Understanding and Coping with Possible Depressive Symptoms: An Extension of the Self-Regulation Model

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Abstract

This dissertation used Leventhal’s Self-Regulation Model (SRM) as a theoretical framework to examine how university students make sense of and cope with symptoms often associated with depression. Students completed questionnaires about possible depressive symptoms (not labelled as such); as well as other components of the SRM, including demographics, psychosocial context, current psychopathology, cognitive appraisals and emotional reactions. The present study addressed several limitations of past work applying the SRM to depression. Past research has often focused on how people make sense of depression during a later part of the process, once symptoms have coalesced into a clearer clinical picture. In contrast, Part 1 of this dissertation focused on the earlier application of the SRM to a range of vague, generally mild depressive symptoms, typically experienced in the context of everyday university life. In addition, past studies have only investigated a limited number of components of the SRM for depression. Accordingly, Part 1 also articulated and tested a more comprehensive SRM, finding that students viewed their potentially depressive symptoms as normative and temporary in the context of university stress. Furthermore, while it is known that many people do not seek treatment for depression, it is less well-known what individuals do to cope with generally mild depressive symptoms. As such, Part 2 defined relevant coping approaches for this sample, and then showed that students were coping with generally mild distress using positive self-help methods, more so than negative self-help or professional assistance. Finally, Part 3 explored how the more complete set of SRM components predicted coping strategies at two time points. Findings here indicated that the predictive SRM components varied significantly, depending on the particular coping
strategy examined. In addition, some SRM components (e.g., the emotional representation) emerged as robust and stable predictors of coping over time. Overall, the present SRM findings offered a rich description of how university students begin to understand and cope with possible depressive experiences. Expansion of SRM theory to include this initial aspect of the model was then considered, along with clinical applications that might be integrated with contemporary university mental health initiatives.

*Keywords: self-regulation model, depression, students, coping*
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Chapter 1
General Introduction

Depression can be a challenging condition to identify and manage. It is not diagnosed by a simple blood test, nor is it easy for people to see, like a rash. It is primarily an internal experience, comprised of numerous and often vague symptoms, including low mood, lack of interest, fatigue, and difficulty concentrating. Further complicating the picture, “depression” exists on a continuum, ranging from a normative mood state to a diagnosable clinical disorder. Therefore, it is often up to the individual experiencing these vague symptoms to decipher whether these experiences represent a typical response to a stressful day, a more serious depressive disorder, or perhaps some other illness or condition (Petter, 2017). Once having done so, the individual must then make decisions as to how to cope accordingly, whether through doing something enjoyable, seeking professional assistance, or taking some other approach (Van Grieken, Kirkenier, Koeter, & Schene, 2014).

To explore this complex process, the present dissertation utilizes the theoretical framework of the Self-Regulation Model (SRM; Leventhal, Diefenbach, & Leventhal, 1992; Leventhal et al., 1997; Leventhal, Leventhal, & Contrada, 1998; Leventhal, Meyer, & Nerenz, 1980; Leventhal, Nerenz, & Steele, 1984; Leventhal, Phillips, & Burns, 2016). This social-cognitive model views people as active problem solvers in the self-management of their illness. The model posits that when a person is confronted with illness symptoms, they will form a set of beliefs (i.e., a cognitive representation) and emotional responses (i.e., an emotional representation) based on their individual experience, which will then drive coping and resulting health outcomes. The model is presented as dynamic, with multiple feedback loops, in which relevant information (e.g., symptom changes) can trigger reevaluation of symptoms or redirection of coping strategies (Leventhal et al., 2016). An illustration of the SRM is shown in Figure 1 (adapted from Ivynian, DiGiacomo, & Newton, 2015).
The self-regulation model has been successfully applied and validated for capturing beliefs and coping with a wide range of physical (Hagger & Orbell, 2003) and mental illnesses (Lobban, Barrowclough, & Jones, 2003), including depression (e.g., Brown et al., 2007; Fortune, Barrowclough, & Lobban, 2004). Although there are some studies applying the SRM to depression (e.g., Kelly, Sereika, Battista, & Brown, 2007), there remain several issues that further research could clarify regarding the process of how people understand and cope with depression. The present dissertation addresses these issues by assessing and testing a self-regulatory model for depression in several novel ways. Firstly, this dissertation considers a more comprehensive SRM than past research, which has typically assessed only a subset of the theorized SRM constructs. Secondly, the methodology employed in the present dissertation targets the preliminary phases of the model by sampling undergraduate students who are beginning to notice some potentially depressive symptoms in their daily lives. This approach is in contrast to past work which has focused on primary care patients already diagnosed with depression, or the general public’s perceptions of a depressed person, as described in a vignette. Lastly, the present dissertation also begins to examine dynamic aspects of...
the model by empirically testing how SRM constructs may predict coping with depressive symptoms, both cross-sectionally and longitudinally.

In order to explore these issues, Part 1 of the dissertation presents a more comprehensive SRM associated with the possible depressive symptoms experienced by undergraduate students. This model illustrates how these students are understanding symptoms which may be associated with depression. In turn, Part 2 of the dissertation focuses on the coping strategies used by this group of undergraduate students to address the depressive symptoms they are experiencing. Part 3 then applies multiple regression techniques to determine which SRM components (derived from Part 1) are predictive of the coping strategies used by the students (derived from Part 2). This move towards a more dynamic assessment in Part 3 is done both cross-sectionally and longitudinally. To provide a broader context for this research, an overview of SRM theory is provided directly below. This theory is examined in terms of content (cognitive and emotional representations), sample tested, coping strategies employed, and dynamic aspects of the model that pertain to coping.

**SRM Cognitive and Emotional Representations**

The content of the cognitive arm of illness representations in the SRM has been ordered into logical themes or categories (Leventhal et al., 1984). Based on in-depth interviews with patients who had hypertension, cancer, or had undergone cardiac bypass surgery, Leventhal et al. (1980) proposed four cognitive categories of illness beliefs: *identity*, which refers to the label applied by the individual to his or her symptoms, as well as the signs or symptoms themselves; *causes*, which refers to perceived reasons for acquiring the illness; *timeline*, which refers to the expectation of how long the illness will last or how the course of the illness will proceed; and *consequences*, which refers to perceived physical, psychological, social, financial, behavioural, or other outcomes of the illness.
A fifth cognitive category was proposed by Lau and Hartman (1983) and subsequently added to the SRM. This illness belief category is control/cure, which refers to the perceived potential for the illness to be prevented, managed, or treated, as well as the efficacy of treatments. A further addition to the model is illness coherence, which Moss-Morris et al. (2002) proposed as a type of meta-cognition capturing whether the whole SRM coalesces to offer the symptomatic individual a clear picture or understanding of their illness.

SRM theorists originally posited that there was parallel processing of emotional representations alongside the cognitive representation (Leventhal et al., 1984). However, they did not systematically analyze and define the content of the emotional arm of illness representations, as they did for the cognitive counterpart described above. SRM theory has for many years recognized that emotional representations may be important determinants of illness perceptions, and thus influence the resultant coping strategies and outcomes that follow. However, theorists and researchers have only more recently begun to actively define emotional reactions to symptoms within the context of the SRM, including worry, fear, upset, sadness, discouragement, hopelessness, nervousness, anger, and embarrassment (e.g., Cameron & Jago, 2008; Kelly et al., 2007; Moss-Morris et al., 2002). Such work is beginning to illuminate the role of the emotional representation in the SRM and offer empirical support for this theoretical construct.

There is a large body of literature supporting the SRM, primarily in relation to physical illnesses where the model has its roots (e.g., Hagger & Orbell, 2003; Hagger, Chatzisarantis, & Orbell, 2017). However, there is also a growing subsection of literature supporting the model’s application to a variety of mental illnesses (e.g., Lobban et al., 2003), including depression (e.g., Brown et al., 2007; Fortune et al., 2004). The component of the SRM which has the most substantial evidentiary support is the cognitive representation, which includes the five categories of illness beliefs (i.e., identity, timeline, causes, consequences, and cure/control). The basic validity and utility
of these five categories has been well-established, with a large body of research and several reviews (e.g., Broadbent, 2010; Hagger & Orbell, 2003) demonstrating that these five cognitive categories can parsimoniously describe and organize beliefs about a wide range of physical conditions (e.g., hypertension, diabetes, heart disease, and arthritis), as well as several mental disorders (e.g., schizophrenia, non-affective psychotic disorder, bipolar disorder, anorexia nervosa, anxiety, and depression).

As proposed by SRM theory, the five cognitive categories have also been found to relate to coping responses and outcomes in both the physical (e.g., Hagger & Orbell, 2003) and mental illness literatures (e.g., Vanheusden et al., 2009). As such, the SRM’s five cognitive categories (i.e., identity, causes, consequences, timeline, and cure/control) have been considered the “basic building blocks” (Heijmans & de Ridder, 1998, p. 486, as cited in Hagger & Orbell, 2003) of quantitative research into how individuals construct an illness representation, for physical or mental illnesses.

Depressed individuals’ cognitive representations of their symptoms have been successfully framed along these five belief categories, and related to coping responses and outcomes (e.g., Brown et al., 2001, 2007; Fortune et al., 2004). For example, in Brown et al. (2001, 2007), depressed primary care patients responded to a questionnaire based on the SRM’s five cognitive categories. This work revealed that: identity or symptomatology included sadness and anhedonia; perceived causes included stress, heredity, and relationship problems; symptoms were considered to be chronic but fluctuating over time; significant negative consequences of symptoms were experienced; and symptoms were believed to be controllable and possible to improve over time. Depressed individuals’ cognitive representations remained significantly associated with coping strategies, regardless of depressive symptom severity. For instance, less perceived control over depression was associated with more religious coping strategies (Brown et al., 2001). Additionally, the more recent SRM construct of illness coherence (i.e., having a clear picture or understanding of the illness), has
shown some initial promise as a valuable addition to the SRM in relation to depression (e.g., Munson et al., 2009).

The emotional representation of the SRM has been less thoroughly articulated, yet preliminary research has offered initial promising support for this component of the model. Moss-Morris et al. (2002) examined the validity of an exploratory emotional representation scale (i.e., get depressed, get upset, feel angry, feel worried, feel anxious, and feel afraid) for eight physical illness groups (i.e., asthma, diabetes, rheumatoid arthritis, acute pain, chronic pain, myocardial infarction, multiple sclerosis, and HIV). These researchers found that, psychometrically, it was possible to separate cognitive representations from both the emotional representation and from positive and negative affective traits. While general affective dispositions may have influenced cognitive and emotional representations for physical illnesses, the emotional representation appeared to exist as a separate construct of distress about the illness.

In the depression literature, Kelly et al. (2007) found that the relationship between a negative emotional reaction to depression (i.e., worry, fear, upset, sadness, discouragement, hopelessness, nervousness, anger, and embarrassment) and maladaptive coping (e.g., venting, behavioural disengagement, and self-blame) remained largely significant, even after controlling for depression severity. These researchers concluded that one’s emotional reaction to depression was a major factor in determining coping strategies, and that the relationship between emotional reactions to depression and coping did not appear to be simply an artefact of the patients’ current depressive symptoms.

The present dissertation. Despite the SRM being such a comprehensive model, few studies have actually measured and reported on all these components for any given sample, even in the general public vignette studies and patient studies on depression (e.g., Brown et al., 2007; Jorm et al., 1997). Moreover, when these SRM components have been assessed, the response options offered have often been limited in scope, providing a relatively narrow view of what people may think, feel
and do about depression. Accordingly, Part 1 of this dissertation offers a more comprehensive view of each component of the SRM, and then reports on this more complete model for undergraduate students experiencing a typically broader range of depressive symptoms.

Within the five categories of the cognitive representation, timeline has often been measured in terms of the perceived course of depression (i.e., acute, chronic, intermittent; e.g., Brown et al., 2001; Leite, 2011), while expected duration of symptoms (e.g., days, weeks, months, years) has been minimally tested (e.g., Care & Kuiper, 2013). Therefore, in Part 1 of this dissertation, both course and duration will be assessed to provide a more comprehensive assessment of timeline. The causal belief category, on the other hand, is perhaps the most comprehensively studied type of belief about depression. Literature reviews (e.g., Hagmayer & Engelmann, 2014) have highlighted important causal belief categories for depression (e.g., stress, personality, and biology), which guided the current study’s inclusion of a wide range of potential causes for depressive symptoms considered relevant for a university sample.

Moving onto consequences, there is a considerable body of literature focusing almost entirely on negative outcomes for depression (e.g., stigma, financial consequences; Brown et al., 2001). Only recently have SRM researchers begun to consider possible positive consequences of the depressive experience (e.g., strength, encouragement; Care & Kuiper, 2013; Lynch, Moss-Morris, & Kendrick, 2011). Therefore, to be more comprehensive, the current SRM study followed suit by including both positive and negative consequences of being depressed. Moving forward, the category of control has been conceptualized as encompassing beliefs about personal control (i.e., self-efficacy) and treatment control (i.e., treatment efficacy; Moss-Morris et al., 2002). Both aspects have been found to be relevant for depression (e.g. Brown et al., 2007; Elwy et al., 2011). Accordingly, both were included in the more comprehensive SRM model tested in the present research.
The cognitive category of identity encompasses two facets: awareness of the symptoms, and perceptions as to what the symptoms might represent. Most SRM studies of depression focus only on measuring identity through a symptom checklist, with the exception of vignette studies which ask participants to label the depressive experience described. The current study offers a more unique assessment of labelling, as students were asked to label their own personal set of depressive experiences, as opposed to a standardized description of depression in another person. A related construct which was included in the current study was the more recent SRM component of coherence. This component of the SRM is a meta-cognitive construct which refers to the extent to which the cognitive appraisals of the SRM actually coalesce into a clear picture or understanding of the symptoms being faced (Moss-Morris et al., 2002). Coherence has been minimally tested in reference to physical illnesses (Moss-Morris et al., 2002) and depression (Munson et al., 2009), and was thus included in the present research.

Increasing the comprehensiveness of the SRM model in the present research also included consideration of the emotional representation of depression. When compared with cognitive representation, this emotional component of the SRM has lagged behind in both theory development and research. Although preliminary SRM studies (e.g., Kelly et al., 2007; Moss-Morris et al., 2002) have begun to operationalize emotional representations, a major limitation is that they have focused solely on negative emotional reactions (e.g., worry, anger, hopelessness, and embarrassment). This may be an oversight, however, when considering the SRM for milder levels of depression. Notably, in the present research these participants may still exhibit a self-positivity bias and react to possible depressive symptoms with some optimism (Care & Kuiper, 2013). Even amongst those participants who may be more depressed, it is possible that those receiving treatment or social support may still feel hopeful or calm when reflecting upon their depressive experience. Therefore, the present study included not only negative emotional reactions to depressive symptoms, but also possible positive
emotional reactions (e.g., hopefulness, contentment). This broader selection provides a more comprehensive look at the role of emotional representations in understanding and coping with possible depressive symptoms.

**SRM Individual Differences and Sample Considerations**

Although the cognitive and emotional representations are the main theoretical components of the SRM, recall that the theory also posits that various individual differences (e.g., demographic factors, psychosocial context, and experience with the illness) can affect the model. In brief, research in the physical and mental health literatures, including research on depression, has shown that the SRM’s cognitive and emotional representations are sensitive to level of depression symptomology (e.g., Fortune et al., 2004), gender (e.g., Kelly et al., 2007), and cultural variations (e.g., Wong et al., 2010).

It is therefore important to consider the sample and methodology in terms of what type of SRM will be constructed and used by individuals. As mentioned earlier, some SRM researchers (e.g., Brown et al., 2007; Kelly et al., 2007) ask primary care patients, who have already been diagnosed with a major depressive disorder (with many on antidepressant treatments), to offer their beliefs and emotion reactions about their experience of depression. When considering the real-life usage of the SRM theory, this type of methodology and sample targets a latter part of the process. In particular, the depressive symptoms have already advanced and coalesced sufficiently to alert the individuals to some sort of “problem.” As such, there was a determination by these individuals that professional assistance was required, and a physician was sought out for help. These individuals were then diagnosed with depression and given some medical explanation and antidepressant treatment for the symptoms they had been noticing as problematic. Therefore, the type of SRM constructed by a primary care patient sample, once diagnosed and treated medically, would be
considerably different from the SRM being constructed by a sample of individuals who are just beginning to notice some potentially depressive symptoms and are trying to make sense of these. Primary care samples offer a very valuable sense of how people actually experiencing depression understand and cope with their symptoms. However, this sample type represents only a small subsection of those who are navigating the experience of depressive symptoms, omitting the preliminary build-up of some subclinical symptoms. There are many people suffering with mild or moderate depressive symptoms, who have not been diagnosed as depressed and may not necessarily see themselves as such. Furthermore, these individuals are typically not engaged in medical treatment, but are instead coping through other means (e.g., self-help strategies; Morgan, Jorm, & Mackinnon, 2012).

A further methodology employed by SRM researchers (e.g., Jorm et al., 1997) to capture how depression is understood is to ask the general public for their perceptions of a depressed person, as described in a standardized depression vignette (e.g., John/Mary is 30 years old. He/She has been feeling unusually sad and miserable for the last few weeks...). In this respect, a vignette approach could allow for the study of preliminary or potential depressive experiences, by using milder or more vague, initial depression experiences in the vignettes. The main problem with such an approach, however, is that a participant’s beliefs and emotional reactions toward an imaginary depressed person may differ in important ways from how they would view and cope themselves when experiencing depression. In fact, nondepressed people often hold a self-positivity bias, judging themselves more favourably than they judge others, even for perceptions about depression. For instance, Igou (2008) found that participants expected shorter durations of negative affect for themselves compared to others. Similarly, Care and Kuiper (2013) compared students’ perceptions of depression across all five cognitive categories of the SRM for an other-referenced vignette (i.e., Imagine Karen has been feeling down…) versus a self-referenced vignette (i.e., Imagine you have been feeling down…). The
same set of depression symptoms were viewed as less serious, more situational, and more easily remedied when considered for oneself; but indicative of a more long-term, dispositional, and serious problem requiring professional treatment for others. However, while self-referenced vignettes may offer a more accurate assessment of how people might work through own symptoms of depression, they are still limited in their generalizability by the disconnect between an imagined scenario and actual lived experience.

Although primary care patient studies and vignette studies have offered valuable insights as to how depression may be understood by certain groups, these approaches omit the everyday experience of many people who are noticing some potentially depressive symptoms in their lives, but may not yet be diagnosed with depression or be experiencing a clinical presentation. This preliminary phase of the model has been largely neglected in existing research. As such, several SRM theorists have recently been calling for further investigation of this important initial aspect of the process. As one illustration, in discussing the future of the SRM, Leventhal et al. (2016) identified a need to assess the dynamic process that occurs in the initial phases of the model. Here, symptoms are first discovered by an individual, a determination is then made by that individual as to whether they are facing some sort of illness and require treatment, and resulting coping strategies are initiated, which may eventually transition to habitual coping.

The present dissertation. In light of the above comments, it was of particular interest to determine how individuals might be using the SRM to navigate potential depressive experiences, inclusive of the initial vague, mild, or subclinical range of severity. The present use of an undergraduate sample experiencing a range of depressive symptoms is thus a novel strategy for addressing these limitations of past research. University students were seen as an appropriate sample for this endeavor for numerous reasons, including their sensitive age range for development of depressive disorders (Sorenson, Rutter, & Aneshensel, 1991), the frequent experience of stress and
emotional distress in an academic setting (Lunau, 2012; Mikolajczyk, Maxwell, Naydenova, Meier, & El Ansari, 2008), and emerging adulthood being a time of self-reflection which might lend itself well to the natural usage of the SRM in daily life (Arnett & Taber, 1994).

Thus, in order to capture this more preliminary stage of the SRM process, the present methodology recruited undergraduate students who were noticing some potentially depressive experiences (e.g., I haven’t been feeling like talking with friends or family as often as I normally do), but not labelled as such. Once these individuals were brought in to complete a questionnaire package, they were then asked to endorse any symptoms of depression which they had noticed in the past two weeks. The words “depressed” and “depression” were not used in the questionnaire to prevent cueing or exclusion of those who would not use these labels. While the symptoms presented to participants are commonly associated with depression, it is of course quite plausible that they may represent or overlap with other issues (e.g., bereavement, sleep deprivation, other clinical disorders, academic stress, etc.). However, this is the main point of the SRM, as it helps frame the process whereby people make sense of initial and sometimes vague illness symptoms. Therefore, once the undergraduate students in the present study had endorsed which potentially depressive symptoms they were noticing, they were asked to complete an SRM Questionnaire which asked for their beliefs, emotional reactions, and coping in reference to these individual experiences. They also completed additional measures relating to further aspects of the SRM, such as demographics, life events (psychosocial context), and a more comprehensive assessment of depression, anxiety, and stress. Lastly, they read and answered some questions about an imagined positive scenario, as a positive mood boost before exiting the study with a debriefing form. Students were then asked to return in two weeks to complete the same questionnaire package and procedure.

In summary, the sample’s demographic characteristics, life events, depressive symptoms, and current psychopathology are all important parts of the background and foundation from which the
SRM is constructed. Thus, all of these aspects of a more comprehensive SRM are considered in Part 1 of this dissertation.

**SRM Coping**

In the SRM, health behaviours that individuals adopt in response to their illness are termed *coping behaviours* or *coping strategies* (Hagger & Orbell, 2003). Researchers have varied in terms of what type of coping strategies have been investigated in relation to depression. Some SRM researchers have focused on antidepressant usage amongst clinically depressed primary care patients (e.g., Fortune et al., 2004), or on specific types of support people who could help a depressed person (e.g., family doctor, counselor, friends; Goldney et al., 2001). Other SRM researchers have incorporated existing coping measures (e.g., Brief COPE; Carver, 1997) to assess a variety of more general coping approaches which may be used by depressed patients, such as active coping, planning, or acceptance (Brown et al., 2007).

Outside of the SRM domain, researchers interested in how the general public copes with subthreshold depression have surveyed the public with long lists of self-help strategies (Morgan et al., 2012). From such surveys, researchers have articulated models of coping with depression which suggest that as depressive symptoms increase from mild to moderate to severe, people tend to shift their approach from using everyday strategies (e.g., friends and family) to new self-help strategies (e.g., meditation) to professional assistance (e.g., therapists and antidepressants; Jorm, Griffiths, Christensen, Parslow, & Rogers, 2004).

**The present dissertation.** Part 2 of the thesis provides a current assessment of the coping strategies used by the undergraduate students sampled in this research. In this approach, surveying a breadth of coping techniques was important, while also aiming to keep the survey to a reasonable length. Recall that the participants were not self-identified or diagnosed as depressed upon entry into
the study. Therefore, they could each be endorsing a unique set of potentially depressive symptoms and understanding them in varied ways. This could then result in widely different coping strategies being implemented. For instance, one student may be experiencing low mood and difficulty concentrating, understood as part of a physical condition requiring medical treatment from a family doctor; while another student may be experiencing lack of interest and difficulty sleeping, understood in the context of relationship problems leading them to seek social support. As such, this dissertation cast a wide net of potential coping strategies that may be used. Based on relevant literatures (e.g., Carver, 1997; Eisenberg, Golberstein, & Gollust, 2007; Jorm et al., 2004; Morgan et al., 2012), these included both positive and negative self-help strategies, as well as professional treatment options for psychological distress. Part 2 thereby offers a set of coping approaches found to be most relevant for the present sample of undergraduate students noticing and dealing with potential depressive experiences.

**SRM Dynamics and the Prediction of Coping**

The SRM is a dynamic model that operates in interrelated and recursive stages with feedback loops, such that illness representations may be constantly changing as symptoms evolve, outcomes of coping strategies are evaluated, new socio-cultural information becomes assimilated, and personal experience develops (Hagger et al., 2017; Leventhal et al., 1992, 2016). Although there are many potential dynamic pathways in the model, the SRM does offer a clear proposal of an overall directionality in theorizing that personal illness models act as filters and interpretative schemes of the available information to guide coping action in response to an illness threat. More generally, meta-analyses of the SRM for a variety of illnesses have found evidence of both direct effects of beliefs on outcomes, and indirect effects of beliefs on outcomes through coping responses (Hagger et al., 2017).
Specific to depression, preliminary mediational results (e.g., Brown et al., 2007) have supported the proposed overall directionality of the SRM, from beliefs to coping to outcomes.

Within the applications of the SRM to depressive symptoms, most studies have investigated the connection between SRM constructs and coping through simple correlations. For instance, amongst depressed primary care patients, Brown et al. (2001) found that several coping strategies remained significantly associated with illness cognitions independent of depression severity. In particular, negative consequences were associated with more active coping, religious coping and self-blame; less personal control was associated with more religious coping; a chronic timeline was associated with less planning; and a strong illness identity was associated with more self-blame, more self-distraction, and more emotional venting. In another SRM study of depression, Kelly et al. (2007) utilized canonical correlations to relate sets of cognitive and emotional representation items with sets of coping strategies used by depressed primary care patients. In this study, a greater negative emotional reaction, along with more depressive symptoms, and belief in longer duration and more negative consequences, was related to a higher level of maladaptive coping.

These studies offer some initial proposals as to how a person’s beliefs and emotions about their depression may lead them to selecting a particular coping strategy. Depending upon the specific selection of strategies, this may ultimately have a positive or negative impact on the individual’s depressive experiences. To examine this process in more detail, SRM theorists (Hagger et al., 2017; Leventhal et al., 2016) have recently been calling for more complex and comprehensive analyses of the model’s dynamics, which go beyond the simple correlational studies typical in the literature toward testing the prediction of coping and outcomes. In acknowledging more complex dynamic models, these theorists have also called for longitudinal checks of the directionality of the SRM from beliefs and emotions to coping over time. Here, Leventhal et al. (2016) has also suggested longitudinal assessments of the SRM at intensive frequencies, particularly with a consideration of the
context and important transitions for the sample in question. Reinforcing this proposal, Hagger et al. (2017) also called for longitudinal designs in future research, preferably close to the time of first diagnosis so that changes in the SRM over that crucial time could be modeled.

**The present dissertation.** Following from the literature just described, the present dissertation explored the above issues in several ways. Part 3 utilizes a multiple regression approach in which a more comprehensive set of SRM constructs from Part 1 (demographics, depressive symptoms, current psychopathology, cognitive and emotional representations) were related to each of the coping strategies identified for the sample in Part 2, in order to determine which SRM components are most predictive of each coping approach. As such, Part 3 moves beyond the results already established in the literature to offer an examination of the predictive relationships between several SRM constructs and subsequent coping. In particular, these multiple regression analyses examine which of the many theorized SRM components are the most significant drivers of coping with depressive symptoms, and thus offer a preliminary identification of potential dynamic pathways in the model.

A further way that Part 3 of this dissertation addresses the call to examine more fully the dynamics of the model, is to test these SRM based predictions of coping responses in a longitudinal manner. Specifically, the set of SRM constructs from Time 1 (demographics, depressive symptoms, current psychopathology, cognitive and emotional representations) are also used as predictors of coping approaches at Time 2. These longitudinal results can offer a sense of stability or change in the prediction of students’ coping strategies, based on the theorized SRM components, across a two-week period. This time lag was considered an appropriate exploratory interval, based on past research which showed that a similar undergraduate sample expected a mild depressive experience (that was imaginal and self-referenced) to last for a duration of two to three weeks (Care & Kuiper, 2013). Following from these results, it might be expected that after two to three weeks, any remaining or
ongoing depressive symptoms and the coping strategies which had been used might need reevaluation. Furthermore, a relatively short two-week interval is consistent with recommendations of SRM theorists, such as Leventhal et al. (2016) who have suggested initial longitudinal tests be at intensive frequencies in the early phases of the SRM process; and also in consideration of the context of the sample (e.g., at time of diagnosis; Hagger et al., 2017). Thus, the present methodology aimed to capture the preliminary phases of the SRM for potentially depressive experiences in which a range of initial, mild, or subclinical symptoms may be noticed by undergraduate students in the context of their busy and often stressful academic setting. As such, two weeks was selected as a reasonable exploratory interval for students to return and reevaluate any ongoing potentially depressive experiences and related coping strategies.
Chapter 2

Method

Procedure

The present study recruited university student participants from the Western Psychology Department’s introductory psychology course research participation pool. This was done via an online poster identifying a list of experiences that could occur as part of a depressive episode, but were not labelled as such (e.g., I have been less interested in doing things that I used to enjoy, I have been feeling down or less happy than usual; see Appendix A). Students that had noticed any of these experiences during the past two weeks could then sign up online to participate in two testing sessions on campus, spaced two weeks apart (see Appendix B: Letter of Information, and Appendix C: Informed Consent).

Each session included a booklet of questionnaires (see Appendix D), beginning with a demographics checklist. Next was an Individual Experiences Sheet (IES), which asked each participant to endorse any of the listed depressive symptoms (labelled as a “set of experiences”) they had noticed in the past two weeks. Each participant then completed the SRM Questionnaire, which assessed their perceptions of their own personal list of IES experiences (i.e., potentially depressive symptoms) they had been noticing. Participants also completed a brief life events checklist to provide some psychosocial context for these experiences. Current psychopathology was then assessed with a measure of depression, anxiety and stress. At the end of each testing session, each participant read a positive imaginal scenario and answered a few related questions, in order to provide a positive experience, before exiting the session with a debriefing form (see Appendix E).

The questionnaire package was nearly the same at Time 2 (two weeks later), with the only differences being as follows: the demographic questions were not repeated at Time 2; a new positive
imaginal scenario was provided at Time 2; and the debriefing form at Time 2 provided additional information explaining the research focus on potential depressive symptoms. Prior to commencing this study, the research protocol was approved by the appropriate ethics committee at the University of Western Ontario (see Appendix F).

Participants

Participants were undergraduate students recruited from the University of Western Ontario’s first-year introductory psychology course, who received course credit for participation.

Previous work by the present researcher sampling from the same undergraduate course, but without recruiting for those noticing potentially depressive experiences, resulted in a sample that was 62% female, predominantly Canadian/European-Canadian (78%), with an average age of just under 19 and a range from 17 to 31 (Care & Kuiper, 2013). A similar demographic profile was expected for the present study, though preselection for potentially depressive experiences could have resulted in some differences. For example, since depression is more prevalent in women, it might be anticipated that the present sample could contain a higher percentage of women.

Overall, the demographics of the present sample were consistent with expectations. The age of the current sample was nearly identical to previous samples enrolled in introductory psychology courses at this university (e.g., Care & Kuiper, 2013; Leite, 2011). The final sample at Time 1 consisted of 190 participants with a mean age of 18.80 (SD = 1.70) years, with ages ranging from 15 to 29. The current sample was 67% female, which represented a slight increase in female participation from prior work (62%; Care & Kuiper, 2013). This increase may have been due to preselection for depression or may have simply reflected trends in enrollment or chance. Nonetheless, the current gender split was consistent with other undergraduate samples where
depression was studied (e.g., 61% female in Sheppardson & Funderburk, 2014; 75% female in Klein et al., 2011).

The predominant ethnicity was Canadian/European-Canadian \((n = 88; 46\%)\), followed by Asian-Canadian \((n = 50; 26\%)\), Other \((n = 28; 15\%)\), South Asian-Canadian \((n = 13; 7\%)\), African-Canadian \((n = 5; 3\%)\), Native-Canadian \((n = 4; 2\%)\), and Hispanic-Canadian \((n = 2; 1\%)\). Under the Other category, 16 participants listed Chinese, five listed Middle Eastern ethnicities, four indicated mixed race descriptions, and two listed Caribbean ethnicities. English was a first language for 119 \((64\%)\) of the participants. Of the remaining 71 \((37\%)\), 55 indicated East Asian first languages, eight indicated European first languages, five indicated Middle Eastern first languages, and three indicated Southeast Asian first languages. The present sample was more diverse than previous samples from the same undergraduate course (i.e., Care & Kuiper, 2013), perhaps reflecting recent university enrollment trends. Regardless, the ethnic profile of the current sample was similar to other metropolitan, North American university samples (e.g., Klein et al., 2011).

At Time 2, 160 of the 190 participants returned to complete the second set of questionnaires, two weeks later. The demographics of the subsample at Time 2 were nearly identical to those of the full sample at Time 1. The mean age of those returning was 18.78 \((SD = 1.73)\) years, with ages ranging from 17 to 29. Sixty-five percent were female, and the group showed a similar ethnic profile as at Time 1. Further information concerning additional characteristics associated with this university sample are provided in the results and discussion section of the following chapter.

**Measures**

Table 1 offers a brief overview of the measures administered. These measures are described below in the order in which they were completed by participants (see Appendix D for the complete
Table 1

Sequence of Measures in Participants’ Questionnaire Package

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Demographic Checklist</td>
<td>Age, gender, relationship status, ethnicity, English as first language</td>
</tr>
<tr>
<td>ii. Individual Experiences Sheet (IES)</td>
<td>List of depressive symptoms (not labelled as such) for participants to endorse which they had noticed in the past two weeks</td>
</tr>
<tr>
<td>iii. SRM Questionnaire</td>
<td>Set of questions from which participants were to evaluate the above “set of experiences” (i.e., depressive symptoms), along the SRM’s theoretical constructs</td>
</tr>
<tr>
<td>iv. Life Events Checklist</td>
<td>Brief list of psychosocial context items (e.g., exams, relational events)</td>
</tr>
<tr>
<td>v. Depression Anxiety Stress Scale-21 (DASS-21)</td>
<td>Measure of current distress, including depression, anxiety and stress</td>
</tr>
<tr>
<td>vi. Positive Scenario</td>
<td>Brief imaginal scenario providing a positive experience at the end of the study</td>
</tr>
</tbody>
</table>

questionnaire package). As detailed earlier, there were several minor changes regarding the second administration of these measures, which occurred two weeks later for each participant.

**Demographics.** Demographics were collected via a simple checklist and fill in the blank format for age, gender, relationship status, ethnicity, and English as a first language.

**Individual Experiences Sheet.** Next, participants completed the Individual Experiences Sheet (IES), which was adapted from the Patient Health Questionnaire-8 (PHQ-8; Kroenke et al., 2009). The PHQ-8 assesses the extent to which a participant has experienced eight diagnostic criteria
of depression in the past two weeks, producing a score that captures the severity of depression experienced. The PHQ-8 has been established as a valid diagnostic and severity measure for depressive disorders in large clinical studies as well as population-based studies (Kroenke et al., 2009).

Several changes were made to the PHQ-8 to construct the IES used in the present study (see Appendix D). This included removal of the word, “depressed,” from one of the eight items and its replacement with the word, “unhappy.” Rather than asking participants to indicate which of the “problems” they had been “bothered by,” the IES asks participants which of the “experiences” they had “noticed.” Lastly, in the frequency scale, “several days” on the PHQ-8 was changed to “a few days” on the IES.

**SRM Questionnaire.** Participants were asked to reflect on their “set of individual experiences” (i.e., any depressive symptoms they noticed and endorsed on the IES they had just completed); and then answer questions regarding their beliefs, emotions, and coping in relation to those depressive symptoms. This measure was originally designed by Leite (2011), guided by research on Leventhal et al.’s (1984) five cognitive categories (i.e., identity, timeline, causes, consequences, and cure/control) of the self-regulation model, as they pertained to depression. The present modified version of the SRM Questionnaire (see Appendix D) included additional items to more comprehensively assess existing subscales and to test several further components of the SRM.

The construct of illness coherence was measured with an item titled Preliminary Impression. This item asked participants to indicate how much they agreed with the statement, “I have a clear picture or understanding of this set of experiences,” using a scale of 1 (*not at all*) to 7 (*very much so*). This preliminary impression item was selected from a list of illness coherence items originated by Moss-Morris et al. (2002) for use in the Illness Perception Questionnaire-Revised (IPQ-R).
To measure perceptions of timeline, participants were asked to indicate how much longer they expected the set of experiences to last (i.e., duration). The nine response options ranged from just the rest of today to over one year. Then, to assess perceived course of the experience (i.e., acute, chronic, variable), participants were asked to indicate how much they agreed with three items (e.g., “This set of experiences will last the rest of my life”), from 1 (not at all) to 7 (very much so).

To measure perceived causes, a list of 18 causes (e.g., genetics, ending a romantic relationship, losing a job) were compiled from a review of the literatures on beliefs about the causes of depression (e.g., Jadhav, Weiss, & Littlewood, 2001; Kuyken, Brewin, Power, & Furnham, 1992; Thwaites, Dagnan, Huey, & Addis, 2004); as well as additional theories (e.g., biological, psychodynamic) of the causes of depression (e.g., Pistrang & Barker, 1992). Participants were asked to rate how likely the experience was caused by each item, on a scale of 1 (very unlikely) to 7 (very likely).

For perceived consequences, a list of 10 items included selections from modified versions of the consequence scale of the Illness Perception Questionnaire (IPQ; Weinman, Moss-Morris, & Horne, 1996), as well as additional items which were developed to specify how the depressed individual may perceive themselves and be perceived by others. Consequence items in the SRM Questionnaire included, “Have difficulties interacting with others,” and, “Be shown encouragement from others.” For each item, participants were asked to rate, on a scale of 1 (very unlikely) to 7 (very likely), how likely that item had been a consequence of their experience in the past two weeks, and how likely it would be a consequence of their experience in the following two weeks.

The SRM Questionnaire also contained a list of 28 coping strategies in order to measure coping actions taken by the participants in their daily lives. The initial source was the Brief Coping Orientations to Problems Experienced scale (Brief COPE; Carver, 1997), which, along with the original COPE, has shown good psychometric properties (Carver, Scheier, & Weintraub, 1989). One
item was used from each of the 14 types of coping (e.g., active coping, emotional support, denial) in the Brief COPE. Examples include, “Get comfort and understanding from someone (e.g., family, friend),” and, “Refuse to believe the experience is happening.” Further items were added from studies in the mental health literacy field that examined individuals’ beliefs regarding specific treatment strategies for depression (e.g., Goldney et al., 2001). Strategies were selected that did not clearly overlap with the items chosen from the Brief COPE, including, “See a family doctor,” “Take prescribed medication,” and “Exercise.” For each coping strategy listed, participants were asked to indicate how often, on a scale of 1 (not at all) to 7 (every day), they had used the strategy in the past two weeks to deal with their experience.

Two items assessed participants’ perceptions of control over the set of depressive symptoms, based on the delineation of personal and treatment control in past SRM measures (i.e., IPQ-R; Moss-Morris et al., 2002). For personal control, participants were asked, “How much do you think you can control this set of experiences?” and selected not at all, somewhat, mostly, or completely. Similarly, for treatment control, participants were asked to answer, “How much do you think some form of treatment can control this set of experiences?” along the same rating scale.

Participants were then asked whether they would use a label to summarize their “set of individual experiences,” using a yes/no checkbox. To measure perceived identity, participants who indicated that they would use a label then wrote down their label in a space provided.

Participants also rated how much they had been experiencing each of 17 listed emotional reactions regarding the depressive symptoms they had been noticing over the past two weeks (as indicated on their completed IES form), using a scale from 1 (not at all) to 7 (every day). The list of emotions was comprised of negative emotions used in previous SRM research (i.e., Kelly et al., 2007; Moss-Morris et al., 2002), as well as some exploratory positive emotional reactions (e.g., encouraged, as the antonym for discouraged).
**Life Events Checklist.** After completing the SRM questionnaire, participants were asked whether they had been experiencing various common university stressors or life events, using a simple yes/no checklist and fill in the blank format (see Appendix D). These items included having a busy day, upcoming exams, feeling they had done poorly in terms of academic performance, being physically ill or injured, and having experienced relationship problems or losses. Amount of sleep and alcohol consumption were also queried. These selected questions were compiled based on the expertise and suggestions of other investigators conducting research at the same university.

**Depression Anxiety Stress Scale-21.** The next questionnaire in the booklet (see Appendix D) was the Depression Anxiety Stress Scale-21 (DASS-21; Lovibond & Lovibond, 1995b), which is a 21-item short form version of the full-length 42-item DASS. The 21 items divide into three subscales of 7 items each that measure current symptoms of depression, anxiety, and stress. Sample items from the depression subscale include: “I felt down-hearted and blue,” and, “I felt that I had nothing to look forward to.” Participants were asked, for each item of the DASS-21, to rate the extent to which they had experienced the symptom over the past week, on a scale of 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). The DASS-21 has demonstrated good internal consistency, concurrent validity, and convergent and discriminant validity (Antony, Bieling, Cox, Enns, & Swinson, 1998).

**Positive Scenario.** At the end of the questionnaire booklet, participants were administered a positive scenario instructing them to imagine that they received a good grade (see Appendix D). They were then asked to reflect on this positive experience while answering several questions about the imagined good grade.
Chapter 3

Part 1: Examining a More Comprehensive SRM for Possible Depressive Symptoms

Part 1 of this dissertation focused on the Self-Regulatory Model (SRM) that the present university sample used to make sense of the possible depressive symptoms they were noticing. The SRM content components examined here included both cognitive (e.g., identity, timeline, causes and consequences), and emotional representations (e.g., positive and negative emotional reactions). In addition, Part 1 of this dissertation also considered several important contextual elements of the SRM. These included the individual experiences noticed by participants, as these potential depressive symptoms represented the foundation for subsequent SRM development and use; as well as the sample’s psychosocial background and current psychopathology.

SRM Content: Cognitive and Emotional Representations

Identity. Hagger and Orbell (2003) summarized the definition of SRM identity as having two facets: awareness of the illness symptoms (e.g., aching muscles, fever, nausea); and perceptions as to what the illness symptoms would be labelled (e.g., I think I have influenza). In the present study, awareness of symptoms often associated with depression was assessed by the IES, wherein participants were asked what potentially depressive symptoms they had been noticing. However, it was also important to measure the second facet of identity (i.e., the label), as the depressive symptoms on the IES were presented without any label of depression or mention of the word, “depressed.” Therefore, in the SRM Questionnaire, participants were asked explicitly whether they would use a label to describe the set of depressive symptoms they were noticing on the IES; and if so, what that word or phrase would be. As such, the present study offered a unique opportunity to assess how students would encapsulate the potentially depressive symptoms they were noticing, be it as depression, stress, a bad day, part of some physical ailment, or some other label.
Past research using vignette studies provides a sense of how an unlabelled depressive experience may be labelled. In general, the recognition of depression in a vignette by the lay public has been close to 50%; with personal experience with psychiatric disorders, such as depression, related to slightly higher rates of recognition (Goldney et al., 2001; Jorm et al., 1997, 2000). Common labels have included stress, nervous breakdown, or work-related problems. In a university sample similar to the present one, primarily nondepressed students were asked whether they would use a label to describe or summarize an unlabelled depression vignette (Care & Kuiper, 2013). For self-referenced vignettes describing a mild level of depression (i.e., “Imagine you have been feeling sad…”), just under one half of participants indicated they would generally label the experience as a sadness, hedging toward a mild or temporary depression.

Based on these past findings it was anticipated that just less than half of the participants would use a label to describe their experience of depressive symptoms. Of those who used labels, it was expected that the majority of these participants would view their depressive symptoms at a severity level below a formal depression (e.g., as a mild or temporary low period). Given that nondepressed individuals often consider depressive symptoms as representing stress or work-related problems, it was considered likely that the participants experiencing generally mild depressive symptoms would use similar labels that fit with their university context, such as feeling down or overwhelmed with stress and exams.

**Timeline.** There has been minimal research regarding SRM timelines for depression. Hagger and Orbell (2003) have described the SRM timeline as involving beliefs about the course of the illness (e.g., chronic, acute, variable), as well as the time scale of the symptoms (i.e., duration). Here, a few key studies offer an indication of what people tend to expect in terms of the course of depression. As one illustration, in a lay public sample, most participants believed depression to have a variable course (70%), with somewhat fewer participants indicating a chronic course (52%; Godoy-
Izquierdo, López-Chicheri, López-Torrecillas, Vélez, & Godoy, 2007). In another study, Leite (2011) presented primarily nondepressed undergraduate students with unlabelled, self-referenced depression vignettes. Similar to Godoy-Izquierdo et al. (2007), Leite (2011) found that the students generally viewed the condition as a cyclical nonpermanent state. In contrast, most primary care patients who have experienced depression most often believed that their condition was chronic and intermittent (32%), or just chronic (17%; Brown et al., 2001).

Leite’s (2011) results also indicated that students may be more likely to see depression as acute rather than chronic, whereas the reverse seems to be evident in primary care samples. Students may view depressive symptoms as more acute, given that much of their distress is rooted in a university lifestyle (e.g., exams, relational and adjustment difficulties; Beiter et al., 2014; Lunau, 2012), which is also considered temporary (Eisenberg et al., 2007). As such, it was expected that the present sample of students would endorse their depressive experience as being highly variable, with a moderate expectation for an acute course, and a low expectation that the symptoms would become chronic.

To assess the expected duration of depressive symptoms, some SRM researchers (e.g., Care & Kuiper, 2013) have asked primarily nondepressed university students how long they expected the experience, as described in an unlabelled, self-referenced, mild depression vignette, to last. These participants estimated a duration of about two to three days for very mild symptoms. Leite (2011), employed a similar methodology, presenting primarily nondepressed undergraduates with unlabelled, self-referenced depression vignettes, and found that these students expected more moderate symptoms to last in the range of two to three weeks.

In the present study, participants were asked to reflect on the IES list of unlabelled depressive symptoms they had noticed during the past two weeks. This methodology is perhaps most similar to the Leite (2011) study, in which the self-referenced vignette described imaginary moderate
depressive symptoms noticed in the past two weeks. In that study, participants estimated a further duration of two to three weeks for these symptoms. Accordingly, it was hypothesized that the participants in the present study would expect that the symptoms they had noticed in the past couple of weeks would continue for the following two to three weeks.

**Causes: Beliefs endorsed.** In the SRM, the causal belief category involves attributions about the factors seen as responsible for causing the illness or disease (Hagger & Orbell, 2003). The causal belief category is the most commonly studied component of the SRM (Lynch et al., 2011). As such, causes of depression have been surveyed amongst various samples, including mostly nondepressed members of the general public, as well as clinically depressed primary care patients. Furthermore, the many plausible causes of depression examined in these studies have been grouped into categories or factors to derive more meaningful and concise causal belief descriptors.

The literature points to a robust overall pattern evident across samples (e.g., general public, university students, depressed patients), levels of depression (e.g., nondepressed, clinical depression), methodologies (e.g., vignette, survey), and locations around the world. In this regard, Hagmayer and Engelmann (2014) reviewed the literature concerning causal beliefs about depression, including 32 Western studies and 13 non-Western studies. Some of these studies sampled from the general public, others sampled depressed patients, and a few sampled university and college students. These researchers found that, overall, stress and external causes for depression tended to be the most highly endorsed, followed by personality or psychological causes, and lastly, biological causes.

Given that the present study sampled university students, it was expected that the overall pattern described in the above review (Hagmayer & Engelmann, 2014) would also be evident in the present research. Consistent with other university samples (e.g., Khan et al., 2010; Samouilhan & Seabi, 2010), the present sample was expected to most endorse the causes that related to psychosocial or situational stressors, such as exams or relationship problems. Of secondary importance would be
psychological or dispositional causes, such as personality. Biological causes, such as genetics or a chemical imbalance in the brain, were expected to be rated the lowest.

**Causes: Factor structure.** Thematic categorization of causal beliefs for depression has been carried out by several researchers. For instance, Hannson, Chotai, and Bodlund’s (2010) analysis of depressed patients’ beliefs yielded 16 categories, which were organized into three themes, namely current life stressors, past life stressors, and constitutional factors. Lynch et al. (2011) administered a Beliefs about Depression Questionnaire to primary care patients with a recent history of depression. In this study, the 11 causal items were separated into four subscales, namely, past events, personal flaws, overwork and physical causes.

Other researchers have used factor analyses to categorize causal beliefs. Addis, Truax, and Jacobson (1995) asked undergraduates about causes of depression, based on their own personal experiences with this condition. A principal components analysis produced an eight-factor solution that encompassed Characterological, Achievement, Interpersonal Conflict, Intimacy, Existential, Childhood, Physical, and Relationship oriented causes for depression. In another student sample, Goldstein and Rosselli (2003) found a simpler three-factor solution, namely, Biological, Psychological and Environmental causes. Of special note is that these three causal factors directly parallel the top three categories of causal beliefs endorsed by most of the samples in Hagmayer and Engelmann’s (2014) review.

Taken together, the above studies offer some initial hints of potential causal belief factor structures for university student samples. However, the closest methodology to the present design is found in the study by Care and Kuiper (2013). In their study, a version of the SRM Questionnaire almost identical to the one used in the present study was administered to a very similar, mostly nondepressed, undergraduate sample (but with respect to depression vignettes). The 13 causes were reduced by a principal component analysis into three factors, namely: Stable Attributes, which
included childhood, genetics, chemical imbalance in the brain, and personality; Work and Relationship Problems, which included ending a romantic relationship, relationship problems with friends or family, and losing a job; and Daily Stressors, which included being overworked, lack of sleep, and normal changes in mood. These causal factors were generally consistent with the various cause categories and factors described by other researchers (e.g., Addis et al., 1995; Hansson et al., 2010; Lynch et al., 2011).

It appeared from the literature reviewed, that if a causal belief factor analysis in the present study were to yield several factors (e.g., Addis et al., 1995), these may include work or achievement-based stressors, interpersonal or relationship problems, childhood past or developmental concerns, and biological or physical reasons for depression. However, if a simpler factor solution were to be found (e.g., Goldstein & Rosselli, 2003; Hagmayer & Engelmann, 2014), it would be expected to represent the three main causal belief categories of environmental, psychological, and biological reasons for depression.

**Consequences: Beliefs endorsed.** Hagger and Orbell (2003) defined the consequences category of the SRM as referring to beliefs about the impact of an illness on a person’s general quality of life, as well as how the illness may affect functional capacity. Overall, the SRM literature has shown that depression is viewed as having significant negative consequences, including detrimental effects to self-concept, public image, and finances; particularly by those who have experienced depression (Brown et al., 2007; Godoy-Izquierdo et al., 2007; Vollmann et al., 2010).

The stigma literature has pointed to several differences in beliefs held, based on demographics, which can assist in developing expectations for the present sample regarding their views about their own experience of depressive symptoms. In particular, this literature (e.g., Prins, Verhaak, Bensing, & van der Meer, 2008) suggests that young people that are primarily Caucasian and largely nondepressed expect less stigma, compared to clinical patients. This pattern is also
consistent with SRM research by Care and Kuiper (2013) showing a self-positivity bias for university students, as they expected less severe consequences for depression in themselves versus others. In addition, Calear, Griffiths, and Christensen (2011) found that youth endorsed more public stigma than personal stigma. This suggests that the present sample would be more likely to expect negative consequences socially (e.g., others don’t want to spend time with me), rather than negative consequences to self-concept (e.g., think of myself as weak). People experiencing depression also endorsed more negative functional impacts on employment and social life (Roeloffs et al., 2003). As such, it was expected that the present student sample, experiencing some potential depressive symptoms, would expect some functional academic (e.g., difficulty finishing assignments) and social (e.g., difficulty interacting with others) impairments.

Negative consequences have been studied more thoroughly, with much evidence indicating that people generally do expect more negative consequences for depression (e.g., Prins, 2008). Interestingly, however, preliminary research on positive consequences (e.g., Care & Kuiper, 2013) has shown that the present sample, given their young age, likely lower level of depression, and higher potential for self-positivity biases, may endorse positive consequences to an equal or perhaps even greater extent than negative consequences.

**Consequences: Factor structure.** As researchers have created their own lists of consequences to examine within the SRM framework, they have begun to conduct exploratory factor analyses on these items. For example, Care and Kuiper’s (2013) consequences split clearly into two factors, Positive and Negative consequences. In a second example, Lynch et al. (2011) compiled a list of eight potential consequences of depression for primary care patients, with a principal components analysis producing three factors, Stigma (e.g., “My condition affects how others see me”), Avoidance (e.g., “I do not want to go out”), and Strength (e.g., “Having this condition makes me a stronger person”).
Given that the current SRM Consequence scale is closest psychometrically to the previous version of the same scale used by Care and Kuiper (2013), a similar factor structure was expected, wherein positive and negative consequences would be split into two factors. However, given the addition of further positive consequence items in the present study, it was possible that the current factor structure could become more complex. In Lynch et al.’s (2011) factor analysis, for example, there was one positive consequence factor (i.e., Strength) and the negative consequences were split into two more distinct factors (i.e., Stigma, Avoidance).

**Control.** Original SRM theorists defined the control component as the extent to which a person believes their condition is amenable to cure or control (Leventhal et al., 1984). The IPQ tested control with several items, including, “There is a lot which I can do to control my symptoms,” and, “My treatment will be effective in curing my illness.” Factor analysis of the original IPQ cure/control scale revealed two distinct factors: Personal Control, which involved self-efficacy beliefs (e.g., “What I do can determine whether my illness gets better or worse”), and Treatment Control, involved beliefs about the efficacy of available treatments (e.g., “My treatment will be effective in curing my illness”; Weinman et al., 1996). These two categories of control beliefs appear to be naturally occurring constructs in depressed peoples’ narratives (Elwy et al., 2011).

Research on this SRM component suggests that a person’s control beliefs tend to correspond with the coping responses that person is currently using to manage their depression. For instance, Brown et al. (2001) sampled people who had screened positive for depression in a medical setting, only one third of whom were taking antidepressants and approximately half of whom had received prior mental health treatment. Most believed depression could be controlled and would improve in time. However, only 39% thought that treatment would be effective while 63% thought that religious strategies would be effective. It was not surprising that this sample had a low endorsement of treatment control and instead valued self-help strategies, as most of the individuals in this sample
were not actively engaged in treatment for their current depressive symptoms. Endorsement in personal or treatment control has also been shown to hinge on current level of depression. Lynch et al. (2011) found that currently depressed patients were more likely to believe they had no control whatsoever, with higher depression scores being associated with lower personal control or self-efficacy beliefs. Vollmann et al. (2010) also found that depressed people perceived depression as less amenable to treatment than never depressed people.

For brevity in the present study, personal and treatment control were each measured with one explicit item, adapted from the IPQ (i.e., personal control: “How much do you think you can control this set of experiences?”; treatment control: “How much do you think some type of treatment can control this set of experiences”; Weinman et al., 1996). Recall that the present sample was expected to be mostly nondepressed, experiencing mild to moderate nonclinical depressive symptoms, and not engaged in formal treatment. As such, it was anticipated that these students would hold a self-positivity bias, believing that they could control their mild depressive experience on their own, and that treatment would not be necessary or effective for controlling their relatively low level of depressive symptoms. As such, a higher endorsement of personal control compared to treatment control was expected.

**Coherence.** The SRM illness coherence construct was devised by Moss-Morris et al. (2002) as an exploratory venture during a revision of the IPQ, a widely validated SRM questionnaire (Weinman et al., 1996). Moss-Morris et al. (2002) wanted to measure the extent to which a person’s beliefs along the SRM cognitive categories (e.g., causes, consequences) provided them with a coherent understanding of their illness. Illness coherence was proposed as a type of metacognition, assessed with the items such as, “The symptoms of my condition are puzzling to me,” and, “I have a clear picture or understanding of my condition.”
Munson, Floerson and Townsend (2009) conducted one of the few studies that has used this revised IPQ-R to examine illness coherence. These investigators found that illness coherence was marginally positively related to openness to professional help and indifference to stigma amongst adolescents being treated medically for mood disorders. This pattern of findings suggested that illness coherence may also be important in the context of coping decisions for depression.

Despite minimal application to depression thus far, illness coherence was considered to be particularly relevant in the present study. In most existing SRM studies for depression, participants are given a vignette clearly labelled as depression (e.g., Jorm et al., 1997) or are asked about their experience with their own diagnosed condition of depression (e.g., Brown et al., 2001). In contrast, it was of particular interest to ask explicitly whether the participants in the present study had a clear picture or understanding of the unlabelled symptoms of depression that were personally relevant to them.

Although SRM illness coherence is relatively unexplored, some general expectations for the present study can be advanced. In this regard, Care and Kuiper (2013) asked a general undergraduate sample several SRM questions pertaining to an unlabelled, self-referenced, mild depression vignette (i.e., “Imagine you have been feeling sad…”). Illness coherence was not explicitly assessed in this study, but approximately one half to three quarters of the participants chose to summarize the vignette with a label, typically describing an emotional status on the cusp of sadness and a mild or temporary depression. These results suggested that a student sample was able to make sense of a set of vague, mild depressive symptoms presented in an unlabelled vignette. It was therefore expected that the present student sample might also have a reasonably coherent view of their own experience of mild, potentially depressive symptoms. As such, an affirmative coherence score was anticipated.

**Emotional reactions: Beliefs endorsed.** Perhaps the most overlooked element of the SRM is the emotional component of this model. Early theory presumed that emotional reactions surrounding
the illness (e.g., anxiety, anger) could impact the model, but no specific emotions or pathways of influence were detailed. More recently, Moss-Morris et al. (2002) proposed six potential emotional reactions to illness, including feeling depressed, upset, angry, worried, anxious, and afraid. Their research suggested that while general affective dispositions may influence cognitive and emotional representations for physical illnesses, the emotional representation that was assessed did, for the most part, measure a separate construct of distress about the illness.

In the past decade or so, researchers have begun to measure the SRM’s emotional representations for depression. Kelly et al. (2007), for example, assessed the SRM for depressed primary care patients. This investigator found that the relationship between having a negative emotional reaction to depression (i.e., worry, fear, upset, sadness, discouragement, hopelessness, nervousness, anger, and embarrassment) and maladaptive coping (e.g., venting, behavioural disengagement, rumination) remained largely significant, even when controlling for depression severity. In turn, this work suggested that it is possible to tap into a construct of emotional reaction to depression that is distinct from actual depression symptoms and is also relevant to coping.

In a subsequent study, Elwy et al. (2011) interviewed primary care patients regarding their experience with depression, and discerned patients’ emotional reactions to their specific depressive symptoms, distinct from their general mood. One prevalent emotional response was anger, though guilt and shame were also evident. Consistent with Kelly et al.’s (2007) conclusions, Elwy et al.’s (2011) approach suggested that emotional reactions to the experience of depression exist naturally in depressed peoples’ narratives, separate from the depressive symptoms themselves. Consistent with this notion, Vollmann et al. (2010) found that depressed individuals perceived depression as inducing stronger emotional reactions compared to never depressed individuals.

With respect to the present study, negative emotional reactions to depression were expected to be endorsed. Depressive symptoms are likely to be perceived as concerning or upsetting to cope
with, as was evident in Elwy et al.’s (2011) patient narratives. However, the students could be primarily nondepressed and therefore would be expected to exhibit a relatively low level of negative emotional reaction, as nondepressed people perceive less negative emotional impact for depression than clinically depressed people (Vollmann et al., 2010). Moreover, it was anticipated that the present sample would also endorse positive emotional reactions to their depressive experiences. Considering that a similar, mostly nondepressed student sample showed a self-positivity bias in response to mild depressive symptoms (albeit in a vignette; Care & Kuiper, 2013), it was plausible that the present, nonclinical student sample might feel more emotionally positive than negative about their depressive experience.

**Emotional reactions: Factor structure.** Although initial studies (e.g., Kelly et al., 2007; Moss-Morris et al., 2002) have offered possible operationalizations of the emotional component of the SRM, a major limitation is that they have focused solely on negative emotional reactions (i.e., anxiety, fear, worry, nervousness, upset, sadness, hopelessness, discouragement, embarrassment). This could be a limitation in the context of the SRM. For instance, mildly depressed individuals may still exhibit a self-positivity bias and react to depressive symptoms with optimism (Care & Kuiper, 2013). Even those more severely depressed could feel hopeful or calm about their symptoms, if they are ameliorating. As such, the present study included an exploratory list of positive emotional reactions (e.g., hopeful, calm, encouraged) to balance out the negative emotions (e.g., hopeless, worried, discouraged) drawn from past literature (e.g., Kelly et al., 2007; Moss-Morris et al., 2002). It was anticipated that the emotional reaction items would split into two factors, negative (e.g., angry, embarrassed) and positive (e.g., confident, grateful).
SRM Context: Life Events, Depressive Experiences, and Psychopathology

Life Events Checklist. University life is stressful, with many academic demands and concerns regarding performance (Lavasani et al., 2011), relational issues (American College Health Association [ACHA], 2015), problems with sleep (Orzech, Salafsky, & Hamilton, 2011) and alcohol use (Murphy, Hoyme, Colby, & Borsari, 2006). As such, a majority of the students in the present study were expected to respond affirmatively on the Life Events Checklist to feeling busy, having upcoming exams, feeling they had performed poorly academically, having relationship difficulties, and to report getting a less than ideal number of hours of sleep per night and consuming several or more alcoholic drinks per week. Significant losses and physical illnesses or injuries, however, were not expected amongst the majority, as most university students are relatively young and in good overall physical health (ACHA, 2015).

Individual Experience Sheet. The Individual Experiences Sheet (IES) was adapted from the Patient Health Questionnaire-8 (PHQ-8; Kroenke et al., 2009), and asked students to endorse any depressive symptoms (not labelled as such), that they had noticed in the past couple of weeks. Given that the present study recruited students who were noticing potentially depressive experiences, IES scores were expected to be above those of general university sample PHQ scores, but still below those of clinical patient sample PHQ scores. Thus, a mean in the mild range was expected for the present preselected university sample, above the not significant depression range for general university samples (e.g., Klein, Ciotoli, & Chung, 2011) and below the moderate range amongst clinically depressed youth (e.g., Richardson, McCauley, & Katon, 2009), or the moderately severe range amongst clinically depressed adult patient samples (e.g., Katzelnich et al., 2011; Löwe, Schenkel, Carney-Doebeling, & Göbel, 2006). Given that the present sample was nonclinical, a bottom-heavy distribution with a skewed distribution of scores, similar to what has been seen in general university samples (e.g., Shepardson & Funderburk, 2014), was anticipated. This would
essentially involve a greater proportion of participants falling into the not significant to moderate part of the severity scale and fewer in the more severe ranges of the severity scale.

**Depression Anxiety Stress Scale-21.** Past research has indicated that university samples tend to score in the mid to high end of the normal range on the DASS-21 (Care & Kuiper, 2013; Leite, 2011; Lovibond & Lovibond, 1995a), thus showing greater distress levels than high school students and adult members of the general public (Mahmoud, Staten, Hall, & Lennie, 2012; Sinclair et al., 2012; Szabó, 2010). Since the present sample was preselected for potentially depressive experiences, the DASS-21 mean score was expected to rise above the typical high normal scores found amongst university samples, hedging into the mild to moderate range, though not as high as clinical samples which are often in the moderate to extremely severe range (e.g., Ng et al., 2007). A bottom-heavy distribution of scores was anticipated (Care & Kuiper, 2013; Leite, 2011), with the majority of students falling in the normal to moderate range and few in the severe range.

**Results and Discussion**

As a supplement to the results provided in the text below, a summary table of means and other descriptive statistics for the following SRM context (e.g., IES and DASS-21 scores) and SRM content variables/factors (e.g., cause and consequence factor scores) is available for reference in Appendix G.

**SRM Context: Life Events, Depressive Experiences, and Psychopathology**

**Life Events Checklist.** Overall, the psychosocial context of the present university student sample was quite consistent with the typical university lifestyle described in other surveys. In terms of academic life, most of the present students (65%) were experiencing a busy day on campus at the time of their participation. Just under half (45%) had a class right after the study, and the vast majority (91%) had an upcoming exam in the next two weeks. Most (72%) had also had an exam in
the past two weeks, and many (65%) felt they had done poorly in terms of academic performance in the past two weeks. Taken together, these findings were congruent with the literature demonstrating that academic stress and perceptions of failure are common amongst university students (e.g., Lavasani et al., 2011).

The average amount of sleep per night participants were getting for the past two weeks was 6.31 hours ($SD = 1.62$). This finding is consistent with other university surveys in which students were found to sleep, on average around 6.68 to 6.87 hours per night, with poor sleep interacting with academics and mental health (Orzech et al., 2011). In the past two weeks, participants in this study had consumed alcohol on average a couple of days ($M = 1.92$, $SD = 2.12$), having several alcoholic drinks ($M = 3.45$, $SD = 3.66$) per occasion. The students’ alcohol consumption patterns were similar to those of other university samples. For example, in an American undergraduate sample, Murphy et al. (2006) found approximately 20% of students were abstainers or drinking less than once a month, 30% drank one to three times per month, 34% drank one to two times per week, and 15% drank on three or more occasions per week. In a survey of first-year American undergraduates, the highest number of drinks in the past 28 days ranged from zero to 25, with an average of five drinks ($SD = 4.8$; McCabe et al., 2007).

Considering physical health issues, just over a third (36%) of the present participants had been ill or injured in the past two weeks. In a large American undergraduate survey (ACHA, 2015), the vast majority of students (86%) reported being in good, very good, or excellent physical health. While 55% of the students in that sample were treated for health problems in the past year, the most frequent health problems were relatively minor, including allergies, sinus infection, strep throat, and back pain. The literature therefore indicates that although some physical illnesses and injuries do occasionally occur in such samples, most undergraduates are in generally good physical health.
In terms of relational events, just under half (42%) of the present participants had experienced relationship problems in the past two weeks, with a much smaller proportion (8%) having experienced a relationship break-up in the past two weeks. Only 8% had someone close to them ill or injured in the past week, and just 2% had experienced the death of someone close to them in the past two weeks. This present sample appeared similar in their relational experiences to other university samples. In an American undergraduate survey (ACHA, 2015), students reported being impacted by a variety of relational problems (e.g., 10% by relationship difficulties, 7% by roommate difficulties, 11% by concern for a troubled friend or family member), with a small percentage (6%) impacted by the death of a friend or family member.

**Individual Experiences Sheet.** Recall that the IES was adapted from the PHQ-8, as a checklist of depressive symptoms. The IES asked participants to indicate how often in the past two weeks they had noticed any of the listed “experiences,” which represented depressive symptoms. Response options were: 0 = *not at all*, 1 = *a few days*, 2 = *more than half the days*, and 3 = *nearly every day*.

Anhedonia (little interest or pleasure in doing things) was noticed on average a few days ($M = 1.18, SD = 0.79$) over the past two weeks. Low mood (feeling down, unhappy, or hopeless) was also noticed on average a few days ($M = 1.13, SD = 0.76$) in the past two weeks. The two most noticed symptoms were sleep problems (trouble falling asleep or staying asleep, or sleeping too much), and fatigue (feeling tired or having little energy)—both noticed on average more than half the days in the past two weeks ($M = 1.67, SD = 1.03$ and $M = 1.71, SD = 0.80$ respectively). Appetite problems (poor appetite or overeating), low self-esteem (feeling bad about yourself—or that you are a failure or have let yourself or others down), and concentration problems (trouble concentrating on things, such as reading the newspaper or watching TV), were all noticed on average a few days over the past two weeks ($M = 1.25, SD = 0.99$; $M = 0.99, SD = 0.88$; and $M = 0.85, SD = 0.89$ respectively).
Psychomotor problems (moving or speaking so slowly that other people could have noticed; or the opposite—being so fidgety or restless that you have been moving around a lot more than usual) were noticed the least, on average close to not at all ($M = 0.50$, $SD = 0.74$).

The symptoms endorsed appeared consistent with the depressive experience which might be expected of this preselected sample. Recall that most of the students sampled were feeling busy with classes and exams, had felt they had done poorly academically, and were sleeping less than seven hours per night. Consistent with this pattern, the most pronounced potentially depressive symptoms were fatigue and sleep problems. Furthermore, keeping in mind that recruitment in this nonclinical sample was geared toward preselecting for everyday experiences which may be associated with depression, the key defining symptoms of depression (i.e., low mood and anhedonia) were noticed only a few days over the past two weeks. Appetite problems, low self-esteem, and concentration problems were noticed at a similar level (i.e., a few days), which would also fit with the picture of students who were mildly impacted by potentially depressive symptoms, but remaining psychologically intact and physically functional, for the most part. Also consistent with the nonclinical nature of the present sample was that psychomotor problems, which often occur only at more severe levels of depression, were not evident in this sample.

The total IES scores were categorized into the severity subgroups designated by the PHQ-8. As anticipated, the mean total IES score of 9.25 ($SD = 4.31$) fell into the low end of the PHQ-8 category of mild depressive symptoms. Furthermore, the mean score for the present sample was quite similar to other university samples which had been preselected for potential depression, such as that of Klein et al. (2011). Also, as expected, the distribution of scores was bottom-heavy and skewed such that most of the participants fell into the not significant to moderate range. Of the total sample ($N = 190$), the vast majority (75%) fell into the mild (38%) or moderate (37%) range, with the next largest segment of participants’ depressive symptoms considered not significant (14%).
smallest proportion of participants noticed moderately severe (8%) or severe (2%) levels of depressive symptoms. In Klein et al.’s (2011) sample of university students preselected for depressed mood or anhedonia, the distribution of scores was similar to that of the present sample, with the majority of students falling in the not significant to moderate range, and a much smaller percentage having a higher level of depressive symptoms.

It should be noted that direct comparisons between the current IES scores and past PHQ scores must be tempered with the caveat that some changes were made to the PHQ. As such, the scoring may not translate exactly. Despite these alterations, however, the results suggest that the present sample noticed similar levels of depressive symptoms as other university samples preselected for depressive experiences.

**Depression Anxiety Stress Scale-21.** The DASS-21 was administered as a more comprehensive and empirically validated measure of current psychopathology than the depressive symptom checklist (IES), as it included separate subscales for depression, anxiety, and stress.

The score ranges on the Depression subscale are: normal (0-9), mild (10-13), moderate (14-20), severe (21-27), and extremely severe (28-42). On the Depression subscale of the DASS-21, the mean score of the present sample was 12.62 (SD = 10.27), which would be considered an overall mild level of nonclinical depression amongst the participants. Of the 190 participants, almost half (46%) were in the normal range of this scale, while the remainder were distributed across the mild (17%), moderate (18%), severe (8%) and extremely severe (11%) depression ranges.

Scores on the Anxiety subscale may fall into the following ranges: normal (0-7), mild (8-9), moderate (10-14), severe (15-19), and extremely severe (20-42). The DASS-21 Anxiety subscale mean of 10.37 (SD = 8.25) represented an overall moderate level of nonclinical anxiety in the present sample. Nearly half (41%) of the participants were in the normal range, while the remainder were
distributed across the mild (8%), moderate (27%), severe (10%), and extremely severe (15%) ranges of anxiety.

The Stress subscale score ranges are as follows: normal (0-14), mild (15-18), moderate (19-25), severe (26-33), and extremely severe (34-42). The DASS-21 Stress subscale mean of 16.26 (SD = 8.90), for the present sample, fell into the mild range of stress. Half (50%) of the participants were in the normal range of stress, while the remainder were distributed across the mild (15%), moderate (17%), severe (14%), and extremely severe (4%) ranges.

All of the above patterns of DASS-21 findings were consistent with initial expectations. As anticipated, the mean DASS-21 scores in the current sample fell in the mild to moderate range, above the low normal scores of general public adolescents (e.g., Szabó, 2010) and adults (e.g., Sinclair et al., 2012), just above the middle to high normal scores of general university samples (e.g., Lovibond & Lovibond, 1995a; Mahmoud et al., 2012), but below the moderate to extremely severe scores of psychiatric inpatient samples (e.g., Ng et al., 2007).

Although the largest segment of the present sample did fall into the normal or nondepressed range (n = 87; 46%), the next largest sections fell, as expected, into the mild (n = 32; 17%) and moderate (n = 34; 18%) nonclinical depression ranges, with the smallest proportions of participants in the severe (n = 16; 8%) or extremely severe (n = 21; 11%) ranges. This bottom-heavy distribution was consistent, as expected, with other university samples. Although Leite’s (2011) sample (N = 315) had less participants in the depressed range (36%), due to not recruiting for possible depression; that 36% was similarly distributed such that the largest proportion of students also fell in the mild (10%) or moderate (15%) ranges and the smallest proportions fell into the severe (7%) or extremely severe (5%) ranges.
Identity. In previous nondepressed samples (e.g., Care & Kuiper, 2013; Goldney et al., 2001), just under half of the participants have used a label to summarize mild depression vignettes. As anticipated, a similar result was found in the present study. Participants were asked whether they would use a label to identify the set of unique experiences they were noticing, and under one half (39%) responded “yes.” The largest portion of this group (44%) described their depressive symptoms as relating to typical university life experiences or stressors (e.g., “overwhelmed and exhausted from new school, new experiences, & new environment,” “normal for a student under stress”). A much smaller portion (20%) of these students labelled their set of experiences as depression (e.g., “depressed,” “depression- clinical? I don’t know, I have not been to doctor for so me time”), anxiety (e.g., “anxiety, overwhelmed”), some other clinical disorder (e.g., “bipolar disorder,” “OCD”), or a combination of disorders (e.g., “binge eating disorder, depression, stress”). Several participants (8%) labelled their experience as having to do with relationship problems or losses (e.g., “family problems,” “typical loss of first love”). A few (5%) listed purely physical problems in their label (e.g., “neck pain,” “unfortunate accidental injury”). The remainder of the participants (6%) listed labels which did not fall as clearly into the above categories but could be viewed as representing a range of normative mood or thought experiences (e.g., “lack of concentration,” “frustration,” “inner thinking”). The full list of labels utilized by the students is viewable in Appendix H.

The above findings were consistent with the expectation that the present sample would mostly view their possible depressive symptoms as being lower in severity than a formal depression, closer to a mild or temporary low period. In the present study, very few students actually used the term, “depression,” or any other clinical disorder. Instead, most normalized their depressive symptoms within the context of their university experience or general life stress. This attribution of depressive symptoms toward university or work stress was also consistent with past literature. In fact, the most
common response to depression vignettes amongst the general public, besides “depression,” has been “stress,” sometimes stated in more specific terms, like “work-related problems” (Goldney et al., 2001; Jorm et al., 1997; 2000). Given that most of the present sample were nondepressed, or only experiencing a milder range of nonclinical depression, their tendency to attribute these potentially depressive symptoms to university stress could be considered a realistic appraisal of their current circumstances and experiences.

**Timeline.** The expected pattern was found, as participants highly endorsed a variable course for depressive symptoms, moderately endorsed an acute course, and lowly endorsed a chronic course, although the numeric ratings were not as extreme as anticipated. Participants expected a somewhat to very variable course for the depressive experience ($M = 5.63, SD = 1.43$, where $1 = not\ at\ all, 4 = somewhat, 7 = very \ much \ so$), rating this type of symptom progression significantly more likely than an acute $[t(188) = 8.82, p < .001]$ or chronic course $[t(188) = 21.45, p < .001]$. The participants rated the depressive symptoms as somewhat acute ($M = 4.04, SD = 1.82$), significantly above their expectation that the symptoms would be not at all to somewhat chronic $[M = 2.64, SD = 1.61; \ t(188) = 6.61, p < .001]$.

Overall, this pattern of findings fits with the body of literature in which multiple samples (e.g., lay public, primary care patients, university students) have tended to view depressive symptoms as primarily variable (Brown et al., 2001; Godoy-Izquierdo et al., 2007; Leite, 2011). It also fits with the proposed notion that university students may be more likely to expect their depressive symptoms to be acute rather than chronic, given the temporary nature of the stressors inherent in the university context (e.g., exam period, student housing). Primary care patients, by contrast, may view their depression as more chronic (Brown et al., 2001), given that they would likely have lived through the experience of symptoms which carried on long enough and at a severe enough level to necessitate medical treatment.
Also, as anticipated, participants expected their set of individual experiences (i.e., potentially depressive symptoms) to last on average about two to three weeks ($M = 4.37, SD = 1.98$). This result was consistent with Leite’s (2011) finding that undergraduates estimated an imagined, unlabelled, self-referent description of moderate depressive symptoms, which had supposedly occurred for a couple of weeks, to continue for another two to three weeks. One explanation may be that the length of time someone has noticed symptoms (i.e., at least the past two weeks in this case) may provide their best estimate of approximately how long they expect the symptoms to carry on forward (i.e., another two weeks or so). Thus, students appeared to expect the emotional and physical burden to lighten in a matter of weeks, as opposed to months or a year or more.

**Causes: Factor structure.** For causes, the 18 items were reduced to a more manageable and concise set of causal factors using a Principal Components Factor Analysis with a Varimax rotation. Variables with factor loadings under .40 were dropped from their factor. Any item that loaded above .40 on multiple factors was included only on the factor for which the item loaded the highest. The result was six factors with Eigen values greater than 1.0, the first four being visibly distinct based on a Scree plot. The factors and their item loadings are displayed in Table 2 below, and the related scree plot may be found in Appendix I.

The first of these four factors, Social Developmental causes, accounted for 22% of the variance, and was comprised of the following items: childhood, relationship problems, trauma, personality, lack of friends, and ending a romantic relationship. Biological causes were represented in the second factor, accounting for 9% of the variance, and including the following items: normal changes in mood, hormonal fluctuations, chemical imbalance, and genetics. The third cause factor related to Loss, accounted for 8% of the variance, and included losing a job and the death of a loved one. The fourth and final factor distinct in the scree plot was Work Stress causes, which accounted for 8% of the variance, and included the following items: being overworked, not doing well at
Table 2

*Cause Factors and Item Loadings*

<table>
<thead>
<tr>
<th>Cause Items</th>
<th>Factor 1 Social Developmental (22%)</th>
<th>Factor 2 Biological (9%)</th>
<th>Factor 3 Loss (8%)</th>
<th>Factor 4 Work Stress (8%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood</td>
<td>.71*</td>
<td>.18</td>
<td>.13</td>
<td>.07</td>
</tr>
<tr>
<td>Relationship problems</td>
<td>.66*</td>
<td>.06</td>
<td>-.08</td>
<td>.10</td>
</tr>
<tr>
<td>Trauma</td>
<td>.58*</td>
<td>-.03</td>
<td>.41</td>
<td>.09</td>
</tr>
<tr>
<td>Personality</td>
<td>.54*</td>
<td>.53</td>
<td>-.06</td>
<td>.16</td>
</tr>
<tr>
<td>Lack of friends</td>
<td>.47*</td>
<td>.06</td>
<td>.39</td>
<td>.07</td>
</tr>
<tr>
<td>Ending a romantic relationship</td>
<td>.42*</td>
<td>-.08</td>
<td>.19</td>
<td>.14</td>
</tr>
<tr>
<td>Normal changes in mood</td>
<td>-.05</td>
<td>.79*</td>
<td>-.03</td>
<td>.11</td>
</tr>
<tr>
<td>Hormonal fluctuations</td>
<td>-.03</td>
<td>.72*</td>
<td>.20</td>
<td>.07</td>
</tr>
<tr>
<td>Chemical imbalance in the brain</td>
<td>.29</td>
<td>.56*</td>
<td>.04</td>
<td>-.05</td>
</tr>
<tr>
<td>Genetics</td>
<td>.40</td>
<td>.55*</td>
<td>.21</td>
<td>-.05</td>
</tr>
<tr>
<td>Losing a job</td>
<td>.08</td>
<td>.10</td>
<td>.77*</td>
<td>.04</td>
</tr>
<tr>
<td>Death of loved one</td>
<td>.15</td>
<td>.06</td>
<td>.76*</td>
<td>.02</td>
</tr>
<tr>
<td>Being overworked</td>
<td>.06</td>
<td>.05</td>
<td>.06</td>
<td>.83*</td>
</tr>
<tr>
<td>Not doing well at work</td>
<td>.24</td>
<td>.04</td>
<td>-.03</td>
<td>.70*</td>
</tr>
<tr>
<td>Lack of sleep</td>
<td>-.08</td>
<td>.25</td>
<td>.20</td>
<td>.52*</td>
</tr>
<tr>
<td>Diet</td>
<td>-.02</td>
<td>.02</td>
<td>.17</td>
<td>.13</td>
</tr>
<tr>
<td>Alcohol and/or drugs</td>
<td>.15</td>
<td>.22</td>
<td>-.03</td>
<td>-.19</td>
</tr>
<tr>
<td>Illness or injury</td>
<td>.07</td>
<td>-.07</td>
<td>-.03</td>
<td>.06</td>
</tr>
</tbody>
</table>

*Note.* A * indicates that the item was included in the factor.

The causal factors obtained in the present study were similar to the thematic subcategories delineated by other researchers, such as Lynch et al. (2011). The present study’s Social Developmental cause factor could be seen as encompassing Lynch et al.’s (2011) categories of past events and personal flaws. The present Loss factor may also relate to Lynch et al.’s (2011) past events category. The present study’s Work Stress causal factor corresponds with Lynch et al.’s (2011) overwork category. Finally, the present study’s Biological cause factor parallels Lynch et
al.’s (2011) physical causes category. Thus, although there is not an exact correspondence between the present study’s causal factors and those found in the past literature, the present set of causal factors appeared to be conceptually reasonable.

**Causes: Beliefs endorsed.** Factor scores were calculated for the four factors described above, as unweighted means [e.g., ca.f1.social.developmental = (ca.childhood + ca.relationship + ca.trauma + ca.personality + ca.lackfriends + ca.endingrelationship) / 6].

Work Stress was endorsed the highest of all the causal factors, rated moderately likely ($M = 4.37$, $SD = 1.35$), significantly above Social Developmental causes [$t(186) = 15.03, p < .001$], Biological causes [$t(187) = 15.02, p < .001$], and Loss causes [$t(187) = 26.80, p < .001$]. Social Developmental causes ($M = 2.69$, $SD = 1.17$) and Biological causes ($M = 2.65$, $SD = 1.18$) were both considered to a similar degree [$t(186) = 0.46, ns$], in between very unlikely and moderately likely causes for the depressive symptoms noticed by participants. However, both of these causes were still endorsed significantly higher than Loss causes [$t(186) = 14.39, p < .001$; $t(188) = 12.85, p < .001$], which were considered to be the least probable reason for the depressive symptoms, close to very unlikely ($M = 1.41$, $SD = 0.95$).

The above endorsement pattern for causes was in line with past research using student samples (e.g., Samouilhan & Seabi, 2010). The Work Stress causal factor (i.e., overworked, not doing well at work/school, lack of sleep), was also rated highest by the present sample of undergraduates. The second highest rated causes were expected to be psychological or dispositional causes, such as personality. The Social Developmental cause factor was rated second, which would be seen as fitting with the anticipated levels of endorsement because it encompassed psychological or dispositional causes, which were expected to be secondary, as well as relationship stressors, which were expected to be primary. However, it made sense that the stressors which were seen as primary in the current university setting were related to the pressures of school work and performance, and
that relational stressors were of secondary concern to these students. As expected, the Biological cause factor (i.e., normal changes in mood, hormonal fluctuations, chemical imbalance, genetics) was rated low in the present study. Finally, Loss (i.e., losing job, death of loved one), which was an unanticipated causal factor, was rated the very lowest, even below biological causes. This finding was also consistent with the literature, as losses are not often endorsed as a cause of depression, though this factor has sometimes been identified in other student samples (e.g., Çirakoğlu et al., 2003).

It is notable that even the most endorsed cause was rated at only a moderate level (i.e., moderately likely), midway between the extremes (i.e., very unlikely, very likely) of the scale utilized. The other causes were rated even further below this point, on the lower half of the scale. Perhaps a low to moderate endorsement of these causes was a result of the overall mild level of possible depressive experience that the students were basing their responses on, such that they were not viewing any causes as glaring or largely problematic.

**Consequences: Factor structure.** The same decisional process for determining factors as was described above (for causes), was applied to the list of consequence items. The consequence factors and their item loadings are displayed in Table 3 below, and the related scree plot is in Appendix I.

As anticipated, the consequence items split into positive and negative consequence factors, as in Care and Kuiper (2013). However, the negative consequences did not split into subcategories, as was seen in Lynch et al. (2011). The Negative consequences factor accounted for 35% of the variance and was comprised of the following items: think of myself as weak, become less confident, be seen as weak, have difficulty interacting with others, find that others don’t want to spend time with me, and have difficulty finishing my assignments. The Positive consequences factor accounted for 14% of the variance and included the following items: learn about myself, view myself as
Table 3

Consequence Factors and Item Loadings

<table>
<thead>
<tr>
<th>Consequence Items</th>
<th>Consequence Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1: Negative (35%)</td>
</tr>
<tr>
<td>Think of self as weak</td>
<td>.83*</td>
</tr>
<tr>
<td>Become less confident</td>
<td>.79*</td>
</tr>
<tr>
<td>Be seen as weak</td>
<td>.77*</td>
</tr>
<tr>
<td>Difficulty interacting with others</td>
<td>.77*</td>
</tr>
<tr>
<td>Others don’t want to spend time</td>
<td>.69*</td>
</tr>
<tr>
<td>Difficulty finishing assignments</td>
<td>.65*</td>
</tr>
<tr>
<td>Learn more about self</td>
<td>.19</td>
</tr>
<tr>
<td>View self as worthwhile</td>
<td>-.05</td>
</tr>
<tr>
<td>Encouragement from others</td>
<td>.02</td>
</tr>
<tr>
<td>Susceptible to illness</td>
<td>.21</td>
</tr>
</tbody>
</table>

Note. A * indicates that the item was included in the factor.

worthwhile, and receive encouragement from others. The only item which did not load onto either of these factors was, “Become more susceptible to illnesses,” which represented a conceptually different item. Whereas all the other items represented psychosocial consequences, this item was the sole biological consequence.

Consequences: Beliefs endorsed. In general accord with prior findings concerning young people’s stigma beliefs (e.g., Calear et al., 2011), and the endorsement of positive and negative consequences (e.g., Care & Kuiper, 2013), the Positive and Negative consequence factors were both reported as being somewhat experienced by the participants, as a result of their depressive symptoms over the past two weeks. It should be noted, however, that the positive consequences ($M = 3.64, SD = 1.18$), were endorsed significantly more so than the negative consequences ($M = 3.19, SD = 1.40$, $t(186) = 3.60, p < .001$).

Overall, this pattern of findings was in keeping with Care and Kuiper’s (2013) concept of a self-positivity bias in a primarily nondepressed undergraduate sample, as opposed to depressive
realism or the more extreme negative biases held by more clinically depressed individuals (Watson, Dritschel, Jentzsch, & Obonsawin, 2008). The present sample was experiencing generally mild to moderate nonclinical depressive symptoms within the context of normative university stressors. As such, it was anticipated that the students might have maintained a more optimistic view that, despite strains to social or academic functioning and self-concept, the depressive experience would ultimately result in personal growth rather than depletion.

**Control.** As expected, personal control was endorsed significantly more strongly ($M = 2.64, SD = 0.75$) than treatment control [$M = 1.99, SD = 0.81; t(189) = 7.80, p < .001$]. Participants believed that they could somewhat to mostly control their set of depressive experiences, whereas they believed that some type of treatment could somewhat control their symptoms. This result may lend some further support to the notion that generally nondepressed people may hold a self-positivity bias (e.g., Care & Kuiper, 2013), thus believing that they are more able to control mild to moderate depressive symptoms than some form of treatment, which may be viewed as unnecessary or not applicable at such levels of distress.

**Coherence.** As anticipated, participants indicated they had a fairly clear picture or understanding of the set of individual experiences they had been noticing ($M = 5.39, SD = 1.17$; where $1 =$ *not at all*, $4 =$ *somewhat*, $7 =$ *very much so*). In fact, the vast majority of participants (95%) indicated that they were somewhat to very much clear in understanding their set of experiences, with only 5% of participants not at all to somewhat clear about understanding their set of experiences. This finding was obtained even though these experiences were varied and unique to each individual, and the set of depressive symptoms were not labelled as such.

In the Care and Kuiper (2013) study, approximately half to three quarters of the participants summarized a self-referenced vignette describing mild or moderate depression with a label of sadness hedging toward a mild or temporary depression. This pattern suggested that even vague, unlabelled,
imaginary symptoms of mild to moderate depression could be viewed clearly or coherently. The present study suggested the same. Depressive symptoms were presented without an accompanying diagnosis or label and were listed in point form rather than in a story or vignette format. Nonetheless, participants were able to construct a coherent understanding of their individual experiences. This was not to say, however, that they necessarily viewed their set of depressive symptoms as depression, as explained earlier in the Identity section. In fact, most students who used a label summarized the set of experiences as having to do with university stresses, with a much smaller proportion referencing depression of some sort. Regardless of the use of a label, however, these coherence results indicate that students were able to make some sense of the depressive symptoms that they had been noticing.

**Emotional reactions: Factor structure.** The same decisional process for determining factors as was described previously, was also applied to the list of emotional reactions items. The emotional reaction factors and their item loadings are displayed in Table 4 below, and the related scree plot is in Appendix I.

As expected, the emotional reaction ratings produced a Positive emotional reactions factor, which accounted for 33% of the variance and included happy, confident, proud, encouraged, grateful, contented, and calm. However, it was not anticipated that the negative emotional reactions would split into two factors. The first of these was termed Negative-Anxious emotional reactions (19% of the variance), and included worried, upset, scared, discouraged, hopeless, tense or nervous, and angry. The second negative emotions factor was Guilt-Shame emotional reactions (7% of the variance), which included embarrassed and guilty. Although guilt and shame were not expected to be distinct from the other negative emotional reactions in the present study, this result was reminiscent of Elwy et al.’s (2011) depressed patient narratives, in which guilt and shame were discussed as a separate theme from other negative emotional reactions, such as anger. Therefore, these three factors may be viewed as conceptually sound in the context of the available literature.
Table 4

Emotional Reaction Factors and Item Loadings

<table>
<thead>
<tr>
<th>Emotional Reactions Items</th>
<th>Emotional Reactions Factor</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1: Positive (33%)</td>
<td>Factor 2: Negative-Anxious (19%)</td>
<td>Factor 3: Guilt-Shame (7%)</td>
</tr>
<tr>
<td>Happy</td>
<td>.84*</td>
<td>-.17</td>
<td>-.11</td>
</tr>
<tr>
<td>Confident</td>
<td>.82*</td>
<td>-.10</td>
<td>-.01</td>
</tr>
<tr>
<td>Proud</td>
<td>.78*</td>
<td>-.09</td>
<td>-.15</td>
</tr>
<tr>
<td>Encouraged</td>
<td>.77*</td>
<td>-.06</td>
<td>-.03</td>
</tr>
<tr>
<td>Grateful</td>
<td>.76*</td>
<td>.05</td>
<td>-.06</td>
</tr>
<tr>
<td>Hopeful</td>
<td>.76*</td>
<td>-.08</td>
<td>-.07</td>
</tr>
<tr>
<td>Contented</td>
<td>.70*</td>
<td>-.14</td>
<td>.06</td>
</tr>
<tr>
<td>Calm</td>
<td>.49*</td>
<td>-.29</td>
<td>.33</td>
</tr>
<tr>
<td>Worried</td>
<td>-.07</td>
<td>.77*</td>
<td>.01</td>
</tr>
<tr>
<td>Scared</td>
<td>.06</td>
<td>.75*</td>
<td>.08</td>
</tr>
<tr>
<td>Upset</td>
<td>-.16</td>
<td>.76*</td>
<td>.20</td>
</tr>
<tr>
<td>Discouraged</td>
<td>-.21</td>
<td>.73*</td>
<td>.15</td>
</tr>
<tr>
<td>Hopeless</td>
<td>-.17</td>
<td>.72*</td>
<td>.30</td>
</tr>
<tr>
<td>Tense or Nervous</td>
<td>-.02</td>
<td>.71*</td>
<td>.01</td>
</tr>
<tr>
<td>Angry</td>
<td>-.17</td>
<td>.54*</td>
<td>.31</td>
</tr>
<tr>
<td>Embarrassed</td>
<td>-.03</td>
<td>.31</td>
<td>.79*</td>
</tr>
<tr>
<td>Guilty</td>
<td>-.09</td>
<td>.23</td>
<td>.75*</td>
</tr>
</tbody>
</table>

Note. A * indicates that the item was included in the factor.

**Emotional reactions: Beliefs endorsed.** It was not certain whether positive or negative emotional reactions would be endorsed more highly in the present sample, especially given that the current study was the first to assess positive emotional reactions to depressive symptoms. In general, depressive symptoms would be expected to be viewed with substantial upset and concern (Elwy et al., 2011). Of note, however, was that primarily nondepressed samples may under-endorse the negative emotional impact of depression (Vollmann et al., 2010), and instead exhibit a self-positivity bias by endorsing a more optimistic emotional reaction (Care & Kuiper, 2013). Therefore, both positive and negative emotions were expected, with perhaps a slightly higher endorsement of positive emotional reactions, in keeping with this self-positivity bias.
As anticipated, both positive and negative emotional reactions were endorsed, all close to the level of being somewhat experienced by the participants. This pattern suggested that the students experienced a range of both positive and negative emotional reactions; all to a mild or moderate degree which would be considered proportionate to the mild to moderate level of depressive symptoms the students were generally experiencing. In contrast to the potential self-positivity bias hypothesized, Negative-Anxious emotional reactions were endorsed most highly \( (M = 3.66, SD = 1.34) \), as somewhat experienced, significantly over the Positive emotions \( [t(187) = 3.04, p < .01] \) and Guilt-Shame reactions \( [t(188) = 6.62, p < .001] \). Although Positive emotions \( (M = 3.20, SD = 1.27) \) were experienced more so than Guilt-Shame reactions \( (M = 2.90, SD = 1.64) \), the difference was not significant \( [t(188) = 1.84, p = ns] \) and both of these emotional reactions were experienced close to somewhat.

It is perhaps not surprising that the most endorsed emotional reaction would be negative and anxious in nature, as this factor includes upset and concern about depression, which has often been very evident in depressed patient narratives (e.g., Elwy et al., 2011). Although emotional reactions to depression can be measured as distinct from the depressive symptoms themselves (Kelly et al., 2007), the Negative-Anxious factor included items which may be expected to be endorsed highly as they are congruent with the depressive experience (e.g., hopelessness, comorbid anxiety; Almeida et al., 2012; Henkel, Bussfeld, Möller, & Hegerl, 2002). The result that positive emotional reactions were endorsed close to somewhat, just below negative and anxious reactions, may lend some merit to the novel proposal that optimistic reactions may also be experienced in response to mild depressive symptoms. In particular, the participants in the present study may have maintained somewhat of a self-positivity bias (Care and Kuiper, 2013); and thus held a more optimistic view of the emotional impact of depression than a clinical sample might have (e.g., Vollmann et al., 2010). Guilt and shame being the lowest endorsed emotional reaction could also be considered to fit with past research.
which has found young adults view themselves with less personal stigma than they expect publicly (Cleaf et al., 2011).

**Part 1 Summary**

The survey of participants’ life events showed that students reported psychosocial stressors consistent with those of other university samples (e.g., Lavasani et al., 2011; McCabe et al., 2007; Murphy et al., 2006; Orzech et al., 2011). These included academic stressors (e.g., classes, exams), low academic self-confidence, less than ideal sleep patterns, typical university alcohol consumption, some relational problems, and loss and injury to a lesser extent. These results highlighted some psychosocial issues which may have contributed to the students experiencing potentially depressive symptoms, and present the context within which the SRM was formed by the sample.

The SRM to follow was based on the symptoms of depression which were endorsed by students on the IES measure (adapted from the PHQ-8). The highest rated potentially depressive symptoms on the IES were fatigue and sleep problems (noticed by students on average more than half the days of the past two weeks). Secondary were the defining symptoms of depression, low mood and anhedonia (noticed a few days); followed by appetite, concentration, and self-esteem problems (noticed a few days); and lastly psychomotor problems (noticed almost not at all). This symptom profile was considered appropriate for a nonclinical, undergraduate student sample. Furthermore, as expected, the average total IES score was in the low end of the mild nonclinical depressive range. These findings were furthered supported by the DASS-21 depression scores, which also indicated that the present study captured a bottom-heavy range of depression scores (with more normal to mild or moderate scores and few severe scores), with average scores in the mild, nonclinical range.

When considering the SRM components in relation to the IES symptoms, students reported that they had a fairly coherent understanding of the potentially depressive experience they had
endorsed on the IES. The majority of students chose not to use a label to summarize their individual experience of these symptoms, and those who did most often related the experience to university stressors, with a much smaller portion of students applying a label of depression or some other clinical disorder. The students viewed the potential depressive symptoms as variable in course, and expected a duration of two to three weeks. These symptoms were seen as moderately likely due to work stress causes, followed by social developmental causes, and lastly, biological causes. Both positive and negative consequences were reported to a moderate degree, with positive consequences experienced slightly more by the students. Negative and anxious emotional reactions to the possible depressive symptoms were noticed somewhat, followed by positive emotional reactions, with guilt and shame reactions experienced the least. The undergraduates believed they could somewhat to mostly control their set of symptoms, and that some type of treatment could somewhat control these same symptoms.
Chapter 4

Part 2: Coping Strategies Used by Undergraduates in Response to Possible Depressive Symptoms

Part 1 detailed the SRM cognitive and emotional representations that the students formed to make sense of the possible depressive symptoms they had been experiencing in a typical undergraduate setting. Part 2 moves on to describe the various coping strategies which these students reported using to deal with these potentially depressive symptoms.

Coping Strategies

In the SRM, health behaviours that individuals adopt in response to their illness are termed *coping behaviours* or *coping strategies* (Hagger & Orbell, 2003). SRM researchers have examined what people do to cope with depressive symptoms, using a variety of methodologies. To begin, there are empirically-validated, standardized SRM questionnaires which have been used to assess coping, such as the IPQ (Weinman et al., 1996). Researchers (e.g., Brown et al., 2001, 2007) have substituted the word, “antidepressants,” for, “treatment,” in the IPQ to make this questionnaire specifically relevant to depression. Unfortunately, however, this questionnaire allows for only one type of treatment to be assessed at a time. Furthermore, the IPQ only assesses the extent to which participants believe this type of treatment could help them, not how much they actually use this treatment.

In response to this limitation, some SRM researchers (e.g., Brown et al., 2001) have also employed the Brief COPE (Carver, 1997), a well-validated coping measure. The Brief COPE lists a wide range of potentially beneficial self-help strategies (e.g., seeking social support, positive thinking), as well as potentially harmful self-help strategies (e.g., substance use, negative self-talk). This measure might also be considered to vaguely allude to possibly seeking treatment (e.g., taking
action). However, the Brief COPE does not differentiate various types of support people (e.g., professionals versus family or friends), or directly specify seeking different types of treatments (e.g., psychiatric, psychological, holistic). As such, it is not a comprehensive tool for assessing potential coping strategies specific to depression.

Therefore, while the IPQ, COPE, and other empirically validated measures of coping offer the benefit of sound psychometric properties, many researchers studying coping with depression have constructed their own measures to explore other possibilities in more depth. Goldney et al. (2001), for instance, focused primarily on the utility of various types of people who could assist someone with depression, including a person’s family doctor, pharmacist, counselor, social worker, psychiatrist, psychologist, close family or friends, and minister or priest. In a different vein, Morgan et al. (2012) recognized the potential importance of self-help strategies for subthreshold depression, including lifestyle (e.g., exercise, do something enjoyable), psychological (e.g., problem solving, relaxation methods), interpersonal (e.g., share feelings with family/friends), dietary (e.g., healthy diet), substances (e.g., reduce or eliminate alcohol and/or drugs), and physical/sensory (e.g., sunlight) approaches.

Other researchers, rather than examining any one type of coping in detail, have attempted to create coping lists which offer an overview of the many potential categories of coping. For example, Jorm et al. (2004) surveyed the general public as to which actions they had taken to cope with depression in the previous six months, with a resulting list of 25 options yielding the following factors: Everyday Activities (e.g., enjoyable activities, exercise, family and friends), Complementary Therapies (e.g., massage, meditation, yoga), Non-prescription Medication (e.g., painkillers, St. John’s wort, alcohol), Dietary Changes (e.g., cutting out alcohol, caffeine, or sugar), and Professional Help (e.g., antidepressants, counseling).
The present study’s approach to investigate coping with depressive symptoms is nearest to that of Jorm et al. (2004). In particular, the aim in the present study was to include a relatively short list of coping strategies or approaches which would survey a broad range of formal treatments and informal self-help strategies, both helpful and harmful. The present study’s coping list was grounded in the empirically-supported Brief COPE (Carver, 1997), which has shown good psychometric properties (Carver, 1997; Carver, Scheler, & Weintraub, 1989). One item was used from each of the 14 types of coping in the Brief COPE. Further items were added from studies which focused on specific treatment strategies for depression (e.g., Goldney et al., 2001). The result was a 27-item coping questionnaire (Care & Kuiper, 2013; Leite, 2011), with one additional item (sleep better) added to the version used in the present study, making a total of 28 items. The SRM Questionnaire’s coping list has been applied successfully to mild depressive symptoms with similar student samples in prior studies in our lab (Care & Kuiper, 2013; Leite, 2011).

Coping Factors

Given that there is a plethora of potential coping strategies for depression, researchers who have compiled long lists of response options have often grouped them into categories, either thematically or through factor analyses. Recall that the Brief COPE outlined 14 thematic categories of coping strategies, including active coping, humor, self-distraction, and venting. As described above, Morgan and Jorm (2009) and Morgan et al. (2012) grouped self-help strategies into thematic categories, including lifestyle, psychological, interpersonal, dietary, substances, and physical. Using a principal components analysis, Jorm et al. (2004) reduced 25 coping strategies for depression to five factors, namely Everyday Activities, Complementary Therapies, Non-prescription Medication, Dietary Changes, and Professional Help. Another factor analysis of coping strategies for depression
by Jorm et al. (2005) yielded four factors: Lifestyle, Psychological, Medical, and Information-Seeking.

More broadly, a meta-analysis of SRM studies for a variety of illnesses led Hagger and Orbell (2003) to conduct a factor analysis of coping strategies for dealing with illnesses, in general. This produced seven coping factors, namely, Avoidance/Denial, Cognitive Reappraisal, Expressing Emotions, Problem Focused Coping – Generic, Problem-Focused Coping – Specific, Doctor’s Visits, and Seeking Social Support. These reviewers have continued to suggest some of these general coping factors for inclusion in the SRM theory, namely Avoidance, Cognitive Reappraisal, Emotion Venting, Problem-Focused Coping, and Seeking Social Support (Hagger et al., 2017).

The present study’s list of coping strategies had also been reduced, in previous research, through principal components analysis into several factors. In both Leite (2011) and Care and Kuiper (2013), the original 27 coping items were rated in terms of perceived helpfulness for imagined depression in a vignette, using undergraduate student samples similar to that of the present study. Separate factor analyses across these two studies indicated considerable convergence, but with some distinctions. Commonalities included Professional Assistance, as well as Rumination. The Social Support factor in one study paralleled a Comfort and Advice factor in the other. The more positive self-help strategies, however, seemed to load onto different factors. Overall, these findings suggested that, in the present study, we might expect factors relating to professional assistance, social support, positive self-help (i.e., behavioral activation strategies like doing something enjoyable, or positive thinking), and negative self-help strategies (e.g., rumination, avoidance, isolation). These expected factors are generally consistent with work by other SRM researchers that has delineated similar coping categories and factors (e.g., Hagger & Orbell, 2003).
Coping Strategies Utilized

Unfortunately, while there are many studies asking people to rate how helpful they think various coping strategies would be for dealing with depression, there are relatively few studies that have surveyed what people actually do to cope with depression. Paradoxically, several studies point to what many people do not do to cope with depression; namely, they do not seek formal treatment. A national survey in Australia, for example, revealed that 33% of adults with an affective disorder had not sought professional help in the previous year (Andrews & Slade, 2001, as cited in Jorm et al., 2004). Even amongst young adults in university, where professional assistance is often free and available through campus medical and counseling clinics, this trend is apparent. For example, Eisenberg et al. (2007) found that although 30% of students in an American university sample believed they needed assistance for emotional or mental health problems in the past year, only 15% of the students had received psychotherapy or psychotropic medication during that time. Of those who screened positive for depression or anxiety, 37% to 84% did not receive treatment, depending on the disorder. Eisenberg et al. (2007) noted this result was comparable to a national survey, which had found that 57% of the general adult population with major depression had received treatment, suggesting that unmet needs are similar amongst students and the general public.

Taken together, these studies indicate that many people struggling with depressive symptoms are not receiving formal treatment. It follows that these individuals may possibly be coping with their symptoms in other ways. However, little is yet known about the actions these people take to reduce or manage their symptoms in their everyday lives. As such, researchers are beginning to investigate the area of informal self-help in coping with depressive symptoms. Two key studies have offered preliminary results in this regard.

In the first of these studies, Morgan et al. (2012) explored the use of informal self-help strategies by members of the general public to cope with subthreshold depressive symptoms. Perhaps
one of the most striking findings here was that there was only a very low association between mean ratings of frequency of use and mean ratings of helpfulness, suggesting that a person’s perception of what is helpful does not necessarily dictate or relate to what they choose to do to actually cope with depression. Interestingly, Morgan et al.’s (2012) findings showed that, of 26 coping strategies, the most frequently used for subthreshold depression by the public was to spend more time alone, despite the fact that this coping strategy was rated the least helpful by the public and was also viewed as potentially harmful by experts. Of the other strategies viewed as potentially harmful, alcohol ranked ninth. Other potentially harmful behaviours did not appear to be used often by the public, with exciting or risky behaviors ranked 19th, and illicit drugs ranked 23rd.

The Morgan et al. (2012) study also identified several healthy, behavioural activation and self-care strategies which were rated as helpful by both experts and the public. These positive self-help strategies were used frequently by the public to cope with subthreshold depression and included actions such as getting out of the house each day, eating a healthy diet, doing something enjoyable, engaging in a purposeful activity, exercising, and getting enough sleep. Although seeking social support was viewed as helpful by the experts, the public seemed to engage in this strategy only to a moderate degree. Cognitive-type strategies, such as rewarding oneself for attaining a small goal, making a list of and using past helpful techniques, were considered helpful, but were used less frequently. Alternative treatments and herbal remedies, which were viewed as less helpful but benign by experts, were used the least frequently by the public, with massage, yoga, and St. John’s Wort all near the bottom of the list.

The second key study which offered crucial background results for the present dissertation was conducted by Jorm et al. (2004). These researchers set out to investigate how people in the general public experiencing varying severities of depression had coped with their symptoms over the past six months. In doing so, these researchers assessed a range of 25 formal treatments and informal
self-help strategies. Based on the results, Jorm et al. (2004) proposed an *overlapping waves of action* model. The first wave of action occurs at a mild level of depressive distress, and involves an intensification of everyday strategies (i.e., enjoyable activities, interaction with family and friends, time with pets, exercise, music, and chocolate). This wave declines as depression becomes more severe. The second wave of action involves new self-help strategies taken up to deal with depressive distress as it becomes more moderate, and includes non-prescription medication (i.e., alcohol, painkillers, St. John’s wort, fish oils, vitamins), dietary changes (i.e., cutting out alcohol, avoiding caffeine, avoiding sugar), and complementary therapies (i.e., massage, relaxation, meditation, yoga, aromatherapy). This wave peaks at moderate levels of depression and then declines as depression becomes more severe. The third wave of action involves seeking professional treatment (i.e., antidepressants, counseling, counselors or clinical psychologists, general practitioners), and increases continually in use amongst the public as depressive symptoms become more severe.

Based upon the above research (i.e., Eisenberg et al., 2007; Jorm et al., 2004; Morgan et al., 2012), several hypotheses were formulated as to how the present sample might have coped with potentially depressive symptoms. Given that the average level of depressive distress was relatively mild in the present sample, it was expected that most of the students would be operating in the first wave of Jorm et al.’s (2004) overlapping waves of coping model. This would entail the intensification of everyday strategies to cope with generally mild depressive symptoms, including, for example, engaging in enjoyable activities, interacting with family and friends, and exercise. Such strategies would also be expected for subthreshold depression based on Morgan et al.’s (2012) results, which similarly found everyday behavioural activation and self-care strategies to be the most frequently used by the public to cope with subthreshold depression. These strategies more specifically included getting out of the house, doing something enjoyable or purposeful, and eating healthily, sleeping well, and exercising. Thus, based on this prior work, it was hypothesized that the
use of mostly positive, everyday self-help strategies could be expected for the present sample of students as they attempted to cope with generally mild depressive symptoms.

It should also be noted, however, that Morgan et al. (2012) did find that the most utilized coping strategy for subthreshold depression by the public was a potentially harmful one, namely spending more time alone. Therefore, it was considered possible that the present sample might have also engaged in similar negative self-help strategies, such as isolation and rumination. Given the university context, it was also possible that the present students might have been engaging in partying or an unhealthy self-medicating of their distress with drugs or alcohol. Alcohol was used relatively frequently in Morgan et al.’s (2012) public sample to cope with subthreshold depression, despite public awareness that it may be harmful.

Complementary therapies and herbal remedies, including relaxation, meditation, yoga, massage, and St. John’s wort, would not be expected to be utilized frequently by the students in the present sample, given that these types of strategies would be more anticipated in wave two of Jorm et al.’s (2004) model (i.e., for more moderate depression). Furthermore, Morgan et al. (2012) also found these strategies to be the least utilized to cope with subthreshold depression amongst the public. Cognitive-type strategies, such as problem solving and planning, were also not utilized very frequently for subthreshold depression in Morgan et al.’s (2012) sample and thus were not anticipated to be high use strategies in the present study.

Seeking social support was expected to a moderate degree amongst the present sample to deal with generally mild depressive symptoms, as Morgan et al. (2012) found the public engaged in such strategies to a moderate degree for subthreshold depression. Conversely, seeking professional assistance was not highly anticipated amongst the present student sample. In Jorm et al.’s (2004) overlapping waves model, seeking professional treatment (e.g., antidepressants, counseling) increased in use amongst the public only as depressive symptoms became more severe. In contrast,
the present sample was experiencing, on average, mild depressive symptoms, with only a handful of students falling into the severe range. Additionally, past studies of university samples (e.g., Eisenberg et al., 2007) suggested that most university students experiencing depressive distress do not seek formal treatment that is available to them.

Results and Discussion

Coping Factors

The list of coping strategies administered to participants was 28 items long. To reduce the individual coping strategies into a smaller number of conceptually meaningful factors, a Principal Components Factor Analysis with a Varimax rotation was performed using the responses of all 190 participants. Variables with factor loadings under .40 were dropped from their factor. Any item that loaded above .40 on multiple factors was included only on the factor for which the item loaded the highest. Of the nine factors which emerged with an Eigen value greater than 1.0, the first four were distinct in a Scree plot (see Appendix I). These four coping factors displayed in Table 5 and reported below.

The first factor, Professional Assistance (psychiatrist, psychologist, medication, family doctor, counselor) accounted for 14% of the variance. The second factor, Withdraw and Ruminate (time alone, blame self, think about how sad, keep feelings to self, give up), accounted for 12% of the variance. Social support (get comfort, get advice), was the third factor, accounting for 9% of the variance. The fourth coping factor, Behavioural Activation (do something enjoyable, exercise, do something to think less, sleep better), accounted for 7% of the variance.

Expectations were generally met for the factor analysis of coping strategies, as this analysis did yield a Professional Assistance factor, a Social Support factor, and the self-help strategies did divide into positive and negative factors. Positive self-help was represented by Behavioural
Table 5

Coping Factors and Item Loadings

<table>
<thead>
<tr>
<th>Coping Items</th>
<th>Factor 1: Professional Assistance (14%)</th>
<th>Factor 2: Withdraw &amp; Ruminate (12%)</th>
<th>Factor 3: Social Support (9%)</th>
<th>Factor 4: Behavioural Activation (7%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychiatrist</td>
<td>.85*</td>
<td>-.06</td>
<td>.02</td>
<td>.00</td>
</tr>
<tr>
<td>Psychologist</td>
<td>.84*</td>
<td>.09</td>
<td>.08</td>
<td>.06</td>
</tr>
<tr>
<td>Prescribed medication</td>
<td>.70*</td>
<td>.07</td>
<td>-.10</td>
<td>-.03</td>
</tr>
<tr>
<td>Family doctor</td>
<td>.68*</td>
<td>.05</td>
<td>-.02</td>
<td>.02</td>
</tr>
<tr>
<td>Counselor</td>
<td>.59*</td>
<td>.15</td>
<td>.26</td>
<td>.10</td>
</tr>
<tr>
<td>Spend time alone</td>
<td>.08</td>
<td>.75*</td>
<td>-.05</td>
<td>.13</td>
</tr>
<tr>
<td>Blame myself</td>
<td>.04</td>
<td>.69*</td>
<td>-.13</td>
<td>-.17</td>
</tr>
<tr>
<td>Think about how sad</td>
<td>.13</td>
<td>.69*</td>
<td>.08</td>
<td>-.15</td>
</tr>
<tr>
<td>Keep feelings to myself</td>
<td>.00</td>
<td>.58*</td>
<td>-.41</td>
<td>.30</td>
</tr>
<tr>
<td>Give up</td>
<td>-.01</td>
<td>.43*</td>
<td>-.03</td>
<td>-.13</td>
</tr>
<tr>
<td>Get comfort</td>
<td>.03</td>
<td>-.08</td>
<td>.86*</td>
<td>.06</td>
</tr>
<tr>
<td>Get advice</td>
<td>.10</td>
<td>-.12</td>
<td>.82*</td>
<td>-.02</td>
</tr>
<tr>
<td>Do something enjoyable</td>
<td>-.01</td>
<td>-.06</td>
<td>-.02</td>
<td>.80*</td>
</tr>
<tr>
<td>Exercise</td>
<td>.11</td>
<td>-.18</td>
<td>-.10</td>
<td>.63*</td>
</tr>
<tr>
<td>Do something to think less</td>
<td>-.01</td>
<td>.41</td>
<td>.21</td>
<td>.61*</td>
</tr>
<tr>
<td>Try to sleep better</td>
<td>.09</td>
<td>.04</td>
<td>.09</td>
<td>.46*</td>
</tr>
<tr>
<td>Take action</td>
<td>-.04</td>
<td>-.01</td>
<td>.07</td>
<td>.08</td>
</tr>
<tr>
<td>Think hard</td>
<td>-.02</td>
<td>.27</td>
<td>.23</td>
<td>-.10</td>
</tr>
<tr>
<td>Look for good</td>
<td>-.12</td>
<td>-.22</td>
<td>.05</td>
<td>.26</td>
</tr>
<tr>
<td>Refuse to believe</td>
<td>.30</td>
<td>.16</td>
<td>-.09</td>
<td>.18</td>
</tr>
<tr>
<td>Say things</td>
<td>-.10</td>
<td>.23</td>
<td>.41</td>
<td>.11</td>
</tr>
<tr>
<td>Ignore</td>
<td>.03</td>
<td>.05</td>
<td>-.37</td>
<td>-.09</td>
</tr>
<tr>
<td>Make jokes</td>
<td>-.06</td>
<td>-.01</td>
<td>.25</td>
<td>.05</td>
</tr>
<tr>
<td>Learn to live with it</td>
<td>.26</td>
<td>.18</td>
<td>.30</td>
<td>.06</td>
</tr>
<tr>
<td>Alcohol or drugs</td>
<td>.35</td>
<td>-.25</td>
<td>.25</td>
<td>-.09</td>
</tr>
<tr>
<td>Meditation/yoga</td>
<td>.14</td>
<td>.35</td>
<td>.03</td>
<td>.27</td>
</tr>
<tr>
<td>Self-help book</td>
<td>.30</td>
<td>.39</td>
<td>.02</td>
<td>.11</td>
</tr>
<tr>
<td>Massage</td>
<td>.17</td>
<td>.47</td>
<td>.02</td>
<td>.03</td>
</tr>
</tbody>
</table>

Note. A * indicates that the item was included in the factor.

Activation, whereas negative self-help was represented by Withdraw and Ruminate. These coping factors did show similarities to past factor analyses based on the same set of coping strategies (i.e., Care & Kuiper, 2013; Leite, 2011), as well as factor analyses from the other studies reviewed earlier (e.g., Hagger & Orbell, 2003; Jorm et al., 2004).
To begin, it had been anticipated that a Professional Assistance (i.e., psychiatrist, psychologist, medication, family doctor, counselor) factor would be evident, given that is such a commonplace factor or thematic category in the coping literature. This was the first factor obtained in the present study, thus replicating the findings of both Leite (2011) and Care and Kuiper (2013). Even in studies with different sets of coping items from the present study, this professional assistance factor tends to appear as a distinct category. For instance, in Jorm et al.’s (2004) factor analysis, a Professional Help factor emerged and consisted of similar items, including antidepressants, counselling, counselors or clinical psychologists, and family doctors.

Social Support also appears to be another common coping factor. It was evident in prior factor analyses by both Leite (2011) and Care and Kuiper (2013). Though the items in this factor were not exactly the same across these studies, the key items of seeking comfort and advice from family and friends were consistent across all three studies using the SRM Questionnaire. Social support from friends and family may be represented in other research through differently named coping factors, such as Lifestyle Strategies (Jorm, Mackinnon, Christensen, & Griffiths, 2005) or Everyday Actions (Jorm et al., 2004). However, in a meta-analysis of coping with a variety of illnesses, Hagger and Orbell (2003) clearly labelled a coping factor for Seeking Social Support, which was defined as any attempt to seek instrumental and emotional support from others.

In terms of positive self-help, coping factors have not been as consistently defined or named in the literature. Even using the same coping items, Leite (2011) and Care and Kuiper (2013) did not find similar positive coping factors, nor did those factors equate exactly to the one in the current study. However, there was some overlap of items. For instance, the current positive coping factor of Behavioural Activation shared two items with Leite’s (2011) Self-Help factor (i.e., do something enjoyable, exercise) and two items with Care and Kuiper’s (2013) Mood Improvement factor (i.e., do something enjoyable, do something to think less about it).
Similarly, negative forms of self-help have also not been consistently defined or labelled as clear factors in past research. As with the patterns for positive self-help, the current negative self-help factor did not exactly replicate past negative self-help factors but showed some commonalities with Leite (2011) and Care and Kuiper (2013). For instance, the present study’s Withdraw and Ruminate factor had some overlap with Care and Kuiper’s (2013) Ruminate factor (i.e., think about how sad you feel); and also shared three common items with Leite’s (2011) Ruminate factor (i.e., spend more time alone, think about how sad you feel, blame yourself for how you feel).

Overall, the coping factors found in the present study showed reasonable overlap in content with past factor analytic work and were conceptually sound in the context of the literature. Professional Assistance and seeking Social Support were robust and clearly defined coping factors in the present study as well as numerous past studies. Self-help strategies, as expected, split into positive and negative forms of self-help. Both the positive self-help factor (i.e., Behavioural Activation) and negative self-help factor (i.e., Withdraw and Ruminate) showed some overlap with past factors and other results (e.g., Care & Kuiper, 2013; Leite, 2011). As a whole, this pattern of findings illustrated the ways in which people may cope on their own with possible depressive symptoms. It also highlighted a need for more attempts to clearly define self-help factors, both positive and negative, in the area of coping with mild or subthreshold depression.

**Coping Factors Utilized**

Participants were asked to rate how often they had actually used each of the 28 coping strategies in the past couple of weeks to try to deal with their individual set of experiences (i.e., the possible depressive symptoms they had reported noticing over the past couple of weeks). Each strategy was rated on a 7-point Likert scale (1 = not at all; 4 = half of the days; 7 = every day). Coping factor scores were then calculated for the four factors described previously. As presented
below, the results indicate the extent to which each coping factor was used by the participants to address the depressive symptoms they were experiencing. The means of these coping factors are presented below, as well as in the overall summary table of means and other descriptive statistics available for reference in Appendix G.

The positive self-help coping factor was the most frequently utilized by the students to cope with the possible depressive symptoms they had been noticing. Behavioural Activation was endorsed at a moderate level (around half the days; \(M = 4.35, SD = 1.21\)), significantly above Social Support \([t(189) = 2.10, p < .05]\), Withdrawing and Ruminating \([t(189) = 8.09, p < .001]\), and Professional Assistance \([t(189) = 34.19, p < .001]\). The next most frequently used strategy was seeking Social Support, which students also engaged in to a similar, moderate extent (approximately half the days; \(M = 4.03, SD = 1.85\)), significantly above their usage of Withdrawal and Rumination \([t(189) = 3.88, p < .001]\) and Professional Assistance \([t(189) = 20.85, p < .001]\). The negative self-help coping factor was used to a lesser extent by the students in response to the possible depressive experience. Participants indicated that they were Withdrawing and Ruminating, less than half of the days (\(M = 3.34, SD = 1.32\)) over the past couple of weeks that they had been noticing the possible depressive symptoms. Withdrawing and Ruminating was nonetheless still utilized significantly more than Professional Assistance \((M = 1.18, SD = 0.59); t(189) = 21.76, p < .001\), which was the least utilized coping factor, sought out almost not at all by the participants in the past two weeks.

The expected ratings as to how much each of the coping factors would be used, from the most to least, were supported, with the present pattern being consistent with relevant past studies (i.e., Eisenberg et al., 2007; Jorm et al., 2004; Morgan et al., 2012). Given that the average level of possible depressive distress was relatively low and mild in the present sample, it was anticipated that the current participants would be operating in Jorm et al.’s (2004) first wave of the overlapping waves model, using everyday actions to cope with mild depressive experiences. This hypothesis was
confirmed, as such activities were certainly represented in the most frequently used coping factors of Behavioural Activation (i.e., do something enjoyable, exercise, do something to think less, sleep better) and seeking Social Support (i.e., get comfort, get advice).

In the present study, the use of Social Support at a moderate level (about half of the days) was rated just under Behavioural Activation, as expected based on a similar ranking in Morgan et al. (2012). In that study, items which represented social support were rated in the middle of the list for frequency of use, also just below the positive self-help strategies. It may be that reaching out to others is a helpful and commonly utilized strategy, but that it is not done quite as frequently as the positive self-help strategies that are more readily available and can be carried out independently, such as exercise or other enjoyable activities.

It was not clear how negative self-help strategies might be used by the present sample. In comparable research, the most utilized self-help strategy by the public for coping with subthreshold depression was a harmful one, namely, spending more time alone (Morgan et al., 2012). Encouragingly, the present study found that negative self-help strategies were used less frequently than the positive self-help strategies. Withdrawing and Ruminating (i.e., spend time alone, blame self, think about how sad, keep feelings to self, give up) was done by participants less than half of the days. Perhaps it is more challenging to withdraw and isolate oneself as an undergraduate university student, given that many students live on or near the school campus.

As predicted, Professional Assistance (i.e., psychiatrist, psychologist, medication, family doctor, counselor), was used almost not at all by the students in response to their generally mild depressive symptoms. In Jorm et al.’s (2004) overlapping waves model, professional assistance would be expected to increase in use only as depressive symptoms became more severe, which was only the case with a handful of students in the present study. Furthermore, other research (e.g., Eisenberg et al., 2007) has shown that most university students experiencing depressive distress do
not seek formal treatment, even though it is available and often free to them through campus medical and counseling services. It was therefore not a surprise that this was a mostly unused strategy amongst the present sample. In fact, this failure to seek treatment did not necessarily present a problem in the present study. Although most people could likely find some benefit from formal treatment for any level of depressive symptoms, it would not be feasible for all people experiencing subthreshold depression to engage in treatment. As suggested by Morgan et al. (2012), positive or adaptive self-help strategies would be a more practical and possibly still effective solution to ameliorate or manage mild depressive symptoms in nonclinical settings, such as in the general public or university environments.

Overall, the results indicated that the undergraduate students were responding to their experience of generally mild, potentially depressive symptoms primarily with positive self-help strategies, engaging in behavioural activation and seeking social supports. To a lesser degree, they were using some negative or maladaptive styles of coping with these symptoms, by engaging in some isolation and rumination. Lastly, they were choosing not to seek formal treatment for their generally mild, potentially depressive experiences. This pattern of coping appeared reasonable and adaptive. At first glance, it may appear concerning that students were failing to seek treatment. However, their symptoms were generally so mild it could be considered more effective that they would be choosing to engage instead in positive self-help strategies.

Finally, it was interesting to note that the overall magnitude of the ratings for using these coping factors was low to moderate, with the highest level of usage only reaching around half of the days and no coping factors used every day of the past two weeks. This pattern may reflect the fact that most of the symptoms often associated with depression were endorsed less than half of the days in the past two weeks (see Part 1). For example, anhedonia, low mood, low self-esteem, concentration problems, and appetite problems, were all noticed by participants on average only a
few days of the past two weeks. Sleep problems and fatigue were the predominant symptoms, experienced on average by the students for more than half of the days in the past two weeks. As such, their usage of coping strategies seems to reasonably match the degree to which the potentially depressive symptoms were experienced.

**Part 2 Summary**

The main purpose of Part 2 was to survey a wide range of possible coping strategies for depression, reduce these coping strategies into factors, and examine which coping factors were most endorsed by the undergraduate participants to manage their experience of symptoms which may be associated with depression. Factor analysis of the 28 coping items resulted in four distinct coping approaches: Professional Assistance, Withdraw and Ruminate, Social Support, and Behavioural Activation.

The two factors which involved reaching out to others, formally through professional assistance and informally through social support, were consistent with past SRM research highlighting these strategies as being relevant for managing depression (e.g., Jorm et al., 2004), as well as many other physical illnesses (e.g., Hagger & Orbell, 2003). Self-help factors had not been as clearly or consistently delineated in past SRM literature. Nonetheless, the present study’s positive self-help factor (i.e., Behavioural Activation) and negative self-help factor (i.e., Withdraw and Ruminate) showed some conceptual overlap with other SRM research on coping factors for depression (e.g., Care & Kuiper, 2013; Jorm et al., 2004, 2005). This aspect of the findings highlighted potential self-help factors for depression, an area that could use further attention in SRM research.

Part 2 also considered the students’ ratings of how often they had actually used each of the 28 coping strategies to deal with their generally mild, potentially depressive experience. As expected
based on Jorm et al.’s (2004) overlapping waves model, the students mostly used positive everyday actions. Behavioural Activation (i.e., do something enjoyable, exercise, do something to think less, sleep better) was used just over half the days, and seeking Social Support (i.e., get comfort, get advice) was used around half of the days. This pattern of use was consistent with prior work by Morgan et al. (2012) specifying general public ratings of coping strategies used to deal with subthreshold depression. Encouragingly, the undergraduates used negative self-help strategies less frequently than positive self-help strategies. Specifically, Withdrawing and Ruminating (i.e., time alone, blame self, think about how sad, keep feelings to self, give up) was done by participants less than half of the days.

Consistent with prior research, Professional Assistance (i.e., psychiatrist, psychologist, medication, family doctor, counselor), was used almost not at all by the students in the present study. This result was also expected based on Jorm et al.’s (2004) overlapping waves model, which showed that professional treatment tends to be sought only at more severe levels of depressive experiences. Additionally, the result was consistent with other research which shows that most university students do not seek formal treatment even when it is available and free to them (Eisenberg et al., 2007). However, the failure to seek treatment did not necessarily represent a problem for the present sample. Instead, it may be considered appropriate and adaptive that the students primarily chose positive self-help strategies over professional assistance to deal with their generally mild, nonclinical levels of possible depressive symptoms.
Chapter 5

Part 3: SRM Cross-sectional and Longitudinal Predictors of Coping Strategies

This dissertation extends existing research by considering how a novel sample may use a more comprehensive SRM at an earlier point in the self-regulatory process. Thus, Parts 1 and 2 of this dissertation described how a university student sample made sense of and coped with mild and ambiguous symptoms that are often associated with depression. In addition, this dissertation also began to address the call amongst SRM researchers (i.e., Hagger et al., 2017; Leventhal et al., 2016) to test the dynamics of this process. In particular, it was of interest to begin to consider how the proposed theoretical components of the SRM, including the possible depressive symptoms and related SRM representations, may have an impact on the coping strategies utilized.

Accordingly, the degree of effectiveness of the SRM components to predict various coping strategies was explored in Part 3 by setting the SRM foundational and contextual components (i.e., depressive symptoms and demographics), along with the SRM cognitive and emotional components, as predictors in a series of multiple regression analyses with each of the four coping factors set as the criterion. These multiple regression analyses were conducted twice, first cross-sectionally with Time 1 SRM predictors of Time 1 coping strategies and then longitudinally with Time 1 SRM predictors of Time 2 coping.

There are only a few studies which have investigated how the various SRM components may relate to coping with depression, be this via the examination of simple correlations or the use of multiple regression techniques (Brown et al., 2001; Kelly et al., 2007; Vanheusden et al., 2009). Moreover, these studies have generally focused on only a few of the SRM components and a few coping strategies, with all of this research being cross-sectional in nature. As such, prior research could not offer direct comparisons or hypotheses for the present study. Instead, the SRM literature is reviewed below, to indicate the extent to which each component of the SRM identified in Part 1 of
the present dissertation might relate to each coping factor identified in Part 2. The details of this exploratory research approach follow thereafter.

**Professional Assistance**

The first coping factor, Professional Assistance (i.e., psychiatrist, psychologist, medication, family doctor, counselor), presented an interesting paradox in the present research. Professional Assistance has been consistently articulated and studied as a coping factor for depression in the SRM literature (e.g., Care & Kuiper, 2013; Jorm et al., 2004; Leite, 2011). Yet, seeking treatment for possible depressive symptoms was the coping strategy least utilized in the present study. Although professional assistance was used almost not at all by the current participants, it is still possible to look to the literature for indications as to which SRM components (i.e., demographics, psychopathology, cognitive and emotional representations, model coherence) may increase the likelihood of seeking treatment. Past studies which have highlighted treatment seeking might offer some explanations as to why so few students sought professional assistance in the present study, and what characteristics or beliefs drove a select few to actually seek professional help.

**Demographics.** Prior SRM research suggests that gender may play a role in treatment decisions regarding depression. For example, Vanheusden et al. (2009) assessed SRM beliefs and treatment seeking decisions among young adults with self-perceived mental health problems in the past year. The results showed that a greater belief in personal control was associated with less use of mental health services for men, but not for women. Along a similar line, in Jorm et al.’s (2004) community survey of coping with depression, it was found that women showed greater overall use of both self-help and professional help. Using a university student sample, Eisenberg et al. (2007) also found that women were more likely to have received mental health services. To account for this pattern, Vanheusden et al. (2009) reasoned that traditional gender roles were still apparent amongst
young people, and that perhaps young women felt it was acceptable for them to seek help while young men felt they should be able to manage their problems alone. Age was also related to seeking mental health services in Eisenberg et al.’s (2007) study, in that older students (e.g., over 25) were more likely to have sought treatment. However, given the younger age and generally limited age range of the present sample, it was not expected that age would play a role here.

**Current Psychopathology.** In a university sample, Eisenberg et al. (2007) found that those who screened positive for depression or anxiety were significantly more likely to not only perceive a need for mental health services, but also to receive services. Rickwood and Braithwaite (1994) offered interesting results that, in addition to being female, seeking social support in adolescence was predicted by higher psychological distress, having supports, knowing someone who had sought professional help, being high in private self-consciousness and willing to disclose mental health. In stark contrast, level of psychological distress was the only significant predictor of seeking professional assistance, suggesting that current psychopathology may be the main driver of this coping factor. Other researchers have also highlighted greater psychopathology as a key construct in treatment seeking. For instance, Jorm et al.’s (2004) overlapping waves of action model described how people tend to shift from everyday actions to cope with mild depressive symptoms, to new self-help strategies as depression becomes more moderate, and then lastly, resort to seeking professional assistance when depression becomes more severe.

**SRM Cognitive Appraisals.** Certain SRM beliefs about depression may provide an important foundation for decisions made to seek treatment. In their study of self-perceived mental health problems among young adults, Vanheusden et al. (2009) found that independent of gender, age, and severity of psychopathology, higher endorsement of intra-psychic causes (i.e., low self-esteem, inner anxieties), more belief in negative consequences, and a belief in the efficacy of treatment to cure/control distress was associated with an increased likelihood of mental health service
use. In contrast, a stronger belief in personal control was associated with a decreased likelihood of using mental health services.

Eisenberg et al. (2007) found similar beliefs among service users in a university sample. Those who had sought treatment were more likely to believe in the helpfulness of therapy, counseling, and/or psychiatric medications. Those who did not seek treatment often held the belief that stress is normal in a university setting, thus did not perceive a need for treatment, or believe that the problem would get better by itself.

In Brown et al.’s (2001) sample of depressed primary care patients, those who perceived depressive symptoms as having a chronic timeline and more negative consequences were more likely to have received prior mental health treatment. Those with a belief in a chronic timeline were also more likely to be on antidepressants. In contrast, those who saw interpersonal difficulties as the cause of depressive symptoms were more likely to demonstrate poor medication adherence. This result harkens back to a conclusion drawn by Iselin and Addis (2003), who suggested that causal beliefs about depression often parallel the type of treatment one endorses or selects. Essentially, those who believe in a biological cause (e.g., brain chemistry) may be more likely to endorse or use biological treatment (e.g., antidepressants), whereas those who believe in interpersonal causes (e.g., relationship difficulties) may choose related means of coping (e.g., social support, psychotherapy).

Fortune et al. (2004) highlighted the potential importance of SRM causal beliefs about depression in the subsequent choice of and adherence to treatment for depression. Similarly, Goldstein and Rosselli (2003) found that undergraduates who believed in a biological cause for depression placed a greater value on treatment for depression. In Lauber, Nordt, Falcato, and Rössler’s (2003) study, those who viewed depression as a mental health issue were more likely to have a positive attitude toward psychotherapy and pharmacotherapy than those who viewed depression as a crisis.
**SRM Emotional Reactions.** Kelly et al. (2007) conducted one of the few studies to examine the SRM’s emotional representation of depression in the context of coping. Unfortunately, as described previously in Part 2, the coping measure used in that study did not explicitly list treatments or professional assistance. As such, there are no studies to date which have assessed the potential impact of the emotional representation of depression on seeking treatment. However, given the strong impact of increased psychopathology on treatment seeking, it could be anticipated that a greater negative emotional reaction to symptoms (i.e., guilt-shame, negative-anxious reactions) may also be more likely to drive students to seeking treatment than positive emotional reactions, such as calmness and contentment.

**SRM Coherence.** The more recent SRM construct of illness coherence has not yet been examined with respect to predicting professional assistance. However, for an individual to ultimately decide they need to seek professional help to deal with depressive symptoms, it could be reasoned that person might have engaged in a fair amount of consideration about the meaning and impact of these symptoms, and potentially arrived at a coherent conclusion as to what the problem is. As such, those who have sought professional assistance may be more likely to report a higher level of model coherence, and perhaps even use a label (e.g., depression) to summarize their experience.

**Expectations.** The above literature was distilled into several exploratory expectations, based on what was known about the present sample. For instance, considering the demographic variable of gender, women appear to engage more in treatment seeking, particularly at lower levels of depressive severity (Jorm et al., 2004). Since the current sample was primarily experiencing mild to moderate depressive distress, female students may have been more likely to have sought treatment. In contrast, although older age may be predictive of seeking treatment (Jorm et al., 2004), the present sample was generally young, with minimal age variation. Therefore, age would not be anticipated to emerge as a significant predictor in the present analyses.
Young people are more likely to use professional assistance at a severe level of depression (Jorm et al., 2004), with the research literature consistently indicating that level of psychological distress appears to be the main driver of treatment seeking, independent of demographics or other SRM components (e.g., Eisenberg et al., 2007; Rickwood & Braithwaite, 1994; Vanheusden et al., 2009). As such, psychological distress was expected to be a strong predictor of seeking professional assistance. However, given that previous studies have not clearly highlighted one type of distress as most important, it was unclear whether depression, anxiety, or stress would be most predictive.

Some SRM beliefs have been found to be predictive of treatment seeking, regardless of depression severity and other SRM constructs. Of these, causal beliefs congruent with seeking treatment (e.g., brain chemistry) were expected to be of primary importance (Care & Kuiper, 2013; Iselin & Addis, 2003); as opposed to causal beliefs which normalized the depressive symptoms as part of everyday stress (Eisenberg et al., 2007). Other beliefs which were viewed as potentially important toward treatment seeking included a belief in treatment control as opposed to personal control, endorsement of negative consequences, and a belief in depression having a chronic timeline (Brown et al., 2001; Eisenberg et al., 2007; Vanheusden et al., 2009).

Although emotional representations have not yet been examined in relation to coping with depression through professional assistance, it would be anticipated that negative emotional reactions (i.e., guilt-shame, negative-anxious) would be related to higher levels of pathology and therefore increased help seeking, as opposed to positive emotional reactions. Similarly, while model coherence was not previously studied with respect to this coping factor, it would be anticipated that those who sought treatment had considered the SRM to a greater degree, arriving at a more coherent understanding of the symptoms, and perhaps even using a label (e.g., depression) to summarize the experience.
Withdraw-Ruminate

Negative self-help was represented in the present study by the coping factor of Withdrawing and Ruminating (i.e., time alone, blame self, think how sad, keep feelings to self, give up). Typically, students used this strategy less than half of the days. As with positive self-help factors, negative self-help factors have not been consistently named or defined in the SRM literature, though some researchers have articulated factors with conceptual overlap to the current negative self-help factor. For example, Hagger and Orbell (2003) defined a couple of factors, named Avoidance/Denial and Expressing Emotions (i.e., venting), to represent commonly occurring maladaptive responses to illnesses. Although other researchers may not have defined negative or maladaptive self-help coping strategies in the same manner as the present study, a few select studies offered preliminary indications as to what might be expected in the current study for coping by withdrawing and ruminating.

Demographics. In Kelly et al.’s (2007) study of the SRM in depressed patients, gender did not impact the relationship between having a negative emotional reaction (e.g., worry, upset) in response to depression and maladaptive coping (e.g., self-blame, rumination, venting). This pattern suggested that gender may not be as important of a predictor for negative styles of coping (e.g., withdrawing and ruminating) as other SRM components, such as having a negative emotional reaction to depression.

Current Psychopathology. The general pattern of increased depression severity leading to a greater self-negativity bias (Watson et al., 2008), along with feelings of helplessness and hopelessness which may precede and maintain depression (Henkel et al., 2002), would suggest that greater depression in the context of the SRM may be predictive of increased negative self-help coping strategies such as withdrawing and ruminating. Similarly, anxiety in the SRM may also contribute to
isolation and avoidance, as anxiety often accompanies depression and can cause people to draw inward (Almeida et al., 2012; Merino, Senra, & Ferreiro, 2016; Starr & Davila, 2012).

SRM studies thus far have not highlighted a specific predictive role of depressive severity towards negative or maladaptive self-help strategies. This made prediction in the present study somewhat uncertain. One indirect hint regarding the potential role of depression severity could be reasoned from Kelly et al. (2007), who found that a negative emotional response to depression was related to maladaptive coping, even after controlling for depression severity. This pattern suggested that depression level may not be as important of a predictor for maladaptive coping as other SRM components, such as having a negative emotional response to depressive symptoms.

**SRM Cognitive Appraisals.** Hagger and Orbell’s (2003) meta-analysis of SRM studies for physical illnesses revealed potential linkages between certain types of SRM beliefs and negative coping styles. Specifically, perceiving an illness as highly symptomatic (i.e., strong illness identity) and having serious negative consequences was significantly associated with Avoidance/Denial and Expressing Emotions (i.e., venting). Believing an illness was uncontrollable and had a chronic timeline was also related to coping through avoidance and denial.

Brown et al.’s (2001) study of the SRM and coping among depressed primary care patients revealed that, regardless of depression severity, several SRM beliefs were associated with maladaptive coping styles. A strong illness identity for depression was associated with engaging in more self-blame, self-distraction, and emotional venting. Additionally, believing depression had many negative consequences was also related to coping through more self-blame.

**SRM Emotional Reactions.** Kelly et al. (2007) utilized canonical correlations to relate sets of cognitive and emotional representation items with sets of coping strategies used by depressed primary care patients. These researchers found that a greater negative emotional reaction (e.g., worry, discouragement, anger, embarrassment), along with more depressive symptoms, and believing
in a longer duration and more negative consequences, was related to higher levels of emotional and symptom coping (i.e., venting, behavioural disengagement, self-blame, rumination and dangerous behaviours). The relationship between having a negative emotional reaction to depression and engaging in maladaptive coping remained largely significant, even after controlling for depression severity.

**SRM Coherence.** There are no studies linking SRM coherence to maladaptive coping. However, it could be presumed based upon the above findings, that having a clear picture or strong sense of identity of the depressive symptoms, particularly viewing and reacting to them as troubling and problematic, may lead to withdrawing and ruminating. Alternatively, being unclear as to what the depressive symptoms represent may lead to avoidance from taking action. As such, coherence could be a predictor of withdrawing and ruminating in either direction, which will be explored here.

**Expectations.** The few studies which have thus far related SRM components to negative self-help coping offer some thoughts as to which SRM components in the present study may relate to a student’s choice to cope through withdrawal and rumination. First, when considering demographics, Kelly et al.’s (2007) findings suggested that gender and actual depression level experienced may not be as important predictors of maladaptive coping as other SRM components, namely holding a negative emotional representation of depression (e.g., worry, upset, embarrassment). Therefore, in the present study, SRM emotional representations of guilt and shame and/or negative and anxious emotional reactions were expected to be significantly related to withdrawing and ruminating, rather than the positive emotional reactions.

It should also be noted, however, that as a person becomes more depressed, they may become more impacted by a self-negativity bias, hopelessness, helplessness, and concurrent anxiety (Almeida et al. 2012; Henkel et al., 2002; Watson et al, 2008). All of these influences may combine to reduce the ability to cope adaptively and increase isolation and rumination. As such, depressive severity was
still expected to play a role in predicting negative forms of self-help in the present study, though having a negative emotional representation of depression could potentially be a stronger influence.

From the cognitive component of the SRM, beliefs which were expected to be particularly related to choosing negative self-help strategies included a strong illness identity (e.g., use of a label), low endorsement of personal control, high expectation of negative consequences, and belief in chronic timeline. Brown et al.’s (2001) results indicated that such beliefs remained related to maladaptive coping, even after controlling for depression severity. Therefore, a negative cognitive representation of depression could potentially be more influential toward using negative forms of self-help in the present study than actual depression level experienced.

There has not yet been any research examining the potential role of holding a coherent understanding of the depressive experiences one is dealing with. Being unclear about what is happening or what the depressive symptoms represent might cause a person to avoid dealing with the experience, as they may be uncertain about what to do. On the other hand, the aforementioned findings might suggest that being very clear or coherent that one is facing depression, and viewing this experience as problematic and troubling, could be overwhelming and cause avoidance or rumination or immobilization from action. These two possibilities were explored in the present study by examining how SRM coherence might relate to the use of negative self-help strategies such as withdrawing and ruminating.

**Social Support**

The third factor, Social Support (i.e., get comfort and advice from friends or family) presented a unique intersection of several coping constructs. On the one hand, seeking social support could be considered part of positive self-help. Contacting friends and family is something that a person may be able to do for themselves when feeling depressed, independent of any formal treatment or
professional assistance. In this regard, several SRM researchers have included social support amongst other everyday positive self-help actions. For instance, Jorm et al.’s (2004) Everyday Actions included interaction with family and friends, as well as time with pets, exercise, music and chocolate. It is also possible, however, that social support can be thought of as being distinctive from the more independent positive self-help strategies (e.g., positive thinking, exercise), as it involves reaching out to others for assistance, albeit informally as opposed to formal or professional assistance (e.g., family doctor, psychologist). Other SRM researchers have therefore delineated a separate coping construct for social support (e.g., Hagger & Orbell, 2003).

Given that social support has been placed into different coping factors, there are not many studies which assess the role of SRM constructs in predicting specifically the seeking of social support. However, the following studies offer some indication as to which of the SRM constructs (i.e., demographics, psychopathology, cognitive and emotional representations, model consideration and coherence) might contribute to the students choosing to cope with depressive symptoms through seeking social support.

**Demographics.** None of the key SRM studies highlighted thus far have included a specific assessment as to the effect of gender on seeking social support. However, other bodies of social support literature offer pertinent information. Rickwood and Braithaite (1994) studied help-seeking in response to emotional problems amongst adolescents. Participants were asked whether they had sought help for a psychological problem in the past twelve weeks; and whether they had reached out to an informal support (i.e., friend or family) or a professional source (i.e., family doctor, mental health service, educational help service). One of the significant predictors of seeking social support to deal with emotional distress was being female. This effect was not due to adolescent girls’ higher level of psychological distress, as gender remained a direct predictor even after psychological
symptoms were controlled. As such, these findings suggested that female gender may be an important SRM predictor of seeking social support in the present study.

**Current Psychopathology.** Again, the SRM literature does not offer any specific findings pertaining to depressive distress in the SRM and seeking social support. However, Rickwood and Braithwaite (1994) did find that the choice to seek social support was predicted by adolescents having more symptoms of psychological distress. These results suggested that higher levels of depressive symptoms might be related to seeking social support in the present study.

**SRM Cognitive Appraisals.** Two SRM studies have examined the role of cognitive appraisals in seeking social support. In Hagger and Orbell’s (2003) meta-analysis of physical illness SRM studies, an overall pattern of results indicated that believing one has some control over an illness was related to seeking social support to help cope with that illness. In a SRM study specific to depression, Kelly et al. (2007) also found that higher levels of perceived controllability, as well as beliefs in interpersonal and stress causes, were related to depressed primary care patients engaging in a number of adaptive coping strategies, including seeking emotional support from others.

**SRM Emotional Reactions.** Although Kelly et al.’s (2007) canonical correlations included emotional representations of depression, no specific findings pointed to a role of these reactions in seeking social support. However, Rickwood and Braithwaite (1994) considered willingness to disclose as a relevant factor in their study of adolescents seeking support from friends and family or professionals. Following from this work, the present study proposed that emotional reactions of guilt and shame, or negative and anxious reactions, would inhibit seeking social support; whereas more positive emotional reactions would facilitate students in initiating such conversations with friends and family.

**SRM Coherence.** No SRM studies had directly assessed the role of considering the SRM or having a coherent understanding of depression in seeking social support. However, Rickwood and
Braithwaite’s (1994) study of help-seeking for emotional distress amongst adolescents suggested that those with a higher level of private self-consciousness (i.e., having a sensitivity to and awareness of one’s internal thoughts and feelings), who were thus engaged in a more constant self-evaluative process, might be more likely to seek assistance to cope with their internal processing. In turn, this finding suggested that, in the present study, those who had engaged in more consideration of the SRM and had attained model coherence might be more predisposed toward seeking social support.

**Expectations.** Female gender was expected to be an important contributor to seeking social support. In addition, increased psychological distress might contribute to decisions to seek social support. Within the cognitive component of the SRM, beliefs that the depressive symptoms were controllable and caused by interpersonal or stress-related issues were expected to increase the likelihood of reaching out to friends or family. Considering the emotional component of the SRM, more negative, anxious, guilty, or ashamed feelings in response to the depressive symptoms were expected to inhibit seeking social support; whereas more positive emotional reactions were expected to facilitate reaching out to others. Lastly, it was proposed that arriving at a more coherent understanding of one’s depressive experience would also enable students to more easily reach out to others with those concerns.

**Behavioural Activation**

Positive self-help was the fourth coping factor in the present study, and was labelled Behavioural Activation (i.e., do something enjoyable, do something to think less, exercise, sleep better). As indicated previously, other researchers have delineated positive self-help coping categories for depression which have been differently named, such as Everyday Actions (e.g., enjoyable activities, friends, pets, exercise, music; Jorm et al., 2004). As such, the specific items contained in other researchers’ positive self-help constructs were not quite comparable to those in the
present study. For instance, other researchers have sometimes included social support along with more independent actions (e.g., Jorm et al., 2004). Regardless, however, this past work still offered some preliminary indications as to what might be expected in the present study. Here, the focus was on the potential impact of demographics, psychopathology, SRM cognitive and emotional representations, and coherence on the use of positive self-help coping.

**Demographics.** Kelly et al. (2007) related depressed primary care patients’ cognitive and emotional representations of their depression to the coping styles they used, while also considering the role of other SRM components, such as gender. Kelly et al. (2007) found that greater perceived control over depression was associated with more adaptive or positive self-help coping (i.e., active coping, positive reframing, problem solving) for women, but not for men.

Jorm et al. (2004) conducted a community survey to assess which actions the public used to cope with depression, and how the actions utilized varied as a function of depression severity and demographic factors, such as gender, age, and education. These researchers found that younger people (i.e., under 40) more often used positive self-help actions (i.e., enjoyable activities, family and friends, pets, exercise, music, chocolate) than older people (i.e., 40 and over). Jorm et al. (2004) also found an overall effect of gender, with women showing a greater use of both self-help and professional help strategies.

**Current Psychopathology.** In Jorm et al.’s (2004) study, when levels of depressive distress were considered, the usage of positive everyday actions was found to peak at mild levels of depression amongst younger people (i.e., under 40) and better educated people (i.e., post high school diploma or degree).

**SRM Cognitive Appraisals.** Brown et al. (2001) measured the SRM for depression in primary care patients with depressive symptoms. These researchers found that several coping strategies remained significantly associated with SRM beliefs about depression, regardless of the
actual severity of depression experienced. Specifically, believing that one’s depressive symptoms have negative consequences was associated with engagement in more active coping. Conversely, believing that depression has a chronic timeline was associated with doing less planning.

In Kelly et al.’s (2007) study of depressed primary care patients, canonical correlations indicated that higher levels of perceived controllability, interpersonal causes and stress causes were related to a greater usage of positive or adaptive coping, such as problem solving or seeking emotional support, and lower levels of behavioural disengagement. Conversely, a belief in greater consequences was associated with less problem solving.

In a broader meta-analysis of SRM studies for a variety of illnesses, Hagger and Orbell (2003) found that viewing an illness as more controllable was related to positive coping approaches, including general and specific problem-focused coping (e.g., active coping, planning) and cognitive appraisals (e.g., positive reinterpretation, acceptance).

**SRM Emotional Reactions.** There are no SRM studies to date which have examined the role of emotional representations in positive self-help coping approaches. Nonetheless, it could be reasoned that having a more optimistic emotional reaction, as opposed to an anxious or ashamed response, might be more likely to encourage positive actions to cope with potentially depressive symptoms.

**SRM Coherence.** There are no studies to date which have examined how considering the SRM components or arriving at a coherent SRM representation of depression might lead to positive self-help coping strategies, such as behavioural activation. However, it could be proposed that having a clear understanding of the potentially depressive symptoms being faced might facilitate planning and taking action in positive ways to cope.

**Expectations.** The findings described above offered several indications as to how the SRM components in the present study may relate to students’ decision to cope positively through
behavioural activation. First, when considering demographics and current psychopathology, being a well-educated, young adult, particularly female, and experiencing mild levels of depressive distress might increase the likelihood of choosing active, positive self-help coping. SRM beliefs which would potentially be important in choosing positive self-help strategies included a belief in personal control over the depressive experience, a belief in relational or situational stressors as the cause of the distress, a view that the experience would be more acute than chronic, and a perception that the depressive experience had more positive and less negative consequences.

Since there were no studies which had highlighted a potential predictive role of the SRM constructs of emotional reactions or illness representation coherence, it was unknown how these factors would relate to positive self-help coping. However, more positive emotional reactions and less guilt, shame, and negative or anxious reactions could likely drive adaptive and active coping. Similarly, having arrived at a coherent understanding of what one was dealing with, might better allow a person to engage in adaptive and active coping.

**Results and Discussion**

Recall that Part 2 of this dissertation reduced 28 coping strategies down to four coping factors and examined the extent to which each strategy was utilized by participants to cope with their generally mild depressive symptoms. To briefly summarize, the positive self-help strategies (i.e., behavioural activation and social support) were the most used at a moderate frequency, followed by the negative self-help strategy (i.e., withdrawing and ruminating) used to a lesser degree, with formal help-seeking (i.e., professional assistance) almost never used.

In Part 3, it was of interest to consider how the various components of the self-regulation model (i.e., demographics, depressive symptoms, cognitive beliefs, emotional reactions, model coherence) might relate to students’ use of each coping factor. This was done by setting each coping
strategy as the criterion factor in a hierarchical multiple regression analysis that inputted the SRM predictor components in blocks, based on conceptual groupings. The blocks were as follows: 1. Demographics (age, gender); 2. Current Psychopathology (IES Total, DASS Depression, DASS Anxiety, DASS Stress); 3. SRM Cognitive Appraisals (timeline beliefs, cause factors, consequence factors, coping beliefs); 4. SRM Emotional Reaction Factors (positive, negative-anxious, guilt-shame); and 5. SRM Coherence (coherence, use of label). A full listing of the predictor variables included in these regression analyses is provided in Appendix J.

The final regression models and all significant predictors, based on these multiple regression analyses are presented below in a series of tables, one for each coping factor. The model reported and discussed for each coping factor was the model which included the highest-level block that showed significant incremental change from the previous block(s) in that analysis. The predictors reported for each coping factor were those which emerged as significant for that selected model. It should be noted, however, that all significant models and predictors are also shown in the tables for reference.

The goal was to determine how much each block contributed to prediction of the coping factor, and furthermore, which individual SRM components within the most predictive model were related to the use of that coping factor. These sets of analyses were conducted twice, first with Time 1 SRM predictors of Time 1 coping factors, and then with Time 1 SRM predictors of Time 2 coping factors. This cross-sectional test and longitudinal check allowed for a preliminary exploration of the extent to which prediction of coping by SRM components was stable or fluctuating over a two-week interval.

While regression analyses results will be presented in the text below, as the focal point of Part 3 in this dissertation, some additional background results are offered in Appendices. Descriptive statistics for the coping factors at Time 2 are provided in brief below and in a summary table in
Appendix G. Additionally, correlational results of potential interest (e.g., correlations amongst SRM components, correlations between depression measures and SRM components, correlations between SRM components and coping factors) are offered in Appendix K.

**Professional Assistance**

The criterion factor in this regression analysis was coping through seeking Professional Assistance, which included seeking help from a psychiatrist, psychologist, counselor, family doctor, or medication.

**Cross-sectional results.** As shown in Table 6a, in terms of predicting Professional Assistance, Model 2 represented the highest-level block that showed significant incremental change from the previous model. This model included Block 1-Demographics and Block 2-Current Psychopathology. The two significant predictors within this model were: DASS Anxiety from Block 2, such that as anxiety level increased participants were more likely to be seeking professional assistance to cope with their depressive symptoms; and gender from Block 1, in that female participants were more likely to seek professional assistance to cope with potential depressive symptoms.

Expectations were met, in terms of the results for demographic predictors of professional assistance. For Block 1 (i.e., demographics), it was proposed that female gender would be a significant predictor of seeking professional assistance, as much past literature has shown that women (including young women and those in university samples) are more likely to seek treatment than men (e.g., Eisenberg et al., 2007; Jorm et al., 2004). This was the case in the present regression analysis. Although older age has been shown to be predictive of treatment seeking (e.g., Jorm et al., 2004), in the current study age was not a significant predictor, as most participants were relatively young, with minimal age variation being evident.
### Table 6a

**Time 1 Professional Assistance Coping: Summary of Significant Time 1 Block Regression Predictors**

<table>
<thead>
<tr>
<th>Model / Additional Block Entered per Model</th>
<th>F (df)</th>
<th>Adj R²</th>
<th>F Δ (df)</th>
<th>R² Δ</th>
<th>Significant Predictors</th>
<th>B</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 Demographics</td>
<td>1.29</td>
<td>.00</td>
<td>1.29</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2 Current Psychopathology</td>
<td><strong>2.12</strong>*</td>
<td>.04</td>
<td><strong>2.43</strong>*</td>
<td>.07</td>
<td>DASS Anxiety</td>
<td>.22*</td>
<td>2.09</td>
</tr>
<tr>
<td></td>
<td>(7,173)</td>
<td></td>
<td>(5,173)</td>
<td></td>
<td>Gender</td>
<td>.18*</td>
<td>2.30</td>
</tr>
<tr>
<td>Model 3 SRM Cognitive Appraisals</td>
<td>1.38</td>
<td>.04</td>
<td>0.95</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 4 SRM Emotional Reactions</td>
<td>1.27</td>
<td>.03</td>
<td>0.65</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 5 SRM Coherence &amp; Consideration</td>
<td>1.27</td>
<td>.04</td>
<td>1.21</td>
<td>.05</td>
<td>Negative consequences</td>
<td>-.28*</td>
<td>-2.07</td>
</tr>
<tr>
<td></td>
<td>(19,161)</td>
<td></td>
<td>(12,161)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p<.05, **p<.01, ***p<.001; **boldface** = the model reported in the discussion

### Table 6b

**Time 2 Professional Assistance Coping: Summary of Significant Time 1 Block Regression Predictors**

<table>
<thead>
<tr>
<th>Model / Additional Block Entered per Model</th>
<th>F (df)</th>
<th>Adj R²</th>
<th>F Δ (df)</th>
<th>R² Δ</th>
<th>Significant Predictors</th>
<th>B</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 Demographics</td>
<td>.52</td>
<td>-.01</td>
<td>.52</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2 Current Psychopathology</td>
<td>.38</td>
<td>-.03</td>
<td>.32</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(6,144)</td>
<td></td>
<td>(4,144)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3 SRM Cognitive Appraisals</td>
<td>1.53</td>
<td>.06</td>
<td>2.09*</td>
<td>.16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(18,132)</td>
<td></td>
<td>(12,132)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 4 SRM Emotional Reactions</td>
<td>1.41</td>
<td>.05</td>
<td>.71</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(21,129)</td>
<td></td>
<td>(3,129)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 5 SRM Coherence</td>
<td>1.32</td>
<td>.05</td>
<td>.49</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(23,127)</td>
<td></td>
<td>(2,127)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p<.05, **p<.01, ***p<.001; **boldface** = the model reported in the discussion
Block 2, representing current psychopathology (i.e., IES total, Current Mood, DASS-Depression, Stress, and Anxiety) was expected to be the primary predictor of professional assistance coping. Depression and anxiety are often comorbid (Almeida et al., 2012) and stress levels are often high amongst university students (Beiter et al., 2014). Thus, it was not certain which type of distress (i.e., depression, anxiety, or stress) would most contribute to students seeking formal help. Some research has found young people were more likely to seek professional treatment for depression as symptoms became more severe (Jorm et al., 2004), whereas other researchers have emphasized overall levels of psychological distress as being more important in seeking help (Rickwood & Braithwaite, 1994; Vanheusden et al., 2009).

Consistent with most of the past findings (e.g., Eisenberg et al., 2007; Rickwood & Braithwaite, 1994; Vanheusden et al., 2009), the current psychopathology block added the most predictive power regarding seeking treatment. Interestingly, however, it was not depressive severity that was most predictive within this block, but rather anxiety level (i.e., DASS Anxiety), that contributed most to the decision to seek formal assistance with depressive symptoms.

Although a higher level of psychopathology (Block 2) was expected and found to be a strong predictor of professional assistance, it was expected that other SRM components would also play a predictive role. Specifically, within the cognitive representation of depression (Block 3), past results (e.g., Brown et al., 2001; Care & Kuiper, 2013; Eisenberg et al., 2007; Iselin & Addis, 2003; Vanheusden et al., 2009), led to the expectation that beliefs in stable or biological causes (e.g., chemical imbalance, personality), chronic timeline, negative consequences, and treatment control might be important in choosing to seek treatment. Within the emotional representation (Block 4), it was reasoned that more negative emotions (i.e., guilt-shame, negative-anxious) would be related to seeking treatment. Lastly, it was proposed that having arrived at a coherent understanding of the depressive experiences, and perhaps even providing a label (e.g., depression), might be related to
increased seeking of professional assistance. Surprisingly, however, none of these predictors emerged as significant in the current analysis. More generally, this pattern indicated that these SRM beliefs and emotional reactions do not drive treatment seeking to the same extent as gender and anxiety levels.

Overall, the present findings were similar to those reported by Rickwood and Braithwaite (1994). These investigators found that among older adolescents, general level of psychological distress was the only significant predictor of seeking professional assistance. The present findings were also consistent with other university samples, which have found women to use professional assistance significantly more than men (Eisenberg et al., 2007). For this particular coping factor, no other SRM cognitions, emotional reactions or model coherence variables were significant, even though past SRM studies might have suggested their potential importance.

**Longitudinal results.** Descriptive statistics for the coping factors at Time 2 are listed for reference in a summary table in Appendix G. Of note, a paired samples t-test found no significant difference between professional assistance coping \( (n = 159) \) at Time 1 \( (M = 1.19, SD = .62) \) and Time 2 \( [M = 1.16, SD = .55; r = .43, p < .001; t(158) = .63, ns] \).

Table 6b showed that in contrast to the cross-sectional results reported in Table 6a, the longitudinal block regression analyses did not yield any significant models. While demographics, specifically female gender, and current psychopathology, specifically higher anxiety levels, at Time 1 were predictive of seeking professional assistance at Time 1, these SRM constructs did not emerge as significant toward prediction of seeking professional assistance two weeks later at Time 2.

It would appear, at least from the present analyses, that while female gender and higher anxiety may have some predictive power toward coping through professional assistance at the time of their initial assessment, they do not retain the longitudinal power to predict professional assistance coping two weeks later. It may be that no models or predictors emerged as significant at Time 2 for
this particular coping target because there were simply not very many students with significant levels of psychopathology seeking professional assistance coping, in order for the analyses to detect predictive patterns cross-sectionally, let alone longitudinally.

**Withdraw-Ruminate**

The criterion factor in this regression analysis was coping with potential depressive symptoms by Withdrawing and Ruminating. This factor included spending time alone, blaming oneself for having the experience, thinking about how sad one feels, trying to keep the feelings to oneself, and giving up trying to deal with it.

**Cross-sectional results.** As shown in Table 7a, Model 4 represented the highest-level block that showed significant incremental change from the previous models. This model included Block 1-Demographics, Block 2-Current Psychopathology, Block 3-SRM Cognitive Appraisals, and Block 4-SRM Emotional Reactions. Significant predictors within this model included DASS Depression, such that as depression level increased participants were more likely to withdraw and ruminate. Furthermore, those feeling guiltier and more ashamed about their depressive symptoms, those expecting their symptoms to be chronic, and those who were older were all more likely to withdraw and ruminate.

Some of the expectations for the coping criterion factor of Withdraw and Ruminate were met, whereas others were not. From Block 1 (i.e., demographics), it was expected that gender would not emerge as a significant predictor, as past researchers had found that men and women with a negative emotional response to depression were equally likely to engage in maladaptive coping (Kelly et al., 2007). As predicted, gender did not appear to be an important determining variable for withdrawing and ruminating to cope with depressive symptoms. However, an unanticipated result was that age was significant, such that older participants were more likely to withdraw and ruminate. It was
Table 7a

Time 1 Withdraw and Ruminate Coping: Summary of Significant Time 1 Block Regression Predictors

<table>
<thead>
<tr>
<th>Model Additional Block Entered per Model</th>
<th>$F$ (df)</th>
<th>Adj $R^2$</th>
<th>$F \Delta$ (df)</th>
<th>$R^2 \Delta$</th>
<th>Significant Predictors</th>
<th>$B$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 Demographics</td>
<td>2.70 (2,179)</td>
<td>.02</td>
<td>2.70 (2,179)</td>
<td>.03</td>
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<tr>
<td>Model 2 Current Psychopathology</td>
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<td>.47</td>
<td>39.33*** (4,175)</td>
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<td>DASS Depression</td>
<td>.42***</td>
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<tr>
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<td></td>
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<td>Age</td>
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</tr>
<tr>
<td>Model 3 SRM Cognitive Appraisals</td>
<td>13.01*** (18,163)</td>
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<td>3.33*** (12,163)</td>
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<td>DASS Depression</td>
<td>.33***</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Age</td>
<td>.11</td>
<td>2.07</td>
</tr>
<tr>
<td>Model 4 SRM Emotional Reactions</td>
<td>12.77*** (21,160)</td>
<td>.58</td>
<td>5.26** (3,160)</td>
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<td>DASS Depression</td>
<td>.29**</td>
<td>3.25</td>
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<td></td>
<td></td>
<td>Guilt-shame emotions</td>
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<td></td>
<td></td>
<td></td>
<td>Age</td>
<td>.11</td>
<td>2.08</td>
</tr>
<tr>
<td>Model 5 SRM Coherence</td>
<td>11.54*** (23,158)</td>
<td>.57</td>
<td>0.10 (2,158)</td>
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<td>DASS Depression</td>
<td>.29**</td>
<td>3.19</td>
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<td>Guilt-shame emotions</td>
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<td>3.13</td>
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<td>Chronic course</td>
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<td></td>
<td></td>
<td>Age</td>
<td>.11</td>
<td>2.07</td>
</tr>
</tbody>
</table>

Note. *p<.05, **p<.01, ***p<.001; **boldface** = the model reported in the discussion

Table 7b

Time 2 Withdraw and Ruminate Coping: Summary of Significant Time 1 Block Regression Predictors

<table>
<thead>
<tr>
<th>Model Additional Block Entered per Model</th>
<th>$F$ (df)</th>
<th>Adj $R^2$</th>
<th>$F \Delta$ (df)</th>
<th>$R^2 \Delta$</th>
<th>Significant Predictors</th>
<th>$B$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
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<td>Model 1 Demographics</td>
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<td>1.62 (2,147)</td>
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</tr>
<tr>
<td>Model 2 Current Psychopathology</td>
<td>16.94*** (6,143)</td>
<td>.39</td>
<td>24.09*** (4,143)</td>
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<td>DASS Depression</td>
<td>.35**</td>
<td>3.45</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>DASS Stress</td>
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<td>2.18</td>
</tr>
<tr>
<td>Model 3 SRM Cognitive Appraisals</td>
<td>7.38*** (18,131)</td>
<td>.44</td>
<td>1.94* (12,131)</td>
<td>.09</td>
<td>DASS Depression</td>
<td>.31**</td>
<td>2.64</td>
</tr>
<tr>
<td></td>
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<td>Personal control</td>
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<td>-2.23</td>
</tr>
<tr>
<td>Model 4 SRM Emotional Reactions</td>
<td>8.11*** (21,128)</td>
<td>.50</td>
<td>6.71*** (3,128)</td>
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<td>Neg-anxious emotions</td>
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<td>2.76</td>
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<td></td>
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<td></td>
<td>DASS Depression</td>
<td>.24*</td>
<td>2.09</td>
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<td></td>
<td></td>
<td></td>
<td>Positive emotions</td>
<td>.15*</td>
<td>2.13</td>
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<td></td>
<td>Personal control</td>
<td>-.15*</td>
<td>-2.34</td>
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<tr>
<td>Model 5 SRM Coherence</td>
<td>7.92*** (23,126)</td>
<td>.52</td>
<td>3.08 (2,126)</td>
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<td>Neg-anxious emotions</td>
<td>.29**</td>
<td>2.89</td>
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<td></td>
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<td>Coherence</td>
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<td></td>
<td>Positive emotions</td>
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<td>2.07</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Personal control</td>
<td>-.14*</td>
<td>-2.11</td>
</tr>
</tbody>
</table>

Note. *p<.05, **p<.01, ***p<.001; **boldface** = the model reported in the discussion
It is surprising that age would emerge as significant in these analyses, particularly because age was generally uniform within this student sample. It may be that the older students were less likely to live on campus and thus constantly be around others, making it more feasible for older students to become isolated and ruminative.

Past reports that increased depression is often characterized by self-negativity, hopelessness, helplessness, and concurrent anxiety (Almeida et al., 2012; Henkel et al., 2002; Watson et al., 2008), led to the expectation that depression severity would be a significant predictor of Withdrawing and Ruminating. This result was obtained, with DASS Depression in Block 2 (i.e., current psychopathology) being a significant predictor of coping through withdrawing and ruminating.

The cognitive representation (Block 3), was expected to be significant for coping through withdrawing and ruminating, as Brown et al. (2001) had found that certain beliefs about depression were significantly associated with maladaptive coping, even after controlling for depression severity. Specifically, a low endorsement of personal control, high expectation of negative consequences, and belief in chronic timeline was expected for those who chose to withdraw and ruminate. Of these beliefs, only an endorsement in a chronic timeline for the depressive symptoms emerged as a significant predictor for this style of maladaptive coping. This result suggested that expecting to endure depressive symptoms continually for a long time might have led some students to the point of maladaptive acceptance, in which they gave up trying to deal with the problem and instead spent time alone, feeling sad and keeping those feelings to themselves. However, unlike in Brown et al. (2001), depression level still appeared to be a more important predictor of withdrawing and ruminating than such beliefs about depression.

In Kelly et al.’s (2007) results, it appeared that having a negative emotional reaction (e.g., worry, discouragement, anger, embarrassment) to depressive symptoms was a particularly strong predictor of maladaptive coping responses. Therefore, it had been proposed that the negative
emotional responses in the present study (i.e., guilt-shame and negative anxious), and not the positive emotional reactions, might be most predictive of withdrawing and ruminating. As expected, reacting to the depressive symptoms with guilt and shame was significantly related to students’ hiding these symptoms from others by withdrawing and ruminating. Negative or anxious emotional reactions were not significant drivers in this process. In contrast to what was expected based on Kelly et al.’s (2007) findings, actual depression levels were a more significant driving force for withdrawing and ruminating than having a guilty or shameful emotional reaction to those symptoms.

Lastly, it was not clear whether having a coherent understanding of the depressive symptoms would incite fear and thereby withdrawal and rumination; or whether clarity about the symptoms would drive positive and active coping, thereby reducing the need to withdraw and ruminate. However, the findings from Block 5 indicated that neither of these patterns emerged, as coherence was neither a negative or positive predictor of withdrawing and ruminating. More generally, the present regression findings revealed that depression level was the most significant predictor of coping with depressive symptoms through withdrawing and ruminating, while some SRM beliefs (i.e., chronic timeline) and emotional reactions (i.e., guilt-shame), as well as demographics (i.e., older age) also played a role in increasing the likelihood of using this coping strategy.

**Longitudinal results.** A paired samples t-test ($n = 158$) found withdraw and ruminate coping to be rated statistically significantly higher at Time 1 ($M = 3.25, SD = 1.30$) than Time 2 [$M = 3.11, SD = 1.27$; $r = .74, p < .001$; $t(157) = 2.00, p < .05$]. However, it is important to note that both ratings were within the same numerical point of the Likert scale ($1 = not at all, 4 = half of the days, 7 = every day$)—indicating a similar low to moderate usage of this coping strategy across time.

As in the cross-sectional analysis, Model 4 in the longitudinal regression represented the highest-level block that showed significant incremental change from the previous models (see Table 7b). Within this block, there were some similarities in the Time 1 SRM predictors which emerged as
significant, this time toward withdrawing and ruminating two weeks later. While older age was no longer a significant predictor, a higher depression level at Time 1 remained predictive of withdrawing and ruminating at Time 2. Along a similar vein, the guilt-shame emotional reactions did not remain significant for Time 2, but negative-anxious emotional reactions did emerge as significant. A sense of worry, hopelessness, and discouragement at Time 1 could understandably lead to withdrawing and ruminating over time. Surprisingly, however, higher positive emotional reactions (e.g., contented, calm) also emerged as significant, possibly reflecting a degree of acceptance or resignation leading to withdrawing instead of taking action. From the cognitive representation, a belief in chronic course was no longer a significant predictor, while a low sense of personal control at Time 1 did become predictive of withdrawing and ruminating at Time 2. Believing that one has little control over their personal experience of potentially depressive symptoms could understandably lead to giving up and fretting after a couple of weeks.

Overall, feeling depressed, discouraged or resigned to the experience, and having low sense of control at Time 1 was predictive of withdrawing and ruminating two weeks later. Comparing the cross-sectional and longitudinal results, it would appear that current psychopathology (specifically higher depression level), emotional representations (likely more negative emotions), and certain cognitions (which reflect a poor prognosis) appear to be fairly stable predictors of withdrawing and ruminating, as they remain significant from Time 1 to Time 2.

Social Support

The criterion factor in this regression analysis was coping through seeking Social Support. This factor was defined as seeking comfort and understanding from someone (e.g., family, friend) and trying to get advice or help from friends/family about what to do.
**Cross-sectional results.** As shown in Table 8a, Model 4 represented the highest level that showed significant incremental change from the previous models. Model 4 included Block 1-Demographics, Block 2-Current Psychopathology, Block 3-SRM Cognitive Appraisals, and Block 4-SRM Emotional Reactions. Gender (Block 1) was a significant predictor, in that female participants were more likely than males to seek social supports to cope with depressive symptoms. Experiencing emotional reactions to depressive symptoms also appeared to be important in predicting seeking social supports, given that all three emotional reaction factors from Block 4 were significant predictors. Feeling concerned, as well as feeling more positive, and unashamed of depressive symptoms, all increased the likelihood of participants seeking social supports. In a similar vein, those expecting more positive consequences to come from their depressive experience (Block 3) were more likely to seek social supports.

For this coping factor, several expectations were met, whereas others were not. Within Block 1 (i.e., demographics), past studies had found female gender to be a significant predictor of seeking social support among similarly aged young people (Rickwood & Braithwaite, 1994). Female gender did, in fact, emerge as a major predictor of seeking social supports amongst the present university sample. Age was not investigated in the past literature with regards to seeking social support, and given the relatively narrow age range of the present sample, was not anticipated to be a predictor, nor did it emerge as one.

Within Block 2 (i.e., current psychopathology), it had been proposed that greater levels of distress might be predictive of participants seeking social supports, as this construct was one of the additional predictors of seeking social support in Rickwood and Braithwaite’s (1994) study. However, level of distress did not appear to impact the present sample with respect to seeking social supports.
Table 8a

**Time 1 Social Support Coping: Summary of Significant Time 1 Block Regression Predictors**

<table>
<thead>
<tr>
<th>Model</th>
<th>Additional Block Entered per Model</th>
<th>$F$ (df)</th>
<th>Adj $R^2$</th>
<th>$F \Delta$ (df)</th>
<th>$R^2 \Delta$</th>
<th>Significant Predictors</th>
<th>$B$</th>
<th>$T$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Demographics</td>
<td>10.26*** (2,179)</td>
<td>.09</td>
<td>10.26*** (2,179)</td>
<td>.10</td>
<td>Gender</td>
<td>-.30***</td>
<td>-4.13</td>
</tr>
<tr>
<td>Model 2</td>
<td>Current Psychopathology</td>
<td>4.49*** (6,175)</td>
<td>.10</td>
<td>1.55 (4,175)</td>
<td>.03</td>
<td>Gender</td>
<td>-.29***</td>
<td>-3.93</td>
</tr>
<tr>
<td>Model 3</td>
<td>SRM Cognitive Appraisals</td>
<td>2.75*** (18,163)</td>
<td>.15</td>
<td>1.76 (12,163)</td>
<td>.10</td>
<td>Gender</td>
<td>-.29***</td>
<td>-3.76</td>
</tr>
<tr>
<td>Model 4</td>
<td>SRM Emotional Reactions</td>
<td>3.47*** (21,160)</td>
<td>.22</td>
<td>6.07** (3,160)</td>
<td>.08</td>
<td>Negative-anxious emotions</td>
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<td></td>
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<td>Negative-anxious emotions</td>
<td>.40**</td>
<td>3.50</td>
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<td></td>
<td></td>
<td></td>
<td>Gender</td>
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<td>-3.35</td>
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<td>Guilt-shame emotions</td>
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<td>-1.99</td>
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</tbody>
</table>

*Note. *p<.05, **p<.01, ***p<.001; **boldface** = the model reported in the discussion*

Table 8b

**Time 2 Social Support Coping: Summary of Significant Time 1 Block Regression Predictors**

<table>
<thead>
<tr>
<th>Model</th>
<th>Additional Block Entered per Model</th>
<th>$F$ (df)</th>
<th>Adj $R^2$</th>
<th>$F \Delta$ (df)</th>
<th>$R^2 \Delta$</th>
<th>Significant Predictors</th>
<th>$B$</th>
<th>$T$</th>
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</thead>
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<td>Model 1</td>
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<td>.08</td>
<td>7.05** (2,148)</td>
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<td>Gender</td>
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</tr>
<tr>
<td>Model 2</td>
<td>Current Psychopathology</td>
<td>4.52*** (6,144)</td>
<td>.12</td>
<td>3.06* (4,144)</td>
<td>.07</td>
<td>Gender</td>
<td>-.24**</td>
<td>-2.90</td>
</tr>
<tr>
<td>Model 3</td>
<td>SRM Cognitive Appraisals</td>
<td>2.27** (18,132)</td>
<td>.13</td>
<td>1.12 (12,132)</td>
<td>.08</td>
<td>DASS Depression</td>
<td>-.37*</td>
<td>-2.53</td>
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<td></td>
<td>Gender</td>
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<td>-2.84</td>
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<td>Model 4</td>
<td>SRM Emotional Reactions</td>
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<td>4.23** (3,129)</td>
<td>.07</td>
<td>DASS Depression</td>
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<td>-2.39</td>
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<td>Gender</td>
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<td>.24 (2,127)</td>
<td>.00</td>
<td>DASS Depression</td>
<td>-.34*</td>
<td>-2.25</td>
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<td>Positive emotions</td>
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<td></td>
<td></td>
<td>Gender</td>
<td>-.22**</td>
<td>-2.64</td>
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</table>

*Note. *p<.05, **p<.01, ***p<.001; **boldface** = the model reported in the discussion*
Similarly, within Block 3 (i.e., cognitive representation) there were several potential predictive beliefs proposed based on past findings (e.g., Hagger & Orbell, 2003; Kelly et al., 2007), that did not come to fruition in the current analysis. A higher belief in personal control, as well as a belief in stress or interpersonal causes, was anticipated to increase social support seeking, though this was not the case in the present study. Instead, positive consequences appeared to be the only SRM belief that was predictive of social support in the current study. In particular, a closer examination of the items contained within this positive consequence factor indicated that one of the items involved a direct positive expectation of social support (i.e., receive encouragement from others), as a result of encountering depressive symptoms. Furthermore, two additional items might tangentially urge someone to engage in discussion with others (i.e., learn about myself, view myself as worthwhile). On a related note, Rickwood and Braithwaite (1994) did emphasize the importance of high private self-consciousness, which involves a high level of awareness to one’s thoughts and feelings, as well as willingness to disclose one’s concerns, toward seeking social support. Having an interest in learning about oneself and holding a positive and resilient self-concept aligns with these constructs, and thus may offer the confidence or positive expectancy necessary to reach out for social support.

For Block 4 (i.e., emotional representation), it was expected that feeling more positive about the depressive symptoms might encourage participants to seek social support, whereas feelings of guilt and shame or negative and anxious feelings would dissuade students from such disclosure. This proposal was partially supported, in that having a more positive emotional reaction and feeling less guilt and shame did facilitate social support. However, rather surprisingly, having a negative and anxious emotional response to the depressive symptoms was the most predictive construct when seeking social support. Rickwood and Braithwaite’s (1994) explanation of private self-consciousness did entail a sense of anxiety or discomfort about one’s inner thoughts and feelings, which then could
urge someone to reach out for help from family or friends. In the present study, it may have been that a certain level of anxiety or concern about the depressive symptoms was a necessary signal which prompted students to seek comfort or advice from friends and family, in conjunction with holding positive expectations of support and growth.

Lastly, there was no prior research relating SRM coherence to social support. However, it was reasoned here that arriving at a coherent awareness of a problem might contribute to the decision to reach out to others for help. Nonetheless, the Block 5 constructs associated with this proposal did not add significantly to prediction of social support.

**Longitudinal results.** A paired samples t-test \( n = 159 \) found social support coping to be rated statistically significantly higher at Time 1 \( (M = 4.05, SD = 1.84) \) than Time 2 \( [M = 3.72, SD = 1.86; r = .60, p < .001; t(158) = 2.51, p < .05] \). However, both ratings were around the same numerical point of the Likert scale \( (1 = \text{not at all}, 4 = \text{half of the days}, 7 = \text{every day}) \)—indicating social support was sought around half of the days across the course of the time period tested.

As in the cross-sectional analysis, the longitudinal analysis found Model 4 to be the highest-level block that showed significant incremental change from the previous models (see Table 8b). Within this model, three of the significant SRM predictors for social support at Time 1 remained significant for predicting social support at Time 2: female gender, negative-anxious emotional reactions, and positive emotional reactions. The more positive emotional reactions and a belief in positive outcomes were no longer significant in the prediction of seeking social support at Time 2. However, having a lower level of depression at Time 1 was predictive of reaching out to social supports two weeks later. As explained for the cross-sectional results, it would appear that feeling less depressed and holding more positive expectancies enables people (particularly women in this study) to take action to seek social supports for their concerns relating to potential depressive symptoms.
Overall, for social support coping, it appears that female gender, emotional reactions, and related psychopathology are important predictors which remain significant both cross-sectionally and longitudinally.

**Behavioural Activation**

The criterion factor in this regression analysis was coping through Behavioural Activation. This construct included: do something enjoyable; do something to think about the experience less, such as going to the movies, watching TV, reading, daydreaming, sleeping, or shopping; exercise; and try to sleep better.

**Cross-sectional results.** As shown in Table 9a, Model 3 represented the highest-level block that showed significant incremental change from the previous models. This model included Block 1-Demographics, Block 2-Current Psychopathology, and Block 3-SRM Cognitive Appraisals. It explained 11% of the variance in coping through behavioural activation. The significant predictors in this analysis all came from Block 3 (i.e., cognitive representation). Here, those who viewed their depressive symptoms as having fewer negative consequences and more positive consequences were more likely to engage in behavioural activation coping strategies. Participants who attributed their depressive symptoms to biological causes or to loss were also more likely to engage in behavioural activation. Lastly, participants with a sense of personal control over depressive symptoms were more likely to cope through behavioural activation.

For Block 1 (i.e., demographics), leading from Jorm et al.’s (2004) results, it was suggested that female gender might increase use of positive self-help coping, though this was not the case for behavioural activation. For Block 2 (i.e., current psychopathology), it was also expected (based on Jorm et al., 2004) that lower levels of depressive symptoms, which were not severe enough
Table 9a

*Time 1 Behavioural Activation Coping: Summary of Significant Time 1 Block Regression Predictors*

<table>
<thead>
<tr>
<th>Model</th>
<th>Additional Block Entered per Model</th>
<th>$F$ (df)</th>
<th>Adj $R^2$</th>
<th>$F \Delta$ (df)</th>
<th>$R^2 \Delta$</th>
<th>Significant Predictors</th>
<th>$B$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Demographics</td>
<td>.55</td>
<td>-.01</td>
<td>.55</td>
<td>.01</td>
<td>Negative consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(2,179)</td>
<td></td>
<td>(2,179)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td>Current Psychopathology</td>
<td>.69</td>
<td>-.01</td>
<td>.76</td>
<td>.02</td>
<td>Positive consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6,175)</td>
<td></td>
<td>(4,175)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Model 3</strong></td>
<td>SRM Cognitive Appraisals</td>
<td><strong>2.31</strong></td>
<td><strong>.12</strong></td>
<td><strong>3.08</strong></td>
<td><strong>.18</strong></td>
<td>Negative consequences</td>
<td>-.34</td>
<td>-2.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(18,163)</td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Biological causes</td>
<td>.25</td>
<td>3.23</td>
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<td></td>
<td></td>
<td></td>
<td>Personal control</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>Loss causes</td>
<td>.17</td>
<td>2.19</td>
</tr>
<tr>
<td><strong>Model 4</strong></td>
<td>SRM Emotional Reactions</td>
<td><strong>2.30</strong></td>
<td><strong>.13</strong></td>
<td>1.95</td>
<td>.03</td>
<td>Positive consequences</td>
<td>-.30</td>
<td>-2.55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(21,160)</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td>Biological causes</td>
<td>.22</td>
<td>2.80</td>
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<td></td>
<td></td>
<td></td>
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<td>Loss causes</td>
<td>.20</td>
<td>2.40</td>
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<tr>
<td><strong>Model 5</strong></td>
<td>SRM Coherence</td>
<td><strong>1.82</strong></td>
<td><strong>.13</strong></td>
<td>1.56</td>
<td>.01</td>
<td>Positive consequences</td>
<td>-.27</td>
<td>-2.24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(23,158)</td>
<td></td>
<td>(2,158)</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Biological causes</td>
<td>.24</td>
<td>2.91</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Loss causes</td>
<td>.20</td>
<td>2.38</td>
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</table>

*Note.* *p*<.05, **p**<.01, ***p**<.001; **boldface** = the model reported in the discussion

Table 9b

*Time 2 Behavioural Activation Coping: Summary of Significant Time 1 Block Regression Predictors*

<table>
<thead>
<tr>
<th>Model</th>
<th>Additional Block Entered per Model</th>
<th>$F$ (df)</th>
<th>Adj $R^2$</th>
<th>$F \Delta$ (df)</th>
<th>$R^2 \Delta$</th>
<th>Significant Predictors</th>
<th>$B$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1</td>
<td>Demographics</td>
<td>.27</td>
<td>-.01</td>
<td>.27</td>
<td>.00</td>
<td>Negative consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td>(2,148)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 2</td>
<td>Current Psychopathology</td>
<td>.54</td>
<td>-.02</td>
<td>.68</td>
<td>.02</td>
<td>Positive consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6,144)</td>
<td></td>
<td>(4,144)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 3</td>
<td>SRM Cognitive Appraisals</td>
<td>.87</td>
<td>-.02</td>
<td>1.04</td>
<td>.08</td>
<td>Negative consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(18,132)</td>
<td></td>
<td>(12,132)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 4</td>
<td>SRM Emotional Reactions</td>
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<td>-.02</td>
<td>.84</td>
<td>.02</td>
<td>Positive consequences</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(21,129)</td>
<td></td>
<td>(3,129)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model 5</td>
<td>SRM Coherence</td>
<td>.80</td>
<td>-.03</td>
<td>.23</td>
<td>.00</td>
<td>Positive consequences</td>
<td></td>
<td></td>
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<td></td>
<td>(23,127)</td>
<td></td>
<td>(2,127)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* *p*<.05, **p**<.01, ***p**<.001; **boldface** = the model reported in the discussion
to impair positive thinking and motivation, would allow students to cope with their depressive symptoms through behavioural activation. However, a low level of depression did not emerge as a significant predictor of this style of coping.

It appeared that the cognitive representation in Block 3 was an important driver of behavioural activation. As expected from Brown et al.’s (2001) results, having a belief in personal control over the depressive experience was associated with engaging in behavioural activation. Also, as anticipated, believing that the depressive experience had more positive consequences and fewer negative consequences was related to students using behavioural activation strategies to cope. In fact, having a positive expectation as to the outcome of the experience was the most significant contributor in taking active steps toward dealing with the experience through behavioural activation. The other impactful beliefs expected here, including relational or situational stress causes, and acute rather than chronic timeline, were not significant for behavioural activation. In contrast, believing that the depressive symptoms were caused by biology or loss, appeared to drive behavioural activation. This result would appear to conflict with past research (e.g., Iselin & Addis, 2003), which has suggested that believing depression was caused by biology would instead lead to coping through medical treatments which could directly address the biological problems. However, it would be reasonable to presume that whether students suspected a biological (e.g., genetics, hormonal changes), loss (e.g., grief), or some other cause for the depressive symptoms, they might nonetheless choose to take positive self-help action to ameliorate their depressive experience (e.g., do something enjoyable).

It was expected that having a more positive emotional reaction to depressive symptoms, rather than feeling guilty and ashamed or negative and anxious, would increase the use of behavioural activation. However, these constructs from Block 4 (i.e., emotional representation) did not contribute significantly to the use of this coping style. Similarly, while it was proposed that having a coherent
understanding of the depressive symptoms (Block 5) could facilitate behavioural activation, this was also not the case in the current analysis.

**Longitudinal results.** A paired samples t-test ($n = 159$) found behavioural activation coping to be rated statistically significantly higher at Time 1 ($M = 4.35, SD = 1.20$) than Time 2 [$M = 4.13$, $SD = 1.21$; $r = .62, p < .001$; $t(158) = 2.37, p < .05$]. However, both ratings were around the same numerical point of the Likert scale ($1 = not at all$, $4 = half of the days$, $7 = every day$), such that behavioural activation was utilized just over half of the days throughout the time period tested.

Interestingly, none of the models for the longitudinal analysis were significant (see Table 9b). In the cross-sectional analysis, Model 1 and 2 were not significant, while Model 3 through 5 were significant and within each of these, it was the cognitive appraisals which were significant predictors of behavioural activation coping at Time 1. The cognitive representation at Time 1 appeared to be the sole driver of behavioural activation coping at Time 1; therefore, it is surprising that for Time 2 behavioural activation, Model 3, wherein the cognitive representation was added (and the Models to follow which also include the cognitive representation), did not emerge as significant. It may be that a positive outlook is a driver of proactive coping at the time of initial assessment of those beliefs, but that these Time 1 beliefs are not strong enough to predict behavioural activation coping two weeks later.

**Part 3 Summary**

The Self-Regulatory Model proposes that individuals, based on their own histories and characteristics, interpret their illness symptoms cognitively and emotionally, in order to arrive at coping responses, which then lead to related health outcomes (Leventhal et al., 1992). The overarching purpose of Part 3 was to determine how the various components of the SRM may be related to the use of the four coping factors identified in Part 2.
**Cross-sectional results.** The main findings for the cross-sectional analyses are summarized as follows. The first coping factor, Professional Assistance, was most accounted for by Model 2, more specifically, the predictors of gender (female) and anxiety. The second coping factor, Withdraw and Ruminate, was best predicted by Model 4, which included the following significant predictors: age, depression, chronic course, and guilt-shame emotions. Social Support was the third factor, and was best explained by Model 4, which included gender (female), positive consequences, positive emotions, negative-anxious emotions, and guilt-shame emotions. Lastly, the fourth coping factor, Behavioural Activation, was most accounted for by Model 3, which included negative and positive consequences, biological causes, loss causes, and personal control.

It is apparent from this brief overview that the various components of the SRM (i.e., demographics, current psychopathology, cognitive representation, emotional representation, and model coherence), may change in relative importance, depending on the coping factor being predicted. For example, the SRM cognitive representation was the sole significant predictor of behavioural activation coping, suggesting that certain beliefs about depressive symptoms (e.g., having personal control over the experience, perceiving positive consequences from the experience) may be very important when laying the foundation for a person to engage in this positive, active self-help coping approach. In contrast, seeking professional assistance was predicted only by the demographic factor of gender (female) and current psychopathology (anxiety), and not by the cognitive or emotional representations of the SRM. Overall, this pattern suggests that the SRM is flexible and fluid, with different components of this model emerging as significant predictors, depending on the specific coping strategy being considered.

**Longitudinal results.** The longitudinal results revealed that some SRM predictors from Time 1 were robust and stable, remaining significant drivers of coping at Time 2, whereas others were not. The two coping factors for which significant SRM predictors fell away across time were
Professional Assistance and Behavioural Activation. Female gender and Time 1 psychopathology (specifically increased anxiety) were predictive of seeking professional assistance at Time 1, but not Time 2. Similarly, behavioural activation coping at Time 1 was predicted entirely by the cognitive representation, yet this Time 1 cognitive representation was not significant in predicting behavioural activation at Time 2. It may be that certain components of the SRM, such as demographics, current psychopathology, and the cognitive representation, may more strongly impact these coping responses at the initial time of assessment; but may not continue across time to sustain or predict future coping actions.

The two coping factors for which Time 1 SRM predictors remained significant, longitudinally, were Withdraw and Ruminate, and Social Support. Withdrawing and ruminating was predicted at Time 1, and two weeks later, by Time 1 psychopathology, emotional representations, and some of the cognitive representations. Similarly, seeking social support was predicted cross-sectionally and longitudinally by gender, the emotional representation, and related psychopathology at Time 1. These results suggest that some of the SRM components which did not remain significant longitudinally for Professional Assistance and Behavioural Activation—namely demographics and the cognitive representation—may still hold their predictive power over time for other coping factors. Moreover, the results from Withdraw and Ruminate, as well as Social Support, highlight the importance of the emotional representation and related psychopathology. The emotional representation appeared to be a quite robust and stable predictor of these types of coping responses at Time 1 and two weeks later at Time 2. This is an important result to note, as the emotional representation has been largely ignored in the SRM literature until recently.
Chapter 6

General Discussion

The purpose of this dissertation was to document and test a self-regulation model (SRM) for the potential depressive experiences of undergraduate students. This research study addressed several gaps in past literature by targeting the uncharted preliminary phase of the SRM process, before a diagnosis had been ascribed to the experience of symptoms often associated with depression. The present research also measured a more comprehensive set of SRM constructs than past studies, which have typically assessed only a subset of the theorized components of the self-regulatory model for depression. Lastly, the dissertation included initial exploratory tests of the theorized directionality and dynamic nature of SRM components leading to coping.

The present endeavor was accomplished in three parts. Part 1 presented a more comprehensive SRM for the students’ potential depressive symptoms, while also taking into account the sample characteristics and psychopathology from which the model was contextualized. Part 2 presented coping strategies that were relevant for this university sample in dealing with these potentially depressive experiences. Part 3 then offered findings from multiple regression analyses that demonstrated how the SRM components (from Part 1) may be predictive of the students’ use of coping strategies (from Part 2), both cross-sectionally and longitudinally.

Research, Theory, and Clinical Implications of the Findings

Since each major part of this dissertation has already provided a detailed presentation and discussion of the specific findings for that section of the research, the general discussion will focus primarily on the broader implications of these findings for research, theory, and clinical applications. Limitations and future directions will thereafter be considered.
Part 1. The first part of the dissertation sought to assess a comprehensive SRM for potential depressive symptoms in a novel way. Rather than sampling clinically depressed patients who had already been diagnosed with and treated for depression, the current methodology recruited a nonclinical sample of university students who were noticing a range of vague symptoms, often associated with depression, in their everyday lives. In doing so, this recruitment strategy allowed for a broader range of depressive experiences from which to base the SRM, including varying symptom profiles and much milder severities than would be evident from a solely clinical presentation.

The results of Part 1 suggested that the preselection process used was effective in drawing in students who were experiencing a range of depressive symptoms, including those at a very mild undiagnosed level—while not excluding those who may be at a more moderate or severe levels. This was a significant advancement from prior research in this domain, as the SRM for depression has thus far only been applied to certain groups of participants. These groups have mainly consisted of primary care patients who were diagnosed with clinical depression and being treated with antidepressants; or nondepressed lay public members who were asked for their views about an imaginary depressed person, as described in a standardized depression vignette (e.g., Brown et al, 2001, 2007; Fortune et al., 2004; Goldney et al., 2002; Jorm et al., 1997; Kelly et al., 2007).

Recall that the present recruitment strategy asked students to sign up if they had experienced any number of potentially depressive experiences, such as, “I have been less interested in doing things that I used to enjoy,” or “I have been feeling down or less happy than usual,” although the word, “depression,” was not used. Similarly, on the study’s questionnaire, the depressive symptoms were referred to as the “set of individual experiences.” This type of recruitment strategy has not been used before in SRM research, thus resulting in no direct basis for present comparisons with past work in this domain. Instead, the benefit of the current preselection recruitment strategy was that it allowed for inclusion of those who did not necessarily identify their depressive symptoms as
“depression” or a “depressed” mood. In this regard, research has previously shown that whether a depression vignette is labelled as “sadness” or “depression” or given no label at all, participants’ perceptions of these symptoms change accordingly (Leite, 2011). Therefore, it was considered prudent in the present study to not interfere in the natural SRM process by cueing participants with a label for their personal experience with symptoms of depression. Furthermore, refraining from using labels such as “depression” or “depressed” minimized any potential stigma associated with these labels, and thus included those who might refrain from signing up for a “depression” study because they do not view themselves as having this disorder.

The present recruitment strategy also allowed for inclusion of those whose reported symptom profile was more somatic or cognitive, with less recognition of depressed mood or anhedonia. This increased flexibility was considered important, as it clearly acknowledges that the individual experience of depression amongst undergraduates does not always align with the prototypical descriptions offered in standardized vignettes, nor is it necessarily limited to the primary affective and somatic symptoms (Daughtry & Kunkel, 1993). As such, the present preselection approach allowed for more personalized experiences of depressive symptoms, without inferring what depression might look like, feel like, or be named, for each unique individual in the study.

Moreover, this novel research approach targeted the SRM at a much earlier phase of the theorized process, wherein a set of unlabelled, undiagnosed, and vague symptoms which may be associated with depression or some other issue are made sense of and dealt with by young adult students in the context of their everyday university life. This approach contrasted with previous studies which have focused on primary care patients who are typically much further along in the process of “figuring out” and then coping with depression (e.g., Brown et al., 2001, 2007). Such individuals have been dealing with a more severe, coalesced experience of depression, to the point that the problem has already been identified (either by the patient or a physician) as depression,
discussed with a physician and treated medically. It would be reasonable to expect that these two sample groups would be at quite different points in their understanding and management of the potential depressive symptoms they might be experiencing. Of note is that both of these stages can theoretically be captured by the SRM, though most researchers have chosen to focus on the latter usage of the SRM, measuring these constructs for people with clear, diagnosed physical and mental illnesses (e.g., Hagger & Orbell, 2003; Lobban et al., 2003).

The present study provides a timely approach, within the broader SRM landscape, to examine a working model of how people “figure out” their more preliminary, vague, and generally mild unlabelled depressive symptoms. Several prominent SRM theorists, including Leventhal et al. (2016), recently suggested that the evaluation of SRM constructs should consider both the context of the illness experience and the timing of the assessment. More specifically, Leventhal et al. (2016) recommended that researchers try to capture the SRM at important transitions, such as before and directly after diagnosis, or during longer term control from treatment initiation to maintenance. The current approach responded to these issues by measuring the SRM for potential depressive symptoms experienced within the university context, prior to formal labelling, diagnosis, or treatment for most of the students involved.

That these students were able to construct a cohesive and comprehensive SRM for vague, unlabelled symptoms was significant, as the SRM is theorized to be applicable to the early “figuring out” stage, but has not yet been applied in this context. To briefly summarize these findings, the students had a fairly coherent understanding of their own individual experience. Most students chose not to use a label to summarize their potential depressive symptoms, and those who did often related the experience to university stressors, with much fewer applying a label of depression or some other clinical disorder. The students viewed their possible depressive symptoms as variable in course and expected a further duration of two to three weeks. Depressive symptoms were seen as moderately
likely due to work stress causes, followed by social developmental causes, and lastly, biological causes. Both positive and negative consequences were reported to a moderate degree, with positive consequences experienced slightly more often. Negative and anxious emotional reactions to the potential depressive experiences were noticed somewhat, followed by positive emotional reactions, with guilt and shame reactions experienced the least. The undergraduates believed they could somewhat to mostly control their possible depressive experiences, and that some type of treatment could somewhat control their symptoms.

Some of the above SRM components, such as the emotional representation, have thus far only been described in a preliminary fashion in SRM theory (Moss-Morris et al., 2002), and thus minimally examined in prior research (i.e., Vanheusden et al., 2009). Part 1 elaborated on the theoretical SRM components by offering more comprehensive definitions. In turn, the present findings could be used to expand SRM theory in general, as well as explain how this more comprehensive SRM applies specifically to depression. For instance, the SRM component of emotional representation has been minimally included in prior depression research (e.g., Kelly et al., 2007), examining only a handful of negative emotional reactions (e.g., worry, anger). In addition, no other SRM research has previously considered positive emotional reactions in response to illness, including potential depression symptoms; yet these types of emotional representations were endorsed as quite relevant in the present study. Furthermore, the original SRM theory (i.e., Leventhal et al., 1984) has not been updated to include a list of potential negative emotional reactions which have since been found relevant in the literature (e.g., Kelly et al., 2007; Moss-Morris et al., 2002). Not only does SRM theory need to expand to accommodate research in this regard, but it could also benefit from further inclusion of positive emotions, based on the preliminary support for their relevance in the present study. Similarly, negative types of consequences have been the sole focus in SRM theory and research thus far (e.g., Brown et al., 2001). However, the present findings, along
with some other more recent research (e.g., Lynch et al., 2011), suggest that positive consequences for depression (and perhaps other illnesses) may be worth adding to an expanded SRM theory and tested more fully in future research.

From an applied clinical perspective, the findings from Part 1 were informative in terms of showing that the students’ perceptions of their potential depressive symptoms along the components of the SRM appeared reasonable, sound, and in keeping with the university context described in Part 1. Mental health initiatives are of increasing concern at universities (Lunau, 2012). As such, it may be of interest to those spearheading such programs to be aware of how students are making sense and coping with depressive symptoms, even when they are not seeking help at university counseling centres. In this way, the results of the present study may be particularly relevant. For instance, the student counseling centre at Western offers a “Managing Anxiety and Stress” group, which would appear to be a well-named workshop to reach students in distress, in light of present and past results (e.g., Leite, 2011) which suggest that using the word, “depression,” might deter students from attending. Recall that most students who were experiencing depressive symptoms in the present study attributed these symptoms to university stressors and rarely used a label of depression.

**Part 2.** The second part of this dissertation continued with the more comprehensive assessment of the SRM by surveying a wide range of coping strategies that students may use to deal with their individual experiences of potential depressive symptoms. The initial larger list of coping strategies was reduced to a much smaller set of coping factors through principal components analyses. This set can be ordered in terms of use, starting with behavioural activation being the most utilized coping strategy (just over half the days of the past two weeks), then social support (used around half the days), followed by withdrawing and ruminating (done less than half the days), and lastly, by professional assistance (sought almost not at all).
Overall, the coping factors derived in the present study fit well with past research findings describing categories of coping (e.g., Care & Kuiper, 2013; Jorm et al., 2004; Leite, 2011). From a broader theoretical perspective, it is interesting to note that the derived coping factors were specific to depression, but also appear consistent with coping approaches found more generally in SRM studies for other illnesses. For instance, social support, professional treatment, taking action (like behavioural activation), and giving up or doing nothing (like withdrawing and ruminating) have been highlighted as common coping approaches used across a variety of illnesses in SRM meta-analyses (Hagger & Orbell, 2003). SRM theory could be updated and expanded to explicitly incorporate such overarching generic coping approaches as part of the theory, considering that the literature suggests that these may commonly apply to many illnesses, including depression. Hagger et al. (2017) have recently suggested five overarching coping categories (i.e., avoidance, cognitive reappraisal, emotion venting, problem-focused coping, and seeking social support) in their meta-analytic process tests. Suggesting and including some common coping approaches in the SRM theory, like in Hagger et al. (2017), would not preclude more specific investigation for particular illnesses, as has been done in other SRM research to date.

From an applied clinical perspective, the Part 2 findings offered value by illustrating how the general university student population may be coping with psychological distress even when they are choosing not to seek formal help through the university counseling centre or other professional assistance avenues. Recall that the undergraduates’ endorsement of the various coping approaches met expectations derived from the literature (e.g., Eisenberg et al., 2007; Jorm et al., 2004; Morgan et al., 2012) as to how those experiencing generally mild, nonclinical depression might respond. As discussed previously, the students’ choice of positive self-help over negative self-help offers an encouraging and adaptive picture of their coping strategies in a university context. Although their occasional use of negative self-help and almost complete avoidance of professional assistance could
increase risk for further depression, given their overall mild level of depressive distress, the students appeared to be coping in reasonable and appropriate ways.

Although it was already known from the previous research literature that many students do not seek formal assistance for depression (Eisenberg et al., 2007), it was much less clear what they may actually do (or not do) in their own personal lives to cope. Thus, it may be of value for university mental health initiatives and outreach, as well as student counseling centres, to be aware of such results which show how students are coping on their own, without formal intervention. For instance, the positive self-help strategies which students are comfortable using (e.g., social engagement and support) could be explicitly highlighted and encouraged, while specific efforts could also be made to discourage or circumvent their occasional usage of negative self-help strategies, such as withdrawal and rumination. Reframing of depressive symptoms through omitting the label of “depression” and using more normative phrasing in outreach (e.g., “feeling less like hanging out with your friends”), alongside offering an appealing image of professional assistance could be of further value to draw in those students who may be experiencing higher levels of depression yet resisting seeking help.

**Part 3.** Part 3 integrated the previous parts of this dissertation and extended what is known about the SRM by testing the predictive nature of this model in a novel manner. Regression analyses inputted the full set of SRM components (demographics, psychopathology, cognitive and emotional representation from Part 1) as predictors for each coping factor (from Part 2), both cross-sectionally for Time 1 coping factors and longitudinally for Time 2 coping factors.

An overview of the Time 1 cross-sectional results indicated that the various components of the SRM may change in their relative predictive importance, depending on the coping factor targeted. For example, the SRM cognitive representation was the sole predictor of behavioural activation coping. In this instance, certain beliefs about depressive symptoms (e.g., personal control, positive
consequences) may be very important in laying the foundation for a person to engage in positive, active self-help—regardless of demographic factors, current psychopathology, or model coherence and consideration. In contrast, seeking professional assistance was predicted only by the demographic factor of gender (female) and current psychopathology (anxiety), while none of the other SRM components (i.e., cognitive appraisals, emotional reactions) emerged as predictors for this coping action. The remaining coping strategies, namely, withdraw-ruminate and social support, both had some other unique combinations of the various domains of the SRM which emerged as significant predictors.

These cross-sectional results demonstrate the ability of the model to highlight when certain SRM components are more important for coping than others, depending on the particular coping strategy involved. Furthermore, the results demonstrate that all the various theoretical components included in the self-regulatory model may be important at certain times during the process. In particular, it is worth noting that emotional representation, which has not previously been attended to as fully as cognitive representation in the model, was a significant predictor of coping.

The longitudinal results revealed that some SRM predictors from Time 1 were robust and stable, remaining significant drivers of coping at Time 2, while others were not. The two coping factors for which significant SRM predictors fell away were Professional Assistance and Behavioural Activation. Female gender and Time 1 psychopathology (specifically increased anxiety) were predictive of seeking professional assistance at Time 1, but not Time 2. Similarly, behavioural activation coping at Time 1 was predicted entirely by the cognitive representation, yet the cognitive representation from Time 1 was not significant in predicting behavioural activation at Time 2. The two coping factors for which Time 1 SRM predictors remained significant, longitudinally, were Withdraw and Ruminate, and Social Support. Withdrawing and ruminating was predicted at Time 1, and two weeks later at Time 2, by Time 1 psychopathology, emotional representations, and some of
the cognitive representations. Similarly, seeking social support was predicted cross-sectionally and longitudinally by gender, the emotional representation, and related psychopathology at Time 1.

These longitudinal results provide some initial support for the theoretical notion that the self-regulatory model is dynamic, with some aspects changing over time. More specifically, the present results suggest that some components of the SRM may be more robust predictors of coping over time. For instance, the emotional representation appeared to hold its predictive power over a two-week period for both social support coping and withdraw and ruminate coping. Once again, the emotional representation seems to be playing a more important role in the SRM process than the dearth of past research on this theoretical component would suggest. In contrast, the cognitive representation did not always hold its predictive power over time, as was the case for behavioural activation. Though the cognitive representation has been studied extensively cross-sectionally, there is limited research as to how these beliefs about an illness may evolve and impact coping longitudinally across time. It may be that the cognitive representation has a more temporary influence on coping in the moment, changing more with new input, whereas the emotional representations of an illness are more deeply rooted, having more impact initially and lasting longer over time. However, such proposals remain speculative, as it is still unclear how these various aspects of the SRM work together. In particular, the larger body of SRM research has not yet empirically focused on testing specific distinctions or similarities between emotional and cognitive representations that may pertain to coping strategies.

Accordingly, the Part 3 findings add to the existing knowledge base concerning SRM theory by offering a novel empirical test of how much the various theorized SRM components may contribute to coping. In the broader theoretical context of the SRM, this study was timely, as seminal theorists and researchers in the field (Hagger et al., 2017; Leventhal et al., 2016) have recently been calling for more process tests of the dynamics and complexities of the model. Hagger et al. (2017) have pointed out that the typical cross-sectional, correlational designs that have been utilized to study
the SRM thus far neglect the proposed dynamic nature of the model and do not account for the theoretical changes over time. In response, these researchers advocated for longitudinal studies, preferably in close proximity to first diagnosis, so that changes in the SRM constructs, coping, and resulting outcome can be modeled over time. Leventhal et al. (2016) similarly suggested assessment of the SRM at frequent intervals over time, to capture important transitions from before and after diagnosis or from treatment initiation to maintenance. Both discussions echo the sentiment that more complex analyses and longitudinal research on the SRM theory are required to move the literature forward.

The present study, by utilizing regression analyses and longitudinal data, provided one of many possible initial explorations of the dynamics of the self-regulatory model as it pertains to depressive symptoms. No other SRM studies of depression thus far (e.g., Brown et al., 2001; Kelly et al., 2007) have been as comprehensive as this present dissertation in their inclusion of SRM components when relating this model to coping strategies. Furthermore, very few have gone beyond basic correlational designs to include multiple regression analyses (e.g., Vanheusden et al., 2009), and none have done so with both cross-sectional and longitudinal components. Should similar work continue for the self-regulatory model of depression, results could provide some preliminary mapping of potential predictive pathways. Simultaneously, new proposals for process modelling of the SRM in general (Hagger et al., 2017), as applied to various illnesses, may begin to inform future hypotheses for predictive pathways which may then also be applicable to depression.

From an applied clinical perspective, having an increased awareness of which demographic, psychological, belief, or emotional constructs in the SRM model relate to each type of coping offers an opportunity for mental health outreach or clinical intervention in that process. This type of clinical intervention in the SRM process is also timely, having been just recently described by other SRM researchers (Hagger et al., 2017), for illnesses in general. To illustrate, one process model result from
Hagger et al.’s (2017) meta-analyses of SRM illness studies was that perceived negative consequences were found to predict both problem-focused coping and thereby adaptive outcomes, as well as avoidance and maladaptive outcomes. Hagger et al. (2017) suggested linking the SRM representation with the desired coping strategy. In particular, it was proposed that interventions raise a patient’s awareness of illness consequences, while simultaneously offering them a problem-focused strategy to help provide an action plan that would address the illness and move them through the SRM in an adaptive direction.

In the present cross-sectional results for depression, significant contributing factors that increased withdrawing and ruminating included a belief that depressive symptoms would be chronic, as well as having a guilty or shameful emotional reaction to this experience. By knowing this information, mental health outreach could focus on dispelling these students’ perceptions that their emotional status and circumstances will not or cannot get better over time. Additionally, there could be a focus on normalizing the experience to reduce associated feelings of shame and guilt, and instead encourage the more positive self-help strategies that their peers are using (e.g., behavioural activation, social support). The key beliefs held by those who do engage in behavioural activation (e.g., positive consequences) could also be shared or utilized to encourage those students who tend toward negative self-help. For example, it may be beneficial to suggest to those students who withdraw and ruminate, through outreach, that positive consequences may be possible. It could be further pointed out that these consequences are experienced by peers who are overcoming the depressive experience through taking steps to become more active and engaged with others. Finally, an outreach program could specifically describe and perhaps offer several avenues to facilitate positive consequences (e.g., peer support lines/groups, campus clubs or activities, wellness sessions at the student development centre).
Following along with the longitudinal results, if it is presumed that certain aspects of the SRM do or do not apply over time, therapists and outreach could prioritize their interventions and check in with students accordingly over time. For instance, since certain emotional reactions (e.g., a combination of concern and positive expectations) that students have toward possible depressive symptoms may lead to seeking social support and maintaining that behaviour over time, therapists and outreach could assess for and encourage such emotional outlooks on the experience. Similarly, finding that the cognitive beliefs (e.g., personal control) that encourage behavioural activation (e.g., engaging in enjoyable activities) may not sustain this behaviour over time could guide therapists or interventions to continue to check in on students’ thinking about their potentially depressive experiences in order to maintain this type of positive thinking and active coping.

**Limitations and Future Directions**

**Diversity of potential depressive experiences within the sample.** As described earlier, using an unlabelled list of depressive symptoms and allowing each student to select which potential experiences were relevant to them provided many novel benefits. However, this breadth of experience within the sample should be addressed further. To elaborate, one participant’s set of experiences could include primarily fatigue, oversleeping, and poor appetite from having a cold or flu. Another participant, however, could be experiencing primarily poor concentration and lack of interest due to a grief/bereavement response. Finally, another participant could be noticing primarily depressed mood, loss of interest, and feelings of worthlessness in relation to poor academic performance. Thus, while all these participants’ overall scores on the IES may cluster around a mild level of depressive symptom severity, their individual experiences from which the SRM is based may be quite different.
Although a strength of the model is that it can accommodate such variation, one might presume that the individual cases which form the composite model presented in this dissertation are too varied to draw conclusions which are representative of the entire sample. However, there is also an alternative perspective which favours allowing for such individuation in depressive symptom profiles. This position argues that diversity of experience is simply a naturally occurring phenomenon when asking many participants to report on their depressive symptoms. In fact, it is a necessary and common practice in SRM research to ask individuals with varied experiences of an illness to offer their understanding of that diagnosis, and then compile those individual responses into a composite model for the sample group in question.

In SRM studies which have asked primary care patients more explicitly about their diagnosis of clinical depression (e.g., Fortune et al., 2004), or in studies which have asked the public what they do to cope when they are feeling depressed (e.g., Jorm et al., 2004; Morgan et al., 2012), the unique experiences and responses of these individuals are summed and averaged in order to gain an overarching viewpoint of depression for that particular sample. In the case of primary care studies, the main commonalities which group the depressed patients together are the diagnosis of clinical depression by a physician and the treatment of said disorder in a primary care setting. The patients’ experiences of clinical depression and coping would nonetheless differ as individuals. In the present sample of undergraduate students, the main commonality amongst the individuals is that they were noticing some potentially depressive experiences in their daily lives at university. As such, despite the variation in individual profiles in the present study, it can still be argued that the composite SRM illustrates how the sample of interest was making sense of and coping with some unique combinations of potentially depressive symptoms in the context of university life.

It could be beneficial to address this issue further, however, through parsing the current sample into subsamples based on symptom profiles. For instance, one subsample could consist of
those who endorsed the two key mood features of depression (i.e., depressed mood, anhedonia), to
focus in more closely on participants who may have been more likely to be noticing a truly
depressive experience. Such subsampling would have been done in the present study, had the sample
size been large enough to allow for this examination. However, any analyses would have been based
on too small of a participant pool to proceed. Should future research repeat a similar methodology
with a larger final participant count, perhaps this could be done.

**Mild depression versus Adjustment Disorder.** Another potential issue with the generally
mild and varied depressive symptoms elicited by the current procedure is that these experiences may
not have been reflective of the low end of the depressive continuum, but rather pertain to an
adjustment disorder or reaction due to stressors from university life. Recall that the majority of the
students would not be considered seriously depressed, as most were in the normal range of the DASS
Depression Scale and only noticing a mild level of nonclinical depressive symptoms on the IES. The
Life Events questions indicated that the students were dealing with academic stressors and a typical
university lifestyle (ACHA, 2015; Beiter et al., 2014; Lunau, 2012). Furthermore, their SRM
attributions reflected these issues, with students most often explaining or labelling the depressive
symptoms as due to academic stressors or university lifestyle.

The Diagnostic and Statistical Manual of Mental Disorders (DSM–5) defines adjustment
disorder as, “the presence of emotional or behavioral symptoms in response to an identifiable
stressor(s) occurring within three months of the onset of the stressor(s)” (American Psychiatric
Association, 2013). The condition can be considered acute or chronic, at over six months duration.
There are six subtypes: depressed mood, anxiety, mixed depressed mood and anxiety, disturbance of
conduct, and unspecified (i.e., symptoms do not fit clearly into the other subtypes). To be considered
an adjustment disorder, the distress must be out of proportion with expected reactions to the stressor
and/or the symptoms must be clinically significant in that they cause marked distress and impairment
in functioning. The distress must be due to a stressor rather than an escalation of a preexisting mental health issue, must not be part of bereavement, and the symptoms must subside within six months of removing the stressor.

In considering whether the potentially depressive symptoms elicited in the present study were perhaps more reflective of an adjustment disorder, such as a depressive or mixed depression-anxiety subtype, one would first need to determine whether the symptoms were out of proportion with expected reactions to the stressor. As discussed in Part 1, the students seemed to be experiencing typical university stressors (ACHA, 2015; Beiter et al., 2014; Lunau, 2012), and appeared to be reacting with a similar level of depression, anxiety, and stress as other university samples (e.g., Klein et al., 2011), indicating that their emotional response was normative. However, regardless of whether the depressive symptoms were reflective of a low level of nonclinical depression or of a subthreshold adjustment reaction, the potential transient nature of this experience would be valuable to explore through additional testing. For example, it would be interesting to see whether students would still endorse a similar level of depressive symptoms over the summer, when academic and other university-related stressors had been alleviated. If so, the students would need to revise their SRM in order to account for symptoms that are persisting despite the easing of university stresses.

Interestingly, when adjustment disorder has been surveyed in college samples, the emotional symptoms are most prevalent (47% of participants reported depressive symptoms, anxiety, and/or homesickness), followed by sleep problems (38%), academic difficulties (26%), social problems (17%), and somatic disturbances (13%; Rodgers & Tennison, 2009). This symptom profile, captured under the label of adjustment disorder, is strikingly similar to the experiences reported by students in the present study, captured under the framework of depressive symptoms. In order to further decipher the differences, future research could repeat the present methodology using the symptoms of adjustment disorder as the “set of individual experiences.” More long-term (e.g., months)
longitudinal tracking of symptom profiles and SRM responses might also help differentiate whether the experiences tested fit more closely with an adjustment reaction or depressive disorder. An alternative viewpoint, however, could be that ultimately, whether the symptoms were reflecting a situational depression (i.e., some sort of adjustment reaction) or the very low end of the clinical depression continuum, it remains of value to understand how students make sense of this type of vague and unlabelled distress. The diagnostic label, as such, may be of secondary importance, especially when the distress is below threshold for a disorder.

**Limiting response options available.** A related difficulty with measuring the front end of the SRM, when potentially depressive symptoms are vague, mild, or varied, is that it is not feasible to include all possible response options that might be relevant. This applies to both the theoretical components of the SRM, and the available responses on the SRM Questionnaire. For instance, there would be innumerable potential reasons why a student might be experiencing some depressive symptoms, and the list of causes offered could have been much longer. Similarly, the SRM posits that individual factors are operating in the background to influence perceptions of an illness (Leventhal et al., 1984). There are many more individual factors which could have been included in the present study, beyond age and gender, such as socioeconomic background or country of origin. However, as questionnaires must be reasonable in length to administer, SRM measures like the IPQ (Weinman et al., 1996) or the current SRM Questionnaire (Care & Kuiper, 2013; Leite, 2011) can only target the constructs and response options proposed to be most relevant or likely. However, a valuable endeavor for future research and a potential solution to having to limit response options would be to complement such quantitative SRM research with qualitative research (e.g., Elwy et al., 2011).

The depth of understanding of the SRM process that could be gleaned from qualitative investigation was evident in the present study, even in the limited scope of asking students to provide
a label for their “set of individual experiences.” Here, one student wrote, “Not completely sure - maybe some sort of depression or anxiety -- set of experiences could simply be caused by stress but such experiences have been too persistent/common for me to just be stress.” One can almost hear the student working through the SRM out loud, considering causal beliefs and weighing these against timeline considerations. In earlier SRM research, Fortune et al. (2004) asked women to write about their experiences with depression, and then deciphered statements from these narratives that fit into the five cognitive categories of the SRM (i.e., identity, causes, consequences, timeline, and cure/control). Such research highlighted which belief categories were most naturally occurring in patient narratives (e.g., causes and consequences). This type of approach would also be valuable if used with student undergraduate samples to gain a sense of which components of the SRM occur naturally in their narratives. For instance, these students could simply be asked to discuss their experience with the list of potentially depressive symptoms, or with being “depressed” or experiencing “depression” if the cueing of these labels were not a concern. They could also be asked how they are coping with the “set of individual experiences” and how they arrived at that strategy.

However, an alternative methodology could offer qualitative results which more directly parallel the present research. Specifically, the same set of unlabelled depressive symptoms could be presented and endorsed by the undergraduates, as per the Individual Experiences Sheet (IES). Then, each of the components of the SRM which were assessed with closed-ended responses in the SRM Questionnaire could be queried with an open-ended question. For instance, for causes, rather than listing potential causes and having students select which they felt were relevant, participants could simply be asked, “What do you believe has caused/is causing you to have this set of individual experiences?” In this way, the student narrative would not be completely natural, as they would be guided and prompted through the constructs of the SRM. However, this procedure would allow for a more comprehensive narrative concerning the full model. It is already known that some SRM
components occur naturally and unprompted in patient narratives, though not all at the same frequency or strength (Elwy, 2011; Fortune et al., 2004). Therefore, it could be a valuable next step for future research to more thoroughly decipher the content and relevance of each SRM component when prompted directly. Student narratives along the SRM components could offer meaningful insights with regards to the experience of living with depressive symptoms and the subtle nuances of the SRM, as well as illustrate the true dynamics of the model in practice. For instance, responses could be grouped into categories, themes, or factors, as in the present study. Alternatively, selected student narratives could be presented as case studies to illustrate how an individual makes sense of depressive symptoms along the SRM.

**Need for replication and follow-up.** As the present dissertation was exploratory and novel in its approach in several ways, the conclusions which can be drawn are limited, as further support is needed along a similar line of research. As one illustration, the recruitment strategy succeeded in preselecting a nonclinical sample noticing some potential depressive symptoms through the introductory psychology course. This type of preselection could be applied in other settings, to further study other individuals who may be experiencing some level of depression, though perhaps not at a clinical level. Preselection could be done within the waiting room of the university’s student counseling centre, to recruit potentially depressed students who are in the process of seeking help for their distress. This would tap into a sample group that may potentially be further along in the process of “figuring out” potential depressive experiences, having arrived at some understanding that there is a problem requiring some formal psychological assistance to address.

Moving outside of a university setting, the current preselection could be repeated with community-based samples, recruiting through posters at community centres, primary care offices, high schools, retirement homes, and so on, to gather more information as to how different demographics may understand and cope with potential depressive symptoms. The depressive
experiences would have to be modified, of course, to match the experiences and language of the demographic in question. For instance, “not feeling like hanging out with friends” may be relevant for a high school poster, while “not feeling like participating in scheduled leisure activities” might be more relevant for a retirement home.

An alternative avenue for sampling wider demographics would be to recruit various samples online, through platforms such as Amazon Mechanical Turk (AMT). In recent years, many psychology researchers have been recruiting participants online through AMT, noting that it offers an efficient method of data collection and equal or higher quality samples than undergraduate sample pools (e.g., Stanton, McArtor, & Watson, 2017). Online recruitment of this nature additionally casts a much broader net to reach people from different countries, of varying ages and backgrounds, and so on. Prospective participants then can be screened for eligibility based on demographic factors or other considerations of interest (e.g., psychological measures), and are compensated monetarily for their participation (e.g., Stanton et al., 2017). Repeating the current study’s methodology online using AMT recruitment would allow for broader sampling of different age groups, ethnicities, countries of origin, socioeconomic statuses, and education levels. Overall, it would be valuable to continue to seek to understand the experience of additional individuals who are noticing and coping with some potential symptoms of depression in everyday life, as opposed to focusing only narrowly on clinical depression as it is understood and managed by patients in a primary care setting.

A related challenge stemming from the exploratory nature of the present dissertation was that the sample size was not large enough to conduct certain analyses and thus limited the conclusions of the results presented. For instance, as mentioned earlier, had the sample size been larger, composite SRM’s could have been compiled for various symptom profiles, as well as for different demographic groups (e.g., by age or ethnicity). Should the present study be repeated with a larger sample size, it would be interesting to see how the SRM might differ for various subsamples.
Similarly, the multiple regression analyses which demonstrated how the SRM components related to coping may have been tempered by issues relating to low incidence. For example, so few students in the present sample actually sought professional assistance for their distress that perhaps the SRM components which may have been predictive of this type of coping cross-sectionally were less prominent than they would have been, had the sample been recruited from the student counseling centre waiting room, and thus could not retain their predictive strength longitudinally. Both the cross-sectional and longitudinal regression analyses included many SRM predictors to be tested against the coping targets, and therefore would have benefitted from a larger sample size with future replication.

The timing of the longitudinal follow-up could also be adjusted in future SRM research in this domain. Longitudinal follow-up in the current study was set at two weeks, based on past research suggesting that students tend to expect a resolution of mild depressive experiences in two to three weeks (Care & Kuiper, 2013). However, given that not much had changed for the students in terms of their life context or potentially depressive experiences within that two-week period, it would be useful to repeat the design with a longer time lag, if possible. For instance, it would be interesting to see if students’ perceptions of the depressive experiences as acute, normative, and relating to academic stressors would persist if they were still noticing such symptoms several months later in the summer, when academic stresses had ceased. Such follow-up might also clarify issues described above as to whether the potential depressive symptoms were representative of a true depressive experience or a stress-related adjustment reaction.

Finally, the SRM proposes many dynamic elements, including feedback loops, in addition to the overall directionality from SRM constructs to coping to outcomes. The regression analyses used to test Time 1 SRM predictors of Time 1 coping and Time 2 coping were offered as a preliminary step toward testing some of the most basic overarching processes suggested by the model. These
results showed some interesting patterns, such as the potential importance of the often-neglected emotional representation toward coping across time. However, not only do such analyses need to be repeated in order to strengthen the conclusions drawn, but they present only a small fraction of the many possibilities of combinations of variables and pathways that could be tested in the SRM. For example, other regression analyses that could be tested would include whether the SRM cognitive and emotional representations of Time 1 or coping strategies used at Time 1 are predictive of SRM outcomes, in terms of depressive experiences (i.e., IES and DASS-21 scores) at Time 2. Given that several SRM researchers (e.g., Hagger et al., 2017; Leventhal et al., 2016) are calling for such tests of the dynamics of the model, it will be interesting to see what research will follow to further our understanding of illness comprehension and management, including potential depressive symptoms.
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Appendices

Appendix A: Online Recruitment Poster

EVALUATING YOUR EXPERIENCES-PART 1

**TWO PART STUDY:** If you are eligible and interested please sign up for *both* Part 1 and Part 2, selecting time slots spaced *two weeks apart*.

**ELIGIBILITY:** In this study we are examining how individuals evaluate their experiences. If, over the past two weeks, you have been having any of the below experiences, you are eligible to participate in this study.

*In the past two weeks…*
- I have been less interested in doing things that I used to enjoy
- I haven’t been feeling like talking with friends or family as often as I normally do
- I’ve had less energy than usual
- I’ve had difficulties concentrating
- I’ve had trouble falling asleep and have found it hard to get out of bed in the morning
- I haven’t been getting as much pleasure out of things that I used to enjoy
- I’ve had plans to go out with my friends, but have cancelled them to stay home
- I have been feeling down or less happy than usual
- I have sometimes thought that others are better than me
- I’ve been struggling to complete my daily tasks, such as grocery shopping or getting work done

*If you have been having any of these experiences in the past two weeks, you are eligible to participate in the study.*

**PARTICIPATION:** In both Part 1 and Part 2, you will be asked to complete a booklet of questionnaires. Within the booklet, you will be presented with a list of individual experiences that you may have gone through in the past two weeks and asked to reflect on the ones that are relevant to you. You will then be asked to answer a set of questionnaires in which you evaluate your individual experiences. After this, you will be asked to complete a further set of questionnaires about you in general. Completion of Part 1 will take less than 30 minutes and completion of Part 2 two weeks later will also take less than 30 minutes, so you will receive a total of 1 research credit for your participation in this study.
EVALUATING YOUR EXPERIENCES-PART 2

**TWO PART STUDY:** If you are eligible (see Part 1) and interested please sign up for both Part 1 and Part 2, selecting time slots spaced *two weeks apart*.

**ELIGIBILITY:** If you have signed up for or completed Evaluating Your Experiences-Part 1, you can sign up for Part 2 here. *Please select an appointment time for Part 2 that will fall two weeks after your appointment for Part 1.*

**PARTICIPATION:** In Part 2, like Part 1, you will be asked to complete a booklet of questionnaires. Within the booklet, you will be presented with a list of individual experiences that you may have gone through in the past two weeks and asked to reflect on the ones that are relevant to you. You will then be asked to answer a set of questionnaires in which you evaluate your individual experiences. After this, you will be asked to complete a further set of questionnaires about you in general. Completion of Part 1 will take less than 30 minutes and completion of Part 2 two weeks later will also take less than 30 minutes, so you will receive a total of 1 research credit for your participation in this study.

*(Sign up restrictions: Must have signed up for or completed Evaluating your Experiences – PART 1. Appointment time selected for PART 2 must fall two weeks after appointment time for PART 1.)*
Appendix B: Letter of Information

EXAMINING YOUR EXPERIENCES

In this study, we are examining how individuals evaluate their experiences. In this study, you will be asked to complete a booklet of questionnaires. Within the booklet, you will be presented with a list of individual experiences that you may have gone through in the past two weeks and asked to reflect on the ones that are relevant to you. You will then be asked to answer a set of questionnaires in which you evaluate your individual experiences. After this, you will be asked to complete a further set of questionnaires relating to you in general. Please refrain from listening to music or using your phone (except for emergencies) while completing the questionnaire booklet. Part 1 of this study will take less than 30 minutes to complete, and Part 2 (two weeks later) will take less than 30 minutes to complete, so you will receive 1 research credit for your participation in both parts.

There are no known physical or psychological risks associated with this study. Your responses will be used for research purposes only and will be kept entirely confidential. You may withdraw from this study at any point in time, for any reason, without loss of credit. Furthermore, you have the right to omit any specific question without penalty. Upon completion of the booklet, you will be provided with a debriefing form offering further information pertaining to the study. Please feel free to contact the researchers with any questions or concerns that you may have in regards to the study. Your participation is greatly appreciated.

Melissa Care, MSc
PhD Candidate, Dept. of Psychology, UWO
melissa.care@uwo.ca

Dr. Nick Kuiper, PhD Supervisor
Professor, Dept. of Psychology, UWO
Appendix C: Informed Consent Form

EVALUATING YOUR EXPERIENCES

I, _________________________________, have read and understood the Letter of Information, have had the nature of the study explained to me, and hereby agree to participate in the study described above. All questions have been answered to my satisfaction.

Signature _________________________ Date ___________________

Experimenter’s signature

Melissa Care, MSc
PhD Candidate, Dept. of Psychology, UWO

Dr. Nick Kuiper, PhD Supervisor
Professor, Dept. of Psychology, UWO

Room 315E, Westminster Hall
melissa.care@uwo.ca
Appendix D: Questionnaire Booklet

EVALUATING YOUR EXPERIENCES

Demographic Information Sheet

Please tell us a little about yourself by answering the following questions. Please remember that this data is analyzed only for group patterns.

1) Age: _______

2) I am: Female _____ Male _______

3) I am: Single ___ In a relationship ___ Married ___ Divorced ___ Widowed ___

4) People sometimes identify themselves by ethnicity or race. Check the box that shows how you identify yourself.
   Canadian, European-Canadian   Asian-Canadian (e.g. Chinese, Vietnamese, Korean, etc.)
   Native Canadian (e.g., Native Indian)   South Asian-Canadian (e.g. East Indian, Pakistani, etc.)
   African-Canadian (Black)   Latin American, Hispanic-Canadian
   Other (please specify)   ____________________

5) Is English your first language? Check yes or no: _____ yes _____ no
   If no, what is your first language? ____________________
**Individual Experiences Sheet (IES)**

Over the **last 2 weeks**, how often have you noticed any of the following experiences?

Please circle 0, 1, 2, or 3 to indicate your answers.

<table>
<thead>
<tr>
<th>Over the past two weeks I have noticed…</th>
<th>Not at all</th>
<th>A few days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling down, unhappy, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Trouble falling asleep or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Feeling bad about yourself—or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Trouble concentrating on things, such as reading the newspaper or watching TV</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Moving or speaking so slowly that other people could have noticed; Or the opposite—being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Once you have completed this page, please raise your hand for the next questionnaire.
SRM Questionnaire

Instructions:
In this questionnaire we are interested in your evaluations of the set of individual experiences from the Individual Experiences Sheet that you just completed. Please keep your completed Individual Experiences Sheet in view while you go through the following questionnaire. The following questions are in reference to all answers that you marked in the shaded area (scored above 0) on the Individual Experiences Sheet (i.e., the set of experiences you have noticed, as a whole).

0) Preliminary Impression:

Please indicate how much you agree with the item directly below. Please use the following scale, and write the number on the line next to the item.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

a) I have a clear picture or understanding of this set of experiences. _____
Please refer back to your responses on the Individual Experiences Sheet as you answer the following questions.

1) **Timeline:**

   a) Given that this set of experiences has been evident for some amount of time over the past two weeks, how much longer do you expect this set of experiences to last?

      Please put a checkmark on the line next to your response.

      Just the rest of today _____  
      For the next 2-3 days _____  
      About one week _____  
      About 2-3 weeks _____  
      Between 1-2 months _____  
      Between 2-3 months _____  
      Between 3-6 months _____  
      Between 6 months to 1 Year _____  
      Over 1 Year _____  

   b) Please indicate how much you agree with the items directly below. Please use the following scale, and write the number on the line next to each item.


<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very much so</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

   a) This set of experiences will be worse at some times and better at some times. _____

   b) This set of experiences will completely go away over time. _____

   c) This set of experiences will last the rest of my life. _____

   c) In the past two weeks, how much have you thought about how long this set of experiences will last? (not including the time spent completing this questionnaire today)

      Please put a checkmark on the line next to your response.

      Not at all _____  
      A few days _____  
      More than half the days _____  
      Nearly all the days _____  
      Once or twice per day _____  
      More than twice per day _____
Please refer back to your responses on the Individual Experiences Sheet as you answer the following questions.

2) Causes:

a) Please indicate how likely you think each item below has caused you to have this set of experiences. Please use the following scale, and write the number on the line next to the item.

<table>
<thead>
<tr>
<th>Very Unlikely</th>
<th>Moderately Likely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5</td>
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<td></td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

a) Relationship problems (with friends, family, etc.) _____
b) Chemical imbalance in the brain _____
c) Diet or eating habits _____
d) Not doing well at work or school _____
e) Physical illness or injury _____
f) Genetics _____
g) Lack of sleep _____
h) A traumatic experience _____
i) Being overworked _____
j) Personality _____
k) Ending a romantic relationship _____
l) Alcohol and/or drugs _____
m) Normal changes in your mood _____
n) Your childhood _____
o) Death of a loved one _____
p) Lack of friends or people who care about you _____
q) Losing a job _____
r) Hormonal fluctuations _____
s) Other? ___________________ _____

b) In the past two weeks, how much have you thought about what has caused this set of experiences? (not including the time spent completing this questionnaire today)

Please put a checkmark on the line next to your response.

Not at all _____
A few days _____
More than half the days _____
Nearly all the days _____
Once or twice per day _____
More than twice per day _____
Please refer back to your responses on the Individual Experiences Sheet as you answer the following questions.

3) **Consequences:**

   a) For each item below, write the number that indicates how likely you think each item has been a consequence of this set of experiences over the past two weeks. Please use the following scale.

<table>
<thead>
<tr>
<th>Very Unlikely</th>
<th>Moderately Likely</th>
<th>Very Likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
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<td>6</td>
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<tr>
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</tbody>
</table>

   a) Be more susceptible to physical illnesses   _____
b) Learn more about myself   _____
c) Have difficulties interacting with others   _____
d) Become less confident   _____
e) Be seen by others as weak   _____
f) Have difficulties finishing my assignments   _____
g) View myself as a worthwhile person   _____
h) Find that others don’t want to spend much time with me   _____
i) Think of myself as weak   _____
j) Be shown encouragement from others   _____
k) Other?______________________________   _____
Please refer back to your responses on the Individual Experiences Sheet as you answer the following questions.

b) For each item below, write the number that indicates how likely you think each item will be a consequence of this set of experiences over the next two upcoming weeks. Please use the following scale.

Very Unlikely: 1 2 3 Moderately Likely: 4 5 6 Very Likely: 7

a) Be shown encouragement from others _____
b) View myself as a worthwhile person _____
c) Have difficulties finishing my assignments _____
d) Think of myself as weak _____
e) Find that others don’t want to spend much time with me _____
f) Become less confident _____
g) Be more susceptible to physical illnesses _____
h) Have difficulties interacting with others _____
i) Learn more about myself _____
j) Be seen by others as weak _____
k) Other? ________________________ _____

In the past two weeks, how much have you thought about consequences of this set of experiences? (not including the time spent completing this questionnaire today)

Please put a checkmark on the line next to your response.

Not at all _____  
A few days _____  
More than half the days _____  
Nearly all the days _____  
Once or twice per day _____  
More than twice per day _____
Please refer back to your responses on the Individual Experiences Sheet as you answer the following questions.

4) Coping:
   a) For each of the items below, rate how often you have actually used the strategy in the past two weeks to try to deal with this set of experiences.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Half of the days</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
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<tr>
<td>7</td>
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</tbody>
</table>

1) Take action to try to make the experience better. _____
2) Ignore the experience. _____
3) Think hard about what steps to take to deal with the experience. _____
4) Look for something good in what is happening. _____
5) Learn to live with the experience. _____
6) Make jokes about the experience. _____
7) Get comfort and understanding from someone (e.g., family, friend). _____
8) Try to get advice or help from friends/family about what to do. _____
9) Do something to think about the experience less, such as going to movies, watching TV, reading, daydreaming, sleeping or shopping. _____
10) Refuse to believe the experience is happening. _____
11) Say things to let my negative feelings escape. _____
12) Use alcohol or other drugs to make myself feel better. _____
13) Give up trying to deal with it. _____
14) Blame myself for having the experience. _____
15) See a psychiatrist. _____
<table>
<thead>
<tr>
<th>Not at all</th>
<th>Half of the days</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

16) Do something enjoyable.  
17) Try to keep my feelings to myself.  
18) Spend time alone.  
19) Take prescribed medication.  
20) See a psychologist.  
21) Exercise.  
22) See a counselor.  
23) Think about how sad I feel.  
24) Get a massage.  
25) See a family doctor.  
27) Do meditation/yoga.  
28) Try to sleep better.  
29) Other? _________________________________  
           _____________________
b) After having used some or all of the above strategies over the past two weeks, how much longer do you expect this set of experiences to last? Please put a checkmark on the line next to your response.

- Just the rest of the day
- The next 2-3 days
- About one week
- About 2-3 weeks
- Between 1-2 months
- Between 2-3 months
- Between 3-6 months
- Between 6 months to 1 year
- Over 1 year

c) In the past two weeks, how much have you thought about how to deal with your set of experiences? (not including the time spent completing this questionnaire today)

Please put a checkmark on the line next to your response.

- Not at all
- A few days
- More than half the days
- Nearly all the days
- Once or twice per day
- More than twice per day

d) How much do you think you can control this set of experiences?

Please put a checkmark on the line next to your response.

- Not at all
- Somewhat
- Mostly
- Completely

e) How much do you think some type of treatment can control this set of experiences?

- Not at all
- Somewhat
- Mostly
- Completely
Please refer back to your responses on the Individual Experiences Sheet as you answer the following questions.

5) **Identity:** Would you use a label to identify this set of experiences?

   Yes ____         No____

   a) If yes, what label would you use?

   ____________________________________________________________

6) **Emotional reactions:**

   a) Please rate how much you have been experiencing the following emotions *in reaction* to your set of experiences over the past two weeks. To clarify, we are NOT asking how much you have felt these emotions, *in general*, in the past two weeks. Instead, we are wondering about when you noticed your individual set of experiences (marked down in the shaded area of the Individual Experiences Sheet) over the past two weeks, how much you felt these emotions *in response* to what you were noticing.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Half of the days</th>
<th>Every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

   1) Feeling worried.  ____

   2) Feeling encouraged.  ____

   3) Feeling scared.  ____

   4) Feeling confident.  ____

   5) Feeling upset.  ____

   6) Feeling hopeful.  ____

   7) Feeling guilty.  ____

   8) Feeling happy.  ____
9) Feeling hopeless. _____

10) Feeling calm. _____

11) Feeling embarrassed. _____

12) Feeling grateful. _____

13) Feeling angry. _____

14) Feeling discouraged. _____

15) Feeling proud. _____

16) Feeling tense or nervous. _____

17) Feeling contented. _____

18) Other. _________________________ _____

f) In the past two weeks, how much have you been aware of your emotional reactions to this set of experiences? (not including the time spent completing this questionnaire today)

Please put a checkmark on the line next to your response.

Not at all _____
A few days _____
More than half the days _____
Nearly all the days _____
Once or twice per day _____
More than twice per day _____
7) Events & Timing:

a) Would you describe today as a “busy day”? ____yes  ____no

b) Do you have class right after this study? _____yes  ____no

c) Do you have an exam scheduled or major assignment due in the next two weeks?  ____yes  ____no

d) Did you have an exam scheduled or major assignment due in the past two weeks?  ____yes  ____no

e) Have you done more poorly than you thought you would have on school activities in the past two weeks?  ____yes  ____no

f) Have you experienced a physical illness or injury in the past two weeks?  ____yes  ____no

g) Has someone close to you been seriously ill or injured in the past two weeks?  ____yes  ____no

h) Has someone close to you passed away in the past two weeks?  ____yes  ____no

i) Did you have relationship problems in the past two weeks?  ____yes  ____no

j) Did you have a romantic relationship break-up in the past two weeks?  ____yes  ____no

k) How many hours of sleep per night (on average) did you have in the past two weeks? __________

l) How many days in the past two weeks did you consume alcohol? ______  How many alcoholic beverages did you consume (on average) on the days that you consumed alcohol? ______

You are now done with the Individual Experiences Sheet and related questions. The following questionnaires pertain to you in general.
DASS-21 (Depression, Anxiety, Stress Scale)

Please read each statement and circle a number 0, 1, 2, or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0  Did not apply to me at all
1  Applied to me to some degree, or some of the time
2  Applied to me to a considerable degree, or a good part of the time
3  Applied to me very much, or most of the time

1) I found it hard to wind down
2) I was aware of dryness of my mouth
3) I couldn’t seem to experience any positive feeling at all
4) I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)
5) I found it difficult to work up the initiative to do things
6) I tended to over-react to situations
7) I experienced trembling (e.g., in the hands)
8) I felt that I was using a lot of nervous energy
9) I was worried about situations in which I might panic and make a fool of myself
10) I felt that I had nothing to look forward to
11) I found myself getting agitated
12) I found it difficult to relax
13) I felt down-hearted and blue
14) I was intolerant of anything that kept me from getting on with what I was doing
15) I felt I was close to panic
16) I was unable to become enthusiastic about anything
17) I felt I wasn’t worth much as a person
18) I felt that I was rather touchy
19) I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)
20) I felt scared without any good reason
21) I felt that life was meaningless
Positive Situation 1: Vignette and Related Questions

ACADEMIC SITUATION 1

Please imagine the following.

Imagine that you are taking an important course which is required for your academic program. Because of the importance of this course, you want to do well on the upcoming midterm exam, which is worth 40% of your overall mark. Two weeks after the exam, the instructor announces that a list of exam grades for every student in the class has now been posted (according to student number). The instructor also announces that the average grade for this exam was 68%.

Now, imagine that you find out that your actual grade on this exam was 87%.
ACADEMIC SITUATION 1

Continue to imagine that you achieved 87% on the important exam. Please use the following scale to answer the following questions.

Not at all                   Somewhat                   Very much so
1                             2                           3                           4                           5                           6                           7

How much would you think that your grade was due to:

a). your hard work in preparing for the exam

1                             2                           3                           4                           5                           6                           7

b). the professor making it an easy exam

1                             2                           3                           4                           5                           6                           7

c). your intelligence

1                             2                           3                           4                           5                           6                           7

d). support from family and friends

1                             2                           3                           4                           5                           6                           7

Please rate your current mood:

Negative                   Neutral                   Positive
1                             2                           3                           4                           5                           6                           7
Positive Situation 2: Vignette and Related Questions

ACADEMIC SITUATION 2

Please imagine the following.

Imagine that you are taking an important course which is required for your academic program. Because of the importance of this course, you want to do well on your upcoming essay assignment, which is worth 40% of your overall mark. Two weeks after you hand in your paper, the instructor announces that a list of the grades for the paper for every student in the class has now been posted (according to student number). The instructor also announces that the average grade for this assignment was 78%.

Now, imagine that you find out that your actual grade on this assignment was 91%.
ACADEMIC SITUATION 2

Continue to imagine that you achieved 91% on the important essay assignment. Please use the following scale to answer the following questions.

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat</th>
<th>Very</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
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<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How much would you think that your grade was due to:

a). your hard work in preparing your paper

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

b). the professor grading leniently

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

c). your intelligence

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

d). support from family and friends

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Please rate your current mood:

<table>
<thead>
<tr>
<th>Negative</th>
<th>Neutral</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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</table>
Appendix E: Debriefing Forms

EVALUATING YOUR EXPERIENCES – PART 1

The purpose of this study was to examine how individuals evaluate a particular set of personal experiences. Therefore, you were asked to reflect on a set of experiences you noticed in the past two weeks and to answer questions regarding the identity, timeline, causes, consequences, and control of your individual experience, as well as your emotional reactions. You were also asked about your age, gender, ethnicity, experience with psychological disorders, and current levels of stress, as we will be looking at how these variables may play a role in the way that you evaluate your individual experiences. After Part 2 of this study in two weeks, we will offer you further information about how these variables may relate and what questions we are hoping to answer with this research.

We would like to thank you very much for your participation today and for your commitment to return in two weeks. If you have any questions about the study or your participation, please feel free to ask us. If you have any questions about your rights as a research participant, you should contact the Director of the Office of Research Ethics at ethics@uwo.ca or 519-661-3036. If you are feeling distressed and would like to talk with someone, we would encourage you to go to the Student Development Centre’s Psychological Counselling Services, located in the Western Student Services Building, Suite 4100 (519-661-3031, http://www.sdc.uwo.ca/psych/), or the Student Health Service’s Counselling Centre, located in the University Campus Centre, Room 11 (519-661-3771, http://www.shs.uwo.ca/counselling/counseling.html). If you are unsure where either of these on-campus services is located, we would be pleased to offer directions. Off campus, you could visit a walk-in clinic or your family doctor, (or in case of emergency, dial 911 or visit the nearest hospital emergency room). An excellent online resource is http://mindyourmind.ca/help. This website offers information about various difficulties (e.g., depression, bipolar, anxiety, psychosis, substance, relationship problems, eating disorders, seasonal disorders, cyberbullying, suicide, grief, stigma, etc.), including suggestions on how to help yourself or friends and family members. The website also lists and helps you navigate many helpful resources that are available to you—ranging from crisis lines, to more specific websites, to treatment centres and professionals in your area. This site also offers a link to Mental Health Helpline Ontario, where Referral and Information Specialists are available by confidential web chat or phone call to further direct you to available resources. Additional online information about psychological difficulties and treatments can be found at http://www.cpa.ca/psychologyfactsheets/.

Thank you so much again for your participation today, and we look forward to your continuation in this study at Part 2 in two weeks.

Melissa Care, MSc
PhD Candidate, Dept. of Psychology, UWO

Dr. Nick Kuiper, PhD Supervisor
Professor, Dept. of Psychology, UWO
EVALUATING YOUR EXPERIENCES – PART 2

The purpose of this study was to examine how individuals evaluate a particular set of personal experiences. The set of experiences you were asked to identify and reflect upon were possible symptoms of depression. Symptoms of depression can range from everyday experiences of mood fluctuations to more severe difficulties— or can be representative of something different, such as a physical illness or bereavement/grief. Research tells us that many people, including university students, experience depression— yet less than half actually seek treatment that is available to them (e.g., through health care, university counselling centres). In fact, our own research has shown that UWO Psych1000 students may be very able to recognize depression in someone else and see a need for that person to seek treatment (e.g., Karen is clinically depressed and she needs professional help), but tend to downplay the severity of the problem and need for treatment if the same set of symptoms apply to themselves (e.g., I’m just having a bad day and I don’t need help).

By asking you which symptoms of depression you have noticed and what you think about these items (without giving you the label of “depression”), we could find out how you evaluate the more ambiguous symptoms that comprise the various aspects of depression. By asking you to answer these questions twice, we can determine how your evaluation of your experience might change over time, as different coping strategies are tried out, and things get better or worse. For instance, a student might believe that their depressive symptoms are due to stress about an upcoming exam, and might expect that they will spend time with friends after the exam to relax and will therefore feel better in a couple weeks. If that student feels worse in a couple of weeks after the exam and some time with friends, they may need to re-evaluate what is causing their depressive symptoms and whether some other type of coping strategy might be needed. We hope to gain better insight into the processes described above so that both counselling centres and the general public can be educated about how mildly to moderately depressed people evaluate their symptoms, and which types of beliefs predict various coping strategies (e.g., seeking professional treatment, seeking social supports, drinking alcohol, ignoring or denial, etc.)

If you are feeling distressed or depressed, and feel that you would like to talk with someone, we would encourage you to go to the Student Development Center’s Psychological Counselling Services, located in the Western Student Services Building, (519-661-3031, http://www.sdc.uwo.ca/psych/), or the Student Health Service’s Counselling Centre, located in the University Campus Centre, (519-661-3771, http://www.shs.uwo.ca/counselling/counselling.html). If you are unsure where either of these on-campus services is located, we would be pleased to offer directions. Off campus, you could visit a walk-in clinic or your family doctor, (or in case of emergency, dial 911 or visit the nearest hospital emergency room). An excellent online resource is http://mindyourmind.ca/help. This website offers information about various difficulties (e.g., depression, bipolar, anxiety, psychosis, substance, relationship problems, eating disorders, seasonal disorders, cyberbullying, suicide, grief, stigma, etc.), including suggestions on how to help yourself or friends and family members. The website also lists and helps you navigate many helpful resources that are available to you— ranging from crisis lines, to more specific websites, to treatment centres and professionals in your area. This site also offers a link to
Mental Health Helpline Ontario, where Referral and Information Specialists are available by confidential web chat or phone call to further direct you to available resources. Additional online information about psychological difficulties and treatments can be found at http://www.cpa.ca/psychologyfactsheets/.

We would like to thank you very much for your participation in this study. Please feel free to ask us any further questions that you have pertaining to this research. If you are interested in this topic, you are encouraged to take a look at the references that are listed below. If you have any questions about your rights as a research participant, you should contact the Director of the Office of Research Ethics at ethics@uwo.ca or 519-661-3036.

Melissa Care, MSc
PhD Candidate, Dept. of Psychology, UWO

Dr. Nick Kuiper, PhD Supervisor
Professor, Dept. of Psychology, UWO


Appendix F: Ethics Approval Notice

Use of Human Subjects - Ethics Approval Notice

<table>
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<tr>
<th>Review Number</th>
<th>Approval Date</th>
<th>Principal Investigator</th>
<th>End Date</th>
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<td>12 05 31</td>
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<td>Protocol Title</td>
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This is to notify you that The University of Western Ontario Department of Psychology Research Ethics Board (PREB) has granted expedited ethics approval to the above named research study on the date noted above.

The PREB is a sub-REB of The University of Western Ontario’s Research Ethics Board for Non-Medical Research Involving Human Subjects (NMREB) which is organized and operates according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario. (See Office of Research Ethics website: http://www.uwo.ca/research/ethics/)

This approval shall remain valid until end date noted above assuming timely and acceptable responses to the University’s periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the PREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g., change of research assistant, telephone number etc.). Subjects must receive a copy of the information/consent documentation.

Investigators must promptly also report to the PREB:
- a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
- b) all adverse or unexpected experiences or events that are both serious and unexpected;
- c) new information that may adversely affect the safety of the subjects or the conduct of the study.

If these changes/ adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to the PREB for approval.

Members of the PREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the PREB.

Clive Seligman Ph.D.
Chair, Psychology Expedited Research Ethics Board (PREB)

The other members of the 2011-2012 PREB are: Mike Atkinson (Introductory Psychology Coordinator), Rick Goffin, Riley Hinson, Albert Katz (Department Chair), Steve Lupker, and Karen Dickson (Graduate Student Representative)

CC: UWO Office of Research Ethics

This is an official document. Please retain the original in your files
### Appendix G: Table of Means and Other Descriptive Statistics

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Appendix H: Labels Utilized by Students

**University life experiences or stressors** (*n* = 32/75; 43%)
- adjusting to being at university - stress/anxiety
- Adjusting to uni?
- Being a teenager
- competition
- Concrete Jungle
- coping with everyday life hardship
- Dealing with the consequences of workaholism :) and learning how to change my behaviour in the future so I can stop this pattern
- Environmental stress and introvertedness
- "first week jitters"
- First year in University
- First year student's time management schedule / finding your balance
- Getting used to a new surrounding/lifestyle
- Leaving parents & live alone for the 1st time
- Life
- Life Experiences
- midterm season and "It's life"
- midterms
- Normal for a student under stress
- overwhelmed and exhausted from new school, new experiences, & new environment
- Residence Life
- school - exam period
- School Stress
- stress
- Stress
- Stress from school
- stress induced
- stress / lack of sleep
- The difference between my life in the past two weeks and my previous life.
- transition to university life
- Unadaptable; totally new environment; lonely
- university experience

**Depression or some other clinical disorder(s)** (*n* = 20/75; 27%)
- anxiety, overwhelmed
- Anxiety
- Anxiety
- anxiety / clinically depressed
- anxiety or depression
- Attention deficiency
- Binge Eating Disorder, Depression, Stress
bipolar disorder
bipolar or mood/personality disorder
Depressed
Depression
Depression
Depression (clinical? I don't know, I have been to doctors for sometime)
Depression
Depression
Depression
I have never seen a psychiatrist or anything of the sort yet, but I would definitely label it as a mental disorder. Possibly bipolar disorder, maybe social anxiety (That's what I think) Or perhaps I simply feel like this because I am an introvert, but this is a less likely reason.
Minor (Acute) Depression
OCD
on the path to depression

**Relationship problems or losses (n = 8/75; 11%)**
- Alone
- Death of close friend
- Family problems
- Grief
- Men being flaky, and inconsiderate
- Paranoia associated with relationships
- Socialless personality
- Typical loss of first love

**Physical problems (n = 4/75; 5%)**
- Athletic life - taper time
- Neck pain
- Not getting enough sleep: Tired
- Unfortunate accidental injury

**Range of normative mood or thought experiences (n = 11/75; 15%)**
- Awful but still have confidence to overcome it
- Discovery
- Feeling down or low
- Fate
- Frustration
- Happy
- I am going to be rich one day, soon...
- Inner thinking
- Lack of concentration
- Lack of self-confidence
- Thinking too much
Appendix I: Scree Plots for SRM Components
(for Which Factor Analyses were Conducted)

Figure 2. Scree plot for causal factors.

Figure 3. Scree plot for consequence factors.
Figure 4. Scree plot for emotional reaction factors.

Figure 5. Scree plot for coping approach factors.
Appendix J: All Variables Included in Hierarchical Block Regressions

Block 1: Demographics
   Age
   Gender

Block 2: Current Psychopathology
   IES Total
   DASS Depression
   DASS Anxiety
   DASS Stress

Block 3: SRM Cognitive Appraisals
   Timeline Beliefs:
      Expected duration
      Variable course
      Acute course
      Chronic course
   Cause Factors:
      Social-developmental
      Biological
      Loss
      Work-stress
   Consequence Factors:
      Negative
      Positive
   Coping Beliefs:
      Personal control
      Treatment control

Block 4: SRM Emotional Reaction Factors
   Positive
   Negative-anxious
   Guilt-shame

Block 5: SRM Coherence
   Coherence/Identity beliefs:
      Clear picture or understanding
      Use of label to summarize the depressive symptoms
## Appendix K: Correllational Results

### Pearson Correlations Among T1 SRM Components

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Note: * p < .05, ** p < .01, *** p < .001 (2-tailed)
### Pearson Correlations Between T1 Depression Measures (IES and DASS-21) and SRM Components (T1 and T2)

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*Note: * $p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed)*
### Pearson Correlations Between T1 SRM Components and T1 Coping Factors

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### Pearson Correlations Between T1 SRM Components and T2 Coping Factors

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Curriculum Vitae

Name: Melissa Nicole Mohan

Post-secondary Education and Degrees:
- Wilfrid Laurier University, Waterloo, Ontario, Canada
  - 2002-2006, B.Sc. Honours

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2010-2014

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2011-2015

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2009-2010

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2007

Research Assistant
York University
2006-2007

Research Assistant
Centre for Addiction and Mental Health
2005

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Wilfrid Laurier University
2014

Publications:

Conference Presentations:

Care, M. N., & Kuiper, N. A. (June, 2013). *Coping with depressive symptoms: A test of the Self-Regulation Model*. Poster presented at the Annual Convention of the Canadian Psychological Association (CPA), Quebec City, Quebec, Canada.

