

**A SUICIDE PREVENTION APPROACH: EXPANDING ONE'S TIME PERSPECTIVE**

by

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## **Abstract**

The current study examined the efficacy of a 1 month future time perspective modification intervention over a 1 month and 6 months period. Participants ( $N = 92$ ) with elevated scores on measures of depressive symptoms or suicidal ideation were assigned to either the intervention condition or a no-intervention control condition. A repeated-measures manova revealed that those in the time perspective modification intervention condition showed significant reductions in psychache and hopelessness at 1 month, relative to those in the control condition. Repeated-measures manovas did not reveal significantly greater changes in depressive symptoms, suicidal ideation, or future time perspective. No results at 6 months were found to be significant. These results suggest that a future time perspective modification intervention can reduce important predictors of suicidality, although the sustainability of these gains and their relation to suicide is unclear.

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## **Chapter 1**

### **Introduction**

The current work serves as an initial study to investigate whether a four-week adapted Time Perspective Modification Intervention (ATPMI; Savickas, 1991) designed to foster or enhance future time perspective will increase future time perspective in addition to reducing levels of suicide ideation and its predictors (psychache, hopelessness, and depression). A secondary aim is to determine the feasibility of this intervention for a subclinical population. Following random assignment, participants in the intervention condition were asked to complete the three phases of the intervention across four weekly sessions. This intervention was compared to a no-intervention control condition involving only the completion of psychological measures.

All participants completed self-report measures of future time perspective, suicide ideation, psychache, hopelessness, and depression at three time points (baseline, post-test, and 6 months post-test).

The central hypothesis was as follows: Compared to receiving no intervention, completing a Time Perspective Modification Intervention over a four-week period is expected to result in greater increases in future time perspective and greater reductions in suicide ideation, psychache, hopelessness, and depressive symptoms at the conclusion of the study period and at follow-up.

## Chapter 2

### Literature Review

Suicide constitutes a significant individual and societal health problem, particularly among young adults. Within this population, suicide is the second leading cause of death (Canadian Psychiatric Association, 2002), and approximately 1.5% of individuals aged 18 to 24 attempt suicide, while 10% experience severe suicidal ideation (Brenner, Hassan, & Barrios, 1999). Considering the larger population, suicide represents the cause of death for more than 3500 Canadian individuals each year (Health Canada, 1994)—a number that is increasing at an alarming rate (Linehan, 2008). In fact, such statistics may provide an underestimated depiction of the prevalence of the various manifestations of suicidality. This misrepresentation likely reflects a combination of underreporting with respect to ideation and attempts, as well as the inherent difficulty in accurately drawing classification distinctions between accidental deaths, deaths of undetermined cause, and suicide (O'Donnell & Farmer, 1995). Furthermore, there are significant costs related to attempted suicides and suicide mortality. In 1992, for example, completed and attempted suicides accounted for over 70% of the \$6.6 billion in direct and indirect costs related to gunshot wounds in Canada (Miller, 1995). Paralleling the economic burden of suicide is the psychological and social aftermath confronting survivors of suicide. Individuals who have suffered the loss of a loved one to suicide report high levels of depression, functional impairment, and trauma symptoms, while approximately 22% report moderate to high levels of suicidal ideation (McNemany, Jordan, & Mitchell, 2008). The identification of evidence-based interventions that can prevent those at risk from advancing along the suicidality continuum thus constitutes a critical empirical and public health task.

University students, in particular, may represent a population at increased risk of suicide thoughts and behaviours spanning the continuum of severity (Hirsch & Ellis, 1995; Rudd, 1989). Westefeld et al. (2005), for example, found that an alarming 24% of students attending college had thought about attempting suicide. Commencing university represents a transitional period characterized by a number of

experiences that potentially render one vulnerable to suicidal thoughts and behaviours, including financial strain, the loss of familiar social support networks, introduction to novel and often more demanding academic and social environments through which students must learn to navigate, and expanded opportunities for use of alcohol and drugs (Arria et al., 2009; Hirsch & Ellis, 1996; Wilcox et al., 2010). University students are therefore an important group for empirically evaluating suicide preventative interventions.

### *Suicide Ideation*

Suicide ideation, a manifestation of suicidality, refers to thoughts about suicide which vary in severity, frequency, and chronicity. They may range from vague considerations of taking one's own life to the formulation of suicidal plans, and from fleeting thoughts to recurrent or persistent ideation (Milos, Spindler, Hepp, & Schnyder, 2004; Wilcox et al., 2010). As the base rates for attempted and completed suicides are extremely low, suicide ideation—which is more frequently occurring—is commonly used as a proxy for suicide, and thus, a surrogate outcome in intervention studies (Links, Heisel, & Quastel, 2005). This strategy for coping with the statistical rarity of suicide can result in less costly trials of shorter duration and enhanced feasibility (Links et al., 2005). For instance, it has been estimated that the use of suicide as an outcome in randomized control intervention trials would necessitate a minimum of 900 participants per condition to achieve the level of statistical power required to uncover existing intervention effects (Arensman et al., 2001).

In addition to such pragmatic advantages, the clinical relevance and utility of selecting suicide ideation as a measured target of intervention has found support in several studies documenting a significant association between suicide ideation and eventual suicide (e.g., Brown, Beck, Steer, & Grisham, 2000; Fawcett et al., 1990). Additionally, although not an invariable predictor of suicide, suicidal ideation may represent the commencement of a trajectory toward suicide attempts and completions for many individuals (Tarrier, Taylor, & Gooding, 2008). Greater intensity of ideation has been found to predict an increased likelihood of suicide attempts and eventual death by suicide (Beck, Brown, & Steer, 1989; Brown et al., 2000). Suicide ideation itself is also a justifiable target of

intervention given that it is an adverse and distressing experience that reduces one's quality of life (Tarrier et al., 2008)

### *Depression and Suicide*

Depressive symptoms are comprised of lowered mood and self-esteem, loss of motivation and energy, feelings of worthlessness and hopelessness, disrupted sleeping and eating patterns, inability to concentrate, and a diminished ability to derive enjoyment from once pleasurable activities (National Institute of Mental Health [NIMH], 2007).

Beck's (Beck, 1979) theory of depression conceptualizes depression as a result of a maladaptive cognitive triad involving distorted views of one's self, world, and future. The negative view of self consists of perceptions of deficiencies, inadequacy, and worthlessness that render the attainment of happiness and satisfaction unlikely (Beck, Rush, Shaw, & Emery, 1979). One with a negative view of the world exhibits a bias to interpreting one's experiences in a negative way, failing to consider more reasonable and positive explanations, when available (Beck et al., 1979). Exhibiting a negative view of the future, depressed persons anticipate unrelenting failure and suffering, and expect current problems to extend into the future (Beck et al.). This latter component of the cognitive triad is particularly implicated in the motivational symptoms of depression, whereby expectations of negative outcomes halt the pursuit of goals and encourage escape and avoidance tendencies (Beck et al.). Suicide can therefore be understood as an extreme manifestation of the desire to escape from what is perceived to be an inmitigable and unending situation, as well as a release—for everyone involved including oneself—from the burden one presents (Beck et al.).

Support for this theory has been found in numerous studies implicating depression as a risk factor for suicide (e.g., Goldney, Grande, Fisher, & Wilson, 2003). In fact, major depression is the most commonly diagnosed DSM-IV Axis I disorder among individuals who die by suicide, with an estimated 40 to 60% of completed suicides involving major depression (Moscicki, 1999) and approximately 67% of individuals hospitalized for a suicide attempt being diagnosed with depression (Langlois & Morrison, 2002). Relative to the general population, the lifetime risk of suicide is nearly 6 times greater for those

with severe depression, with estimates as high as 6% (Inskip, Harris, & Barraclough, 1998) compared to a risk of 1.3% in the general population (O'Hara & Swain, 1996). The status of depression as a notable risk factor for suicide is particularly supported by research demonstrating a dose-response relationship between increasing depression severity and suicidal intent (Silver, Bohnert, Beck, & Marcus, 1971) and completions (Yen et al., 2003). However, estimates have also shown that most individuals with depression do not die by suicide and that many suicide attempts do not occur in the context of a major depressive episode (e.g., Rhodes, Bethell, & Bondy, 2006).

### *Hopelessness and Suicide*

Hopelessness, defined as the expectation of negative future outcomes, is also a well-known correlate of suicide. It is posited as the aspect of depression that is most associated with suicidality (Beck, 1963), recurring and interacting with life crises to result in eventual suicide (Beck, Steer, Kovacs, & Garrison, 1985).

Ample studies have found hopelessness to be a strong predictor of suicide ideation (Beck, Kovacs, & Weissman, 1979; Johns & Holden, 1997), suicide intent (Beck et al., 1979), suicide attempts (Johns & Holden, 1997) and completions (Beck, Steer, Kovacs, & Garrison, 1985). Beck et al. (1985) found a score of nine or above on the Beck Hopelessness Scale to successfully predict 91% of later suicides in a sample of hospitalized patients exhibiting suicidal ideation. Importantly, hopelessness has consistently been found to be a superior predictor of suicide manifestations than depression (e.g., Kuo, Gallo, & Eaton, 2004; Minkoff, Bergman, Beck, & Beck, 1973). In fact, hopelessness, when controlled for, has been found to eliminate the relationship between depression and suicide (e.g., Beck et al., 1985). As with depression, however, some studies have failed to find a significant predictive relationship between hopelessness and suicide (e.g., Beck, Steer, & Trexler, 1989).

### *Psychache and Suicide*

Psychache, or psychological pain, has recently emerged as a psychological construct that is critical to understanding suicide. It may be defined as the "hurt, anguish, soreness, aching, psychological pain in the psyche, the mind." (Shneidman, 1993, p. 145). Psychache is theorized to arise out of a context

of genetic or social vulnerabilities, coupled with life events such as stresses and failures that are perceived as negative and adverse. Once the resultant mental pain reaches a subjectively unendurable intensity, desires to cease and escape from one's pain transpire. As halting consciousness of one's pain is perceived as the sole means of escape, suicide emerges as the only viable solution. As such, "suicide is...not so much a movement toward death as it is a movement away from...intolerable emotion, unendurable pain or unacceptable anguish" (Shneidman, 1984, p. 322).

Shneidman (1993) theorized that psychache is a necessary and sufficient condition for suicide, mediating the predictive or contributive effects of all other factors, including depression and hopelessness. Evidence for the relevance of psychache to suicide is accruing. Several studies have found that among both university and psychiatric populations, psychache is a unique statistical predictor of suicidality, when controlling for hopelessness and depression (e.g., Berlim et al., 2003; DeLisle & Holden, 2004; Holden, Kerr, Mendonca, & Velamoor, 1998). In fact, psychache has been found to demonstrate the strongest predictive relationship with suicidality (e.g., Berlim et al., 2003; DeLisle & Holden, 2004; Holden, Mehta, Cunningham, & McLeod, 2001; Troister & Holden, 2010). Research investigating Shneidman's assertion that other factors are only associated with suicide through their association with psychache has yielded partial support. For instance, Troister and Holden (2010) found psychache to render nonsignificant the contributions of hopelessness and depression to the prediction of attempter status and number of lifetime attempts. When suicide ideation, suicide motivation, and suicide preparation were used as the outcome variables, however, depression and hopelessness maintained significance, even after controlling for psychache.

Although it is evident that depression, hopelessness, and psychache cannot fully explain suicide, they remain important factors that should be included as outcome variables in any study investigating a preventative approach to suicidal manifestations.

#### *Clarifying Constructs of Optimism and Hopelessness*

While optimism and hopelessness are indubitably similar, they are generally regarded as independent yet correlated constructs in the literature. Hopelessness, as it is operationalized by the Beck

Hopelessness Scale, is evidently broader in scope, incorporating motivational features (e.g., “There’s no use in really trying to get something I want because I probably won’t get it”), future uncertainty (e.g., “The future seems vague and uncertain to me” or “I can’t imagine what my life would be like in 10 years”), and feelings of incompetence and ineffectiveness (e.g., “My past experiences have prepared me well for my future” or “I might as well give up because I can’t make things better for myself”).

Optimism, on the other hand, is limited to generalized future expectancies.

Although counterintuitive, it is not certain that optimism is merely the absence of hopelessness. This is consistent with the present findings that decreases in hopelessness did not occur alongside increases in optimism. Similarly, optimism and hopelessness may not necessarily be experienced in a mutually exclusive manner, especially given that optimism is considered to be trait-like, while hopelessness is considered to be state-like (Hirsch & Conner, 2006).. For instance, Hirsch and Conner (2006) found a trend for optimism to reduce the relationship between hopelessness and suicidal ideation, such that an individual who exhibited hopelessness may have been less likely to exhibit suicide ideation if they also displayed optimism. This potential buffering effect of optimism “against the worst effects of hopelessness” may suggest that they can be experienced simultaneously (Hirsch & Conner, 2006, p. 662) and are therefore independent.

Lastly, optimism has been found to negatively correlate with suicide ideation, even after controlling for the effects of hopelessness (Scheier, Carver, & Bridges, 1994), thus further suggesting that optimism and hopelessness may, in fact, represent distinct constructs.

However, given the patent conceptual similarities between the two constructs, it is clear that further research is required to clarify the extent to which optimism and hopelessness are distinct.

#### *Future Time Perspective*

Consistent with the traditional focus on psychopathological risk factors, little attention has been paid to the study of protective characteristics that may distinguish suicidal from non-suicidal individuals (Hirsch, Conner, & Duberstein, 2007). One adaptive characteristic that has been theoretically and empirically suggested is a future time perspective (FTP). Although the literature is replete with a

multitude of terminologies such as time attitude and temporal orientation, time perspective can be described as the overarching concept accounting for the existence of a subjective experience of time (Drake & Duncan, 2008). It refers to the manner in which an individual psychologically and behaviourally connects to concepts of past, present, and future (Marko & Savickas, 1998).

An FTP has been defined in manifold ways including involvement in the future (DeVolder, 1979), a governing consideration of future consequences when making behavioural decisions (Hall & Fong, 2003), a well-defined vision of the future (Rothspan & Read, 1996), and the preference for and pursuit of distal goals and rewards (Zimbardo & Boyd, 1999). However, several authors have argued that FTP is more accurately and comprehensively conceptualized as a multifactorial, rather than unitary, construct that encompasses cognitive, affective, and behavioural domains (e.g., Husman & Shell, 2008; Lennings, 1994).

Likewise, in the present study, FTP was defined multidimensionally in accordance with the definition proposed by the developers of the intervention of interest. According to the work of Marko and Savickas (1998), an FTP can be conceptualized as encompassing the following 3 components: (1) A general orientation to the future involving the tendency to think about or centre one's thoughts on the near and distant future; (2) An evaluative component involving positive attitudes about the future, in addition to specific as well as generalized positive outcome expectancies (the latter of which is termed 'optimism'); (3) A behavioural component comprised of the tendency to envision and direct oneself towards future goal states as well as the tendency for one's present actions to be guided by heightened awareness of future consequences.

#### *Benefits of Future Time Perspective*

The positive implications of adopting an FTP have been found to span a wide range of safety and health-protective outcomes, including enhanced physical activity (Hall & Fong, 2003) and greater abstinence from both risky driving (Zimbardo, Keough, & Boyd, 1997) and substance use (Henson, Carey, Carey, & Maisto, 2006).

Certain aspects of FTP have also been linked to psychological health and well-being, although available research is comparatively limited in this area. One study by Zaleski, Cycon, and Kurc (2001) found that relative to those espousing a present-preoccupation, those who possessed long-term goals and corresponding plans—a critical component of FTP—reported less emotional distress and hopelessness. Other studies have also found optimism, or generalized expectations of positive future outcomes, to be associated with lowered levels of depressive symptoms (Dunn, 1996), anxiety (Scheier et al., 2001), enhanced subjective well-being (Scheier et al., 2001), and better psychological adjustment to negative life events (Aspinwall & Taylor, 1992; Davis, Nolen-Hoeksema & Larson, 1998).

The documented benefits of various components of FTP may therefore extend a promising avenue for inciting positive change in other areas of mental health including suicide ideation and its predictors.

#### *Future Time Perspective and Suicide: Theoretical Perspectives*

Numerous theoretical perspectives have supported the notion that FTP is one crucial factor distinguishing suicidal from non-suicidal individuals, although the role of adaptive variables in general has received relatively less attention.

There are several theories relating time perspective to suicide that, amidst their discrepancies, converge on the conception that suicidal individuals lack the various components of an FTP. Underscoring some of these theories is the notion that suicidal persons possess a mental state characterized by cognitive constriction, or rigid thinking and narrowed focus (Shneidman, 1985, as cited in Leenaars, 1996). Among other indicators, such constriction may take the form of an approach to time that is maladaptively restricted in range or specific to limited domains of time. In light of findings that the emergence of manifestations of cognitive rigidity coincides with the onset of suicidality (Perrah & Wichman, 1987), it has been suggested that, rather than an enduring personality trait, rigidity represents a crisis coping response intended to cease the inundation of undesired thoughts (Shneidman, 1981). Thus, extending one's time perspective to encompass the future may be conceived of as a more adaptive and constructive alternative means of coping.

### *Theoretical Perspectives: Suicidality and the Orientation Component of FTP*

Robert Yufit is one author that has argued that suicide is largely an outcome of unhealthy time perspectives. He theorized that suicide can be predicted by a negative preoccupation with the past and reduction of or disconnection from the future (Yufit, Benzies, Fonte, & Fawcett, 1970). Fixation on the past may be revealed as lamenting over the ‘good old days’ to which individuals wish to return. Past preoccupation may also involve obsessive thinking about past mistakes made or negative events endured (Yufit et al., 1970). Singular focus on the past is said to absorb emotional resources and further reduce one’s focus on and investment in the future, as well as further impede the development of future plans (Yufit & Lester, 2005). Subsequently, the development of alternatives in problem solving is restricted, contributing to a loss of hope that one’s problems can be resolved and amplifying feelings of helplessness, immitigable vulnerability, and entrapment within one’s painful situation(Yufit & Lester). Additionally, if past preoccupation manifests as rumination over negative life events, this may provide the conditions for a host of experiences that confirm one’s negative expectations. In turn, this may further fuel the cycle of past preoccupation and future disconnection (Yufit & Benzies, 1979, as cited in Lennings, 1994). In support of this overall theory, Yufit and Benzies (1973; also Yufit, Benzies, Fonte, & Fawcett, 1970) found that suicidal high-risk patients possessed elaborated and negative views of the past, which resulted in feelings dissatisfaction, guilt, and shame.

Conversely, other authors contend that suicidal persons adopt a present-oriented time perspective. They theorize that suicidal individuals have a negative or troubled awareness of the past and future, resulting in attempts to escape into a constricted concentration on the present, which subsequently further obstructs one’s focus on the future (Shneidman, 1986). In other words, with “nothing positive to look back on and nothing to look forward to”, suicidal individuals become “frozen in the present” (Lennings, 1994). Not only may this prevent individuals from seeing beyond their present painful circumstances, it may have a downward effect on their motivation to overcome such circumstances and develop problem-solving strategies (Lennings, 1994). Indeed, some studies have suggested that the time perspective of suicidal individuals centers on the present to the detriment of other domains of time. For example, Iga

(1971) found a correlation between completed suicide and limited, short-term time perspectives (as cited in Baumeister, 1990). In another study by Greaves (1971), it was shown that relative to non-suicidal individuals, suicidal persons were found to use less future-tense verbs and more present-tense verbs while performing a sentence completion task.

*Theoretical Perspectives: Suicidality and the Evaluative Component of FTP*

Others have focused their theories on the conceptualization of suicide as a response to anticipating a negative continuity between the past, present, and future. Akin to the learned helplessness theory where past failures result in expectations of future failures (Abramson, Seligman, & Teasdale, 1978), suicidal individuals are thought to expect a negative future that is a repetition or continuation of their current and/or past negative life circumstances (e.g., Rush & Beck, 1978). As described earlier, suicidal individuals often display hopelessness or negative future expectations. If a more positive future is not perceived as a viable means of escaping from one's present pain, suicide becomes the only option (Baumeister, 1990) and the loss of a future is perceived as a minimal and preferable sacrifice (Linehan, Goodstein, Neilsen, & Chiles, 1983). In support of this theory, Iga (1971) found that suicidal students were more prone than their non-suicidal counterparts to respond to failure with an inability to envision a future whose valence positively exceeds that of the present (as cited in Baumeister, 1990). This is in stark contrast to individuals espousing a future time perspective in which optimism is a central component. An individual who is able to engender a positive discontinuity between the present and future may experience reductions in suicidal risk by way of reductions in distress. Perceiving a more positive future to look forward to may also protect one against suicide by reducing a sense of entrapment and providing reasons for living (O'Connor et al., 2007). Furthermore, optimism strengthens the pursuit of distal goals (Scheier & Carver, 1985) which can further strengthen one's motivation to live. It also provides a fundamental basis for planning for, as opposed to denying, the future which may aid in minimizing the subjective and objective gap between desired and anticipated positive future outcomes (Linehan et al., 1983; MacLeod et al., 2004). Finally, studies have found that optimists make greater use of approach and problem-focused coping strategies including direct engagement of problems (Brissette, Scheier, & Carver, 2002), which in

turn, facilitate adaptive coping in times of adversity and stress (Aspinwall & Taylor, 1992; Nes & Segerstrom, 2006; Scheier & Carver, 1992). Of note, some studies have found suicidal manifestations to be more prevalent among individuals who rely less on problem-focused coping methods (Lauer, De Man, Marquez, & Ades, 2008) and more on avoidance coping strategies (Orbach, Bar-Joseph, & Dror, 1990).

#### *Theoretical Perspectives: Suicidality and the Behavioural Component of FTP*

Lastly, in a study of autopsies on youth suicide, the lead author concluded that “suicide does not occur on the spur of the moment or as an impulsive act” (as cited in Holden, 1976, p. 839). Although this statement fails to account for the fact that suicide attempts may represent a rapid onset, unplanned event, it does acknowledge that suicide may also represent a decision (Lennings, 1994) that, among other processes, is heavily influenced by an excessive focus on short-term rewards (i.e., escaping from or ending one’s pain) and a lack of consideration of long-term consequences (i.e., the loss of future life). Thus, this conceptualization of suicide implies that suicidal individuals lack an important aspect of FTP. In fact, research has demonstrated the impaired-decision making capacities of suicidal individuals (e.g., Jollant et al., 2005), in which long-term outcomes are overshadowed by immediate rewards. In this way, suicide is rendered a conceivable, preferable, and rewarding solution. It is therefore possible that efforts to promote this decision-making aspect of FTP may facilitate behaviours that are harmonious with one’s long-term interests such as the preservation of life and the seeking of help.

#### *Empirical Perspectives: Suicidality and the Orientation Component of FTP*

A number of empirical studies have supported the notion that suicidal individuals fail to adopt a general orientation to the future. For example, examining the relationship between temporal orientation and death involvement, Neuringer and Harris (1974) found that hospitalized suicidal individuals exhibited greater difficulty in thinking about the future than other death-involved patients, including those who were terminally and geriatrically-ill. Lennings (1991b) utilized a projective technique to examine suicide as it relates to future orientation (as cited in Lennings, 1994). He found that juvenile delinquents identified as suicide risks evidenced greater reductions in future time projections than their non-suicidal risk counterparts. Similarly, suicidal high-risk patients have been found to have less focus on the future,

and less elongated and detailed future projections than patients classified as low suicide risks (Yufit, Benzies, Fonte, & Fawcett, 1970; Yufit & Benzies, 1973). In another study by Melges and Weisz (1971), patients who had recently attempted suicide were asked to describe as vividly and as detailed as possible the antecedent circumstances surrounding their attempt. This procedure was designed to evoke an emotional and psychological state that paralleled their state of mind just prior to attempting suicide. Findings revealed that after providing their narrative, individuals exhibited a reduction in future awareness as well as an increasingly negative view of the future.

*Empirical Perspectives: Suicidality and the Evaluative Component of FTP*

The relation between suicide and optimism (a part of the evaluative component of FTP) has found support in a study by Hirsch, Conner, and Duberstein (2007). In a sample of 287 undergraduate students, a significant inverse relation was revealed between suicide and generalized optimism, as measured by the Life Orientation Test-Revised (Scheier, Carver, & Bridges, 1994). Specifically, it was found that students with higher levels of optimism reported lower levels of suicide ideation, even after accounting for the effects of hopelessness and depression. Another study by Hirsch, Wolford, LaLonde, Brunk, and Morris (2007) investigated the hypothesis that dispositional optimism would exert a buffering effect against suicidal ideation in the face of negative life events. Findings revealed that after controlling for hopelessness and depression, optimism attenuated the relationship between negative life events and current suicide ideation, providing that such events were low to moderate in number and severity. This suggests that although the protective effects of optimism may be limited, thoughts of suicide may be less likely when individuals view their crises and negative life circumstances in a more positive, future-involved way (Hirsch et al., 2007).

Additionally, a number of studies have provided some evidence for the notion that suicidal individuals lack positive future thinking in the form of anticipation of more specific positive future events. For instance, O'Connor, O'Connor, O'Connor, Smallwood, and Miles (2004) found expectations of specific positive future outcomes to buffer the relationship between stress and hopelessness, such that individuals under high levels of stress who also anticipated the future occurrence of positive events

reported lower levels of hopelessness than those with similar stress levels but less positive future thinking. This finding is of particular relevance given the demonstrated predictive relationship between hopelessness and manifestations of suicidality.

*Empirical Perspectives: Suicidality and the Behavioural Component of FTP*

Examining the behavioural aspects of FTP, Laghi, Baiocco, D'Alessio, and Gurrieri (2009) compared adolescents with varying degrees of suicidal ideation on the Future subscale of the Zimbardo Time Perspective Inventory (Zimbardo & Boyd, 1999) — a subscale measuring the planning for and achievement of future goals and the tendency for one's decisions and acts to be informed by an awareness of future consequences. Results showed that those with severe suicide ideation yielded significantly lower scores on this subscale than those with moderate levels of suicide ideation. Weiss (1957) also found that the majority of recent suicide attempters were unable to verbalize any potential consequences of killing themselves, thus suggesting, albeit indirectly, that suicidal individuals may not be 'in touch' with thinking about future consequences and may lack long-term planning (as cited in Baumeister, 1990).

*Empirical Perspectives: Suicidality and a Multidimensional FTP*

Finally, a few studies have investigated the relationship between suicide and FTP using a conceptualization of FTP that is similar in comprehensiveness and in content to that used in the present study. Specifically, FTP was defined in these studies as the ability to think about the future, a general positive attitude and mood concerning the future, the adoption of strategies aimed at achieving precisely delineated goals, and lastly, the presence of reasons for living. Using this definition, Hirsch et al. (2006) found, in a sample of adults aged 50 years and older receiving treatment for depression, that those with greater future orientation had lower levels of both current and worst point suicidal ideation, and were less likely to evidence a history of attempted suicide. Of note, this effect was found after controlling for the effects of age, gender, hopelessness, and depression. In another correlational study conducted on a sample of depressed patients, a high future orientation was found to moderate the association between functional status and suicide ideation while controlling for age, gender, depression severity, and illness burden (Hirsch et al., 2007).

### *The Integration of Future Time Perspective in Therapeutic Interventions*

Upon considering the urgency with which suicidality should be empirically addressed, there is a surprising insufficiency of studies investigating preventative approaches to suicide (Public Health Agency of Canada, 2005). This has contributed to a penury of evidence-based interventions for pre-suicidal cognition and behaviour (Van Beek, Kerkhof, & Beekman, 2009). Furthermore, current suicide prevention efforts largely involve screening for various risk factors (Jollant et al., 2005) or ameliorating symptoms of depression (NMHA, 2002, as cited in Hirsch, Conner, & Duberstein, 2007). Although identification and direct targeting of risk factors are clearly justified, research linking FTP to suicide manifestations suggests that protective characteristics may also be valid targets for enhancement through intervention (Hirsch & Conner, 2006). Such a strategy may exist alongside traditional efforts in a complementary fashion, thus serving to compound the reduction of suicidality.

Previous studies have suggested that various components of FTP can be directly targeted and cultivated through intervention. Of note, the majority of these interventions are of a circumscribed focus, addressing only one aspect of FTP. In this study, however, FTP was defined multidimensionally, thus prompting investigation of the ATPMI, which is much more comprehensive in its targeting of FTP.

In efforts to promote the health behavior of physical activity, Hall and Fong (2003) developed a brief time perspective intervention comprised of activities designed to increase awareness of the link between time orientations, decisions, and present actions, and to project the motivational saliency or pre-eminence of long-term consequences. Relative to both a no-intervention control condition and a goal-setting control intervention, the time perspective intervention was found to significantly enhance both long-term thinking about exercise and levels of physical activity among undergraduates averaging an age of approximately 21 years (Hall & Fong, 2001). One of the described activities was adapted for the ATPMI to aid in targeting the aspect of the behavioural component of FTP involving the link between present actions and future outcomes (see Appendix A).

Although the application of FTP interventions to mental health variables is less empirically developed, some studies have sought to assess the value of this goal. King (2001), for example, described

the therapeutic efficacy of a writing intervention in which participants were to write about their best possible selves, encompassing a personal future characterized by positive outcomes and the realization of one's life goals. In a sample of undergraduate students, it was found that completing this exercise 20 minutes per day for 4 consecutive days resulted in significant increases in subjective well-being (comprised of life satisfaction and dispositional optimism) 3 weeks later as well as significant reductions in physical illness evident 5 months later. Shapira and Mongrain (2010) evaluated a similar optimism intervention involving the written expression of visualizations of a more positive future. Over a 7-day period, participants were asked to imagine and describe in detail a specific time in the future when current issues of concern had been resolved. In their letters, participants were also asked to provide advice from this future perspective, describing the steps taken to propel themselves to this better future and realizations emerged along the way. Compared to a control condition in which participants simply wrote about an early memory, individuals assigned to the optimism condition evidenced greater reductions in depressive symptoms and greater increases in happiness—effects that were sustained up to 3 and 6 months, respectively. An adapted version of this optimism exercise was utilized in the fourth session of the ATPMI to aid in the potential enhancement of optimism.

To this author's knowledge, two studies have directly applied the use of future oriented interventions to suicidal populations. Van Beek, Kerkhof, and Beekman (2009) described a 10-week, future-oriented group therapy that can be used, in conjunction with treatment as usual, for inpatients and outpatients exhibiting suicidal ideation. The program is a practical and educational intervention which uses future thinking, cognitive therapy, and problem solving therapy in efforts to foster future oriented and goal striving behaviour (Van Beek et al., 2009). The first session revolves around explaining the relationships between negative expectations, reduced future thinking, and suicidal thoughts and intent. Highlights of the second and third sessions include exercises aimed at strengthening one's ability to imagine change and promoting the realization that ideators possess an unchallenged, "hopeless tendency" to believe that of all possible envisioned future outcomes, only the negative outcome will occur (Van Beek et al.). The fourth and fifth sessions utilize cognitive therapy to address maladaptive thoughts that

hinder the pursuit and achievement of future goals. The sixth and seventh sessions focus on identifying achievable goals, formulating plans to realize those goals, and developing strategies to maximize the likelihood of goal attainment and to overcome foreseeable hindrances to motivation and goal striving. Lastly, the final sessions involve applying learned strategies and realizations to the pursuit of a specific goal, as well as discussing how such lessons and insights can be preserved over time. Although promising, the efficacy of this intervention is currently being tested. Although this therapy shares several similar activities with the ATPMI, it has a large component devoted to cognitive behavioural therapy, and also directly links intentions of its sessions with suicide. It was thought that an intervention (such as the ATPMI) that targets FTP without being directly linked to suicide would provide a more isolated and precise investigation of the potential protective influences of FTP.

Walsh (1993) developed an art intervention for hospitalized suicidal adolescents in which they were to construct images of positive future outcomes in order to alter future expectations with respect to one's occupational and life plans. Contrary to expectations, although there was a trend towards the experimental group showing greater improvement in depressive symptoms and future time perspective, no significant differences were found between the intervention and control groups on measures of self-esteem, depressive symptoms, and future time perspective. This finding was complicated, however, by unexpected methodological shortcomings in which the length of time between and pre- and post-intervention assessment was considerably shorter for the experimental group. Particularly worth mentioning, however, are the largely qualitative reactions to the intervention, of which several themes emerged, including the rekindling of dreams, reappearance of humour, gaining or recapturing of control and self-confidence, and anticipation of a pleasant future (Walsh & Minor-Schork, 1997). Although this exercise was not utilized in the ATPMI given its unclear effectiveness and more adolescent-specific nature, its premises involving visualizing positive outcomes are embedded throughout the ATPMI.

#### *Adapted Time Perspective Modification Intervention*

The intervention that will be used in the current study is an adapted Time Perspective Modification Intervention (ATPMI), originally developed by Savickas (1991) as a means of fostering

career development. It consists of three phases that take place over the course of four weekly sessions. Although all features of the TPMI were retained in this study, several activities and discussions were added to further enhance the proposed relevance of this intervention for the population of interest. The first session comprises the Orientation Phase, which centres on inducing or increasing orientation to the future, optimism regarding one's personal future, and recognitions of the importance of one's future. The goals of the second phase, the Differentiation Phase, allow for the future to feel meaningful. By aiding individuals in populating their near and distant futures with many expected events, both the felt existence of the future and the envisioning of their place in the future are able to transpire (Marko & Savickas, 1998). This, in turn, establishes a context for setting, planning, and preparing for personal future goals. The final phase, the Integration Phase, enhances perceptions of future-related controllability by cultivating awareness of the interrelations among temporal domains of past, present, and future. This phase thus involves helping individuals to practice planning skills and to construct pathways connecting present behaviours with future outcomes, as well as the reinforcement of positive attitudes toward planning. A complete description of the ATPMI can be found in Appendix A.

#### *Investigating the Efficacy of the TPMI*

The efficacy of the original, unadapted TPMI was evaluated in a randomized control trial by Marko and Savickas (1998). Participants were randomly assigned to either the intervention group ( $n = 27$ ) or the no-treatment control group ( $n = 28$ ). The intervention was subsequently administered across four weekly sessions of approximately 40 minutes each to 15 tenth grade students and 12 college freshmen. Outcome variables included career planfulness and future orientation—as assessed by a measure of the orientation and behavioural components of future time perspective (Long Term Personal Direction Scale; LPTD, Wessman, 1973, as cited in Marko & Savickas) as well as a measure of optimistic evaluations of the future (Achievability of Future Goals Scale; AFG, Heimberg, 1961, as cited in Marko & Savickas). These measures were administered during week 5 to both treatment and control participants. Results revealed that those who received the TPMI had significantly greater LTPD scores than those in the control group, with a reported effect size (Cohen's  $d$ ) of .73. An ANOVA conducted on AFG scores

indicated a “practically significant” ( $p = .053$ ) main effect for treatment condition with an effect size of .57. Finally, a significant main effect for treatment condition was also found for career planfulness, with an effect size of .77.

### *Overview and Hypotheses*

The current work serves as an initial study to investigate, using the methodology of a randomized control trial, whether the TPMI can be effectively adapted for a subclinical population.

It is expected that compared to individuals who do not receive an intervention, those who complete the Adapted Time Perspective Modification Intervention over a four-week period will experience greater increases in future time perspective and greater reductions in suicide ideation, psychache, hopelessness, and depressive symptoms both 1-month and 6-months later.

## Chapter 3

### Method

#### Participants

To obtain a subclinical sample, inclusionary criteria consisted of participants who obtained a minimum score of 14 on the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) or a positive response to items 4 or 5 on the Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1993) during the Psychology 100 subject pool prescreen at Queen's University. No exclusionary criteria were employed for this study.

One hundred participants were initially recruited to create 2 conditions of equal size. This sample size was targeted in order to yield statistical power of .80 with a two-tailed alpha of .05 for similar effect size (Cohen's  $d = .57$ ) as that obtained in the Marko and Savickas (1998) study, while simultaneously accounting for an expected attrition rate of 35%. From the time of recruitment to baseline assessment, however, 8 participants withdrew. This resulted in an initial sample consisting of 92 undergraduate students ( $n = 47$ , intervention group;  $n = 45$ , control group) from the Psychology 100 Subject Pool at Queen's University, ranging in age from 17 to 23 years ( $M = 18.15$ ,  $SD = 0.84$ ). There were 73 women (79.3%) and 19 men (20.7%). Overall, the sample was predominantly Christian (84.6%), and of Caucasian heritage (75%). The remaining participants identified themselves as Chinese (9.8%), Korean (5.4%), South Asian (3.3%), South East Asian (2.2%), Filipino (2.2%), Aboriginal (1.1%), and Arab/West Asian (1.1%). Lastly, 74 were of Canadian citizenship (80.4%), and 97.8% were single.

At baseline, 35 participants (38%) met criteria for suicide ideator status (a positive response to either item 4 or 5 on the BSS), while a total of 56 (60.9%) individuals reported at least mild depressive symptomatology (a total score of at least 14 on the BDI-II). Thus, only a total of 62 of the 92 participants ( $n = 36$ , intervention group;  $n = 26$ , control group) that completed the baseline assessment satisfied at least one of the inclusion criteria at baseline.

To summarize, recruitment resulted in an initial sample size of 100 with 50 participants in each group. However, because there was an approximately 1-week interval between recruitment and baseline assessment, some participants withdrew. This resulted in a sample of 92 participants at baseline. Of these 92 participants, only 62 participants satisfied the inclusion criteria at baseline. Because the inclusion criteria were specific only to depressive symptoms and suicidal ideation, it was deemed appropriate to include all participants in the analyses (not just those satisfying inclusion criteria) as they provided elevation and variability to the other measures, in addition to increases in power. Furthermore, Beck and Steer (1991) have suggested that any positive response on the BSS is indicative of at least some degree of suicidal risk, suggesting that it is still informative to include all participants when assessing the potential effects of the ATPMI on suicidal ideation.

#### Procedure

Four administrators (2 clinical graduate students, 1 developmental graduate student, and 1 social psychology graduate student) were trained by this author over the course of 6 weeks to conduct the intervention. As a learning tool, transcripts were created for each session in order to provide a model for how each activity could be implemented. Training sessions consisted of discussions regarding the transcripts, multiple role plays, and group feedback. Administrators were paid \$15 per hour for group training sessions and individual preparation. Although suicide was not explicitly targeted during the intervention, procedures for addressing the potential occurrence of expressed suicidal thoughts or intent were outlined.

Prior to participant recruitment, individuals satisfying inclusion criterion were randomly assigned to either the Modified Time Perspective Modification Intervention (MTPMI) condition or the inactive control condition using a random number generator (<http://www.random.org/integers/>). Prospective participants were then contacted via phone or email, and were asked to participate in a study on the longitudinal relationship between an individual's orientation to time and psychological health. They were provided with respective condition-specific details regarding participation and compensation (See Appendix C – Recruitment Scripts). This approximately 2-week process continued until there were 50

individuals in each group. However, it should be noted that 8 participants withdrew, resulting in less than 50 individuals in each group at baseline assessment.

A total of 11 intervention groups were created, with group sizes ranging from 3-5 participants (2 groups contained 3 participants, 3 groups had 4 participants, and 5 groups contained 5 participants). Each administrator was responsible for 2 groups each, with the exception of myself, who was responsible for 3 groups.

Following the completion of participant recruitment and group meeting scheduling, participants were sent emails containing a link to the online baseline assessment at <http://www.surveymonkey.com>. Given that the use of random assignment was not revealed to participants, separate letters of information and consent forms were provided online at the commencement of the assessment (see Appendix C). Participants in both conditions were apprised that all collected data would remain confidential within legal limits, and that they would have the right to withdraw or terminate participation from the study at any time, without being penalized.

Participants in the control condition were informed that the study would involve the online completion of measures at 2 time points, each of which would take approximately 30 minutes to complete. Control group participants received 1 course credit for completing measures at baseline and post-intervention (0.5 credits for each assessment). Alternatively, they could choose to substitute a \$10 payment for the assessments at any one time.

Those in the ATPMI condition were informed that participation would entail the online completion of measures at 2 time points, as well as partaking in four, 60-minute weekly meetings that would each conclude with a 3-minute measure. They were remunerated with up to 5 course credits upon completion of the study (either \$10 or 1 credit for each attended weekly meeting, and either \$10 or 0.5 credits for each assessment). In the event that they withdrew from the study before completion, they were provided with the specified compensation for their participation up to that point.

Both groups were also informed that they would be asked to complete a third assessment six-months later, for which they would be compensated with \$10.

Individuals in both conditions were advised that the assessments would involve answering questions about sensitive and personal issues, and should they feel distressed or desire to speak confidentially to someone regarding their thoughts and feelings, I would be able to assess the situation further under the supervision of Dr. Holden. A list of appropriate free and fee-for-service resources was also provided. Participants were also reminded that they were under no obligation to answer questions found to be objectionable or to result in feelings of discomfort, and that their supplied data could be immediately deleted upon request. So that potential questions or concerns could be addressed, contact information of the researchers was provided.

All participants were then asked to complete a battery of measures online, including a demographic questionnaire and measures of depressive symptoms (Beck Depression Inventory-II; BDI-II), hopelessness (Beck Hopelessness Scale; BHS), suicide ideation (Beck Scale for Suicide Ideation; BSS), future time perspective (Future Time Perspective Scale; FTPS), temporal focus (Temporal Focus Scale; TFS), optimism (Life Orientation Test-Revised; LOT-R) and psychache (Psychache Scale) (see Appendix C).

#### *Time Perspective Modification Intervention Condition*

Participants in this condition met once a week for four weeks to complete each phase of the intervention. Specifically, the Orientation Phase was conducted during the first session, the Differentiation Phase was conducted during the second session, and the Integration Phase was conducted during the final two sessions. Each session lasted approximately 60 minutes and concluded with the administration of a measure of session evaluation (Session Evaluation Questionnaire, Form 5; SEQ). After each session, intervention administrators were asked to complete an 'Intervention Integrity Checklist' adapted from Brown-Chidsey and Steege (2005) (see Appendix B). One week following the final intervention session, participants were asked to complete the post-intervention assessment. This entailed an abbreviated demographic questionnaire inquiring only about potentially variable characteristics including current diagnoses and treatment, measures of depressive symptoms (BDI-II), hopelessness (BHS), suicide ideation (BSS), future time perspective (FTPS), temporal focus (TFS),

optimism (LOT-R) and psychache (Psychache Scale). They were also provided with an opportunity to share their thoughts regarding what they perceived to be positive and negative aspects of the group meetings (See Appendix G – participant feedback). They had approximately one week to complete the post-intervention assessment, and reminder emails were sent mid-week.

#### *No-Treatment Control Condition*

Participants in this condition were asked to complete the shortened demographic questionnaire, the BDI, BHS, BSS, FTPS, TFS, LOT-R and the Psychache Scale four weeks following baseline assessment. They were given approximately one week to complete the assessment, and reminder emails were provided mid-week.

#### *Follow-Up Assessment*

In order to obtain further information on the potential long-term effects of the TPMI, participants were contacted six months post-test for additional online assessments of future time perspective, temporal focus, optimism, suicide ideation, psychache, hopelessness, and depression. Participants in the intervention condition were also asked to comment on whether the group meetings had a positive effect on their lives and whether they practiced any of the exercises learned over the course of the 4 sessions (see Appendix G).

#### *Precautionary Procedures*

At any given assessment, if a participant indicated the presence of a relatively elevated suicide risk (i.e., a score of at least 24 on the BSS (see Cochrane-Brink et al., 2000) or a positive response to the item “I would like to kill myself” on the BDI-II), my supervisor (Dr. R. R. Holden, Ph.D., C. Psych. – Registration Number 2324) contacted them, recommended seeking counseling, and, if risk was deemed imminent, encouraged and/or escorted them to a hospital Emergency Department for immediate medical attention.

#### *Debriefing*

Participants were provided with letters informing them of the purpose and nature of the study. They were also offered the opportunity to receive the Time Perspective Modification Intervention if they

had not already done so during the course of the study. Participants who indicated a willingness to complete the 6-month follow-up assessment received debriefing letters online at the conclusion of this final assessment. Participants who did not want to complete the 6-month follow-up were sent debriefing letters via email, immediately following the post-intervention assessment.

### Materials

Copies of all questionnaires can be found in Appendix C.

*Demographic Questionnaire.* An author-constructed demographics survey assessed demographic characteristics of participants including age, gender, race and ethnicity, citizenship, religion, marital status, and number of years in post-secondary education. Participants were also asked to report current or past psychiatric diagnoses, current medication use (status, type, and length of time on medication) and current participation in psychotherapy (status, type, and length of time in therapy).

*Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996).* The BDI-II is a 21-item self-report scale used to measure the presence and severity of depressive symptoms during the past two weeks in adults and adolescents aged 13 or older. It was developed in efforts to align the BDI with the newly established DSM-IV diagnostic criteria for major depression. Each item corresponds to a depressive symptom and is rated on a 4-point scale of escalating severity. Total scores range from 0 to 63, with higher scores reflecting greater levels of depressive symptoms. Although not a diagnostic tool, a meta-analysis of 25-years of research found that the average correlations between the BDI and clinical ratings were .72 for psychiatric patients and .60 for nonpsychiatric patients (Beck, Steer, & Garbin, 1988). Additionally, the mean correlations of the BDI with the Hamilton Psychiatric Rating Scale for Depression were .73 for psychiatric patients and 0.74 for nonpsychiatric samples (Beck, Steer, & Garbin, 1988). Both construct validity with respect to self-reported depression (Steer, Ball, Ranieri, & Beck, 1997) and high internal consistency (Beck, Steer, Ball, & Ranieri, 1996) have been demonstrated.

*Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974).* The BHS consists of 20 true-false statements that assess an individual's negative future expectations. The total scores range from 0 to 20, with higher scores indicating higher levels of hopelessness. In a sample of 294 hospitalized

patients who had recently attempted suicide, an alpha reliability coefficient of .93 was reported (Beck, Weissman, Lester, & Trexler, 1974). In the current nonpsychiatric sample, internal reliability was .87. Concurrent validity has also been supported, as the BHS has been found to correlate highly with both clinician ratings ( $r = .62$ ) and other self-report measures of hopelessness ( $r = .60$  to  $r = .63$ ) (Beck et al., 1974). Lastly, this scale has shown high test-retest reliability over a 3-week period in a nonpsychiatric, undergraduate sample (Holden & Fekken, 1988).

*Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991).* The BSS is a 19-item inventory measuring one's thoughts, intentions, and motivations with respect to suicide. Each item is comprised of three statements rated on a 3-point scale, ranging from 0 to 2, on the basis of escalating intensity. Total scores may thus range from 0 to 38. High internal consistency has been demonstrated, with Cronbach alpha coefficients ranging from 0.89 to .96 in psychiatric samples (Beck, Brown, & Steer, 1979; Beck, Steer, & Ranieri, 1988). Additionally, the BSS has been found to correlate significantly with the BDI, the BHS, and the Revised Hamilton Psychiatric Rating Scale for Depression (Beck, Brown, & Steer, 1997; Beck, Steer, & Ranieri, 1988). In further support of its concurrent validity, Beck, Steer, and Ranieri (1988) found the BSS and clinical ratings of suicide ideation to correlate at .90.

In addition to yielding an overall measure of suicide ideation, the BSS can be partitioned into two subscales (Beck, Brown, & Steer, 1997). The first subscale, Motivation, is comprised of items assessing attitudes about living and dying, as well as the frequency and duration of suicidal thoughts. Preparation, the second subscale, reflects a more active component of suicidal ideation involving planning of a suicide attempt. This two-factor model was supported by a study of suicide attempters by Holden and DeLisle (2005), which yielded alpha reliability coefficients of .85 and .73 for motivation and preparation, respectively.

*Future Time Perspective Scale (FTPS; Husman & Shell, 2008).* The FTPS is a 27-item scale that measures four aspects of future thinking. The first component, speed, refers to the ability to anticipate and plan for the future, and is measured by such items as "I find it hard to get things done without a deadline." Scores on this subscale may range from 3 to 15. Distance, the second subscale, refers to the distance over

which a person's thoughts extend, where greater extension is reflected in an increasingly minimized perceived distance between the present and distant future. It is thereby measured by items such as “September seems very near” and “Half a year seems like a long time to me.” Distance scores may range from 5 to 25. Connectedness, the third component, refers to the tendency to plan for the future and to connect present activities with future outcomes. Items include “One should be taking steps today to help realize future goals” and “I don’t like to plan for the future.” Scores on the connectedness subscale may range from 12 to 60. The final component, Value, refers to the importance one places on long-term future goals, and is measured by such items as “Long range goals are more important than short range goals.” Value subscale scores may range from 7 to 35. A five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) is utilized. Husman and Shell (2008) reported Cronbach’s alpha coefficients of 0.72 for the speed subscale, 0.74 for the extension subscale, 0.82 for the connectedness subscale, and 0.72 for the value subscale. Construct validity was also supported, although further research is needed to buttress the psychometric properties of this scale (Husman & Shell, 2008).

*Life Orientation Test-Revised* (LOT-R; Scheier, Carver, & Bridges, 1994). The LOT-R consists of 10 statements designed to assess levels of generalized optimism, or the generalized expectations of favourable outcomes (Scheier & Carver, 1992). Participants are asked to indicate the extent to which they agree with each statement on a 5-point Likert scale, resulting in a total score ranging from 0 to 24. Scheier et al. (1994) found acceptable internal consistency, reporting a Cronbach’s value of .78. In an undergraduate sample, test-retest reliabilities ranged from .68 to .79, with higher correlations corresponding to successive increases in test-retest intervals (Scheier et al., 1994).

*The Psychache Scale* (Holden, Mehta, Cunningham, & McLeod, 2001). The Psychache Scale is a 13-item self-report questionnaire that assesses psychological pain. Items are rated on a 5-point scale, with total scores ranging from 13 to 65. Strong reliability and validity have been established in nonpsychiatric samples (Holden et al., 2001). Utilizing an undergraduate sample, Holden et al. (2001) reported an alpha reliability coefficient of .92, in addition to medium to large correlations with suicide ideation and suicide attempts, respectively. The Psychache Scale has also been found to distinguish previous suicide

attempters from nonattempters, and to improve the statistical prediction of suicidal ideation over and above the contributions of depression and hopelessness (Troister & Holden, 2010).

*Temporal Focus Scale* (TFS; Shipp, Edwards, & Lambert, 2009). The TFS consists of 12 items designed to measure the frequency with which individuals think about the past, present, and future. Items are rated on a 7-point Likert scale ranging from 1 (“never”) to 7 (“constantly”). Three subscale scores are derived to quantify the allocation of one’s thoughts to each of the three domains of time (past, present, and future). Each subscale score may range from 4 to 28. Shipp et al. (2009) provided empirical support for the three-factor structure of the TFS, and demonstrated adequate reliability estimates, ranging from .65 to .84.

*Session Evaluation Questionnaire, Form 5* (SEQ ; Stiles, 1980; Stiles, Gordon, & Lani, 2002) (see Appendix B). The SEQ is a self-report measure of participant session evaluation and post-session mood. It consists of 21 bipolar adjectives on a 7-point scale. In the session evaluation section, the stem “This session was” precedes the following 11 items: bad-good; difficulty-easy; valuable-worthless; shallow-deep; relaxed-tense; unpleasant-pleasant; full-empty; weak-powerful; special-ordinary; rough-smooth; and comfortable-uncomfortable. In the post-session mood section, the stem “Right now I feel” precedes the remaining 10 items: happy-sad; angry-pleased; moving-still; uncertain-definite; calm-excited; confident-afraid; friendly-unfriendly; slow-fast; energetic-peaceful; and quiet-aroused. Support for the internal consistency of the SEQ has been obtained (Stiles et al., 1994; Stiles & Snow, 1984).

## Chapter 4

### Results

#### *Preliminary Analyses*

The first step of analyses screened the data for accuracy and missing values. Scale scores were prorated only if participants were missing a maximum of 10% data on each scale; otherwise, scale scores were not calculated. Univariate and multivariate outliers were sought separately for each group at each time point. Although no multivariate outliers were identified, a few univariate outliers were found. A comparison of results including the outliers, deleting the outliers, and adjusting the outliers to be no more than 3 standard deviations from the mean, revealed little influence on MANOVA outcomes.

#### *Correlations*

Pearson correlations were employed to examine the relationships among study variables for the intervention group and the control group, at each time point (see Appendix D). In order to maximize consistency between the descriptive and data analyses, the following analyses were conducted using only individuals who completed the post-intervention assessments.

Within the intervention group, significant correlations were found between the suicidality predictor variables of psychache, hopelessness, and depressive symptoms at each time point. Consistent with previous research (e.g., Troister & Holden, 2010), these predictors were also found to be significantly positively correlated with suicidal ideation, motivation, and preparation at each time point. At baseline, those with higher levels of future thinking, optimism, and future connectedness had lower total suicide ideation scores, and lower levels of suicide preparation and suicide motivation. Individuals reporting higher levels of present thinking had lower suicide ideation total and suicidal preparation scores. At 1 month, however, none of these time perspective variables were correlated with suicide variables, with the exception of optimism, which retained its negative correlations with all 3 factors of the Beck Scale for Suicidal Ideation.

Among control participants, only psychache was found to demonstrate a positive correlation with suicidal ideation, motivation, and preparation at baseline; both depressive symptoms and hopelessness were positively correlated with only suicidal motivation and total suicide ideation scores. At 1 month, however, while both psychache and depressive symptoms were positively correlated with each suicidal ideation factor, hopelessness no longer demonstrated significant associations with any of the suicidal ideation factors.

At baseline, participants in the control group with higher levels of future speed as well as higher levels of optimism had lower scores on all suicidal ideation factors, while those with greater future thinking evidenced only lower suicidal motivation. At 1 month, while the pattern of association between future thinking and suicidal motivation was maintained, future speed now only demonstrated a negative correlation with suicidal motivation. Optimism retained its negative correlations with each factor on the Beck Scale for Suicidal Ideation at 1 month. Also at 1 month, those with present thinking were now found to exhibit lower levels of all suicidal ideation factors.

Finally, Pearson correlations were also performed to uncover any characteristics that may be related to whether or not intervention participants attended all 4 ATPMI sessions (coded as 1 = attended all 4 sessions and 0 = attended less than 4 sessions). No significant correlations were found.

#### *Completers vs. Non-Completers at 1 Month*

A total of 92 participants ( $n = 47$ , intervention group;  $n = 45$ , control group) provided data at baseline, with 88% of these individuals ( $n = 41$ , intervention group;  $n = 40$ , control group) completing the 1 month assessment. Independent sample  $t$ -tests comparing participants remaining in the study at 1 month to the initial sample were conducted to detect any potential differences in demographic, psychological, and time perspective variables.

Participants who did not complete the 1 month assessment were more depressed,  $t(87) = -2.7, p = .008$ , and higher in psychache,  $t(86) = -3.39, p = .001$ , at baseline. These analyses suggest the existence of systematic baseline differences between completers and non-completers that likely affect the extent to which results generalize to those with greater psychological distress.

### *Examining Potential Intervention Effects on Suicide Predictors at 1 month: Descriptive Statistics*

As expected given the recruitment of a subclinical sample, means for psychache, depressive symptoms, and hopelessness, at both baseline and 1 month, were greater in our sample than those found in previous studies examining undergraduate samples (e.g., Troister & Holden, 2010). Alpha coefficients of these scales were consistent with previous research.

### *Examining Potential Intervention Effects on Suicide Predictors at 1 month: Covariate Analyses*

Separate independent sample *t*-tests were conducted for each baseline variable to identify any potential covariates that may influence results. Due to missing data across scales and across time, it was important to ensure that covariates were identified only for those included in each MANOVA. Thus, to identify covariates for the MANOVA conducted on the suicide predictors of depressive symptoms, psychache, and hopelessness, *t*-tests were conducted utilizing only those who completed measures of depressive symptoms, psychache, and hopelessness at both baseline and 1 month ( $n = 38$ , intervention group;  $n = 35$ , control group). These analyses did not reveal any significant differences between conditions at baseline, and thus no covariates were entered into the subsequent analysis.

### *Examining Potential Intervention Effects on Suicide Predictors at 1 month: Final Analyses*

Effectiveness of the ATPMI on psychache, hopelessness, and depressive symptoms was assessed using a repeated-measures MANOVA. There were 2 levels of time (baseline and 1 month) and the main predictor was condition (ATPMI vs. no-intervention control). Box's M test for homogeneity of variance-covariance matrices was significant,  $F(21, 18267) = 2.65, p < .001$ . Therefore, Pillai's criterion was used to evaluate multivariate significance.

The repeated measures MANOVA revealed no main effect for time, indicating that not all participants evidenced changes in psychache, hopelessness, and depressive symptoms at 1 month, regardless of condition (see Table 1). Examining the interaction between group and time, the overall MANOVA was significant,  $F(3, 69) = 4.02, p = .011$ . As expected, univariate *F*-tests revealed a significant interaction between group and time for psychache,  $F(1, 71) = 4.11, p = .047, n = 73$ , partial  $\eta^2 = .055$ , with an examination of the means indicating that participants in the intervention group

decreased more in psychache at 1 month than those in the control group. A univariate F-test also yielded a significant interaction between group and time for hopelessness,  $F(1,71) = 7.34, p = .008, n = 73$ , partial  $\eta^2 = .094$ , with those in the intervention group evidencing greater reductions in hopelessness at 1 month than those in the control condition. Lastly, there was no significant time by condition interaction for depressive symptoms,  $F(1,71) = 3.29, p = .074, n = 73$ , partial  $\eta^2 = .044$ .

#### *Examining Potential Intervention Effects on FTP at 1 month: Descriptive Statistics*

This analysis included the LOT-R, TFS Future scale, and the FTPS.

Means, observed ranges, and alpha coefficients for optimism were comparable to those found in previous research using an undergraduate sample (e.g., Hirsch, Conner, & Duberstein, 2007; Scheier et al., 1994), although the standard deviations in our sample were slightly larger (e.g., Hirsch, Conner, & Duberstein, 2007). Among the intervention group, alpha coefficients for the LOT-R were .73 at baseline and .72 at 1 month. Among the control group, alpha coefficients were .79 at baseline and .85 at 1 month. These values are consistent with those found in other studies (e.g., Hirsch et al., 2007; Scheier et al., 1994).

Although the means and standard deviations for the Temporal Focus Scale were comparable to those reported in previous studies, these statistics have not been reported for the Future Time Perspective Scale. For the Temporal Focus Scale, alpha coefficients each subscale were similar to those found in previous research (Shipp, Edwards, & Lambert, 2009). Specifically, among those in the intervention condition, alpha coefficients at baseline were .85, .71, and .82 for past, present, and future, respectively. At 1 month, they were .92, .67, and .89 for past, present, and future, respectively. Among those in the control condition, alpha coefficient values at baseline were approximately .86 for past, present, and future subscales. At 1 month, alpha coefficient values were .88, .71, and .87 for past, present, and future, respectively.

For the Future Time Perspective Scale, not all internal consistency reliability coefficients for the Future Time Perspective Scale factors were comparable to those found by Husman and Shell (2010).

Although alpha coefficients for connectedness and speed were both over 0.70, as found by Husman and

Shell (2010), reliabilities for value and distance were considerably lower, at .601 and .638, respectively. These values, however, are considered to be within an acceptable range; therefore, the subscales of value and distance were retained in this study.

#### *Examining Potential Intervention Effects on FTP at 1 month: Covariate Analyses*

Examining participants who completed the Life Orientation Test-Revised (LOT-R), Future Time Perspective Scale, and Temporal Focus Scale at both baseline and 1 month ( $n = 38$ , intervention group;  $n = 33$ , control group), independent sample t-tests revealed that those in the intervention group were more depressed at baseline ( $M = 20.08$  (10.52)) than control participants ( $M = 15.39$  (8.40)),  $t(69) = 2.05$ ,  $p = .044$ . Additionally, intervention participants were also found to be significantly higher in psychache at baseline ( $M = 28.91$ (24.25)) relative to controls ( $M = 24.25$ ( 7.39)),  $t(68) = 2.13$ ,  $p = .037$ . Thus, both baseline depression and psychache were entered as covariates in the following analysis assessing effectiveness of the ATPMI on measures assessing components of FTP.

#### *Examining Potential Intervention Effects on FTP at 1 month: Final Analyses*

Effectiveness of the ATPMI on the Future Time Perspective Scale, LOT-R, and Future subscale on the Temporal Focus Scale was assessed using a repeated-measures MANCOVA. There were 2 levels of time (baseline and 1 month) and the main predictor was condition (ATPMI vs. no-intervention control), while controlling for baseline depression and psychache. Box's M test for homogeneity of variance-covariance was significant,  $F(78, 13727) = 1.30$ ,  $p = .040$ . Pillai's criterion was therefore used to evaluate multivariate significance.

The repeated measures MANCOVA did not yield a main effect for time, nor was a significant overall group by time interaction effect found. Descriptive statistics can be found in Table 2.

Although not targeted by the ATPMI, we also wanted to investigate possible changes in the remaining time variables of past and present thinking, as measured by the Temporal Focus Scale. As found for FTP, a repeated-measures MANCOVA did not reveal a significant main effect for time or group by time interaction.

#### *Examining Potential Intervention Effects on Suicidal Ideation at 1 month: Descriptive Statistics*

As expected given the recruitment of a subclinical sample, means for each Beck Scale for Suicidal Ideation subscale at both baseline and 1 month, were greater in our sample than those found in previous studies examining undergraduate samples (e.g., Troister & Holden, 2010). Alpha reliability coefficients of each scale at each time point were found to be consistent with previous research.

*Examining Potential Intervention Effects on Suicidal Ideation at 1 month: Covariate Analyses*

Following the procedure for preceding analyses, independent sample t-tests were conducted to examine baseline differences between groups among only those who completed the Beck Scale for Suicidal Ideation at both baseline and 1 month ( $n = 40$  for intervention group;  $n = 35$  for control group). As previously found, those in the intervention group had significantly higher baseline depression scores ( $M = 19.78$  (10.37)) than those in the control group ( $M = 15.11$  (8.46)),  $t(73) = 2.12$ ,  $p = .038$  (2-tailed). Baseline depression thus served as a covariate in the following analysis.

Table 1

*Descriptive Statistics: Predictors of Suicidality at Baseline and 1 Month (N = 73)*

	BDI Mean (SD)	BDI Range	BDI Reliability	BHS Mean (SD)	BHS Range	BHS Reliability	Psychache Mean (SD)	Psychache Range	Psychache Reliability
Intervention Group									
Baseline ( <i>n</i> = 38)	19.38 (10.39)	0-44	0.91	6.01 (4.89)	0-19	0.89	28.58 (10.18)	13-57	0.94
1 month ( <i>n</i> = 38)	15.71 (11.24)	0-44.10	0.92	4.11 (4.03)	0-15.79	0.86	26.28 (8.86)	13-49	0.96
Control Group									
Baseline ( <i>n</i> = 35)	15.37 (8.39)	1-42	0.87	4.66 (3.41)	0-16	0.79	25.29 (8.77)	13-55	0.91
1 month ( <i>n</i> = 35)	14.80 (9.51)	0-43	0.9	5.34 (4.32)	Jan-17	0.86	25.93 (12.09)	13-59	0.97

*Note.* BDI = Beck Depression Inventory; BHS = Beck Hopelessness Scale; Psychache = The Psychache Scale. Descriptive statistics at each time point were calculated using individuals included in the manova analysis. As a result, *n*'s, means, standard deviations, ranges, and reliabilities may vary due to missing data.

Table 2

*Descriptive Statistics: Measures of Future Time Perspective at Baseline and 1 Month (N = 70)*

	LOT-R Mean (SD)	LOT-R Range	TFS Future Mean (SD)	TFS Future Range	FTPS Connectedness Mean (SD)	Connectedness Range	Value Mean (SD)	Value Range	Speed Mean (SD)	Speed Range	Distance Mean (SD)
<b>Intervention Group</b>											
Baseline ( <i>n</i> = 38)	11.26 (4.54)	3-20	20.18 (3.98)	8-28	45.72 (5.42)	29-57	21.86 (3.16)	14-29	6.51 (2.12)	3-12	14.40 (3.37)
1 month ( <i>n</i> = 38)	12.26 (4.11)	5-19	19.47 (4.80)	7-28	45.93 (5.96)	27-59	22.90 (3.86)	17-35	6.71 (2.00)	3-11	14.03 (2.80)
<b>Control Group</b>											
Baseline ( <i>n</i> = 32)	11.88 (4.64)	3-22	19.81 (4.59)	5-28	45.75 (6.36)	24-54	21.88 (3.83)	14-30	7.61 (2.90)	3-13	13.48 (2.81)
1 month ( <i>n</i> = 32)	12.21 (4.73)	5-23	19.17 (3.88)	10-28	45.25 (5.63)	31-57	22.76 (3.58)	14-30	7.62 (2.95)	3-13	13.42 (2.34)

Note. LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; FTPS = Future Time Perspective Scale. Descriptive statistics at each time point were calculated using individuals included in the manova analysis. As a result, n's, means, standard deviations, ranges, and reliabilities may vary due to missing data.

Table 3

*Descriptive Statistics: Suicidal Ideation at Baseline and 1 Month (N = 76)*

	SSI Total Mean (SD)	SSI Range	SSI Reliability	Motivation Mean (SD)	Motivation Range	Motivation Reliability	Preparation Mean (SD)	Preparation Range	Preparation Reliability
<i>Intervention Group</i>									
Baseline ( <i>n</i> = 40)	8.54 (7.01)	0-28	0.92	2.90 (3.43)	0-12	0.88	4.77 (3.86)	0-15	0.85
1 month ( <i>n</i> = 40)	7.03 (6.03)	0-23	0.89	2.17 (2.68)	0-10	0.82	3.93 (3.47)	0-12	0.85
<i>Control Group</i>									
Baseline ( <i>n</i> = 36)	6.89 (4.17)	0-22	0.84	1.67 (2.03)	0-9	0.81	4.67 (3.14)	0-14	0.75
1 month ( <i>n</i> = 36)	5.52 (3.96)	0-31	0.82	1.66 (2.51)	0-13	0.81	3.75 (3.33)	0-15	0.82

*Note.* SSI Total = Beck Scale for Suicide Ideation Total; Motivation = Beck Scale for Suicide Ideation Motivation; Preparation = Beck Scale for Suicide Ideation Preparation. Descriptive statistics at each time point were calculated using individuals included in the mancova analysis. As a result, *n*'s, means, standard deviations, ranges, and reliabilities may vary due to missing data.

### *Examining Potential Intervention Effects on Suicidal Ideation at 1 month: Final Analyses*

A repeated-measures MANCOVA with total suicidal ideation scores as the outcome was conducted, with 2 levels of time (baseline and 1 month) and the main predictor being condition (ATPMI vs. no-intervention control). Box's M test was significant, so Pillai's criterion was used to evaluate multivariate significance. Overall, there was a significant main effect for time,  $F(1,70) = 8.40, p = .005$ , with all participants reporting decreases in suicidal ideation at 1 month. A significant group by time interaction was not found.

To assess potential effects of the ATMPI on the Beck Scale for the Suicidal Ideation subscales, a repeated-measures MANCOVA was conducted with suicidal motivation and suicidal preparation subscales as outcomes, with 2 levels of time (baseline and 1 month) and the main predictor being condition (ATPMI vs. no-intervention control). Box's M test was not significant, so Wilks' Lambda was used to evaluate multivariate significance. A significant main effect for time was found,  $F(2,73) = 5.09, p = .009$ , with all participants significantly decreasing in suicidal preparation over time, regardless of condition,  $F(1,74) = 9.72, p = .003$ . No overall significant time by condition interaction emerged. Descriptive statistics for these analyses can be found in Table 3.

### *Completers vs. Non-Completers Across Six Months*

A total of 41 participants ( $n = 19$ , intervention group;  $n = 22$ , control group) completed measures at the six month assessment (occurring 6 months following the 1 month assessment). This represented only 44.56% of the baseline sample. To uncover any potential differences at baseline between those who completed the six month assessment and those who did not ( $n = 51$ ),

independent sample *t*-tests were conducted. No baseline differences were found, potentially suggesting that there were no systematic factors involved in the drop-out rate at 6 months.

#### *Examining Potential Intervention Effects on Suicide Predictors at Six Months*

Independent sample *t*-tests were first conducted to identify any baseline differences between participants in the intervention and control conditions. No covariates were identified.

Effectiveness of the ATPMI on psychache, hopelessness, and depressive symptoms was assessed using a repeated-measures MANCOVA, with 3 levels of time (baseline, 1 month, and 6 months) and the main predictor being condition (ATPMI vs. no-intervention control). Box's M test for homogeneity of variance-covariance matrices was not significant. Overall, no main effect for time or a time by condition interaction was found. Descriptive statistics can be found in Table 4.

#### *Examining Potential Intervention Effects on FTP at Six Months*

Independent sample *t*-tests did not uncover the existence of any baseline differences between the two groups.

To assess the effectiveness of the ATPMI in yielding long-term changes to the Future Time Perspective Scale, LOT-R, and Future subscale of the Temporal Focus Scale, a repeated-measures MANOVA was conducted, with 3 levels of time (baseline, 1 month, and 6 months) and the main predictor being condition (ATPMI vs. no-intervention control).

A repeated-measures MANOVA again did not yield a significant overall time by condition interaction.

There was a main effect for time,  $F(12, 124) = 7.42, p < .001$ . Over 6 months, all participants were found to evidence significant increases in optimism,

$F(2, 66) = 96.45, p < .001$ ; future value,  $F(2, 66) = 3.59, p = .033$ , and future speed,

$F(2, 66) = 4.94, p = .010$ . Descriptive statistics can be found in Table 5.

Similarly, with respect to past and present thinking (as measured by the Temporal Focus Scale), no overall significant time by condition interaction was found. As found for FTP,

however, there was an overall significant effect for time,  $F(4, 148) = 8.61, p = .000$ , such that all participants decreased in past thinking,  $F(2, 74) = 14.72, p < .001$ , and present thinking,  $F(2, 74) = 7.76, p = .001$ .

#### *Examining Potential Intervention Effects on Suicidal Ideation at Six Months*

Once again, no covariates were identified. Two separate repeated measures MANOVAs were conducted to assess potential long-term effects of the TPMI on total suicidal ideation scores, and on suicidal preparation and suicidal motivation. For the first analysis using total suicide ideation scores as the outcome variable, Box's M test was not significant, so Wilks' lambda was used to evaluate multivariate significance. No significant time by condition or main effect for time were found. For the analysis using suicidal preparation and suicidal motivation as outcome variables, again, no significant effects were found. Descriptive statistics can be found in Table 6.

Table 4

*Descriptive Statistics: Suicide Predictors at Baseline and 6 months (N = 33)*

	BDI Mean (SD)	BDI Range	BHS Mean (SD)	BHS Range	Psychache Mean (SD)	Psychache Range
Intervention Group ( <i>n</i> =15)						
Baseline	21.79 (9.06)	3-42	7.42 (4.88)	1-19	31.76 (11.50)	17-57
1 month	17.31 (12.16)	2-42	5.21 (4.01)	0-16	29.13 (11.11)	15-49
6 months	19.20 (14.47)	3-47	6.73 (5.18)	1-16	30.40 (13.05)	13-51
Control Group ( <i>n</i> = 18)						
Baseline	17.12 (9.60)	6-42	5.47 (3.86)	1-17	27.41 (10.49)	14-55
1 month	16.71 (10.78)	6-43	6.23 (4.89)	0-16	28.65 (14.00)	13-59
6 months	17.88 (13.21)	3-52	6.00 (3.97)	1-14	27.53 (12.71)	13-61

*Note.* BDI = Beck Depression Inventory; BHS = Beck Hopelessness Scale; Psychache = The Psychache Scale. Descriptive statistics at each time point were calculated using individuals included in the manova analysis. As a result, *n*'s, means, standard deviations, ranges, and reliabilities may vary due to missing data.

Table 5

*Descriptive Statistics: Measures of Future Time Perspective at Baseline and 6 Months (N = 37)*

	LOT-R Mean (SD)	LOT-R Range	TFS Future Mean (SD)	TFS Future Range	Connected Mean (SD)	Connected Range	Value Mean (SD)	Value Range	Speed Mean (SD)
<b>Intervention Group (n = 17)</b>									
Baseline	10.77 (4.51)	2-19	19.59 (3.22)	12-24	44.29 (4.21)	37-53	21.58 (3.32)	14-29	5.65 (1.62)
1 month	12.12 (4.41)	6-19	19.06 (3.98)	8-25	45.62 (5.43)	36-59	22.54 (4.17)	17-35	6.23 (1.25)
6 months	17.41 (5.26)	8-25	19.12 (4.52)	10-27	46 (4.66)	34-52	23.52 (3.10)	19-32	7.12 (2.17)
<b>Control Group (n = 20)</b>									
Baseline	11.01 (4.45)	4-22	19.25 (5.12)	5-28	45.05 (7.11)	24-53	21.48 (4.23)	12-29	6.38 (2.36)
1 month	11.00 (4.25)	5-21	19.35 (3.95)	10-28	45.33 (5.30)	31-53	22.76 (3.58)	14-30	6.65 (2.52)
6 months	17.60 (3.87)	12-27	18.30 (4.28)	11-26	44.30 (7.34)	22.91-53	22.91 (3.56)	14-30	6.78 (2.46)

*Note.* LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; FTFS = Future Time Perspective Scale. Descriptive statistics at each time point were calculated using individuals included in the manova analysis. As a result, *n*'s, means, standard deviations, ranges, and reliabilities may vary due to missing data.

Table 6

*Descriptive Statistics: Suicidal Ideation at Baseline and 6 Months (N = 38)*

	SSI Total Mean (SD)	SSI Range	SSI Reliability	Motivation Mean (SD)	Motivation Range	Motivation Reliability	Preparation Mean (SD)	Preparation Range
<b>Intervention Group</b>								
Baseline ( <i>n</i> = 18)	8.34 (5.15)	2-20	0.85	2.94 (2.71)	0-10	0.79	4.38 (3.02)	0-10
1 month ( <i>n</i> = 18)	6.60 (5.32)	0-18	0.87	2.00 (2.38)	0-8	0.77	3.64 (2.82)	0-10
6 months ( <i>n</i> = 18)	7.62 (6.71)	0-23.22	0.89	3.00 (3.13)	0-10	0.83	4.50 (3.81)	0-14
<b>Control Group</b>								
Baseline ( <i>n</i> = 20)	8.01 (4.70)	2-22	0.79	1.80 (2.09)	0-8	0.76	5.15 (3.03)	2-14
1 month ( <i>n</i> = 20)	8.40 (6.48)	0-31	0.88	2.45 (3.02)	0-13	0.82	5.10 (3.64)	0-15
6 months ( <i>n</i> = 20)	7.81 (5.62)	1.06-22.17	0.78	2.15 (3.12)	0-13	0.84	5.50 (3.47)	1-16

*Note.* SSI Total = Beck Scale for Suicide Ideation Total; Motivation = Beck Scale for Suicide Ideation Motivation; Preparation = Beck Scale for Suicide Ideation Preparation. Descriptive statistics at each time point were calculated using individuals included in the mancova analysis. As a result, *n*'s, means, standard deviations, ranges, and reliabilities may vary due to missing data.

## Chapter 5

### Discussion

The aim of this study was to explore the potential benefits of a four-week, adapted time perspective modification intervention for future time perspective, suicidal ideation, and its predictors. Analyses revealed that participants who received the ATPMI reported significantly greater reductions in psychache and hopelessness at 1 month than participants who did not receive the intervention. In this respect, our results buttress the use of the APTMI for important predictors of suicidality. The same results, however, were not found at 6 months, although a high rate of attrition reduced the adequacy of our sample size and thus the power of the test at this time. Furthermore, contrary to expectations, receiving the APTMI did not result in increases in future time perspective or decreases in depressive symptoms and suicidal ideation at 1 month.

#### *Psychache*

Participants in the ATPMI condition reported significantly greater reductions in psychache at 1 month compared to those in the control condition. Although the sustainability of these gains at 6 months is unclear, this remains an important finding, as evidence is accumulating to support Shneidman's (1993) claim that psychache is a pre-eminent factor fuelling the need to escape and resultant suicide.

Shneidman (1993) has argued that psychache is caused by thwarted or unfulfilled psychological needs considered important by the individual. Therefore, addressing these needs should yield reductions in psychache, and in turn, suicidality (Shneidman, 1993). Needs that may be particularly germane for university students are the needs for achievement, control and predictability (Shneidman, 1999a; 2005). Several components of the ATPMI may have aided in enhancing the perceived likelihood of attaining these needs and thus the perception that satisfaction of central needs is impeded. These include activities aimed at increasing one's awareness that positive outcomes can be shaped and negative outcomes avoided by considering the future when making one's decisions; discussion on how future differentiation can increase the likelihood of goal attainment; activities aimed at targeting the perceived predictability of

positive life events and the conquering of life-stage challenges; and finally, the ATPMI's emphasis on linking desired future outcomes with planning. All of these activities may have enhanced one's belief that positive outcomes and attainment of important goals are indeed controllable, predictable, and achievable. As one participant remarked at 6 months regarding what learnings from the APTMI she made use of, "no matter what happens, we will reach end goals one way or another" (see Appendix G).

The ATPMI may have also decreased psychache by expanding one's inner coping resources, and thus, reducing one's stress and distress. For instance, enhanced anticipations of more positive and achievable felt futures may have provided a means of coping by rendering stress and distress more enduring. The intervention may have also instilled a direct and buoyant approach to coping. Specifically, participants may have learned to utilize negative experiences to recall previous methods of problem resolution and as guides on how to create alternative futures (e.g., learning from past mistakes). They may have also learned to utilize planning and future-imbued decision making skills as means of reversing negative circumstances or increasing the probability of more positive futures.

### *Hopelessness*

Intervention participants were found to decrease more in hopelessness at 1 month than control participants. This result is of critical importance in light of research findings that individuals whose hopelessness did not significantly change in response to psychiatric treatment were at increased likelihood of committing suicide (Dahlsgaard, Beck, & Brown, 1998). As "what happens in the future is not only the result of circumstances, but can also be affected by how the person thinks about the future," (MacLeod, Williams, & Linehan, 1992, p. 201), reductions in hopelessness remain an important outcome that may provide one with the psychological architecture to build favourable future outcomes. However, these results were not maintained at 6 months, although the reliability of this finding is unknown given the markedly reduced sample size at 6 months and resultant reduction in power.

Speculation as to why the ATPMI effected positive change to participants' levels of hopelessness at 1 month uncovers several potential mechanisms. For instance, envisioning a more meaningful future

populated with many anticipated events may have helped to counter one's expectations that largely negative outcomes will occur.

The ATPMI's emphases on goal pursuits and planning may have also been helpful in reducing hopelessness. According to O'Connor and Cassidy (2007), previous experiences with unsuccessful goal attainment that sever the perceived causal link between one's behaviour and outcomes may cause individuals to have difficulties in goal identification and planning (O'Connor & Cassidy, 2007). This may have a downward effect on one's motivation and expectancies regarding the future, thereby leading to hopelessness (O'Connor & Cassidy). The ATPMI made explicit efforts to foster or reconnect individuals with the skill and practice of generating long-term goals and related plans. This may have decreased participants' hopelessness directly by replacing or balancing expectations of negative outcomes with expectations of goal attainment. It may also have influenced hopelessness indirectly by initiating a perceived achievability of goals and controllability of future outcomes. In fact, when asked at 6 months whether they practiced or made use of anything learned or discussed in the group meetings, goal formulation and planning arose as a common theme in participants' responses.

Negative life events have also been implicated in the development and course of hopelessness. Abramson, Metalsky, and Alloy (1989) have proposed that negative life events represent one cause of hopelessness, mediated by at least one of several inferences about the causes and consequences of the events, as well as inferences about the self. There are reasons to speculate the ATPMI may have influenced hopelessness by way of altering several of such inferences. For instance, one path to the development of hopelessness involves viewing negative life events as important, and as having stable and global causes (Abramson et al., 1989). Perceptions of causes being stable may have been particularly influenced by the ATPMI's focus on the predictability of experiencing and conquering life-stage challenges, the controllability of the future through goal formation, planning, and consideration of the future when making present decisions, and finally, the notion that the future need not repeat the negative circumstances of one's past and/or present. Indeed, one participant noted that she made particular use of the notion that "bad things don't last forever" (see Appendix G). Hopelessness is also thought to arise

when the consequences of negative life events are perceived as important, global, and unlikely to change or be remedied (Abramson et al.). Several emphases of the ATPMI may have aided in altering the valence of importance assigned to consequences of negative life events. By emphasizing flexibility in how positive outcomes are defined and by practising the skills of positive reinterpretation and utilization of negative experiences to build more positive futures, individuals may have come to see that negative consequences can, in fact, be positive as well. Perceptions of the stability of consequences may have also been altered by the ATPMI's emphasis on how negative experiences and resultant consequences need not be permanent if one adopts a future-oriented approach to shaping one's future.

Lastly, the downward effect of hopelessness on motivation may initiate a host of confirmatory experiences, thereby reinforcing hopeless expectations regarding the future (Yufit & Benzies, 1979, as cited in Lennings, 1994). It is possible that even within the short time period of 1 month, participants began to implement ATPMI teachings, resulting in more positive outcomes. This, in turn, may have served to challenge the veracity and validity of their hopeless expectations. For instance, at the fourth session, one participant commented that she had made ample use of the "What would you rather feel?" decision-making technique, which had aided her in overcoming issues of low motivation in order to better strive for and achieve her academic goals.

### *Depressive Symptoms*

Although previous research would suggest that changes in hopelessness, as evidenced by individuals in the ATPMI condition, would contribute to changes in depressive symptoms (e.g., Brothers & Andersen, 2009), participants in the ATPMI condition did not report significantly greater reductions in depressive symptoms at 1 month than those in the control condition. On the one hand, it is possible that corresponding changes in depressive symptoms would not occur concurrently at 1 month, but rather, would manifest only at a later point in time (Alford, Lester, Pathel, Buchanan, & Giunta, 1995). Again, a more powerful test of the ATPMI's effects over time would be able to test the plausibility of this interpretation.

Alternatively, our findings may be due to the fact that depressive symptoms are not limited to negative views of the future, but rather, span a wide range of affective, motivational, behavioural, and other cognitive symptoms, many of which would not be targeted by the ATPMI. Also, perhaps the ATPMI would be more effective in remediating some symptoms of the hopelessness subtype of depression. As Abramson, Metalsky, and Alloy (1989) argued, hopelessness is a proximal sufficient cause of hopelessness depression. Thus, any intervention strategy that curtails hopelessness should be effective in yielding diminished symptoms of hopelessness depression (Abramson et al., 1989). As utilizing measures specifically designed for the assessment of this subtype of depression are highly recommended (Metalsky & Joiner, 1997), assessment of this hypothesis is not testable in this study, and could represent an avenue for future research.

It should be noted, however, that the ATPMI does not contain key therapeutic ingredients known to be necessary for the remediation of depressive symptoms, such as a strong therapeutic alliance and the primary or abundant use of cognitive behavioural strategies applied to all pertinent spheres of distorted cognition (i.e. not just future- and goal-related cognitions) (DeRubeis & Feeley, 1990). Given that effects of the ATPMI necessitate considerable change to one's future-related cognitions and behaviours, it is possible that individuals high in depressive symptoms would require more direct therapeutic efforts to engage the individual (e.g., through a strong therapeutic alliance) and aid them in overcoming motivational symptoms of depression in order to implement learnings in one's daily living (e.g., through the use of homework strategies). It would therefore be interesting for future research to assess the effects of the ATPMI on depressive symptoms in the context of key therapeutic ingredients and techniques.

#### *Future Time Perspective*

A perplexing finding was that in spite of positive changes to psychache and hopelessness, the direct target of the intervention, FTP, was not found to change to a significantly greater degree in the intervention condition relative to the control condition. Although merely speculative, there are several possible reasons for these findings.

Firstly, one cannot ignore the possibility that the specific content of the ATPMI is not an effective means of increasing FTP, which is in stark contrast to the findings of Marko and Savickas (1991). The latter study, however, evidenced methodological limitations that may account for the differences in results—namely, a failure to control for baseline differences in future time perspective. It is therefore possible that our findings represent an uncovering—as a result of improved methodology—of an overestimation of previously found benefits of the TPMI.

Alternatively, it may be that the efficacy of the ATPMI is dependent on the specific characteristics of those receiving the intervention. For instance, Marko and Savickas (1991) utilized a sample whose age range extended into the adolescent years, with more than half of the participants possessing a mean age of 15.4. Our sample, however, consisted of individuals with a mean age of 18. This is an important difference as FTP components have been associated with age (D'Alessio, Guarino, De Pascalis, & Zimbardo, 2003), with some theory and research suggesting that adoption of FTP is largely solidified by about age 15 or 16. Furthermore, our sample was solely comprised of first-year university students, and previous research has demonstrated a positive association between components of FTP and education (D'Alessio et al., 2003). Taken together, this suggests that exclusive use of an older, university sample may indicate that our sample was comprised of individuals already elevated in FTP, thereby restricting the range over which individuals could improve with respect to FTP. Unfortunately, this cannot be confirmed at present, as attempts to compare the time variable means in the present study to those found in other studies using first-year undergraduate students, specifically, were fruitless given that such circumscribed means have not been reported. However, when examining elevated individuals in our sample who had significantly lower optimism scores than those who were not elevated in either depressive symptoms or suicidal ideation, there was a trend for the intervention group to increase more in optimism than the control group ( $p = .057$ ). Similarly, examination of the elevated sample who had lower (but not significantly lower) baseline scores in future connectedness revealed that those in the intervention group evidenced significantly greater increases in FTPS connectedness than those in the control group ( $p$

= .040). These results may in fact suggest that the ATPMI is more effective for those low in FTP, or at least, the optimism component of FTP.

As components of FTP are thought to be dispositional characteristics that are stable across time, it may also be that an intervention that is considerably longer than 4 hours is necessitated in order to effect greater changes in FTP. Although the intervention made use of exercises aimed at fostering behavioural implementation, perhaps the largely didactic nature of the intervention—unaccompanied by important ingredients for the promotion of change—was also insufficient. According to the Behavioural Influence Stairway Model (Vecchi, 2009), four stages need to be followed in proper succession in order to effectively promote change in distressed individuals. These include active listening to the views and unique stories of individuals in crises, followed by the provision of empathy, then the development of rapport (Vecchi, 2009). As the ATPMI did not incorporate such strategies, it is possible that a lack of readiness to accept the suggestions and ideas of the experimenter impeded the occurrence of significant changes to FTP. Additionally, homework assignments used to increase the likelihood of learned concepts being translated into behavioural implementation in the day-to-day lives of participants may have allowed participants to more concretely experience the benefits of FTP. This, in turn, may have led to greater increases in FTP by triggering and reinforcing changes to one's thinking and attitudes about the future, and enhancements to the perceived value and motivational influence of the future.

Alternatively, it is possible that the benefits of the ATPMI manifest over longer periods of time than adequately explored in this study. For instance, a history of positive outcomes have been found to be pivotal to the development of dispositional optimism (Ryback, 1970). This, coupled with the notion that FTP leads to positive outcomes by way of enhancing one's architectural approach to the future, would suggest that greater changes to optimism would only manifest with continued adoption of FTP principles, and in turn, prolonged experiences with positive outcomes.

Finally, the lack of positive findings with respect to FTP may be due to the specific measures used in this study. This notion is buttressed by the fact that research in the area of FTP is replete with conflicting findings, with several authors attributing such unsettled diversity to a lack of consensus on

how FTP should be defined and an ensuing lack of cross-study consistency in how FTP is measured (Gjesme, 1983; Greaves, 1971). Additionally, although efforts were made to align this study's chosen measure with our conceptualization of FTP, not all measures directly mapped onto and captured FTP as targeted by the intervention, thereby limiting opportunities for the measurement of potential effects. For instance, the FTPS value scale, which measures valuing of the future and future goals, contains items such as "What happens in the long run is more important than how one feels right now" and "The most important thing in life is how one feels in the long run." Although the overarching intention of the scale captures a fundamental and essential target of the ATPMI, its particular items imply that valuing of the future cannot and should not co-exist with valuing of the present. In other words, such items communicate the idea that the present should be sacrificed for the future. Although a mutually exclusive valuing of the present and future would be beneficial at a time when one is seriously considering suicide, such items might imply, particularly to subclinical individuals, an undervaluing of present psychological distress. Although the intervention aimed to increase valuing of the future, nowhere in the intervention was it communicated that how one feels in the present is unimportant. It thus follows that participants experiencing psychological distress would not be expected to endorse such items, regardless of having received the ATPMI. Similarly, items on the future value subscale also communicated a positioning of long-term goals against short-term goals, while the ATPMI linked these two temporal goals, specifying that short-term goals are a necessary step in achieving long-term goals. Moreover, a final concern with our chosen measures is that given that they were only very recently developed, sufficient empirical confirmation of their factor structure, psychometric properties, and sensitivity to change in clinical trials has yet to be provided, with the exception of the LOT-R used to measure dispositional optimism. It is thus not certain whether our findings would hold using alternative measures of FTP, which could potentially be assessed in subsequent studies.

### *Suicidal Ideation*

Shneidman has argued that successful reduction of psychache should result in corresponding reductions in suicidality. Similarly, research has found that changes in both psychache and hopelessness

predict acute changes in suicidal ideation (Flamenbaum, 2009). At first glance, it is thus surprising that relative to the control group, the intervention group did not evidence significant reductions in suicidal ideation manifestations at 1 month, concurrent with evidenced reductions in hopelessness and psychache. On the other hand, our findings are in line with other research demonstrating superior effects of singular-focus therapies on suicide predictors, occurring in the absence of concomitant superior benefits in suicidal ideation (Lerner & Clum, 1990). One possible reason is that sole administration of the ATPMI did not yield large enough changes in psychache and hopelessness for corresponding changes in suicidal ideation to transpire. Thus, it is possible that the ATPMI will effect significant changes in suicidality only when used in conjunction with clinical therapies, as a function of exerting additive effects on pre-eminent suicide predictors. As the current work was intended to serve as a preliminary study, evaluation of this hypothesis is, in fact, consistent with our ultimate empirical goal.

There are additional reasons that the ATPMI may need to be used in conjunction with other therapies in order to effect changes to suicidality. The ATPMI focuses on only one potential direct or indirect contributor to suicidal thoughts and behaviour, thereby failing to address the complex host of interpersonal, social, affective, and cognitive factors fuelling an individual's suicidality (Huey et al., 2004). Secondly, the experience of suicidal ideation and its antecedent or contributing circumstances were not directly discussed in ATPMI sessions, and several authors have argued that any intervention with the ultimate intention of reducing suicidality needs to directly focus on some facet of suicidality (Tarrier, Taylor, & Gooding, 2008).

The ATPMI may also have not been effective for suicidal ideation due to other structural and content features. Firstly, its brief design may have been of insufficient duration to affect change to such a complex intrapersonal experience. Another potential inadequacy of the ATPMI's content may have been its predominant focus on the future. Although conflicting, research has shown suicidal individuals to demonstrate a maladaptive approach to the present and past, as well as the future (Greaves, 1971; Yufit & Benzie, 1973). Therefore, perhaps efforts to instill what Boniwell and Zimbardo (2004) call a Balanced Time Perspective may have been effective in reducing suicidal ideation. Such a perspective entails

positive and pleasurable views of one's past, a lack of negative and aversive attitudes toward the past, an ability to live in and for the moment, the pursuit of future goals and rewards and consideration of future consequences, and finally, a lack of belief in the notion that one is helpless in controlling life's outcomes. Persons with a balanced time perspective are able to harmoniously and flexibly engage the past, present, and future, depending on the demands and needs at hand (Drake, Duncan, Sutherland, Abernethy, Henry, 2008). Although strategies to utilize and interpret negative past experiences in positive ways were employed in the ATPMI, it is conceivable that individuals exhibiting suicidal ideation may benefit from a time perspective intervention that devotes greater attention to the reconstruction of past evaluations and the fostering of a harmonious balance between future pursuits and present enjoyment.

An equally viable explanation and important comment regarding our findings is that in spite of our attempts to recruit participants identified as suicide ideators in the prescreen, only 38% of participants were ideators at the time of the baseline assessment. It is therefore possible that the power of the test of changes in suicidal ideation was reduced, owing to restricted range at the lower end of suicide ideation scores. Future research would be strengthened by examining the efficacy of the ATPMI in a larger sample of suicide ideators in order to provide a more valid and powerful evaluation of the potential therapeutic relationship between the ATPMI and suicide ideation.

Some research has suggested that suicide ideators should be analyzed as distinct groups, delineated on the basis of severity (Laghi, Baiocco, D'Alessio, & Gurrieri, 2009). Research by Laghi et al. (2009) found that nonideators, moderate ideators, and severe ideators were distinguishable from one another on the basis of a different host of factors. For instance, severe ideators were most differentiated from nonideators on the basis of self-esteem, psychopathological symptoms, negative views of the past, and a nihilistic approach to the present (Laghi et al.). Conversely, severe ideators were differentiated from moderate ideators on the basis of a 'hedonistic present' orientation characterized by a predominant penchant for present enjoyment and pleasure, and diminished future orientation towards planning for and achieving future goals (Laghi et al.). These findings might suggest that the ATPMI may exert different effects as a function of ideation severity, with demarcated relevance for those exhibiting severe suicidal

ideation. In addition to further buttressing the importance of examining the ATPMI in a sample with a more expanded range of suicidal ideation, the work of Laghi et al. also suggests that future research may benefit from using alternative measures of suicidal ideation that permit the categorization of ideation severity.

It is also possible that benefits of the ATPMI would be realized for manifestations of suicidality other than suicide ideation. Brown, Have, Henriques, Xie, Hollander, and Beck (2005), for example, found a cognitive behaviour therapy program to result in significantly greater reductions than a control condition in depression, hopelessness, and suicide attempts, but not suicidal ideation. Although not directly comparable to this study given the use of a clinical therapy, it does support the hypothesis that interventions may exert different effects, depending on the suicidal outcome examined. It is plausible that while the ATPMI may not prevent thinking about suicide in the context of a host of contributing factors, it may halt or mitigate the progression from predisposing factors and suicidal ideation, to suicide attempts and completions. If suicide is a decision arising from a constricted focus on present pain and circumstances (Lennings, 1994; Shneidman, 1986), enhancing the motivational influence of the future and a governing consideration of the future and future outcomes may serve as an impediment to the acting out of suicidal thoughts. In other words, although thoughts of suicide may remain, one may be less likely to act out on such thoughts if the future is given greater consideration and weight. A reduction in hopeless future expectations may also negate perceptions that the loss of a future, through suicide, would represent a minimal sacrifice. Finally, enhancing the perceived controllability of the future and fostering a planful approach to the shaping of one's future may present the future as a viable means of escaping the present, thus limiting perceptions that suicide is the only available option. It would therefore be interesting for future research to disaggregate the effects of the ATPMI into influences on the transition from risk factors and suicidal ideation to attempted and completed suicides.

Finally, the intervention may have failed to address a potential mediator of ATPMI effects—self-efficacy, which has been found to be related to both suicide and future time perspective. Self-efficacy may be defined as personal beliefs in one's capability to engender particular outcomes (Bandura, 1977).

Findings that individuals with high self-efficacy levels report higher levels of future orientation have implicated self-efficacy as an important contributor to each component of FTP (Kerpelman & Mosher, 2004; McCabe & Barnett, 2000; Trommsdorff, 1983). Individuals with elevated depressive symptoms or suicidality, on the other hand, have been found to have low levels of self-efficacy (Stewart et al., 2005). Additionally, both theory and research have identified judgments of self-efficacy as a pivotal mechanism of therapeutic change (Bandura, 1977; Kavanagh & Wilson, 1989). In fact, a meta-analysis by Hyde, Hankins, Deale, and Marteau (2008) revealed that “when no significant effect of intervention on self-efficacy is found, no significant behaviour change is reported either” (p. 613). Taken together, it is possible that the ATPMI will only affect suicidal ideation when accompanied by efforts to foster beliefs that one can perform the behaviours necessary to achieve desired future visions. If one does not perceive a positive future and distal goals as achievable due to perceived self-inadequacies, expectations will remain stagnant, the motivational influence of FTP will be minimized, and behavioural enactment of FTP will not occur. This may reduce opportunities for potentially accompanying effects on suicidal ideation to be realized. Therefore, especially for use in a subclinical or clinical sample comprised of individuals who are likely to have lowered self-efficacy beliefs, strategies aimed at building one’s self-efficacy may represent an integral addition to the ATPMI.

### *Limitations*

Although this study presents some informative findings, a number of study limitations must be acknowledged. One such limitation is that, for several reasons, it is not possible to rule out the effects of demand characteristics, which may have influenced the behaviours of participants, resulting in attempts to either confirm or disconfirm the study’s hypotheses. Firstly, partly in efforts to align the study design with that of the original study in which efficacy of the TPMI was demonstrated, the ATPMI condition was compared to a no-intervention rather than placebo intervention control condition, the latter of which would have aided in disentangling experimental artefact from the presence or absence of intervention effects. Secondly, although efforts were used to conceal the experimental hypotheses through deception by omission, it is possible that the hypothesis was made discernible by the nature of the intervention

itself. Both the content and didactic character of the intervention would unmistakably convey the wishes, expectations, and viewpoints of the experimenter (Kanter, Kohlenberg, & Loftus, 2004). Although an intervention rationale was not provided, application of the intervention itself likely made it effortless for participants to detect that the purpose of the ‘group meetings’ was, at a minimum, to encourage participants to think more about the future, increase their valuing of the future, and view the future in a more positive way. Further contributing to the possibility of demand characteristics was the use of a pre-test, post-test design in the context of an intervention. As Orne (1962b) observed with respect to this design, “even the dullest college student is aware that some change is expected” (p. 779, as cited in Kanter et al., 2002), and although the intervention may not have been perceived as directly related to the assessments, it would not be difficult to form a conceptual link between the two. However, this issue may be rendered less pertinent given that this study did include a control group who also may have thought, although inaccurately, that the purpose of the study was to look at change in these variables over time. Furthermore, in psychotherapy, demand characteristics have been described as part of a group of ‘common factors’ contributing to favourable outcomes. Some have even suggested that the adoption of specific therapeutic models initiates the occurrence of at least some amount of influence and persuasion (Kanter et al.). Although the ATPMI is not a form of psychotherapy, it does share the aim of promoting an enduring influence on thoughts and behaviours, therefore rendering its infusion with demand characteristics unavoidable, and even somewhat acceptable. Lastly, we do have data, although minimal, to suggest that demand characteristics alone cannot account for our psychache and hopelessness findings. Specifically, when asked at 6 months whether the intervention had a positive impact on their lives, 44.4% of participants responded yes, while 38.9% responded somewhat. Nonetheless, future research would benefit from comparing the ATPMI to both a no-intervention control group and placebo control condition, as well as incorporating the use of a post-test manipulation check to gauge whether participants did in fact correctly infer the purpose of the study.

An additional limitation around the use of a no-treatment rather than attention placebo control group is that it is not possible to establish the construct validity of the intervention. That is, effects found

for psychache and hopelessness may be due to common factors attached to any form of intervention, rather than the specific content of the ATPMI. These may include attention from intervention administrators and other group members, a sense of belonging to and being supported by a group, or the simple attending of sessions. It is thus important for future research to attempt to replicate our findings using an attention placebo control condition to uncover whether the ATPMI is, in fact, composed of unique therapeutic ingredients.

There may also exist potential limitations to the use of FTP interventions as an adaptive tool for mental health. Orientation to the future may create anxiety (Drake, Duncan, Sutherland, Abernethy, & Henry, 2008) if not anchored by a more clear and dense vision of the future, as targeted by the APTMI (Savickas, 1991). It is thus important to not only increase one's emphasis on the future, but to accompany that emphasis with activities that aid the individual in envisioning their place in the future and in decreasing perceptions of abstraction with respect to their perceived future, as in the ATPMI. Additionally, the intervention's emphasis on creating one's future through the pursuit of goals may also create anxiety (Shipp, Edwards, & Lambert, 2009) and worries that one will not achieve the future one is trying to shape. This, however, is precisely why attempts to foster planning skills were incorporated into the intervention and why this author added an activity targeting some of the common thoughts that serve as a link between goal-striving and anxiety. Even so, the ATPMI could be improved by further alleviating this source of anxiety by, for example, incorporating strategies aimed at enhancing one's self-efficacy. It could also be argued that over time, if goals are not met successfully, this may serve to reinforce and confirm the veracity of one's pre-intervention hopeless expectations, thereby re-igniting one's hopelessness regarding the future. With respect to psychache, unsuccessful goal attainment may cause the individual to feel that efforts to build more positive outcomes are futile, thus increasing perceptions of being trapped within one's present psychological pain. When modifying the TPMI, this was predicted as a potential negative long-term outcome, which is why efforts were made to foster a realistic, flexible perspective with respect to future expectations. A final potential hindrance to the efficacy of the ATPMI may be its incorporation of activities attempting to foster a positive vision of one's future. It is possible

that this may create a marked juxtaposition between the present and future, thereby highlighting the negativity of one's present situation and enlarging the perceived gap between one's existing and desired situation and circumstances. This, in turn, may strengthen negative psychological responses to one's present situation, in the form of increased psychache, hopelessness, depression, and suicidality. Other research, however, has found exercises aimed at creating a positive vision of the future to be effective in reducing depressive symptoms (Shapira & Mongrain, 2010). Similarly, the current study does provide preliminary support for the use of the ATPMI for psychache and hopelessness, although the exact components of the intervention which effected positive changes to these outcomes are unknown. Therefore, in addition to providing further support for use of the ATPMI, it is important that future research attempt to determine which intervention activities are beneficial for specific outcome variables.

An additional limitation is that the results found in this study with respect to psychache and hopelessness were, although statistically significant, not necessarily clinically significant. Specifically, although individuals in the ATPMI group experienced significant changes in psychache and hopelessness 1 month post-test, this may have failed to translate into personally meaningful and clinically important change. This is particularly pertinent given that changes in psychache and hopelessness occurred without corresponding changes in depressive symptoms or suicidal ideation. The goal of the study, however, was to serve as a preliminary, feasibility study in order to demonstrate that the intervention activities were not only practical in terms of amount of effort required, but also to determine whether the intervention could effect some degree of positive change at a small-scale study level. This is indeed consistent with our findings on psychache and hopelessness. Moreover, qualitative data on the positive impact of the ATPMI mentioned above may suggest that the intervention did in fact serve at least somewhat of a meaningful function in the lives of participants.

Another limitation is that study findings may not generalize to other manifestations of suicidality not assessed in this study, including suicide attempts and completions. Significant differences have been found between suicide ideators and attempters (e.g., Rudd, Joiner, & Rajab, 1996), suggesting that they may be different groups presenting a different constellation of contributing factors. It is thus possible, as

previously stated, that the ATPMI may be more pertinent for the behavioural, rather than cognitive, manifestations of suicidality. An additional concern regarding the use of suicide ideation as a proxy for suicide stems from findings that the suicidal thoughts of most individuals do not escalate into suicidal acts (e.g., Kessler, Borges, & Walters 1999), and that some individuals who have attempted suicide do not appear to have had preceding suicidal ideation (e.g., Waern, Beskow, Runeson, & Skoog, 1999) or suicidal thoughts of greater severity (Beck, Brown, & Steer, 1997). However, ample research has found that suicidal ideation is a strong, although not invariable, predictor of suicide attempts and completions (e.g., Beck, Brown, & Steer, 1989; Brown, Beck, Steer, & Grisham, 2000). It is also, in itself, a distressing experience representing an important mental health issue (Tarrier, Taylor, & Gooding, 2008). Taken together, these points support the viability of SI as a target of early, preventative interventions, although assessing the efficacy of the ATPMI in preventing suicidal attempts and completions remains an important empirical goal.

Another limitation relates to the high rate of attrition (55.43%) that occurred over 6 months. This may be due to decreased motivation to complete the third assessment, given that monetary compensation was offered in lieu of course credits. Also, the 6 month assessment occurred well after the academic year had ended, potentially resulting in less frequent use of their school email address, which was used to contact participants.

Finally, this study cannot escape the criticism that our sample was restricted to individuals that were largely Canadian, Caucasian, female, and highly educated, thus limiting the extension of our findings to the general population. The lack of variability within such demographic factors in our sample also impeded a statistical examination of the effects of these factors on responses to the ATPMI. With respect to gender, some studies have found males to be more future-oriented than females (e.g., Trommsdorff, 1983), while others have found that males are more present-oriented than females (e.g., Zimbardo et al., 1997), and still other studies have failed to find significant gender differences in time perspective. Although the relationship between gender and time perspective is unclear, this does not negate the possibility that our largely female sample may have responded to the intervention in distinctive

ways. Several studies have also found cultural and ethnic differences in time perspective and aspects of FTP (e.g., Ji, Guo, Zhang, & Messervey, 2009; Zimbardo & Boyd, 1999). It is thus possible that the premises of the intervention may be more or less palpable or well-received as a function of cultural or ethnic background. Furthermore, the concepts and activities of the ATPMI may have been more or less palatable for individuals of different age or educational background, as mentioned previously. The high incidence of suicidal thoughts and other forms of suicidal activity in undergraduate populations (Westefeld et al., 2005), however, make this an important group for assessing the effectiveness of an intervention with proposed relevance for suicidality. Lastly, participants who did not complete the 1 month assessment were more depressed and had higher levels of psychache at baseline, thus limiting the generalizability of our results to those in greater psychological distress. Evidently, it is important for the efficacy of this intervention to be explored in future research utilizing a more diversified sample.

#### *Future Research*

There exist a number of avenues for future research, in addition to those already discussed. It is especially important to investigate the mechanisms by which the ATPMI reduces psychache and hopelessness in order to further understand the use of ATPMI as a tool with relevance for mental health. Similarly, the intervention is comprised of several different activities, and it is unclear how necessary or contributive each activity is for the reduction of psychache and hopelessness. Although the intervention is already brief, isolating the most effective components of the ATPMI will facilitate optimal and efficient utilization of limited resources.

An additional area of future exploration could be an examination of different outcome measures with known associations with both FTP and suicidality, in order to further delineate the range of benefits that the ATPMI may impart. For instance, the ATPMI may effect positive change in such risk-taking behaviours as drug-taking, which in turn, may decrease associated suicidality.

It is also important to determine how to maximize the effectiveness of the ATPMI by investigating various methodological alterations. Perhaps increasing the duration of each intervention phase may increase the impact of each exercise, resulting in more clinically and personally meaningful

change. Comparisons of an individual and group format may also be illuminative; it is possible that an individual format may allow for a more personalized and flexible application of the ATPMI that is tailored to one's individual approach to time and personal concerns regarding the future. Furthermore, when commenting on the exercises found to be most or least beneficial, two participants remarked that yielded benefits were temporary, after which they could not remember anything from the intervention. The development and testing of maintenance strategies is thus critical to augmenting the ATPMI, and is, indeed, an integral component of any efforts to promote enduring cognitive, emotional, or behavioural change.

## **Chapter 6**

### **Summary and Conclusions**

To conclude, a 4-week, time perspective modification intervention was found, over 1 month, to reduce levels of psychache and hopelessness in an undergraduate sample, many of whom had elevated depressive symptoms, suicidal ideation, or both. These findings are novel in that it suggests that pre-eminent predictors of suicidality can be targeted through a brief intervention aimed at cultivating an FTP. Contrary to expectations, however, the ATPMI was not found to yield increases in FTP and reductions in depressive symptoms and suicidal ideation. Additional research is needed to further understand the relationship between the ATPMI and suicidality using alternative methodologies and outcome measures.

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**Appendix A**  
**Description of the MTPMI**

The first session comprises the Orientation Phase, which centres on inducing or increasing orientation to the future, optimism regarding one's personal future, and recognitions of the importance of one's future.

The first session began with an introduction outlining a general purpose of the group meetings—discussing the positive and negative ways in which we might think about the past, present, and future and how these can affect our life goals, life paths, and the decisions that we make.

A brief 'ice-breaker' activity was added to aid in minimizing potential social discomfort initiated by the group format. This included the following:

Tell us your name, where you're from, favourite hobby, and pick one of the following questions written out on the board: If there was one thing you would want someone to know about you, what would it be?; who is the most important person in your life?; what is your biggest fear?

The first activity was to administer The Circles Test (Cottle, 1967, as cited in Marko & Savickas, 1998) and discuss the ensuing results. The specific directions of the Circles Test are as follows:

Think of the past, present, and future as being in the shape of circles. Now arrange these circles in any way that best shows how you feel the past, present, and future are related. You may use different size circles to show how you feel or think about the past, present, and future.. When you have finished, label each circle to show which one is in the past, which one is in the present and which one is the future" (Cottle, 1967). Then, think of three words to describe how you feel about your past, your present, and your future", and then write them next to the corresponding circles.

Discussion is then guided by the following prompts: (1) What were you thinking about as you drew the circles? (2) What do their relative sizes mean to you? (Marko & Savickas, 1998, p. 112). Reinforce any statements that indicate that the future is important or that they have positive feelings about their futures.

Participants are then asked to describe a recent choice they had made, positive or negative, and to identify the time zone they focused on while making that decision (Marko & Savickas, 1998). This author created a 'formula' for engaging discussion about each type of decision, considering the positivity or negativity of the decision for each time domain. Each discussion attempted to convey that considering the future in various forms when making decisions (e.g., Focusing on a future that is not a repetition of the past, focusing on the future benefits of a decision, etc.) can lead to positive outcomes and the avoidance

of negative outcomes. Formulaic responses that were not brought up by participants' presented decisions were then discussed, where the administrator would offer an example to stimulate the discussion.

Another addition to the intervention was to summarize important points discussed, as follows: considering the future when making decisions often helps us to make the best choices with the best, longest-lasting outcomes; thinking *only* about the present and how a decision will affect one in the present can often fail to lead to good choices; controllability of the future can be enhanced by considering it when making decisions in the present; and finally, a focus on a negative past can be replaced by a focus on making decisions in the present that will render the future a better and different place than one's past (in other words, by believing that one's future will inevitably repeat the past, one fails to realize that it is possible to change one's life course).

The next activity involved answering the following question, in written format: 'How [do] you think your future adult life will be different from your life today?' (Savickas, 1991). Shared responses were then discussed, where perceived positive change was reinforced, and perceived negative change or negative continuation was discussed with the idea that although such a perception is a common response to hardship, the future has yet to occur and can therefore be moulded in a more positive way.

The final added activity was adapted from the Hall and Fong's (2003) time perspective intervention for physical activity, conducted in effort to contrast the types of decisions that can be made when considering short-term and long-term benefits and consequences. This proceeded as follows:

- (a) Group discussion to complete chart of short-term and long-term benefits and consequences of exercise
- (b) Ask the following question: "Looking at your charts, & covering the future side of your chart with your hand so that you can only see the present, what decision do you think you'd make if you focused only on the present?" [someone answers they would decide not to exercise]
- (c) Ask the question: "And why do you think that is?" [someone says because when considering only the short-term, the costs of exercising outweigh the benefits]

- (d) Ask the question: “Now cover the present side. What would happen if you focused on the future? Why?” [someone answers they would choose to exercise because benefits of exercising outweigh costs]
- (e) Comment on how often times the benefits of an activity only become known when focusing on the future; if one focuses only on the present, all one can see are the immediate costs, thus preventing one from exercising.
- (f) Ask the following question: “And which are longer-lasting? The costs of exercising or the *benefits* of exercising?”
- (g) Summarize the point that gratification felt and benefits experienced by avoiding the costs of exercising would be momentary, while the gratification and benefits yielded when putting up with momentary costs would last much longer.
- (h) Summarize the point that for many beneficial activities, the costs outweigh the benefits if one focuses only on the present. However, if one thinks more of the future, the benefits outweigh the costs.

The following question applied to an example was then offered as a more efficient way of conducting a similar cost-benefit, present-future analysis: “What would you rather feel? [momentary joy of present benefit or longer-lasting joy of future benefit] [the momentary pain/inconvenience of present costs or the long-lasting pain/inconvenience of future costs].

## Session 2

The goals of the second phase, the Differentiation Phase, allow for the future to feel meaningful. By aiding individuals in populating their near and distant futures with many expected events, both the felt existence of the future and the envisioning of their place in the future are able to transpire (Marko & Savickas, 1998). This, in turn, establishes a context for setting, planning, and preparing for personal future goals. Specifically, the following exercises are completed to accomplish the goals of this phase:

- (a) Make a list of responses to two questions: “Who will you be?” and “What will you do?” (Kastenbaum, 1961). In an attempt to promote positive thinking, additions to this exercises included a

specification that responses to these questions would be made in reference to one's best possible future selves, which are individualized representations of goals and imaginable positive futures (King, 2001; Markus & Nurius, 1986). Similar exercises have been found to result in significant increases in subjective well-being, as described earlier (King, 2001). Also added to this exercise was a brief comment on how, with respect to changes that are within one's control, the completion of this exercise indicates an ability to recognize potential areas for growth, and therefore, the possession of the self-awareness and self-insight necessary for the creation of growth and change.

(b) list 10 events that might happen to them in the future and the age at which they might occur (Wallace, 1956). In light of the sample used in this study, however, participants were asked to only list positive events so as to divert their likely attention away from the negative. Also, so as not to incite feelings of relative inadequacy or hopelessness, participants were only asked to list as many positive events as they could, rather than 10 specifically.

(c) Explain and discuss why future differentiation is important (i.e., it makes the future feel more like a real place as opposed to a vague and distant time; it provides hope and motivation).

(d) Savickas (1991) specified that an explanation should be given as to why future differentiation is important in career planning. Although career planning was not the focus of this study, this activity was retained due to its relevance to the common concerns or focal points of undergraduate students. We opted to adopt a different approach, however, that was more conducive to discussion: First, a description of two people with the same career goal yet different approaches to envisioning that goal (i.e., vague vs. expanded visions of what accomplishment of the goal will look like) was provided. This was then followed by the question "Who do you think will be more likely to reach their goals and why?" Potential answers included that a clear and detailed vision of the future is motivating, and enables one to plan and prepare. Another addition to this exercise was to discuss the importance of flexibility by recognizing that there are other ways to reach one's basic goal or a positive future, and that flexibility and openness to the idea that goals and paths may change may allow one to adjust one's plan accordingly. In light of the sample used in this study, we thus felt it was important to emphasize the idea that there is never just one

way of achieving a goal or positive future. We also felt it was important to qualify this discussion with a comment on how, as first year students, it is not expected that they will have ascertained their career goals, but that they can still differentiate their future in other ways.

(e) Complete their life lines from “birth” to “old age,” including their responses to the “What will you be and do” questions, and their list of positive future events. Mark a spot on the line to represent the age at which they will graduate university. Draw brackets on their life lines to demarcate the life stages of growth (birth–14), exploration (15–24), early adulthood (25–45), middle adulthood (46–64), and late adulthood (65 onward). Once they finished, the group brainstormed to generate common likely events that they may have omitted. A discussion was added by this author to address the foreseeable concern that while these events may happen, they seem very far away in time. Specifically, a visualization exercise was conducted where they were asked to picture themselves in their grade 8 or 9 classroom (to represent a 5 year time span), and to think of how far away their first semester at university seemed. This was done in efforts to promote a felt realization of the closeness in time between the present and the future. We also felt it was important to address the anticipated concern that someone with a negative view of self and future would have regarding their life lines. Specifically, we predicted that some participants would think that ‘Just because most people experience these good things, doesn’t mean I will. I will probably be the *one* person who doesn’t.’ Adopting cognitive behavioural techniques which are well-known to be effective for maladaptive thoughts, we had participants challenge this thought by thinking of things they would say to a best friend who believes they will be the one person who does not experience the positive events life commonly has to offer. Some strategies included, thinking of a past experience where they believed a similar thought, only to discover that it was not true; and putting things in perspective by helping their friend to realize that while (s)he may not experience all of these events, it is likely that many of them will be experienced and that other positive events will take their place. A last strategy was to relate the life stages outlined previously to the idea that the lives of many people follow a predictable path, with similar situations and enjoyments shared along the way. This notion of predictability was then extended to the positive events contained within their life lines.

(f) Teach clients that the lives of most people follow a predictable course through these stages....where during each life stage, people share similar situations, demands pressures, concerns, and problems. As an add-on, we also qualified this lesson with an acknowledgement that this notion of shared challenges and concerns common to each life-stage does not negate the reality that they may also have their own unique problems that others may never have to face. We also added a discussion on how the notion of predictability predicts the experiencing and conquering of life-stage challenges and the resultant progression to a new stage of life, as well as the advantages of being aware of this (e.g., knowing that negative experiences will not last forever; that it facilitates preparedness and thus, mastery of challenges when encountered). Another advantage was communicated by use of analogy: it was discussed that lows *and* highs can be expected in life, and that those low experiences are akin to books stored in one's library of life that can be used as a source of guidance for similar problems encountered later on, and also as a reminder of one's strength that can be applied to the tackling of novel problems.

(g) Using their lifelines as a guide, ask them to write a mini-autobiography, focused on a day four years in the future. Savickas (1991) recommends that counselors direct clients to examine their future autobiographies and to restate abstract or ambiguous goals in more achievable, controllable, and concrete terms. We predicted that time would not permit such an in-depth, facilitated examination. Thus, we felt that asking participants to write about some of the steps they would take to reach their goals described in their mini-autobiography would also serve to aid in reducing any abstraction and enhance perceptions of achievability and controllability. As they were writing, intervention administrators offered revisions and suggestions if necessary.

(h) At the conclusion of the session, participants were asked to complete a small homework assignment in which they described a negative experience that led to an 'I'll never' or 'I'll always' thought (i.e., a thought that imposed a perception of permanence onto negative experiences endured).

Sessions 3 and 4:

The final phase, the Integration Phase, enhances perceptions of future-related controllability by cultivating awareness of the interrelations among temporal domains of past, present, and future. This phase thus involves helping clients to practice planning skills and to construct pathways connecting present behaviours with future outcomes, as well as the reinforcement of positive attitudes toward planning. Specifically, it consisted of the following exercises in session 3:

(a) Prior to the session, submitted homework responses describing maladaptive future thoughts were analyzed for common themes. At the commencement of the session, these ‘common-theme thoughts’ were presented to the group, prompting group discussion to generate alternative thoughts that would combat the veracity of each theme of maladaptive thought. This was then concluded with a comment on the importance of differentiating between belief and fact, and how while we typically and automatically enter into a defensive mode if someone were to say to one’s best friend that their future will permanently be infused with negativity and failure, we fail to do that when such accusations are coming from ourselves (Padesky, 2002).

(b) Added: Referring back to the circles test data, it was acknowledged that it is understandable that one may view the past as being isolated from the present, future, or both if one views the past as being unimportant or if negative past experiences have triggered a desire to forget one’s past. However, there are positive ways in which their pasts can be used in the present and future.

(c) “Help clients...to envision how the past overlaps with the present by identifying past events that continue to influence their present situations, choices, and concerns” (Savickas, 1991, p. 245). Clients listed ten past accomplishments that they did well and enjoyed doing (\*Note: participants were only asked to list as many accomplishments as they could, so as to minimize the ignition of feelings of relative inferiority or inadequacy). Given that it was expected that our sample would have difficulty bypassing their focus on negativity in order to complete this exercise, a list of strengths were written on the board to aid their retrieval of past accomplishments. Participants were then asked to list the needs met and skills used for each accomplishment, and subsequently, determine if any patterns of needs and skills arose.

(d) “Counselors may reinforce clients’ newly articulated sense of identify by relating it to the present and future. The pattern can be related to the present by asking clients to give examples of things they have done during the current week that exemplify their continuing pattern” (Savickas, 1991, p. 245). In light of the downward effect poor mental health functioning may have on one’s current pursuit of goals and accomplishments, the following amendments/additions were made: (1) examples were generated in reference to a more recent time, rather than the current week, and (2) it was acknowledged that if they are having difficulty generating recent examples, that is fine because the next activity will focus on how they can use their patterns of needs and skills in the future.

(e) To relate their patterns to the future, Savickas (1991) states that the importance of selecting an occupation that manifests their demonstrated pattern should be explained. In order to make this learning more interactive and broad, however, the group was asked to brainstorm on how each group member could use their patterns not only in their future occupations, but also in other aspects of day-to-day living such as extra-curricular activities and volunteer work. This way, they can provide themselves with many opportunities to experience positivity and success.

(f) “Explain that people control their futures through actions in the time zone where the present and future circles overlap” (Savickas, 1991, p. 245). Discussions on the following topics were added: (1) While we cannot control everything, we *can* shape a considerable portion of our futures. (\*Note: the concept of ‘controlling’ one’s future was replaced with the concept of ‘shaping’ one’s future, as it was expected to be more believable to individuals who may feel helpless with respect to their futures); (2) While the notion of shaping their futures may be intimidating—possibly due to a lack of self-efficacy—examples and specific lines of questioning were provided to facilitate awareness of the fact that they have already demonstrated an ability to shape their futures in positive ways; (3) Lastly, it was discussed that we have all made mistakes, thereby demonstrating an ability to shape our lives through negative decisions as well. This awareness that one can be the cause of *some* negative occurrences could

be used to facilitate an empowering awareness that one can also be the cause of some positive occurrences in one's future. While many negative things may happen that are genuinely beyond one's control, this discussion is limited to the kinds of mistakes that everyone makes that are largely under our control. It was stated that this discussion is not intended to encourage self-blaming. Instead, the group generated reasons why making mistakes can be positive (e.g., it is a necessary prerequisite for learning, growth and progression; it leads to an empowering realization that one has control or some of life's occurrences).

(g) An added exercise was to discuss ways in which the *negative* experiences of one's past can be used in a positive way. This was done through a 'positive reinterpretation' exercise with the rationale that some research has found that happy individuals are happy not necessarily because their lives are perfect without the occurrence of any negative or tragic events, but rather because they have learned to use skills (namely, positive reinterpretation) that allow them to respond to negative events in a more positive way. Participants were then asked to brainstorm on and write down the ways in which negative events of our past can be reinterpreted. They were then asked to apply, in writing, these strategies to a personal example. They were asked to keep their positive reinterpretation sheets and encouraged to refer to them in the future.

Positive reinterpretation is re-evaluating a negative situation in a positive way, and represents an emotion-focused strategy that targets the emotional consequence of a stressor, rather than the stressor itself (Cheshire, Barlow, & Powell, 2010). Emotion-focused strategies have been found to facilitate problem-focused coping by way of reducing the interference of negative, unproductive emotions (Folkman & Lazarus, 1985), although the adaptive nature of this strategy is currently debated (Wortman, 2004). It has also been found to be positively correlated with optimism (Scheier, Carver, & Bridges, 1994) and positive affect (Moskowitz, Folkman, Collette, & Vittinghoff, 1996), and negatively correlated with depressive symptoms and self-perceived stress (Cheshire et al., 2010). Additionally, a 'benefit-finding' writing exercise in which patients with cancer were asked to write about their positive thoughts and feelings with respect to having cancer has been found to result in advantages on health-related

outcomes (Stanton et al., 2002). This study, however, failed to find promising findings with respect to psychological outcomes (e.g., Stanton et al., 2002). In spite of the unclear psychological advantages of positive reinterpretation as a predominant strategy, we believed that the purpose of this exercise was to introduce positive reinterpretation as one way in which the negative experiences of the past can be used in a positive way.

In session 4, the integration phase was continued using the following exercises:

(a) To understand what constitutes a good plan, it was explained that a plan is a series of activities or steps that lead to a goal, and that to achieve the best results, it is best to have a plan where each step is contingent upon completing the previous step. An example was provided, after which participants were asked to create their own contingent plan for *any* life goal (not just a career goal, as indicated by Savickas, 1991). At each step, they were asked to write the positive outcome of completing that step as well as any negative outcomes that might occur. Once they finished, the intervention administrator checked their plans to revise if necessary. “Revision could include making a step more specific and detailed, adding steps to further differentiate the future, making the plan more comprehensive, and building in alternatives” (Savickas, 1991, p. 246).

(b) Tell clients how planning can increase the likelihood of attaining any future goal.

(c) As an added discussion, acknowledge the fact that things may not always go as planned, and therefore it is important to be flexible in *when* we achieve our goals (i.e. It may take multiple attempts before a goal is achieved) and also flexible with respect to outcomes.

(d) The following activity was also added to account for the fact that rather than failing to adopt a goal-oriented approach, individuals in our sample may do so, but in a maladaptive way. That is, they may be consumed by worries and anxieties surrounding the pursuit of goals, and by fears of not achieving the future they are trying to shape. Again using CBT techniques, “thought charts” were created to prospectively address common maladaptive thoughts that may occur as they try to pursue their goals (Padesky, 2002). These included, “I made a big mistake...therefore I’ll never reach my goal;” “I’m really struggling with one of the steps....therefore I can’t do this, I’m not good enough; and “My life is over if I

don't achieve my goal." For each thought, the group brainstormed to provide evidence for and against the maladaptive thought and generated a more adaptive and realistic thought that could serve as a healthier and more effective replacement.

(e) It was discussed that goal pursuits may be overwhelming, partly because we fail to focus on each step, one at a time. A visualization exercise was utilized where they envisioned themselves at the start of a 100m hurdle race. In one vision, they were asked to focus on the finish line and the succession of hurdles that stand in their way. In an alternative vision, they were asked to focus on just the first hurdle, blocking out all other hurdles from their focus. Participants' feelings and thoughts in response to each vision were contrasted and subsequently applied to the way we may approach the pursuit of goals, in order to illuminate the idea that focusing on one step at a time is one way to minimize the extent to which goal pursuits become overwhelming and stressful, and enhance perceptions of manageability.

(f) The last added activity was called "A letter from your future self" which was adapted from the Shapira and Mongrain (2010) study described earlier. This activity asks participants to write a letter from their future self who is in a more positive place, offering encouragement and advice on how to get there. The only alteration to this exercise was the addition of a visualization exercise, performed in efforts to provide positive, soothing images and to facilitate the ease with which participants could imagine a future self that is so different from their present self. Positive visualization is thought to provide an opportunity to experience a more positive and motivating mental representation of the future (Riskind & Mercer, 1996). Studies have shown that visualizing the completion of one's goals can lead to more effective goal pursuit and successful attainment (e.g., Pham & Taylor, 1999; Ruvolo & Markus, 1992).

(g) Participants were encouraged to use their letters, thought charts, and other discussed techniques whenever they encountered stress, negative thoughts or feelings in the future.

**Appendix B**  
**Intervention Session Materials**

## Meeting Evaluation Questionnaire

ID # : \_\_\_\_\_

Date: \_\_\_\_\_

Please circle the appropriate number to show how you feel about this meeting.

### **This meeting was:**

bad	1 2 3 4 5 6 7	good
difficult	1 2 3 4 5 6 7	easy
valuable	1 2 3 4 5 6 7	worthless
shallow	1 2 3 4 5 6 7	deep
relaxed	1 2 3 4 5 6 7	tense
unpleasant	1 2 3 4 5 6 7	pleasant
full	1 2 3 4 5 6 7	empty
weak	1 2 3 4 5 6 7	powerful
special	1 2 3 4 5 6 7	ordinary
rough	1 2 3 4 5 6 7	smooth
comfortable	1 2 3 4 5 6 7	uncomfortable

### **Right now I feel:**

happy	1 2 3 4 5 6 7	sad
angry	1 2 3 4 5 6 7	pleased
moving	1 2 3 4 5 6 7	still
uncertain	1 2 3 4 5 6 7	definite
calm	1 2 3 4 5 6 7	excited
confident	1 2 3 4 5 6 7	afraid
friendly	1 2 3 4 5 6 7	unfriendly
slow	1 2 3 4 5 6 7	fast
energetic	1 2 3 4 5 6 7	peaceful
quiet	1 2 3 4 5 6 7	aroused

Intervention Integrity Checklist (Sample from Session 1)

Administrator's Name: \_\_\_\_\_ Date: \_\_\_\_\_

*Directions:* The individual implementing this intervention is to complete this form immediately following session 1.

Intervention Components	Completed		Integrity	Comments
	Yes	No	(1-10*)	
Intro Confidentiality Non-judgmental environment Acknowledge notes Ice breaker				
Circles Test + 3 words				
Analyze decision according to formula				
Included missing decisions				
Summarized take-home points				
Work vs. Play				
How will future life be different				
Cost vs. benefits				
What would you rather feel				
Administer HW				
SEQ				

\*10 = high integrity;  
1 = low integrity

Adapted from: Brown-Chidsey, R., & Steege, M.W. (2005). Solution-focused psychoeducational reports. In Brown-Chidsey, R. (Ed.), *Assessment for intervention: A problem-solving approach* (pp. 267-290). New York: Guilford Press.

1) What went well?

2) What didn't go well? Any problems/surprises?

3) Who Attended/Didn't attend?

**Appendix C**  
**Materials**

## Recruitment Script – Intervention Participants

Hi,

My name is Jackie Chin and I am conducting a study, under the supervision of Dr. Ronald Holden, on the longitudinal relationship between an individual's orientation to time and psychological health.

Participant would involve the completion of a battery of measures at 3 time points, each of which would take approximately 30 minutes to complete. Both of these assessments would be conducted online.

Participation would also involve 4 weekly group meetings, each lasting approximately 60 minutes and concluding with a brief measure that will take less than 3 minutes to complete.

For your participation, you would be compensated with either 0.5 credits or \$10 for each assessment and 1 credit for attending each weekly meeting. Thus, you may receive up to 5 course credits for your participation.

You will also be asked to participate in an additional online assessment 6 months following the second assessment, for which you would be compensated with \$10.

If you have any questions or are interested in participating, please contact me at [8jc76@queensu.ca](mailto:8jc76@queensu.ca) or 613-533-2346.

Thank you for your time.

Sincerely,

Jackie Chin

M.Sc. Candidate, Queen's University

## Recruitment Script – Control Participants

Hi,

My name is Jackie Chin and I am conducting a study, under the supervision of Dr. Ronald Holden, on the longitudinal relationship between an individual's orientation to time and psychological health.

Participant would involve the completion of a battery of measures at 3 time points, each of which would take approximately 30 minutes to complete. Both of these assessments would be conducted online.

For your participation, you would be compensated with either 0.5 credits or \$10 for each assessment.

Thus, you may receive up to 1 course credit for your participation.

You will also be asked to participate in an additional online assessment 6 months following the second assessment, for which you would be compensated with \$10.

If you have any questions or are interested in participating, please contact me at [8jc76@queensu.ca](mailto:8jc76@queensu.ca) or 613-533-2346.

Thank you for your time.

Sincerely,

Jackie Chin

M.Sc. Candidate, Queen's University

Letter of Information – [Intervention Participants]

Time Orientation and Psychological Health

This research is being conducted by Jacqueline Chin under the supervision of Dr. Ronald R. Holden, in the Department of Psychology at Queen's University in Kingston, Ontario.

This research investigates the relationship between an individual's orientation to time and psychological well-being. The study will require 2 online assessments (1 mid-October and 1 in the beginning of December). Each assessment takes about 30 minutes to complete. Participation also involves 4 weekly meetings, each about 60 minutes and concluding with a brief measure taking less than 3 minutes. However, you will also be asked to be contacted for a 4th online assessment 6 months later, for which you will be compensated with \$10.

For your participation, you can be remunerated with up to 5 course credits (either \$10 or 1 credit for each meeting, and either 0.5 credits or \$10 for each assessment), depending on your choice. Should you withdraw from the study before completion, you will be provided with the specified compensation for your participation up to that point. Should you miss a meeting or assessment, you will not be compensated for that meeting or assessment.

Assessments will involve answering questions about sensitive and personal issues. Should you feel distressed at any time and would like to speak confidentially to someone about your thoughts and feelings, I am trained to assess the situation further under the supervision of Dr. Holden. I will also provide you with a list of appropriate free and fee-for-service resources, if necessary (i.e., Student Counselling centre, 613-533-2506; Hotel Dieu emergency (Psychiatry), 613-546-1240; Canadian Mental Health Association, 613-549-7027; Distress Center, 613-544-1771; 24-Hour Crisis Line, 613-544-4229).

Your participation at all times is voluntary and you may withdraw from the study at any time, without penalty or effect on your academic standing. While it would be greatly appreciated if you would answer all questionnaires, you are under no obligation to answer any questions that you find objectionable or that make you feel uncomfortable. Additionally, if you have supplied any data that you would like deleted, your request will be immediately granted.

All of your responses to the questionnaires will be kept confidential to the limits allowed by law. Given that this study takes place over several weeks, we do require your name and other contact information to

contact you about study details, compensation, and debriefing. To ensure confidentiality, your name and other identifying information will be kept separate from your responses to the questionnaires. Instead, you will be assigned an ID number to be used in place of names. The master list matching names to ID numbers will be kept apart from the data, will be stored in a secured area, and will only be available to the researcher in charge of contacting you. Consent forms will be kept separate from your data and contact information, and stored in a secured area. All questionnaire data will also be stored in a secured area to which only experimenters involved in the study will have access. For online assessments, data will be password-protected. Once publications from this study have been completed, all data and participant information will be destroyed.

All information gathered will be used for research purposes only. Any journal publications or presentations at scientific conferences that proceed from this study will be of general findings, and will not reveal personally identifying information.

Any questions about study participation may be directed to Jacqueline Chin at 613-533-2346 or 8jc76@queensu.ca, or Dr. Ronald R. Holden at 613-533-2879 or holdenr@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at chair.GREB@queensu.ca or 613-533-6081.

This study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen's policies.

We thank you for your willingness in participating in our research..

Sincerely,  
Jackie Chin

Letter of Information – [Control Participants]

Time Orientation and Psychological Health

This research is being conducted by Jacqueline Chin under the supervision of Dr. Ronald R. Holden, in the Department of Psychology at Queen's University in Kingston, Ontario.

This research investigates the relationship between an individual's orientation to time and psychological well-being. The study will require 2 online assessments (1 mid-October and 1 in the beginning of December). Each assessment takes about 30 minutes to complete. However, you will also be asked to be contacted for a 4th online assessment 6 months later, for which you will be compensated with \$10.

For your participation, you will receive a total of 1 credit (0.5 credits for each assessment). Alternatively, you may choose to substitute a \$10 payment for any one assessment. Should you withdraw from the study before completion, you will be provided with the specified compensation for your participation up to that point.

Assessments will involve answering questions about sensitive and personal issues. Should you feel distressed at any time and would like to speak confidentially to someone about your thoughts and feelings, I am trained to assess the situation further under the supervision of Dr. Holden. I will also provide you with a list of appropriate free and fee-for-service resources, if necessary (i.e., Student Counselling centre, 613-533-2506; Hotel Dieu emergency (Psychiatry), 613-546-1240; Canadian Mental Health Association, 613-549-7027; Distress Center, 613-544-1771; 24-Hour Crisis Line, 613-544-4229).

Your participation at all times is voluntary and you may withdraw from the study at any time, without penalty or effect on your academic standing. While it would be greatly appreciated if you would answer all questionnaires, you are under no obligation to answer any questions that you find objectionable or that make you feel uncomfortable. Additionally, if you have supplied any data that you would like deleted, your request will be immediately granted.

All of your responses to the questionnaires will be kept confidential to the limits allowed by law. Given that this study takes place over several weeks, we do require your name and other contact information to contact you about study details, remuneration, and debriefing. To ensure confidentiality, your name and other identifying information will be kept separate from your responses to the questionnaires. Instead, you will be assigned an ID number to be used in place of names. The master list matching names to ID numbers will be kept apart from the data, will be stored in a secured area, and will only be available to the

researcher in charge of contacting you. Consent forms will be kept separate from your data and contact information, and stored in a secured area. All questionnaire data will also be stored in a secured area to which only experimenters involved in the study will have access. For online assessments, data will be password-protected. Once publications from this study have been completed, all data and participant information will be destroyed.

All information gathered will be used for research purposes only. Any journal publications or presentations at scientific conferences that proceed from this study will be of general findings, and will not reveal personally identifying information.

Any questions about study participation may be directed to Jacqueline Chin at 613-533-2346 or [8jc76@queensu.ca](mailto:8jc76@queensu.ca), or Dr. Ronald R. Holden at 613-533-2879 or [holdenr@queensu.ca](mailto:holdenr@queensu.ca). Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at [chair.GREB@queensu.ca](mailto:chair.GREB@queensu.ca) or 613-533-6081.

This study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen's policies.

We thank you for your willingness in participating in our research.

Sincerely,

Jacqueline Chin

Consent Form – [Intervention participants]

1. I have read the Letter of Information and have had any questions answered to my satisfaction.
2. I understand that I will be participating in the study called Time Orientation and Psychological Health. I understand that this means that I will be asked to partake in 4 weekly group activity sessions and complete a number of questionnaires at 2 different time points, all of which will be online.
3. I understand that I may feel uncomfortable with some of the questions asked. I understand that my participation in this study is completely voluntary and that I may withdraw at any time, without penalty.
4. I understand that if my questionnaire responses indicate that I am at elevated risk for suicide, I will be contacted by Dr. Ronald R. Holden and, if necessary, encouraged and/or escorted to a hospital Emergency Department for immediate medical attention.
5. I understand that every effort will be made to protect my right to confidentiality, and that only experimenters in the Personality Laboratory will have access to the area in which data will be stored. The data may also be published in scientific journals or presented at scientific conferences, which will be of general findings and will never reveal personally identifying information.
6. I am aware that any questions about study participation may be directed to Jacqueline Chin at 613-533-2346 or 8jc76@queensu.ca, or Dr. Ronald R. Holden at 613-533-2879 or holdenr@queensu.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at chair.GREB@queensu.ca or 613-533-6081.
7. I am aware that this study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen’s policies.

**I have read the above statements and freely consent to participate in this research.**

- Yes
- No

Consent Form – [Control Participants]

1. I have read the Letter of Information and have had any questions answered to my satisfaction.
2. I understand that I will be participating in the study called Time Orientation and Psychological Health. I understand that this means that I will be asked to complete a number of questionnaires at 2 different time points, all of which will be online.
3. I understand that I may feel uncomfortable with some of the questions asked. I understand that my participation in this study is completely voluntary and that I may withdraw at any time, without penalty.
4. I understand that if my questionnaire responses indicate that I am at elevated risk for suicide, I will be contacted by Dr. Ronald R. Holden and, if necessary, encouraged and/or escorted to a hospital Emergency Department for immediate medical attention.
5. I understand that every effort will be made to protect my right to confidentiality, and that only experimenters in the Personality Laboratory will have access to the area in which data will be stored. The data may also be published in scientific journals or presented at scientific conferences, which will be of general findings and will never reveal personally identifying information.
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7. I am aware that this study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen’s policies.

**I have read the above statements and freely consent to participate in this research.**

- Yes
- No

## Questionnaire 1

### Beck Depression Inventory-II

This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the one statement in each group that best describes the way you have been feeling during the **past two weeks, including today**. Click on the dot beside the one statement you have picked. If several statements in the group seem to apply equally well, circle the highest option for that group. Be sure that you do not choose more than one statement for any group, including item 16 (Changes in Sleeping Pattern) or item 18 (Changes in Appetite).

1.

- I do not feel sad.
- I feel sad much of the time.
- I am sad all of the time.
- I am so sad or unhappy that I can't stand it.

2.

- I am not discouraged about the future.
- I feel more discouraged about the future than I used to be.
- I do not expect things to work out for me.
- I feel my future is hopeless and will only get worse.

3.

- I do not feel like a failure.
- I have failed more than I should have.
- As I look back, I see a lot of failures.
- I feel I am a total failure as a person.

4.

- I get as much pleasure as I ever did from the things I enjoy.
- I don't enjoy things as much as I used to.
- I get very little pleasure from the things I used to enjoy.
- I can't get any pleasure from the things I used to enjoy.

5.

- I don't feel particularly guilty.
- I feel guilty over many things I have done or should have done.
- I feel quite guilty most of the time.
- I feel guilty all of the time.

6.

- I don't feel like I am being punished.
- I feel I may be punished.
- I expect to be punished.
- I feel I am being punished.

7.

- I feel the same way about myself as ever.
- I have lost confidence in myself.
- I am disappointed in myself.
- I dislike myself.

8.

- I don't criticize or blame myself more than usual.
- I am more critical of myself than I used to be.
- I criticize myself for my faults.
- I blame myself for everything bad that happens.

9.

- I don't have any thoughts of killing myself.
- I have thoughts of killing myself, but I would not carry them out.
- I would like to kill myself.
- I would kill myself if I had the chance.

10.

- I don't cry any more than I used to.
- I cry more than I used to.
- I cry over every little thing.

o I feel like crying, but I can't.

11.

o I am no more restless or wound up than usual.

o I feel more restless or wound up than usual.

o I am so restless or agitated that it's hard to stay still.

o I am so restless or agitated that I have to keep moving or doing something.

12.

o I have not lost interest in other people or activities.

o I am less interested in other people or things than before.

o I have lost most of my interest in other people or things.

o It's hard to get interested in anything.

13.

o I make decisions about as well as ever.

o I find it more difficult to make decisions than usual.

o I have much greater difficulty in making decisions than I used to.

o I have trouble making any decisions.

14.

o I do not feel I am worthless.

o I don't consider myself as worthwhile and useful as I used to be.

o I feel more worthless as compared to other people.

o I feel utterly worthless.

15.

o I have as much energy as ever.

o I have less energy than I used to have.

o I don't have enough energy to do very much.

o I don't have enough energy to do anything.

16.

o I have not experienced any change in my sleeping pattern. 0

- o I sleep somewhat more than usual. 1
- o I sleep somewhat less than usual. 1
- o I sleep a lot more than usual. 2
- o I sleep a lot less than usual. 2
- o I sleep most of the day. 3
- o I wake up 1-2 hours early and can't get back to sleep. 3

17.

- o I am no more irritable than usual.
- o I am more irritable than usual.
- o I am much more irritable than usual.
- o I am irritable all the time.

18.

- o I have not experienced any changes in my appetite. 0
- o My appetite is somewhat less than usual 1
- o My appetite is somewhat greater than usual. 1
- o My appetite is much less than before. 2
- o My appetite is much greater than usual. 2
- o I have no appetite at all. 3
- o I crave food all the time 3

19.

- o I can concentrate as well as ever.
- o I can't concentrate as well as usual.
- o It's hard to keep my mind on anything for very long.
- o I find I can't concentrate on anything.

20.

- o I am no more tired or fatigued than usual.
- o I get more tired or fatigued more easily than usual.
- o I am too tired or fatigued to do a lot of the things I used to do.
- o I am too tired or fatigued to do most of the things I used to do.

21.

I have not noticed any recent change in my interest in sex.

I am less interested in sex than I used to be.

I am much less interested in sex now.

I have lost interest in sex completely.

## Questionnaire 2

### The Psychache Scale

The following statements refer to your psychological pain, NOT your physical pain. By checking the appropriate statement, please indicate how frequently each of the following occurs.

1. I feel psychological pain

Never  Sometimes  Often  Very Often  Always

2. I seem to ache inside

Never  Sometimes  Often  Very Often  Always

3. My psychological pain seems worse than any physical pain.

Never  Sometimes  Often  Very Often  Always

4. My pain makes me want to scream.

Never  Sometimes  Often  Very Often  Always

5. My pain makes my life seem very dark.

Never  Sometimes  Often  Very Often  Always

6. I can't understand why I suffer.

Never  Sometimes  Often  Very Often  Always

7. Psychologically, I feel terrible.

Never  Sometimes  Often  Very Often  Always

8. I hurt because I feel empty.

Never  Sometimes  Often  Very Often  Always

9. My soul aches

Never  Sometimes  Often  Very Often  Always

Please continue this inventory using the following scale:

10. I can't take my pain any more

Strongly Disagree  Disagree  Unsure  Agree  Strongly Agree

11. Because of my pain, my situation is impossible

Strongly Disagree  Disagree  Unsure  Agree  Strongly Agree

12. My pain is making me fall apart.

Strongly Disagree  Disagree  Unsure  Agree  Strongly Agree

13. My psychological pain affects everything I do.

Strongly Disagree  Disagree  Unsure  Agree  Strongly Agree

### Questionnaire 3

#### Beck Hopelessness Scale

Below you will find a series of statements that a person might use to describe himself/herself. Please read each statement carefully and decide whether or not it describes you. Then check your answer beside each statement. If you agree with a statement or decide it describes you, check TRUE. If you disagree with a statement or decide it does not describe you, check FALSE. Please try to answer every statement either true or false, even if you are not completely sure of your answer.

1. I look forward to the future with hope and enthusiasm.

- True
- False

2. I might as well give up because I can't make things better for myself.

- True
- False

3. When things are going badly, I am helped by knowing they can't stay that way forever.

- True
- False

4. I can't imagine what my life would be like in 10 years.

- True
- False

5. I have enough time to accomplish the things I most want to do.

- True
- False

6. In the future, I expect to succeed in what concerns me most.

- True
- False

7. My future seems dark to me.

- True
- False

8. I expect to get more of the good things in life than the average person.

- True
- False

9. I just don't get the breaks, and there's no reason to believe I will in the future.

- True
- False

10. My past experiences have prepared me well for my future.

- True
- False

11. All I can see ahead of me is unpleasantness rather than pleasantness.

- True
- False

12. I don't expect to get what I really want.

- True
- False

13. When I look ahead to the future, I expect I will be happier than I am now.

- True
- False

14. Things just won't work out the way I want them to.

- True
- False

15. I have great faith in the future.

- True
- False

16. I never get what I want so it's foolish to want anything.

- True
- False

17. It is very unlikely that I will get any real satisfaction in the future.

- True
- False

18. The future seems vague and uncertain to me.

- True
- False

19. I can look forward to more good times than bad times.

- True
- False

20. There's no use in really trying to get something I want because I probably won't get it.

- True
- False

## Questionnaire 4

### Life Orientation Test – Revised

Please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no "correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

- A = I agree a lot
- B = I agree a little
- C = I neither agree nor disagree
- D = I DISagree a little
- E = I DISagree a lot

1. In uncertain times, I usually expect the best.
2. It's easy for me to relax.
3. If something can go wrong for me, it will.
4. I'm always optimistic about my future.
5. I enjoy my friends a lot.
6. It's important for me to keep busy.
7. I hardly ever expect things to go my way.
8. I don't get upset too easily.
9. I rarely count on good things happening to me.
10. Overall, I expect more good things to happen to me than bad.

## Questionnaire 5

### Temporal Focus Scale

The following items ask you to describe how much think about your past, present, and future **in general**. Please answer each item by selecting any number from 1 (“Not at all”) to 7 (“Constantly”).

1. I think about things from my past.
2. I live my life in the present.
3. I think about what my future has in store.
4. I focus on what is currently happening in my life.
5. I focus on my future.
6. I replay memories of the past in my mind.
7. I imagine what tomorrow will bring for me.
8. My mind is on the here and now.
9. I reflect on what has happened in my life.
10. I think about where I am today.
11. I think back to my earlier days.
12. I think about times to come.

## Questionnaire 6

### Beck Scale for Suicide Ideation

Please carefully read the following 19 statements and, for each, check the most appropriate response for you.

1. How strong is your wish to live?

- Moderate to strong.
- Weak.
- None.

2. Do you have any wish to die?

- None.
- Some weak desire.
- Moderate to strong desire.

3. In considering your reasons for living and dying:

- the reasons for living outweigh the reasons for dying.
- the reasons for living equal the reasons for dying.
- the reasons for dying outweigh the reasons for living.

4. Do you have any desire to attempt to end your life?

- None.
- I have some weak desire.
- I have at least moderate desire.

5. If for any reason your life was endangered and you were in a position to intervene, would you:

- take the necessary action to save your life?
- leave the final result of life and death to chance?
- avoid any steps which could be taken to save your life?

6. For what duration have you had thoughts of taking your own life?

- If at all, they have been at the most brief, passing thoughts.

- o They have persisted longer than the occasional passing thought.
  - o They are continuously on my mind.
7. How frequently have you thought of taking your own life?
- o If at all, only on rare occasions.
  - o Fairly frequently.
  - o Quite often, almost all the time.
8. How do you feel about any thoughts of ending your life you might have?
- o I reject them.
  - o I am unsure about them.
  - o I accept them.
9. Do you feel you can control any thoughts of ending your life you might have?
- o I feel they are under my control.
  - o I am unsure that I control them.
  - o I have no sense of control over these wishes.
10. Do you feel deterred from taking action to end your life by certain inhibiting factors (e.g., family, religious beliefs) within it?
- o I would not attempt to end my life because of deterrents.
  - o I am moderately inhibited from ending my life by deterrents.
  - o I am unconcerned about any deterrent.
11. What reasons could you have for attempting to end your own life?
- o Only to get attention or revenge.
  - o To get attention and to escape my problems.
  - o To escape from my problems and solve them.
12. Have you ever contemplated ending your own life to the extent of making a plan or choosing a method with which to do so?
- o No, I have not considered it.
  - o Yes, but not to the extent of working out the details.
  - o Yes, I have considered and worked out a plan to do so.

13. What opportunity would you have to end your own life?
- o Very little, there is no available method or opportunity.
  - o Some, but getting an opportunity and acquiring a means to do so would take some effort.
  - o Considerable, an opportunity and means to do so are readily available.
  - o Considerable, although opportunity and means are not currently available, they would be in the future.
14. How capable could you feel in carrying out an attempt to end your life?
- o I would be too afraid, hesitant or incompetent.
  - o I would be unsure of my courage and competence.
  - o I would be quite sure of my courage and competence.
15. Do you anticipate that you will ever make an actual attempt to end your life?
- o No.
  - o I don't know; I am not quite sure.
  - o Yes
16. Have you ever made any preparation for any attempt to end your life?
- o No, none whatsoever.
  - o Some, but not complete preparation.
  - o Yes, complete preparation for an attempt.
17. Have you ever formulated a suicide note for yourself?
- o No.
  - o I thought about one but only started composing or writing it.
  - o Yes, I completed one.
18. Have you ever taken any actions (e.g., insurance, will) in anticipation of attempting to end your own life?
- o None at all.
  - o Some, I have thought about such action and made preliminary arrangements.
  - o Considerable, I have made a definite plan or completed such arrangements.

19. To what degree have you openly revealed any thoughts you might have of ending your life?

o I have revealed any ideas openly.

o I have held back on revealing any thoughts of this nature.

o I have kept them to myself or taken measures to conceal their knowledge from others.

## Questionnaire 7

### Future Time Perspective Scale

This measure concerns your feelings or beliefs about the relationship between the present and the future. Using the following scale, indicate your agreement or disagreement with each of the following statements.

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

1. What might happen in the long run should not be a big consideration in making decisions now.
2. What happens in the long run is more important than how one feels right now.
3. In general, six months seems like a very short period of time.
4. September seems very near
5. One should be taking steps today to help realize future goals.
6. The most important thing in life is how one feels in the long run.
7. It's not really important to have future goals for where one wants to be in five or ten years.
8. One shouldn't think too much about the future.
9. Given the choice, it is better to get something you want in the future than something you want today.
10. Half a year seems like a long time to me.
11. I find it hard to get things done without a deadline.
12. It is important to have goals for where one wants to be in five or ten years.
13. I don't like to plan for the future.
14. It is better to be considered a success at the end of one's life than to be considered a success today.
15. Immediate pleasure is more important than what might happen in the future.
16. I always seem to be doing things at the last moment.
17. Planning for the future is a waste of time.
18. Long range goals are more important than short range goals.
19. What will happen in the future is an important consideration in deciding what action to take now.

20. It often seems like the semester will never end.
21. I have been thinking a lot about what I am going to do in the future.
22. It is more important to save for the future than to buy what one wants today.
23. It's really no use worrying about the future.
24. August seems like a long way off.
25. What one does today will have little impact on what happens ten years from now.
26. I need to feel rushed before I can really get going.
27. I don't think much about the future.

## Questionnaire 8

### Demographic Questionnaire

1. What is your age?
2. What is your gender?
3. What is your citizenship?
4. What is your current marital status?  
Single; Married, Common-law; Divorced; Separated; Widowed
5. What is your religious affiliation?  
Protestant Christian; Roman Catholic; Evangelical Christian; Jewish; Muslim; Hindu; Buddhist;  
Other
6. How many years of post-secondary education have you completed?
7. What is your race?  
Aboriginal; Arab/West Asian; White (Caucasian); Black; Chinese; Filipino; Japanese; Korean;  
South Asian; South East Asian; Latin American; Native Hawaiian or Other pacific Islander;  
Other
8. Do you have a current psychiatric diagnosis or diagnoses? If yes, please specify.
9. Have you received a psychiatric diagnosis in the past? If yes, please specify.
10. Are you currently taking psychiatric medication? If yes, please specify.
11. Are you currently receiving psychotherapy? If yes, please specify the type and length.

**Appendix D**  
**Tables Depicting Correlations Among Measures**

Table 6

*Intervention Group: Correlations Among Variables at Baseline (N = 47)*

	BDI-II	PS	BHS	LOT-R	TFS Past	TFS Present	TFS Future	BSS Total	BSS Motivation	BSS Preparation	FTPS Connected	FTPS Value	FTPS Speed	FTPS Distance
BDI-II	--													
Psychache Scale	.75***	--												
BHS	.59***	.52***	--											
LOT-R	-.62***	-.56***	.82***	--										
TFS Past	-0.01	0.02	0.29	-0.18	--									
TFS Present	-.37*	-.45**	-.45**	.52***	-0.08	--								
TFS Future	-0.29	-0.26	-.46**	.38**	-0.03	.42**	--							
BSS Total	.57***	.48**	.57***	-.62***	0.01	-.33*	-.59***	--						
BSS Motivation	.51***	.43**	.50**	-.50***	-0.1	-0.25	-.57***	--	--					
BSS Preparation	.51***	.42**	.52***	-.58***	0.04	-.32*	-.52***	--	.82***	--				
FTPS Connectedness	-.42**	-0.24	-.42**	0.25	0.05	0.09	.70***	.54***	-.53***	-.47**	--			
FTPS Value	-0.03	-0.13	-0.01	0.05	0.09	-0.13	0.18	-0.16	-0.13	-0.18	0.27	--		
FTPS Speed	-.36*	-0.2	-0.15	0.13	0.12	0.06	.35*	-0.24	-0.28	-0.17	.54***	0.02	--	
FTPS Distance	-0.04	-0.17	-0.22	0.28	-0.03	.31*	.30*	-0.11	-0.1	-0.08	0.02	0.24	0.06	--

*Note.* \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ , two-tailed. Some correlations are based on fewer than 47 participants due to missing data. BDI-II = Beck Depression Inventory-II; PS = Psychache Scale; BHS = Beck Hopelessness Scale; LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; BSS = Beck Scale for Suicide Ideation; FTPS = Future Time Perspective Scale.

Table 8

*Control Group: Correlations Among Variables at Baseline (N = 45)*

	BDI-II	PS	BHS	LOT-R	TFS Past	TFS Present	TFS Future	BSS Total	BSS Motivation	BSS Preparation	FTPS Connected	FTPS Value	FTPS Speed	FTPS Distance
BDI-II	--													
Psychache Scale	.76***	--												
BHS	.52***	.45**	--											
LOT-R	-.54***	-.40**	-.53***	--										
TFS Past	.35*	0.29	0.17	-0.27	--									
TFS Present	-0.25	-.35*	-0.19	0.17	-0.08	--								
TFS Future	-0.08	-0.18	-0.27	0.12	-0.18	.49**	--							
BSS Total	.41**	.63***	.35*	-.38*	0.17	-0.03	-0.17	--						
BSS Motivation	.55***	.68***	.50**	-.41**	0.22	-0.15	-.34*	--	--					
BSS Preparation	0.26	.49**	0.2	-.35*	0.09	0.04	-0.02	--	.68***	--				
FTPS Connectedness	0.11	0.04	-.35*	0.04	-0.2	0.22	.64***	-0.15	-0.25	-0.04	--			
FTPS Value	-0.1	-0.21	-0.11	-0.03	-0.27	0.16	0.25	-0.07	-0.1	-0.02	0.26	--		
FTPS Speed	-.45**	-.53***	-.51***	.38*	-0.1	.41**	0.23	-.40**	-.37*	-.38*	0.17	0.04	--	
FTPS Distance	-0.13	-0.21	-.32*	0.27	-0.03	.34*	.30*	-0.24	-0.24	-0.21	0.09	0.25	0.11	--

*Note.* \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ , two-tailed. Some correlations are based on fewer than 45 participants due to missing data. BDI-II = Beck Depression Inventory-II; PS = Psychache Scale; BHS = Beck Hopelessness Scale; LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; BSS = Beck Scale for Suicide Ideation; FTPS = Future Time Perspective Scale.

Table 9  
*Intervention Group: Correlations Among Variables at 1 Month (N = 41)*

	BDI-II	PS	BHS	LOT-R	TFS Past	TFS Present	TFS Future	BSS Total	BSS Motivation	BSS Preparation	FTPS Connected	FTPS Value
BDI-II	--											
Psychache Scale	.65***	--										
BHS	.40*	.31*	--									
LOT-R	-.56***	-.39*	-.76***	--								
TFS Past	.32*	0.22	0.11	-0.16	--							
TFS Present	-0.02	-0.05	-0.17	0.09	-0.29	--						
TFS Future	-0.2	-0.01	-.37*	.44**	-0.13	0.02	--					
BSS Total	.54***	.44**	.46**	-.49***	0.12	0.14	-0.29	--				
BSS Motivation	.58***	.44**	.49***	-.45**	0.14	0.15	-0.3	--	--			
BSS Preparation	.43**	.40**	.41**	-.45**	0.09	0.14	-0.3	--	.81***	--		
FTPS Connectedness	-0.15	-0.03	-.40*	0.3	-0.1	-0.09	.63***	-0.23	-0.3	-0.2	--	
FTPS Value	-0.14	0.14	-0.29	0.2	-0.26	0.01	.32*	-0.09	-0.05	-0.1	.52***	--
FTPS Speed	-0.28	-0.01	-0.11	0.19	-0.09	-0.07	0.21	-0.13	-0.24	-0.05	0.23	0.16
FTPS Distance	-.47**	-.35*	-.32*	0.26	-0.24	0.1	0.05	-0.14	-0.18	-0.09	0.09	-0.05

*Note.* \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ , two-tailed. Some correlations are based on fewer than 41 participants due to missing data. BDI-II = Beck Depression Inventory-II; PS = Psychache Scale; BHS = Beck Hopelessness Scale; LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; BSS = Beck Scale for Suicide Ideation; FTPS = Future Time Perspective Scale.

Table 10

*Control Group: Correlations Among Variables at 1 Month (N = 40)*

	BDI-II	PS	BHS	LOT-R	TFS Past	TFS Present	TFS Future	BSS Total	BSS Motivation	BSS Preparation	FTPS Connected	FTPS Value	FTPS Speed	FTPS Distance
BDI-II	--													
Psychache Scale	.74***	--												
BHS	-0.03	-0.09	--											
LOT-R	-.44**	-0.32	-0.14	--										
TFS Past	0.32	0.3	-0.12	-0.21	--									
TFS Present	-.50***	.68***	-0.04	-.40*	-0.19	--								
TFS Future	-0.1	-0.22	0.28	-0.08	0.25	.47**	--							
BSS Total	.58***	.64***	0.09	-.37*	0.06	-.46**	-0.27	--						
BSS Motivation	.55***	.67***	0.05	-.36*	0.01	-.43**	-.33*	--	--					
BSS Preparation	.55***	.57***	0.08	-.38*	0.07	-.48**	-0.24	--	.74***	--				
FTPS Connectedness	0.12	0	0.25	0.09	-0.12	-0.07	0.28	-0.06	-0.14	-0.01	--			
FTPS Value	0.31	0.1	0.15	-0.12	0.01	0.18	.34*	0.05	0.09	-0.04	0.2	--		
FTPS Speed	-.39*	-.52***	0.26	0.23	-0.2	0.21	0.16	-0.3	-.35*	-0.27	.43**	-0.11	--	
FTPS Distance	-0.13	-0.14	.41*	0.06	-0.25	-0.16	0.11	0	-0.07	0.06	.47**	-0.09	.34*	--

*Note.* \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ , two-tailed. Some correlations are based on fewer than 40 participants due to missing data. BDI-II = Beck Depression Inventory-II; PS = Psychache Scale; BHS = Beck Hopelessness Scale; LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; BSS = Beck Scale for Suicide Ideation; FTFS = Future Time Perspective Scale.

Table 11

*Intervention Group: Correlations Among Variables at 6 Months (N = 19)*

	BDI-II	PS	BHS	LOT-R	TFS Past	TFS Present	TFS Future	BSS Total	BSS Motivation	BSS Preparation	FTPS Connected	FTPS Value	FTPS Speed	FTPS Distance
BDI-II	--													
Psychache Scale	.86***	--												
BHS	.48*	.57*	--											
LOT-R	-.70**	-.64**	-.73***	--										
TFS Past	.57*	0.24	-0.13	-0.27	--									
TFS Present	-.50*	-.59*	-.46*	0.44	-0.32	--								
TFS Future	0.08	-0.03	0.02	-0.11	0.25	0.29	--							
BSS Total	.59**	.67**	.55*	-.71***	0.23	-0.45	0.11	--						
BSS Motivation	.65**	.71***	.48*	-.69***	0.28	-0.43	0.01	.92***	--					
BSS Preparation	.51*	.65**	.53*	-.59**	0.21	-.51*	0.1	.95***	.81***	--				
FTPS Connectedness	0.1	-0.25	-0.13	-0.08	0.43	-0.01	0.44	-0.04	-0.08	-0.04	--			
FTPS Value	0.32	0.37	0.4	-.57*	-0.35	-0.16	-0.09	0.27	0.33	0.23	0.07	--		
FTPS Speed	-0.08	0.04	0.02	-0.13	-0.16	0.04	0.02	0.11	0.04	0.11	-0.33	-0.02	--	
FTPS Distance	-0.35	-0.39	0.03	0.22	-0.16	0.03	0.32	-0.22	-0.37	-0.12	0.18	-.46*	0.28	--

*Note.* \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ , two-tailed. Some correlations are based on fewer than 19 participants due to missing data. BDI-II = Beck Depression Inventory-II; PS = Psychache Scale; BHS = Beck Hopelessness Scale; LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; BSS = Beck Scale for Suicide Ideation; FTPS = Future Time Perspective Scale.

Table 12

*Control Group: Correlations Among Variables at 6 Months (N = 22)*

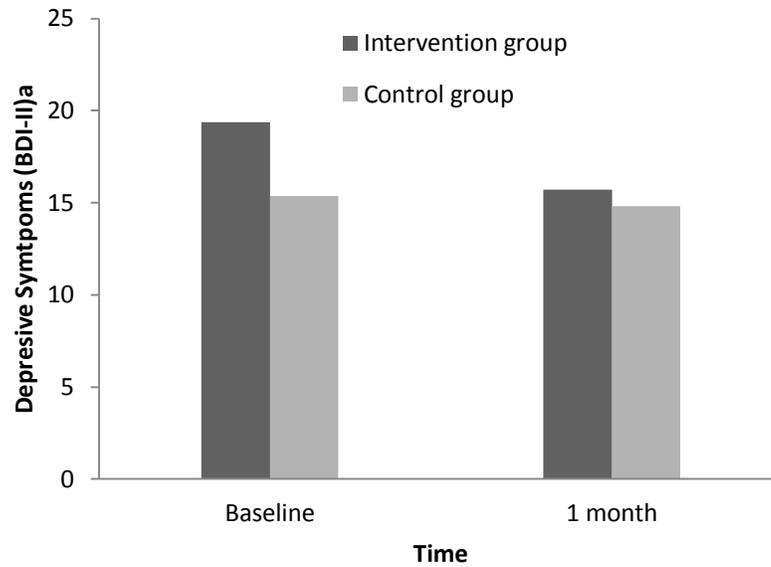
	BDI-II	PS	BHS	LOT-R	TFS Past	TFS Present	TFS Future	BSS Total	BSS Motivation	BSS Preparation	FTPS Connected	FTPS Value	FTPS Speed	FTPS Distance
BDI-II	--													
Psychache Scale	.74***	--												
BHS	0.41	0.23	--											
LOT-R	-0.31	0.03	-.61**	--										
TFS Past	0.41	.47*	-0.17	0.19	--									
TFS Present	-.46*	-.52*	-0.3	0.33	-0.06	--								
TFS Future	-0.18	-0.23	-0.38	0.22	0.3	.44*	--							
BSS Total	.47*	.54*	0.13	-0.09	0.27	-0.36	-0.21	--						
BSS Motivation	.66**	.77***	0.22	0.07	0.3	-0.29	-0.34	--	--					
BSS Preparation	0.19	0.22	-0.03	-0.12	0.24	-0.39	-0.09	--	0.37	--				
FTPS Connectedness	-0.06	0.02	-0.15	0	0.34	-0.21	.51*	-0.15	-0.33	0.14	--			
FTPS Value	-0.22	-0.37	0.21	-0.13	-0.16	-0.01	0.1	-0.24	-.50*	0.02	.51*	--		
FTPS Speed	-0.38	-0.39	0.09	-0.06	-.53**	0.18	-0.08	-.43*	-0.36	-0.34	-0.01	0.41	--	
FTPS Distance	-.42*	-0.18	-0.3	0.13	-0.11	0.02	0.13	-0.04	-0.18	0.12	0.29	0.01	0.19	--

*Note.* \* $p < .05$ , \*\* $p < .01$ , and \*\*\* $p < .001$ , two-tailed. Some correlations are based on fewer than 22 participants due to missing data. BDI-II = Beck Depression Inventory-II; PS = Psychache Scale; BHS = Beck Hopelessness Scale; LOT-R = Life Orientation Test-Revised; TFS = Temporal Focus Scale; BSS = Beck Scale for Suicide Ideation; FTPS = Future Time Perspective Scale.

## **Appendix E**

### **Figures**

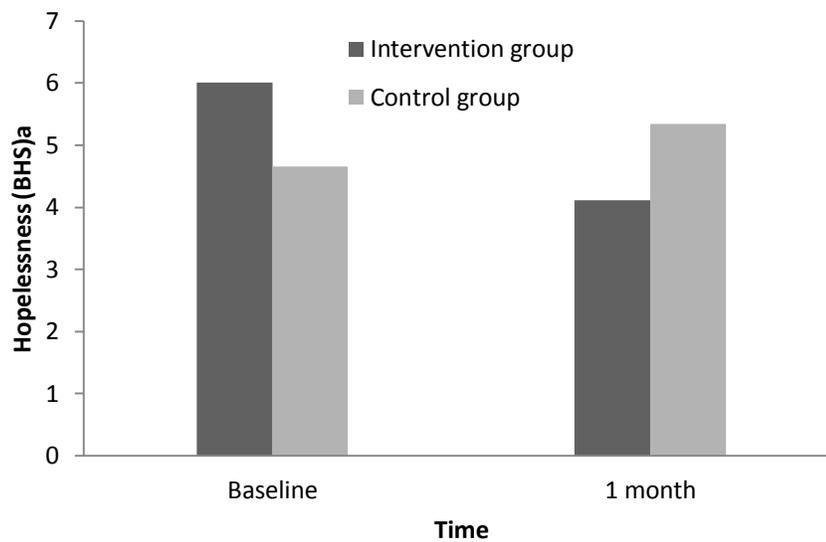
Figure 1. Interaction of Time and condition on depressive symptom scores.



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<sup>a</sup> Note. BDI-II; Beck, Steer, & Brown, 1996.

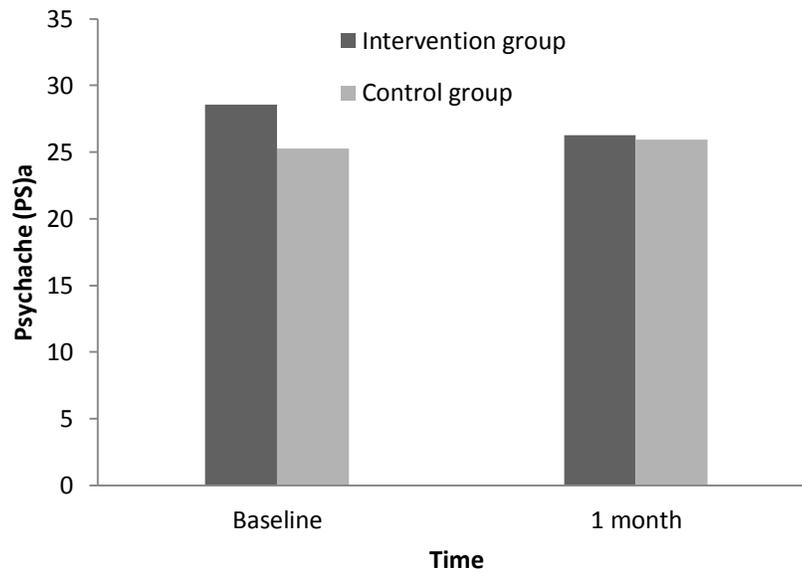
Figure 2. Interaction of Time and condition on hopelessness scores.



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<sup>a</sup> Note. BHS; Beck et al., 1974.

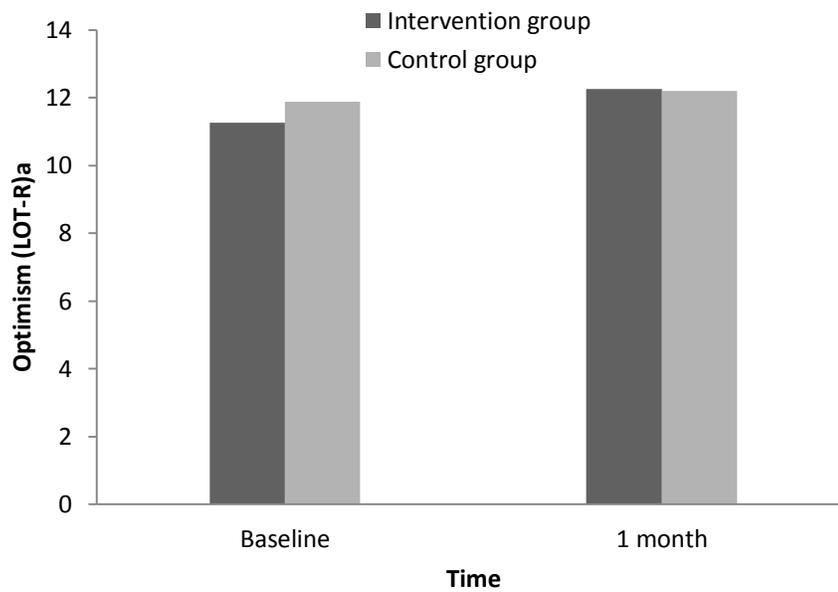
Figure 3. Interaction of Time and condition on psychache scores.



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<sup>a</sup> Note. The Psychache Scale ; Holden et al., 2001.

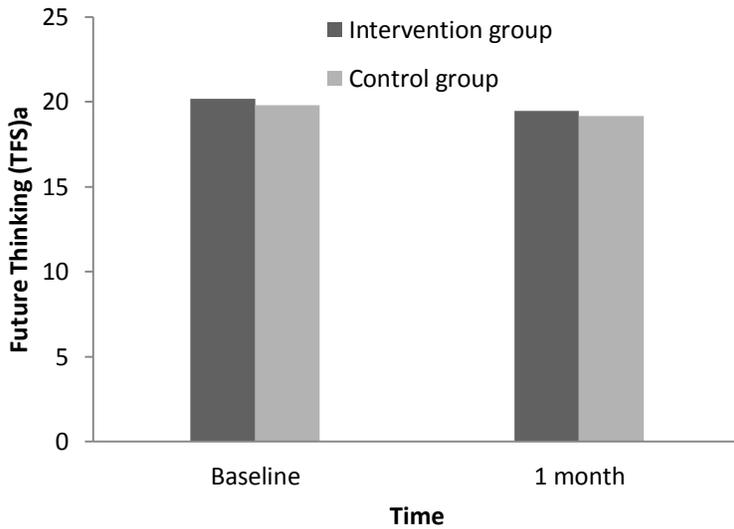
Figure 4. Interaction of Time and condition on LOT-R.



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<sup>a</sup> Note. LOT-R ; Scheier et al., 1994.

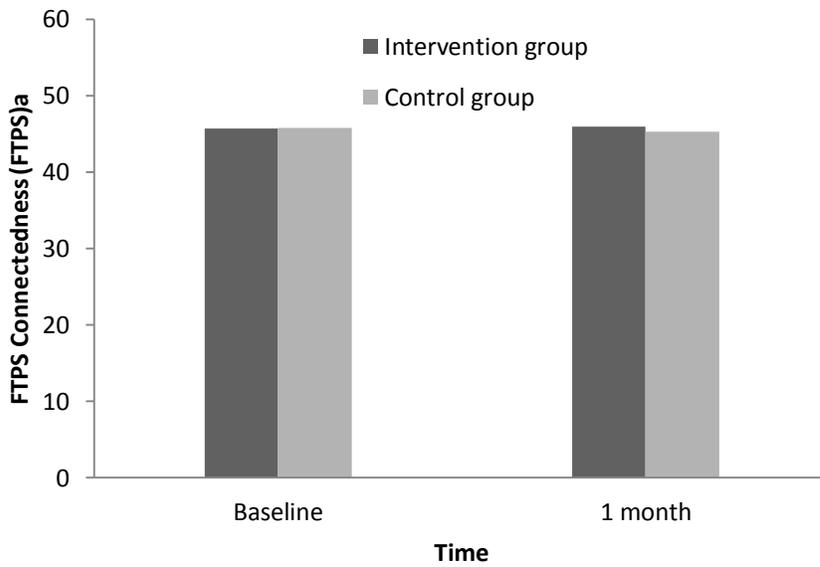
Figure 5. Interaction of Time and condition on Future Thinking.



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<sup>a</sup> Note. TFS Future subscale ; Shipp et al., 2009.

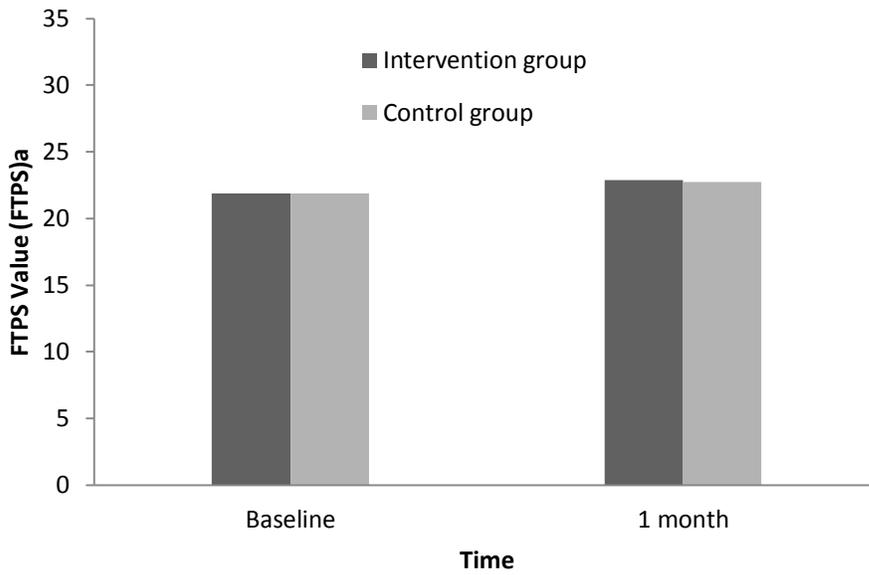
Figure 6. Interaction of Time and condition on FTPS Connectedness.



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<sup>a</sup> Note. FTPS Connectedness subscale ; Husman & Shell, 2008.

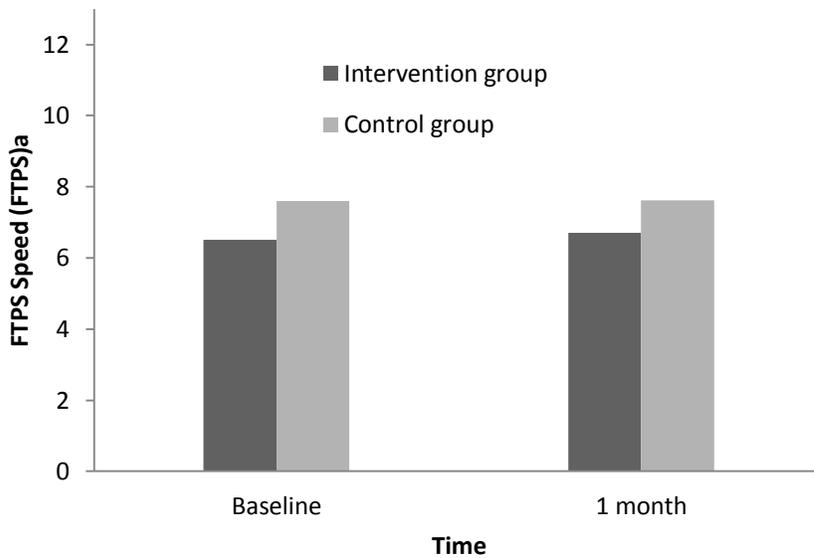
Figure 7. Interaction of Time and condition on FTPS Value.



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<sup>a</sup> Note. FTPS Value subscale ; Husman & Shell, 2008.

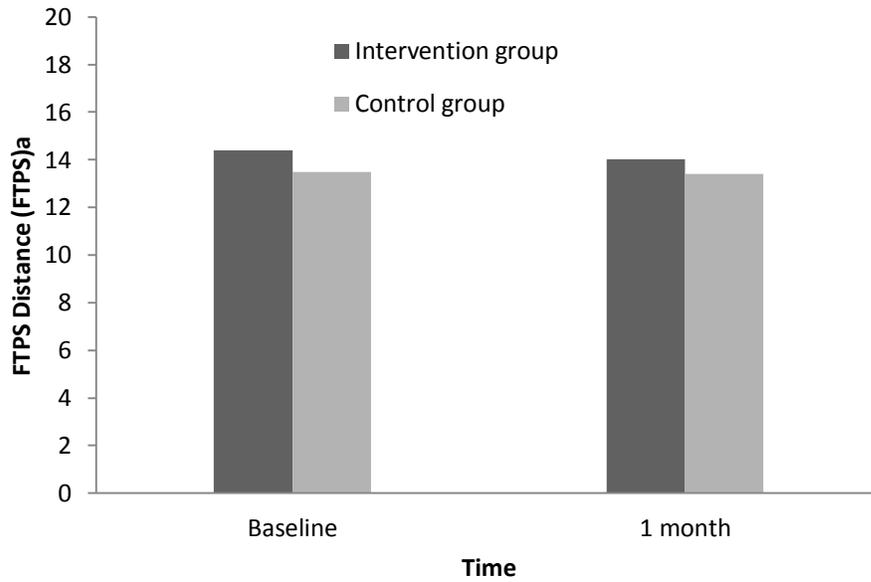
Figure 8. Interaction of Time and condition on FTPS Speed.



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<sup>a</sup> Note. FTPS Speed subscale ; Husman & Shell, 2008.

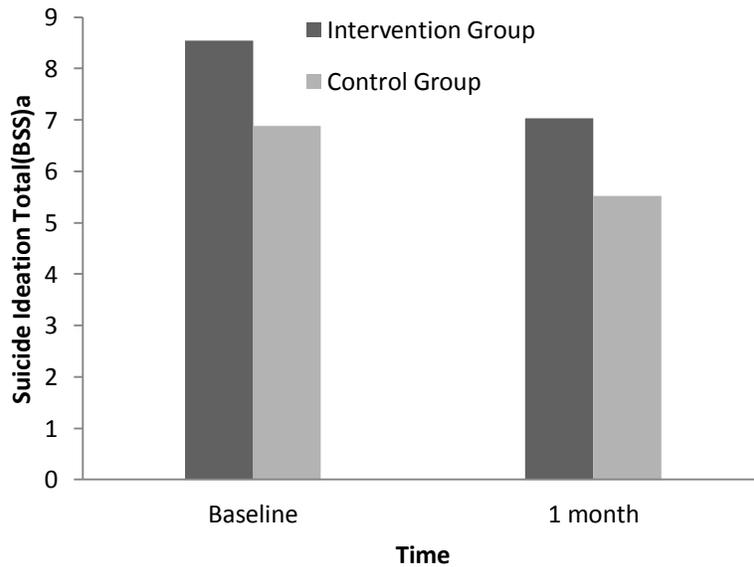
Figure 9. Interaction of Time and condition on FTPS Distance.



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<sup>a</sup> Note. FTPS Distance subscale ; Husman & Shell, 2008.

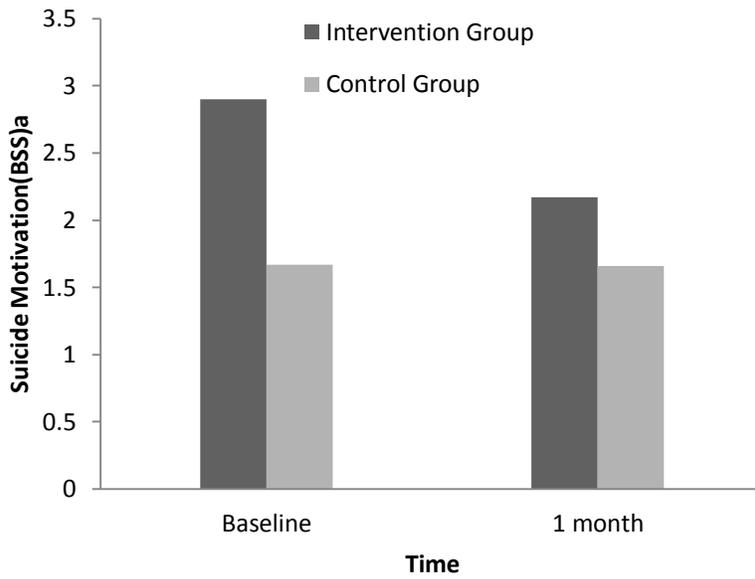
Figure 10. Interaction of Time and condition on suicide ideation total scores.



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<sup>a</sup> Note. BSS ; Beck et al., 1991.

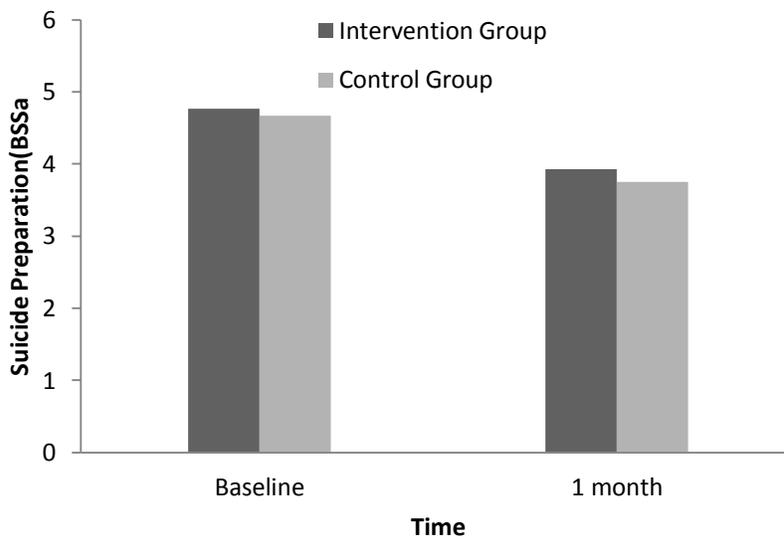
Figure 11. Interaction of Time and condition on suicide motivation.



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<sup>a</sup> Note. BSS ; Beck et al., 1991.

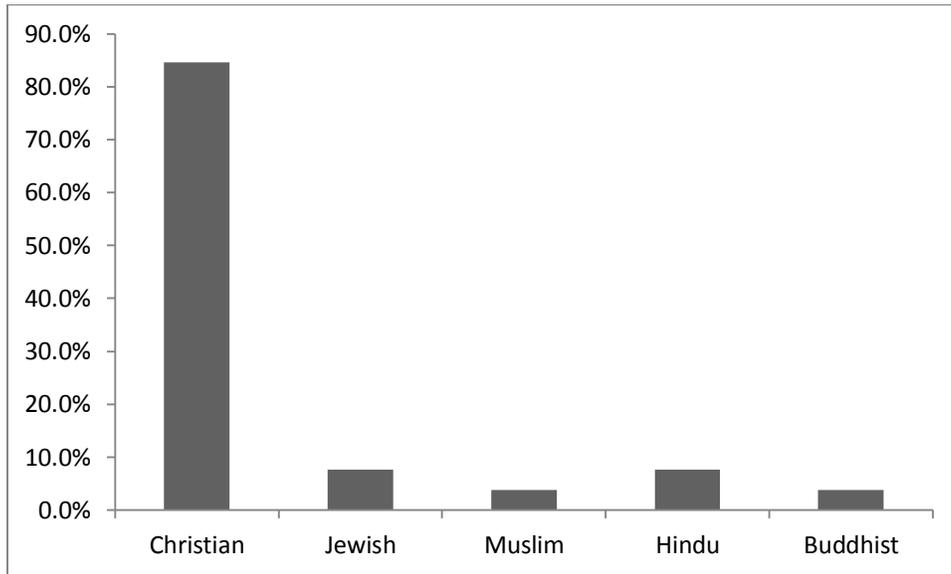
Figure 12. Interaction of Time and condition on suicide preparation.



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<sup>a</sup> Note. BSS ; Beck et al., 1991.

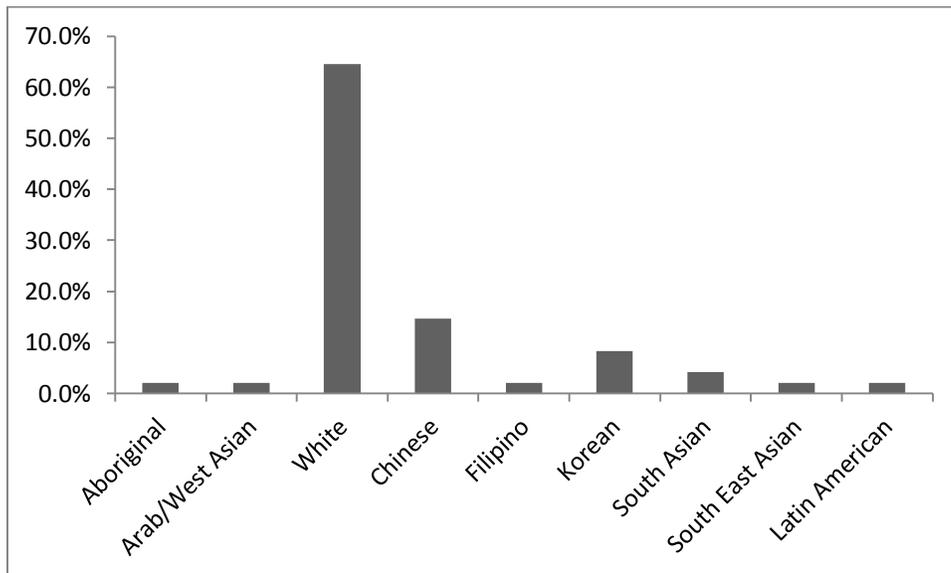
Figure 13. Religious composition of sample.



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<sup>a</sup> Note. Demographic Questionnaire.

Figure 14. Race composition of sample.



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<sup>a</sup> Note. Demographic Questionnaire.

## **Appendix F**

### **Figure Captions**

*Figure 1.* Mean Beck Depression Inventory-II (BDI-II) scores for intervention ( $n = 38$ ) and control ( $n = 35$ ) groups.

*Figure 2.* Mean Beck Hopelessness (BHS) scores for intervention ( $n = 38$ ) and control ( $n = 35$ ) groups.

*Figure 3.* Mean Psychache Scale scores for intervention ( $n = 38$ ) and control ( $n = 35$ ) groups.

*Figure 4.* Mean Life Orientation Test-Revised (LOT-R) scores for intervention ( $n = 38$ ) and control ( $n = 32$ ) groups.

*Figure 5.* Mean Temporal Focus Scale (TFS) Future scores for intervention ( $n = 38$ ) and control ( $n = 32$ ) groups.

*Figure 6.* Mean Future Time Perspective Scale Connectedness (FTPS) scores for intervention ( $n = 38$ ) and control ( $n = 32$ ) groups.

*Figure 7.* Mean Future Time Perspective Scale Value (FTPS) scores for intervention ( $n = 38$ ) and control ( $n = 32$ ) groups.

*Figure 8.* Mean Future Time Perspective Scale Speed (FTPS) scores for intervention ( $n = 38$ ) and control ( $n = 32$ ) groups.

*Figure 9.* Mean Future Time Perspective Scale Distance (FTPS) scores for intervention ( $n = 38$ ) and control ( $n = 32$ ) groups.

*Figure 10.* Mean Beck Scale for Suicide Ideation Total (BSS) scores for intervention ( $n = 40$ ) and control ( $n = 35$ ) groups.

*Figure 11.* Mean Beck Scale for Suicide Ideation Motivation (BSS) scores for intervention ( $n = 40$ ) and control ( $n = 35$ ) groups.

*Figure 12.* Mean Beck Scale for Suicide Ideation Preparation (BSS) scores for intervention ( $n = 40$ ) and control ( $n = 35$ ) groups.

*Figure 13.* Data on religious composition of sample derived from the Demographic Questionnaire.

*Figure 14.* Data on race composition of sample derived from the Demographic Questionnaire.

## **Appendix G**

### **Participant Intervention Feedback**

## Participant Feedback at 1 Month

**If you would like, here you can provide comments on your group meetings. Were there any particular activities or sessions that you found to be valuable and why? Were there any particular activities or sessions that you did not find valuable and why? Was there anything you think should have been addressed during the meetings but was not?**

I really liked comparing the different perspectives/interpretations of tasks with other group members. It was really interesting sometimes!

I liked the future time line, thought that was valuable as it gave positive insight to my future and showed how everybody generally has the same timeline and it normally goes according to plan...

the last meeting was great i really enjoyed the topics discussed, i feel like the person who went through the information with us was instructing us most of the time, it felt more like a lecture than a discussion about 50% of the time, not sure if that's how it's supposed to feel.

I really liked my group meetings. Towards the end we were all very comfortable with each other and it allowed us to speak openly and honestly. I think that maybe having some sort of meet and greet session would allow participants to feel like they can be more open faster. Thanks!

I found all the group meetings really good. I left feeling really positive about my future and optimistic. It was nice to hear from other people as well that I wasn't the only one struggling with past, present, and future decisions. Everything about the meetings were really positive and uplifting. It was one of my favourite parts of my week!

Some of the activities were somewhat juvenile. For instance, the one where we had to write down a negative thought what mood it would put us in, how to think more positively about it, etc.

Seemed like the meetings were meant to be directed towards people who were depressed because everything was so sad and trying to fix problems. However, it was helpful/valuable to talk about the future/planning goals to make you see that current issues don't last forever, it was reassuring. Overall I thought the group meetings were informative and helpful. Thank you

Group meetings offered the tools for a more in-tune level of introspection, especially regarding future interests and how to fulfill personal desires (career or family orientated). Shortcomings, whether they are derived from academic failure or otherwise, are an unavoidable, and in some cases, beneficial part of living and should be embraced as opportunities to develop character. After the meetings, I have gained a greater appreciation of how we inherently compartmentalize time in order to achieve immediate and lifelong goals, and how these culturally defined goals shape the quality of our life, and perceptions of the future. I have no comments to address neither the structure nor possible improvements for the sessions, needless to say I enjoyed going to everyone.

I enjoyed the relaxed settings which helped me to open up about my opinions, etc. in a confidential environment. Less writing and more speaking as a group would make the group meetings more enjoyable. Keep up the good work!

The first meeting was kind of frustrating for me because the future was not something I thought about in depth. At most, I have only really thought about the aspect of career in my future and not much in other areas. Listening to the others in my group who were so sure about what their life in the future would be like made me feel unprepared and as though I should have already thought about these kind of things. Overall, the meetings have been valuable to me because they have prompted me to add ideas to my ideal future and help me visualize the general plan of attaining my future. Furthermore, the meetings were meaningful to me because they have reiterated the way one should deal with stress and feeling hopeless when faced with a challenge, which I have come to realize and I try to improve the situation with ideas that we have discussed at the group meetings.

I believe that the group meetings were organized well, there were a lot of activities that really helped you understand the topics we were focusing on. It was helpful, towards making goals, and looking at life from a different perspective. Some of the sessions, helped you realize that making goals, and trying to achieve them is a good way to go about things, and that it helps you prepare for events, and life more easily. Overall, I enjoyed the meetings a lot. Thank you.

I enjoyed our group meetings and found them beneficial in regards to thinking more positively about the future. Thanks, Jackie:)

The weekly meetings really gave me a new perspective on how I should make decisions now, to help me in the future. I found the meetings very valuable.

Reflecting back on my thoughts from the first session, despite my uncertainty about the future, my confidence towards how I will one day reach the goals has been reinforced and am now... driven to study for exams. Compared to the online studies I have completed, this one was much more valuable because there was the opportunity to learn about human behaviour in general and reflect on how my behaviour compares to the behaviour of others as well as how my behaviour has somewhat changed as I have become more aware of it. Overall, I found the sessions to be particularly helpful. I became more mindful of how my time is spent and being able to physically put my thoughts into words/hear others express the same ideas to be reinforcing of how I felt towards past experiences/the future. Particularly as a first year student, it was nice to know everyone else has the same feelings of uncertainty and being overwhelmed by balancing their lives as well. However, the last session felt somewhat repetitive; perhaps instead of restating the same feelings and solutions, we could have gone through one example then discussed why this could be applied to all the situations. Thank you for conducting the study and best of luck in your very optimistic, challenging, interesting future! :)

Talking about the future in optimistic terms

The sessions that revealed to myself the type of person I am, the first session in particular about whether I am a person who dwells on the past a lot or someone who looks forward to the future. It made me accept and understand why I always reflect back on things, this was somewhat comforting to me.

They were a fun way to think about the subject at hand. Very helpful and inspirational. I really found the visualization exercises a helpful way to learn new ideas.

I thought the meetings were valuable and everyone in my group seemed open to discussion. I thought it was an interesting study and am curious as to what the results are.

I liked the letters we wrote to ourselves at the end of the last meeting. I found that reassuring and helpful.

I enjoyed the group meetings and every week I left feeling more confident. I enjoyed planning for the future and discussing with others who were feeling the same way as I did. The visualization activities were the only parts of the meetings that I didn't find as valuable, but this is usual for me as it is difficult for me to picture those things in my head on the spot. Overall the meetings were meaningful for me.

## Participant Feedback at 6 Months

### **Have the group meetings had any positive effect on your life? Please explain.**

I now realize how important it is to think of the future instead of just the present when you are making decisions. This helps me make better decisions for a happier life in the long run.

They gave a good outlook on why it is important to keep your future constantly on your mind while making decisions. It was also good to get other people's opinions on their future and see you were not the only one so unsure.

It has shown me how to move on from the past, and that even though the future is uncertain, it will become certain eventually.

The group meetings gave an interesting perspective on what others perceived about the tasks we were given and it was also interesting to see what they had planned as "important" goals for the future.

The meetings were focused toward the right type of thing sort of, but they were no more profoundly impactful than any other situations of a similar variety. Perhaps the environment was too ordinary to consider any of the information to be very meaningful.

They were very insightful and positive/optimistic

The group meetings were thought provoking at best but it also felt as though certain opinions were being forced on the group.

They have made me face the problems I have and learnt several approaches that I could use to solve or alleviate the effects.

During first year, I felt a lot of uncertainty with courses, the environment, and my academics. The group sessions were effective to learn better time management skills and to recognize that although friends and peers appear confident, they undergo the same moments of uncertainty as I do, which was reassuring.

Made me realize not to stress too much over things, but that setting goals is important for the future and that you're psychological well being is important for success

After the meetings, I felt more optimistic but it was only a temporary feeling. I have forgotten almost entirely what types of activities or discussions we did in the group meetings.

They very much helped me see the future in a different fashion, and people's experiences have taught me that changes can always be made and that you have the power to alter the path your life takes.

I feel as though the group activities were too broad and focussed on the future. I think that maybe one on one discussions would have been more affective.

Helped me to see the future in a brighter way

**Have you practiced or made use of anything you learned or discussed in the group meetings?  
Please explain.**

I have kept all the worksheets that we completed during our group meetings and I often refer back to them when I feel unsure about my future or decisions.

I forgot some of the things, but what I do remember I try to make use of it!

Formulating steps for goals like studying for an exam.

For the summer, I have constructed a goal chart of things I want to accomplish or finish by the end to help ensure that my time isn't wasted.

Can help my friends with their problems more successfully

Yes, to not dwell on past experiences too much and focus more on present and future time.

The meetings reinforced thinking optimistically and constructively. No matter what happens, we will reach end goals one way or another. Planning out the things I wanted to achieve this summer has given me the motivation to accomplish the activities.

I drew out how I see my life and tried to analyze why I think my life is like that and changed my goals etc. to make my future less blurry

In the beginning yes, but as time when by I forget about what was talked about in the meetings.

I am less anxious about things not going the way I would like them to because I know there will be chances to change and improve that in some way.

Things can be worse than it is now and the bad things don't last forever.