Addressing Basic Psychological Needs Fulfillment, Autonomous Motivation, and Working Alliance in Psychotherapy

by

Beth Keleher

A thesis
presented to the University of Waterloo
in fulfillment of the
thesis requirement for the degree of
Master of Arts
in
Psychology

Waterloo, Ontario, Canada, 2015

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

According to many sources (e.g., Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Safran & Muran, 2006; Wampold et al., 1997; Zuroff & Blatt, 2006), common factors found in all psychological treatments are more powerful predictors of treatment efficacy than treatment techniques espoused by any one individual therapy method. In order to address our understanding of *how* diverse forms of psychotherapy lead to positive outcomes, several authors have investigated the possible contribution of self-determination theory (SDT) variables to therapeutic change (e.g., Zuroff et al, 2007; Zuroff, Koestner, Moskowitz, McBride, & Bagby, 2012). In particular, the SDT constructs of autonomous and controlled motivation, autonomy support, and basic psychological needs have been proposed as factors that could influence psychotherapy outcome (Ryan & Deci, 2008; Deci & Ryan, 2008). Few research studies have examined the relationship between basic psychological needs, working alliance, and therapy persistence. Therefore, the goal of the interview study was to determine whether client ratings of the fulfillment of their basic needs during psychotherapy predicted early termination of therapy. While results in Study 1 were not significant, the trend indicated that a better-powered examination of the variables might result in significant findings. Accordingly, results from Study 2 indicated that those clients who unilaterally end therapy early without the agreement of their therapist tended to have significantly lower ratings of basic psychological needs fulfillment within psychotherapy than their planned-ender counterparts.

Furthermore, while previous research has provided a window into the clinical value of autonomous motivation and autonomy support in psychotherapy, little is known about the state-related intricacies of motivation and working alliance in psychotherapy as they vary from day-to-day and week-to-week. In order to address this area of inquiry, and in lieu of the resources to

conduct a psychotherapy treatment study, we developed an intervention with an analogue population: problem procrastinators. Results revealed that participants in both the individual and group conditions experienced a significant increase in autonomous and controlled motivation for academics overall over the course of the intervention. However, this increase in motivation was not dependent on assigned condition. Furthermore, controlled motivation for daily proximal tasks increased significantly over the course of the intervention, while autonomous motivation for proximal tasks demonstrated a similar, although not significant, trend. Again, these findings did not differ by phase of study (baseline or intervention) or condition assignment. Future research should examine these variables in a psychotherapy-receiving treatment population, prospectively.

Acknowledgements

I would like to thank my supervisor, Dr. Jonathan Oakman, for his tireless effort and support in this endeavor, and for always conveying confidence in my abilities even when I was not so sure myself. My thanks also go out to Dr. Walter Mittelstaedt, an integral member of the PIRT lab, for his insightful suggestions and support in the development of this line of research. I would also like to extend my gratitude to my additional readers, Drs. Allison Kelly and Uzma Rehman, for providing valuable feedback on this project. I would like to acknowledge the hard work of the PIRT lab's Research Assistants, Katie Finch, Brandon Harnarain, Sandra Osazuwa, Patricia Philip, and Simrat Tung, who were essential in the data collection process. I would also like to thank my cohort, Kevin Capobianco, Katie Miller, Kevin Barber, and Martyn Gabel, for their aid in my academic pursuits, good humour (and bad puns) in stressful situations, and unflagging support throughout this process. On a personal note, I am forever grateful to my family, Gary, Joyce, and Ryan Keleher, for listening to me when I complain, giving me pep talks when I am discouraged, and rejoicing in my successes with me. This thesis was supported by the Social Sciences and Humanities Research Council (SSHRC) Joseph-Armand Bombardier Canada Graduate Scholarship and Dr. Jonathan Oakman's SSHRC Insight Development Grant.

Table of Contents

List of Tables

Table of Figures

Literature Review

Common Factors in Psychotherapy and Working Alliance

A great deal of research in the last two decades has been dedicated to examining the efficacy of common factors that are present across all forms of psychotherapy. According to numerous sources, common factors found in all psychological intervention methods are more influential predictors of treatment outcome than treatment techniques championed by any one individual therapy method (e.g., Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Safran & Muran, 2006; Wampold et al., 1997; Zuroff & Blatt, 2006). For example, Bandura (1977) proposed that differing level and strength of self-efficacy in clients was responsible for a significant proportion of the changes achieved through different treatment methods. A client's context and expectancies have also been proposed as common factors that account for improvement across therapy modalities (Drisko, 2004). In particular, the working alliance between a client and therapist is the most studied and cited of the potential common factors that could form the basis of a process-oriented model of psychotherapy (Martin et al., 2000; McBride et al., 2010).

According to Bordin (1979), working alliance is comprised primarily of three features: an agreement on the goals of therapy, an assignment of a task or series of tasks, and the development of a bond between therapist and client. In a meta-analysis of 24 psychotherapy treatment studies examining working alliance as a predictor of therapy outcome, Horvath and Symonds (1991) found that working alliance was a moderate predictor of positive therapy outcomes. Importantly, the authors found that this relationship between working alliance and outcome did not differ according to the therapy modality used or the length of treatment. In addition, client ratings of working alliance appeared to be the most predictive of positive therapy

outcomes, compared to therapists' and observer's ratings of working alliance. Moreover, Zuroff and Blatt (2006) found that across different forms of treatment, when clients perceived a more positive working alliance early in treatment, they experienced significantly more rapid decline in symptoms going forward. This relationship between working alliance and positive outcomes also held throughout an 18-month follow-up period. A more exhaustive meta-analysis of 79 studies conducted by Martin and colleagues (2000) similarly found that there appears to be a moderate and consistent relationship between working alliance and positive outcome, taking into account a plethora of variables (e.g., type of therapy, client socio-economic status, age, education, etc.).

Despite these findings, the focus in treatment-oriented research has been on developing manualized treatment methods with the aim of targeting specific behavioural outcomes (Ryan & Deci, 2008). Most of the resulting evidence-based treatments are designed and tested with participants who meet very specific criteria and fall into discrete diagnostic categories (Ryan & Deci, 2008). However, authors controversially claim that outcomes from different therapies have no significant difference in efficacy (Messer & Wampold, 2002; Luborsky et al., 2002). According to Ryan and Deci (2008), there is a paucity of research dedicated to developing evidence-based treatments that focus on the process of change in psychotherapy. The authors assert that treatments that address the process of change are particularly important in the treatment of new or unique problems because in such cases standardized treatments might not apply directly to the individual's treatment needs. As presenting problems and treatment goals in many therapy settings are complex and oftentimes evolve (Yalom, 2002), therapeutic principles that can be easily adapted on a case–by–case basis are essential (Ryan & Deci, 2008). Comprehensive theories that address these process needs would certainly assist therapists in

working with clients whose goals for treatment sometimes change and whose problems present in a fashion that the therapist has not yet encountered (Ryan & Deci, 2008).

While working alliance is a pan-theoretical and reliable predictor of positive therapeutic outcomes (Horvath & Symonds, 1991; Martin et al., 2000), it is not a comprehensive treatment method. The correlation between working alliance and outcome is moderate. Meta-analyses have estimated the weighted effect size of working alliance to outcome at $r = .22$ to $r = .26$ (Martin et al., 2000; Horvath & Symonds, 1991). The modest effect size revealed in the available research indicates that there is a great deal of unexplained variance left to be accounted for (Zuroff, Koestner, Moskowitz, McBride, Marshall, & Bagby, 2007). Additionally, although working alliance is predictive of dropout from therapy (independent of the therapy modality used or specific diagnoses), other factors such as client motivation have been implicated in the likelihood of dropout (Johansson & Eklund, 2006; Castonguay, Constantino, & Holtforth, 2006). It would therefore be a prudent next step for researchers to identify other common factors that both predict positive outcomes in psychotherapy and that forecast early termination of therapy.

Therapy Dropout

Estimates of the rate of dropout after the first session of psychotherapy range from 20% to 57% across various settings and among various treatment populations (Barrett, Chua, Crits-Cristoph, Gibbons, & Thompson, 2008). In addition, whether the criterion is therapist judgment or the number of sessions attended, approximately 48% of clients are considered to discontinue therapy early (Wierzbicki & Pekarik, 1993). As a result, many clients entering treatment do not receive enough psychotherapy to obtain the desired symptomatic relief they sought treatment for (Barrett et al., 2008).

Bados, Balaguer, and Saldana (2007) found that 46.7% of clients who terminated Cognitive-Behavioural treatment early cited low motivation and or/ a lack of satisfaction with the treatment method or therapist. Another study conducted by Piper et al. (1999) found that while pretherapy variables (e.g., demographics, diagnoses) did not predict therapy completers from those who would terminate early, process variables such as client ratings of working alliance significantly differentiated the two groups. A meta-analysis of 11 studies investigating the relationship between therapy dropout and working alliance found that working alliance has a moderately strong relationship with dropout (Cohen's d = .55, r = .27), with clients who report a weaker working alliance being more likely to terminate therapy early (Sharf, Primavera, & Diener, 2010).

Studies have used varying definitions of dropout in previous literature, and there is currently no one agreed-upon definition in use in the research literature. While most previous studies have defined dropout as withdrawing from therapy prior to a specified number of sessions, this number of sessions can vary from study to study (Barrett et al., 2008). Other authors have defined dropout as missing two consecutive sessions (Kolb, Beutler, Davis, Crago, & Shanfield, 1985), missed attendance of the final therapy session (Hatchett, Han, & Cooker, 2002), ending therapy within the first 9 months (Frayn, 1992), and unilateral client-initiated therapy termination without the backing of the therapist (Berrigan & Garfield, 1981; Pekarik, 1992). For our purposes in Study 1, we define dropout according to whether client therapy termination was planned with the therapist or unplanned. In this regard, we hope to identify those clients who made a unilateral decision to end therapy prematurely, without the consultation of their therapist.

Self-Determination Theory as a Potential Framework for New Common Factors

In response to the gap in our understanding of *how* various forms of psychotherapy lead to positive outcomes, several authors have investigated the possible contribution of Self-Determination Theory (SDT) variables such as autonomous and controlled motivation to therapeutic change (e.g., Zuroff et al, 2007; Zuroffet al., 2012; McBride et al., 2010; Mansour et al., 2012). SDT is an overarching theory of human motivation, development, and wellness (Ryan & Deci, 2008). Among the many facets of the human condition SDT attempts to explain are personality development, self-regulation, universal basic psychological needs, life goals, energy and vitality, nonconscious processes, the relationship between culture and motivation, affect, behaviour, and well-being (Deci & Ryan, 2008).

The SDT model proposes that people's basic psychological needs for autonomy, competence, and relatedness must be satisfied for personal growth and mental health (Ryan & Deci, 2008). Autonomy refers to the self-endorsement of one's own behaviour and the resulting sense of volition that accompanies this personal backing, competence to an individual's sense of confidence in their ability to effect desired outcomes, and relatedness to a person's need to feel a sense of connection with others (Ryan & Deci, 2008; Ryan, Lynch, Vansteenkiste & Deci, 2010). SDT postulates that these three needs form the basis for self-motivation and the integration of one's personality (Ryan et al., 2010). Specifically, contextual factors in an individual's environment, such as an extrinsic reward or an opportunity for choice, can thwart or support the fulfillment of basic needs. In turn, this fulfillment or thwarting of needs can be used to predict outcomes (e.g., behaviour, affect, well-being, level or type of motivation experienced; Deci & Ryan, 2008).

The principles of SDT readily lend themselves to application to a number of different psychotherapy treatment interventions, as treatment motivation and a supportive therapeutic environment are considered to be essential in many psychotherapy modalities (Ryan & Deci, 2008). SDT is particularly relevant to the discussion of common psychotherapeutic factors. The theory's proponents have used SDT principles to outline an evidence-based set of guidelines and principles that aim to increase client motivation to reflect on experiences and events in their lives in order to make positive changes in their goals, behaviours, and relationships (Ryan & Deci, 2008).

In particular, the SDT constructs of autonomous and controlled motivation, autonomy support, and basic psychological needs have been proposed as factors that could influence psychotherapy outcome (Ryan & Deci, 2008; Deci & Ryan, 2008). Within the last few years, the roles of SDT variables such as autonomy support and autonomous motivation in psychotherapy outcome have been increasingly explored. However, as highlighted by Zuroff et al. (2012), there are some theoretically relevant SDT variables (e.g., support for relatedness, competence support) that have not yet been examined empirically. The contributions of these variables to the psychotherapeutic process are, as of yet, unexplored (Zuroff et al., 2012).

Basic Psychological Needs

The SDT model proposes that people's basic psychological needs for autonomy, competence, and relatedness must be satisfied for personal growth and mental health (Ryan & Deci, 2008). Ryan and Deci (2008) assert that those who are unable to satisfy one or more basic needs may remain unaware of their importance or may diminish the personal meaningfulness of the need. The authors suggest that these thwarted needs are often replaced with substitutes (e.g.,

extrinsic life goals), which then become the focus of the person's energy rather than striving to fulfill the basic psychological need. This needs thwarting leads to predictably poor outcomes. For example, when autonomy is consistently thwarted in the developmental period, this interferes with the child's development of intrinsic motivation, internalization, attachment, and emotional integration, leading to psychopathology (Ryan, Deci, Grolnick, & La Guardia, 2006). Proponents of SDT propose that a person's sense of autonomy, competence, and relatedness to others as experienced in psychotherapy will influence that individual's ability to develop an internal sense of motivation for effective change (Ryan & Deci, 2008). It is likely that facilitating clients' awareness of their basic psychological needs and exploring opportunities for greater satisfaction of these needs in psychotherapy will result in better outcomes and fewer early terminations. Interventions designed to increase a client's sense of autonomy, competence, and relatedness in psychotherapy might therefore result in more effective treatment and higher rates of client retention.

Within psychotherapy, Ryan and colleagues (2010) describe the manner in which each need can be supported in clients. Autonomy support (covered in more detail below) occurs when a therapist softens the pressure to enact specific behaviours and places a higher value on encouraging clients to base their actions on personally meaningful motives and ideals. Competence support can be achieved through providing a client with the necessary skills and mechanisms to effect change, and occurs once a client has developed a sufficient sense of autonomy (as autonomy is necessary in the SDT framework for the most effective uptake of learning and strategy application). Relational support occurs when the client perceives genuine unconditional positive regard and involvement on the part of their therapist.

A plethora of evidence suggests that self-reported autonomy, competence, and

relatedness are each important contributors to positive mood, well-being, and thriving in both the short- and long term across a variety of contexts (Sheldon & Filak, 2008). For instance, several studies have demonstrated that daily variations in the three basic needs combine to predict daily fluctuations in well-being (Sheldon, Ryan, & Reis, 1996; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Reis and colleagues (2000) examined daily state fluctuations in basic needs satisfaction over a two-week period, controlling for trait-level individual differences. The authors found that emotional well-being from day to day was significantly predicted by level of basic needs satisfaction reported on a given day. In addition, the authors discovered that relatedness needs were best supported daily by meaningful talk and feeling understood by conversational partners. Moreover, research by Sheldon and colleagues (1996) revealed that in addition to state levels of autonomy and competence predicting daily well-being, participants who scored higher in terms of trait competence and autonomy tended to rate their experience as "better" on average than those who scored lower on these trait measures.

Furthermore, recent studies have demonstrated a consistent link between basic needs satisfaction and objective outcomes. For example, Reeve and Tseng (2011) found that participants who were working in a controlling setting compared to an autonomy supportive or neutral setting produced significantly more of the stress hormone cortisol, even when the tasks being completed were enjoyable. In addition, Ahmad, Vansteenkiste, and Soenens (2013) demonstrated that children who rate their basic needs as more fulfilled tend to be rated as better adjusted in school by their teachers. Basic needs fulfillment has also been implicated in the amount of engagement individuals feel in specific situations. For instance, Van der Elst, Van den Broeck, De Witte, and De Cuyper (2012) found that frustration of autonomy, competence, and relatedness needs in the workplace predicted job insecurity and emotional exhaustion in

employees.

Satisfaction of the three needs has also been demonstrated to predict secure attachment relationships (La Guardia, Ryan, Couchman, and Deci, 2000) and ratings of whether an event was satisfying (Sheldon, Elliot, Kim, & Kasser, 2001). La Guardia et al. (2000) also found that there was significant variability for the level of attachment to important others (e.g., mother, romantic partner, best friend) within a single individual. Thus, not all relationships satisfy one's need for relatedness at the same level for one individual. Sheldon and colleagues investigated whether the three identified basic needs (autonomy, competence, and relatedness) were consistently the most associated with satisfying life events, compared to 7 other potential basic needs. Participants consistently rated autonomy, competence, and relatedness needs as the most fulfilled after the occurrence of satisfying life events.

As overall well-being, secure relationship attachments, engagement, and situational satisfaction share a strong relationship with basic need satisfaction, it holds that psychological interventions which support a client's sense of autonomy, competence, and relatedness in psychotherapy would produce beneficial client outcomes and higher rates of client retention. In essence, these needs-fulfilled clients might experience greater well-being, a better relationship with their therapist, and a better experience of- and more engagement with the process of therapy, and these positive outcomes would likely lead to greater therapy persistence.

SDT: Types of Motivation

SDT principles focus not only on the amount of motivation individuals possess in various life domains, but also the types of motivation individuals hold (Deci & Ryan, 2008). Previous theories of human motivation were primarily based upon the amount of motivation

individuals demonstrated in specific behaviours or activities. Those who reported a high amount of motivation were thought to be more likely to succeed in achieving their goals. However, Deci and Ryan (2008) theorized that the quality of motivation for particular life domains would prove more predictive of outcome (e.g., psychological health, quality of life, performance in a domain, creative problem solving, abstract learning). This theory was borne out in an abundance of research in an extensive number of areas (Deci & Ryan, 2008). Researchers have used an SDT framework of motivation to predict outcomes in a wide variety of behaviour change programs, including those targeting weight loss (Williams, Grow, Freedman, Ryan, & Deci, 1996), alcohol cessation (Ryan, Plant, & O'Malley, 1995), job performance (Gagné & Deci, 2005), and academic performance (Guay, Ratelle, Roy, & Litalien, 2010). For instance, Ryan, Plant, and O'Malley (1995) reported that autonomous motivation significantly predicted improvement in symptoms in a group of individuals receiving alcohol cessation treatment. Williams, Grow, Freedman, Ryan, and Deci (1996) discovered a similar relationship between autonomous motivation and successful weight loss. Guay and colleagues (2010) found that autonomous motivation mediated the relationship between high school students' academic self-concept and the level of academic achievement attained. More recently, autonomous motivation has been employed as a predictor of successful symptom reduction in psychotherapy (Ryan & Deci, 2008).

According to SDT, motivation takes several different forms, ranging on a spectrum from the most externally generated form of motivation to the most internalized form. In the SDT framework, a distinction is made between autonomous motivation and controlled motivation. Individuals are said to be autonomously motivated when they perceive their goals to be independently chosen, personally meaningful, and when they experience volition in acting

towards those goals (Deci & Ryan, 2008; Zuroff et al., 2012). When individuals experience controlled motivation, however, their drive to act is powered by external rewards or punishments, or internal pressures (e.g., approval seeking, avoidance of shame; Deci & Ryan, 2012).

As these concepts apply to psychotherapy, Ryan and Deci (2008) note that the most controlled form of motivation is known as external regulation, and it occurs when a client feels pressured or coerced to act in a certain way. Next, introjection results when clients enter into treatment as a result of feelings of guilt, the seeking of approval from others, or "shoulds" (Deci & Ryan, 2008). More autonomous than introjection, identified regulation is an extrinsic form of autonomous motivation in which clients identify and act towards personally meaningful therapy goals. In this type of motivation, clients are motivated towards the eventual outcome instead of the process of therapy. A person who experiences integrated regulation moves a step up the autonomous motivation ladder and identifies that the therapeutic tasks are in-line with personal ideals and perceptions. Finally, the most autonomous form of motivation is intrinsic motivation, in which a client demonstrates a genuine curiosity and interest in what is occurring in therapy. SDT posits that those who experience more controlled forms of motivation will experience less than ideal engagement in therapy and less long-term success. Ryan and Deci (2008) suggest that autonomous motivation is essential in the therapeutic process to facilitate lasting and meaningful change. They proposed that clients who experience more autonomous motivation are better able to engage in therapy tasks resulting from an internal sense of responsibility for the outcome (i.e., experience more success applying what they learn in therapy to make positive changes necessary for treatment success).

Several studies have investigated the unique contribution of autonomous and controlled motivation to therapeutic outcomes across various schools of psychotherapy. Research has indeed established that more autonomously motivated individuals demonstrate more willingness to effect change and greater therapy persistence. In line with the SDT framework for change, Zuroff and colleagues (2012) examined the role of autonomous motivation, controlled motivation, and autonomy support in the treatment of depression. Across three 16-week manualized treatment forms (Cognitive-Behavioural Therapy, Interpersonal Therapy, and Pharmacotherapy with clinical management), the authors found that autonomous motivation, controlled motivation, and level of perceived therapist autonomy support at sessions 3, 8, 13, and post treatment predicted depressive severity. Moreover, higher perceived autonomy support predicted higher ratings of autonomous motivation. As the results were comparable across the three treatment conditions, it is likely that an SDT framework has some utility in identifying new potential common factors in psychotherapy efficacy.

In another investigation of the effect of common factors on psychotherapy outcome, McBride et al. (2010) examined working alliance and autonomous motivation in a sample of depressed outpatients who received a 16-week Interpersonal Therapy treatment. Results indicated that working alliance and autonomous motivation demonstrate a differential effect in treatment, depending on the amount of depression recurrence participants suffer. While both working alliance and autonomous motivation predicted more positive treatment gains, those with highly recurrent depression benefitted most from a better working alliance while those with less recurrent depression benefitted from both working alliance and autonomous motivation. Additionally, controlled motivation negatively impacted participants' likelihood of remission. Thus, the interplay between depression recurrence, working alliance, and autonomous motivation

indicate that these factors hold clinical utility and should be monitored in order to inform treatment.

Mansour and colleagues (2012) also investigated the role of autonomous motivation in treatment outcome in a sample of typically treatment-resistant clients (those diagnosed with bulimia-spectrum eating disorders). The authors reported that those clients who possessed higher levels of autonomous motivation prior to treatment onset had lower scores post-treatment on a number of symptom specific measures, including eating preoccupation, binge eating, anxiety and depression, relationship to the self and others, and impulsivity. Thus, it appears that autonomous motivation is consistently predictive of positive therapeutic outcomes across a variety of treatment methods and diagnoses. This investigation found autonomous motivation to be predictive out outcome when autonomous motivation was measured prior to treatment. Theory would suggest that autonomy support during therapy would have an additional positive impact on outcome.

Autonomy Support

Autonomy support has been investigated as a causal mechanism for the development of autonomous motivation in individuals in a variety of situations (e.g., academics, sports, weight loss). For example, when teachers were instructed on techniques to improve autonomy support in the classroom, engagement of students in the learning process was significantly higher than for those teachers who received no such intervention (Reeve, Jange, Carrell, Jeon, & Barch, 2004). Pelletier, Fortier, Vallerand, and Briere (2002) found that sports coaches who were more control-oriented elicited more controlled forms of motivation in their athletes, whereas coaches who were autonomy supportive elicited significantly more autonomous motivation. Additionally,

Williams et al. (1996) found that autonomous motivation for weight loss was predicted by the level of autonomy support perceived from the health care staff who were delivering the intervention.

More recently, the role of autonomy support as a tool for fostering a greater sense of autonomous motivation in psychotherapy clients has been explored. Therapeutic environments are said to be autonomy-supportive when the therapist downplays the pressure to enact specific behaviours and emphasizes encouraging clients to base their actions on personally meaningful motives and ideals (Ryan et al., 2010). Autonomy support can be said to be achieved when a client feels able to identify personally meaningful reasons to enact change and does not feel pressured to act in a certain way (Ryan et al., 2010).

Motivational Interviewing (MI) is a psychotherapeutic intervention dedicated to the promotion of behaviour change (Miller & Rollnick, 2012) via increasing client motivation to change. In order to investigate the efficacy of MI, Westra and Dozois (2006) conducted a study in which half of participants received a three session "pre-treatment" of MI, followed by CBT, and the other half received only the CBT intervention. The authors found that CBT responders were significantly more frequent in the MI pre-treatment group compared to the no pretreatment group. In an attempt to explain the efficacy of forms of therapy dedicated to the improvement of clients' sense of internal volition, Markland, Ryan, Tobin, and Rollnick (2005) applied the SDT framework to MI. The authors suggested that MI techniques seemed to encourage clients to develop an internal sense of motivation for therapeutic change, consistent with an autonomy-supportive environment. Furthermore, a MI style of psychotherapy typically promoted the support of a client's basic psychological needs for autonomy, competence, and relatedness to others. Within MI psychotherapy, the authors theorize that autonomy is promoted through

nondirective questioning and reflection, competence through the delivery of case-relevant knowledge, and relatedness through the provision of unconditional positive regard (Marklandet al., 2005; Ryan and Deci, 2008).

In addition, Tee & Kazantzis (2011) suggested that SDT might provide a sound theoretical basis for the benefits of collaborative empiricism (CE). CE is a defining characteristic of cognitive therapy in which a client and therapist collaborate actively to pinpoint problematic situations and to test client's beliefs empirically through the designing, implementation, and evaluation of 'tests'. Tee and Kazantzis proposed that SDT could explain the mechanism through which CE moderates therapeutic outcome. According to the authors, CE supports client autonomy through providing a meaningful behaviour change rationale, minimized importance of external contingency reinforcement and the provision of choice in treatment, and the acknowledgement of negative feelings. Through this autonomy supportive environment, clients who also feel a high degree of competence to enact the behaviour change are then able to muster the volition to do so. Buckner and Schmidt (2009) also investigated the utility of pairing motivational enhancement therapy (MET) with CBT. Participants (socially anxious clients) were assigned to either a MET for CBT treatment condition or a control group. The authors found that those participants who received the MET intervention were significantly more likely to attend a first CBT session. These participants also demonstrated significantly more interest in being contacted by a therapist for the purpose of scheduling an appointment.

Ryan and colleagues (2010) also applied the SDT framework to a variety of psychotherapies as an explanatory factor in the positive outcomes produced by each. For example, the authors suggest that within behavioural therapies, practitioners facilitate increased externally regulated motivation via external reinforcements and punishments in order to effect

behavioural change. Further, while not explicitly stated as intentionally autonomy-supportive, Cognitive-Behavioural practice guidelines typically review the importance of allowing clients to feel a sense of volition in treatment, personal choice, and an internal valuing of the process of therapy.

Putting the Puzzle Pieces Together

SDT presents an evidence-based set of guidelines and principles that aim to increase client motivation to reflect on experiences and events in their lives in order to make positive changes in their goals, behaviours, and relationships (Ryan & Deci, 2008). The perceived fulfillment of basic psychological needs and the support for the fulfillment of these needs is essential in the development of an internal and personally meaningful sense of motivation for behaviour change. The principles of SDT readily lend themselves to application within a number of different treatment interventions, as treatment motivation and a supportive therapeutic environment are considered to be essential in many psychotherapy modalities (Ryan & Deci, 2008).

In addition, while working alliance has been investigated thoroughly in the context of therapy outcome, the similarity between SDT constructs (the basic psychological need of relatedness, in particular) and working alliance has yet to be investigated. For instance, Ryan and colleagues (2010) defined relational support (that which supports a client's basic need for relatedness) as that in which the therapist provides unconditional positive regard and involvement towards the client. Ensuring that the client feels respected, understood, and appreciated is considered essential in the support for this need. This unconditional positive regard and appreciation is thought to facilitate connection and trust between the client and

therapist. The conceptualization of this need for relatedness could perhaps partially explain the mechanism through which a good working alliance promotes positive therapeutic outcomes.

Current Research

Interview Study

This study aimed to address the as-of-yet uncharted relationship between basic psychological needs fulfillment in psychotherapy, working alliance, and early termination of therapy. We used a retrospective interview to ascertain former clients' sense of their needs fulfillment during their course of treatment, their working alliance with their therapist, and whether or not they had planned their ending therapy with their therapist. We hypothesized that (1) clients who rated higher fulfillment of basic psychological needs in psychotherapy would be more likely to persist in treatment until completion; (2) those who indicated experiencing higher levels of working alliance in their relationship with their therapist would also be more likely to complete psychotherapy, as previous research has demonstrated; and (3) ratings of basic psychological needs fulfillment within psychotherapy would correlate highly with ratings of working alliance, as the two measures seem to tap into similar constructs (e.g., bond between therapist and client in working alliance is similar to the relatedness to others need espoused in SDT).

Procrastination Study

While the aforementioned research has provided a window into the clinical value of autonomous motivation and autonomy support in psychotherapy, there remains a gap in the

research with regards to the state-related intricacies of motivation and working alliance in psychotherapy from week to week. Further, few research studies have examined the relationship between basic psychological needs, motivation, and therapy outcome. In order to address this area of inquiry, and in lieu of the resources to conduct a manualized psychotherapy treatment study, we developed an intervention with an analogue population: problem procrastinators.

Approximately 70 percent of university students consider themselves to be procrastinators, and of those, 50 percent report that their procrastination habits are problematic (Schouwenburg, Lay, Pychyl, & Ferrari, 2004; Day, Mensink, & O'Sullivan, 2000). Academic procrastination is a pervasive, counter-intentional behaviour that is often characterized as bad, harmful, or foolish, and over 95% of procrastinators wish to reduce it (Steel, 2007). Similar to populations that experience mental health difficulties, problem procrastinators are often aware of their problematic thinking or behaviour but are not willing or able to take the appropriate steps to make positive changes (Rüsch, Angermeyer, & Corrigan, 2005; Ariely & Wertenbroch, 2002). Thus, procrastination habits require pervasive, emotionally demanding behavioural change that can be compared to the changes that are necessary for a mental health treatment seeking population.

Through this study, we explored whether self-determination supportive environments foster more autonomous motivation and greater psychological needs fulfillment in the context of an intervention directed at reducing academic procrastination. Participants were assigned to either a group or individualized procrastination intervention. The interventions were common across conditions; the difference between conditions was that the individualized intervention was tailored to match participants' trouble areas and thereby facilitate participants' sense of self-determination and working alliance with their facilitator.

In the current study, we proposed that a one-on-one, tailored intervention for procrastination would prove more successful in supporting self-determination in participants than a standardized group intervention. It was hypothesized that in the individual intervention, (1) participants would report higher levels of basic psychological needs fulfillment post-intervention; (2) participants would experience a better working alliance with their intervention facilitator; (3) participants would experience a greater increase in autonomous motivation and little increase in controlled motivation for academics from baseline to endpoint, whereas participants in the group condition would experience a significant increase in controlled motivation over this same period. Additionally, as basic psychological needs constructs share a fair amount of similarity to subscales of the working alliance, it was hypothesized that participant ratings of the two measures would correlate highly. Finally, we expected to find that participants in the individual condition would report more autonomous and controlled motivation from baseline to endpoint for proximal homework goals (i.e., a daily identified homework task) and would demonstrate less procrastination behaviour than their group condition counterparts. The proposed study allowed for these important possibilities to be explored in a structured and experimental research design for a challenging, behaviour-change oriented problem experienced by many, namely procrastination.

Introduction

Interview Study

A great deal of research in the last two decades has been dedicated to examining the efficacy of common factors that are present across all forms of psychotherapy. According to numerous sources, common factors found in all psychological intervention methods are more influential predictors of treatment outcome than treatment techniques championed by any one individual therapy method (e.g., Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Safran & Muran, 2006; Wampold et al., 1997; Zuroff & Blatt, 2006). Despite these findings, the focus in treatment-oriented research has been on developing manualized treatment methods with the aim of targeting specific behavioural outcomes (Ryan & Deci, 2008).

As a result of the focus on manualized interventions, most evidence-based treatments are designed and tested with participants who meet very specific criteria and fall into discrete diagnostic categories (Ryan & Deci, 2008). According to Ryan and Deci (2008), there is a paucity of research dedicated to developing evidence-based treatments that focus on the process of change in psychotherapy. The authors assert that treatments that address the process of change are particularly important in the treatment of new or unique problems because in such cases, standardized treatments might not apply directly to the individual's treatment needs. As presenting problems and treatment goals in many therapy settings are complex and oftentimes evolve, therapeutic principles that can be easily adapted on a case–by–case basis are essential (Ryan & Deci, 2008; Yalom, 2002). Comprehensive theories that address these process needs would certainly assist therapists in working with clients whose goals for treatment sometimes change and whose problems present in a fashion that the therapist has not yet encountered (Ryan & Deci, 2008).

In particular, the working alliance between a client and therapist is the most studied and cited of the potential common factors that could form the basis of a process-oriented model of psychotherapy. According to Bordin (1979), working alliance is comprised primarily of three features: an agreement on the goals of therapy, an assignment of a task or series of tasks, and the development of a bond between therapist and client. Working alliance is a pan-theoretical and reliable predictor of positive therapeutic outcomes (Horvath & Symonds, 1991; Martin et al., 2000). However, as noted by Martin and colleagues (2000), while this relationship appears to be consistent regardless of the measure used or the position of the rater (e.g., client, therapist, observer), the correlation between working alliance and outcome is moderate. Meta-analyses have estimated the weighted effect size of working alliance to outcome at $r = .22$ to $r = .26$ (Martin et al., 2000; Horvath & Symonds, 1991). The modest effect size revealed in the available research indicates that there is a great deal of unexplained variance left to be accounted for (Zuroff, Koestner, Moskowitz, McBride, Marshall, & Bagby, 2007). Further, several authors controversially claim that outcomes from different therapies have no significant difference in efficacy (Messer & Wampold, 2002; Luborsky et al., 2002). Even if differences in efficacy are found, there is a robust effect size that seems to be related to treatment itself and unrelated to the type of psychotherapy (Smith & Glass, 1977). It would therefore be a prudent next step for researchers to identify other common factors that predict positive outcomes in psychotherapy.

In response to this seeming gap in our understanding of *how* differing forms of psychotherapy lead to similar positive outcomes, several authors have investigated the possible contribution of self-determination theory (SDT) variables such as autonomous and controlled motivation and autonomy support to therapeutic change (e.g., Zuroff et al, 2007; Zuroff, Koestner, Moskowitz, McBride et al., 2010; Mansour et al., 2012). SDT is an overarching theory

of human motivation, development, and wellness (Ryan & Deci, 2008). The principles of SDT readily lend themselves to application to a number of different treatment interventions, as treatment motivation and a supportive therapeutic environment are considered to be essential to many psychotherapy modalities (Ryan & Deci, 2008). SDT is particularly relevant to the discussion of common psychotherapeutic factors; the theory's proponents have used SDT principles to outline an evidence-based set of guidelines and principles that aim to increase client motivation to reflect on experiences and events in their lives in order to make positive changes in their goals, behaviours, and relationships (Ryan & Deci, 2008). In particular, the SDT constructs of autonomous and controlled motivation, autonomy support, and basic psychological needs have been proposed as factors that could influence psychotherapy outcome (Ryan & Deci, 2008; Deci & Ryan, 2008). However, as highlighted by Zuroff et al. (2012), there are some theoretically relevant SDT variables (e.g., support for relatedness, competence support) that have not yet been examined empirically. The contributions of these variables to the psychotherapeutic process are, as of yet, unexplored (Zuroff et al., 2012).

The SDT model proposes that people's basic psychological needs for autonomy, competence, and relatedness must be satisfied for personal growth and mental health (Ryan & Deci, 2008). Autonomy refers to the self-endorsement of one's own behaviour and the resulting sense of volition that accompanies this personal backing, competence to an individual's sense of confidence in their ability to effect desired outcomes, and relatedness to a person's need to feel a sense of connection with others (Ryan & Deci, 2008; Ryan, Lynch, Vansteenkiste & Deci, 2010). SDT postulates that these three needs form the basis for self-motivation and the integration of one's personality (Ryan et al., 2010). Specifically, contextual factors in an individual's environment, such as an extrinsic reward or an opportunity for choice, can thwart or

support the fulfillment of basic needs. In turn, this fulfillment or thwarting of needs can be used to predict outcomes (e.g., behaviour, affect, well-being, level or type of motivation experienced; Deci & Ryan, 2008).

Ryan and Deci (2008) assert that those who are unable to satisfy one or more basic needs may remain unaware of their importance or may diminish the personal meaningfulness of the need. The authors suggest that these thwarted needs are often replaced with substitutes (e.g., extrinsic life goals), which then become the focus of the person's energy rather than striving to fulfill the basic psychological need. Proponents of SDT propose that a person's sense of autonomy, competence, and relatedness to others as experienced in psychotherapy will influence that individual's ability to develop an internal sense of motivation for effective change (Ryan & Deci, 2008). It is thus likely that facilitating clients' awareness of their basic psychological needs and exploring opportunities for greater satisfaction of these needs in psychotherapy will result in better outcomes and fewer early terminations.

Within psychotherapy, Ryan and colleagues (2010) have described the manner in which each need can be supported in clients. Autonomy support occurs when a therapist softens the pressure to enact specific behaviours and places a higher value on encouraging clients to base their actions on personally meaningful motives and ideals. Competence support can be achieved through providing a client with the necessary skills and mechanisms to effect change, and it occurs once a client has developed a sufficient sense of autonomy (as autonomy is necessary in the SDT framework for the most effective uptake of learning and strategy application). Relational support occurs when the client perceives genuine unconditional positive regard and involvement on the part of their therapist.

A plethora of evidence suggests that self-reported autonomy, competence, and

relatedness are each important contributors to positive mood, well-being, and thriving in both the short and long term across a variety of contexts (Sheldon & Filak, 2008). For instance, several studies have demonstrated that daily variations in the three basic needs combine to predict daily fluctuations in well-being (Sheldon, Ryan, & Reis, 1996; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Satisfaction of the three needs has also been demonstrated to predict secure attachment relationships (La Guardia, Ryan, Couchman, and Deci, 2000), and ratings of whether an event was satisfying (Sheldon, Elliot, Kim, & Kasser, 2001). As overall well-being, secure relationship attachments, and situational satisfaction share a strong relationship with basic need satisfaction, it holds that the psychotherapeutic context as well as individual psychological interventions which support a client's sense of autonomy, competence, and relatedness in psychotherapy might produce beneficial client outcomes and higher rates of client retention. In essence, these clients might experience greater well-being, a better relationship with their therapist, and a better experience of the process of therapy, and these positive outcomes would likely lead to greater therapy persistence.

Estimates of the rate of dropout after the first session of psychotherapy range from 20% to 57% across various settings and among various treatment populations (Barrett, Chua, Crits-Cristoph, Gibbons, & Thompson, 2008). In addition, whether the criterion is therapist judgment or the number of sessions attended, approximately 48% of clients are considered to discontinue therapy early (Wierzbicki & Pekarik, 1993). As a result, many clients entering treatment do not receive enough psychotherapy to obtain the desired symptomatic relief they sought treatment for (Barrett et al., 2008).

Bados, Balaguer, and Saldana (2007) found that 46.7% of clients who terminated Cognitive-Behavioural treatment early cited low motivation and or/ a lack of satisfaction with

the treatment method or therapist. Another study conducted by Piper et al. (1999) found that while pretherapy variables (e.g., demographics, diagnoses) did not predict therapy completers from those who would terminate early, process variables such as client ratings of working alliance significantly differentiated the two groups. A meta-analysis of studies investigating the relationship between therapy dropout and working alliance found that working alliance has a moderately strong relationship with dropout (Cohen's d = .55, r = .27), with clients who report a weaker working alliance being more likely to terminate therapy early (Sharf, Primavera, & Diener, 2010). While SDT variables such as basic psychological needs satisfaction and autonomous motivation have not yet been researched in the context of early treatment termination, it is predicted that the relationship would be similar to other therapy process variables, such as working alliance.

While working alliance has been investigated thoroughly in the context of therapy outcome, the similarity between SDT constructs (the basic psychological need of relatedness, in particular) and working alliance has yet to be investigated. For instance, Ryan and colleagues (2010) defined relational support (that which supports a client's basic need for relatedness) as that in which the therapist provides unconditional positive regard and involvement towards the client. Ensuring that the client feels respected, understood, and appreciated is considered essential in the support for this need. This unconditional positive regard and appreciation is thought to facilitate connection and trust between the client and therapist (Rogers, 1992). The conceptualization of this need for relatedness could perhaps partially explain the mechanism through which a good working alliance promotes positive therapeutic outcomes and lower dropout rates.

Studies have used varying definitions of dropout in previous literature, and there is currently no one agreed-upon definition in use in the research literature. While most previous studies have defined dropout as withdrawing from therapy prior to a specified number of sessions, this number of sessions can vary from study to study (Barrett et al., 2008). Other authors have defined dropout variously as missing two consecutive sessions (Kolb, Beutler, Davis, Crago, & Shanfield, 1985), missed attendance of the final therapy session (Hatchett et al., 2002), ending therapy within the first 9 months (Frayn, 1992), and unilateral client-initiated therapy termination without the backing of the therapist (Berrigan & Garfield, 1981; Pekarik, 1992). For our purposes in the current study, we will define dropout according to whether client therapy termination was planned with the therapist or unplanned. In this regard, we hope to identify those clients who made a unilateral decision to end therapy prematurely, without the consultation of their therapist.

Through this study, we aimed to address the relationship between basic psychological needs fulfillment in psychotherapy, working alliance, and early termination of therapy. We used a retrospective interview to ascertain former clients' sense of their needs fulfillment during their course of treatment, their working alliance with their therapist, and whether or not they had planned their ending therapy with their therapist. We hypothesized that (1) clients who rated higher fulfillment of basic psychological needs in psychotherapy would be more likely to persist in treatment until completion; (2) those who indicated experiencing higher levels of working alliance in their relationship with their therapist would also be more likely to complete psychotherapy, as previous research has demonstrated; and (3) ratings of basic psychological needs fulfillment within psychotherapy would correlate highly with ratings of working alliance, as the two measures seem to tap into similar constructs (e.g., bond between therapist and client in

working alliance is similar to the relatedness to others need espoused in SDT). It is possible that basic needs satisfaction could be used to explain variation in therapist-client working alliance, or that these two constructs are distinct enough to independently influence the therapy process.

Study 1 – CMHR Services Follow-Up Study

Method

Participants

Potential participants were adult psychotherapy clients who had completed their course of psychotherapy within the Centre for Mental Health Research (CMHR) in the past three years. The CMHR is run by the Clinical Psychology Program in the Department of Psychology at the University of Waterloo. It is a university-based treatment centre in which students completing their Ph.D. or internship in Clinical Psychology receive training and conduct psychotherapy under the supervision of Clinical Psychologists. There are three main goals within the CMHR: providing training to graduate students of the clinical program, providing mental-health services, and conducting mental-health research. Clients at the CMHR are people from the surrounding community who seek services for a variety of psychological difficulties.

CMHR clients are asked prior to beginning therapy if they consent to being contacted regarding research opportunities that arise. Those clients who provided this consent and had completed their course of therapy within the last three years were eligible to participate in the study. Additionally, prior to contacting former clients, the researchers sought consent to participate in the study from student therapists and their supervisors at the CMHR via email. Researchers only contacted former clients for whom both their student therapist and the supervisor of the case provided consent (see Figure 1 for participant recruitment flow chart). Clients who met all of the eligibility requirements listed above (n = 48) were contacted by a researcher. Those former clients who met all eligibility requirements and agreed to participate (n = 11) were 5 males and 6 females with an average age of 34.8 (SD = 15.45).

Measures

Interview. Participants were asked to complete a semi-structured interview either via phone or in-person. Included in the interview were questions regarding therapy experience satisfaction, reasons for therapy termination, status at time of termination (i.e., did they consider their ending of therapy planned with their therapist or unplanned), and ratings of case conceptualization variables included for another related study (see Appendix A for full interview script).

Basic Needs Satisfaction Psychotherapy Scale (BNSP). This scale was adapted from the Basic Psychological Needs Satisfaction in Relationships scale (La Guardia, Ryan, Couchman, & Deci, 2000). This measure was designed to evaluate the degree to which a person's basic psychological needs are satisfied within a particular relationship. The questionnaire verb tense was revised to reflect retrospective ratings. Further, the root phrase "When I am with _____," was replaced with the phrase "In therapy." For example, one item that originally read, "When I am with _____, I feel free to be who I am," was modified to state, "In therapy, I felt free to be who I am." Item responses are rated on a 7-point Likert scale, ranging from (1) Not at all true to (7) Very true. The original scale demonstrated reliabilities for mother, father, romantic partner, and friends as .92, .92, .92, and .90, respectively (La Guardia, Ryan, Couchman, & Deci, 2000).

Working Alliance Inventory – Short Form (Client; WAI-SF). This 12-item measure was designed to evaluate the various thoughts and feelings a client might hold towards the therapist with whom they have been working (Horvath & Greenberg, 1989). The scale demonstrates good reliability, with a Cronbach's alpha of .91 (Busseri & Tyler, 2003). Verb tenses of items were revised to reflect a retrospective rating. For example, the item, "My

therapist and I are working towards mutually agreed upon goals," became "My therapist and I were working towards mutually agreed upon goals."

Procedure

Former clients who had met all study eligibility requirements were called or emailed by a researcher, depending on the contact preference they had expressed in their CMHR file. The nature and content of the phone interview was explained. Participation in lab was also offered if participants were not interested in completing the interview over the phone. If the former client expressed interest in participation, researchers sent them an Information Letter via mail or email. Participants were informed that they either could contact the researchers to set up an interview time or wait until researchers contacted them again to establish an interview slot.

Interviews were audio-recorded for record-keeping purposes with the consent of participants. However, if a participant did not consent to audio-recording, participation was still possible. Researchers contacted the participants within two weeks of sending the Information Letter if the participant did not contact researchers to set up their interview time. Phone calls and emails were made using contact information provided by past clients from the CMHR.

The interview lasted an average of approximately 30 minutes. The questions' content and format can be found in the interview script (see Appendix A). At the conclusion of the interview participants were asked how they felt discussing their former treatment or involvement with the CMHR in order for researchers to provide support and resources in the unlikely event that participants were negatively impacted by study participation. A feedback letter was mailed or emailed to participants after the conclusion of the interview.

Results

Did level of basic psychological needs fulfillment predict client retention?

It was hypothesized that participants who reported higher levels of basic psychological needs fulfillment within the psychotherapy context would demonstrate a higher rate of therapy completion. T-tests were conducted to compare reported satisfaction of autonomy, competence, and relatedness needs with termination status (i.e., planned versus unplanned). Comparison of mean retrospective ratings of autonomy, competence, and relatedness needs satisfaction indicated that while there were slightly higher scores in all variables for those participants who were planned enders, the relationship between needs satisfaction and termination status in our sample was not statistically significant (see Table 1).

Did client ratings of working alliance predict termination status?

We hypothesized that participants who had higher retrospective ratings of working alliance would be more likely to be therapy completers. T-tests were conducted, comparing overall working alliance scores as well as individual working alliance subscales across groups formed in accordance with termination status. Results indicated that while mean ratings on the task, bond, and goal subscales were slightly higher for planner enders, none of these trends were statistically significant (see Table 2).

Did level of basic psychological needs fulfillment correspond with self-reported working alliance?

We predicted that participants who reported higher ratings of basic psychological needs fulfillment would also report higher levels of satisfaction with the working alliance they shared

with their therapist. Pearson correlations between the overall scores on the BNSP and WAI-SF were conducted, as were Pearson correlations between subscales of the BNSP (autonomy, competence, and relatedness subscales) and the WAI-SF (task, bond, and goal subscales). Results (see Table 3) indicated that there was a significant correlation between the two measures overall, $r = .70$, $n = 11$, $p = .017$. The pattern of correlations between individual subscales of the BNSP and WAI-SF is also notable. Ratings on the autonomy subscale were highly correlated with overall ratings of working alliance, $r = .80$, $n = 11$, $p = .003$, as well as bond, $r = .84$, $n = 11$, $p = .001$, and goal, $r = .83$, $n = 11$, $p = .001$, subscales. There was no statistically significant relationship evident between autonomy and the task subscale. However, the test of the difference among the correlation between autonomy and alliance and autonomy and task approached statistical significance ($z = -0.16$, $p = 0.11$). Moreover, the competence subscale of the BNSP was significantly correlated only with the task subscale of the WAI-SF, $r = .69$, $n = 11$, $p = .019$. However, a test of difference among the correlation between competence and task and competence and bond revealed a trend in the direction of statistical significance ($r_{competence,task} = .69$, $r_{competence,bond} = .14$; $z = 1.41$, $p = .159$). Finally, the relatedness subscale was correlated with overall ratings of working alliance, $r = .82$, $n = 11$, $p = .002$, as well as the task, $r = .63$, $n = 11$, $p = .037$, and bond, $r = .80$, $n = 11$, $p = .003$, subscales. Although not statistically significant, the relationship between relatedness and the goal subscale was of a very similar magnitude (relatedness and task $r = .63$; relatedness and goal $r = .60$).

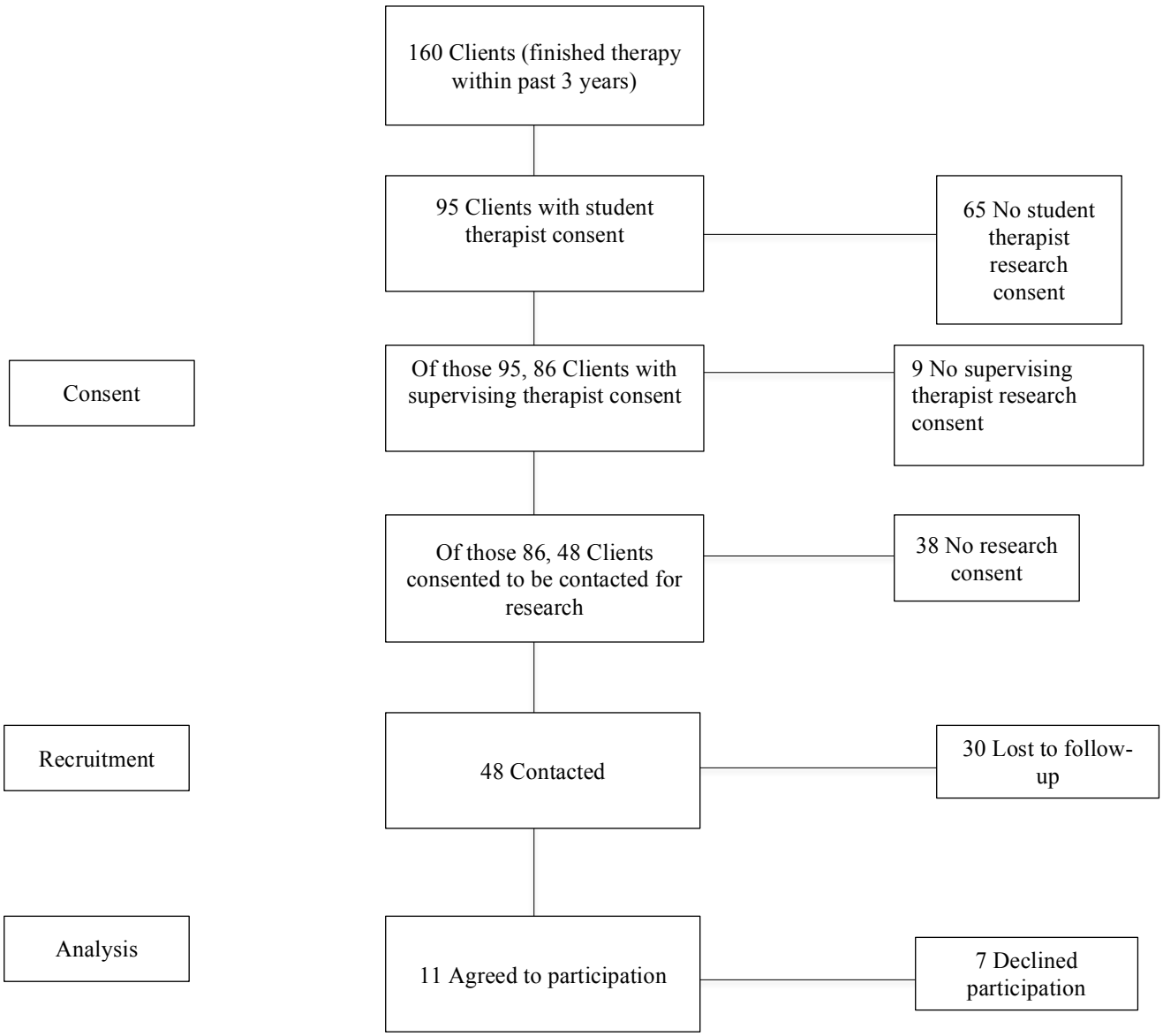


Figure 1. Interview study participant recruitment flow chart.

Table 1

Basic Needs Satisfaction and Termination Status – Study 1

	Planned (n = 7)		Unplanned (n = 3)				
	M	SD	M	SD	*t*	*df*	*p*
Autonomy Subscale	6.62	.36	6.33	.67	.911	8	.389
Competence Subscale	5.52	1.35	4.78	.77	1.11	8	.404
Relatedness Subscale	6.43	.60	5.89	.84	1.17	8	.275

Note. One participant was excluded from the analyses due to missing information.

Table 2

Working Alliance Subscales and Termination Status – Study 1

	Planned (n = 7)		Unplanned (n = 3)				
	M	SD	M	SD	*t*	*df*	*p*
Task Subscale	6.11	.67	5.50	.25	1.47	8	.179
Bond Subscale	6.61	.35	5.58	.95	1.82	8	.197
Goal Subscale	6.25	.68	5.67	.52	1.32	8	.224

Note. One participant was excluded from the analyses due to missing information.

Table 3

Basic Needs Satisfaction Correlation with Working Alliance – Study 1

	WAI-SF	Task	Bond	Goal
BNSP	.70*	.78*	.58	.40
Autonomy	.80**	.28	.84**	.83**
Competence	.30	.69*	.14	-.03
Relatedness	.82**	.63*	.80*	.60
WAI-SF	--	--	--	--
Task		--	.36	.45
Bond			--	.79**
Goal				

n = 11; * $p \leq .05$; ** $p \leq .01$

Discussion

The purpose of the current study was to evaluate the relationship between basic psychological needs satisfaction within the psychotherapy context, therapy termination status, and working alliance. The study was conducted as a retrospective phone interview, in which ratings of basic psychological needs fulfillment and working alliance were self-reported by former clients. Participants also rated their therapy termination status as either "planned" with their therapist or "unplanned."

We predicted that higher ratings of basic psychological needs fulfillment would be found in a group of planned enders compared to unplanned enders, as a person's sense of autonomy, competence, and relatedness to others as experienced in psychotherapy is thought to influence that individual's ability to develop an internal sense of motivation for effective change (Ryan & Deci, 2008). However, results indicated that this relationship was not significant in our sample. In addition, we hypothesized that higher ratings of working alliance would also predict a higher proportion of planned endings, as a plethora of previous research has indicated that working alliance has a significant effect on therapy outcome (e.g., Horvath & Symonds, 1991; Martin, Garske, & David, 2000; Safran & Muran, 2000, 2006; Wampold et al., 1997; Zuroff & Blatt, 2006). This result was again found to be non-significant in our sample. Despite these non-significant findings, in both cases, results were trending in the direction that we predicted (i.e., greater ratings of basic needs satisfaction and working alliance corresponding to a smaller likelihood of dropout from psychotherapy). The current sample was very small (n = 11). A larger sample size would better estimate the relationship between basic needs satisfaction in psychotherapy, working alliance, and therapy persistence.

Further, there was an interesting pattern of correlations between our measure of basic needs satisfaction in psychotherapy and working alliance, both in overall scores and between subscales of the measures. While we expected to (and did) find a significant correlation between basic needs satisfaction and working alliance overall, the pattern of correlations between subscales of the two measures is especially notable. For example, clients who endorse a strong bond also tend to feel more cared for and connected (i.e., relatedness), and perceive experiencing more autonomy in therapy. In addition, clients endorsing a high degree of agreement on therapeutic tasks tend to feel more competent in learning and applying therapy techniques and more relatedness with their therapist. It is likely that the working alliance and needs measures are tapping into similar constructs within the psychotherapy context. However, while these constructs are similar, they do not appear to share so much variance as to be identical. It is likely that the basic needs scale can offer important information in addition to working alliance measures.

This study has several limitations to note. First, the sample we interviewed was self-selecting. It is possible that those former clients who agreed to participate were functionally different from those who declined participation. For example, the clients who participated could have had a more positive therapeutic experience than those who did not participate and were thus more willing to share their experiences. It is also possible that therapy completers were more likely to agree to participation than those who discontinued treatment early. Moreover, as our study was conducted retrospectively, client ratings of past experiences might have been influenced by the amount of time that had passed since they completed therapy. Those who were rating therapy experiences that had occurred three years prior might have had a more difficult time accurately rating how they felt at the time than those who completed therapy within the past

year. In future studies, in order to address the limitations of the current research, basic psychological needs fulfillment, working alliance, and their relationship with therapy termination status should be evaluated on a broader scale, prospectively. The increase in power will allow for the true nature of the relationships to be revealed, and a prospective study design will allow for clients to provide more accurate and immediate ratings of these variables as well as how they change while they undergo treatment.

Study 2 – Undergraduate Therapy Experiences Study

Method

Participants

Participants included nineteen undergraduate students from the University of Waterloo who were recruited to participate in this study for course credit. Participants were able to view the study details on SONA (a university-based online research recruitment tool) and self-selected into the study. Participants were only able to view and select the study if they had experienced at least one session of one-to-one psychotherapy since beginning high school. Participants included 5 males and 14 females with an average age of 20.79 (SD = 1.13)

Measures

Interview. Participants were asked to complete a semi-structured interview in-person. Akin to the interview described in Study 1, this interview consisted of questions regarding therapy experience satisfaction, reasons for therapy termination, and ratings of case conceptualization variables. The interview script was modified from our original version used with former CMHR clients in order to gather information on the types of therapy experiences students were rating (see Appendix A for full interview script).

Basic Needs Satisfaction Psychotherapy Scale (BNSP). This scale was identical to that used in Study 1.

Working Alliance Inventory – Short Form (Client; WAI-SF). This measure was again the same as that used in Study 1.

Procedure

This study was developed as a continuation of Study 1 with the intent of gathering further insight into the relationship between basic psychological needs satisfaction within the psychotherapy context, therapy termination status, and working alliance. The study was conducted as a retrospective in-person interview, in which ratings of basic psychological needs fulfillment and working alliance were self-reported by undergraduate students who had completed at least one session of one-to-one psychotherapy. Participants also rated their therapy termination status as either "planned" with their therapist or "unplanned."

Interviews were audio-recorded for record-keeping purposes with the consent of participants. Interviews were conducted in the psychology building research area at the University of Waterloo and lasted an average of approximately 30 minutes. The questions' content and format can be found in the interview script (see Appendix A). At the conclusion of the interview participants were asked how they felt discussing their former treatment in order for researchers to provide support and resources in the unlikely event that participants were negatively impacted by study participation. A feedback letter was provided to participants at the conclusion of the interview.

Results

Did level of basic psychological needs fulfillment predict client retention?

As in Study 1, it was hypothesized that participants who reported higher levels of basic psychological needs fulfillment within the psychotherapy context would also report a higher rate of therapy persistence. T-tests were conducted to compare reported satisfaction of autonomy, competence, and relatedness needs with termination status (i.e., planned versus unplanned). Results (see Table 4) indicated that overall ratings of needs satisfaction were significantly higher for those who had planned their therapy termination with their therapist, t (16) = 2.32, p = .034. Furthermore, while there was no significant difference between ratings of autonomy and relatedness for planned versus unplanned therapy enders, planned enders retrospectively rated their felt sense of competence in therapy as significantly higher, t (14.46) = 2.94, p = .010 (Levene's test for equality of variance was significant, F (1, 16) = 10.20, p = .006, so the reported t statistic was computed not assuming homogeneity of variance).

Did client ratings of working alliance predict termination status?

In line with Study 1, we hypothesized that participants who had higher retrospective ratings of working alliance would be more likely to be therapy completers. T-tests were conducted to compare overall working alliance scores as well as individual working alliance subscales to termination status (see Table 5). Results indicated that, while ratings of overall working alliance for planned enders was not significantly higher than for unplanned enders, this relationship approached significance, t (16) = 2.00, p = .063. Levene's test for equality of variance was significant for the task t-test, F (1, 16) = 6.01, p = .026, and as such the following t-test was computed not assuming homogeneity of variance. Individual t-tests examining the

relationship of working alliance subscales and termination status revealed that both bond, t (16) = 2.36, p = .032, and task, t (16) = 2.27, p = .038, were rated significantly higher by planned enders. There was no significant difference between planned and unplanned ender ratings of the goal subscale.

Did level of basic psychological needs fulfillment correspond with self-reported working alliance?

Again, as stated in Study 1, it was predicted that participants who reported higher ratings of basic psychological needs fulfillment would also report higher levels of satisfaction with the working alliance they shared with their therapist. Pearson correlations between the overall scores on the BNSP and WAI-SF were conducted, as were Pearson correlations between subscales of the BNSP (autonomy, competence, and relatedness subscales) and the WAI-SF (task, bond, and goal subscales). Results (see Table 6) indicated that there was a significant correlation between the two measures overall, r = .79, n = 19, p <.001. The pattern of correlations between individual subscales of the BNSP and WAI-SF is also noteworthy. Ratings on the autonomy subscale were highly correlated with overall ratings of working alliance, r = .60, n = 19, p = .006, as well as task, r = .56, n = 19, p = .013, bond, r = .62, n = 19, p = .005, and goal, r = .49, n = 19, p = .033, subscales. Moreover, the competence subscale was correlated with overall working alliance scores, r = .48, n = 19, p = .036, and was also significantly correlated with the WAI-SF bond subscale, r = .52, n = 19, p = .024. In contrast with findings from Study 1, in Study 2, competence seemed to be much more related to the bond and goal subscales. However, the test of the difference of correlations was not significant (for both, z < -1.01 and p > .3). Finally, the relatedness subscale was correlated with overall ratings of working alliance, r = .81,

$n = 19$, $p < .001$ as well as the task, $r = .74$, $n = 19$, $p < .001$, bond, $r = .88$, $n = 19$, $p < .001$, and goal, $r = .59$, $n = 19$, $p = .007$, subscales.

Table 4

Basic Needs Satisfaction and Termination Status – Study 2

	Planned (n = 6)		Unplanned (n = 12)				
	M	SD	M	SD	*t*	*df*	*p*
BNSP Total	52.00	5.66	43.17	8.36	2.32	16	.034
Autonomy Subscale	17.50	3.15	15.58	3.03	1.25	16	.229
Competence Subscale	16.83	1.17	13.33	3.77	2.94	14.46	.010
Relatedness Subscale	17.67	3.67	14.25	3.91	1.78	16	.094

Note. One participant was excluded from these analyses as she was still undergoing therapy.

Table 5

Working Alliance Subscales and Termination Status – Study 2

	Planned (n = 6)		Unplanned (n = 12)				
	M	SD	M	SD	*t*	*df*	*p*
WAI-SF Total	68.00	7.48	56.25	13.25	2.00	16	.063
Task Subscale	22.67	1.75	19.25	4.59	2.27	15.45	.038
Bond Subscale	23.67	3.20	18.33	5.02	2.36	16	.032
Goal Subscale	21.67	3.72	18.67	4.98	1.30	16	.213

Note. One participant was excluded from these analyses as she was still undergoing therapy.

Table 6

Basic Needs Satisfaction Correlation with Working Alliance – Study 2

	WAI-SF	Task	Bond	Goal
BNSP	.79**	.72**	.84**	.61*
Autonomy	.60**	.56*	.62**	.49*
Competence	.48*	.43	.52*	.39
Relatedness	.81**	.74**	.88**	.59**
WAI-SF	--	--	--	--
Task		--	.83**	.83**
Bond			--	.67**
Goal				

n = 11; * $p \leq .05$; ** $p \leq .05$

Discussion

The purpose of Study 2 was to further evaluate the relationship between basic psychological needs satisfaction within the psychotherapy context, therapy termination status, and working alliance with a larger sample size from the University of Waterloo undergraduate pool. The study was conducted as a retrospective in-person interview, in which ratings of basic psychological needs fulfillment and working alliance were self-reported by former clients. Participants also rated their therapy termination status as either "planned" with their therapist or "unplanned."

The results of Study 2 were more in line with our expected findings than as found in Study 1. Despite a modest sample size for Study 2, the slightly larger sample allowed for some of the trends seen in Study 1 to achieve statistical significance. Higher ratings of basic psychological needs fulfillment were related to a higher likelihood of a planned ending. Interestingly, participants who considered themselves planned enders rated their felt sense of competence in therapy as significantly higher than their unplanned ender counterparts. It is likely that feeling a greater sense of understanding of therapeutic techniques and more self-efficacy in practicing these techniques will lead to greater therapy persistence. Therefore, a focus on facilitating client understanding of therapy techniques and positive feedback regarding the application of these techniques is likely an important factor in preventing early therapy termination.

In addition, we hypothesized that higher ratings of working alliance would also predict a higher proportion of planned endings. While this result was again found to be non-significant in our sample, the relationship approached significance. Results were trending in the direction that we predicted (i.e., greater ratings of working alliance corresponding to a smaller likelihood of

dropout from psychotherapy). As noted in Study 1, a larger sample size would better estimate the relationship working alliance and therapy persistence. Further, despite the non-significant relationship of overall ratings of working alliance to early therapy termination, the relationship between unplanned endings and working alliance converts to an *r* of 0.45, which is larger than the effect size typically reported in meta-analyses (*r* = .22 to .26; Martin et al., 2000; Horvath & Symonds, 1991). Participants who completed their course of therapy rated both the task and bond subscales significantly higher than those who were unplanned enders. In our sample, it appears that the relevance of tasks assigned to clients and the strength of connection between client and therapist are important factors in early therapy termination.

There was also an interesting pattern of correlations between our measure of basic needs satisfaction in psychotherapy and working alliance, comparable to our findings in Study 1. Once again, we discovered a significant correlation between overall basic needs satisfaction and working alliance. Moreover, significant correlations between subscales of the two measures are notable in this study. For instance, ratings of autonomy on the BNSP were significantly correlated with all subscales of the WAI-SF. It appears that facilitating a client's sense of autonomy in treatment relates highly to the quality of the relationship between therapist and client. In contrast to Study 1, in this sample, competence was significantly correlated with only the bond subscale of the WAI-SF, whereas in Study 1, competence was significantly correlated only with the task subscale. While the test of differences revealed no significant difference between the correlations on these subscales between studies, it is worth noting that in this sample of participants, therapy occurred primarily at university counseling centres and most participants identified "talk therapy" as the style of treatment undergone. It is possible that this difference in treatment styles could account for some variation in the pattern of results. For example, as the

style of treatment received by participants in Study 2 focused more heavily on discussing current issues in the client's life whereas the style of treatment in Study 1 was more primarily based in Cognitive-Behavioural techniques, it follows that participants in Study 2 might derive their sense of competence less from the specific techniques used but instead from the perceived supportiveness of the relationship. In support of this theory, planned enders' ratings of relatedness correlated significantly with overall working alliance, as well as all working alliance subscales. Once again, these results indicate that the working alliance and needs measures might be tapping into similar constructs within the psychotherapy context.

This study has several limitations to note, similar to those addressed in Study 1. Our participants might have been unable to provide the most accurate responses due to the amount of time that had passed since therapy completion. Additionally, the therapy experiences of our participants in Study 2 were more variable, and participants sometimes were unclear as to the credentials of the treating therapist or the nature of the treatment they completed with their provider. In future studies examining the relationship between basic psychological needs fulfillment, working alliance, and therapy persistence, these variable should be examined prospectively on a larger scale. As stated in Study 1, the increase in power will allow for the true nature of the relationships in question to be clarified, and a prospective study design will allow for participants to provide more accurate and immediate ratings of these variable while in treatment.

Introduction

Procrastination Study

In the last two decades, there has been a plethora of research examining the efficacy of common factors that are present across all forms of psychotherapy. According to many sources (e.g., Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000; Safran & Muran, 2006; Wampold et al., 1997; Zuroff & Blatt, 2006), common factors found in all psychological treatments are more powerful predictors of treatment efficacy than treatment techniques espoused by any one individual therapy method. The working alliance between a client and therapist is far and away the most studied of these common factors (Martin et al., 2000; McBride et al., 2010).

According to Bordin (1979), working alliance is comprised primarily of three features: an agreement on the goals of therapy, an assignment of a task or series of tasks, and the development of a bond between therapist and client. Working alliance is a pan-theoretical and reliable predictor of positive therapeutic outcomes (Horvath & Symonds, 1991; Martin et al., 2000). However, as noted by Martin and colleagues (2000), while this relationship appears to be consistent regardless of the measure used or the position of the rater (e.g., client, therapist, observer), the correlation between working alliance and outcome is moderate. Meta-analyses have estimated the weighted effect size of working alliance to outcome at $r = .22$ to $r = .26$ (Martin et al., 2000; Horvath & Symonds, 1991). The modest effect size revealed in the available research indicates that there is a great deal of unexplained variance left to be accounted for (Zuroff, Koestner, Moskowitz, McBride, Marshall, & Bagby, 2007). Further, some researchers have controversially argued that outcomes from different therapies have no significant difference in efficacy (Messer & Wampold, 2002; Luborsky et al., 2002). It would therefore be a prudent

next step for researchers to identify other common factors that predict positive outcomes in psychotherapy.

In response to this gap in our understanding of *how* diverse forms of psychotherapy lead to positive outcomes, several authors have investigated the possible contribution of self-determination theory variables such as autonomous and controlled motivation to therapeutic change (e.g., Zuroff et al, 2007; Zuroff, Koestner, Moskowitz, McBride, & Bagby, 2012; McBride et al., 2010; Mansour et al., 2012). Self-Determination Theory (SDT) is an overarching theory of human motivation, development, and wellness (Ryan & Deci, 2008). The principles of SDT readily lend themselves to application within a number of different treatment interventions, as treatment motivation and a supportive therapeutic environment are considered to be essential to many psychotherapy modalities (Ryan & Deci, 2008). SDT is particularly relevant to the discussion of common psychotherapeutic factors; the theory's proponents have used SDT principles to outline an evidence-based set of guidelines and principles that aim to increase client motivation to reflect on experiences and events in their lives in order to make positive changes in their goals, behaviours, and relationships (Ryan & Deci, 2008). In particular, the SDT constructs of autonomous and controlled motivation, autonomy support, and basic psychological needs have been proposed as factors that could influence psychotherapy outcome (Ryan & Deci, 2008; Deci & Ryan, 2008).

Individuals are said to be autonomously motivated when they perceive their goals to be independently chosen, personally meaningful, and when they experience volition in acting towards those goals (Deci & Ryan, 2008; Zuroff et al., 2012). When individuals experience controlled motivation, however, their drive to act is powered by external rewards or punishments, or internal pressures (e.g., approval seeking, avoidance of shame; Deci & Ryan,

2012). Ryan and Deci (2008) suggested that autonomous motivation is essential in the therapeutic process to facilitate lasting and meaningful change. They proposed that clients who experience more autonomous motivation are better able to engage in therapy tasks resulting from an internal sense of responsibility for the outcome (i.e., these clients experience more success applying what they learn in therapy to make positive behavioural changes).

In an attempt to explain the efficacy of forms of therapy dedicated to the improvement of clients' sense of internal volition, Markland, Ryan, Tobin, and Rollnick (2005) applied the SDT framework to motivational interviewing (MI). MI is a form of psychotherapy dedicated to the promotion of behaviour change (Miller & Rollnick, 2012). The authors suggested that MI techniques seemed to encourage clients to develop an internal sense of motivation for therapeutic change, consistent with an autonomy-supportive environment. Furthermore, a MI style of psychotherapy typically promotes the support of a client's basic psychological need for autonomy, competence, and relatedness to others. Within MI psychotherapy, the authors theorize that autonomy is promoted through nondirective questioning and reflection, competence through the delivery of case-relevant knowledge, and relatedness through the provision of unconditional positive regard (Markland, Ryan, Tobin, and Rollnick, 2005; Ryan and Deci, 2008).

The SDT model proposes that people's basic psychological needs for autonomy, competence, and relatedness must be satisfied for personal growth and mental health (Ryan and Deci, 2008). Ryan and Deci (2008) assert that those who are unable to satisfy one or more basic needs may remain unaware of their importance or may diminish the personal meaningfulness of the need. The authors suggest that these thwarted needs are often replaced with substitutes (e.g., extrinsic life goals), which then become the focus of the person's energy rather than striving to fulfill the basic psychological need instead. It is likely that facilitating clients' awareness of their

basic psychological needs and exploring opportunities for greater satisfaction of these needs in psychotherapy will result in better outcomes and fewer early terminations. Interventions designed to increase a client's sense of autonomy, competence, and relatedness in psychotherapy might therefore result in more effective treatment and higher rates of client retention.

In addition to the seemingly important role of basic needs fulfillment in psychotherapy, several studies have investigated the unique contribution of autonomous and controlled motivation to therapeutic outcomes across various schools of psychotherapy. Zuroff and colleagues (2012) examined the role of autonomous motivation, controlled motivation, and autonomy support in the treatment of depression. Across three16-week manualized treatment forms (Cognitive-Behavioural Therapy, Interpersonal Therapy, and Pharmacotherapy with clinical management), the authors found that autonomous motivation, controlled motivation, and level of perceived therapist autonomy support at sessions 3, 8, 13, and post treatment predicted depressive severity. Moreover, higher perceived autonomy support predicted higher ratings of autonomous motivation. As the results were comparable across the three treatment conditions, it is likely that an SDT framework has some utility in identifying new potential common factors in psychotherapy efficacy.

In another investigation of the effect of common factors on psychotherapy outcome, McBride et al. (2010) examined working alliance and autonomous motivation in a sample of depressed outpatients who received a 16-week Interpersonal Therapy treatment. Results indicated that working alliance and autonomous motivation demonstrate a differential effect in treatment, depending on the course of depression from which participants suffer. While both working alliance and autonomous motivation predicted more positive treatment gains, those with highly recurrent depression benefitted most from a better working alliance while those with less

recurrent depression benefitted from both working alliance and autonomous motivation. Additionally, controlled motivation negatively impacted participants' likelihood of remission. Thus, the interplay between condition severity, working alliance, and autonomous motivation indicate that these factors hold clinical utility and should be monitored in order to inform treatment.

While the aforementioned research has provided a window into the clinical value of autonomous motivation and autonomy support in psychotherapy, there remains a gap in the research with regards to the state-related intricacies of motivation and working alliance in psychotherapy from week to week. Ryan, Connell, and Deci (1985) postulated that the motivation individuals experience is dynamic, and thus a client's motivation to engage in therapy or complete particular therapeutic tasks might vary according to situational influences (Pelletier, Tuson, & Haddad, 1997). Given that clients may feel more motivated towards action on some tasks or goals of psychotherapy than others, it is likely that task uptake and persistence towards identified goals varies accordingly. It is therefore important that researchers understand differential motivation day-to-day and week-to-week for programs that involve emotionally demanding behaviour change. Further, few research studies have examined the relationship between basic psychological needs, motivation, and therapy persistence. In order to address this area of inquiry, and in lieu of the resources to conduct a psychotherapy treatment study, we developed an intervention with an analogue population: problem procrastinators.

Approximately 70 percent of university students consider themselves to be procrastinators, and of those, 50 percent report that their procrastination habits are problematic (Schouwenburg, Lay, Pychyl, & Ferrari, 2004; Day, Mensink, & O'Sullivan, 2000). Academic procrastination is a pervasive, counter-intentional behaviour that is often characterized as bad,

harmful, or foolish, and over 95% of procrastinators wish to reduce it (Steel, 2007). Similar to populations that experience mental health difficulties, problem procrastinators are often aware of their problematic thinking or behaviour but are not willing or able to take the appropriate steps to make positive changes (Rüsch, Angermeyer, & Corrigan, 2005; Ariely & Wertenbroch, 2002). Thus, procrastination habits require pervasive, emotionally demanding change that can be compared to the changes that are necessary for a mental health treatment seeking population.

Through this study, we intended to explore whether self-determination supportive environments foster more autonomous motivation and greater psychological needs fulfillment in the context of an intervention directed at reducing academic procrastination. Participants were assigned to either a manualized (group) or individualized (one-on-one) procrastination intervention. In the group condition, participants were assigned research-based, but generic tasks to decrease their procrastination habits to be implemented for the next session. In the individualized condition, participants developed an explanation for their procrastination habits individually with their facilitator and collaboratively identified personally relevant goals to be implemented for the next session for reducing their procrastination. The interventions were common across conditions; the difference between conditions was that the individualized intervention was tailored to match participants' trouble areas and thereby was intended to facilitate participants' sense of self-determination and working alliance with their facilitator. After each session in both conditions participants were asked to complete measures of working alliance and perceived autonomy support. Measures of autonomous and controlled motivation and basic psychological needs fulfillment were completed at baseline and endpoint. Finally, participants completed a daily autonomous and controlled motivation questionnaire relating to their set goals for a specific daily homework task.

In the current study, we proposed that a one-on-one, tailored intervention for procrastination would prove more successful in supporting self-determination in participants than a standardized group intervention. It was hypothesized that in the individual intervention, (1) participants would report higher levels of basic psychological needs fulfillment post-intervention, (2) participants would experience a better working alliance with their intervention facilitator, and (3) participants would experience a greater increase in autonomous motivation and little increase in controlled motivation for academics from baseline to endpoint, whereas participants in the group condition would experience a significant increase in controlled motivation over this same period. Additionally, as basic psychological needs constructs share a fair amount of similarity to subscales of the working alliance, it was hypothesized that participant ratings of the two measures would correlate highly. Finally, we expected to find that participants in the individual condition would report more autonomous motivation and less controlled motivation from baseline to endpoint for proximal homework goals (i.e., a daily identified homework task) than their group condition counterparts. The current study allowed for these important possibilities to be explored in a structured and experimental research design for a challenging, behaviour-change oriented problem experienced by many, namely procrastination.

Methods

Participants

Participants included forty-seven undergraduate students form the University of Waterloo who were recruited to participate in this study for payment. Participants were eligible to receive a total of sixty-two dollars upon completion of the study. They were remunerated five dollars per weekly meeting, for a total of four meetings. Participants also received two dollars per completed diary entry, with a maximum of forty-two dollars for having completed twenty-one diary entries. This method of remuneration was necessary in order to appeal to student participants who could more easily receive two course participation credits through shorter or more simplistic studies.

Participants were able to view the study details on SONA (a university-based online research recruitment tool) and self-selected into the study. Potential participants were expected to select the study if they identified their procrastination habits as "problematic" and had an interest in completing an intervention to address these problematic procrastination issues. Participants included 13 males and 32 females with an average age of 20.44 (SD = 1.71)

Participants in both the first and second waves of recruitment were able to sign up for one of four 10-participant groups. Once participants self-selected into the study, each group of participants was assigned to either the individual or group condition. Condition assignment was designed to ensure a relatively even number of participants for the individual and group conditions. Four groups were assigned to the individual condition (21 participants at intake), and four groups were assigned to the group condition (24 participants at intake).

Materials and Measures

Initial Assessment Interview. The assessment interview was developed by a lab member who is a clinical psychology graduate student based on psychotherapy case formulation research (Kuyken, Fothergill, Musa, & Chadwick, 2005). The interview was conducted only with the individual condition participants. This brief interview allowed facilitators to gain a better sense of the participant's procrastination behaviour, in order to tailor an intervention to their individual needs. The semi-structured interview (see Individual Procrastination Interview and Session Outline; Appendix B) involved guided questions and techniques to aid the facilitator in narrowing the individual's description of their procrastination to the most problematic behaviours or thinking patterns.

Demographic Questionnaire. A 5-item measure comprised of demographic questions (e.g., "What is your age?" and "What is your program of study?").

Basic Need Satisfaction in General Scale. This questionnaire, comprised of 21 items, measures the participant's current level of fulfillment of basic psychological needs in their life overall. Responses are rated on a 7-point Likert scale, from (1) not at all true, to (7) very true. With a Cronbach's alpha of .89, this measure is considered reliable (Gagné, 2003). Sample items include "I feel like I am free to decide for myself how to live my life" and "I really like the people I interact with."

Reasons for Learning Questionnaire. This 12-item measure is rated on a 7-point Likert scale, from (1) not at all true to (7) very true. The questionnaire requires participants to answer questions regarding their motivational reasons for completing academic coursework. The controlled regulation subscale has demonstrated good reliability with a Cronbach's alpha of .75, as has the autonomous regulation subscale with a Cronbach's alpha of .80. (Black & Deci, 2000;

Williams & Deci, 1996). Question stems were modified to reflect a general inquiry into academic coursework rather than organic chemistry, which was the topic of the original questionnaire. For example, "I will participate actively in organic chemistry…" became "I will participate actively in my courses…" Items include questions such as "I will complete homework in my courses because I feel like its a good way to improve my understanding of the material." and "I am likely to follow my instructor's instructions for homework/studying because I would get a bad grade if I didn't do what he/she suggests."

Learning Climate Questionnaire – Revised. This 15-item measure, rated on a Likert scale ranging from (1) strongly disagree to (7) strongly agree, requires participants to rate how autonomy-supportive they perceive their intervention facilitator to be. The questionnaire was modified to reflect that the participant was working with an intervention facilitator rather than a course instructor. For example, "I feel that my instructor provides me with choices and options" became "I feel that my facilitator provides me with choices and options." The scale is considered very reliable, with a Cronbach's alpha of .93 (Williams & Deci, 1996). Examples of measure items include "I feel that my facilitator accepts me," and "My facilitator encouraged me to ask questions."

Working Alliance Inventory – After Intervention (Client; WAI-AI). This 12-item measure was designed to evaluate the various thoughts and feelings a client might hold towards the therapist with whom they have been working (Horvath & Greenberg, 1989). The measure was modified to reflect a study setting rather than a therapeutic setting. For example, the item "I believe my therapist likes me" became "I believe my facilitator likes me." The scale demonstrates good reliability, with a Cronbach's alpha of .91 (Busseri & Tyler, 2003). Item

examples include “I believe my facilitator likes me” and “What I did in today's meeting gave me new ways of looking at my problem.”

Autonomous/Controlled Motivation Questionnaire (AMCQ). This questionnaire is comprised of six items that measure a person’s state level of motivation for a particular task. The scale was modified from the Autonomous and Controlled Motivation for Treatment Questionnaire (Zuroff et al., 2007). Items were ranked on a 7-point Likert scale, from (1) strongly disagree to (7) strongly agree. Items included questions such as “Completing this task today will allow me to participate in other important aspects of my life” and “I would feel guilty if I didn’t do this task today.”

Working Alliance Inventory – General (WAI-G). This questionnaire is similar to the WAI-AI, but rather than assessing working alliance post-intervention session, the scale measures a participant’s felt sense of working alliance with their facilitator over the whole course of the intervention (Horvath & Greenberg, 1989).

Other Measures. The above questionnaires were administered alongside a package that included the following measures: Brief Ego Depletion Questionnaire (BDEQ; Tice, Baumeister, Shmueli, & Muraven, 2007), Debrief Meeting Questions (developed by the lab to gauge study satisfaction), Aitken Procrastination Inventory (Aitken, 1982), as well as the Procrastination Styles Inventory, Factors of Procrastination Scale, Procrastination Measure, and Collaborative Case Conceptualization (developed by a Master’s level Clinical Psychology student who is a lab member).

Procedure

Prior to recruitment, undergraduate research assistants were trained by two clinical psychology students in the Master's program. Facilitator training included three hour-long sessions completed over a two-week period. Facilitators were taught the study procedure, semi-structured interview techniques, and collaborative case conceptualization techniques. Role-plays of semi-structured interviews and collaborative intervention development (for the individual condition) were conducted.

Upon signing up for a group, participants were assigned to either the individual or group intervention conditions. Group and individual participants were expected to attend four hour-long meetings over the course of three weeks, during which they received study information, two hour-long intervention meetings, a feedback meeting, and completed several measures per meeting (the specific measures administered per meeting are detailed below).

In addition, participants were assigned a daily questionnaire regarding their experience of procrastination and their level of autonomous and controlled motivation. Participants were able to participate in the daily questionnaire portion of the study in one of three ways; paper versions that could be completed over the week via pen or pencil, an app (Mea) designed for smartphone use through which users were prompted daily, and the Qualtrics website for use via a computer with internet capability. Various methods of completion were provided in order to assure the possibility of participation for the greatest number of participants.

Meeting 1. The first meeting procedure was comparable across conditions. Participants were provided with an information letter and consent form that provided study information. Those participants who had been assigned to the individual condition were also asked to complete an audio and video recording consent form, although study participation was still

possible upon refusal of this consent. Participants were then asked to complete a number of baseline measures, including the Demographic Questionnaire, Procrastination Measure, Aitken Procrastination Inventory (API), Factors of Procrastination Assessment Scale (FoPAS), Procrastination Styles Inventory, Basic Needs Satisfaction in General Scale, and Reasons for Learning Questionnaire – Revised. Participants were informed about the various methods of daily questionnaire completion. The daily questionnaire was described to participants as a method of collecting baseline information about their procrastination habits prior to intervention sessions. Finally, individual condition participants were assigned to a time slot with their own facilitator.

Meeting 2.

Individual Condition. Participants met for one hour, one-on-one, with their facilitator for the first time. The facilitator completed a semi-structured interview with the participant, during which the participant was asked to describe his or her pattern of procrastination. Based on the information disclosed by the participant, the facilitator and participant then worked together to discuss the procrastination pattern and the possible tailored interventions that the participant might find efficacious in light of their described difficulties. Throughout the meeting, the facilitator followed the *Individual Procrastination Interview and Session Outline* document (Appendix B) in order to best mimic collaborative case formulation techniques used in psychotherapy. In addition, participants were asked to complete the Learning Climate Questionnaire and Working Alliance – After Interventions Questionnaire, and facilitators completed the Working Alliance Questionnaire – Facilitator.

Group Condition. This meeting consisted of an hour-long manualized intervention conducted by a facilitator. There were two hour-long interventions which occurred on consecutive weeks (planning and organization; CBT; see full scripts in Appendix B) delivered as part of the group condition, and these interventions were counterbalanced across study waves. During the planning and organization intervention, participants were taught the benefits of adopting methods for planning and organizing their schedules (both work and leisure) and beneficial techniques that would be helpful to use in doing so. During the cognitive behavioural intervention, participants were taught the basics of identifying automatic thoughts related to procrastination that influence their procrastination habits, identifying the feelings that might accompany different automatic thoughts (e.g., "I don't know where to begin" might result in anxiety), and how these thoughts and feelings could contribute to procrastination. After the intervention, the Learning Climate Questionnaire and Working Alliance – After Interventions Questionnaire were administered.

Meeting 3.

Individual Condition. Participants met for the second time in a one-on-one hour-long session with their facilitator. Discussion topics included the participant's experience of procrastination over the previous week as compared to pre-intervention, the participant's use or non-use of the intervention techniques discussed in the previous session, and which techniques worked or did not work and why. Facilitators also inquired about the previous week's conceptualization of the participant's procrastination difficulties to determine whether there were any relevant pieces of procrastination behaviour or thinking missing. Finally, facilitators once again administered the Learning Climate Questionnaire and Working Alliance – After

Interventions questionnaires, and the facilitators completed the Working Alliance Questionnaire – Facilitator.

Group Condition. Once again, this meeting consisted of an hour-long manualized intervention conducted by a facilitator. Participants received either the planning and organization or CBT interventions described above, depending on the study wave. After the intervention, participants were again required to complete the Learning Climate Questionnaire and Working Alliance – After Interventions Questionnaire.

Meeting 4. Akin to Meeting 1, meeting 4 was comparable across conditions. Participants were asked to return to their original group sign-up time slot in order to receive feedback, complete final measures, and collect remuneration based on the elements of the study that they completed (remuneration was pro-rated). Participants were remunerated five dollars per meeting they attended and two dollars per daily procrastination questionnaire entry completed. Post-intervention measures included the Procrastination measure, Aitken Procrastination Inventory (API), Factors of Procrastination Assessment Scale (FoPAS), Procrastination Styles Inventory, Basic Needs Satisfaction – General, Reasons for Learning Questionnaire – Revised, Debrief Meeting Questions, Working Alliance – General, and Collaborative Case Conceptualization – Debrief (Individual Intervention Condition Only). Participants were informed that as other similar procrastination interventions typically last for eight weeks, they should continue to practice the techniques they have learned in order to experience lasting results. Information regarding procrastination workshops and counseling services on the University of Waterloo campus was also provided.

Results

Study Population

In order to ensure participants were comparable across conditions, demographic characteristics of the sample were compared across condition using a chi-square analysis. Results indicated no significant relationship between gender and condition (χ^2 *(1)* = .739, p > .05). Furthermore, an individual samples *t*-test revealed no significant association between participant age and assigned condition, *t* (43) = 1.82, *n*s. Demographic data are reported in Table 1.

Participants were included in the following analyses if they attended at least one intervention session (see Figure 1 for participant inclusion flow chart). In total, 50 participants were recruited through SONA. Five participants did not attend the first meeting and were thus excluded from analyses. In total, 20 participants in the individual condition and 18 participants in the group condition completed both baseline and endpoint measures and at least one intervention session and are included in the final analyses.

Basic Needs Fulfillment Across Condition

We hypothesized that participants in the individual condition would experience a greater increase in ratings of basic psychological needs fulfillment than those in the group condition from baseline to endpoint. Repeated measures ANOVAs were conducted to examine whether there was a significant increase in felt competence, autonomy, and relatedness from baseline to endpoint across condition (see Table 7). Results, while not statistically significant, indicated a trend towards higher participant ratings of competence from baseline to endpoint in the

individual condition, F (1, 29) = 2.23, p = .146. Participant ratings of autonomy from baseline to endpoint did not vary by condition, F (1, 29) = .46, p = .502, nor did participant ratings of relatedness, F (1, 29) = 1.60, p = .217. Participants in both conditions experienced a significant increase in relatedness from baseline to endpoint, F (1, 29) = 4.95, p = .034.

As participant ratings of competence from pre- to post-intervention were approaching statistical significance based on condition, subscales of the BNS were examined to assess whether participants in the individual intervention rated particular needs as more fulfilled after study completion compared to the group intervention. An individual samples t-test revealed that, while not statistically significant, there was a trend for participants in the individual condition experiencing more competence post-intervention than those in the group condition, t (29) = -1.85, p = .075. T-test results for the autonomy subscale, t (29) = -1.31, p = .204, and relatedness subscale, t (29) = -1.21, p = .237, were not significant (see Table 8).

Basic Needs Fulfillment and Dropout

Repeated measures ANOVAs were used to examine whether a change in basic needs fulfillment from baseline to endpoint was related to the amount of study participation per individual (see Table 9). For the purposes of these analyses, the number of daily dairy entries participants completed was the dependent variable. Participants in the individual condition completed significantly more daily diary entries than those in the group condition, F (1, 19) = 4.08, p = .005. Participant ratings of autonomy, F (1, 19) = 0.27, p = .608, competence, F (1,19) = 1.01, p = .689, and relatedness, F (1, 19) = 0.87, p = .413, from baseline to endpoint were not significantly associated with the number of entries completed. Participant ratings of autonomy, F

(1, 19) = 0.33, p = .954, competence, F (1, 19) = 0.72, p = .689, and relatedness, F (1, 19) = 1.09, p = .413, also did not vary by condition.

Working Alliance Across Condition

As we theorized that participants assigned to the individual condition would experience a better working alliance with their facilitator, repeated measures ANOVAs were used to determine whether participant ratings of working alliance after the first and second intervention sessions varied by assigned condition (see Table 10). Results revealed a significant effect of condition on the task subscale, such that participants in the individual condition rated this subscale of the working alliance higher than those in the group condition, F (1, 22) = 15.29, p = .001. There was no significant effect on condition on participant ratings of bond, F (1, 22) = .72, p = .405, or goal, F (1, 22) = 1.30, p = .226.

Several independent samples t-tests were conducted to elucidate the relationship between participant ratings of working alliance at endpoint, taking into account the entire intervention, and condition assignment (see Table 11). Levene's test for equality of variances was significant for the bond subscale, F (29) = 6.57, p = .016. Owing to this violated assumption, the t statistic reported for bond is that which does not assume homogeneity of variance. Results revealed that participants in the individual condition had significantly higher ratings on the task, t (28) = -4.29, p < .001, bond, t (21.98) = -2.59, p = .017, and goal subscales, t (28) = -3.76, p = .001.

Basic Needs Fulfillment and Working Alliance

Pearson's correlations between the BNS at baseline and WAI-AI (after the first intervention session) were conducted, as it was hypothesized that subscales of the two measures

would be highly related (see Table 12). Results revealed a significant correlation between goal and competence, $r = .39$, $n = 32$, $p = .027$. There were no other significant correlations between BNS baseline and WAI-AI (first intervention) subscales. However, there were significant intercorrelations between subscales of the BNS, specifically autonomy and competence, $r = .33$, $n = 39$, $p = .038$, and autonomy and relatedness, $r = .52$, $n = 39$, $p = .001$. There were also significant intercorrelations between subscales of the WAI-AI, including task and bond, $r = .54$, $n = 32$, $p = .002$, task and goal, $r = .54$, $n = 32$, $p = .001$, and bond and goal, $r = .69$, $n = 32$, $p < .001$.

Pearson's correlations between the WAI-G and BNS at endpoint were also conducted (see Table 13). Results indicated that the correlation of participant ratings of bond and competence was significant, $r = .51$, $n = 31$, $p = .004$, as was the correlation between ratings of task and competence, $r = .39$, $n = 31$, $p = .031$. In addition, the BNS subscales competence and autonomy, $r = .47$, $n = 33$, $p = .006$, and relatedness and autonomy, $r = .38$, $n = 33$, $p = .027$ were significantly correlated. Moreover, the WAI-G subscales were strongly interrelated (goal and task, $r = .71$, $n = 31$, $p < .001$; bond and task, $r = .84$, $n = 31$, $p < .001$; and bond and goal, $r = .61$, $n = 31$, $p < .001$).

Overall Academic Autonomous and Controlled Motivation

Repeated measures ANOVAs were conducted to compare overall levels of autonomous and controlled motivation for academics from baseline to endpoint across conditions (see Table 14). Results indicated that, while there was no difference in ratings of autonomous motivation based on condition, $F(1, 27) = .05$, $p = .833$, participants in both conditions experienced a significant increase in autonomous motivation from baseline to endpoint, $F(1, 27) = 17.00$, $p <$

.001. Furthermore, while there was no significant difference between baseline and endpoint controlled motivation between conditions, F (1, 27) = .36, p = .556, participants in both conditions experienced significantly more controlled motivation post-intervention than at baseline, F (1,27) = 18.55, p < .001.

Autonomy Support and Overall Motivation for Academics

Multiple regression analyses (see Table 15) were used to address the potential relationship between autonomy support during intervention sessions and overall autonomous and controlled motivation for academics. Autonomous and controlled motivation were both entered as independent variables in separate analyses, with autonomy support as the dependent variable. Results of the regression indicated that autonomous R^2 = .01, F (2, 23) = .06, p = .942, and controlled, R^2 = .10, F (2, 23) = 1.16, p = .334, motivation at baseline did not predict ratings of autonomy support after the first and second interventions. In addition, regression analyses were conducted which included autonomy support after the first and second interventions as independent variables. Separate analyses were conducted with autonomous motivation at endpoint and controlled motivation at endpoint as dependent variables (see Table 16). Results of the regression indicated that ratings of autonomy support on the LCQ after the first and second interventions did not explain a significant amount of variance in participant ratings of autonomous, R^2 = .02, F (2, 22) = .23, p = .797, and controlled motivation at endpoint, R^2 = .04, F (2, 22) = .44, p = .650.

State Autonomous and Controlled Motivation For Proximal Goals

It was believed that participants in the individual condition would report more autonomous motivation and less controlled motivation from baseline to endpoint for proximal homework goals (i.e., a daily identified homework task) than their group condition counterparts. In order to investigate this outcome, multilevel growth curves were used to determine which model best described the change in participants' motivation over time (see Tables 17 and 18).

The increase of autonomous motivation over time was best described by a linear trend, as the $-2LL$ change from the linear to the quadratic ($df = 1$, χ^2Change = 1.37) and linear to the cubic ($df = 1$, χ^2Change = 3.77) terms were not significant (critical values for chi-square statistic for $df = 1$ is 3.84 for $p < .05$). Similarly, the increase of controlled motivation over time was also best described by a linear trend, as the $-2LL$ change from the linear to the quadratic ($df = 1$, χ^2Change =0) and linear to the cubic ($df = 1$, χ^2Change = 1.09) terms were not significant.

Using a linear growth model, we first investigated autonomous motivation as dependent on amount of time in the study, study phase, and condition, with a fixed-effects only model. While there appeared to be a trend of higher ratings of autonomous motivation over time for all participants, this trend was not significant, F (1, 559) = 1.86, $p = .173$. There was no significant effect of phase (baseline versus intervention) for participant ratings of autonomous motivation, F (1, 559) = .85, $p = .357$, nor for autonomous motivation between individual and group conditions, F (1, 559) = 1.31, $p = .254$. Finally, there was no interaction between phase and condition for participant ratings of autonomous motivation, F (1, 559) = .06, $p = .804$.

After examining the fixed-effects model, the day of measure completion variable was added as a random slopes, random intercepts feature. The amount of autonomous motivation reported by participants at baseline was significantly variable, Var(u_{0j}) = 4.46, p = .001, as was the variance in the slopes of reported autonomous motivation across individuals, Var(u_{1j}) = .02, p

= .023. Results were somewhat strengthened compared to the fixed-effects only model, indicating slightly higher levels of autonomous motivation based on amount of time in the study, F (1, 44.09) = 2.63, p = .112, phase, F (1, 525.95) = 1.26, p = .262. The main effect of condition, F (1, 60.00) = .06, p = .811 and phase by condition interaction, F (1, 507.55) = .12, p = .735 continued to show no effect on autonomous motivation.

Next, controlled motivation was examined as dependent on amount of time in the study, study phase, and condition, with a fixed-effects only model. Participants rated controlled motivation as significantly higher the longer they participated in the study, F (1, 558) = 4.05, p = .045. While there was no significant effect of phase for participant ratings of controlled motivation, F (1, 558) = .93, p = .761, participants in the individual condition reported experiencing significantly more controlled motivation than their group condition counterparts, F (1, 558) = 8.42, p = .004. There was no interaction between phase and condition for participant ratings of controlled motivation, F (1, 558) = .00, p = .998.

After examining the fixed-effects model, the day of measure completion variable was again added as a random slopes, random intercepts feature. The amount of controlled motivation reported by participants at baseline was significantly variable, Var(u_{0j}) = 12.60, p < .001, as was the variance in the slopes of reported controlled motivation across individuals, Var(u_{1j}) = .04, p = .016. Results indicated significantly higher levels of controlled motivation the longer participants were in the study, F (1, 41.59) = 5.28, p = .027. However, all other effects were not significant [main effect of phase, F (1, 522.75) = .006, p = .938; main effect of condition, F (1, 47.21) = 2.18, p = .146; phase by condition interaction, F (1, 511.15) = .04, p = .837].

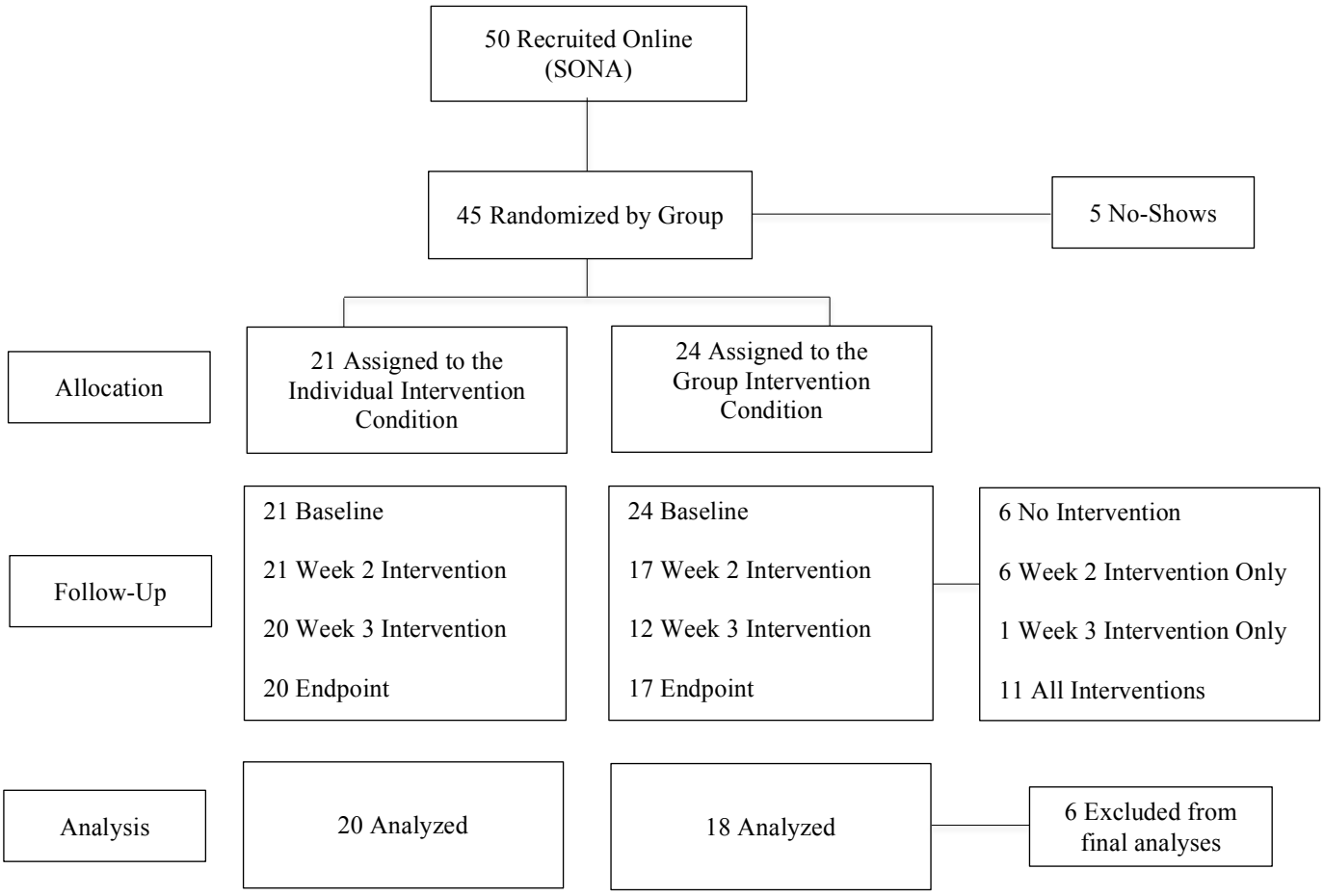


Figure 2. Procrastination study participant recruitment flow chart.

Table 7

Basic Needs Satisfaction Pre- and Post-Intervention by Condition

	Mean (SD)		Between Subjects			Within Subjects: Pre/Post			Within Subjects: Pre/Post*Condition		
Scale	Baseline	Endpoint	*F*	*df*	*p*	*F*	*df*	*p*	*F*	*df*	*p*
Basic Need Satisfaction – General (BNS-G)											
Autonomy											
Group	32.00 (1.46)	32.40 (1.13)	.462	1,29	.502	2.45	1,29	.129	1.22	1,29	.279
Individual	32.13 (1.41)	34.44 (1.09)									
Competence											
Group	24.00 (1.69)	24.00 (1.66)	2.23	1,29	.146	1.47	1,29	.235	1.47	1,29	.235
Individual	26.25 (1.64)	28.25 (1.60)									
Relatedness											
Group	40.40 (1.93)	42.07 (1.86)	1.60	1,29	.217	4.95	1,29	.034*	0.01	1,29	.908
Individual	43.69 (1.87)	45.19 (1.80)									

* $p < .05$

Table 8

Independent T-test of Condition and Basic Psychological Needs at Endpoint

	Individual (n = 29)		Group (n = 29)				
	M	SD	M	SD	*t*	*df*	*p*
Autonomy	34.44	4.66	32.40	4.01	-1.31	28.81	.204
Competence	28.25	7.54	24.00	4.91	-1.85	29	.075
Relatedness	45.19	8.69	42.07	5.11	-1.21	29	.237

Table 9

ANOVA of Basic Needs Satisfaction and Dropout

	Mean (SD)		Between Subjects			Within Subjects: Pre/Post			Within Subjects: Pre/Post*Condition		
Scale	Baseline	Endpoint	*F*	*df*	*p*	*F*	*df*	*p*	*F*	*df*	*p*
Basic Need Satisfaction – General (BNS-G)											
Autonomy											
Group	32.00 (1.46)	32.40 (1.13)	4.08	1,19	.005**	0.27	1,19	.608	0.33	1,19	.954
Individual	32.13 (1.41)	34.44 (1.09)									
Competence											
Group	24.00 (1.69)	24.00 (1.66)	0.80	1,19	.619	1.01	1,19	.689	0.72	1,19	.689
Individual	26.25 (1.64)	28.25 (1.60)									
Relatedness											
Group	40.40 (1.93)	42.07 (1.86)	1.03	1,19	.454	0.87	1,19	.413	1.09	1,19	.413
Individual	43.69 (1.87)	45.19 (1.80)									

* $p < .05$; ** $p < .01$

Table 10

Working Alliance Post-Intervention by Condition

	Mean (SD)		Between Subjects			Within Subjects: Pre/Post			Within Subjects: Pre/Post*Condition		
Scale	Baseline	Endpoint	*F*	*df*	*p*	*F*	*df*	*p*	*F*	*df*	*p*
Working Alliance Inventory – After Interventions (WAI-AI)											
Task											
Group	21.56 (.92)	22.78 (.95)	15.29	1,22	.001**	0.28	1,22	.606	1.37	1,22	.254
Individual	26.07 (.71)	25.60 (.74)									
Bond											
Group	23.56 (1.32)	24.33 (.95)	.72	1,22	.405	1.71	1,22	.204	.00	1,22	.985
Individual	24.67 (1.02)	25.47 (.74)									
Goal											
Group	23.33 (1.02)	23.22 (1.20)	1.30	1,22	.266	.223	1,22	.641	.11	1,22	.748
Individual	24.93 (.79)	24.33 (.93)									

** $p = .001$

Table 11

Independent T-test of Condition and Working Alliance at Endpoint

	Individual ($n = 29$)		Group ($n = 29$)				
	M	SD	M	SD	*t*	*df*	*p*
Task	26.20	1.93	22.07	3.20	-4.29	28	.000
Bond	25.33	2.19	22.33	3.92	-2.59	21.98	.017
Goal	25.73	3.15	4.18	1.08	-3.76	28	.001

Table 12

Correlation of Baseline Basic Needs and Working Alliance after Intervention 1

	Autonomy	Competence	Relatedness	Task	Bond	Goal
Autonomy	--	.33*	.52**	-.08	.14	.13
Competence		--	.27	.16	.23	.39*
Relatedness			--	.10	.19	.21
Task				--	.54**	.54**
Bond					--	.69**
Goal						--

* $p < .05$; ** $p \leq .001$

Table 13

Correlation of Basic Needs and Working Alliance at Endpoint

	Autonomy	Competence	Relatedness	Task	Bond	Goal
Autonomy	--	.48**	.42*	.17	.45*	.26
Competence		--	.11	.49**	.65**	.28
Relatedness			--	.19	.32	.16
Task				--	.66**	.73**
Bond					--	.58**
Goal						--

* $p < .05$; ** $p \leq .001$

Table 14

Autonomous and Controlled Motivation for Academics Pre- and Post-Intervention by Condition

						Within Subjects					
	Mean (SD)		Between Subjects			Pre/Post			Pre/Post*Condition		
Scale	Baseline	Endpoint	*F*	*df*	*p*	*F*	*df*	*p*	*F*	*df*	*p*
Reasons for Learning Questionnaire (RLQ)											
Autonomous Regulation											
Group	26.27 (1.54)	29.18 (1.32)	.046	1,27	.833	17.00	1,27	.000**	.010	1,27	.920
Individual	26.56 (1.20)	29.61 (1.03)									
Controlled Regulation											
Group	27.73 (1.31)	37.09 (1.39)	.356	1,27	.556	18.55	1,27	.000**	.391	1,27	.537
Individual	28.08 (1.03)	38.36 (1.09)									

** $p < .001$

Table 15

Multiple Regression of Autonomy Support After Interventions 1 and 2 by Baseline Motivation

	Autonomous Motivation			Controlled Motivation		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
LCQ 1	-.025	.220	-.047	.199	.167	.465
LCQ 2	.056	.208	.111	-.239	.158	-.590
R^2		.001			.099	

Table 16

Multiple Regression of Autonomy Support After Interventions 1 and 2 by Endpoint Motivation

	Autonomous Motivation			Controlled Motivation		
Variable	*B*	*SE B*	β	*B*	*SE B*	β
LCQ 1	.010	.187	.021	.174	.190	.378
LCQ 2	.056	.177	.131	-.161	.181	-.367
R^2		.022			.042	

Table 17

Multilevel Linear Growth Model of Autonomous Motivation Over Time and by Phase and Condition

Random Effects					
Groups	Est.	SE	Wald Z	*df*	*p*
Day within Phase	9.79	0.59	16.72	559	.000

Fixed Effects (*n* = 559)					
Variable	Est.	SE	*t*	*df*	*p*
Day within Phase	0.05	0.04	1.36	559	.173
Phase	0.42	0.46	0.92	559	.357
Condition	-0.53	0.47	-1.14	559	.254
Phase*Condition	-0.14	0.57	-0.25	559	.804

Table 18

Multilevel Linear Growth Model of Controlled Motivation Over Time and by Phase and Condition

Random Effects					
Groups	Est.	SE	Wald Z	*df*	*p*
Day within Phase	18.63	1.12	16.70	558	.000

Fixed Effects (*n* = 559)					
Variable	Est.	SE	*t*	*df*	*p*
Day within Phase	0.10	0.05	2.01	558	.045
Phase	0.19	0.63	0.31	558	.761
Condition	-1.87	0.64	-2.90	558	.004
Phase*Condition	-0.00	0.79	-0.00	558	.998

Discussion

We hypothesized that a one-on-one, tailored intervention for behaviour change would better encourage autonomous motivation, basic psychological needs fulfillment, and working alliance in individuals when compared to a standardized group intervention. This study allowed us to explore these important possibilities in a structured and experimental research design through which procrastinators served as an analogue to a clinical treatment-seeking population. While some of our hypotheses were supported (e.g., higher ratings of working alliance in the individual condition, correlation of select subscales of the BNS and WAI, an increase in autonomous motivation for academics overall), others were not (e.g., relationship between autonomy support and ratings of motivation). We will discuss the potential implications of our findings, study limitations, and future directions.

Basic Needs Fulfillment Across Condition

It was theorized that participants assigned to the individual intervention would report higher levels of basic psychological needs fulfillment (autonomy, competence, and relatedness to others) from pre- to post-intervention than their group intervention counterparts. While results revealed that these relationships were non-significant, there was a trend towards higher participant ratings of competence from baseline to endpoint in the individual condition. It is possible that these nonsignificant results are a result of the low power due to small sample size at endpoint. Additionally, it was revealed that participants in both conditions experienced a significant increase in relatedness over the course of the intervention. It is possible that both group and individualized interventions designed to tackle a demanding problem create a sense of belonging, regardless of whether the intervention is in a group or one-on-one.

Basic Needs Fulfillment and Dropout

We found that participants in the individual condition completed significantly more daily diary entries than those in the group condition. As participants in the individual condition could use their daily diary entries with the help of their facilitator to pinpoint possible individualized interventions, it is possible that they felt more engaged in the daily diary aspect of the study compared to the group condition participants. Unexpectedly, we found that ratings of autonomy, competence, and relatedness from baseline to endpoint did not account for a significant difference in number of daily diary entries. As previous research has found that supporting autonomy in individuals undergoing psychotherapy treatment increases autonomous motivation and is associated with better outcomes (Zuroff et al., 2007; Zuroff et al., 2012), it will be interesting for future studies to investigate whether basic needs fulfillment can, in fact, predict therapy persistence.

Working Alliance Across Condition

The hypothesis that individual condition participants would experience a better working alliance with their intervention facilitator than group condition participants was partially supported. On a measure of working alliance that was completed immediately after both intervention sessions, participants in the individual condition scored higher on the task subscale, indicating that participants in the individualized intervention experienced more clarity and agreement on the specific tasks they should employ to address their procrastination issues.

Furthermore, an endpoint working alliance measure revealed that participants in the individual condition rated all three subscales of the working alliance as significantly better than

their group condition counterparts. These findings provide support for the assertion of some researchers (e.g., Yalom, 2002; Ryan & Deci, 2008) that adapting to treatment needs on a case-by-case basis is essential, and that common factors like working alliance play a significant role in this adaptation.

Basic Needs Fulfillment and Working Alliance

As basic psychological needs constructs share a fair amount of similarity to subscales of the working alliance, it was hypothesized that participant ratings of the two measures would correlate highly. However, only a few significant subscale correlations emerged. Correlations between the baseline basic need of competence and the goal subscale of the first intervention's working alliance measure were significant. It is thus possible that individuals who feel more self-efficacious and confident in their abilities are able to come to more agreement on targeted intervention goals than those who have a lower sense of competence. Moreover, endpoint measures of overall intervention working alliance and basic needs fulfillment indicated that competence correlated significantly with the working alliance subscales of bond and task. Therefore, those participants who felt especially competent tended to also experience a better relationship with their facilitator and experienced more satisfaction with the types of tasks that they were to complete for the intervention.

Overall Academic Autonomous and Controlled Motivation

We expected that participants in the individual condition would experience a significant increase in autonomous motivation for academics from baseline to endpoint, and that participants in the group condition would experience a significant increase in controlled motivation over this

same period. The above hypotheses were not supported. Instead, we found that participants in both conditions experienced a significant increase in both autonomous and controlled motivation from baseline to endpoint. In our sample it appears that participation in any intervention for a problematic behaviour, regardless of whether it is completed in a group/standardized or one-on-one/individualized manner, is associated with internal and external motivation for improving upon the target behaviour.

Autonomy Support and Overall Motivation for Academics

We anticipated that participants in the individual condition would report higher levels of perceived autonomy support from their facilitator than those in the group condition, as they were encouraged to tailor their intervention tasks and goals with the aid of their facilitator. However, we found that participants in both conditions reported similar levels of autonomy support. It is possible that participants in both interventions felt that their autonomy was being supported simply as a function of participating in an intervention for a problematic behaviour, especially as employing the suggested techniques was each individual's choice in both conditions, and remuneration was received regardless.

State Autonomous and Controlled Motivation For Proximal Goals

Finally, we expected to find that participants in the individual condition would report more autonomous motivation from baseline to endpoint for proximal homework goals (i.e., a daily identified homework task) than those in the group condition. We also hypothesized that a similar increase in controlled motivation would occur for those in the group condition. However, multilevel growth models of both autonomous and controlled motivation for identified

homework tasks did not indicate a significant difference in these variables between conditions. Nevertheless, participants in both conditions did experience a significant increase in controlled motivation over the course of the study, and while this trend was not significant for autonomous motivation, it was approaching significance.

It appears that participation in any intervention for a problematic behaviour, regardless of whether it is group/standardized or one-on-one/individualized, will produce noticeable changes in the amount of proximal motivation an individual can muster towards changing the identified behaviour. It is also likely that controlled motivation was significantly increased in both conditions because the impetus to complete the intervention for external reasons was heightened (e.g., to make a positive report back to the facilitator the next week).

Finally, there was no difference between groups for the amount of motivation they experienced in each phase (e.g., baseline or during the intervention), and no difference between the amount of autonomous and controlled motivation reported in each phase. It is possible that merely participating in the intervention acted as an intervention during the baseline phase. For example, participants were asked to log the homework tasks they would like to complete, rate their importance, and choose one task to focus on completing. In doing so, participants were using recommended techniques for improving upon procrastination (e.g., Ariely & Wertenbroch, 2002), and as a result, might have experienced more autonomous and controlled motivation than would be typical outside of an intervention.

Limitations

This study has several limitations to note. First, we intended to examine the difference between a manualized and an individualized intervention for a problematic behaviour. However,

our conditions of comparison consisted of a group (standardized format) and a one-on-one (individualized) condition. While this format enabled us to recruit and run greater numbers of participants, we are unable to state with certainty that the results are the effect of the level of intervention tailoring or the method of delivery (i.e., group vs. individual). In future research, conditions should be comparable on delivery method so as to ascertain the source of the effects.

Second, the level of training of each facilitator varied somewhat. For example, some facilitators were undergraduate student research assistants. These facilitators received several hours worth of training on developing an individualized case conceptualization and collaboratively determining an effective individualized intervention with a participant, while other facilitators were Master's level graduate students who had more extensive training in semi-structured interviewing and case conceptualization. It is possible that the level of training of each facilitator could have affected the efficacy of the intervention or participant ratings of autonomy support and working alliance.

Third, this study was conducted during two terms (Winter and Spring), and at different points within the term (e.g., in the middle vs. during final exams). It is possible that the timing during the semester had an effect on the results. For example, students who were completing the daily motivation questionnaire during an exam period might have been experiencing a great deal more controlled motivation than those completing the questionnaire in the middle of the semester, as the proximal tasks they were working towards (e.g., a final exam worth 60% of the grade) were both more urgent and of higher importance.

Furthermore, participant recruitment presented a limitation. Participants self-selected into the study, and therefore determined on their own whether they were problem procrastinators. An objective measure of procrastination might be beneficial in selecting participants for future

studies of this nature. In addition, individuals received monetary remuneration for their participation in the study, and thus some participants might have entered into the study for remuneration rather than that they truly considered themselves procrastinators and wanted to change their habits. Also, the small resulting sample size for this study likely played a role in the low proportion of statistically significant results. In the future, higher sample sizes should be obtained in order to better estimate the relationship of the interventions to the variables of interest.

Finally, this study was conducted with a problematic behaviour in mind (procrastination) that was meant to act as an analogue to a therapy treatment seeking population. In order to more accurately examine the role of SDT variables (e.g., basic needs fulfillment, autonomy support, autonomous and controlled motivation) in psychotherapy treatment persistence and outcome, researchers must examine these variables prospectively with a sample of individuals receiving treatment for mental health difficulties.

References

Ahmad, I., Vansteenkiste, M., & Soenens, B. (2013). The relations of Arab Jordanian adolescents' perceived maternal parenting to teacher-rated adjustment and problems: The intervening role of perceived need satisfaction. *Developmental Psychology, 49,* 177–183. doi:10.1037/a0027837

Aitken, M. E. (1982). *A Personality Profile of the College Student Procrastinator.* Unpublished doctoral dissertation, University of Pittsburgh.

Ariely, D., & Wertenbroch, K. (2002). Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science, 13*(3), 219-224. doi:10.1111/1467-9280.00441

Bados, A., Balaguer, G., & Saldaña, C. (2007). The efficacy of cognitive–behavioral therapy and the problem of drop-out. *Journal of Clinical Psychology*, *63*(6), 585-592.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215.

Barrett, M. S., Chua, W. J., Crits-Christoph, P., Gibbons, M. B., & Thompson, D. (2008). Early withdrawal from mental health treatment: Implications for psychotherapy practice. *Psychotherapy: Theory, Research, Practice, Training*, *45*(2), 247–267.

Berrigan, L. P., & Garfield, S. L. (1981). Relationship of missed psychotherapy appointments to premature termination and social class. *British Journal of Clinical Psychology, 20,* 239–242.

Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*(6), 740–756.

Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research & Practice*, *16*(3), 252–260.

Buckner, J. D., & Schmidt, N. B. (2009). A randomized pilot study of motivation enhancement therapy to increase utilization of cognitive–behavioral therapy for social anxiety. *Behaviour Research and Therapy*, *47*(8), 710–715.

Busseri, M. A., & Tyler, J. D. (2003). Interchangeability of the working alliance inventory and working alliance inventory, short form. *Psychological Assessment, 15*(2), 193.

Castonguay, L. G., Constantino, M. J., & Holtforth, M. G. (2006). The working alliance: Where are we and where should we go? *Psychotherapy: Theory, Research, Practice, Training*, *43*(3), 271–279.

Day, V., Mensink, D., & O'Sullivan, M. (2000). Patterns of academic procrastination. *Journal of College Reading and Learning, 30*(2), 120–134.

Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 182–185.

Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. *The Oxford Handbook of Human Motivation*, 85–107.

Drisko, J. (2004). Common factors in psychotherapy outcome: Meta-analytic findings and their implications for practice and research. *Families in Society: The Journal of Contemporary Social Services*, *85*(1), 81–90.

Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion, 27,* 199–223.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational behavior*, *26*(4), 331–362.

Guay, F., Ratelle, C. F., Roy, A., & Litalien, D. (2010). Academic self-concept, autonomous academic motivation, and academic achievement: Mediating and additive effects. *Learning and Individual Differences*, *20*(6), 644–653.

Frayn, D. H. (1992). Assessment factors associated with premature psychotherapy termination. *American Journal of Psychotherapy, 46,* 250–261.

Hatchett, G. T., Han, K., & Cooker, P. G. (2002). Predicting premature termination from counseling using the Butcher Treatment Planning Inventory. *Assessment*, *9*(2), 156–163.

Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the working alliance inventory. *Journal of Counseling Psychology, 36*(2), 223–233.

Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychology: A meta-analysis. *Journal of Counseling Psychology, 24*, 240–260.

Johansson, H., & Eklund, M. (2006). Helping alliance and early dropout from psychiatric out-patient care. *Social Psychiatry and Psychiatric Epidemiology*, *41*(2), 140–147.

Kolb, D. L., Beutler, L. E., Davis, C. S., Crago, M., & Shanfield, S. B. (1985). Patient and therapy process variables relating to dropout and change in psychotherapy. *Psychotherapy: Theory, Practice, & Research, 22,* 702–710.

La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology, 79,* 367–384.

Kuyken, W., Fothergill, C. D., Musa, M., & Chadwick, P. (2005). The reliability and quality of

cognitive case formulation. *Behaviour Research and Therapy, 43*(9), 1187–1201. doi:10.1016/j.brat.2004.08.007

Luborsky, L., Rosenthal, R., Diguer, L., Andrusyna, T. P., Berman, J. S., Levitt, J. T., ... & Krause, E. D. (2002). The dodo bird verdict is alive and well—mostly. *Clinical Psychology: Science and Practice*, *9*(1), 2–12.

Mansour, S., Bruce, K. R., Steiger, H., Zuroff, D. C., Horowitz, S., Anestin, A. S., & Sycz, L. (2012). Autonomous Motivation: A Predictor of Treatment Outcome in Bulimia-Spectrum Eating Disorders. *European Eating Disorders Review*, *20*(3), 116–122.

Markland, D., Ryan, R. M., Tobin, V., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology, 24,* 811–831.

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*, 438–450.

McBride, C., Zuroff, D. C., Ravitz, P., Koestner, R., Moskowitz, D. S., Quilty, L., & Bagby, R. M. (2010). Autonomous and controlled motivation and interpersonal therapy for depression: Moderating role of recurrent depression. *British Journal of Clinical Psychology*, *49*(4), 529-545.

Messer, S. B., & Wampold, B. E. (2002). Let's face facts: Common factors are more potent than specific therapy ingredients. *Clinical Psychology: Science and Practice*, *9*(1), 21–25.

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. New York, NY: Guilford Press.

Pekarik, G. (1992). Posttreatment adjustment of clients who drop out early vs. late in treatment. *Journal of Clinical Psychology, 48,* 379–387.

Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Brière, N. M. (2002). Perceived autonomy support, levels of self-determination, and persistence: A longitudinal investigation. *Motivation and Emotion*, *25*(4), 279–306.

Pelletier, L. G., Tuson, K. M., & Haddad, N. K. (1997). Client motivation for therapy scale: A measure of intrinsic motivation, extrinsic motivation, and amotivation for therapy. *Journal of personality assessment*, *68*(2), 414–435.

Piper, W. E., Ogrodniczuk, J. S., Joyce, A. S., McCallum, M., Rosie, J. S., O'Kelly, J. G., & Steinberg, P. I. (1999). Prediction of dropping out in time-limited, interpretive individual psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, *36*(2), 114–122.

Pychyl, T. A. (2014, March 12). Procrastination: Why mindfulness is crucial. *Psychology Today*. Retrieved from https://www.psychologytoday.com/blog/dont-delay/201403/procrastination-why-mindfulness-is-crucial

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and emotion*, *28*(2), 147–169.

Reeve, J., & Tseng, C. M. (2011). Cortisol reactivity to a teacher's motivating style: The biology of being controlled versus supporting autonomy. *Motivation and Emotion, 35,* 63–74. doi:10.1007/ s11031-011-9204-2

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, *26*(4), 419-435.

Rogers, C. R. (1992). The necessary and sufficient conditions of therapeutic personality change. *Journal of Consulting and Clinical Psychology*, *60*(6), 827–832.

Rüsch, N., Angermeyer, M. C., & Corrigan, P. W. (2005). Mental illness stigma: Concepts,

consequences, and initiatives to reduce stigma. *European Psychiatry*, *20*(8), 529–539.

Ryan, R. M,, Connell, J. P., & Deci, E. L. (1985). A motivational analysis of self-determination and self-regulation in education. In C. Ames & R. E. Arnes (Eds.), Research on motivation in education: The classroom milieu (p, 13-51). New York Academic.

Ryan, R. M., & Deci, E. L. (2008). A self-determination theory approach to psychotherapy: The motivational basis for effective change. *Canadian Psychology/Psychologie Canadienne*, *49*(3), 186–193.

Ryan, R. M., Lynch, M. F., Vansteenkiste, M., & Deci, E. L. (2010). Motivation and autonomy in counseling, psychotherapy, and behavior change: A look at theory and practice. *The Counseling Psychologist, 39*(2), 193–260.

Ryan, R. M., Plant, R. W., & O'Malley, S. (1995). Initial motivations for alcohol treatment: Relations with patient characteristics, treatment involvement, and dropout. *Addictive Behaviors*, *20*(3), 279–297.

Safran, J. D., & Muran, J. C. (2006). Has the concept of the therapeutic alliance outlived its usefulness? *Psychotherapy: Theory, Research, Practice, Training, 43*, 286–291.

Schouwenburg, H. C., Lay, C. H., Pychyl, T. A., & Ferrari, J. R. (2004). *Counseling the Procrastinator in Academic Settings.* Washington, DC: American Psychological Association.

Sharf, J., Primavera, L. H., & Diener, M. J. (2010). Dropout and therapeutic alliance: A meta-analysis of adult individual psychotherapy. *Psychotherapy: Theory, Research, Practice, Training*, *47*(4), 637–645.

Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What's satisfying about satisfying

events? Comparing ten candidate psychological needs. *Journal of Personality and Social Psychology, 80*, 325–339.

Sheldon, K. M., & Filak, V. (2008). Manipulating autonomy, competence, and relatedness support in a game‐learning context: New evidence that all three needs matter. *British Journal of Social Psychology*, *47*(2), 267–283.

Sheldon, K. M., Ryan, R. M., & Reis, H. T. (1996). What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin*, *22*(12), 1270–1279.

Smith, M. L., & Glass, G. V. (1977). Meta-analysis of psychotherapy outcome studies. *American Psychologist*, *32*(9), 752–760.

Steel, P. (2007). The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*(1), 65–94.

Tee, J., & Kazantzis, N. (2011). Collaborative empiricism in cognitive therapy: A definition and theory for the relationship construct. *Clinical Psychology: Science and Practice*, *18*(1), 47–61.

Tice, D. M., Baumeister, R. F., Shmueli, D., & Muraven, M. (2007). Restoring the self: Positive affect helps improve self-regulation following ego depletion. *Journal of Experimental Social Psychology, 43*(3), 379-384. doi:10.1016/j.jesp.2006.05.007

Van der Elst, T., Van den Broeck, A., De Witte, H., & De Cuyper, N. (2012). The mediating role of psychological need frustration in the relationship between job insecurity and work-related well- being. *Work & Stress, 26,* 252–271. doi:10.1080/ 02678373.2012.703900

Wampold, B. E., Mondin, G. W., Moody, M., Stitch, F., Benson, K., & Ahn, H. (1997). A meta-

analysis of outcome studies comparing bona fide psychotherapies: Empirically, 'all must have prizes'. *Psychological Bulletin, 122*, 203–215.

Westra, H. A., & Dozois, D. J. (2006). Preparing clients for cognitive behavioral therapy: A randomized pilot study of motivational interviewing for anxiety. *Cognitive Therapy and Research*, *30*(4), 481–498.

Wierzbicki, M., & Pekarik, G. (1993). A meta-analysis of psychotherapy dropout. Professional Psychology: Research and Practice, *24*, 190–195.

Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology, 70*(4), 767–779.

Williams, G. C., Grow, V. M., Freedman, Z. R., Ryan, R. M., & Deci, E. L. (1996). Motivational predictors of weight loss and weight-loss maintenance. *Journal of personality and social psychology*, *70*(1), 115–126.

Yalom, I. D. (2002). *The gift of therapy.* New York: HarperCollins.

Zuroff, D. C., & Blatt, S. J. (2006). The therapeutic relationship in the brief treatment of depression: Contributions to clinical improvement and enhanced adaptive capacities. *Journal of Consulting and Clinical Psychology, 74*, 130–140.

Zuroff, D. C., Koestner, R., Moskowitz, D. S., McBride, C., & Bagby, R. M. (2012). Therapist's autonomy support and patient's self-criticism predict motivation during brief treatments for depression. *Journal of Social and Clinical Psychology*, *31*(9), 903–932.

Zuroff, D. C., Koestner, R., Moskowitz, D. S., McBride, C., Marshall, M., & Bagby, M. R. (2007). Autonomous motivation for therapy: A new common factor in brief treatments for depression. *Psychotherapy Research*, *17*(2), 137–147.

Appendix A

CMHR Services Follow-Up Study Interview Script

PART 1: Introduction
Telephone Script – Self-Determination and Dropout/ Collaborative Conceptualization Study

Hi, may I please speak with _____ _____(first name and last)? Hello, this is _____; I'm a researcher at the University of Waterloo calling from the Centre for Mental Health Research. I'm calling today to ask if you would like to participate in a phone interview for a research project regarding mental health services. We recently sent along some information via mail or email for you to look over about our research project. Have you received this information and had a chance to look it over?

If YES: Great. So if you decide to participate, I will ask you some questions that will hopefully help to give psychologists a better understanding of what factors may be important to ensure the therapy they deliver is effective. The interview will last approximately 30 minutes. If you would prefer we could call you back at another time that would be better for you. Are you interested in participating?

If YES : Thank you! **(Proceed to Consent Review)**
If not a good time: Is there another time that would be better for me to call back?
Time: _____
If NO: Thank you for your time. Have a good day!

If NO: Ok, have you received it yet? Is your contact information the same as when you accessed services at the CMHR? Would you like us to call back after you have had a chance to look it over?

If YES: When would be a good time to call you back? **Time:** _____

If NO: Thank you for your time. Have a good Day!

Consent Review

Are you in a private place, or in a place you feel comfortable talking with us about the services you received at the CMHR? **(Allow participant to get to a comfortable location)** First, I want to give you an outline of the research project and how the information you provide will be used. This information can also be found in the letter/email we sent you. The things we talk about today will be used by a group of researchers here at the CMHR. Your responses will be kept secure and confidential; no one outside of the research team will be able to trace your responses back to you, except for a few situations involving safety risks. We would have to break confidentiality if you tell us that you or someone else is at clear risk for harm, if we learn that a health professional has been abusing their clients, or if we learn that a minor is being abused, in those cases we would have to break confidentiality and take steps to ensure everyone's

safety. Any information that ends up in a published research paper or presented in academic conferences will be combined with the responses from other participants so that only aggregate or average responses are reported. Your former therapist will not be privy to any information gathered today, and the information you provide to us will not be used to evaluate him or her. There will be no impact on any future services should you choose to return to the CMHR. This study has been reviewed and approved by an ethics review board here at the University of Waterloo. It is important to know that you can stop participating at any time. Also, feel free to let me know if you want to skip a question because you don't want to answer, we will just move on to the next one. Finally, we don't expect that answering any of the questions in this questionnaire will be upsetting, but if they are let us know, and you can decide whether to continue or not. Do you have any questions before we start or was anything I just said unclear? **[Answer questions]**

Do you have any questions about the information we will be gathering from your client file mentioned in the letter we sent you? **YES / NO**

Do you want to participate? YES / NO (circle)

If YES : **Proceed to Audio Consent**
If NO: Thank you for your time. Do you have any questions before I let you go? **(Answer Questions).** Have a good day!

It would also be useful for us to audiotape your responses, so we can go back to them for research purposes, for example, to make sure we recorded your answers correctly. The recordings and the other data for this study will be kept for 7 years in a secure, locked office and then destroyed. Is that alright with you? **Ok to audiotape? YES / NO (circle)**

Finally, sometimes using anonymous quotations can be useful for research presentations or publications. Is that alright with you? YES / NO (circle)

PART 2: Self-Determination and Dropout Study Questionnaire

1. Do you have any feedback about your experience with the CMHR?

_____

_____

The following questions are about your experience receiving services at the CMHR. There are no right or wrong answers, so please just answer as honestly as possible.

Please respond to each statement by indicating how true it is for you. Use the following scale, from 1 (not at all true) to 7 (very true):

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

1. In therapy, I felt like I could be completely honest with my therapist. ____
2. In therapy, I felt like a competent person. ____
3. In therapy, I felt valued and cared about by my therapist. ____
4. In therapy, I often felt inadequate or incompetent. ____
5. In therapy, I had a say in what happened, and I could voice my opinion. ____
6. In therapy, I often felt a lot of distance in my relationship with my therapist. ____
7. In therapy, I felt very capable and effective. ____
8. In therapy, I felt a lot of closeness and understanding. ____
9. In therapy, I felt controlled and pressured to be certain ways. ____

2. What were your reasons for ending your treatment at the CMHR when you did?

3. Would you consider your ending therapy planned with your therapist or unplanned?
PLANNED / UNPLANNED

I'm going to ask you a few questions about the time just prior to when you first received services at the CMHR.

A) Were you experiencing a crisis when you first sought treatment at the CMHR?

YES / NO

C) Did anything change in regards to your symptoms or your situation from the time you first contacted the CMHR to the time you first came in for treatment? **YES / NO**

I. **If YES**: What changed? Why?

_____

_____

_____

_____

_____

II. On a scale of 1 – 7, 1 being much worse, 4 being unchanged, and 7 being much better, how much did the problem change between the time you first contacted the CMHR to the time you first came in for treatment?

1	2	3	4	5	6	7
Much Worse			No Change			Much Better

D) What were your expectations for therapy prior to your first session? (***pause for answer, give examples if needed*** How did you think therapy would go? e.g. How many sessions would you need to attend? Did you expect to be required to share your true thoughts/feelings? Did you expect to feel comfortable with your therapist?)

_____

_____

_____

_____

_____

_____

_____

I am going to read a list of questions describing some other expectations about therapy that you may have had. For each question, respond with the number that indicates how strongly you found yourself expecting what is described in the question, from 1 (not at all) to 7 (very much so).

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

1. Did you expect that your therapist would provide support? ____
2. Did you think you would be able to express your true thoughts and feelings? ____
3. Did you expect you would feel comfortable with your therapist? ____
4. Did you expect your therapist would be interested in what you had to say? ____
5. Did you expect your therapist would be sympathetic? ____
6. Did you expect that you would come to every appointment? ____
7. Did you anticipate being a better person as a result of therapy? ____
8. After therapy, did you expect to be a much more optimistic person? ____

E) On a scale of 1 – 7, 1 being not clear at all and 7 being very clear, how well-defined were your expectations for therapy before attending your first session?

1	2	3	4	5	6	7
Not clear at all						Very clear

F) In what way, if any, were you surprised by what occurred in therapy?

_____

_____

_____

_____

_____

G) Did your expectations change after the first session? **YES / NO**
If **YES**: In what way did your expectations change?

_____

_____

_____

_____

_____

Working Alliance Inventory-Client Short Form (Client):

I'm going to read sentences that describe some of the different ways you might have thought or felt about your therapist, keeping the whole course of therapy in mind. If the statement describes the way you *always* felt (or thought) respond with the number 7; if it never applied to you, respond with the number 1. Use the numbers in between to describe the variations between these extremes.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

1. My therapist and I agreed about the things I needed to do in therapy to help improve my situation. ____

2. What I did in therapy gave me new ways of looking at my problem. ____

3. I believed my therapist liked me. ____

4. My therapist did not understand what I was trying to accomplish in therapy. ____

5. I was confident in my therapist's ability to help me. ____

6. My therapist and I were working towards mutually agreed upon goals. ____

7. I felt that my therapist appreciated me. ____

8. We agreed on what was important for me to work on. ____

9. My therapist and I trusted one another. ____

10. My therapist and I had different ideas on what my problems were. ____

11. We established a good understanding of the kind of changes that would be good for me. ____

12. I believed the way we worked with my problem was correct. ____

Reasons for Termination:
We discussed this at the beginning of the interview, but I'd like to ask you a few more questions about your reasons for ending your treatment at the CMHR when you did. Using a scale from 1 (not at all important) to 4 (very important), rate the importance of each of the following possible reasons in your decision to end therapy:

1. Accomplished what you wanted to do in therapy ____
2. Could no longer fit time for therapy into schedule ____
3. Just lost interest in therapy ____
4. No longer had money or insurance coverage to pay for therapy ____
5. Felt therapy was going nowhere so ended therapy ____
6. Felt therapy was making things worse so stopped ____
7. Weren't confident in therapist's ability to help ____
8. Uncomfortable talking about personal matters with therapist ____
9. Therapy didn't fit with ideas about what would be helpful ____
10. Decided to go elsewhere for services ____
11. [Any other reasons?] Other: _____ ____

G) How satisfied were you with the services you received at the CMHR on a scale of 1 (not at all) to 7 (very much so)?

1	2	3	4	5	6	7
Not At All			Somewhat			Very Much So

H) Would you recommend our services to friends or family? **YES / NO**
Why/Why Not: _____

_____

_____

PART 2: Collaborative Case Conceptualization Questionnaire

These questions are about your time in therapy at the CMHR. For these questions I want to know if you: "0, disagree ------ 1, somewhat disagree ------ 2, somewhat agree -- (or) -- 3, agree" with the statement I make. Feel free to use the whole range of answers if you only somewhat agree or somewhat disagree with the statement. I can repeat questions or the possible answers for you if you would like.

1) You and your therapist came to understand the issues that brought you to therapy in a deeper and more thorough way over the course of your treatment.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

1b) Could you briefly describe how this understanding changed or stayed the same over time?

_____

_____

_____

_____

2) You and your therapist consistently worked together, with genuine curiosity and respect for each other's input, to understand the issues that brought you to therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

3) You and your therapist made sure to check the accuracy of how you both understood the issues that brought you into therapy, making sure your understanding was a good fit and was correct. **[Give examples if needed]** This might have been by looking at possible alternative explanations, doing personal experiments between sessions, discussing relevant psychological research, looking for ways new ideas might not make sense for you, or otherwise assuring that you were understanding the problems accurately.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

4) During your treatment you and your therapist identified your personal strengths, interests, or aspirations, and how they might be useful for you in working on the issues that brought you to therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

5) The way my therapist thought about the issues that brought me to therapy matched with my goals and priorities for treatment.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

6) My therapist discussed with me a clear explanation and set of reasons for how they thought about the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

7) Over my time in therapy I found my therapist and I made meaningful links between different events, situations, feelings, thoughts, and behaviours in my life that helped me reach my goals.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

8) The way my therapist and I thought about the issues that brought me into therapy was simple enough for me to easily understand.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

9) My therapist and I worked together to understand the issues that brought me into therapy better. We both took turns listening, both added important information, and valued each other's opinions.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

10) My therapist used language, metaphors, and examples that made sense to me and were relevant to my cultural background and personal experiences to help me understand the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

11) My therapist showed genuine interest and curiosity in the issues that brought me into therapy, working to understand my experiences the way that I do.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

12) My therapist seemed to know psychological and scientific information that was relevant to the issues that brought me into therapy and this information helped us understand my personal circumstances.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

13) My therapist and I explored aspects of the issues that brought me into therapy that were hard to understand, and that didn't immediately fit with how we were working towards my goals.

0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

14) The plan for my treatment seemed to make sense in light of the way we talked about the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

15) My therapist was interested in understanding my strengths as well as my difficulties.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

16) Over the course of my therapy we found how my personal strengths could help me with the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

17) My goals and positive hopes for the future were also focused on over the course of my therapy. My therapist was interested in helping me achieve my hopes and goals.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

18) The way my therapist and I thought about the issues that brought me into therapy helped me see the ways I had been strong and resilient in dealing with my mental health difficulties.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

Outcome Questions

These questions are about the changes you made and how much of an impact you believe your time at the CMHR had for you. Just like before I want to know if you:

"0, disagree ------ 1, somewhat disagree ------ 2, somewhat agree --(or)-- 3, agree" with the statement

19) Immediately following the end of my time in therapy my emotions, level of stress, symptoms, or quality of life was greatly improved

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

20)These days I find that my emotions, level of stress, symptoms, or quality of life is still greatly improved.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

21) As a result of my time in therapy at the CMHR I feel like I understand the issues that brought me into therapy better.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

22) I still use the techniques, strategies, exercises, or recommendations I learned and gained from my time in therapy at the CMHR when I encounter *the same types of issues* that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

23) I use the techniques, strategies, exercises, or recommendations I learned and gained from my time in therapy at the CMHR when I encounter *new challenges or issues*, different from those that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

24) **Alliance Question:** My therapist and I worked well together, agreeing on goals, tackling the issues I thought were important, and we respected each other and got along well.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

Do you have any further comments about your time as a client with the CMHR or the process through which you and your therapist worked to understand the issues that brought you into therapy?

_____

_____

_____

_____

PART 5 | Debrief |

Thank you for participating in our study! As mentioned before this information will hopefully help us learn more about what factors can and do make therapy more effective. Particularly, we have an interest in understanding how a client and their therapist work together in order to make positive changes and what types of expectations and needs clients come in with.

We are planning on sending you a brief one page document with more information on this study for you to look over if you have an interest in learning more about the topics that guided our research project.

If you are interested in contacting the CMHR regarding this study or your participation, the phone number is (519) 888-4567 ext. 33842. You can also email the CMHR director at whmittel@uwaterloo.ca. Or if you would prefer you can contact Maureen Nummelin at the Waterloo Office of Research Ethics at (519) 888-4567, ext. 36005.

How are you feeling about talking with us today about your experience of having been in treatment?

_____

_____

_____

If OK → That's good to hear. Once again thank you for participating. We wish to remind you that this project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation is yours. Participants who have concerns or questions about their involvement in the project may contact the Chief Ethics Officer, Office of Research Ethics at 519-888-4567, Ext. 36005 or maureen.nummelin@uwaterloo.ca.
Have a good morning/afternoon/evening!

If not OK → Assess severity of distress. None/Mild/Moderate/Severe.
Assess suicidality. None/Mild/Moderate/Severe.
Have a discussion about their concerns, distress, or feelings. Offer resources such as: a local distress line, calling a friend or family member to talk to, ask if they would like to contact a therapist or the CMHR director.

If participant has any suicidal thoughts or is currently in severe distress DO NOT HANG UP PHONE, follow CMHR crisis procedures. Ask where they are, get address. Ask who is near them. Ask if they would like you to call the police for them.

Would the client like to be contacted by the CMHR regarding a concern or complaint?

YES / NO (circle)

Undergraduate Therapy Experiences Study Interview Script

PART 1: Past Experiences

1. This study is about your experience of psychotherapy. These words cover broad spectrum of treatment interventions. To the extent that you feel comfortable, can you tell me a little bit about the nature of the work you did with your treatment provider (e.g., CBT, "talk therapy", guidance counselling, etc.)?

_____

_____

_____

_____

_____

a. *If nature of therapy experience unclear*: Would you have considered what you were doing more academic, religious, or spiritual counseling where you were seeking advice, or a mental health treatment?

   _____

   _____

We are interested in the experiences of people who have attended *at least one appointment for individual (i.e one-to-one) psychotherapy* at some point in their lives. It would be useful to focus on the most recent experience of therapy you have had that has ended, where you are no longer seeing that therapist any longer. However, if you are still seeing your therapist and have no other experiences in therapy, that's okay. We can still continue. **Past / Current**

2) How long ago did you begin this course of one-to-one psychotherapy (number of months or years ago)? _____

3) At the start of therapy was there a plan for the length of treatment? **Y / N**

4) How many sessions long was this course of therapy initially planned to be? [**If not aware of a planned length:** How many sessions did you expect to be in therapy for?]

_____

5) During this most recent experience in psychotherapy, how many sessions did you actually attend (if unsure estimate)? _____

4) How many scheduled sessions did you miss? _____

5) How many months have you/did you work with this therapist? _____

6) Who provided this service to you (e.g., a psychologist, psychiatrist, family doctor, social worker, other therapist without degree in medicine, psychology, or social work, etc.)? Were they a student trainee?

_____

_____

7) Over this course of therapy, did you see only one therapist? **Y / N**

If No: Please explain.

_____

_____

PART 2: Self-Determination and Dropout Study Questionnaire

The following questions are about your experience receiving psychological services. There are no right or wrong answers, so please just answer as honestly as possible.

1. Please respond to each statement by indicating how true it is for you. Use the following scale:

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

1. In therapy, I felt like I could be completely honest with my therapist. ____
2. In therapy, I felt like a competent person. ____
3. In therapy, I felt valued and cared about by my therapist. ____

4. In therapy, I often felt inadequate or incompetent. ____
5. In therapy, I had a say in what happened, and I could voice my opinion. ____
6. In therapy, I often felt a lot of distance in my relationship with my therapist. ____
7. In therapy, I felt very capable and effective. ____
8. In therapy, I felt a lot of closeness and understanding. ____
9. In therapy, I felt controlled and pressured to be certain ways. ____

2. **[*Skip to question 4 if client is still seeing their therapist*]** What were your reasons for ending your treatment when you did?

_____
_____
_____
_____
_____
_____
_____
_____

3. Would you consider your ending therapy planned with your therapist or unplanned?
PLANNED / UNPLANNED

I'm going to ask you a few questions about the time just prior to when you first received services during this most recent course of therapy.

4. Were you experiencing a crisis when you first sought treatment? **YES / NO**

5. Did anything change in regards to your symptoms or your situation from the time you first contacted your therapist to the time you first went in for treatment? **YES / NO**

III. **If YES**: What changed? Why?

_____
_____
_____
_____
_____

IV. On a scale of 1 – 7, 1 being much worse, 4 being unchanged, and 7 being much better, how much did the problem change between the time you first contacted your therapist to the time you first came in for treatment?

1	2	3	4	5	6	7
Much Worse			No Change			Much Better

6. What were your expectations for therapy prior to your first session? (***pause for answer, give examples if needed*** How did you think therapy would go? e.g. How many sessions would you need to attend? Did you expect to be required to share your true thoughts/feelings? Did you expect to feel comfortable with your therapist?)

_____

_____

_____

_____

_____

_____

7. I am going to read a list of questions describing some other expectations about therapy that you may have had. For each question, respond with the number that indicates how strongly you found yourself expecting what is described in the question, from 1 (not at all) to 7 (very much so).

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

1. Did you expect that your therapist would provide support? ____
2. Did you think you would be able to express your true thoughts and feelings? ____
3. Did you expect you would feel comfortable with your therapist? ____
4. Did you expect your therapist would be interested in what you had to say? ____
5. Did you expect your therapist would be sympathetic? ____
6. Did you expect that you would come to every appointment? ____
7. Did you anticipate being a better person as a result of therapy? ____
8. After therapy, did you expect to be a much more optimistic person? ____

8. On a scale of 1 – 7, 1 being not clear at all and 7 being very clear, how well-defined were your expectations for therapy before attending your first session?

1	2	3	4	5	6	7
Not clear at all						Very clear

9. In what way, if any, were you surprised by what occurred in therapy?

_____

_____

_____

_____

_____

10. Did your expectations change after the first session? **YES / NO**

If **YES**: In what way did your expectations change?

_____

_____

_____

_____

_____

Working Alliance Inventory-Client Short Form (Client):

I'm going to read sentences that describe some of the different ways you might have thought or felt about your therapist, keeping the whole course of therapy in mind. If the statement describes the way you *always* felt (or thought) respond with the number 7; if it never applied to you, respond with the number 1. Use the numbers in between to describe the variations between these extremes.

1	2	3	4	5	6	7
Never	Rarely	Occasionally	Sometimes	Often	Very Often	Always

1. My therapist and I agreed about the things I needed to do in therapy to help improve my situation. ____
2. What I did in therapy gave me new ways of looking at my problem. ____
3. I believed my therapist liked me. ____
4. My therapist did not understand what I was trying to accomplish in therapy. ____
5. I was confident in my therapist's ability to help me. ____
6. My therapist and I were working towards mutually agreed upon goals. ____
7. I felt that my therapist appreciated me. ____
8. We agreed on what was important for me to work on. ____
9. My therapist and I trusted one another. ____
10. My therapist and I had different ideas on what my problems were. ____
11. We established a good understanding of the kind of changes that would be good for me. ____
12. I believed the way we worked with my problem was correct. ____

Reasons for Termination [*Skip if client is still seeing their therapist*]:

We discussed this at the beginning of the interview, but I'd like to ask you a few more questions about your reasons for ending your treatment when you did. Using a scale from 1 (not at all important) to 4 (very important), rate the importance of each of the following possible reasons in your decision to end therapy:

12. Accomplished what you wanted to do in therapy ____
13. Could no longer fit time for therapy into schedule ____
14. Just lost interest in therapy ____
15. No longer had money or insurance coverage to pay for therapy ____
16. Felt therapy was going nowhere so ended therapy ____
17. Felt therapy was making things worse so stopped ____
18. Weren't confident in therapist's ability to help ____
19. Uncomfortable talking about personal matters with therapist ____
20. Therapy didn't fit with ideas about what would be helpful ____
21. Decided to go elsewhere for services ____

22. [Any other reasons?] Other:

_____ ____

A) How satisfied were you with the services you received on a scale of 1 (not at all) to 7 (very much so)?

1	2	3	4	5	6	7
Not At All			Somewhat			Very Much So

B) Would you recommend that service to friends or family? **YES / NO**

Why/Why Not: _____

_____

_____

PART 3: Collaborative Case Conceptualization Questionnaire

These questions are about your time in therapy, again keeping in mind the course of therapy we have been discussing. For these questions I want to know if you:

"0, disagree ------ 1, somewhat disagree ------ 2, somewhat agree -- (or) -- 3, agree" with the statement I make. Feel free to use the whole range of answers if you only somewhat agree or somewhat disagree with the statement. I can repeat questions or the possible answers for you if you would like.

1) You and your therapist came to understand the issues that brought you to therapy in a deeper and more thorough way over the course of your treatment.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

1b) Could you briefly describe how this understanding changed or stayed the same over time?

_____

_____

_____

_____

_____

2) You and your therapist consistently worked together, with genuine curiosity and respect for each other's input, to understand the issues that brought you to therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

3) You and your therapist made sure to check the accuracy of how you both understood the issues that brought you into therapy, making sure your understanding was a good fit and was correct. **[*Give examples if needed*:** This might have been by looking at possible alternative explanations, doing personal experiments between sessions, discussing relevant psychological research, looking for ways new ideas might not make sense for you, or otherwise assuring that you were understanding the problems accurately].

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

4) During your treatment you and your therapist identified your personal strengths, interests, or aspirations, and how they might be useful for you in working on the issues that brought you to therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

5) The way my therapist thought about the issues that brought me to therapy matched with my goals and priorities for treatment.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

6) My therapist discussed with me a clear explanation and set of reasons for how they thought about the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

7) Over my time in therapy I found my therapist and I made meaningful links between different events, situations, feelings, thoughts, and behaviours in my life that helped me reach my goals.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

8) The way my therapist and I thought about the issues that brought me into therapy was simple enough for me to easily understand.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

9) My therapist and I worked together to understand the issues that brought me into therapy better. We both took turns listening, both added important information, and valued each other's opinions.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

10) My therapist used language, metaphors, and examples that made sense to me and were relevant to my cultural background and personal experiences to help me understand the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

11) My therapist showed genuine interest and curiosity in the issues that brought me into therapy, working to understand my experiences the way that I do.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

12) My therapist seemed to know psychological and scientific information that was relevant to the issues that brought me into therapy and this information helped us understand my personal circumstances.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

13) My therapist and I explored aspects of the issues that brought me into therapy that were hard to understand, and that didn't immediately fit with how we were working towards my goals.

0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

14) The plan for my treatment seemed to make sense in light of the way we talked about the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

15) My therapist was interested in understanding my strengths as well as my difficulties.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

16) Over the course of my therapy we found how my personal strengths could help me with the issues that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

17) My goals and positive hopes for the future were also focused on over the course of my therapy. My therapist was interested in helping me achieve my hopes and goals.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

18) The way my therapist and I thought about the issues that brought me into therapy helped me see the ways I had been strong and resilient in dealing with my mental health difficulties.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

Outcome Questions

These questions are about the changes you made and how much of an impact you believe your

time with that therapist had for you. Just like before I want to know if you:
"0, disagree ------ 1, somewhat disagree ------ 2, somewhat agree --(or)-- 3, agree" with the statement

19) Immediately following the end of my time in therapy my emotions, level of stress, symptoms, or quality of life was greatly improved

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

20)These days I find that my emotions, level of stress, symptoms, or quality of life is still greatly improved.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

21) As a result of my time in therapy I feel like I understand the issues that brought me into therapy better.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

22) I still use the techniques, strategies, exercises, or recommendations I learned and gained from my time in therapy when I encounter *the same types of issues* that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

23) I use the techniques, strategies, exercises, or recommendations I learned and gained from my time in therapy when I encounter *new challenges or issues*, different from those that brought me into therapy.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

24) **Alliance Question:** My therapist and I worked well together, agreeing on goals, tackling the issues I thought were important, and we respected each other and got along well.

(0) Disagree-- **(1)** somewhat disagree-- **(2)** somewhat agree-- **(3)** agree

Do you have any further comments about your time as a client or the process through which you and your therapist worked to understand the issues that brought you into therapy?

_____

_____

_____

_____

_____

PART 5 | Debrief |

Thank you for participating in our study! As mentioned before this information will help us learn more about what factors can and do make therapy more effective. Particularly, we have an interest in understanding how a client and their therapist work together in order to make positive changes and what types of expectations and needs clients come in with.

If you are interested in contacting the Waterloo Office of Research Ethics regarding this study or your participation you can contact Maureen Nummelin at (519) 888-4567, ext. 36005.

How are you feeling about talking with us today about your experience of having been in treatment?

_____

_____

_____

_____

If Okay → That's good to hear. Once again thank you for participating. We wish to remind you that this project has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee. However, the final decision about participation is yours. Participants who have concerns or questions about their involvement in the project may contact the Chief Ethics Officer, Office of Research Ethics at 519-888-4567, Ext. 36005 or maureen.nummelin@uwaterloo.ca.

Have a good morning/afternoon/evening!

If not Okay → Can you tell me a bit about the reaction you are having right now to talking about your psychotherapy experiences? Can you tell me how you are feeling right now? [**Follow PIRT SOP]**

Appendix B

Group Intervention 1 – Planning & Time Management

INSTRUCTOR GUIDELINES

Welcome the incoming participants and hand them their respective package of study materials. His or her participant number will identify their individual package.

The participant numbers, and the name of the individual to which they are assigned can be found on the sheet entitled "Participant List".

- *Welcome back everyone! Let's begin with a discussion about your experience self-monitoring over the past week. How did it go? Are there any aspects of the monitoring that require clarification? Were there any days that you could not self-monitor, and why? Are the reminders (e-mails, alarms, etc…) working for everyone?*
- *The purpose of last week's self-monitoring was to give us an idea about the overall trends in your procrastination We believe that individuals may procrastinate at various times, for various reasons, and in various ways. One of our main goals with this intervention is that you can understand your personal reasons and ways of procrastinating.*
- *The researchers have reviewed your self-monitoring responses of the previous week, as well as your results from the procrastination measures taken at last week's meeting. The relevant procrastination trends and accompanying information have been compiled onto a sheet, which can be found in your sheet package. Reviewing this information should allow you to pinpoint your reasons/circumstances for procrastinating and assist you in making changes in your work habits.*
- *Before we continue on to the intervention, does anyone have any questions about their results?*

THE PROCRASTINATION INTERVENTION #1

- *First, let's clarify what procrastination is exactly. To procrastinate is to put off or postpone something until another day. – There is a gap between what you intend to do and actually doing it. The delay in question is both voluntary and irrational.*
- *Procrastination is a very common phenomenon experienced by many people today – 20 to 25% of the general population (20 people out of a group of 100). If you were to step onto a university campus, like The University of Waterloo, that number skyrockets to 70% of students, half of which consider themselves problematic procrastinators. Needless to say, you are not alone in this, even though it may feel like it at times.*
- *Procrastination has been a popular area of research in psychology for many years. Dr. Timothy Pychyl, a professor at Carleton University in Ottawa, is a renowned researcher on the topic. His research team, the Procrastination Research Group, has created a website www.procrastination.ca, which contains numerous additional resources/information on procrastination.*
- *Next, we will be discussing some planning and time management techniques in order to become more efficient. One of the key components that have been identified for solving problem procrastination is the way in which you organize your time. In this session, we will explore methods to improve your time management and provide you with tools that will simplify the process. Throughout the session, you will be asked to follow along with the sheet package provided and complete the tasks as instructed.*

Each step must be reviewed thoroughly in order to provide each participant with a clear understanding of what is expected of them. That being said, timing is limited and therefore do not hesitate to wrap up any discussion points in order to ensure that each of the techniques is covered.

1. MAKE LISTS:

- *Using the weekly list sheet provided, make the following lists:*
- *List One – Identify a list of the tasks that need to be accomplished in the coming week. Review each of your courses to see what needs to be done. Remember to think 2 weeks out – studying for tests and exams is best accomplished in a distributed way rather than all at the last minute.*
- *List Two – Identify a list of the other tasks that need to be accomplished that will compete for time with the first list. Can anyone list off a few tasks that may take precedence over schoolwork? Life happens, which means that at some point in time you will be required to do something that is seemingly unrelated to your schoolwork (e.g. making dinner, doing laundry, bathing) but that still needs to be accomplished. That being said, having an awareness of tasks that may possibly interfere with your schoolwork will allow you to better prepare for them.*

2. RATE THE TASKS:

- *Using the same sheet:*
- *Rate each of the tasks on your first list in terms of importance and urgency.*
- *When it comes to assignments, etc., everything may seem important and urgent. I am here to tell you that this is definitely not the case. Does anyone have an idea as to how we could distinguish whether a task is urgent or important? The following can serve as helpful reminders:*
- *URGENT – Upcoming deadlines (within next few days).*
- *IMPORTANT – Task of high value.*
- *It is crucial to note that while a task may be urgent, it may not be the most important task to complete on your list. E.g. Studying for a midterm worth 50% of your final mark is relatively more important than spending excessive amounts of time perfecting the formatting of a paper, especially if beauty is not part of the grading scheme.*

3. TIMING IS EVERYTHING:

- *Identify times in the week that you will be able to set aside to accomplish the list of tasks.*
- *Using a weekly planner, like the one provided, is helpful. Start by indicating the times in the week where you know you are NOT available, and then have a look at what is left. Try to imagine the times of the day that you know you are best suited for working. For example, if you know that once you get home from class all you want to do is lounge around, set yourself up to do most of your work before class.*
- *Next, compare the time you have to work with the time you estimate your list of tasks will require. It is important to be realistic in this goal, try your best to estimate the time required for a task. If the time available is less than the time required, starve the less important tasks of time – if it isn't important, a rush job will be okay.*

4. BREAK IT DOWN NOW:

- Using the daily task sheet:
- Break down tasks that will take longer than an hour into a series of subordinate steps, each taking an hour or less.

- A common thought is that we need to accomplish a task in a single sitting. (E.g. "Reading this chapter will take me 3 hours but I only have 1 hour right now so I won't do it until later") Large segments of time in a day are very rare therefore it is important to make good use of the bits and pieces of time you have available to you. By breaking up larger tasks into smaller segments, you will likely be more focused and driven to complete it. Before you know it, all of your small segments will be accomplished and you'll be able to cross that task off your list!

5. GETTING THINGS DONE:

- *Form clear implementation intentions:* ***on this day at this time in this place I will do X, which will help me accomplish Y****. By outlining exactly what your plan is for a particular task, you are less likely to be spending your time trying to figure out how to get started when the time comes.*
- *Anticipate any obstacles and plan how to overcome them. Unexpected changes may occur when it comes to the plans that you have made; can anyone name a few examples of this? (E.g. Planning to work on group a project on Tuesday but then the group cancels. Getting home to work on a report and realizing you don't have all of the necessary source material.) It is important to be able to anticipate such unexpected changes, and prepare for them.*

6. REWARDING YOURSELF:

- Generate a list of rewards and plan to reward self for accomplishments each day.
- Finally, after all of the hard work you have put into getting yourself organized and on track, be sure to reward yourself. You will feel more motivated to work toward that reward and in turn, will accomplish what you set out to do that day!

WEEKLY LIST – ACADEMIC TASKS

TASKS TO ACCOMPLISH	URGENCY RATING	IMPORTANCE RATING

WEEKLY PLANNER

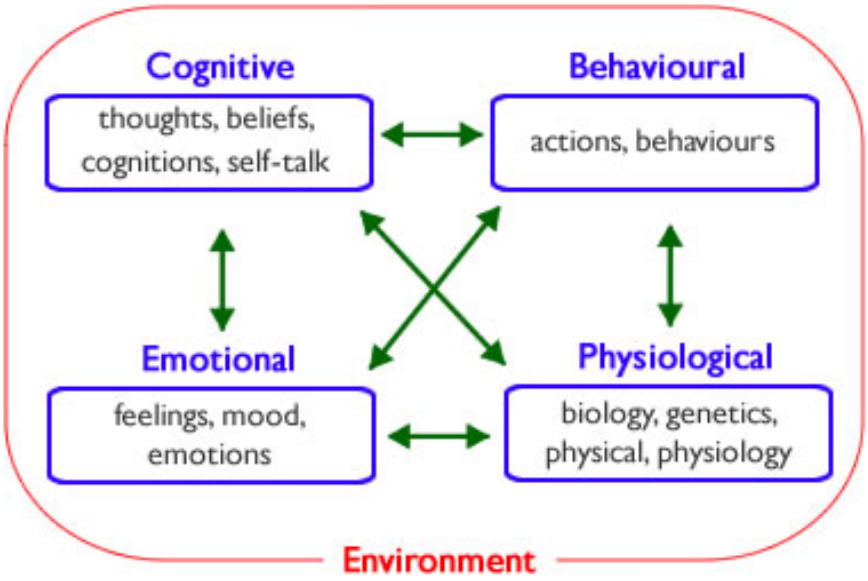
TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
6:00 AM							
7:00 AM							
8:00 AM							
9:00 AM							
10:00 AM							
11:00 AM							
12:00 PM							
1:00 PM							
2:00 PM							
3:00 PM							
4:00 PM							
5:00 PM							
6:00 PM							
7:00 PM							
8:00 PM							
9:00 PM							
10:00 PM							
11:00 PM							
12:00 PM							

CBT Group Procrastination Intervention

- "Welcome back everyone! Let's being with a discussion about your experience putting last week's strategies into practice. Did you find you were able to follow any of the suggested techniques? What did and didn't work for you? Why? How much of an impact did the things you tried have on your level of procrastination? Are there any thoughts or feelings you have after trying some techniques? Are there strategies you didn't try? Why?"

- "This week, we're going to try something a little different. We're going to talk about some of the thoughts and feelings that people can have in relation to procrastination, and how these thoughts and feelings can affect our behaviour. There are many theories that have been proposed to explain why people procrastinate. One such theory is based on a cognitive-behavioural understanding of procrastination. Cognitive refers to how we think and reason, and behavioural refers to why and how we act. People feel a variety of emotions in their day-to-day lives. These feelings can be reactions to automatic thoughts (which are brief words or images) that pop into our heads in response to the situations we are in. The thoughts and feelings we have influence how we behave, and that behaviour can then influence our thoughts and feelings."

- Let's talk about an example. I might start to consider doing an assignment and have the thought, "I don't know where to begin." What might I feel in response to that thought? [anxiety/sadness/frustration, etc.] Can you guess how those thoughts and feelings might influence what I do next? [e.g., put off work because it makes me feel bad/try to distract myself/etc.] Can you see how my behaviour might affect thoughts or feelings I have later? [I didn't finish the assignment in time, it must be because I'm not smart enough/etc.]



- "There are well-established thought habits that we hold and believe because we don't really examine them in depth. They are more automatic thoughts that we don't second-guess. However, they can be self-deceptive. For example, you might make a habit of telling yourself you'll be more motivated to get homework done on the weekend even though you usually don't follow through or there are consequences (e.g., you can't do an activity with friends because you won't finish an assignment by the due date)."

- "Try to think back to a time you procrastinated in the last week. What thoughts crossed your mind when you were putting off homework? How do you give yourself permission to procrastinate - what are words you say? Here is a list of common thoughts people have when they procrastinate. Can you relate to any of these thoughts? Let's talk about the most common and convincing reasons you tell yourself in order to put off homework [give list of common thoughts]:

Common Procrastination Thoughts:
"I'm waiting until I'm more in the mood."
"I'll do this later in the day."
"I'll have more time to complete this tomorrow or on the weekend."
"There's still plenty of time before this is due."
"I'll just do/watch/play _____; then I'll get to work."
"I'm too tired right now. I'll do this after a good sleep."
"I do my best work in a time crunch."
"This task really isn't important for this class overall."
"I don't need to do this to get a good grade."
"I'm anxious about starting this. I will feel less worried if I distract myself."
"This won't take very long to do, so it can wait."
"There's so much to do. I don't know where to begin."
"Since I won't get it done now I might as well not begin."
"I'll never understand this. Why even bother trying?"
"There's no way I'll have enough time to finish this all. I might as well not do it."
"This task is so frustrating. It's not worth my time."

- "Which thoughts are most characteristic of you? Are there any other thoughts you can think of that cross your mind when procrastinating? [Get examples from students of their most common thoughts] What is the evidence you have from your own personal experience that tells you this thought might be accurate? What is the evidence that tells you this thought might not be the most reliable? What's a more balanced perspective that is something you could endorse and follow through with?" [Make evidence chart]

Thought	**Evidence For Thought Accuracy**	**Evidence Against Thought Accuracy**	**More Balanced/Accurate Thought**
Ex: "I'll just do/watch/play _____; then I'll get to work"	Occasionally, when time is pressing, I will stop watching Friends and get some work done	I tell myself I will get to work after one more episode; this is usually a lie	This assignment won't take very long. If I do it now, I can watch many episodes of Friends guilt-free. If I don't do it now, it will be in the back of my mind and I won't enjoy the show.
"I'll have more time to complete this tomorrow or on the weekend."	I don't have many activities scheduled for the weekend.	I've said the same thing to myself many times; more work tends to pile up and I can't get it all done.	I have time on the weekend, but I might have more homework than I expect. If I do this now, I will have time for unexpected homework or more free time!

- "We tend to avoid doing things that cause negative feelings to try to stop those negative feelings. However, this temporary relief can lead to bigger problems down the road. **Mindful awareness lets me recognize that I'm freaking out about this task or bored stiff by this task and this awareness can signal the need to inhibit my habit of procrastinating**. **If I can be aware of my emotions, I can exert control and stay put (**Pychyl, T. A. (2014, March 12).
  Try to notice the negative feelings that come up when you think about your homework. When you notice some negative feelings, Think: '**If** I feel negative emotions about the task at hand, **Then** I will stay put and not stop, put off the task or run away." Another helpful mantra can be "Feel the [negative emotion] and do it anyway". Try to access another more positive resource that you have [e.g., curiosity, desire to succeed etc.], rather than getting stuck in the negative emotion/s associated with the task. Say you're starting an assignment that you are not very confident you can do correctly. How might you be feeling? […] How might you be inclined to act in response to this feeling?

[avoid?] How might continuing to work even though it doesn't feel good help you? What might the benefits be? Would they outweigh the drawbacks?" (Baker,

Thought	**Feeling**	**Behaviour**
Ex: "I'll never understand this. Why even bother trying?"	Sad, anxious, hopeless	Avoid task, do something that makes me feel better

- "Beware the 'feel good' of 'good intentions'. If you give in to procrastination by saying to yourself 'I'll do it tomorrow', you will experience the immediate relief of not having to do the task now, plus the positive feelings that go with creating positive goals. The catch is that when we imagine ourselves doing the task tomorrow, the picture of the future is generally ungrounded, undetailed, not taking into account the fine details of the situation, and over optimistic.

- Research has shown that we often overestimate the difficulty and unpleasantness of tasks. Getting started on a task tends to change our perception of it, and can also change how we think about ourselves (we feel more in control, more optimistic). Once we start a task it is often not as bad as we thought it would be. So "Just get started". Progress on our goals makes us feel happier and more satisfied with life and with ourselves. These positive emotions help us to make further progress on our goals and start a positive cycle.

Steps for the next week:

- "Remember to fill out your procrastination monitoring daily. This week, when you notice yourself procrastinating, try to identify some thoughts that have crossed your mind in which you are allowing yourself to put off homework. Practice spotting your most common excuses and make a list of them. Try to come up with a thought that might be more accurate or helpful in the long run. Try to use some of the mindfulness techniques we discussed to identify when you're having negative feelings about your homework and then control your behaviour in response to those feelings (e.g., let yourself feel worried about the task but stay put to get it done and out of the way)."

- "Next week, you will come in for your final group meeting. We will discuss how this week's techniques went and will fill out some final questionnaires. Any final questions about what you should be doing this week?"

Individual Procrastination Interview and Session Outline

	First Meeting	Second Meeting
Before Meeting	Review responses to weekly tracking data and other questionnaires completed, make a very tentative and sparse preliminary formulation in your head, identify "type" of procrastinator if possible	Review responses to weekly tracking data and other questionnaires completed, note what changed from last time. Review notes from end of last meeting to re-familiarize self with participants goals, formulation, and plan of action from last week
First Part of Meeting (20mins)	Conduct an interview to learn about participant's procrastination, identify main goals in procrastination reduction	Review their last week of efforts to implement their plan of action. Explore how things they noticed might or might not support the formulation.
Second Part of Meeting (20mins)	Using information from the interview collaborate to create a conceptualization with the client.	Collaborate to examine the evidence for and against the conceptualization's accuracy, alter the conceptualization with new ideas where needed
Third Part of the Meeting (20mins)	Collaborate to create some useful suggestions for an action plan to try for the next week	Collaborate to create or modify the suggestions for an action plan to try for the next week
After Meeting	Spend a few minutes making notes for this meeting. Record the participant's main goals, the formulation you have developed so far, and their action plan for the next week	Spend a few minutes making notes for this meeting. Record how the last week's action plan went, the participant's goals, the formulation you have developed so far, and their action plan for the next week

Before Meeting

Before session review the participant's last week of self tracking data. Examine how they have rated the different causes of procrastination, are there one or two causes that appear most relevant? Have the factors identified before changed? Is there any other interesting data to make note of for this person's case? Keep these in mind for your meeting, they will help make up a preliminary formulation that you can begin to test or help you track progress and make changes to last week's formulation.

Session Summary:

1a) **In the first session**, spend the first 20 minutes exploring the person's procrastination through the types of questions attached to the end of this document. Be flexible in the interview, focus more time on factors that appear most relevant as indicated from this participant's 1st week of tracking data, or on areas of the interview which the participant themselves appears to find relevant. Also try to identify 1 or 2 main goals for the person related to their procrastination. Identifying success or failure in reaching these goals should be easy, and as such it is helpful to have a concrete rather than abstract goal, i.e. "I want to sit and read from my textbook three times a week, when I plan to, for 45mins each". Try to keep the goal meaningful but realistic and attainable. After the interview, try to briefly discuss their responses to the procrastination questionnaires that they have responded to so far, what their responses might indicate as driving their procrastination.

1b) **If this is not the first session** skip the interview and instead spend time reviewing how the last week went, did the participant try out the suggestions you had agreed on? Did they notice a change? Review their last week of tracking data with them, point out if things got better, worse, or stayed the same. Discuss this in the context of the conceptualization, if things got better do they think it is because the formulation is accurate and the suggestions were appropriate? If things did not get better do they think the formulation needs to be changed or were the suggestions just not helpful or realistic? Did any of their experiences over the last week help them to identify new information that might help you both understand their procrastination?

2a) **If this is the first session**, spend the next 20 minutes actually creating a conceptualization with the participant. You can begin this process by saying something along the lines of:

"I appreciate all the information you just shared, now I think it would be useful if we put it all together in order to really make sense of what is causing your procrastination. For the next little while we are going to put together a "first draft" of what might be causing you to procrastinate, this draft might need to be changed later as we learn more. Our understanding of your procrastinating will help us plan some ways for you to reach your academic goals and procrastinate less. I think this process will benefit from us working together as much as possible, using both the facts I know about procrastination, what you shared, and your expertise about your own life and strengths."

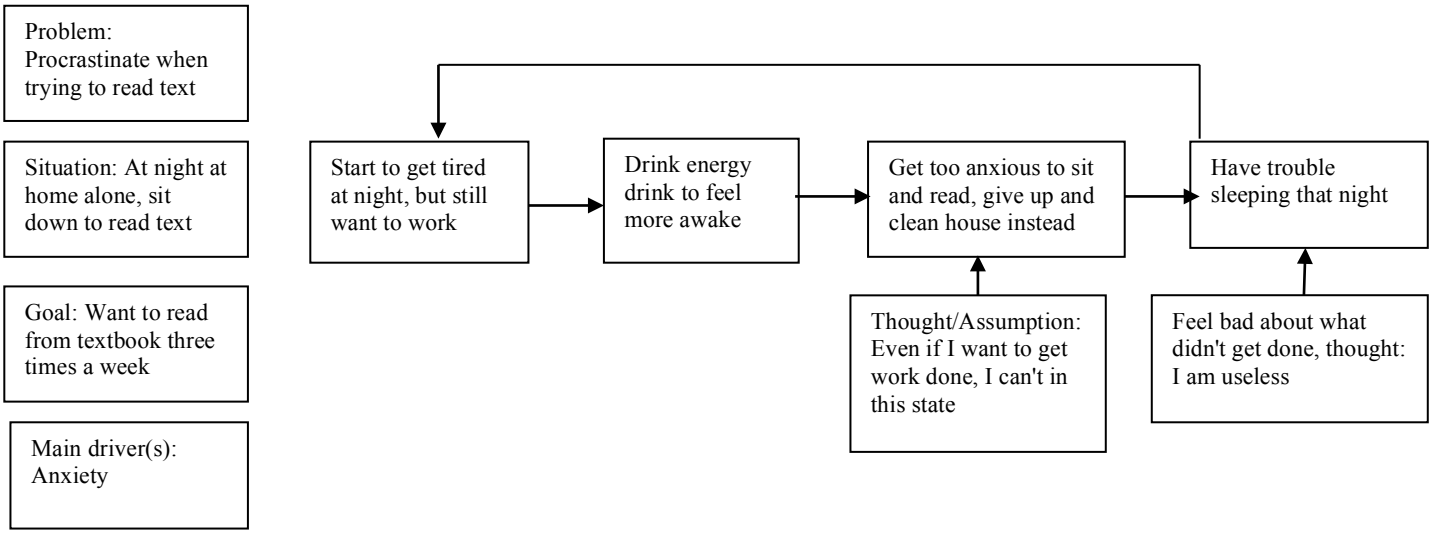
Continue this section of the meeting by verbally (and possibly visually) creating links between different areas of information you have so far gathered. These should relate to the goal, the situation surrounding the procrastination, and the main driver(s) of the problem. Make the language as accessible to the client

as possible and try to focus on the factors you both agree are likely the most important causes for procrastination. As an example of this part of the conversation might resemble the following:

"You mentioned earlier that you tend to procrastinate most when you are working at night, and also that while you are procrastinating you start to get really anxious. You also said that you tend to drink lots of energy drinks at night in an effort to get more done. Here's a thought I had, maybe you are starting to get too tired to work late at night and so you drink lots of energy drinks in order to feel more awake, but those energy drinks are making you feel too wound up to work because they also make you feel sort of anxious too. What do you think of that idea?"

Keep your ideas somewhat tentative and try to phrase ideas you are having in a way where the participant can be comfortable disagreeing, or willing to add and expand. Where possible, ask questions to allow the participant the chance to put forward their own ideas. While formulating the person's procrastination keep in mind we will be focusing on four main causes of procrastination: anxiety, failure to create clear implementation intentions, temporal discounting, and habit. Try to keep the core information contained in the formulation tied as closely as possible to these areas, as relevant to the participant.

If you want to draw out the formulation on some paper this might be useful for the client, and you can ask if this would help. The formulation above, if expanded a bit, might look something like this.

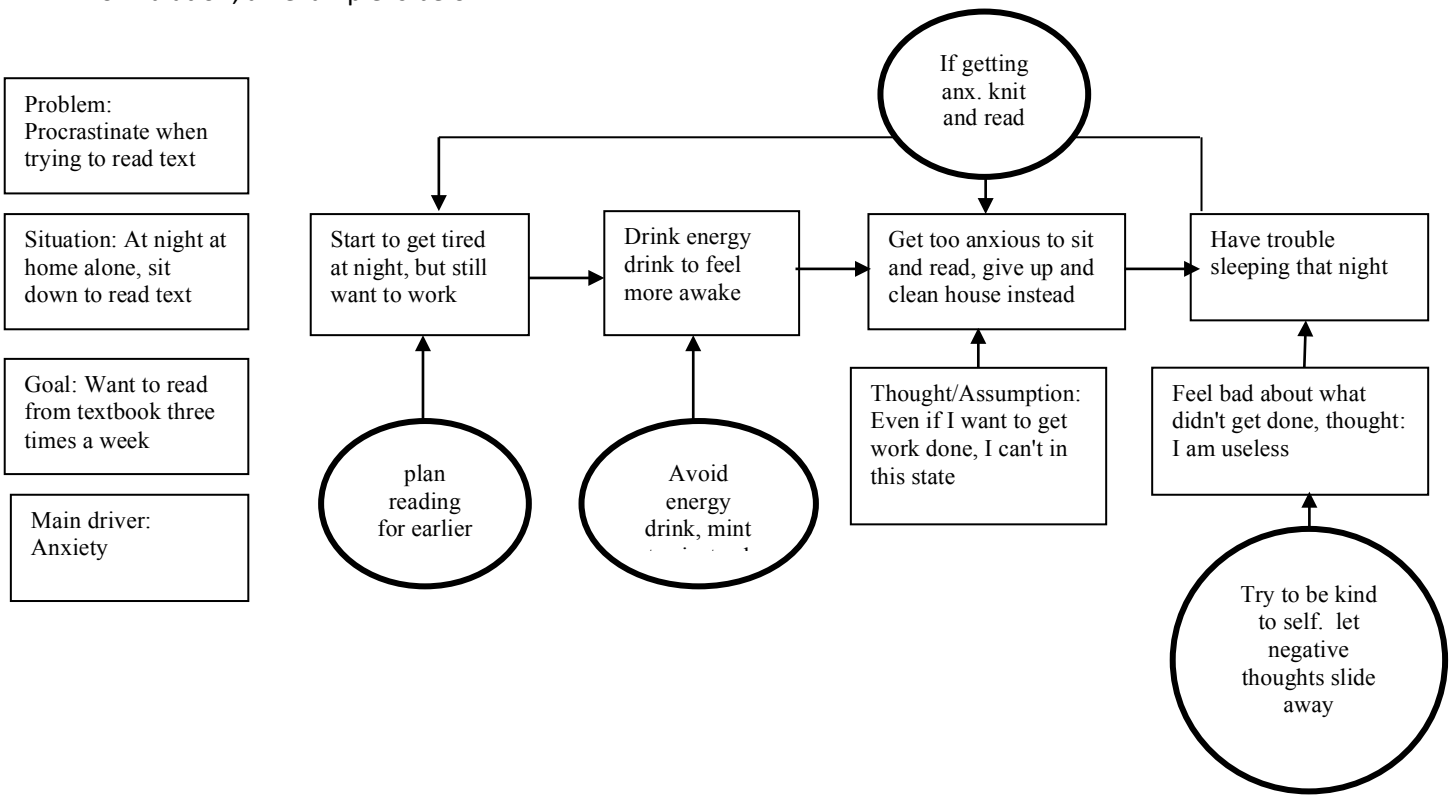


2b) **If this is not the first meeting**, keep in mind the process from 2a but focus more on identifying places where information could be added, changed, or removed if it is actually not important. Explore how the participant might agree or disagree with aspects of the formulation based on their experience over the last week. If the client has made some progress or agrees with the formulation it is unlikely that the whole thing should be thrown out, but if they are not seeing any progress and disagree with large parts of the formulation you can even try to make some major modifications and let the new formulation guide the next section of the session.

3a or b) **First or second meeting**. Once you have outlined or revised the formulation with the participant move on to discussing some suggestions or plans to help the procrastination problem and hopefully test out the conceptualization as well. You can frame this section of the session something like this:

*"Great, we now have a work in progress about what might be causing your procrastination. (**Or**: We have hopefully improved our understanding of what be causing your procrastination compared to last time) From what we just put together it looks like... (**recap formulation**) there is a kind of cycle going on where you try to read at night but are feeling tired, so you drink some energy drinks, and then get too anxious to actually do your readings. Maybe because of the caffeine or maybe because of your feeling bad about not getting much done you have trouble sleeping that night and then the whole process repeats the next day. If we assume we are on the right track here, what do you think we can do to help change things for the better?"*

3a) **If this is the first session**, give the participant a chance to come up with some ideas/possible solutions, these will hopefully be related to the conceptualization. If they aren't, you can discuss this with them emphasizing the goal of coming up with solutions that stem from the conceptualization because the conceptualization should show us where the most important places to intervene are. Add in some of your own ideas for what might help too, these should relate back to some of the suggestions we are going to be giving to those participants in the group condition. If possible also try to find some strengths of the participant that can be included in the solutions. Tie the proposed solutions to the formulation, an example is below:



After coming up with a few possible solutions collaborate with the participant to choose one or two that are both 1) likely to be done (not too hard, don't require skills they don't have yet) and 2) likely to be most impactful (target the root cause(s) for the procrastination, would produce the most changes). Discuss any barriers to trying out these possible solutions and problem solve around these, try to keep motivation up and help participant see the possible benefits of trying these out, keeping their goal in mind. This might look something like this:

"So we have found a few possible solutions but trying them all might be a bit too much all at once. Which ones do you think might be the most important or useful to try out? Maybe trying to do some reading earlier? ... You say you don't really have much other time to read, so trying to read earlier might not be realistic, ok well that can be in our back pocket, so if you find a time to read earlier in the day you can try, but it might not happen. Instead maybe we can focus on lowering the anxiety you feel, how about you try to avoid energy drinks if you can? ... Oh, well you're right it might still be hard to focus if you're tired, maybe having some black tea, or even mint tea will help you focus without making you feel too anxious... so that sounds like a plan. You also mentioned knitting has helped you both relax and focus before, so maybe if you do feel a bit anxious you can try to knit while reading and see how that goes."

3b) If this is a later session keep in mind the process from 3a) while focusing on reviewing the effectiveness of the suggestions from last week, trimming out suggestions that were not helpful, and adding in new ones that appear relevant to the conceptualization as it currently stands. You can also spend some more time exploring the barriers to successfully implementing the suggestions, or exploring the participant's motivation and drive to enact the changes. Try to emphasize and praise the participant's effort and keep a hopeful but empathetic tone.

4a or b) Once you have agreed on some strategies to try/continue trying over the next week remind the participant to try to be aware of their procrastination in light of the current formulation you both developed. Let them know it will be useful if they can come back next week and discuss whether the suggestions made any impact on their procrastination and whether they feel as if the conceptualization was helpful and actually accurate to their situation. This is because the better understanding you both have of the key aspects of their procrastination the more useful the plans you come up with should be, next week you can refine and improve upon the work you both did this week. Briefly remind them of your next meeting and ask them to continue answering the daily questions. Lastly, thank them for coming in and working hard.

Procrastination Interview for Session 1 | Length 20 minutes.

Introduce yourself, explain/recap your role over the next few weeks: helping them to understand their procrastination better and develop some strategies for them to try to improve their problem in between meetings. Let them know today is about 1) getting the important information to understand their academic procrastination as best you can, 2) putting that information together so you can both start to identify the reasons and causes of their procrastination, and 3) using the information to make a plan of action for the next week that will hopefully help them procrastinate less and also learn even more about why they are having procrastination trouble.

Let them know that as your time together is limited you have a set of questions you would like to ask to begin understanding their procrastination and their main goals for their participation in this study. This section of your meeting will be about 20 minutes long and will focus only on information relevant to procrastination. If they have some other personal challenges they are experiencing that appear more serious you can provide some other resources for them to access, but your work together will focus on their academic procrastination. Ask them to keep their answers relatively brief, and let them know you might interrupt their answers if you have got enough information on one topic, just because time is short. Give them an opportunity to ask any questions they might have before starting. Remind them, there are no right or wrong answers or ideas, we are just looking to accurately find out their problem.

This interview can flow from the following questions or focus more on specific and typical examples of procrastination the person can identify and describe.

1. Please tell me about your academic procrastination to give me an overview of your difficulties. What do you procrastinate on most, what is causing you the most issues, and in what situations or circumstances do you procrastinate.

2. What sorts of things do you find yourself doing instead of your work?

3. Can you think of any advantages to procrastinating, any ways it might actually be useful for you?

4. Can you think of any reasons why procrastination impacts you more than other people?

5. Are there things about you, your life, or your academics that contribute to your procrastination?

6. Do anxiety or stress contribute to your procrastinating?

7. How might any habits you have be getting in the way of your work, do you find when you want to get to work you just end up doing something else out of habit? Please explain. If at all, how might your organizational skills, ability to make clear or detailed plans, or ability to put plans into action impact your procrastination?

8. Do you have trouble getting motivated to work right up until the deadline approaches? Do you find work seems less important and harder to do the further away it is due? Please explain.

9. Are there any situations where you find it easier to avoid procrastinating? Are there any situations where it is particularly hard? What sorts of things have you tried before to avoid procrastinating? Did this work? Why or why not?

10. What strengths of yours might we be able to use to help you procrastinate less? Think about procrastination as a barrier we need to bring down, what tools might you have handy to help?

11. We probably won't be able to completely eliminate all procrastination from your academics, what are a couple of main tasks we can help you to procrastinate less on, what might be a main goal for us to focus on over the next couple of weeks?

12. Is there anything else that would be useful for me to know about your academic procrastination?

13. How does your procrastination make you feel, do you have any thoughts or beliefs about yourself related to your procrastination?

14. Are there any solutions that you can think of to help you procrastinate less? Is there anything you think you can do in this situation?

15. Let's think of a few specific instances where you procrastinated. Can you tell me about them? Can you think of any behaviours you engage in when procrastinating, what exactly do you do? What supports this behaviour?