing opportunities for more availability on behalf of the client (Kimsey-House et al., 2011). Additionally, the impact on participants may be two-fold. Firstly, depending on the needs of the individual participant, the coaching sessions may be enough to assist with stress management. For other individuals, the coaching sessions might have a second function, in that the coaching will act as a conduit for a different type of intervention (in this case, stress interventions). To clarify further, the individual in the first scenario may simply need to engage in a coaching

relationship in order to become more attuned to his or her stressors and his or her reactions to those stressors. An individual in the second example may realize (through the coaching) that further action is required to cope with his or her stress (i.e. things ranging from yoga and exercise, to therapy and medical help). In summation, the flexibility granted by this coaching approach offers individuals more opportunities to engage in an action that may be beneficial for stress management.

CALC cornerstones. The cornerstones of the CALC model provide many opportunities to find the client's underlying causes of stress. This is because CALC emphasizes that a person's whole life is involved, in whatever he or she is working on (Kimsey-House et al., 2011). In a Co-Active relationship nothing is off limits, which promotes the ability to explore all aspects of a person's life (Kimsey-House et al., 2011). Further, the other highly important aspect of CALC for this study is that of process coaching. In process coaching, coaches assist clients with working through emotionally-charged issues, as well as teaching clients to comprehend that, although discomforting, chaos, bewilderment, and stagnation are all a part of client's growth and moving forward (Kimsey-House et al., 2011). Process coaching entails being with clients in the present – wherever he or she may be in the current moment – permitting them to deepen their self-learning, and helping them to develop an enduring life purpose statement (Kimsey-House et al., 2011). A deeper understanding of stress and the client's response to stress provides the client with the tools to better manage stressful events and learn effective coping strategies, while overcoming the weaknesses of uniform stress reduction methods that are adapted for research studies (Woolfolk et al., 2007).

Utilizing An MI-via-CALC Intervention For Stress

In the last twenty years, there has been an increasing evidence-base encouraging the application of MI to a wide range of issues across populations (Rollnick, Miller, & Butler, 2008), including anxiety (Westra, 2012). Given that anxiety develops from, and is associated with, prolonged stress (Russ et al., 2012; Schlotz, Yim, Zoccola, Jansen, & Schulz, 2011), study results encouraging MI as a treatment for anxiety may be extrapolated to the subject area of stress.

MI for anxiety. Westra, an anxiety researcher from York University, (2012) proposed that due to the nature of MI, people have the ability to make behaviour changes by focusing on their ambivalence toward behaviour change. Enacting behaviour changes is often difficult and filled with ambivalence, including conflicting and often opposing intentions and feelings (Westra, 2012). Individuals experiencing anxiety commonly struggle with ambivalence (i.e. an individual wants to change but is resistant to make changes), and while they may be aware that anxiety is causing problems and there is a desire to be free from it, it is difficult and uncomfortable to change familiar behaviours (Westra, 2012). The same can be said for stress, as stress is merely a product of how an individual reacts to a stressor; sometimes a shift in attitude and perspective may permit a different reaction from an individual toward a stressor (i.e. one could react negatively to a stressor, but with a change in attitude could react more positively).

Linking MI and CALC for the treatment of anxiety/stress. Westra's (2012) claim regarding MI as a method for treating stress by addressing ambivalence coincides with the principles of MI-via-CALC. The CALC model emphasizes that individuals possess the answers and solutions to the matters that need changing (Kimsey-House et al., 2011). CALC contains two important constructs that relate to making behaviour changes, aptly named *perspectives* and *balance*. *Perspectives* permit clients to view situations from multiple stances, thus providing

individuals with the opportunity to explore the pros and cons, thoughts, and feelings of numerous perspectives/decisions for a given situation (Kimsey-House et al., 2011). CALC's construct of *balance* states that one is always in choice, and that every decision made is a choice (Kimsey-House et al., 2011). Thus, *perspectives* and *balance* operate in tandem to allow a client to realize that it is possible to view a situation (or a stressor) in a different manner, and therefore make a new or different decision.

Another aspect of the model is CALC's construct of *Naturally Creative Resourceful and Whole* (*NCRW*). *NCRW* is a foundational premise of the intervention approach, and it sets the experience up to be an empowering one for the client/participant. Thus, this cornerstone acts as a positive predictor of an MI-via-CALC intervention due to its likeness to the concept of internal locus of control (Rotter, 1954). *NCRW* dictates that a client is viewed as a whole person that is capable of finding his or own answers/solutions to the current situation, and that the client is able to make behaviour changes; the client is not deemed as a broken victim (Kimsey-House et al., 2011). Locus of control is a theory in personality psychology referring to the extent to which individuals believe that they can control events that affect them (Rotter, 1954). A person's 'locus' is conceptualized as either internal (an individual believes he or she can control his or her life) or external (an individual believes that his or her decisions and life are controlled by environmental factors which cannot be influenced; Lefcourt, 1976; Rotter, 1954). Individuals who possess a high internal locus of control believe that events in their lives derive primarily from their own actions (Rotter, 1954; Carlson, Buskist, Heth, & Schmaltz, 2009). This relates to *NCRW*, such that individuals whom believe themselves to be whole and in possession of their own answers, essentially possess an internal locus of control.

Supportive literature. Because MI is entirely encompassed within CALC (Newnham-Kanas et al., 2010), and MI has been shown to be an effective treatment for anxiety (Westra, 2012), it is anticipated that an MI-via-CALC intervention will be an effective treatment for students suffering from stress. Furthermore, studies that have utilized MI-via-CALC have demonstrated promising results in other areas of health, such as obesity (Newnham-Kanas, Irwin, & Morrow, 2008; Newnham-Kanas et al., 2011; Newnham-Kanas, Irwin, Morrow, & Battram, 2011; Pearson, Irwin, & Morrow, 2013; Pearson, Irwin, Morrow, & Hall, 2012; Pearson, Irwin, Morrow, Battram, & Melling, 2013; van Zandvoort, Irwin, & Morrow, 2008; van Zandvoort, Irwin, & Morrow, 2009) and smoking cessation (Mantler et al., 2010; Mantler, Irwin, & Morrow, 2013; Mantler, Irwin, Morrow, Hall, & Mandich, under review). Even though the aforementioned studies were aimed at other areas of health, participants receiving an MI-via-CALC intervention in several of the studies expressed that their levels of stress had decreased (Mantler et al., 2010; Newnham-Kanas et al., 2008; Newnham-Kanas et al., 2011; Newnham-Kanas et al., 2011; Pearson et al., 2012; Pearson et al., 2013; van Zandvoort et al., 2008). The results were gathered qualitatively through interviews. Also, the quantitative improvements in self-efficacy and self-esteem may further reflect improvements in the stress experience, as researchers have established a link between stress, self-efficacy, and self-esteem among students (Abouserie, 1994; Brown, 1996; Emil, 2003; Hackett & Betz, 1989; Lent, Brown, & Larkin, 1984; Lyrakos, 2012; Steele, Spencer, & Lynch, 1993; Zimmerman, 2000; Zuckerman, 1989). Thus, if university students were administered an MI-via-CALC intervention, they may be better prepared to cope with stress, which would increase their overall health and well-being. A more thorough literature review is presented in the following chapter.

Chapter III: Literature Review

The following literature review will serve as a *brief* overview of studies that have been conducted related to the topics of MI-via-CALC and MI utilized as an intervention for stress. The literature highlighted in this section will demonstrate the various uses of MI-via-CALC, such that the rationale for utilizing this type of intervention for stress among university students will be further illustrated. Early studies in this field referred to the intervention simply as CALC, but research studies have emphasized that the tenets and principles of MI are enclosed entirely within, and brought to fruition via CALC (Newnham-Kanas et al., 2010). Thus, even though some of the studies may have called the interventions CALC – as opposed to MI-via-CALC – it has been demonstrated that the terms can be equated; and therefore, the research presented on CALC, in actuality, is MI-via-CALC, and will be connoted as such in the literature review section.

MI-via-CALC Interventions

MI-via-CALC, though still in its relative infancy, has demonstrated promising results with regard to its use with health-related issues. The research that has been conducted on MI-via-CALC has demonstrated its potential for fostering positive behaviour changes, and it is supported by behaviour change theories (Irwin & Morrow, 200; Pearson, 2011). A small-scale study (n = 5) by van Zandvoort et al. (2008) looked at the use of CALC as an intervention for obesity among female university students. The researchers observed changes in participants' body mass index (BMI), waist circumference (WC), functional health status, and self-esteem. After receiving an average of nine, 35-minute one-on-one coaching sessions, the researchers found that there was no change in BMI for three participants, but that there was a decrease for one participant, and a slight increase for one participant (van Zandvoort et al., 2008). The results

also indicated that WC decreased for three participants and remained stable for two. The effect sizes and qualitative statements collectively demonstrated clinically significant improvements (i.e. large effects and increases) in participants' self-esteem (Cohen's $d = 0.79$) and physical (Cohen's $d = 0.88$), mental (Cohen's $d = 0.74$), and overall health statuses (Cohen's $d = 0.90$) upon completing the intervention (van Zandvoort et al., 2008). The clinically significant improvements from this study demonstrate that an MI-via-CALC intervention has merit and should be utilized in the proposed research study regarding stress. Further, the clinically significant improvements occurred with respect to participant's self-esteem, mental health, and overall health statuses, in which all of these categories can be related to stress. The impact on these university students' mental health is particularly noteworthy for the current, proposed research study.

A study by Newnham-Kanas and colleagues (2008) looked at utilizing CALC as a treatment for obese adults. This study had more participants than the previously mentioned van Zandvoort et al. (2008) obesity study ($n = 20$); but both studies indicate the efficacy of CALC as a method for obesity. Newnham-Kanas et al. (2008) looked at BMI, WC, self-esteem, self-efficacy, physical activity, and functional health status of adults with obesity (Newnham-Kanas et al., 2008). Participants received an average of seven one-on-one coaching sessions, for 35 minutes each. The results demonstrated a slight decrease in BMI, but the decrease was not statistically significant [$t(17) = 1.42$, $p = 0.172$] from pre-test ($M = 40.83$, $SD = 6.48$) to post-test ($M = 40.38$, $SD = 6.02$). However, a statistically significant decrease was observed for WC [$t(17) = 2.34$, $p = 0.032$] from pre-test ($M = 118.73$, $SD = 17.18$) to post-test ($M = 115.27$, $SD = 15.91$). The researchers also found a statistically significant increase in self-esteem [$t(17) = -2.94$, $p = 0.01$] from pre-test ($M = 20.67$, $SD = 6.79$) to post-test ($M = 23.83$, $SD = 6.44$). Three self-

efficacy questionnaires were utilized, and it was found that barriers to physical activity self-efficacy increased, but was not significant [$t(17) = -1.33$, $p = 0.20$] from pre-test ($M = 47.20$, $SD = 20.43$) to post-test ($M = 52.38$, $SD = 18.32$). Physical activity-related task self-efficacy decreased but was not significant [$t(17) = 2.02$, $p = 0.06$] from pre-test ($M = 80.28$, $SD = 15.55$) to post-test ($M = 72.08$, $SD = 25.48$). Nutrition self-efficacy increased, but was not statistically significant [$t(17) = -0.48$, $p = 0.64$] from pre-test ($M = 70.46$, $SD = 13.36$) to post- test ($M = 72.02$, $SD = 14.65$). When looking at physical activity, statistically significant results were not found, though *some* changes in these behaviours did occur (Newnham-Kanas et al., 2008). Because there was a statistically significant decrease in WC, it can therefore be assumed to be attributed to changes in physical activity and diet; and due to participants' qualitative accounts stating that these behaviours improved, it is logical that changes in both physical activity and diet occurred (Newnham-Kanas et al., 2008). Functional health status increased significantly [$t(17) = -2.89$, $p = 0.01$] from pre-test ($M = 66.33$, $SD = 19.13$) to post-test ($M = 75.28$, $SD = 16.04$). Newnham-Kanas and colleagues' (2008) presented the first study that investigated the use of motivational interviewing and coaching as an intervention for an obese population. The promising results evince the potential, meaningful impact that an MI-via-CALC intervention may have for future obesity studies, as well as the proposed stress study – specifically due to the fact that there were clinically significant changes in self-esteem, which may be relevant to stress (Abouserie, 1994; Brown, 1996; Emil, 2003; Hackett & Betz, 1989; Lent et al., 1984; Lyrakos, 2012; Steele et al., 1993; Zimmerman, 2000; Zuckerman, 1989).

Newnham-Kanas et al. (2011) conducted a qualitative study to investigate the impact of MI-via-CALC as a treatment for adults (aged 33-55 years) struggling with obesity. The participants ($n = 8$) received 18 coaching sessions over six months with a Certified Professional

Co-Active (CPCC) coach. Participants then engaged in semi-structured pre- and post-intervention interviews, along with a focus group six months after the final coaching session (Newnham-Kanas et al., 2011). After the intervention was complete, participants attributed increased self-confidence, learning to cope with life in a healthy manner, putting the self first, increased emotional healing, the importance of social networks in weight loss, and learning to step outside their comfort zone in the one-on-one coaching sessions (Newnham-Kanas et al., 2011). Thus, Newnham-Kanas and colleagues (2011) were able to conclude that an MI-via-CALC intervention is efficacious for individuals who need help coping with life factors that may hinder weight loss and stress (due to the increase in self-confidence, which has been linked with stress; Brown, 1996; Lyrakos, 2012; Steel et al., 1993). The results of this study establishes that the use of an MI-via-CALC intervention for students suffering from stress is an appropriate intervention, specifically due to the fact that participants attributed life changes and increased coping to the coaching sessions.

In 2011, Newnham-Kanas et al. conducted a study that observed the quantitative assessment of MI-via-CALC as a treatment for adults struggling with obesity. The researchers looked at weight, WC, self- esteem, functional health status, quality of life, self-efficacy, physical activity, and nutrition for adults aged 35 to 55 years (n = 8). Following the intervention, analysis of the results indicated that MI-via-CALC was an effective tool for use among adults struggling with obesity. To clarify, upon visual inspection, the researchers found changes in weight and WC among the participants. Clinically significant changes were observed in participants' self-esteem functional health status, quality of life, self-efficacy, physical activity, and nutrition. At the six-month follow-up, three participants had gained weight (although two participants were still below their baseline weight), one participant continued to lose weight and

four participants maintained the weight lost during the intervention phase. The several clinically significant results of this study allude to the fact that MI-via-CALC possesses substantial value when it comes to participants making positive behaviour changes. Further, the significant changes were observed in areas that may have strong links with stress.

In a recent study by Pearson et al. (2012), MI-via-CALC was utilized as an obesity intervention (Coaching towards Healthy Actions Naturally through Goal-related Empowerment; CHANGE) and compared to another program, the validated obesity intervention known as LEARN (Lifestyle, Exercise, Attitudes, Relationships, Nutrition). The study used a university population (n = 45, aged 18 to 24) and was a 12-week telephone-based intervention. Participants either received intervention-based phone calls utilizing MI-via-CALC techniques or phone calls utilizing the LEARN program (Pearson et al., 2012). Pearson and colleagues (2012) found that an MI-via-CALC intervention produced significant changes to self-esteem between weeks 6 and 12 of the intervention, and that these changes were independent of weight loss (Pearson et al., 2012). It was also concluded that, after analyses, both interventions produced significant time effects between baseline and 6 months for self-esteem and all dimensions of the SF-36 (Short Form Functional Health Status Scale; Ware 1997). This demonstrates the effectiveness of MI-via-CALC as an intervention tool for weight management, as the CHANGE program provided results that were congruent with a previously existing and validated intervention tool (LEARN; Pearson et al., 2012; Pearson et al., 2013). This larger scale study – in addition to the others mentioned in this section – aptly demonstrates that an MI-via-CALC intervention is appropriate for a university-based population.

In a pilot study (n = 9), Mantler et al. (2010) assessed the utility of MI-via-CALC among 19 to 28 year-old smokers and found that 22% of participants were smoke-free at six months

post-intervention. This rate is 10% higher than the average quit-rate for other cognitive-behavioural interventions (Lancaster & Stead, 2008), clearly emphasizing the positive effects of MI-via-CALC. Participants in this study qualitatively expressed that stress was a trigger for smoking, but due to the MI-via-CALC intervention were able to gain more control over their smoking behaviours, as well as gaining an increased self-awareness and coping strategies (Mantler et al., 2010). Quantitatively, a positive trend was reported for all measures including self-efficacy and self-esteem (i.e. participant self-efficacy and self-esteem increased; Mantler et al., 2010). Additionally, a more recent study was conducted that assessed the experience and impact of MI-via-CALC training on smoking hotline employees' perceived competency to facilitate callers' behaviour changes (Mantler et al., 2013). The study found that the training had a positive impact on participants' perceived competencies to facilitate behaviour change (Mantler et al., 2013). In a larger study, Mantler et al. (under review) assessed MI-via-CALC with regard to smoking behaviours, personal competency, as well as changes in perceptions of identity, smoking, quitting, and the intervention itself among the intervention population (n = 35, aged 19 to 25 years). This study was unique in that there was an immediate-intervention group (i.e. participants received the treatment immediately after enrollment) and a wait list group (i.e. participants received the treatment after being placed on a waitlist for three months). The waitlist group acted as a control/comparison group for the immediate-intervention group. After receiving an average of nine, 35-minute one-on-one coaching sessions, it was found that the immediate-intervention group decreased significantly from baseline to post-intervention in smoking behaviours, including the number of cigarettes smoked per day and cigarette dependency (Mantler et al., under review). It was also concluded that the immediate-intervention group had significant increases in personal competency including self-esteem and self-efficacy, in

comparison to the waitlist. Mantler and colleagues (under review) discovered that after receiving the intervention, 31.4% of participants were smoke-free at the 12-month post-intervention follow-up. The positive results that have been gathered from the multiple smoking-related studies has illustrated that MI-via-CALC is a versatile intervention technique (i.e. it has been used in smoking and obesity) that possesses the potential to be utilized in a variety of contexts. Thus, it is likely that an MI-via-CALC intervention will be effective for the proposed stress study.

MI for Stress and Anxiety Treatment

MI has long been used in almost all areas of healthcare (Naar-King & Suarez, 2011). In specific regard to stress, several studies have shown positive results that indicate MI is a useful tool to manage anxiety (a manifestation of stress; Insel et al., 2011; Russ et al., 2012; Westra, 2012). MI is a well-supported treatment in the areas of substance abuse (Hettema et al., 2005), and according to Westra (2012), it makes sense to integrate MI into the treatment of anxiety and associated issues, such as depression: it makes sense due to the fact that MI focuses on a client's ambivalence. MI has been used to improve treatment adherence in anxiety disorders (Slagle & Gray, 2007; Westra & Dozois, 2006). However, research has only recently begun to study the value of adding MI to existing treatments for these conditions (Westra, Aviram, & Doell, 2011). These studies are mostly 'early-stage' work, and include uncontrolled case studies and controlled pilot studies (Westra, 2012). Data from case studies have provided support that adding MI and motivational enhancement strategies may be an effective method of treatment for a range of anxiety disorders, including generalized anxiety disorder (GAD; Westra & Arkowitz, 2010), obsessive compulsive disorder (OCD; Simpson & Zuckoff, 2011), health anxiety (McKay & Bouman, 2008), panic disorder (Arkowitz & Westra, 2004), social anxiety disorder (Buckner,

Roth, Ledley, Heimberg, & Schmidt, 2008), and mixed anxiety and depression (Westra, 2004). It is important to understand that because anxiety is a manifestation of stress (Insel et al., 2011), studies involving MI as a treatment for anxiety may be utilized when referring to stress.

MI has demonstrated promising evidence in studies that have compared MI to psychoeducational or no-treatment controls (Westra, 2012). Specifically, MI has illustrated promise in (a) increasing receptivity to recommended treatments such as exposure and response prevention for obsessive-compulsive disorder (OCD; McCabe, Rowa, Antony, Young, & Swinson, 2008; Tolin & Maltby, 2008); (b) increasing problem recognition and treatment attendance for post-traumatic stress disorder (PTSD; Murphy, 2008); (c) increasing treatment-seeking among individuals with social anxiety who are not yet seeking care (Buckner, 2009); and (d) improving responses to cognitive behaviour therapy (CBT) for anxiety more broadly (Westra & Dozois, 2006) and GAD in particular (Westra, Arkowitz, & Dozois, 2009). In a larger controlled study (n = 76; Westra et al., 2009) adding MI (compared with no MI) as a pretreatment to CBT for GAD, MI was found to substantially improve worry reduction among those with the most severe worry at the outset of treatment. Researchers also found that individuals who suffered from severe high worry, and who received MI as compared to those who did not, demonstrated substantially lower levels of resistance (i.e. higher receptivity to change) in CBT, and this accounted for the higher levels of worry reduction in treatment (Aviram & Westra, 2011; Westra et al., 2009). While these results are promising, these studies contain a wide range of limitations, and future research – utilizing more rigorous controlled designs – is needed in order to establish the value of adding and/or integrating MI with other treatments for anxiety and depression (Westra, 2012).

Chapter IV: Methods

Study Design and Procedure

Before conducting the research study, ethics approval was sought and received by Western's Office of Research Ethics (the host university's Office of Research Ethics). This eight-session pilot study used a pre-post test, repeated-measures design, with data collection at three time points: pre-intervention (baseline, or before the coaching sessions); mid-intervention (after participants received four coaching sessions); and post-intervention (immediately after participants received the eighth coaching session). As this was a pilot study, the research team aimed to recruit 30 students for the intervention group. This number was based on the power calculations made via the power calculation software program, *Horatio* (C. Lee, 2013). It was estimated that a sample of 20 participants would be sufficient to detect a moderate effect (r^2 = .12) of a three-level within-subject independent variable more than 80% of the time, using a conventional alpha level of .05. This calculation emphasized that 30 participants for this pilot study was deemed sufficient, in that it would permit for power to be maintained even with some expected attrition.

The study began in January 2014 and ran until May 2014. The study was active until all participants received their coaching sessions, since data was collected and analyzed at all time points. Participants in the intervention group were to receive eight sessions of telephone-based sessions of one-on-one coaching with a volunteer Certified Professional Co-Active Coach (CPCC; N = 13), with each session lasting between 30 and 40 minutes. During data collection, it was discovered that four participants (five, when including one person who dropped out) also used Skype, due to running out of minutes on their phones and/or due to long-distance fees. Additionally, one participant had one session in person and did the rest by phone, while another

participant had four sessions in person, and completed the rest by phone. It was also revealed that two participants (n = 2) only had six coaching sessions. However, after thorough conversations with both the clients and the coaches, the researcher learned that some sessions were longer than the allotted 30-40 minutes (i.e. one hour), and so instead of having eight sessions, six were had in order to adhere to the total time dedicated to the coaching, in accordance with the study guidelines provided to the CPCCs. Nine (n = 9) coaches noted having some sessions that were above the requested time frame (i.e. 45-minutes to one hour), and as a result had some sessions that were shorter (i.e. less than 30-minutes) in order to adhere to the guidelines. Thus, because the total contact time between coach and participant fell within the study protocol guidelines, the researcher was still able to make the assumption that the study guidelines were followed when doing statistical analyses.

The rationale for having participants receive eight coaching sessions was based on numbers utilized during other successful MI-via-CALC interventions, which ranged from six to nine sessions. Additionally, graduate and undergraduate students are covered under Western's student health plan for up to 500 dollars of counselling sessions with a psychologist. Western's Student Development Centre (SDC) also offers student counselling, but the number of sessions is determined based on an individual basis. Thus, it was estimated that eight coaching sessions would be similar to what students would be offered through Western's health plan, based on an average cost for a psychologist per a 30-40minute session.

Participants

Participant eligibility. Participants were eligible for the study if they were: (a) between the ages of 17-24; (b) full-time undergraduate students at Western University and/or the affiliate schools, which is defined as acquiring between 3.5 or 5.0 credits during September to April; (c)

English-speaking; (d) not receiving any therapy or counselling; (e) not taking any medications for stress or anxiety, or anything that could be deemed mood- or mind-altering; and (f) perceived their levels of stress to be above normal (i.e. interfering with daily life and activities). To further clarify the last eligibility criterion, all participants were asked to rate his/her current level of stress from 1-10, with 1 being normal and manageable, and 10 being very high and a hindrance on life and daily activities. All participants noted levels between 5-9 (see Results). Because stress is personal and a perception, participants were asked to describe the number they chose in order to ensure that they met the study criteria, before being fully accepted the study and moving forward.

Participant recruitment. As the undergraduate population was the target audience, Western's mass email system was used to recruit participants for the study. Emails (Appendix A) were sent out on January 2nd, 2014, and were distributed to the entire undergraduate population, including those from Western's main campus, as well as Western's affiliated schools (Huron, Brescia, and King's University College). According to the mass email system, 25,565 emails were sent out, and of those, 25,201 emails successfully reached their intended recipients, while 364 emails failed to be sent. Within a few hours of the message being distributed, approximately 100 emails were received by the researcher from students expressing interest in participating. In total, 246 responses were received by the researcher (either by phone and/or email) expressing interest in the study**.**

Students were responded to in order (i.e. whomever emailed or called the researcher first) to provide more information about being a participant in the study. The first 30 people who responded to the more detailed email were screened to ensure that they were eligible for the study. The researcher was in contact with 45 people before the 30 was reached. Eligible

participants were then asked to meet with the researcher for pre-intervention assessments and additional screening. A letter of information and consent form (Appendix B and Appendix C, respectively) were given to participants to read and sign before the collection of any data. Additionally, participants were asked to fill out a demographic questionnaire (Appendix D), to further demonstrate eligibility and provide general background information. The demographic questionnaire served as a useful tool, as it was discovered that one participant had not actually met the eligibility criteria, as the participant was taking a prescription medication known to be mind/mood-altering. Thus, this participant was excluded from the study, and the next eligible student was enrolled.

Exclusions. Several people were excluded from the study (from the 246 that contacted the researcher). One participant ($n = 1$) was excluded due to medication that would have comprised the integrity of the study (as noted above). Three participants ($n = 3$) were excluded due to missing screening appointments, and failure to communicate with the researcher about the missed appointments and continued interest in the study (despite numerous attempts on behalf of the researcher to contact them). Participants were also excluded due to: age (older than the study cut-off, $n = 7$); intention (only interested in joining the study for compensation, $n = 2$); and inability to commit to the study protocol (time commitments and scheduling conflicts, $n = 2$). All other participants were excluded once the maximum number of 30 people was met in order to conduct the pilot study. It is important to note that these participants were all excluded prior to the collection of any pre-intervention data (i.e. questionnaires and interviews).

Active participants in the study and attrition. In total, 30 participants were recruited for the study ($N = 30$) in January 2014; however, six participants ($n = 6$) dropped out, leaving the study with a total of 24 participants ($n = 24$). One participant dropped out after meeting with the

researcher, and before meeting with the coach. The participant did not provide any explanation for dropping out of the study: the participant did not contact the coach, and could not be reached by the coach or the researcher, and thus, did not receive any coaching. One participant dropped out after receiving seven out of the eight sessions, due to a family emergency and was unable to be reached for any further data collection, but had expressed a desire to complete the study. The other four participants dropped out after failing to contact their coaches and/or missing several appointments. These four participants dropped out of the study before mid-intervention, and only received between one and three coaching sessions. The four participants described "being too busy," and "the coaching not being for them" as reasons for leaving the study. Of these four, one participant described that the two coaching sessions had with the coach before dropping out were successful and that the participant "got what they wanted from it." Reasons given for dropping out confirmed that no negative consequences had resulted from the coaching, and in an attempt to gain additional information about the decision to drop out, the researcher contacted each participant up to three additional times, but no further information was offered.

Study Coaches

All coaches ($N = 13$) were volunteers and possessed no affiliation with the study or research team, and were recruited via an electronic post on the Co-Active Coaches Network (Appendix E). Coaches were all Certified Professional Co-Active Coaches (CPCC) and were asked, and agreed, to use only their CPCC skills throughout the study (i.e. some may have had additional trainings in other counselling approaches). All interested coaches were screened by the research team, with local coaches in the area (i.e. Ontario, Canada) being preferred to help ensure that they were particularly familiar with the local environment including information that might be brought up during the coaching sessions (such as being familiar with the list of Western

University and London, Ontario health and emergency services that was provided to all study coaches). Furthermore, the researcher spoke with each volunteer coach to ensure that he or she did not have any personal experiences with stress that would have prevented them from fulfilling their CPCC role (i.e. coaches were asked, "Is there anything in your personal or professional life that would inhibit your ability to fully engage in the CPCC role regarding university students and stress?"). All coaches signed a consent form (Appendix C) and letter of information (Appendix F), in which they consented to: only using their CPCC skills; adhering to study protocols, such as time limits; contacting the researcher should any issues arise; and to an interview with the researcher post-intervention.

Upon initial recruitment, the researcher sought to recruit approximately seven coaches, with each accepting between four and five clients into his/her coaching practice in a desired attempt to minimize differences in the coaching received by participants (i.e. even with the CPCC designation indicating comparable skill-sets, it is feasible that individual differences could exist among coaches). However, this proved to be a non-feasible option, with coaches expressing the ability to only accept between two and three clients each. Thus, 14 coaches were recruited for this study. Of the 14 coaches, 12 were to be actively utilized for the study, with two coaches designated as alternate coaches, in the event that there was an issue between a client and his/her coach. During student-participant recruitment and coach-matching, one of the coaches dropped out of the study due to unforeseen time commitments, leaving the study with 12 active coaches and one alternate coach. Initially, all 12 coaches were coaching between two and three clients, but due to an issue between one of the coaches and a client, the coaching relationship was dissolved. Thus, the alternate coach was asked to step in and take on the client. Because of this, one client received two sessions from one coach, and received the remaining six sessions from

the new coach. After this incident – and accounting for dropouts (excluding the one participant that dropped out near the very end due to an extenuating circumstance) – coaches had between one and three clients (coaches with one client, $n = 3$; coaches with two clients, $n = 8$; and coaches with three clients, $n = 2$).

Matching participants and coaches. Participants were matched with the coaches on a random, first-come, first-serve basis. That is to say, the first coach assigned to the study was matched with the first student participant enrolled in the study. This was done until all participants were assigned a coach. The participants were given the email and phone number of the coach and were informed that it was his/her responsibility to contact the coach to set up the first coaching session.

Data Collection

Qualitative and quantitative data were utilized to address the study's purpose statement. The quantitative data was utilized to identify statistically significant results and the qualitative data acted as a first-hand experience of the study from the perspective of the participants. The qualitative data also functioned as a way to further understand the quantitative data[5]. The qualitative findings may also assist with future studies of this nature (i.e., participants had the opportunity to describe which aspects of the study did or did not work well). Additionally, because this was a pilot study with no control group, it was imperative that all manners of data were gathered to comprehensively address the research study's purpose statement.

Semi-structured interviews. Interviews were conducted between the researcher and (a) coaches; and (b) participants in order to help understand the experiences of the intervention from the participants' perspectives (Appendix G and Appendix H). Prior to conducting the interviews,

[5] It is important to recognize that qualitative methods were used for this study (e.g. semi-structured interviews) as opposed to qualitative methodology (i.e. a theory of thought, such as grounded theory, was not utilized and/or applied to this study and its results).

participants and coaches were asked to adhere to honesty demands (Bates, 1992), such that answers were as honest as possible (i.e. not what the researchers wanted to hear). Honesty demands (Bates, 1992) help to diminish the effects of social desirability. Additionally, interview questions underwent pilot testing to ensure that they were appropriate and representative for the study. Interviews with participants occurred at pre-, mid-, and post-intervention, while interviews with coaches only occurred post-intervention. All interviews between the researcher and (a) coaches; and (b) participants were audio-recorded (Sony® digital recorder) and transcribed verbatim. Quality assurance steps (Table 1) to help ensure data trustworthiness, as suggested by Guba and Lincoln (1989), were utilized throughout data collection and the analysis phase of the research study. Inductive content analysis, as described by Patton (2002), was utilized to analyze transcripts from interviews, in order to find common emergent themes expressed by the participants.

Table 1

Quality Assurance Steps Followed for Data Collection and Analysis

Measure	Description
Credibility	Member checking was done between each question and at the end of each interview to ensure that the researchers correctly understood the responses from participants.
Confirmability	The researcher and research assistant (RB) independently and simultaneously performed inductive content analysis on interview transcriptions. The researcher and research assistant compared their analyses. Data was examined for similarities and differences across the transcriptions and common emergent themes were identified. A summary of the analysis was prepared and discussed.
Dependability	Research team members met to debrief and summarize their findings. Any biases were voiced, recorded, and considered to ensure that the analyses were not influenced by researcher bias.
Transferability	The research process was documented in detail, thus enabling potentially interested parties with the ability to determine whether the study results will be transferable to other settings.

Note. Based on Guba and Lincoln (1989) and adapted from Irwin, He, Bouck, Tucker, and Pollett (2005).

Coaches completed interviews post-intervention with the researcher to help ascertain if there were specific aspects of the CALC model that were used more commonly among the coaches and with these specific participants who are suffering from stress. The intent of interviewing the coaches post-intervention was strictly for research purposes (i.e. this was a pilot study and the research team wanted as much information as possible in terms of what might be particularly helpful for future research in the area). To ensure confidentiality between the coach and the participant remained intact, prior to the interviews, coaches were advised to not provide specific details of the coaching sessions (i.e., no personal information and/or specifics from coaching sessions).

Demographic questionnaire. In addition to completing one-on-one interviews with the researcher, participants were asked to fill out a short demographic questionnaire (Appendix D). The demographic questionnaire provided the researcher with some brief background on participants, such as: name; age; year of enrollment; course-load; self-reported level of stress; and if any medications were being taken that would interfere with the study, or if participants were involved in therapy and/or counselling. In order to run descriptive statistics on the sex of the participants, each sex was assigned a code. Males were coded as 1 and females were coded as 2.

Perceived Stress Scale (PSS). To determine their current level of stress, participants completed the Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermeistein, 1983; Cohen & Williamson, 1988), a previously-validated and reliable scale that is considered the most widely used psychological instrument for measuring stress (Cohen et al., 1983; Cohen, 2000). The PSS (Appendix I) assesses the amount of stress in a person's life rather than response to a specific stressor and individuals respond to the questions based on their thoughts and feelings within the

last month (Cohen, 2000). It is represented as a 4-, 10-, and 14-item Likert-scale (i.e. never, almost never, sometimes, fairly often, and very often) ranging from zero to four, in which items are reversed scored (0 = 4, 1 = 3, 2 = 2, 3 = 1, & 1 = 4) for the positively stated items (items 4, 5, 7, and 8 on the PSS-10; Cohen, 2000). The scale yields a single score after summing all of the items on the questionnaire, and a higher score is indicative of greater levels of perceived stress (the highest possible score is 40; Cohen, 2000). The 10-item scale has the highest efficacy in terms of its psychometric properties. In a review of the psychometric evidence of the PSS, E. Lee (2012) concluded that the psychometric properties of the PSS-10 are superior to those of the PSS-14 and the PSS-4 (Cohen & Williamson, 1988; E. Lee, 2012). Thus, the PSS-10 was used for this study. The PSS-10 has demonstrated reliability, such that coefficients of Cronbach's alpha have been shown to range from 0.75 to 0.91 (Cohen et al., 1983; Cohen & Williamson, 1988; Cole, 1999; Glaser et al., 1999). Studies have also reported test–retest reliability with correlations ranging from 0.55 (six-week interval) to 0.61 (12 months) (Cohen et al., 1983; Cole, 1999). The PSS-10 has also shown validity when compared to health behaviors and perceived health (Cohen et al., 1983) and stressful life events and negative affects (Cohen, Tyrrell, & Smith, 1993) as criterion measures (Reis, Hino, & Rodriguez-Añez, 2010).

Hospital Anxiety and Depression Scale (HADS). Participants also completed the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983; Appendix J). The HADS "is a self-rated screening questionnaire detecting mild degrees of anxiety and depression" (Preedy & Watson, 2009, p. 4227). It uses a four-point Likert-scale (from zero to three) with 14 items – seven for anxiety (HADS-A) and seven for depression (HADS-D; Preedy & Watson, 2009; Zigmond & Snaith, 1983). Thus, a participant may score between zero and twenty-one (0-21) for each scale. Although it was intended for general medical hospital outpatients, it has been

widely used in a primary care setting (Preedy & Watson, 2009). Researchers have emphasized the connections among stress, anxiety, and depression; thus, the researcher of the current study decided it was important to utilize a scale that measures anxiety and depression, not just stress. A prominent feature of this scale is that it was developed to measure anxiety and depression in those who possess good physical health (Zigmond & Snaith, 1983). To clarify, sometimes people who suffer from physical illnesses display symptoms of fatigue and insomnia. The fatigue and insomnia, though a source of anxiety and depression, are related to the physical illness, and not anxiety and depression in terms of a psychological illness (Bjelland, Dahl, Haug, & Neckelmann, 2002). Zigmond and Snaith's (1983) scale measures anxiety and depression as it pertains to a psychological illness – not based on physical symptoms that may also lead to anxiety and depression. In summation, the HADS was developed in a manner that prevents 'noise' from somatic disorders (Bjelland et al., 2002). Additionally, the HADS does not detect serious mental illnesses (Bjelland et al., 2002), which is appropriate for the proposed MI-via-CALC study. In terms of its psychometric properties, the application of the HADS has demonstrated validity and reliability (Bjelland et al., 2002; Herrmann, 1997; Zigmond & Snaith, 1983), and has illustrated "good to very good" (Bjelland et al., 2002, p.75) concurrent validity when compared with other frequently utilized anxiety and depression questionnaires. Bjelland and colleagues (2002) found that for the HADS-A, Cronbach's alpha ranged from 0.68 to 0.93 (with a mean score of 0.83); and for the HADS-D, Cronbach's alpha ranged from 0.67 to 0.90 (with a mean score of 0.82). According to Bjelland et al.'s (2002) investigation, factor analyses demonstrated a two-factor solution in good accordance with the subscales, HADS-A and HADS-D, respectively. The correlations between the two subscales varied from 0.40 to 0.74 (with a mean score of 0.56).

Correlations between HADS and other commonly used questionnaires were in the range of 0.49 to 0.83.

Quantitative Data Analysis

Using IBM SPSS (Statistical Package for the Social Sciences, version 21.0; hereafter referred to as SPSS), descriptive statistics were run on all quantitative data gathered in this study. In order to determine statistical significance, three one-way, repeated-measures ANOVAs were completed with an alpha of 0.05. One ANOVA was done to assess the scores from the PSS, while separate ANOVAs were done for the anxiety and depression components of the HADS (as mentioned above, the HADS is composed of two scales, one for anxiety and one for depression, and the scores for each scale remain separate). A Bonferonni correction was applied when conducting the ANOVAs to control for Type I Error.

Chapter V: Results

The following section will provide the quantitative and qualitative results obtained from the data analysis. Quantitative results will be presented first, followed by the qualitative findings. A discussion of the results contextualized with previously published and relevant literature will be presented in the following chapter.

Demographic Questionnaire

Participants were English-speaking students aged 18 to 24 years, with a mean age of 20.13 year (*SD*[6] =1.46) and a mode of 20 years of age. With regard to year of enrollment, participants ranged from being in first year to fifth year, averaging 2.63 (*SD* = 1.09). The majority of students (*n* = 12) were enrolled in third year; six participants (*n* = 6) were enrolled in second year; six participants (*n* = 6) were enrolled in first year; five participants (*n* = 5) were enrolled in fourth year; and one participant (*n* = 1) was enrolled in his/her fifth year. Participants were taking between three to six courses for the current semester[7], with an average of 4.93 (*SD* = 0.52). Of these, 25 participants (*n* = 25) were taking five courses; two participants (*n* = 2) were taking six courses; two participants (*n* = 2) were taking four courses; and one participant (*n* =1) was taking three courses. With regard to participants' self-reported perceived level of stress (which was reported on a scale of 1-10, with 1 being low and normal stress, and 10 being very high levels of stress that interfere with daily living), the range was between five and nine (5-9), averaging 7.35 (*SD* = 1.09), and a mode of seven. Out of the original 30 participants, nine (*n* = 9) were males and 21 (*n* = 21) were females and after accounting for dropouts at the end of the study, there were 7 males and 17 females. In a repeated-measures design, each person acts as

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[6] *SD* connotes standard deviation.

[7] When answering the demographic questionnaire, participants provided course information for the current semester, and revealed that they were taking between 3 and 6 half-credit (0.5) courses. To be considered a full-time student, 3.5 to 5.0 course equivalents must be taken during September to April. Thus, the researcher confirmed with each participant that he/she was indeed a full-time student.

his/her own control. This means that because six participants did not provide data at all three time periods, they were excluded from the analyses, and thus a sample size of 24 was used (n = 24). See Table 2 for a summary of the demographic information (Table 2 was compiled using a sample size of 30).

Table 2

Demographic Information

Participant Characteristic	*N*	Mean	Mode	SD
Sex				
Male	9	1.70	2	0.46
Female	21			
Age (15-24 years)				
18	4			
19	4			
20	13			
21	6	20.13	20	1.46
22	1			
23	0			
24	2			
Year of enrollment				
1st	6			
2nd	6			
3rd	12	2.63	3	1.09
4th	5			
5th	1			
Number of courses (≥3)				
3	1			
4	2	4.93	5	0.52
5	25			
6	2			
Self-reported level of stress (1-10)*				
1	0			
2	0			
3	0			
4	0			
5	2			
6	4			
7	8	7.35	7	1.09
7.5	4			
8	7			
8.5	1			
9	4			
10	0			

Note. *Several participants provided in between values insisting that they accurately depicted their current levels of stress. In order to respect the participants' self-reported measures, values were kept as is and were not rounded.

PSS

Over time, there was a statistically significant difference with regard to participants' perceived levels of stress [$F(2, 46) = 28.49$, $p < .05$]. There was a statistically significant and positive difference from pre-intervention ($M = 25.21$, $SD = 5.69$) to mid-intervention ($M = 16.92$, $SD = 5.57$), and pre-intervention to post-intervention ($M = 15.92$, $SD = 7.19$), indicating a reduction in participants' perceived levels of stress over the course of the study, and signifying a positive/favourable statistically significant difference. There were no statistically significant differences between mid-intervention to post-intervention.

HADS: Anxiety Scale

Over time, there was a statistically significant and positive difference with regard to participants' perceived levels of stress [$F(2, 46) = 16.09$, $p < .05$]. There was a statistically significant difference from pre-intervention ($M = 12.04$, $SD = 2.99$) to mid-intervention ($M = 9.20$, $SD = 3.12$), and from pre-intervention to post-intervention ($M = 7.79$, $SD = 3.87$). No statistically significant differences were found between mid-intervention and post-intervention.

HADS: Depression Scale

Over time, there was a statistically significant and positive difference with regard to participants' perceived levels of stress [$F(2, 46) = 9.30$, $p < .05$]. There was a statistically significant difference from pre-intervention ($M = 6.54$, $SD = 3.52$) to mid-intervention ($M = 4.87$, $SD = 2.43$), and from pre-intervention to post-intervention ($M = 3.70$, $SD = 2.78$). No statistically significant differences were found between mid-intervention and post-intervention.

Qualitative Findings From Participants

Pre-Intervention

At baseline, participants were asked several questions pertaining to their current level of stress, the impact of stress on daily life, and what they hoped to gain from the coaching sessions.

The following themes emerged from the interviews: (1) above normal stress levels; (2) health; (3) worry; (4) balance; (5) procrastination; and (6) self-awareness and coping. Table 3 will present quotations that typify participants' reports.

Above normal stress. When asked about their current level of stress, all participants described feeling very high levels of stress. Participants described that their levels of stress were above normal, such that the stress was having a negative impact on daily life.

Health. Most participants described that stress had a negative impact on their health, some describing more physiological health issues, such as those related to sleeping, eating, and physical activity, while other participants also described mental health issues.

Worry. Although it could fall within the 'health' theme above, all participants described feeling worried about all of the things that they had to do, and constantly thinking about too many things and as such, it is considered its own specific theme.

Balance. The majority of participants described not having a balance in their lives, and not being able to relax and enjoy other parts of life.

Procrastination. Most participants discussed feeling so stressed and having so much to do that instead of being motivated to complete their tasks, they instead put them aside.

Self-awareness and coping strategies. When asked what would be different at the end of the study if the coaching sessions were effective, all participants expressed a desire to gain increased self-awareness in order to understand why they react the way they do to stressors. All participants also expressed a desire to learn new and more coping strategies in order to manage and alleviate their stress.

Table 3

Quotations Supporting Themes From Pre-intervention

Above normal stress
"Well, I think I'm stressed all the time about everything…if I had to put it on a scale of like 0-10, I would probably say I'm stressed between 8-10."
"I'd say I mostly get stressed out…on a daily basis. And, I'd say it definitely affects my life a lot more than it used to."
"…It's higher than I'm comfortable with. Yes, higher than I'm comfortable with."
"I feel very stressed all the time, and I just feel like I, I can't control it. Like I, I try to, and my Mom's always like, you can't be that stressed, and I try to not like be stressed, but I just feel like it's taking over me, and then it makes me not be able to do the things I want to do."
Health
"So, it [stress] affects my sleeping habits and…because of that, it also kind of affects my eating habits. Cause…sometimes I get too tired, so I have to go take a nap, and then I nap through like a really important time…"
"Eating… I make eating a last priority because I'm so focused on trying to do other things, that I won't eat. Which might make me more stressed out because I don't have the proper fuel to maintain…a mentally stable…state I guess."
"I used to be able to go to the gym everyday, no problem, sleep no problem, eat no problem. Now, I find that…getting to the gym takes so much more effort…I definitely eat less. I had to go to the doctor recently because I was feeling really dizzy, always like pretty sick…and sleeping. I have such a hard time sleeping, especially when I know that something's wrong, I can't sleep at all."
"…I feel like it [stress] makes me more forgetful, too. You know, because…there's so much, there's more pressure to focus it on these little things, that I forget the bigger picture."
"It just like really leaves me feeling really just like negative and pessimistic really…you know, I don't really have a lot of desire to do things."
"I tend to express it…like I'll start crying because I can't handle what's going on. But it's usually I cry at home and then I come to school and then like I try to ignore it. But, then I get home and I just kind of explode a little bit."
"I feel like the inside of my body…I'm just like complete emptiness. I don't know what I'm going to do…I can't read on the page, on the paper, like my whole head is on fire. Sometimes…like my emotions just get destroyed."

"…[A]n extreme impact. I suffer from chronic migraines. So, the second that I even feel a little stressed, even if it's something that is extremely miniscule, I have the potential to have a full-blown migraine, in which case I either have to nap or turn all the lights off. And, that just increases my stress because then I can't do anything."

"[B]ut it's more of the butterflies, like something, something's just unsettling and I don't feel comfortable in my own mind, or being. Like, I just have a tummy-ache…"

"I was on the bus and just like thinking of everything that I had to do, and then I started feeling like really panicky and my heart started pounding like [gasp], started really freaking out. I was having a lot of trouble sleeping during exams and like trouble eating…I didn't really have an appetite. My stomach was hurting all the time, so I'm like thinking that it was really affecting my life."

Worry

"It's like always kind of just like weighing on the back of my mind."

"I'll constantly worry about the things I have to do, and worry about whether or not I'll finish them or not. And whether I'll be efficient enough to finish all of them in one day, or whether I might, my performance will be good enough to achieve well on the exam."

"[I'm] really stressed out about all the stuff I have to do…I guess with the new semester, there's a lot of new things you have to start up and like there's a whole bunch of emails I have to respond to, and stuff like that. And…just like thinking about all of it makes me like not want to do it. And, I don't know. I get stressed out when I have to think about…everything that I have to do."

"It [stress] just kind of consumes my thoughts. So, even though I have maybe like some time to relax, it's really not relaxed time. It's just an interval between me doing more work."

Balance

"I've lost sleep and I've also kind of lost interest in like my friends and things like that, because I feel like I just need to focus on my schoolwork."

"…[A]nd I try to not…be stressed, but I just feel like it's taking over me; and then it makes me not be able to do the things I want to do."

"A lot of the times I can't…sit down and read a book just for fun. Or like watching TV is almost impossible because I feel like I should be, like not reading for fun, like reading for school. Yeah, super guilty when I pick up a book, I'm like, this isn't a textbook. Or like going out with friends, a lot of the time I just tell them I can't cause I'm really busy. But, like, I dunno. Maybe if I do more work ahead of time I coulda gone out, but I never feel like I can."

"I used to be social, but…like I didn't really get the chance or time to go out with my friends and just have a good time, and not worry about school for like a few hours, and then come back to reality."

"…Because I feel like I am just constantly on edge, and not being able to like, during the Christmas break I would, everybody's like oh they had a great break, but for me, the first week was horrible because I felt like I, I wasn't doing anything and I felt like I was just wasting time. I feel like I just want to be able to relax and not feel that way anymore."

Procrastination

"Nothing gets done."

"…It just impedes what I do. I just procrastinate and don't get all of my work done. Cause I just build it up in my head, so that would be it. Just procrastinating and not getting on with things that I should do."

"…It kind of de-motivates, de-motivates me in everyday life, and like doing uh schoolwork, sometimes. Like I get kind of, uh, it's just, I get kind of, just like, I feel overwhelmed and then I start to do other things, and start to like, not, not, what I'm supposed to be doing."

"Because I, like, it's almost like I'm so stressed about things that I just don't do them, because I want to forget about them. So, so I don't…cause I don't want to be stressed. So, I'll just like put it off, like throw, like sweep everything under the rug."

"I tend to like switch my priorities in a way that doesn't benefit my academics or my job. Things like that. So, for example, if I have a whole bunch of things coming due and I feel really stressed about it, I might clean my house or do something like a DIY project, or something that I think is more fun but still productive. That kind of thing. But, it's not the right kind of productive… and then, when I'm really stressed, I think a lot, like dwell a lot on the things that I have to do rather than doing them."

Self-awareness and coping strategies

"If I were to say that if the Co-Active Coaching is to be helpful, I think I would function at a higher productivity…I w[ouldn't] have these kinds of breakdowns…and in other words, I would have more control over my life and I can anticipate…and plan according to my schedule."

"So, I think if it's effective, it would be…not that I'm less stressed, but that I'm…able to handle the stress more efficiently and effectively."

"I feel like I would just have a bit more control over my mind again [and] being a bit more self-aware… And like trusting myself with it, and having conversations with the coach that just support like the feelings of myself...Self-esteem and confidence in my own mind… Yeah, self-awareness. Just knowing more about myself. And like how, like why did I act the way I did, like, and, is the pessimist really me? Like, just to even find out like if that is more me than yeah. Just to find out like where my mind really is."

"I would definitely…it'd be a lot easier for me to relax. It would be better for me to just accept that I've done these things."

"I think I would just be a little more relaxed and like my mind, and not have so many bodily

symptoms. Cause sometimes I don't know I'm stressed in my mind, but then I'll like have a symptom from my body and then I'm like oh, oh I didn't even notice…so probably when things, those start calming down and going away and stuff like that, and I feel more confident in myself, I think that would probably change. I'd just feel better about myself and more relaxed."

"Just like figuring stuff out more on my own, and balance everything a little bit better."

"Maybe just…some insight into my own coping mechanisms, the way they are, like you know maybe how I deal with things is negative, it's very self-destructive. Like you know, I need to learn positive coping mechanisms."

"I think it'd be helpful to like, to know when I'm in a stressful situation, how to sort of take myself out of that, and like okay, like calm myself down. And how to get out of it as well."

Mid-Intervention and Post-Intervention

The themes for both mid- and post-intervention themes were the same for both time-periods. This is further corroborated and understood by the fact that there were no statistically significant differences between mid- and post-intervention among the quantitative data. Thus, the common themes will be presented in aggregate form to avoid repetition. The common themes were: (1) decreased and more manageable levels of stress; (2) perspectives; (3) increased self-awareness; (4) self-reliance; (5) and perspectives on coaching. The magnitude of sentiments within each theme varied by time point and as such, Tables 4 and 5 will present supplemental quotations for these themes at the mid- and post-intervention time points, respectively.

Decreased and more manageable levels of stress. At both time periods, the majority of participants reported having lower levels of stress. Some participants felt that their levels of stress were not necessarily lower, but felt that they were able to better manage their stress.

Perspectives. All participants noted being able to view their stress from a different perspective, which helped with coping and management.

Increased self-awareness. Between both time-points, all participants described that they had a better sense of their stressors and how they felt when they were stressed.

Self-reliance. Most participants mentioned that a positive attribute of the coaching sessions was that the coach was not forceful and that their coaches did not give advice; but rather, the coach acted as a guide and the answers/solutions came from the clients themselves.

Perspectives on coaching. Between both time-points, all participants expressed that the coaching sessions were a positive experience, and that the sessions were something to which they looked forward.

Table 4

Quotations Supporting Themes From Mid-Intervention

Decreased and more manageable levels of stress
"I'm able to sort of slowly ease my way through…relax myself and sort of wind myself down…it's almost like I have more control over it [stress]."
"I'd definitely say it's [stress] decreased…from the first time we met. I think [my] coping skills have gotten a lot better."
"I would say it's [stress] a bit lower than before I started because at least now I know how to control things better."
"On average, it's [my stress] been much lower than it was in the past. Now it [my stress] doesn't seem to be as much, you know. It [my stress] doesn't have a burden that it used to. So I find that I'm doing a lot better…"
"I'd describe it [my stress] as manageable. The things that used to upset me very, very easily, I'm now able to take a breath or like look at it instead of immediately getting upset."
"I think it's [my stress] lower than what it was a few weeks ago. Like, I, I have felt the effects of the stress study, or the coaching…and they have been helpful."
Perspectives
"I see it [stress] more, sort of like a road sign telling me where I am right now."
"And it's [stress management] a process, there's going to be a lot of challenges for a lot of people, but I think, to make it very, very clear how the coach helped me, is that [my coach], [my coach] didn't really change my goals, but [my coach] just helped me get to them in a more enjoyable way."
"I think it's [coaching] been helpful…my [coach] has helped me I guess sort of change my outlook on stressful situations."
"I've learned through coaching to kind of live in the now instead of living in the future, instead of worrying about something that's gonna happen in one month or two months, just living in the moment and kinda stick to that…I think [my coach] helped me kinda learn to deal with stress in a different way. Usually, I'm like very kinda like one-minded on how to do one thing, just like kinda one thing at a time, and she's taught me that there's different ways to do things."
"But, like the way I look at stress is different now…So, it [the coaching] just really like opened my eyes to a bunch of new things and changed my perspective on the problems I already thought like were there."
"I'm clear-minded about things and I'm more logical about things…it's like I have a better

thought process…"

Increased self-awareness

"I feel like there is more clarity in whatever I do…there is more awareness."

"Just that I can better understand myself, in terms of my stress, and…my emotional level and things like that."

"I think [the coaching] it's been really positive, I feel like my stress level and being able to relax has definitely got a lot better. I also feel like I've learned quite a few things, quite a few different ways to sort of re-focus myself and realize what I need to do on a daily basis, just in order to have stress be positive. And I think from working with the coach, I know more about what makes me happy and what motivates me so that I can do more of those things on a daily basis."

"I feel like [my coach] helped me realize that I am actually happy with who I am…[And] it's not like hurting me. Like, my self-esteem…like I'm nicer to myself. I take it easier on myself when I screw-up…Like, I can't always control the things that happen to me, but I can control the way that I react to it."

"[M]ore self-reflective…Like, it just made me reflect on the coaching, and my own problems…and yeah, just to grow from here and learning about myself from the stresses in my life."

"And [my coach] helped me kind of start self-reflecting, and kind of, I dunno, focusing in goals that were a little more, really what I needed but that I never addressed before…Be more, get more self-aware and that sort of stuff."

"…It's been really enlightening. [My coach] just like makes everything, makes you more aware of everything that's going on in your life…it's like an awareness."

"…Just because I guess I get kind of, you know, got to talk about things a bit more and kind of figured out myself and what's making me feel stressed."

"…I feel like I now take responsibility for that [my reaction to stressors], and I know that if I wanted to, I could not be stressed…Because I, I realize that I can, that I don't have to be [stressed]."

"And I, like understand the drivers of my stress, so what actually makes me feel stressed."

Self-reliance

"So, the coach was helping me form my own conclusions…helping me realize that all the answers, I already have…helping me ask questions that help me discover them. I thought that was a very neat approach and it's very interesting in a fun way to discover myself as well."

"…A lot of it was just me trying to figure out solutions for myself…but [my coach] like reinforced them and like led me to them, and made sure I did them consistently. So, that helped!"

"Whenever we talk [my coach] like, like I'm always the one that kind of decides what I want to be coached on that week. So, it's not [my coach] just saying, oh, we're going to talk about how to deal with stress at school this week, it's really what I want and what'll help me. So, I like that…How I kinda choose my own direction."

"Cause, I know that [my coach] knows. But, you have to discover it yourself, which can be frustrating, but I understand it. You know what I mean? Like, it all makes sense to me, but at that moment, it's like uh, huh, yeah. But, I mean, you know, and obviously it being…a Co-Active relationship, it is more beneficial because now I feel more able to handle situations on my own. And teaching my brain to come to those conclusions, right. I just think it's more sustainable. Yeah, as opposed to therapy where you're being dependent upon that right. I feel like I learned another skill."

"…One thing I like that [my coach] does is…[my coach] doesn't just tell me to go and do this certain homework or whatever like some people might. [My coach] goes, okay, this is what I was thinking based on what you were saying, that you might want to do. And then explains it to [me] and actually there's like, like okay, so are you actually interested in doing this?"

"…And [my coach is] good at like you know, listening to everything and making you focus in on like, well you know, how do you think this affects you and, [my coach will] bring it back to you. And you're the one, and [my coach is] kinda just like a guide in solving your own problems. Which is really good because it's like you know, it makes you realize that you do have all of the answers at the end of the day, and you shouldn't like feel so overwhelmed with everything in your life because, you know there are other options and other ideas, and perceptions to how you view your problems."

"I liked the ability of [my coach] to empower me to find my own answers. I really appreciated that. I feel like these coaching sessions really, really helped to empower me to find my own answers, and I really, really appreciate that."

Perspectives on coaching

"I'm just glad I made myself do it [the coaching]!"

"I'm very, very grateful. And [my coach is] very supportive so it's just like, like a really good atmosphere…I just hope [my coach] has other students in the study because [my coach] is amazing!"

"Yeah, it's really positive! [My coach is] really funny, which I like. It doesn't feel like another thing I have to do. It's more, I guess because [my coach is] funny, it seems lot more low-key, which is great. And, I like how easy it is to arrange a schedule, so I guess, thinking of times when um I'm not in the middle of a bunch of things."

"It's [the coaching] been really good…Like whenever I, it's so funny, like I get excited to talk to [my coach] …like, oh my God! I'm speaking to [my coach today]. This is so exciting. I love it!"

"It's very...open. And, I know [my coach] has my best interest in mind, and [my coach]

genuinely wants to help me deal with stress, and just get through problems or issues that I feel are really big but then [my coach] kind of brings them down to size, and then I don't feel like they're impossible to get over… the comfort level is there. I know that [my coach] won't judge me if I start discussing something that like bothers me or stresses me out."

"I feel like my coach really inspires me to like kind of find myself…it's a really good experience in my opinion."

"It [the coaching] really just opened my eyes to a bunch of new things."

"I guess it's [the coaching relationship] a positive environment. [My coach is] very supportive and…I guess it kinda raises my energy a little bit, after I go through a coaching session, cause I feel more, I guess just, I just feel a little bit more relieved."

"It's like a very, like we've developed a very strong relationship, like a very like trusting, honest, relationship. You know at the end of the session I feel very good about things we talked about and you know she gives me challenges, or, something to work on. I get really excited about like applying that to my life…It's been a very, like a very positive experience. Like I enjoy it a lot!"

"I always look forward to it [the coaching], and I always find that you know, right after I just feel great! I just feel energized. I feel like I can take on the day!"

Table 5

Quotations Supporting Themes From Post-Intervention

Decreased and more manageable levels of stress
"I would say I would be, amazingly, at a zero [my stress level]…My stress level has always, I guess, it's been a lot lower compared to the previous meetings."
"I would say it's [my level of stress] a lot lower… I think it, I learned how to handle it [my stress level] more and like sort of use it more as a motivational thing to get my work done…so definitely just like the change in how I cope and use stress, I guess, has changed throughout it."
"Zero…Like…I'm not stressed about anything…I am so much better at handling things. Like I'm more mature about things. I don't really let things bother me, and I feel like I find it easier to take initiative and…like control over my own life."
"I would say it's [my level of stress] not too bad, especially with exams coming up. I've learned how to kinda deal with what I have to do, so I'm not as stressed as I normally am…No, I'm just really happy that it's uh, more manageable than it used to be."
"Yeah, despite the fact that I'm in exams…I'm not feeling any stress."
"…I had finals and I definitely felt a lot less stressed towards my finals than I normally feel towards my exams."
"Currently, I'm feeling pretty good, even though I have like a ridiculously hectic week coming up with four exams…and like this big research project today. Normally I would be a lot more stressed than I am."
"I'd say it's [my level of stress] fairly low. Even though exams are coming up, I feel that I am better able to manage my stress now, as opposed to, um, three months ago when I started this, um, coaching session, program thing."
"I actually yeah, I found like quite a big difference just in terms of…just recently, I have a lot of projects, and exams, and things like that. And I felt like…I'm pretty sure it's like a result of the coaching."
Perspectives
"And I guess my perspective on, on stress changed, because before when I was paralyzed, I saw fear and something that was inherently bad and I had to get rid of entirely in my life. But now, I see stress more as something um that is neutral and that should be managed, and can be good and bad in different amounts."
"It [the coaching sessions] kinda gave me a time away from my schoolwork, to reflect and to figure out what was going right, what was going wrong, and it was good…So, I just completely changed my perspective so that I wasn't giving myself more stress, I was kinda just breaking it

down, doing smaller things, and that way kinda avoided the whole overwhelming breakdown, so, that was probably the best and the most efficient thing that worked."

"Definitely seeing things that I can't control or just the way a day goes, being able to look at in a different perspective. Seeing it as more of a challenge, like that's what I learned from the coaching. And seeing it as a challenge has made it so much less of a stress. Now I see it way more of like something that I can overcome…I can overcome this, I got this!"

"…So just changing my perspective, seeing it [my stress] from different sides. And I found that really cool, like I would hear myself talking and in my mind being, wow, I've never even thought about it like this."

"…Like the coaching definitely gave me a lot of mechanisms and ways to like look at the situation so that I don't stress myself out."

"I felt like my attitude towards it [my stress] has definitely changed, and I felt that, like it's [the coaching] really had a big impact on my life."

"…I stopped panicking…and like now my perspective has shifted…It surprised me that I was even able to shift my perspective."

"I think [my coach] definitely gave me a different perspective to look at stress. And so that really helped me, because I look at stress, for example, like, stress for me is just so threatening and so like you know, it will give me anxiety, and it's so negative…[and now I can] think of it as a challenge or something that you can overcome and kind of like, a goal instead."

Increased self-awareness

"…At times, at first, it [the coaching] sort of took my attention away from the problem and sort of uh, brought more awareness to myself. To let myself know that I am in stress. And that I should do something about it. And, I guess that brought me a lot of insight to me, because before I didn't even…know that I was in such a state."

"So the fact that like I'm making a difference right now to my life, is something huge."

"…Just realizing that I'm stressed and where the stress is coming from….So I think by me being able to identify where the stress is in my life, then it's easier for me to control and um reduce that stress."

"…Now, I've been able to kind of separate myself, you know, from all the stressors that are going on, knowing that they are outside of my control, and that's made things a lot better… I've been able to take myself out of those stressful situations almost, and know that they aren't a part of me."

"The study has shown me kind of more that stress is temporary and that yes, it's gonna be tough, but that, really, it's shown me I guess the value of social support of being able to talk to someone, and really kind of see, and be more self-aware of how I'm handling stress or not

handling stress well. So yes, I'm still having trouble with stress, but it's, I'm definitely more aware of it. I'm definitely working towards…being more in control as I'm more able to um feel it coming on. And be, just yeah, I guess just an overall more self-awareness towards stress."

"[The coaching sessions] were mostly focused on personal development…So that contributed to my ability to manage stress more effectively, cause I just had less negative feelings associated with feeling stress or um being under stress…It was kind of like finding the root cause of the stress in a way."

Self-reliance

"It was fun to have the challenge [of coming up with my own answers and topics] because after all, it is my decision to go in any way, in any direction that I wanted. I guess it was fun…to set the topic and set the goal for each call."

"[My coach] definitely made me it more about me, than about like her telling me what to do, which I really, really liked. We came up with strategies together, kind of came up with different things to do together so that we weren't, I dunno, so that, I just feel really comfortable with the fact that [my coach] explained to me like what I could be doing and made me find my own answers, rather than her telling me answers."

"But they [the coach] can't tell you like that. You know what I mean? They [the coach] need to make you figure it out for yourself. You know? They'll [the coach] teach you through metaphors, you know, what would you, what would you say to your daughters, your future daughter if she was in this situation? You know and stuff like that so they make you find out for yourself and you know…it is a little tough when you're really stressed out and you need some help. But after each session I'm always like thankful for that aspect of it because now that the coaching is over, I have those tools and they're mine, you know it's not just like something that someone told me and I wrote down…You know, I came up with them myself, I figured out what works best for me, and I think I like that model because it's not like therapy where you're kind of dependent upon the session for however long, right?"

"Instead of being like you know, you're wrong, do it my way! [My coach] was also very, you know left me to be very accountable, so you know like if I wanted to do something, that was my choice. Like, even if it was something that maybe [my coach] suggested, [my coach] never pressured me to do things. [My coach] never pressured me to get things done. It was always on me."

"[My coach] kind of like helps you find the answer yourself."

Perspectives on coaching

"It [the coaching] was a very, very pleasant experience. The other day I was thinking about it and I thought to myself, when I signed up for the program, I was, I was having the thought of why not? And now I definitely thought it was one of the better choices I made in my life!"

"I think we worked well together. It was fun…and I think that [my coach] was able to understand my personality-type and I think it was just like an effective, positive experience."

"It [the coaching] was amazing! I loved going to see [my coach] every week. [My coach] was so helpful…and I was so sad to be ending with [my coach], our last session was bittersweet!"

"It [the coaching] was really great! I knew that after the first time we talked that it was a good match, and I really looked forward to our conversations."

"It [the coaching] was great. Yeah [my coach] made me feel really comfortable and I liked that. [My coach] was funny…there was definitely some comedy involved in our sessions, which I really appreciated especially when I was stressed out going into session you know? And I just feel like I could talk to [my coach] about, you know, whatever was going on, or whatever was stressing me out. You know what, I need help, you know learning how to deal with [stress]."

"I think that we just developed a like really good bond, and that was really pivotal for me to kind of open up and really give myself to it, to get the best result."

"I loved it! I loved the study! I'm really happy that I responded to the email…it was fun getting involved in it, the whole experience…And it's always like, at the very end of the, the session, there's always like a really good, I come out with like a really good feelings about having like discussed everything."

"And half the time I wouldn't know what to say and I felt like it was really awkward. But then, as time progressed I think I got more used to my coach, more like open about like everything we talked about and I really felt like it [the coaching] really had a good impact on my life in general so I really enjoyed working with my coach….I felt that it's really had a big impact on my life."

"It [the coaching] was amazing. I loved [my coach]…I felt like I could get along with her and I felt like she would understand me and I could understand like where [my coach was] coming from. And, it made me love myself more because I was like, wow I'm like, I'm really special…It was really, really, really good. And like I miss [my coach]."

"I mean I would say like it's been you know for the most part pretty effective… I definitely think that I've taken away some like you know meaningful things from it and I was able to build like you know a great relationship with [my coach]. And I didn't feel like I was talking to like you know like a therapist or anything. Like, I felt like [my coach] was somebody that I had known for a long time, and so it's very easy to open up to [my coach]."

"It [the coaching] was very enjoyable! I always looked forward to our phone calls and I always felt quite motivated after. It was really just a delight to work with [my coach]."

"I loved [my coach]…I ended up like falling in love with [my coach - joke]! And like, I feel like I have like a relationship with [my coach]. Like [my coach] understands me. And I loved talking to [my coach]…[My coach] helped me work through a lot of things and like I noticed within about three weeks of talking to [my coach] like on our third session. I was like high on life!"

Coaches' Perspectives

Coaches were interviewed by the researcher post-intervention to garner a first-hand experience from them, pertaining to what it was like to work with this age group and what the experience was like utilizing the CALC model for the subject area of stress. The following themes emerged from the interview transcripts and will be corroborated via excerpts from the transcriptions: (1) client development; (2) CALC model is effective; (3) dancing in the moment, championing, and acknowledgments; (4) and being mindful. Table 6 will include quotations illustrative of these themes.

Client development. Coaches voiced the importance of working with their clients, due to the specific age group. Coaches cited that because the clients were students between the ages of 17-24 years, this was a crucial time for personal growth and development. Thus, the students that sought help were learning skills that would help with future development; and help with attaining future goals. Coaches explained that not only did they view this as being important, but it was a sentiment expressed to them by their clients/study participants.

CALC model is effective. Coaches were asked to describe their experience utilizing the Co-Active Coaching model for the topic area of stress with this study's age cohort. It was reported that the CALC model, in its entirety, was very effective. Coaches did not voice any concerns with regard to certain CALC tools or parts of the model being ineffective for the age group and/or topic area. The coaches discussed that the model had many tools and cornerstones to work with, and that made it easy to use the tools in unison.

Dancing in the moment, championing, and acknowledgements. Although coaches expressed using the CALC model in its entirety without any difficulties, coaches emphasized that Dancing In The Moment (one of the cornerstones of the CALC model; being with the client

where they are in the present and going with the client where he/she wants to go in the sessions), championing (encouragements), acknowledgements (recognition) were very important tools.

Being mindful. After a thorough discussion with the coaches about what it was like to work with a student population, the coaches described that the experience was positive in nature. All coaches stated that the coaching sessions were "fun" and that the clients were very open to being "playful" and really exploring themselves and the coaching model. The one important challenge that came up, however, was that the clients – being university students – were very busy. Thus, the coaches all described having to be really open and flexible with schedules, and realizing that for students, unexpected things (such as homework or assignments) can arise. The coaches discussed that because of the clients' busy lives, coaches tried to be aware so as not to make the sessions feel like a "burden" or "one other thing on top of everything else."

Table 6

Quotations Supporting Themes From Coaches

Client development
"It's very good, I enjoyed working with this population…what is exciting for me is that they are at an age, it's a great age to be able to really get conscious about your life and about the choices that you're making and to gain that awareness from any, it's just, it's that in-and-of itself is a very new experience because they may have been recently with, you know, sitting at home. There's just lots of new stuff going on in their life and so it's a time, I think of maturity, too, where people are getting to a point where they're starting to figure out who they are, and what they want to do, and how they, who they wanna be. So, working with this age group is really a lot of fun."
"I would also say that of my two clients it was such a strong commitment to their own development. They really struck me as life-learners at the beginning of that journey. And, just a real sense of integrity, responsibility, ownership, that was very interesting."
"So, my initial thought was that we might be looking more at what's going on at school courses, choices of where they're specializing and all that stuff. But, in reality, it was some of that but it sometimes was more… So it wasn't, it wasn't always about school. So coaching really was where the person was on the call and what they were bringing, what they desired to bring to the call, which was interesting… Yeah, what they brought to the call was who they were. And who they were, were no longer teenagers. That being in school, and stepping in and accepting all of the realities of that, they had to be more mature, and sometimes it was like, I'm not very mature about this, or you know, this doesn't quite work for me anymore…[The] coaching for, for both clients at the end was perhaps what is it like being a young adult…That was a really fun element of looking to the future, and being who you are, which isn't what you were yesterday."
"…[R]eally heartening to see how they want to learn tools and, um, find ways, skills and tools to better manage their lives."
"Working with young people, you're especially able to shape them with some fundamentals, and how to use their minds…these are lessons that as they become aware, I truly believe will carry them for the rest of their lives."
CALC model is effective
"The Co-Active model will manage the coach and client, on any call. And, for the coach, yeah, go back and review those aspects of Co-Active model!"
"Have fun with it. And trust the model. Just trust the model, because it works."
"So, was I in the four corners? Absolutely. Are they naturally creative resourceful and whole? Absolutely. Did I tell them what to do? No. Did, did they figure out their own solutions? Absolutely. Did I dance with them? Yes. Did I focus on them as a whole person? Yes. So all of that was present. Were there transformations? Absolutely. And the whole purpose of closing

from the place of reflecting was still, it was still acting on that, whole transformation. So what were they learning and what are they taking with, with them, what are they going to do with it. So, that they are owning their own learning. They are connecting with the shifts that they've made. They're connecting with the perspective they're now in, and that capability they've now discovered, and their resources. It's nothing that anybody did for them or to them, its what they created for themselves, so all of the tools were used in order for them to get there."

Dancing in the moment, championing, and acknowledgements

"You know… it always related to the client and what works for them. So that's really going back to, you know, dancing in the moment, and their agenda being what drives the coaching."

"Basically just going with what shows up, you know throughout the coaching was very helpful."

"I come back to championing. I mean these, and I'm using the word kids, these kids, don't get a lot of championing. You know when you're one of [hundreds] sitting in an auditorium, who's there to champion you, right?"

"Acknowledgements was a huge thing! Being acknowledged and also acknowledging themselves. That was very powerful…The tendency with all my clients is to accomplish something and then run away from the actual acknowledging and breathing in the acknowledgement of who you needed to be in order to make that happen. We're always on to the next thing, so it was about getting them grounded in the acknowledgment. Which was a powerful tool, because they weren't used to it. Especially acknowledging themselves and celebrating who they are."

Being mindful

"Making requests…I really had to watch that on several levels. Making a request of a student who's already in overload, overwhelmed with projects that keep coming up…I needed to make sure that their requests were honestly accepted."

"I think it's really important to, I think that coaches need to be mindful of the fact that when people are in, especially this age group, but in general are in that place of feeling really overwhelmed that even though this is a good thing, and could benefit them, it can be really stressful to add it to their plate. So it can feel like it's one more thing and so asking the student to make a lot of accommodations to kinda fit the coach's schedule, may be a place where things break down. I think that working with people who have stress and mental health challenges, in a coaching capacity, means the coach needs to be ready to, to have a lot of flexibility or to be able to really hear what the individual's constraints are and sort of design that together. Because it, it, it could break down right there. If, you know, if it's just too stressful trying to figure out the meeting schedule, or it's too stressful, it feels like another burden that they have to somehow take on, doing something else. That overwhelm like that can really be impactful for them."

Chapter VI: Discussion

The purpose of this semester-long pilot study was to assess the impact of MI-via-CALC on the stress management of 30 full-time, English-speaking undergraduate students at Western University. Thorough quantitative and qualitative analyses have demonstrated that the MI-via-CALC intervention employed in this study had a positive impact on the participants with regard to participants' perceived levels of stress. Several findings from the study are worth discussing in greater detail.

The primary finding from the study was that of statistically significant differences on each of the stress-related quantitative scales utilized in the study. For the PSS, a statistically significant difference, in a favourable direction, was found over time. This finding is intriguing, and was something that was also consistent with the qualitative analyses. During semi-structured interviews at both mid- and post-intervention, the same themes were brought up by the participants, speaking to fact that not a lot of change had occurred during the fourth and final coaching sessions. Evidently, the biggest changes occurred during the initial coaching sessions until the middle of the intervention, and was maintained until the end of the sessions. Findings such as this have been apparent in other MI-via-CALC studies where participants quantitatively displayed a positive change over time, as well as displaying consistent qualitative themes about improved stress management between two different time-periods (Mantler et al., 2010). For instance, in Mantler et al.'s smoking cessation study (2010), participants demonstrated a positive shift in levels of stress, which was illustrated by increases in self-esteem and self-efficacy, which are constructs reflecting experiences of stress (Abouserie, 1994; Brown, 1996; Emil, 2003; Hackett & Betz, 1989; Lent et al., 1984; Lyrakos, 2012; Steele et al., 1993; Zimmerman, 2000; Zuckerman, 1989). Qualitatively, participants also noted a greater sense of self-awareness, as

well as noting the acquisition of coping skills for stress, which was reported as the main trigger for smoking (Mantler et al., 2010). Previous MI-via-CALC studies, not specifically targeting stress, have also resulted in positive improvements in participants' stress experiences, where stress was seen as a core issue for some of their other health-behaviour challenges (Newnham-Kanas et al., 2008; Newnham-Kanas et al., 2011; Newnham-Kanas et al., 2011; Pearson et al., 2012; Pearson et al., 2013; van Zandvoort et al., 2008). For instance, improvements in self-esteem and self-efficacy were found (Newnham-Kanas et al., 2008; Newnham-Kanas et al., 2011; Newnham-Kanas et al., 2011; Pearson et al., 2012; Pearson et al., 2013; van Zandvoort et al., 2008), and the constructs of self-esteem and self-efficacy have been linked with stress (Abouserie, 1994; Brown, 1996; Emil, 2003; Hackett & Betz, 1989; Lent et al., 1984; Lyrakos, 2012; Steele et al., 1993; Zimmerman, 2000; Zuckerman, 1989). Together with the current study's finding, the culmination of results might suggest that MI-via-CALC is an effective intervention for targeting stress as a root contributor challenging healthy behavioural choices. With regard to other stress reduction studies, results were indicative that regardless of the intervention, over time, any type of stress management has positive affects on the participants (Bell, 2009; Carmody & Baer, 2008; Chiesa & Serretti, 2009; Chinaveh et al., 2010; Deckro et al., 2002; Eberth & Sedlmeier, 2012; Galbraith & Brown, 2011; Milligan, 2006; Oman et al., 2008; Redwood & Pollak, 2007; Roberts & Danoff-Burg, 2010; Schure et al., 2008; Simard & Henry, 2009; Woolery et al., 2004). However, what sets the current MI-via-CALC study apart from the other stress reduction studies, is that those studies were focused on stress reduction strategies, and these strategies do not attempt to the change the source of the stress (Clark, Hemsley, & Nason-Clark, 1987; Cosden & McNamara, 1997; Lyrakos, 2012). The intention of the current MI-via-CALC study was to help participants recognize and comprehend the sources

of their stress, in addition to providing a source of stress management (i.e. participants noted a greater understanding and self-awareness with regard to their stressors, and because of that, were able to better manage their stress response, as well as engage in activities that helped to reduce stress).

Although the focus of this study was on stress, the HADS, which assesses anxiety and depression, was also administered given the link between and among stress, anxiety, and depression (CAMH, 2010; Magalhaes et al., 2010). Interestingly, participants in the study did mention and use stress and anxiety interchangeably, sometimes in the semi-structured interviews and sometimes candidly. Depression was not often brought up in conversations with the participants. This is corroborated in the scores of the scales: participants tended to have higher scores on the PSS and HADS anxiety scales, and much lower scores on the HADS depression scale. This finding corroborates the link between stress and anxiety (CAMH, 2010; Magalhaes et al., 2010) and speaks to the nature of the study, in that participants were indeed identifying as being stressed and anxious. Additionally, all scores decreased at the same time points, and each scale (over time) produced a tidy set of patterns. This finding once again suggests that stress and anxiety are linked (CAMH, 2010; Magalhaes et al., 2010). Further research on the effects of coaching in this subject area, and additional research is required in order to distinguish whether or not the intervention is appropriate for stress on its own, or is also appropriate for anxiety, as the current study results suggest.

While not a finding per se, the fact that the majority of participants in the study were female is something worth noting. With respect to the total number of people that contacted the researcher expressing interest in the study (246), 72% were female. This finding is corroborated through information pertaining to females experiencing (or at least admitting to) higher rates of

stress versus males (APA, 2010; Statistics Canada, 2012), and posits that the current study had a high probability of being comprised of mostly females. Due to this, the researcher is interested in conducting further research that is more representative of both sexes.

Limitations and Future Implications

There were several limitations that were apparent in this study. An exploration of these limitations must be considered, and married with suggestions that may be utilized for future research. The first limitations of the study were the potential for self-selection bias inherent in all research studies (i.e., it is not possible to assess how those who agreed to participate differ from those who did not respond to the recruitment ad), and more concerning in this study was the *lack of a control/comparison group*. In order to provide sound evidence, it is imperative to have a control/comparison group. However, previous studies using the MI-via-CALC approach that attempted to have a control group were unsuccessful, such that there was a 70% attrition rate (Mantler et al., 2010). It was the intention of this research project to include a wait list control group, which was done in a study by Mantler et al. (under review), and demonstrated efficacious results. Additionally, control groups are the gold standard in research. It was brought to the attention of the research team that having a wait list control group may act as a catalyst for harm and risk to the participants. Through discussions among the research team and members of the university's Office of Research Ethics, it was agreed to omit the wait list control group and instead utilize a one-group pre-post study design. Therefore, in addition to the research team's previous experience with high attrition rates in the control group of an MI-via-CALC study, it was determined that ethically, a wait list control group would also be unsustainable as individuals would be required to wait for the intervention, and this could have possibly created safety issues. As such, ethical approval was granted for the current study as a pre-post

intervention study only. However, during the semi-structured interviews, participants were asked to describe challenges that arose for them during the study, and not one participant cited having any distress while answering the questionnaires or during the interviews (or throughout the rest of the study). Thus, it is the research team's desire to include a control group in future studies based on the current findings, in order to provide more rigorous research results.

One limitation of the study was the *consistency* of coaching that was received among the participants. Although efforts were made to reduce the number of coaches in the study and to ensure consistent skill-sets (each coach was required to be a CPCC), logistics in terms of the number of participants each coach could accept into his or her practice resulted in more coaches than ideal. As such, due to human variability, it is possible that there were some meaningful differences in the provision of coaching that may have impacted the experiences of the participants. It is also important to examine this limitation from the perspective of the participants. While in some regard the coaching intervention provided a very real-world experiment, in that participants were able to schedule the coaching calls whenever it suited him/her best and talk about what he/she need to talk about, there were inherent flaws with this technique. Participants were urged to have two coaching sessions per month over the period of the study (four months, January to April, 2014). This was to be done in order to provide some level of consistency of the coaching sessions among participants. However, this was something that did not occur. This lack of consistency in the coaching was reportedly due to participants' busy schedules. Not many challenges were noted in the semi-structured interviews, but the one challenge that arose for both the student participants and the coaches was that rescheduling occurred on multiple occasions due to school projects and exams. Because of this, participants did not finish the coaching intervention at the same time – in fact, the end times were rather

staggering, with several participants finishing at the end of March 2014, several finishing at various times in April, and several participants ending in mid-May, 2014. Participants were aware of this, and noted this in the semi-structured interviews by mentioning the possibility of their stress levels being correlated to their current environment (i.e. three participants mentioned that their lowered levels of stress may have been due to the fact that they were finished exams and had commenced summer vacation). This limitation may not have had a profound impact on the study results (with respect to both coach variability and participant-driven inconsistencies), as participants were fairly descriptive of how their levels of stress had altered due to the coaching. But, with respect to the quantitative rigor and validity of the study, this is something that should be considered for future studies. The research team suggests putting more stringent guidelines in place for participants in future research studies, such that coaching sessions need to be completed by a specific time period, in hopes that there will be more consistency among the start and end time of the coaching sessions.

Building on the above limitation regarding consistency of the coaching, participants in the study received the coaching intervention through various methods. That is to say, participants did not all receive coaching via the telephone, which was the intended method of delivery for the intervention. Instead, participants utilized several methods such as Skype, telephone, and in-person coaching. Because participants received coaching in several different forms, as opposed to a uniform method of delivery, this presents itself as a limitation of the study. In one respect, the varied methods of intervention delivery presented a very real-world experience for the participants, in that participants were able to get the most out of the study by being able to use methods that were appropriate for their lives and schedules. However, with regard to the rigidity of the study and observing the impacts of the coaching intervention on the participants' levels of

stress, it is important that the intervention be delivered in the same manner to every participant. Based on the qualitative data from the semi-structured interviews, it seems that the various methods of intervention delivery were non-issues with regard to facilitating different results. Nonetheless, it is important to consider this factor for future research studies, and the researcher suggests future studies either implement more rigid structures in place to ensure only one method of delivery, or purposefully assign participants to various methods of delivery and assess associated differences.

Further addressing the delivery method(s) of the coaching intervention, an interesting point to consider is whether or not the coaches fully adhered to the study guidelines, by only using their CALC coaching tools. While coaches were asked to use only their CALC training in order to ensure that participants were receiving the same intervention, a fidelity assessment was not conducted due to the confidential nature of the intervention, and is thus recommended for a future study.

Although it is not an inherent limitation in the current study, *long-term of effects* of the study intervention must be considered. It is crucial to understand the longer-term impacts of MI-via-CALC on participants suffering from stress, and if the coping skills gained in the current study are something that will be carried forward into the future. Thus, the research team has received ethical approval to collect data from the current study population in September 2014 to assess the longer-term (four-months post-intervention) impacts of the MI-via-CALC intervention on the stress management habits of the participants. The research team would also like to conduct studies over a longer period of time, such as an entire academic school-year (versus one semester).

As this was a pilot study, it was crucial to understand the reasoning behind dropouts to determine if the attrition rate was a result of the context of study design, or if it was with regard to another element. The attrition rate for the study was 20%, with six participants dropping out of the study. With the exception of the one participant who had to drop out due a family emergency, the researcher hypothesizes that these participants were less ready to make changes to their lives and habits, than they originally perceived when signing up for the study, and readiness to change is a critical component of behaviour change (Prochaska & DiClemente, 1983; Westra, 2012). In addition to this, participants were randomly matched with coaches rather than interviewing and choosing their own, and typically, clients meet with several coaches to ensure the best match (Kimsey-House et al., 2011). The random coach-client assignment may have resulted in a less-than-ideal match of personalities, which also could have led to participants dropping out from the study. Regardless of the six dropouts, the study was still able to achieve statistical power.

Another element of interest is with regard to *biological verifiers*. In the current MI-via-CALC study, stress was only measured by self-reported methods, due to the fact that this study was rooted in the belief that stress is a perception. However, according to an analysis on the psychometric properties of the PSS (E. Lee, 2012) future studies may include the use of biological verifiers, such as cortisol, as a criterion variable (E. Lee, 2012; van Eck & Nicolson, 1994) to more accurately measure stress, and in order to overcome the weaknesses of the criterion validity of the PSS. Future research studies are warranted using an MI-via-CALC intervention in this subject area, as well as with the same methods of the current study, in order to assess the validity of the intervention and assess whether or not findings were similar, in order to deduce if additional measures are needed for research of this nature. On another note, stress has a physical implication on the body, and thus biological verifiers might be something to

consider in future studies, if feasible (i.e. would participants be willing to provide biological samples), in order to provide additional evidence and understanding of the efficacy of the intervention with regard to stress levels and stress management.

With consideration to the limitations noted above, the current pilot study proved promising. The statistically significant results of the quantitative analyses along with the qualitative findings about participants' positive experiences of being in the intervention are indicative of the beneficial nature of an MI-via-CALC intervention for university students suffering from stress. Thus, this should be an avenue that is explored further in larger-scale and longer-term research studies. Eventually, it is anticipated that evidence-based recommendations will be made to integrate MI-via-CALC on a larger scale, such that students would be able to access a coach as a part of university-offered services.

Conclusions

The findings from this pilot study provide the foundation to conclude that the MI-via-CALC intervention had a positive impact on participants' levels of perceived stress and anxiety. Going forward, further research needs to be done on a larger sample size, and in other environments, in order to provide more sound conclusions on the utility of MI-via-CALC as a tool for students' stress management.

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Appendix A

Email Script for Recruitment

Subject Line: Stress Study! Invitation to participate in research

You are being invited to participate in a study that we, Rebecca Fried and Dr. Jennifer Irwin, are conducting at Western University (London, Ontario, Canada). Briefly, the study involves undergraduate university students who are struggling with stress working over-the-phone with a Certified Professional Co-Active Life Coach (CPCC) for up to 8 one-on-one coaching sessions. The coaching sessions will occur at a time that is mutually convenient for you and your coach. The study will last for one academic term, beginning January 2014, and running until April 2014. If you are currently suffering from **stress and are not currently receiving any counselling or treatment (such as medication)** and would like the opportunity to work with a coach, then the researchers would be interested in your participation. As a participant you will complete several questionnaires and interviews with the researchers in person or over-the-phone in order to observe the effects of the coaching sessions in relation to stress.
If you would like more information on this study or would like to receive a letter of information about this study please contact the researcher at the contact information given below.

Thank you very much for your consideration.

--
Rebecca Fried
BHSc (Specialization in Health Sciences)
MSc student, Health & Rehabilitation Sciences - Health Promotion
Western University
London, Ontario, Canada
email
xxx-xxx-xxxx

Dr. Jennifer Irwin
Ph.D., School of Health Studies, Faculty of Health Sciences
Western University
London, Ontario, Canada
email
xxx-xxx-xxxx ext. xxxxx

Appendix B

Western HealthSciences

Letter of Information for Participants

Study Title: Calmly Coping: A Motivational Interviewing via Co-Active Life Coaching (MI-via-CALC) Intervention for University Students Suffering From Stress

Principal Investigator
Dr. Jennifer Irwin, PhD
Associate Professor, Faculty of Health Sciences, Western University, London, Ontario
Phone: (xxx) xxx-xxxx ext. xxxxx
Email: *email*

Co-investigator
Rebecca Fried, MSc Candidate
Health & Rehabilitation Sciences, Western University, London, Ontario
Phone: (xxx) xxx-xxxx
Email: *email*

Purpose of the study

You are being invited to participate in a research project being conducted by researchers from Western University. The purpose of this project is to explore stress among full-time, English-speaking students, between the ages of 17-24. Investigators from Western University are conducting research to determine the effectiveness of Co-Active Coaching and Motivational Interviewing (MI-via-CALC) for alleviating and managing stress. If you are a student who believes he/she is suffering from stress, the researcher would like you to participate in the study. There will be a total of 15 participants.

What will I have to do if I choose to take part?

If you agree to participate, you will receive up to eight one-on-one coaching with a Certified Co-Active Life Coach (CPCC) who has been successfully taught the techniques of Co-Active Life Coaching. The foundation of the Co-active Coaching method is that participants have the answers to their own questions and the coach helps them to access these answers through the use of a variety of techniques. As a participant, you will be requested to attend a one-hour meeting to complete a twenty-minute one-on-one interview with the researcher, and several questionnaires (requiring approximately 15 minutes each). You will also be required to fill out questionnaires and complete a one-on-one interview with the researcher at the middle and end of the study. The study will run until you have completed your 8 coaching sessions. The purpose of the study is to determine if Motivational Interviewing and Co-Active life Coaching (MI-via-CALC) is an effective method to help students alleviate and manage stress.

Are there any risks or discomforts?

There are no known risks to participating in this project. However, some of the topics that surface during your coaching sessions may pertain to sensitive topics, and you may experience some discomfort answering some of these questions. You are not required to answer any questions that you feel uncomfortable answering. This will also be explained to you with your coach, with whom you will develop a designed alliance on which topics may or may not be discussed in your coaching sessions. In the case that you do experience distress from answering some of the questions, we (the coach and/or the researcher) will provide you with a list of resources for various health, counselling, and educational agencies within your community that you may need.

What Are The Benefits of Participating?

There are possible benefits to you associated with your participation in this project. By participating in this project, you are assisting others to better understand how Motivational Interviewing and Co-Active Life Coaching techniques can be utilized to alleviate and manage stress. Collected data may be presented to others through publications, journals, conferences, and meetings – all information, however, will be presented in aggregate form, and information will not be able to personally identify participants. Your participation may also help influence the services, programs, and policies related to university students with regard to stress and mental health. You may not, however, benefit personally from the study.

Cost & Compensation

There is no cost to you for participating in the study, and there will be no compensation. When the results of the study are published, your name will not be used. If you would like to receive a copy of the overall results of the study, please put your name on a blank piece of paper and give it to the researcher.

What happens to the information that I tell you?

The interviews between you and the researcher will be audio-recorded. If you request that the interview is not audio-recorded, notes will be taken by hand, which will later be typed out and stored digitally. If you agree to have the interview audio-recorded, these files will be stored digitally. What you say on the recording will be typed out verbatim. The only people who will listen to the recordings will be the researchers, and the recordings will be destroyed once they are transcribed and analyzed. To protect your identity, only pseudonyms will be used to identify recordings, transcripts of the recordings, and notes from the interview. These digital files will be password protected through encryption. Hard copies of the consent form and questionnaire will be stored in a locked cabinet in a secure office at Western University.

Confidential nature of this study:

Your participation in this study is strictly confidential and will not be disclosed to anyone **except** when the law requires reporting.

With your permission, the information you share may be presented to others through journals, publications, and at conferences and meetings in order to both increase awareness of this topic and to help institute mental health promotion initiatives in university communities. If the results of the study are published, your names will not be used and no information that discloses your identity will be released or published without your permission.

Representatives of the Western University Health Sciences Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

Other Information about this Study:

Participation in this study is entirely voluntary. This means that you may refuse to participate, refuse to answer any questions, or withdraw from the study at any time. If you do drop out of the study, any information that you have provided may still be used in the research findings. You do not have to answer any questions on the form or in the interview. You do not have to talk about anything in the interview if you do not want to. Being in this study or dropping out will not affect you in any way.

If you have any questions or require additional information, please telephone **Rebecca Fried at (xxx) xxx-xxxx**. If you have any questions about the conduct of this study or your rights as a research participant you may contact the Office of Research Ethics, University of Western Ontario at (xxx) xxx-xxxx, or by email at: *email*

This letter is for you to keep.

Appendix C

Western HealthSciences

Consent Form

Project Title: Calmly Coping: A Motivational Interviewing via Co-Active Life Coaching (MI-via-CALC) Intervention for University Students Suffering From Stress

Study Investigator's Name: Dr. Jennifer Irwin & Rebecca Fried

I have read the letter of information, and I have had the nature of this study explained to me. I have been afforded the opportunity to ask questions and seek clarification. All questions have been clarified and answered to my satisfaction. I agree to participate.

*The research team will keep your identity, comments, written data, and questionnaire responses confidential and secure. No names or means of personal identification will appear on any documents published as a result of this study – all results will be presented in aggregate form.

Representatives of Western University's Health Sciences Research Ethics Board may require access to your study-related records or may follow up with you to monitor the conduct of the research.

Participant's Name (please print): _____

Participant's Signature: _____

Date: _____

Person Obtaining Informed Consent (please print): _____

Signature: _____

Date: _____

Appendix D – Demographic Questionnaire

Dear participant,

Please answer the following questions as honestly as possible. The following information will not be presented and/or shared with anyone outside of the research team. Therefore, it is to your benefit to please answer honestly. Thank you!

1) Do you speak English proficiently? YES / NO

2) a) First and last name:

2) b) Age:

3) Gender/how do you identify yourself? Male, female, other

4) Are you an undergraduate or graduate student?

5) Current year of enrollment

6) I am currently a full-time student: YES / NO

7) How many courses are you taking?

8) On a scale of 1-10, 1 being the lowest and 10 being the highest, how would you rate your level of stress?

9) I am not receiving other treatments or counselling that may interfere with this study: YES / NO

Appendix E

Email Script for Recruitment

Subject Line: Coaching For A Stress Study! Invitation to participate in research

Dear Coach,
You are being invited to participate as a volunteer CPCC in a research study that we, Rebecca Fried and Dr. Jennifer Irwin from Western University (London, Ontario, Canada), are conducting. Briefly, the study involves working over-the-phone with undergraduate university students that are students from Western University, who are suffering from stress. You will work with a client for up to 8 one-on-one coaching sessions. The coaching sessions will occur at a time that is mutually convenient for you and your student-client. We would ask that each volunteer coach take between one and three clients each. We aim to have the CPCCs on board to begin coaching in January 2014, with the study/coaching ending in April 2014.
Although we do not have any funding for the study to acknowledge our appreciation your contributions, there are several benefits to coaching for this study, including the participants may decide to continue on with coaching after the study which would then become between you and the participant. Additionally, there will be students who do not enroll in the study, but who may request contact information for a coach, and coaches in this study would have the opportunity to have their names put forth. Coaching for this study would also offer you the opportunity to expand your business to a demographic previously unknown to you.
Our (Rebecca and Jennifer) involvement in the coaching is limited to requiring notification if a participant misses a coaching session, or if you feel the match between you and your student-client is not suitable. Other than that, we will have no involvement in the coaching sessions.
If you are currently a Certified Professional Co-Active Coach (CPCC) and would like the opportunity to volunteer your services, then the researchers would be interested in your potential participation. As a participant you will have several check-in phone calls with the researcher, and will complete an interview with the researchers once the study is over – in person or over-the-phone – in order to provide your insights and feedback regarding the effects of the coaching sessions in relation to stress.
If you would like more information on this study or would like to receive a letter of information about this study please contact the researcher at the contact information given below.
Thank you very much for your consideration.
--
Rebecca Fried
BHSc (Specialization in Health Sciences)
MSc student, Health & Rehabilitation Sciences - Health Promotion
Western University
London, Ontario, Canada
email
xxx-xxx-xxxx

Dr. Jennifer Irwin
Ph.D., School of Health Studies, Faculty of Health Sciences
Western University

London, Ontario, Canada
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Western HealthSciences

Appendix F

Letter of Information for Participants

Study Title: Calmly Coping: A Motivational Interviewing via Co-Active Life Coaching (MI-via-CALC) Intervention for University Students Suffering From Stress

Principal Investigator
Dr. Jennifer Irwin, PhD
Associate Professor, Faculty of Health Sciences, Western University, London, Ontario
Phone: (xxx) xxx-xxxx ext. xxxxx
Email: *email*

Co-investigator
Rebecca Fried, MSc Candidate
Health & Rehabilitation Sciences, Western University, London, Ontario
Phone: (xxx) xxx-xxxx
Email: *email*

Purpose of the study

You are being invited to participate in a research project being conducted by researchers from Western University. The purpose of this project is to explore stress among university students. Investigators from Western University are conducting research to determine the effectiveness of life coaching (Co-Active Life Coaching) and Motivational Interviewing (MI-via-CALC) for alleviating and managing stress among undergraduate students. If you are a Certified Co-Active Life Coach who wishes to help students suffering from stress, the researcher would like you to participate in the study.

What will I have to do if I choose to take part?

If you agree to participate, you will use your skills to assist your clients with alleviating and managing stress. At the beginning of the study you will be contacted to match yourself up with a student/participant. At the end of the study, you will be contacted by the researcher to complete a 15-20 minute recorded phone interview, which will allow you the opportunity to provide insight and feedback on the study. The study will run from January 2014 to April 2014 (second semester). The purpose of the study is to determine if Motivational Interviewing and Co-Active life Coaching (MI-via-CALC) is an effective method to help students alleviate and manage stress.

Are there any risks or discomforts?

There are no known risks to participating in this research. However, some of the topics you encounter in your coaching sessions may cover sensitive topics, and you may experience some discomfort in these situations, such as clients displaying signs of a more serious condition than stress. In the event that you do experience distress from a situation like this, we will provide you with a list of resources for various health, counselling, and educational agencies within the Western community for you and your clients to access.

Cost & Compensation

There is no cost to you for participating in the study, and there will be no compensation. When the results of the study are published, your name will not be used. If you would like to receive a copy of the overall results of the study, please put your name on a blank piece of paper and give it to the researcher.

What happens to the information that I tell you?

The final interview will be audio-recorded. If you request that the interview is not audio-recorded, notes will be taken by hand, which will later be typed out and stored digitally. If you agree to have the interview audio-recorded, these files will be stored digitally. What you say on the recording will be typed out verbatim. The only people who will listen to the recordings will be the researchers, and the recordings will be destroyed once they are transcribed and analyzed. To protect your identity, only pseudonyms will be used to identify recordings, transcripts of the recordings, and notes from the interview. These digital files will be password protected through encryption. Hard copies of the consent form and questionnaire will be stored in a locked cabinet in a secure office at Western University.

Confidential nature of this study:

Your participation in this study is strictly confidential and will not be disclosed to anyone **except** when the law requires reporting.

With your permission, the information you share may be presented to others through journals, publications, and at conferences and meetings in order to both increase awareness of this topic and to help institute mental health promotion initiatives in university communities. If the results of the study are published, your names will not be used and no information that discloses your identity will be released or published without your permission.

Representatives of the Western University Health Sciences Research Ethics Board may contact you or require access to your study-related records to monitor the conduct of the research.

Other Information about this Study:

Participation in this study is entirely voluntary. This means that you may refuse to participate, refuse to answer any questions, or withdraw from the study at any time. If you do drop out of the study, any information that you have provided may still be used in the research findings. You do not have to answer any questions on the form or in the interview. You do not have to talk about anything in the interview if you do not want to. Being in this study or dropping out will not affect you in any way.

If you have any questions or require additional information, please telephone **Rebecca Fried at (xxx) xxx-xxxx**. If you have any questions about the conduct of this study or your rights as a research participant you may contact the Office of Research Ethics, University of Western Ontario at (xxx) xxx-xxxx, or by email at: *email*

This letter is for you to keep.

Appendix G – Interview Questions With Coaches

Dialogue before interview session:

Please answer the following questions as honestly as possible (i.e. do not tell us what you think the researcher wants to hear). The following information will not be presented and/or shared with anyone in such a way that you will be personally identified. In order for this intervention to maintain its integrity and be effective, it is to your benefit to please answer honestly. If at any point you have questions and need clarification, please do not hesitate to ask. Thank you!

1) What's important to you about helping students manage and alleviate their stress?

-What made you want to participate in this study?

2) What is it like working with this population (students/undergraduates)?

3) In your opinion, what worked best with regard to your CPCC tools when working with this population?

4) In your opinion, what was the least effective tool (or tools) when working with this population?

5) For you, as a coach, what was the most challenging (what was challenging when coaching this population and/or this topic area)?

6) What advice do you have for other coaches in this area (i.e. mental health, stress, anxiety)?

7) What have I not asked you that is important for us, as researchers, to know?

Appendix H – Interview Questions With Participants

Dialogue before each session:

Please answer the following questions as honestly as possible (i.e. do not tell us what you think the researcher wants to hear). The following information will not be presented and/or shared with anyone in such a way that you will be personally identified. In order for this intervention to maintain its integrity and be effective, it is to your benefit to please answer honestly. If at any point you have questions and need clarification, please do not hesitate to ask. Thank you!

*Additional note for participants

You may have been educated on formal definitions of stress, and the difference between stress, distress, and eustress. For the purposes of this study, we ask that you kindly use the definition of distress for stress (i.e. stress as a negative aspect in your life).

Pre-Intervention

1) How would you describe your current level of stress?

2) What impact does stress have on your daily life?

3) If, at the end of this study you were to say it was effective for you, what would be different?

4) What else do you want us to know?

Mid-Intervention

1) How would you describe your current level of stress?

2) What impact does stress have on your daily life?

3) What is it like for you working with the coach?

4) What is working out well for you?

5) What challenges are you having, if any?

6) If, at the end of this study you were to say it was effective for you, what would be different?

7) What else do you want us to know?

Post-Intervention

1) How would you describe your current level of stress?

2) What impact does stress have on your daily life, and how is it different from before you started the study?

3) What was it like, for you, working with the coach?

4) What worked particularly well for you?

5) What challenges did you have, if any? (With regard to being involved in the intervention)

6) What did you like least about being in the intervention?

7) With regard to your stress and stress management, what is different since you started the intervention (that you would attribute to the coaching)?

8) What advice do you have for us, if we were to do this study again?

9) What else do you want us to know?

Appendix I – Perceived Stress Scale (PSS)

The items on this scale ask you about your feelings and thoughts during the last month. For each question, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions may appear similar, there are differences between them, and thus, you should treat each question as a separate entity. The best approach is to answer each item fairly quickly. That is, do not try to count up the number of times you felt a particular way, but rather, indicate the alternative that seems like a reasonable estimate. Your answers will be more accurate based on your immediate reaction, as opposed to a thought-out response. Remember that your answers will never be presented in a way that will reveal your identity: please answer as honestly as possible.

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

1) In the last month, how often have you been upset because of something that happened unexpectedly? 0 1 2 3 4

2) In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2 3 4

3) In the last month, how often have you felt nervous and stressed? 0 1 2 3 4

4) In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2 3 4

5) In the last month, how often have you felt that things were going your way? 0 1 2 3 4

6) In the last month, how often have you found that you could not cope with all of the things that you had to do? 0 1 2 3 4

7) In the last month, how often have you been able to control irritations in your life? 0 1 2 3 4

8) In the last month, how often have you felt that you were on top of things? 0 1 2 3 4

9) In the last month, how often have you been angered because of things that happened that were outside of your control? 0 1 2 3 4

10) In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? 0 1 2 3 4

Source: Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385–396. doi: 10.2307/2136404

Appendix J – Hospital Anxiety and Depression Scale (HADS)

The items on this questionnaire are designed to ask you about your feelings during the last month. For each question, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions may appear similar, there are differences between them, and thus, you should treat each question as a separate entity. The best approach is to answer each item fairly quickly. That is, do not try to count up the number of times you felt a particular way, but rather, indicate the alternative that seems like a reasonable estimate. Your answers will be more accurate based on your immediate reaction, as opposed to a thought-out response. Remember that your answers will never be presented in a way that will reveal your identity: please answer as honestly as possible.

1) I feel tense or "wound up":

a) Most of the time
b) A lot of the time
c) From time-to-time, occasionally
d) Not at all

2) I still enjoy the things I used to enjoy:

a) Definitely as much
b) Not quite so much
c) Only a little
d) Hardly at all

3) I get a sort of frightened feeling as if something awful is about to happen:

a) Very definitely and quite badly
b) Yes, but not too badly
c) A little, but it doesn't worry me
d) Not at all

4) I can laugh and see the funny side of things:

a) As much as I always could
b) Not quite so much now
c) Definitely not so much now

d) Not at all

5) Worrying thoughts go through my mind:

a) A great deal of the time
b) A lot of the time
c) From time-to-time, but not too often
d) Only occasionally

6) I feel cheerful:

a) Not at all
b) Not often
c) Sometimes
d) Most of the time

7) I can sit at ease and feel relaxed:

a) Definitely
b) Usually
c) Not often
d) Not at all

8) I feel as if I am slowed down:

a) Nearly all the time
b) Very often
c) Sometimes
d) Not at all

9) I get a sort of frightened feeling like “butterflies” in the stomach:

a) Not at all
b) Occasionally
c) Quite often
d) Very often

10) I have lost interest in my appearance:

a) Definitely
b) I don’t take so much care as I should
c) I may not take quite as much care
d) I take just as much care as ever

11) I feel restless, as if I have to be on the move:

a) Very much indeed
b) Quite a lot
c) Not very much
d) Not at all

12) I look forward with enjoyment to things:

a) As much as I ever did
b) Rather less than I used to
c) Definitely less than I used to
d) Hardly at all

13) I get sudden feelings of panic:

a) Very often indeed
b) Quite often
c) Not very often
d) Not at all

14) I can enjoy a good book, radio or television program:

a) Often
b) Sometimes
c) Not often
d) Seldom

Source: Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370. doi: 10.1111/j.1600-0447.1983.tb09716.x

Curriculum Vitae

Name	Rebecca Fried
Post-secondary Education and Degrees	The University of Western Ontario London, Ontario, Canada 2008-2012 BHSc. (Specialization in Health Sciences) CTI (Coaches Training Institute) Toronto, Ontario, Canada April 2014-August 2014 Co-Active Life Coach Training The University of Western Ontario London, Ontario, Canada 2012-2014 MSc. (Health Promotion)
Honours and Awards	Recipient of Western Graduate Research Scholarship 2012-2014
Related Work Experience	Research Assistant The University of Western Ontario 2010-2012 Teaching Assistant The University of Western Ontario 2012 Teaching Assistant The University of Western Ontario 2013
Publications	**Fried, R. R.** (2014). Coping through coaching: Co-active life coaching as a method for managing stress and anxiety. *Health Science Inquiry, 5*(1), 87-88.
Presentations	**Fried, R. R.** (April 2013). *Guiding light: Teaching high school guidance counsellors the techniques of MI & CALC to assist with student stress and anxiety*. Current Topics In Child & Youth Health Course. The University of Western Ontario – London, Ontario, Canada **Fried, R. R.** (November, 2013). *Evaluations: Importance of evaluations in*

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