Motivational Interviewing, Therapist Fidelity and Treatment Outcomes Among Adolescents with Concurrent Disorders

by

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Abstract

Addressing motivational issues has been considered an important target in treatment among adolescents with concurrent disorders (CD). The client-centered, collaborative and non-confrontational approach of MI, make it a particularly useful approach with adolescents. MI has been shown to be effective at increasing commitment to change and enhance treatment engagement among adolescents. To date, there have been limited studies to examine the effectiveness of MI as a pre-treatment intervention among adolescents with CDs. The purpose of the study was to address this need for research and to understand which specific MI interventions are essential for facilitating client change among adolescent CDs. The current study was a pilot sub-project from a larger study examining the feasibility and effectiveness of a single MI session as a pre-treatment intervention among adolescents with CDs. Thirty-two adolescent males and females attended a brief MI intervention session prior to participating in a group treatment program. The goals of this study were to: (1) examine the efficacy of a brief MI intervention among adolescents with CDs; (2) develop a better understanding of the important elements of the intervention that influence outcomes, specifically examining treatment effects at the level of therapist behaviours. The results were consistent with the hypothesis that following the MI session, adolescents would report greater motivation, specifically taking greater steps and actions to changing their alcohol use. Contrary to our predictions, no significant changes emerged in
readiness to change alcohol use, drug use or problems following the brief MI intervention. The relationship between MI fidelity and treatment engagement (i.e., number of DBT sessions attended) was significant. Specifically, the greater the percent of MI adherent statements made by the practitioner, the greater the treatment engagement by the adolescent (i.e., attendance in group treatment). Although other MI fidelity dimensions such as percent complex reflections, percent open questions, reflection-to-question ratio and Global Spirit were not significantly associated with treatment engagement individually, the combined use of these MI fidelity dimensions had a significant effect at increasing adolescent treatment engagement. These results add to the literature which has suggested the strength of the intervention lies in the integration of the skills and MI spirit and that the ‘whole is greater than the sum of its parts.’ The findings from the current pilot study demonstrate the effectiveness of MI as a pre-treatment intervention for adolescents with CDs and provide essential information for therapist training and supervision. Future studies could examine the efficacy of brief MI interventions using a randomized control study design.
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Chapter 1: Introduction

Concurrent Disorders

Over the past two decades there has been increasing attention and awareness to the high rate with which substance use disorders (SUDs) occur in conjunction with a range of other mental health and behavioural problems among adolescents (Grant et. al., 2004; Bukstein, Brent & Kaminer, 1989). Among adolescents receiving treatment for a substance use disorder (SUD), 25%-90% have another mental health diagnosis (Bender, Springer, & Kim, 2006; Dennis, Chan & Funk, 2006; Rush, 2008) and prevalence rates of SUDs among adolescents in mental health treatment settings range from 11%-55% (Hides, Lubman, Elkins, Catania & Rogers, 2007; Hoffman et. al., 2004; Rush & Koegl, 2008). Results from longitudinal studies have also shown that young persons under 18 years of age with mental health disorders are at high-risk for developing a SUD in adolescence (Adair, 2009; Costello, Mustillo, Erkanli, Keeler, Angold, 2003; Hodgins et al., 2007; Schwartz, Garland, Harrison, & Waddell, 2007).

The terms ‘co-occurring disorders’ and ‘concurrent disorders’ are often used interchangeably in the literature to describe the co-occurrence of mental health and substance use disorders (SUDs). The term ‘concurrent disorders’ is most often used in the Canadian literature, and was used in the 2002 Health Canada document, Best Practices for Concurrent Mental Health and Substance Use Disorders (Health Canada, 2002). In the United States, the Center for Substance Abuse Treatment (CSAT) adopted the term ‘co-occurring disorders’ (Piotrowski, 2007). For the purposes of this literature review, I will use the term concurrent disorders (CDs), to refer to any combination of mental health and SUDs, as defined, in the 5th edition of the
Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013).

There is considerable variation in estimates of the prevalence of CDs among adolescents, which may reflect differences in the ways in which both mental health and substance use issues are assessed (i.e., using different symptom and diagnostic scales) as well as variations in the settings from which study samples are drawn (i.e., clinical treatment settings studies vs. population-based studies). A review by Armstrong and Costello (2002) found that 60% of adolescents with a substance use disorder (SUD) had a concurrent mental health diagnosis, where conduct disorder and oppositional defiant disorder were the most common diagnoses to co-occur with the SUD. Similarly, Grella, Hser, Joshi, and Rounds-Bryant (2001) examined the prevalence rates of CDs across a sample of 23 adolescent treatment programs (i.e., residential, short-term inpatient, & outpatient) and found that 64% of the sample had a CD. Additionally, those adolescents with a CD had higher rates of drug and alcohol use, were more likely to initiate alcohol and substance use at earlier ages and used more substances than those adolescents without CDs (Grella, et al., 2001). Swadi and Bobier (2003) examined adolescents (16-18 years) receiving inpatient treatment services for a mental health disorder. Diagnosis of SUDs and mental health disorders was based on the DSM-IV criteria and included clinical records (i.e., adolescent’s detailed assessment records documented by professionals, family history and adolescent self-reported history. The overall prevalence rate of CDs was 64.5%, consistent with the prevalence rate from the study from Grella, Hser, Joshi and Rounds-Bryant (2001).

Examination of inpatient treatment settings for adolescents has also revealed high CD prevalence rates. Lagenbach and colleagues (2010) examined prevalence rates of CDs among adolescents referred for inpatient substance use treatment. Among the sample, 40.5% met criteria for at least
one concurrent Axis I disorder in addition to a SUD, diagnosed according to the DSM-IV criteria. Prevalence rates of 19.2% for mood disorders, 9.3% for somatoform disorders, and 22.5% for anxiety disorders were found among this sample of adolescents seeking treatment for an SUD. Sterling and Weisner (2005) found prevalence rates for CDs among a sample of adolescents (12-18 years) attending chemical dependency treatment programs. The results revealed that 55% of the adolescents at treatment intake had at least one mental health disorder and SUD diagnosis.

Rush and Koegl (2008) examined the prevalence rates of CDs across mental health service settings (i.e., tertiary inpatient care, outpatient, and community based mental programs). The diagnosis of CD was evaluated two ways, either a recorded diagnosis by a licensed mental health professional or the Colorado Client Assessment Record (CCAR), a functional assessment tool that captures a wide range of demographic and diagnostic information. Participants were considered as having a CD if they had a diagnosis of a mental health disorder and SUD. The results revealed that among younger adults (aged 16-24 years) the prevalence rate of a CD was 55%.

Hussey, Drinkard, and Flannery (2007) examined CD prevalence rates among a sample of adolescents within juvenile justice settings. All adolescents in the study were initially assessed using the intake version of Global Appraisal of Individual Needs (GAIN-I), a measure designed to support initial screenings and clinical assessments for diagnosis and used with adolescent populations across therapeutic and correctional treatment programs. Subsequently, trained clinicians completed the SUD and mental health diagnosis with adolescents using the DSM-IV criteria and 65% of these adolescents met criteria for a CD.
Larger population studies examining prevalence rates of CDs among the general population of adolescents provide a helpful comparison to clinical and treatment setting prevalence rates. A Canadian population-based study, the Ontario Student Drug Use and Health Survey (OSDUHS) is the longest ongoing school survey of adolescents in Canada. The results revealed that 9% of Ontario students - an estimated 83,300 students—reported both hazardous/harmful drinking [i.e., assessed by Alcohol Use Disorders Identification (AUDIT) scores] and associated elevated psychological distress (i.e., symptoms of anxiety and depression). This study also found that females were more likely than males to report coexisting anxiety and depressive symptomology (Paglia-Boak, Adlaf & Mann, 2013).

Implications of CDs. There is significant evidence indicating that a CD diagnosis has a negative impact on adolescent treatment outcomes. Many individuals with a CD have poor treatment compliance and overall poor outcomes, including increased symptom severity, associated medical conditions, greater risk of suicidality, poor functioning at school and difficulties with parent and peer relationships, and academic difficulties (Adair, 2009; Couwenburgh et. al., 2006; Schwartz, Garland, Harrison, & Waddell 2007). Tomlinson and colleagues (2004) examined treatment outcomes among adolescents with a concurrent substance use disorder and another Axis I disorder (i.e., mood, anxiety, conduct, ADHD) in comparison to adolescents with only an SUD diagnosis. Adolescents diagnosed with CDs were more likely to relapse and to relapse sooner following treatment compared to those with an SUD alone. In addition, adolescents with a CD used more substances following treatment than those adolescents with an SUD alone.

The presence of a CD has been associated with greater symptom severity and associated physical/medical conditions (Adair, 2009). Adolescents diagnosed with a CD typically have
more severe symptoms on each of their single disorders in comparison to those with only a single disorder (Bukstein, Cornelius, Trunzo, Kelly & Wood, 2005; Grella et al., 2001; Shane, Jasiukaitis, & Green, 2003). Adolescents with SUDs who have an additional mental health disorder have more severe substance involvement, greater numbers of substances used, earlier age of initiation and are more likely to have been treated in hospital (Canadian Pediatric Society, 2007; Lubman, Allen, Rogers, Cementon, & Bonomo, 2007; Hurtig et. al., 2007). Certain physical or medical conditions have also been found to relate with CDs (Crome, 2004). For example, previous research indicates that sleep disturbance, sleep disorders and sleep-related endocrine dysfunction are associated with a concurrent SUD and major depression among adolescents aged 12 to 17 (Cousins, Bootzin, Stevens, Ruiz, & Haynes, 2007; Mertens, Flisher, Fleming & Weisner, 2007).

In addition, adolescents with a CD diagnosis are at a greater risk of suicidality (i.e., the occurrence of suicidal thoughts or suicidal behaviour) than those with a single mental health diagnosis. Spirito and Esposito-Smythers (2006) conducted a review examining a number of risk factors that contribute to suicidal behaviour among adolescents. The presence of a CD was identified as a major risk factor for serious suicidal behaviour, attempts, and completions among adolescents. Within the literature it has also been suggested that the effects of alcohol intoxication lead to increased impulsivity and negative mood which are both significant risk factors for suicide attempts among adolescents (Armstrong & Costello, 2002).

Previous studies have also found that adolescents diagnosed with a CD experience significant difficulties in multiple areas of daily life functioning. Adolescents with CDs have difficulties with school functioning, including dropout and poor achievement (Hoffman et al., 2004), difficulties with peer and family relationships (Grella, Hser, Joshi & Rounds-Bryant,
2001), and problems with functioning within the community (Dennis, Chan, & Funk, 2006).

Lubman and colleagues (2007) examined older adolescents and emerging adults (ages 16-22) receiving treatment for an SUD. Participants completed self-report measures and structured interviews, which were used to assess drug use, mental health disorder symptoms, and quality of life [i.e., measured by the World Health Organization Quality of Life Questionnaire Self Report form (QOL-SF)] (Lehman, 1994). These researchers found that those adolescents with an SUD and a concurrent diagnosis of depression or anxiety disorders had poorer quality of life (measured by the QOL-SF) than those with an SUD alone.

There are also several long-term risks associated with a CD among adolescents. Rohde, Lewinsohn, Seeley, Klein, Andrews and Small (2007) examined adult functioning for 773 adolescents diagnosed with SUDs before age 19 and followed to age 30. They found that a CD resulted in multiple negative outcomes, including lower levels of education, poorer employment and income, increased risky sexual behaviour and suicide attempts, poorer coping, increased stressful life events and poorer global adjustment. Clark, Martin, and Cornelius (2008) examined 870 adolescents aged 12 to 18 years with SUDs from clinical programs and the community and completed follow-ups after an average of eight years. The results suggest that those with CD demonstrated a significant increased risk for early adult death.

Furthermore, for adolescents with CDs, the lack of collaboration between service provider systems results in high recidivism, poor retention, poor treatment outcomes, and increased burden, not only for persons in need of care but also for service delivery systems (Adair, 2009). Studies indicate that among individuals with a CD who enter treatment for both substance use and mental health disorders, only a minority receive simultaneous services for both conditions (Harris & Edlund, 2005). These results suggest that those adolescents with CDs have
more complex problems, unique treatment issues, and are at a greater risk of relapse and highlight the need for specialized treatment.

**Developmental issues and treatment.** Despite the high rates of CDs among adolescents, there are limited studies examining interventions specific to CD treatment among adolescent populations (Adair, 2009; Salvo, et al., 2012). Best practice guidelines of treatment approaches for CDs have outlined Cognitive-Behavioural Therapy and Dialectical Behavioural Therapy as highly effective treatment approaches (Health Canada, 2002). To date, no other best practice guidelines have emerged to address motivational approaches among adolescents with CDs. The majority of the empirical research on treatment efficacy for CDs has focused on adult populations (Courbasson, Nishikawa, & Dixon, 2012; Gullota & Adams, 2005; Swadi & Bobier, 2003) and there is a paucity of research on effective treatments for adolescents with CDs (Salvo et. al., 2012). This lag in evidence-based treatment for CDs is a result of a lack of empirical research on best practices for the treatment of CDs among adolescents and further research is warranted (Health Canada’s Best Practices, 2001; Salvo et. al., 2012).

There are several important differences between adult and adolescent populations with CDs, and researchers have highlighted the need for specialized treatment approaches for adolescents based on developmental differences (Fagan, 2006). Many adolescents consider their substance use as time-limited and normal, and for most adolescents, identity development and logical thinking abilities are not yet completely developed. Most common treatment interventions involve goal setting, planning, identifying triggers, and developing coping strategies, which are skills that tend to develop later in adolescence. Furthermore, it has been suggested that executive functioning generally develops during the early twenties and therefore many adolescents (i.e., between 12 and 19 years) have immature forms of logical reasoning,
impulse control and planning (Cicchetti & Rogosch, 2007), which result in relapse, early drop out and treatment non-completion. In order for treatment interventions to be effective, they must take into account the adolescent’s biological development and cognitive abilities.

Identity and role formation have been identified as one of the most important tasks of the young person’s development (Rice & Dolgin, 2008). During this period of transition of adolescence there is experimentation with different roles, behaviours, and values (Rice & Dolgin, 2008). Erikson (1982) identified the stages of psychosocial personality development and characterized adolescence as the stage of ‘autonomy vs. diffusion’. During this stage, the goal of establishing a personal identity is achieved by evaluating one’s own positive and negative qualities and deciding how these qualities will influence behaviour during the transition into emerging adulthood (Naar-King & Suarez, 2011). Therefore, decisions regarding long-term changes (i.e., long-term treatment or life goals) during this developmental period, can be challenging for an adolescent, as role identities and goals are temporary and constantly changing (Naar-King & Suarez, 2011). With regards to SUD treatment, adolescents in comparison to adults, may need additional time and alternative strategies to understand how their substance use is discrepant from their life goals (Stevens et. al., 2007).

These biological, cognitive and socio-emotional developmental changes lead to constant shifts in the young person’s decisions, motives and goals, which may have important implications for treatment. A critical component of treatment and recovery for individuals with an SUD is motivation to change (Breda & Heflinger, 2007). Difficulties with decision-making and frequent shifts in goals may lead to ambivalence about making changes to problematic behaviours, and lead to reductions in motivation for treatment. Treatment studies for adolescents with CDs have identified difficulties related to poor treatment motivation, difficulties engaging
adolescents in treatment, poor treatment compliance and high rates of early termination (Couwenburgh et al., 2006; Schwartz et al., 2007; Adair, 2009).

Motivation and Motivational Issues Among CDs

Lack of motivation has been recognized as a significant barrier to treatment engagement and completion and related to post-treatment relapse among those with SUDs. Individuals who are not in agreement with treatment goals and rationale, or do not believe in their capacity for change are less likely to achieve success in treatment (Naar-King & Suarez, 2011). Among adolescents, dropout rates in substance abuse treatment programs range from 20% to 50% (Naar-King, 2011). Monti, Colby, and O’Leary (2004) identified motivational approaches as suitable to guide adolescents through a reflective process of developing mature thinking about their behaviour and associated consequences. In addition, motivational interventions have been shown to effectively reduce substance-related problems and substance use among adolescents (Feldstein & Ginsburg, 2006; Jensen et. al., 2011). Thus, there is a need for further research on treatment strategies that contribute to increased motivation among adolescents, particularly those with CD’s, who are especially vulnerable to treatment attrition and disengagement.

Motivational Interviewing

Motivational Interviewing (MI) is a collaborative, person-centered form of guiding to elicit and strengthen intrinsic motivation for change by resolving ambivalence through exploration of the individual’s own arguments for change (Miller & Rollnick, 2013). The central goal of MI is to increase intrinsic motivation to change, that which arises from personal values and goals instead of external sources coercing the person to change (Arkowitz, & Miller, 2008). MI involves more than the technical application of interventions and is also conceptualized as a
“spirit” or therapist “way of being,” which provides the context or therapeutic relationship where techniques are applied. There are four main aspects of the spirit of MI: *Partnership, Acceptance, Compassion and Evocation* (Miller & Rollnick, 2013). The first aspect of *partnership*, emphasizes the client-centered perspective, where the client is viewed as the expert of his or her own experiences and the clinician is the companion who works collaboratively within a positive interpersonal atmosphere, which is conducive to change rather than coercive. Similarly, the aspect of *acceptance*, involves valuing the inherent worth and potential of the client, affirming his or her strengths, making an effort to understand the client’s internal perspective and respecting each person’s right for self-direction. *Compassion* is also an important aspect that emphasizes the deliberate effort to actively promote the other’s need and prioritize their welfare. Finally, *evocation* refers to the therapist drawing out the individual’s own thoughts about change, which are more powerful and meaningful motives for change, than the therapist imposing his or her opinions on the client.

Within the MI approach there are five main principles that guide therapist practice: *expressing empathy, developing discrepancy, avoid arguing, rolling with resistance, and supporting self-efficacy* (Miller & Rollnick, 2013). *Expressing empathy* involves the therapist evoking a non-judgmental attitude towards the client and attempting to understand the client’s subjective experience. *Developing discrepancy* involves the therapist highlighting the discrepancy between the client’s long-term goals and their current behaviours. The awareness of the discrepancy is thought to instigate motivation to change and decrease ambivalence. Another important guiding principle is to *avoid arguing*, as these confrontations generate power struggles and are counterproductive. *Rolling with resistance* is the cornerstone of the MI approach where the therapist strives to understand both sides of the ambivalence. Finally, *support of self-efficacy*
highlights the belief that the client has the capacity to carry out the change. MI therapists use methods that encourage and reinforce change talk to resolve the ambivalence and increase the motivation to change.

Central to MI are four key therapeutic processes: *engaging, focusing, evoking and planning* (Miller & Rollnick, 2013). *Engaging* is the process where both parties establish a helpful connection and working relationship. Although, this is not unique to MI and is important in many approaches, therapeutic engagement is required for the work that will follow. *Focusing* is the process where the therapist and client develop and maintain a specific direction in the conversation about change. The process of *evoking* is central to MI and involves eliciting the client’s own motivations for change. The *planning* process incorporates both developing commitment to change and formulating a concrete plan of action (Miller & Rollnick, 2013).

There are four core skills that are used in the practice of MI, that are shared from other forms of counseling such as person-centered therapy (Hill, 2009) and these skills are used in the aforementioned MI processes. *Open-ended questions* are used frequently in MI and encourage the individual to elaborate on their experience in contrast to closed questions, which ask for specific information and result in shorter responses. Although information gathering is not the main purpose in an MI session, open-ended questions allow the therapist to understand the client’s perspective. Open-ended questions are effectively used during the focusing and engaging processes of MI. Furthermore, open questions evoke a dialogue of motivation to change and move the client closer towards change. *Affirming* is another core skill that is widely practiced within MI. It involves the therapist recognizing and commenting on the client’s strengths, abilities and effort. Furthermore, affirming increases autonomy and feelings of competency within the client. *Reflective listening* is also an important core skill within MI. Reflective
statements from the therapist involve taking a guess of the client’s experiences and further deepening understanding by clarifying the client’s meaning. Reflective statements allow the client to think about their thoughts and experiences with the therapist offering different words or descriptions. Summaries are similar to reflections and involve reviewing what the client has discussed. During the engaging and focusing processes of MI, summaries demonstrate to the client that the therapist is following and listening to them closely. Furthermore, through summaries the therapist is able to convey to the client, that they value what the client has to say. Summaries are also useful in the planning process, as they pull together the person’s motivations, intentions and plans for change. All these core skills share many commonalities. For example, summaries are long reflections and reflective listening can also involve affirming. Furthermore, the MI therapist who applies all four-core skills (i.e., open questions, affirming, reflective listening, & summarizing) through the processes of MI (engaging, focusing, evoking, & planning), will move effectively more their client toward change (Miller & Rollnick, 2013).

Although the MI approach has specified the application of core skills, it should not be confused with a set of techniques. “Techniques” are suggestive of a simple procedure that could be easily replicated with specified steps. MI is characterized a method of communication, as a style of being with people which enhances intrinsic motivation towards change (Miller & Rollnick, 2013).

**Origins of Motivational Interviewing (MI).** It is well established among the behavioural scientific community, that scientific findings begin with a theory, from which hypotheses are predicted and then resulting in environmental testing (Reichenbach, 1983). In contrast to this traditional perspective, the methods and practice of MI developed from a series of unexpected outcomes, rather than a specific theory (Miller, 2009). These unexpected outcomes
led to the conceptualization and development of MI as an effective treatment approach to facilitate intrinsic motivation to change.

After training therapists in techniques for a clinical trial study of behaviour therapy for problem drinking, Miller and colleagues found some unanticipated results (Miller, Taylor, West, 1980). Specifically, the researchers found that therapist empathy predicted two thirds of the variance in client drinking at the 6-month follow-up and at 12- and 24-month follow-ups. Counsellor empathy continued to account for one-half and one-quarter of the variance in outcomes (i.e., client drinking), respectively (Miller & Baca, 1983). At the time, these significant effects of therapist style (i.e., empathy) were much larger compared to those found with other behavioural interventions (Valle, 1981). Later they identified that differentially responding to client speech with an emphasis on evoking and strengthening the client’s own verbalized motivations for change (i.e., later defined as change talk) was associated with change. Although MI was not developed from any specific set of theoretical principles, current discussions of MI often include those theoretical models that seem to fit with the foundations of MI practice. These are discussed briefly below.

**Theoretical foundations of MI.** The Transtheoretical Model (TTM) of change (Prochaska & DiClemente, 1984; 1982) is an integrative model of behaviour change, which posits that behaviour change progresses through a continuum of five stages (i.e., Stages of Change). The stages are defined as follows: 1) pre-contemplation, individuals in this stage are not considering or intending to make changes to a behaviour; 2) in the contemplation stage, the individual becomes aware of a desire to change a particular behaviour and typically weigh the pros and cons of changing their behaviour; 3) individuals in the preparation stage are planning to make a change in the immediate future; 4) in the action stage, individuals make meaningful,
overt behavioural changes; 5) in the maintenance stage, individuals focus on sustaining behavioural change and preventing relapse (Prochaska & DiClemente, 1984). MI and the TTM model of change both surfaced in the early 1980s. The TTM revolutionized how addiction therapists conceptualized and facilitated change. Furthermore, the TTM highlighted the need for individualized treatment and recognized change as a process or spectrum rather than an absolute entity. The stages of the TTM provided a logical way to think about the clinical role of the therapist in MI, and MI provided the practical approach for clinicians to guide clients to move between the various stages of change. Miller and Rollnick (2009) emphasize that MI did not originate from the TTM, rather the TTM provided a comprehensive model for why and how change occurs and MI was the clinical method to enhance the individual’s motivation to change.

MI also shares basic principles with humanistic theories of therapy, as outlined by Carl Rogers (1959). Rogers’ theory of therapy focused on the fundamental conditions for healthy growth and development, and the role of the therapist as a facilitator of that growth. Rogers (1959) referred to his approach as person-centred therapy, where the therapist provides empathy, openness and unconditional positive regard, and expresses a genuine belief in the client’s capacity for growth and self-actualization. MI builds on Rogers’ humanistic theories and shares the same belief in an individual’s capacity for change through the process of self-actualization. Within the person-centered and MI approaches, the therapeutic relationship is a collaborative partnership. The influences of humanistic theories are evident in the guiding principles and overall spirit of MI, where the agent of change is the therapeutic relationship (i.e., therapist empathy and empathic understanding). However, MI distinguishes itself from traditional person-centered counselling, specifically its conscious focus on goals and planned and intentional direction toward change. Unlike Rogers’ approach, which lacked a specific focus on tangible
goals and outcomes, MI therapists carefully listen to clients and selectively reinforce certain types of client speech (i.e., change talk) to facilitate increased motivation for change (Miller & Rollnick, 2009).

Another theory of motivation that provides a framework for the MI approach is self-determination theory (SDT) (Deci & Ryan, 1985). SDT is a theory of personality development and self-motivated behavioural change. The underlying principle of SDT is that each individual has the innate tendency toward growth and resolution of conflicts (Ryan, 1995; Ryan & Deci, 2000). Proponents of SDT theory are interested in how individuals internalize extrinsic motivation and how they come to self-regulate their behaviour autonomously (Deci & Ryan, 1985). SDT addresses the issues of 1) processes through which non-intrinsically motivated behaviours can become truly self-determined and 2) the ways in which the social environment influences those processes. Intrinsic motivation refers to doing an activity for the inherent satisfaction of the activity itself, whereas extrinsic motivation refers to the performance of an activity in order to attain some specific outcome. In contrast with perspectives that view extrinsic motivation as completely non-autonomous, SDT suggests that extrinsic motivation can vary in its degree of autonomy (Deci & Ryan, 2000).

Within SDT, Deci and Ryan (1985) introduced the theory of organismic integration to depict the different types of extrinsic motivation and the contextual factors that promote integration and identification. Extrinsic motivation can be categorized based on four forms. Externally regulated motivation consists of behaviours that are performed to satisfy an external demand or reward and is typically contrasted with intrinsic motivation. Interjected regulation is a controlled form of regulation, in which behaviours are performed to avoid anxiety and/or attain pride. An example is an individual who is motivated to demonstrate ability (avoid failure) in
order to maintain feelings of worth. A more autonomous or self-determined form of regulation is identification, which involves more conscious awareness of the behaviour as being important in order to achieve their personal values. These values provide the incentive to maintain the behaviour and limit difficulties. Finally, the most autonomous of the extrinsic motivation is integration. Integration occurs when identified regulations are fully assimilated to the self, which means that they have been evaluated and congruent with one’s values and needs. Although the behaviours characterized by integration share similarities with intrinsic motivation, integration is different, in that behaviours are still done for outcomes rather than inherent enjoyment. Given that identification and integration are the two extrinsic motivations that lead to greater self-determination, it becomes important to find ways to promote more autonomous regulation and self-determined actions. It has been widely acknowledged that individuals perform behaviours that are modelled or valued by significant others (Ryan & Deci, 2000), suggesting the importance of relatedness and connection in promoting internalization. According to the organismic integration theory, internalization is more likely to occur when there exists feelings of connection, support and affiliation. Furthermore, the theory suggests that autonomy facilitates internalization and is necessary for integrated regulation (i.e., self-determined type of extrinsic motivation). Contexts that are supportive of autonomy and allow the individual to feel competent are thought to generate autonomous regulation within the individual. It is also suggested that by facilitating a sense of choice within the person, without external pressure to behave a certain way, can allow individuals to achieve more integrated regulation. Deci and Ryan (2000) found that conditions that supported autonomy and competence facilitated greater internalization and integration and contexts that attempted to control an individual’s behaviour hindered the expression of human growth.
The basic tenets and aspects of the SDT theory strongly relate to foundations of the MI approach. Within the MI approach, the main processes (i.e., expressing empathy, avoid arguing, rolling with resistance, and supporting self-efficacy) create the positive social context that Deci and Ryan (1985) emphasize are important for integration and internalization. The processes of MI, specifically expressing empathy, avoiding arguing, rolling with resistance and supporting self-efficacy all create the therapeutic context to facilitate the expression of growth, development, and change. Moreover, SDT emphasizes the importance of fostering and nurturing competence for growth. Similarly, the MI relationship is one of partnership, acceptance and compassion, which creates a supportive context and promotes the individual to feel a sense of competence and autonomy.

Social cognitive theories such as Cognitive Dissonance Theory (CDT; Festinger, 1957) have also been used to explain the basis of MI interventions. CDT suggests that we have an innate drive to maintain our attitudes and beliefs in harmony with one another and we avoid ‘dissonance.’ Festinger (1957) posited that when an individual is experiencing a state of cognitive dissonance (tension), he or she has a drive towards attaining cognitive consistency (i.e., seeking consistency in beliefs and attitudes). According to this theory, the negative tension created by cognitive dissonance creates the motivation to reduce this negative state and achieve consistency. One of the principles of MI includes developing a discrepancy between the individual’s present behaviour and broader life goals, thereby creating a cognitive dissonance and invoking a drive towards internal consistency (Miller & Rollnick, 2013).

The concept of self-efficacy, central to Bandura’s (1995) social cognitive theory is also included within the MI approach. Social cognitive theory posits that human functioning is a result of the interaction between personal, behavioural and environmental influences. According
to Bandura (1995) an individual’s attitudes, abilities, and skills create the self-system (i.e., involved in the perception of environment and our behavioural responses). Bandura (1995) considers the concept of self-efficacy as an essential part of the self-system and defined self-efficacy as “the belief in one’s capabilities to organize and execute the courses of action required to manage perspective situations (Bandura, 1995; p.2). One of the main principles of MI is supporting self-efficacy (Miller & Rollnick, 2002) According to the MI perspective, self-efficacy is considered an important element in motivation for change; by enhancing the individual’s confidence in his or her resilience and strength, the therapist facilitates an increased likelihood of successfully making the change (Miller & Rollnick, 2002; 2013).

Although MI was developed without consideration of specific theoretical underpinning, over the past many years, researchers have proposed that the underlying foundations are consistent with several important theories of motivation and behaviour change.

**Applicability of MI with Adolescents**

The client-centered and non-confrontational approach of MI and its focus on establishing a partnership or collaboration, make it a particularly useful approach for adolescents. Adolescence is characterized as the period when young people are beginning to separate from their parents and develop their own ideas and decisions (Naar-King & Suarez, 2012). When therapists approach adolescents from an expert stance, they often impose their own ideas for change, which may be inconsistent with the adolescent’s values or goals, resulting in resistance from the adolescent and further commitment to maintaining the status quo (i.e., not changing). In MI, the therapist is not an expert on the client’s experience, but attempts to elicit from the client
his or her own ideas about change. This approach conveys respect for the adolescent’s own individual beliefs, values and goals, thereby strengthening therapeutic alliance.

It is well established that when individuals perceive that their personal freedoms are under control they react with negative feelings (i.e., resistance). Given the young person’s pursuit of autonomy and independence it is common to see this reaction more often in adolescence than any other developmental period (Naar-King & Suarez, 2011). Disagreements within the family unit arise when the adolescent is negotiating their autonomy, resulting in increases in conflict and negative emotions towards adult parents (Holmbeck, 1996). Therefore, adolescents would benefit from a therapist not arguing for change, but rather expressing an understanding of their point of view (i.e., rolling with resistance) (Naar-King & Suarez, 2011). When the therapist conveys a belief in the adolescent’s ability and competence, behaviour change is more likely to occur. Miller and Rollnick (2002) state that actual behaviour change occurs when the individual believes in his or her own capacity to change. With its focus on acceptance, autonomy-support, and increasing self-efficacy, MI is an appropriate intervention for adolescents as it promotes autonomy, fosters collaboration, evokes reasons for change and emphasizes the expression of genuine compassion for the young person.

**Effectiveness of MI for Adolescent Substance Use**

Addressing motivational issues has been considered an important target in treatment among adolescents with CDs. Given that there are few studies of MI for adolescents with CDs, the current review will focus on the more common use of MI in the adolescent literature: to increase motivation to change substance use. Over the past decade, research on the use of MI-based interventions for adolescent substance use has grown (Waldron & Kaminer, 2004) and has been shown to be effective for different types of substance use (Jensen et. al., 2011).
MI for adolescent smoking. In the past decade, several studies have explored the efficacy of MI for substance use behaviour change. Colby and colleagues (2005) examined the efficacy of using a brief motivational intervention for smoking cessation in comparison to standardized brief advice among adolescents (ages 14 to 19) in a hospital outpatient and/or emergency department. Participants in this study were not seeking treatment for smoking cessation. The results indicated that abstinence rates were much higher in the MI group than the brief advice group, suggesting that even among adolescents not seeking treatment, MI appeared to have a significant impact on smoking reduction. In contrast, Audrain-McGovern and colleagues (2011) conducted a study to evaluate the efficacy of MI in comparison to a structured brief advice intervention for behavioural changes to smoking among adolescents and found no differences in smoking abstinence rates between the interventions. In this study, participants either received five MI sessions or structured brief advice sessions and outcome measures of smoking cessation and/or smoking reduction was evaluated post treatment and at a 24-week follow up. No significant differences emerged between groups on measures of smoking abstinence. However, adolescents who received the MI intervention showed a greater reduction in cigarettes smoked per day in comparison to those adolescents who received the structured brief advice intervention. Overall, although MI led to no differences in abstinence, it did lead to significant reductions in the amount of cigarettes smoked.

MI with adolescent alcohol use. In a study examining the effectiveness of an MI intervention for reducing alcohol use among adolescents (ages 13-19) receiving emergency health services, Monti et al. (1999) found significant reductions in alcohol use among late adolescents (i.e., 18-19 years), but not among early adolescents (i.e., 13-17 years). Furthermore, at the 6-month follow up, the late adolescent group showed significantly greater reductions in
alcohol-related consequences (i.e., decreased episodes of drinking and driving, fewer alcohol-related injuries and other alcohol related problems at school) in comparison to the early adolescent group. These results highlight that there may be developmental differences in responses to MI interventions. Further examination of the effectiveness of MI among young adolescents is needed to better understand whether MI is appropriate for this younger age group.

MI has also been incorporated into a brief family intervention for adolescents with alcohol use problems. Spirito and colleagues (2011) conducted a study with adolescents (ages 13-17) treated in an emergency department following an alcohol related event. Adolescents were randomly assigned to receive either an individual MI session (individual single session with adolescent) or a combined individual-family intervention with both an individual and an MI family session (session with parents and adolescent). Both groups (individual intervention and combined individual-family intervention) experienced significant reductions in drinking outcomes at 3-month and 6-month follow up periods. Additionally, the added MI family session led to even greater alcohol use reductions among those adolescents assessed with greater alcohol use severity. These findings highlight that MI is effective for reducing alcohol use among adolescents. Also, the results provide evidence that MI has a greater effect among those with a greater alcohol use severity, even among adolescents not readily seeking treatment for their alcohol use. Furthermore, this study demonstrates how MI can be applied flexibly with other approaches including family therapy, supporting the use of MI as an adjunct to other therapies.

**MI for adolescent poly-substance use.** Poly-substance use among adolescents has a significant negative impact on motivation for treatment and results in poorer outcomes among those who have completed treatment (Arnaud et. al., 2012). McCambridge and Strang (2004) examined the treatment benefits of a single session MI intervention with an adolescent sample
(i.e., 16-20 year olds) who engaged in poly-substance use (i.e. alcohol, tobacco, and marijuana). Adolescents were randomly assigned to either an MI group or an education as usual control group. Those adolescents in the MI group showed significant reductions in their use of cigarettes, alcohol, and cannabis compared to the control group. Specifically, for alcohol and cannabis use, those adolescents with heavier use experienced the greatest effects of the MI session (i.e., reduction alcohol and cannabis). The results of the study highlight that even a single session MI intervention can have significant effects on reducing poly-substance use, with greater effects among those with greater substance use severity.

A meta-analytic review by Jensen and colleagues (2011) demonstrated the overall effectiveness of MI interventions across several substance use outcomes, including reductions in cigarette use, alcohol use, marijuana and illicit substance use among adolescents. These results were consistent with other previous meta-analytic studies, which also demonstrated the effectiveness of brief MI interventions for substance use among adolescents (Burke, et al., 2003; Ruback, Sandback, Lauritzen, & Christensen, 2005). The majority of studies included in this meta-analytical review consisted of a brief or single session MI interventions, highlighting not only the treatment efficacy of MI, but also the significant effects from a single-session. These results emphasize the cost-effectiveness of a brief MI intervention and suggest that it could have potential use as a precursor to substance use treatment.

**MI as a Precursor to Treatment**

Although several studies have examined the effectiveness of MI as a stand-alone brief intervention, there is growing evidence from the adult literature that prefacing evidence-based treatments with brief MI interventions may be a useful method for engaging individuals in
treatment (Westra & Dozois, 2006; Walitzer, Dermen, & Connors, 1996; Monti, Colby, O’Leary, 2004). Given the aforementioned challenges associated with engaging adolescents with a CD in treatment, MI may be an important tool for addressing motivational issues and increasing treatment engagement among adolescents with CDs. Dennis and colleagues (2004) conducted a large study with two interrelated randomized control trials of a short-term outpatient treatment program for adolescents that included Motivational Enhancement Therapy (MET) followed with Cognitive Behavioural Therapy (CBT), Family Support Network, the Adolescent Community Reinforcement Approach, and Multidimensional Family Therapy. MI focuses on enhancing motivation to change behaviors and addresses client ambivalence, MET is a specific application of MI for treating substance use disorders (Miller & Rollnick, 1992). The purpose of the MET intervention was to serve as a pre-treatment intervention for increasing recognition and motivation by helping the adolescent recognize the relationship between cannabis use and its consequences and explore the pros/cons of use. Following the MET sessions the subsequent CBT treatment would provide the necessary coping strategies to actually initiate and sustain changes. The first trial compared five sessions of MET plus CBT (MET/CBT) with 12 sessions of MET/CBT and a Family Support Network intervention. The second trial compared a five-session MET/CBT with the Adolescent Community Reinforcement Approach and the Multidimensional Family Therapy. The results of the study revealed that all five treatments demonstrated significant post-treatment effectiveness. At the 12-month follow-up, researchers found that adolescents across all types of therapies showed improvements and increased their number of abstinent days. Although it was expected that the longer and more resource intensive family treatment approaches would be more effective, family treatments did not prove to be consistently
superior to the other interventions. In fact, the MET and five-session of CBT was as effective as the Family Support Network, proving to be shorter and more cost-effective.

In a pilot study that examined the effectiveness of a combined brief motivational interviewing intervention and cognitive-behavioural based alcohol intervention group for youth (ages 12-19 years) at risk of developing alcohol problems, these researchers found significant treatment effects (Bailey, Baker, Webster & Lewin, 2004). Participants were randomly assigned to either receive the combined intervention (MI-CBT) or receive no treatment. The results of the study indicated that those who received the combined MI-CBT intervention for alcohol use showed an increase in their readiness to reduce their alcohol consumption, reduced frequency of drinking post-treatment and at one-month follow-up compared to those who received no treatment. These results suggest that youth identified for high-risk alcohol use behaviours, who were ambivalent about changing their alcohol use, can be engaged in treatment with MI and showed significant reductions in alcohol use.

MI has been compared with relaxation training interventions among adolescents (14-19 years) who were incarcerated for legal issues related to alcohol use and driving (Stein, Colby, Barnett, Monti, Golembeske, Lebeau-Craven, 2009). Those adolescents who received the MI intervention showed lower rates of alcohol use and driving, less reports of being a passenger in a vehicle with a driver who has consumed alcohol in comparison to those who received the relaxation training intervention. This study also examined whether mental health symptoms (i.e., depression) mediated this relationship. The results indicated that low levels of depression resulted in reductions in alcohol use and driving; however high levels of depression resulted in similar outcomes as the relaxation training intervention. These results highlight that the severity of mental health symptoms can influence the effectiveness of MI interventions. Further research
to identify the association between MI effectiveness and mental health symptom severity is warranted.

Although there are studies on the effectiveness of brief motivational interventions for adolescents across different mental health and substance use disorders (Tevyaw & Monti, 2009; Colby et al., 2005), there have been several studies that have reported no significant changes following the MI intervention (Miller, Yahne & Tonigan, 2003; Walker et al., 2006; Winhusen et al., 2008). The differences in efficacy could be attributed to differences in clinician’s practice and level of adherence to the approach and also differences across populations. Variability in outcomes across studies suggests the importance of examining therapist factors (i.e., MI adherence) that influence efficacy. Examination of the mediators and moderators of MI treatment efficacy will further develop the connection between therapeutic process and client outcomes.

One of the benefits of MI is that fidelity or adherence to MI has been well-studied and there are several well developed research tools that provide ratings of adherence to MI, including the Motivational Interviewing Treatment Integrity (3rd version; MITI 3.1.1; Moyers, Martin, Manual, Miller, & Ernst, 2010) or the Motivational Interviewing Skill Code (MISC; v.2.1 Miller, Moyers, Ernst, Amrheim, 2008).

**MI Fidelity Studies**

Within the literature it has been recognized that treatment outcomes vary depending on aspects of the practitioner delivering the therapeutic interventions (Luborsky, McLellan, Woody, O’Brien, & Auerbach, 1985), additionally variation in therapist MI skills and fidelity may be related to outcomes among MI trials (Miller & Rollnick, 2014). This variability appears to exist in well-designed trials and appears to have less to do with practitioners themselves, but rather the
specific behaviours they exhibit within sessions (Project Match Research Group, 1998). Over the years, MI has accumulated substantial evidence of its effectiveness (Burke, Arkowitz, & Menchola, 2003; Hettema, Steele, & Miller, 2005), however less is known about the specifics of what occurs in therapy and the therapist behaviors that facilitate change (Burke et. al., 2002; 2003). Examination of MI sessions using therapist training and fidelity measures allows for a closer examination of therapist adherence to the principles and practices of MI and greater understanding of the extent to which use of MI techniques in particular results in behaviour change (McCambridge, Day, Thomas, Strang, 2011).

One of the first studies to examine therapist behaviour in relation to client outcomes was conducted by Miller, Benefield, and Tonigan (1993). Miller and colleagues (1993) compared the effects of a client-centered MI condition and a directive– confrontational style among individuals with problematic drinking on within-session and post-treatment drinking outcomes. Results of the study suggested that the frequency of counselor confrontation (e.g., challenging, disagreeing, and disputing) was correlated with greater drinking behaviours (i.e., more frequent drinking) at the 12-month follow-up. Additionally, those in the MI condition (i.e., client-centered skills of empathy, and acceptance) demonstrated a lower frequency of negative responses during therapy such as arguing with the therapist, denying problems, interrupting, and a higher frequency of acknowledging problems. The frequency of negative client responses was also related to greater drinking at the 12-month follow-up. These findings indicate that therapist style has an important influence on client behaviours during treatment, which in turn affects outcomes. Although this study supported MI techniques as effective for facilitating better outcomes, the study lacked an MI-specific coding system that would have allowed full exploration of all MI consistent and MI-inconsistent behaviours.
To address these methodological issues and establish a more reliable method for rating therapist behaviours, several coding systems have been established for evaluating therapist fidelity to MI. The first of such coding systems was the Motivational Interviewing Skills Code (MISC; v.2.1 Miller, Moyers, Ernst, Amrheim, 2008), which was developed to provide an in-depth assessment of clinician and client behaviours during an MI session. The MISC consists of multiple codes for classifying therapist utterances (e.g., advise, affirm, confront, direct, facilitate, raise concern, reframe, reflect), as well as global ratings along several MI dimensions (i.e., Acceptance, Empathy, and MI Spirit) and client utterances (i.e., change talk).

Several studies have used the MISC and identified specific fidelity variables associated with client responses during MI interventions. Catley et al. (2006) examined 89 audio-taped counselling sessions to determine whether adherence to MI principles was associated with more productive within-session client behaviour in a smoking cessation trial. Their results revealed that therapist acceptance, egalitarianism, warmth, genuineness, empathy, and overall adherence to the MI spirit were all associated with positive within-session client behaviours (i.e., expression of affect, cooperation, disclosure, and engagement). Moreover, they found that listening reflectively, reframing statements, and raising concern with permission were positively associated with change talk in the client (i.e., statements that reveal considerations of motivation for or commitment to make changes). In contrast, giving advice without permission was negatively associated with change talk from the client. A major limitation of their study was the use of only one coder for rating client and therapist utterances, which increases the likelihood of bias. Boardman and colleagues (2006) addressed this limitation using two coders and examined whether therapist behaviours consistent with MI were associated with within-session working alliance and client engagement. Using audiotaped MI sessions in a smoking cessation trial,
separate coders rated therapist and client behaviours using the MISC and found that MI-
consistent style (i.e., average of global ratings) was positively associated with alliance and
engagement. Boardman (2006) found MI spirit demonstrated a significant and positive
relationship with both working alliance and client engagement consistent with the study
conducted by Catley and colleagues (2006), demonstrating significant associations between
counsellors’ overall MI style and positive within-session client behaviours (i.e., treatment
engagement). The results of the study also revealed that none of the individual counselor’s
behaviours (i.e., affirming, reflecting, open-ended questions, and summarizing) were significant
predictors of client change talk.

Although the MISC provides a comprehensive assessment of therapist fidelity to MI, the
use of multiple codes (i.e., 15 possible therapist behaviour codes per therapist utterance) is quite
taxing, particularly for therapy outcome studies, which often involve coding numerous therapy
tapes. The authors of the MISC subsequently developed a briefer instrument for assessing MI
fidelity: the Motivational Interviewing Treatment Integrity (3rd version; MITI 3.1.1; Moyers,
Martin, Manual, Miller, & Ernst, 2010) scale. The MITI collapses across several of the MISC
behaviour codes, which allows researchers and clinicians to evaluate therapist utterances more
generally (e.g., MI-adherent vs. MI-non-adherent), while also capturing integral MI skills (e.g.,
complex and simple reflections; closed and open questions). The MITI has been used in a variety
of clinical and research settings (Moyers, Martin, Manuel, & Hendrickson, 2005; Madson &
Campbell, 2006; Forsberg et. al., 2008; Miller & Rollnick, 2015).

For example, Moyers, Miller, and Hendrickson (2005) examined MI counselling sessions
to assess whether therapist interpersonal skills were associated with client involvement in
therapy, which was defined as client cooperation with the therapist, and client disclosure, and
expression of affect. Audiotapes from an MI training study for therapists were evaluated for therapist interpersonal skills. The results revealed that therapist interpersonal skills (i.e., empathy, acceptance, egalitarianism, warmth, genuineness, and overall MI spirit) were positively associated with client involvement in therapy (i.e., cooperation, disclosure, and engagement).

Studies using the MITI have found evidence of the impact of MI fidelity extending beyond within-session outcomes (e.g., engagement) to subsequent behaviours post intervention. Tollison and colleagues (2008) examined the effects of practitioner questions (open/closed), reflections (simple/complex) and client change talk, following a brief motivational intervention for alcohol use among university students. Therapist MI fidelity was examined using the MITI. Higher frequency of closed questions used by the therapist was associated with less contemplation to change alcohol use behaviors, whereas more open questions was associated with greater contemplation of alcohol use behaviors. Simple reflections were associated with increased alcohol use at 3-month follow up; however the use of complex reflections reduced the effect of simple reflections on drinking outcomes. Similarly, a more recent study examined the relationship between MI fidelity and cannabis cessation at a 3-month follow-up among adolescents (ages 16 to 19 years of age). MI spirit and the proportion of complex reflections were found to be predictive of cessation outcomes and no other aspects of fidelity were associated with outcomes (McCambridge, et al., 2011).

These studies highlight the importance of moving beyond the standard relationship between types of treatment and outcome, and engaging in a more thorough analysis of the specific intervention skills that contributed to treatment effects. By studying treatment effects at the level of therapist behaviour, we can more fully understand which specific MI interventions...
are essential for facilitating client change, which provides essential information for therapist training and supervision.

**Rationale of Study**

As outlined above, the effectiveness of substance use treatment interventions has been well established, but less is known about the treatment of CDs among adolescents. To date, few interventions have been developed for CDs and there is a lack of training available for service providers. As a result, there is a significant need for: 1) interventions addressing CDs among adolescents and 2) a better understanding of the important elements of intervention that influence outcomes.

MI has been shown to be effective at increasing commitment to change and enhance treatment engagement, retention, and reductions in substance use among adolescents. Recently, there has been interest in utilizing MI for adolescents with CDs and limited research available. The current study builds on this need for research on MI for adolescents with CDs by implementing a pre-treatment MI session, as part of a larger study of the effectiveness and feasibility of implementing treatments for CDs. Specifically, the current study was part of the treatment sub-project of the Research and Action for Teens (RAFT) project, a CIHR-funded research study. The treatment sub-project of the RAFT includes an adolescent treatment piece, which involved a single session of an individual MI session prior to a 12-session Dialectical Behaviour Therapy (DBT) skills group. Therapists were trained in the delivery of MI for CDs. This was considered a pilot study, as adolescents were not randomized to treatment conditions and there was no control group. Instead, the focus was on feasibility, effectiveness, and sustainability of delivering treatments to adolescents by training existing staff. The goal of the
study is to conduct a process-level examination of the relationship between specific MI-related therapist behaviours and client outcomes among adolescents with a CD.

In the current study we examined the relationship between MI fidelity scores and outcomes (i.e., readiness to change, recognition that change is needed, and taking steps towards change) that were assessed following the MI session. We also examined the relationship between MI fidelity and engagement in the DBT group (i.e., number of sessions attended). Finally, we explored whether client characteristics (i.e., externalizing vs. internalizing disorders) interact with MI fidelity dimensions to facilitate positive outcomes.

**Research Questions and Study Hypotheses**

Given the significantly high prevalence rates of CDs among adolescents (Armstrong & Costello, 2002), there is a substantial need for research examining effective treatment approaches. Motivational issues have been identified as a significant factor related to treatment engagement and completion among adolescents with CDs (Monti, Colby, & O’Leary, 2004). The period of adolescence is also characterized as the time when young people are seeking autonomy and attempting to create their own individual identity (Naars-King & Suarez, 2011). Examining developmentally appropriate treatment interventions which address motivational issues with empathy and acceptance, while also valuing the adolescent’s autonomy is important.

Applications of motivational interventions have been shown to effectively reduce substance-related problems and substance use among adolescents (Jensen et al., 2011). This research study will broaden our knowledge of therapist behaviours and the use of MI among adolescents with CDs by addressing the following research questions & hypotheses:
1) Does a brief motivational interviewing (MI) intervention lead to positive changes (i.e., greater motivation and readiness to change) among adolescents with CDs?
   a. It is anticipated that adolescents with CDs who receive a motivational interviewing intervention will show greater motivation and readiness to change alcohol and other drug use following a single session of MI.

2) What are the dimensions of MI fidelity associated with changes in adolescents with CDs?
   Specifically, is greater readiness to change associated with the proportion of open questions, complex reflections and MI adherent statements from the therapist?
   a. According to Miller and Rollnick (2002) therapist adherence to MI principles can reduce resistance and increase client collaboration and engagement. Therefore, it was expected that greater therapist MI fidelity would be associated with greater readiness to change among adolescents with CDs following a single session of MI. In addition, it was hypothesized that greater use of MI consistent therapist behaviours (i.e., asking open-ended questions, complex reflections and MI adherent statements) would be positively associated with treatment engagement (number of DBT group sessions attended) by the adolescent.

3) What is the relationship between client characteristics (e.g., externalizing vs. internalizing disorders and baseline substance and/or alcohol use) and positive outcomes following an MI intervention?
   a. Due to limited research on the effectiveness of MI interventions for CDs among adolescents, no specific hypotheses were made regarding these relationships.
This study aims to expand on the current literature by increasing our understanding of MI process variables and treatment outcomes among a brief-motivational intervention among adolescents with CDs. Furthermore, the results of this study will be important for informing MI training and supervision, increasing the efficacy of MI interventions, and suggesting ways for service providers to apply this approach synergistically with other treatment modalities.
Chapter 2: Methods

Overview of Study Design

Participants were adolescent clients who participated in a pilot study evaluating the efficacy of a single session of MI delivered prior to a 12-week DBT skills group for adolescents with CDs. The MI intervention was based on the principles and phases of MI outlined by Miller and Rollick (2002). Although MI has recently been updated and the current structure involves four processes of MI (engaging, focusing, evoking and planning; Miller & Rollnick, 2013), the current MI intervention was developed prior to the publication of the third edition of the MI manual; thus the intervention adheres to the two-phase format outlined by Miller and Rollnick (2002). Clients attended a single 90-minute session of MI, which was structured around two phases: building motivation to change and strengthening commitment to change. The MI session focused on providing feedback about the adolescent’s substance use and mental health concerns, examining the pros and cons of change (i.e., decisional balance) and the pros and cons of starting treatment, developing a discrepancy between substance use and current goals or values, providing further support for change, and preparation for group skills training, including a discussion of potential barriers to treatment. Each MI session was evaluated for fidelity to MI (i.e., adherence to the MI approach) using the Motivational Interviewing Treatment Integrity manual (3rd version; MITI 3.1.1; Moyers, Martin, Manual, Miller, & Ernst, 2010). Participants in the study were administered questionnaires pre and post-MI session, including measures of substance use, related consequences, and motivation. Finally, treatment engagement was evaluated using the number of DBT sessions attended by the adolescents.
Study Participants

Participants were male and female clients between the ages of 14 and 18 years old ($M = 16.56, SD = 1.48$). Adolescents were recruited from the participating treatment center as well as from the community. Recruitment letters were emailed to treatment centers and community-based clinicians, requesting referrals for the CD treatment. Therapists were asked to refer adolescent clients (14-18 years olds) who had both a substance use and a mental health diagnosis. Research assistants and the project manager contacted interested participants, explained the study, and arranged the baseline assessment. Therapists were not involved in participant recruitment or delivery of any study-related materials. Only those individuals who met study eligibility criteria were invited to participate in the MI session and DBT group intervention. To be enrolled in the study, participants must have met the following criteria: 14 to 18 years of age; literate in English; no history of schizophrenia or other psychotic disorders; no evidence of an organic brain syndrome or mental retardation; provide informed consent to participate in study; have no family members participating in any family therapeutic intervention (there was a separate family intervention study that is part of the larger grant from which the MI-DBT study originates); be participating in regular case management or counselling (at least twice per month); have significant substance abuse problems as indicated by a score in the problematic range on either the alcohol and/or drug screening measures; meet criteria for another mental health disorder. Alcohol and drug use was assessed using the Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders & Monteiro, 2001) and the Drug Abuse Screening Test for Adolescents (DAST-A; Martino, Grilo, & Fehon, 2000).

The present sample consisted of three male (9.4%) and 29 female (90.6%), participants ranging in age from 14 to 18 years old ($M = 16.88 SD = 1.91$). Overall, 50.5% of the sample
reported their sexual orientation as heterosexual and 18.8% identified as bisexual. A large proportion of the sample identified as White/Caucasian (78.1%), and Latin American (6.3%) and had a parent who completed a university education (46.9%). Additional demographic information is listed in Table 1.
Table 1

Demographic Characteristics of Participants

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<td>Grade 11</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Grade 12</td>
<td>21</td>
<td>65.6</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>25</td>
<td>78.1</td>
</tr>
<tr>
<td>Chinese</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>South Asian</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Filipino</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Latin American</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>West Asian</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td><strong>Sexual Orientation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisexual</td>
<td>6</td>
<td>18.8</td>
</tr>
<tr>
<td>Gay</td>
<td>1</td>
<td>3.1</td>
</tr>
<tr>
<td>Heterosexual or straight</td>
<td>16</td>
<td>50.5</td>
</tr>
<tr>
<td>Lesbian</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Not sure or Questioning</td>
<td>3</td>
<td>9.4</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>12.6</td>
</tr>
<tr>
<td><strong>Highest Level of Education for father</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated University</td>
<td>15</td>
<td>46.9</td>
</tr>
<tr>
<td>Graduate College</td>
<td>6</td>
<td>18.8</td>
</tr>
<tr>
<td>Attended College</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Graduated High School</td>
<td>7</td>
<td>21.9</td>
</tr>
<tr>
<td>Attended High School/Don’t know</td>
<td>2</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Highest Level of Education of mother</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated University</td>
<td>19</td>
<td>46.9</td>
</tr>
<tr>
<td>Graduate College</td>
<td>4</td>
<td>12.5</td>
</tr>
<tr>
<td>Attended College</td>
<td>2</td>
<td>6.3</td>
</tr>
<tr>
<td>Graduated High School/Don’t know</td>
<td>7</td>
<td>21.9</td>
</tr>
</tbody>
</table>
Therapists

Therapists delivered the MI treatment to adolescents at a mental health and addictions treatment agency in Toronto. Four therapists (two social workers and two psychiatrists) volunteered to receive training in MI and deliver the treatment as part of the larger study. Therapists ranged in their years of clinical experience (i.e., five to 20 years) and worked in different services within the treatment agency. Three therapists belonged to the addictions service and one therapist worked within the mood and anxiety service, suggesting that therapists varied in their level of clinical experience with treating substance use and addictions. All therapists attended a two-day training workshop delivered by an MI trainer (i.e., psychologist trained in MI). The workshop covered the general principles of MI and specific content of the MI protocol developed for this study. MI therapists received ongoing supervision by the MI trainer who reviewed audiotapes and provided feedback throughout the study. As this study was a sub-project of a larger MI-DBT feasibility study, therapists delivered the intervention without the requirement of MI proficiency, prior to providing the intervention. As such, there is considerable variability among therapists in their level of MI proficiency. As suggested in the MITI manual, beginning proficiency scores were used in this study for the evaluation of MI fidelity, which will be described in subsequent sections.

MI Fidelity Raters

Two MITI fidelity raters participated in this study and were doctoral level counselling psychology students. This researcher was one of the MITI raters and completed the fidelity ratings for this study. The fidelity ratings were completed by this researcher prior to the analysis of the client outcomes measures, which mitigated any potential issues associated with rater bias due to knowledge of outcomes prior to the ratings. In fact, the researcher only had access to the
treatment outcomes data once all ratings were completed. Supervision for the study therapists and the MITI raters was provided by a clinical psychologist with over 10 years of training in MI. The experience and training of the raters involved in this study (i.e., the MI therapists, MITI raters, and this researcher) are outlined subsequent sections.

**Motivational Interviewing Sessions**

The MI intervention is based on the principles and phases of MI outlined by Miller and Rollick (1992; 2002; 2013). Therapists completed a single 90-minute session of MI with each individual client (see Appendix A for detailed manual). The MI session was structured around two phases: building motivation to change and strengthening commitment to change. The goal of the session was to explore the adolescent’s ambivalence about substance use and seeking treatment for a CD, and strengthen their commitment to attend CD group treatment. The focus of the session was resolving the ambivalence of attending group, by eliciting reasons for making changes to their substance use and/or alcohol use, to increase their overall motivation for problem changes, thereby strengthening their commitment to engaging in group treatment.

Prior to the session, therapists received and reviewed a personalized feedback report based on questionnaires the participant completed during the baseline assessment. The therapist began the session by providing an overview and focused on building rapport with the client. As part of the review of the assessment tools, therapists helped clients explore their reasons for seeking CD treatment and highlighted the connection between the adolescent’s substance use and mental health concerns. Therapists used a decisional balance exercise to encourage clients to explore their ambivalence about changing their substance use and starting treatment (i.e., exploring the pros/cons of changing and starting the CD treatment). During the session, the therapist also focused on developing a discrepancy between the client’s current substance use
and personally relevant goals/values. Specifically, therapists engaged clients in an exercise to identify important goals/values and elicited from clients their ideas about how substance use was interfering with the client achieving his or her goals/values and how seeking treatment may facilitate work towards goals/values. In addition, in preparation for the DBT group, therapists explored the client’s confidence in making changes, discussed personal strengths and supports, and supported the client’s self-efficacy for change. Therapists provided support for change, negotiated a change plan and prepared for group treatment, including a discussion of the possible barriers to treatment adherence and ways to overcoming these barriers.

**Motivational Interviewing Treatment Integrity 3.1.1 (MITI 3.1.1)**

Each MI session was audio recorded, transcribed and evaluated for MI fidelity using the Motivational Interviewing Treatment Integrity coding system (3rd version; MITI 3.1.1; Moyers, Martin, Manual, Miller, & Ernst, 2010). The MITI is a behavioural coding system that examines how well or poorly a practitioner is using motivational interviewing. It is intended for use as a treatment integrity measure and a method for providing formal feedback to improve practice.

The MITI is comprised of two components: global scores (i.e., an overall rating on a particular dimension) and behaviour counts (i.e., tally of individual therapist behaviours). To establish the global scores, the rater assigns a single number along a five-point scale to characterize the entire interaction across four dimensions: **Evocation, Collaboration, Autonomy/Support, and Empathy**. The rater assumes a beginning score of three and moves up or down the scale of one to five, depending on specific qualities of the therapist-client interaction. The specific qualities that are necessary for high vs. low ratings are clearly outlined in the MITI manual, which includes a qualitative descriptor for all possible ratings (i.e., ratings of one through five). Global ratings of **Evocation, Collaboration, and Autonomy/Support** are averaged
together to create a global rating for MI Spirit. Additional information about rating for the global dimensions and behavioural counts are provided below. These descriptions are extracted from the MITI manual.

The *Evocation* scale measures the extent to which the clinician conveys an understanding that the motivation and ability to move toward change resides within the client. Practitioners are rated high on this scale when they focus efforts to elicit motivation by actively creating opportunities for the client to use language in favour of change (i.e., change talk). Clinicians rated highly on this scale convey curiosity during the interaction and proactively evoke the client’s own reasons for change and ideas about how change should happen.

The *Collaboration* scale refers to the extent to which the session is occurring between two equal individuals, together in a partnership. Clinicians are rated as high on this scale when they foster encouragement in power sharing, where the client’s ideas substantially influence the nature of the session. Rather than advising or telling the client what they should do, a collaborative practitioner takes the client’s ideas and incorporates this to impact the session in a meaningful manner.

The *Autonomy/Support* scale is intended to convey the degree to which the clinician actively fosters the client perception of choice and using strategies to enhance autonomy and support. Practitioners scoring high on this dimension significantly highlight the client’s expression of autonomy, in such a way as to markedly expand the client’s experience of control and choice. These clinicians help client’s recognize the client’s choices and convey belief in their ability to make decisions regarding their behavioural changes.

The MITI also includes the dimension *Direction*, which involves the practitioner’s attempt to steer the client towards discussion of behavioural change. For the current study,
practitioners were required to follow a specific MI session manual, outlining goals, objectives and specific target interventions. As such, the dimension of Direction was not rated.

Finally, the Empathy scale captures all the effort of the clinician in understanding the client’s perspective and feelings and conveying that understanding to the client. Session had higher scores on this dimension when the therapist demonstrated evidence of a deep understanding of the client’s perspective, not just what has been stated explicitly, but rather what client means and has not yet said. The practitioner attempts to “put self in client’s shoes” (Moyers, Martin, Manual, Miller, & Ernst, 2010; pp. 15) and effectively communicates that understanding to the client.

The second component of the MITI consists of behaviour counts, where the rater parses the session in utterances and then rates each utterance to determine whether it falls into one of the pre-assigned categories outlined in the MITI. Once each utterance is rated, the rater tallies the instances of specific behaviours. Behaviour counts are not judged based on the quality of the behaviour as with global ratings, but reflect categorical ratings (i.e., yes/no does this utterance fit into one of the MITI dimensions?). The rater maintains a running list, which includes the number of behaviour counts for each category and then provides a summary score for each category. The summary score is the total number of times the therapist engaged in the behaviour. Raters are not required to rate the quality of the behaviour as with global ratings, rather they are expected to maintain a total count. Consistent with procedures outlined in the MITI manual (Moyers, Martin, Manuel, Miller & Enrst, 2010), a random 20-minute segment was selected and raters made two passes through the tape: the first pass involved ratings on the global scores and the second pass involved the behaviour counts. Coding a 20-minute segment was suggested to reduce coder error and to increase inter-rater reliability. Using the MITI coding system, six practitioner
behaviours are coded: Giving information, MI-adherent, MI non-adherent, closed questions, open question, simple reflections and complex reflections.

*Giving information* involves offering information, providing feedback from assessment measures, educating on topics, explaining ideas or concepts relevant to the intervention. *MI-adherent* behaviours are those where the clinician is asking for permission before giving advice or information, emphasizing the client’s freedom of choice, highlighting the client’s ability to make decisions, affirming client strengths, and providing supportive statements of compassion. *MI-Non Adherent* statements are those clinician statements that are deemed inconsistent with the MI approach (i.e., advising without permission, being confrontational with client, or directing the client by giving commands or judgements). *Closed Questions* are those questions that require a particular, limited set of responses such as “yes” or “no” (e.g. “Did you smoke today?”). In contrast, *Open Questions* allow for a wide range of possible responses and welcome the client’s self-exploration. Reflections are statements made by the clinician and are categorized into either *Simple Reflections* or *Complex Reflections*. *Simple Reflections* convey an understanding of a client’s experience by repeating or rephrasing what the client has stated and do not go beyond the client’s original content, adding no additional deeper meaning to what the client has said. For example, if the client says “I’m sick of my parents being on my case about getting to school on time. I don’t need them knocking at my door at 7:30 telling me to get up.” A simple reflection might be “You don’t need your parents telling you what to do.” In contrast a *Complex Reflection* conveys a deeper meaning or understanding of the client’s experience. The purpose of these statements is to deepen the conversation, by identifying an unstated feeling or meaning of a client’s statement and propel the conversation forward into a new or intentional direction (Moyers et al., 2010). Considering the previously discussed client statement, “I’m sick of my
parents being on my case about getting to school on time. I don’t need them knocking at my door at 7:30 telling my to get up.” A complex reflection might be “You know what you need to do, and you want your parents to recognize how responsible and independent you are.”

Following the global and behaviour count ratings, several MITI total scores are calculated from the global ratings and behaviour counts. MITI total scores are comprised of Global Spirit rating (an average of Evocation, Collaboration, Autonomy/Support ratings), percent complex reflections (percent complex reflections among total reflections), percent open questions (percent open questions among total questions), reflection–to-question ratio (ratio of reflections to questions) and percent MI-adherent (percent MI adherent among the total of MI adherent and MI non-adherent).

To evaluate the level of clinician fidelity to MI, MITI total scores are categorized at two levels as recommended in the MITI 3.1.1 manual (Moyers et al. 2010): 1) beginning proficiency; and 2) competency thresholds. Beginning proficiency is the lower standard and is the expected level for someone who is a new learner to MI and has established a beginning level of proficiency. The following guidelines are used to establish beginning proficiency in MI: 1) Global Spirit MITI scores of 3.5 and above; 2) 50% open questions; 3) 40% complex reflections; 4) 90% MI-adherent statements; and 5) a 1:1 ratio of reflections to questions. Competency is a higher standard for MI adherence and is calculated as follows: 1) Global Spirit MITI scores are 4 or above; 2) 70% open questions; 3) 50% complex reflections; 4) 100% MI-adherent statements; and 5) 2:1 (or higher than 2) ratio of reflections to question (MITI version 3.1.1; Moyers, Martin, Manual, Miller, & Ernst, 2010). As illustrated in Table 2, average scores on MITI dimensions in the current sample varied and ranged from below beginning proficiency to above competency.
Table 2

*Guidelines for Beginning Proficiency and Competency* and Average Therapist Scores.

<table>
<thead>
<tr>
<th>Behavioural Indicator</th>
<th>Beginning Proficiency</th>
<th>Competency</th>
<th>Average ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Spirit</td>
<td>3.5</td>
<td>4</td>
<td>4.14</td>
</tr>
<tr>
<td>Percent Open Questions</td>
<td>50%</td>
<td>70%</td>
<td>44%</td>
</tr>
<tr>
<td>Percent Complex Reflections</td>
<td>40%</td>
<td>50%</td>
<td>16%</td>
</tr>
<tr>
<td>Percent MI-Adherent Statements</td>
<td>90%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>Question to Reflection Ratio</td>
<td>1</td>
<td>2</td>
<td>.90</td>
</tr>
</tbody>
</table>

*Recommended guidelines as per MITI 3.1.1.

**MI Intervention Changes During Study**

The initial plan for the MI sessions was to have adolescent clients attend to sessions with the MI therapist prior to starting the DBT group. However, scheduling difficulties and logistical challenges of ensuring the completion of both MI sessions in time for the DBT group start date proved to be an obstacle. In addition to the MI sessions, adolescents were also required to attend a DBT orientation session (individual session with the DBT group facilitator) prior to beginning group. Since the current study was a feasibility study, having adolescents attend three individual sessions before the DBT group became impractical and the decision was made to reduce the number of MI sessions to a single session. As such the two 60-minute MI sessions were condensed into one single 90-minute MI intervention. The content of the sessions remained the same; the minor change in protocol was that practitioners did not review the rates of substance use among the participant’s same age peers, rather they focused on the participant’s self-reported mental health symptoms and consequences of substance use. Among the 32 participants in the study, 11 participants received two 60-minute sessions and 21 participants received the single
90-minute session. MITI scores (global ratings and behaviour counts) were averaged across both sessions for those who received two 60-minute sessions.

**Training and Rating Procedures for MITI Raters**

The MI sessions were rated by two doctoral student MITI raters – one was completing a doctoral degree in Counselling Psychology and the other in Counselling and Clinical Psychology. Each rater was trained on the MITI by a clinical psychologist with expertise in MI and in MITI ratings. Raters received training in the use of the MITI through in-person training meetings and through standard methods for MI training, including readings on the MITI based on Miller and Moyers (2006), Moyers and colleagues (2007) and review of training videotapes (Hettema, 2000; Miller, Rollnick, & Moyers, 1998). In addition, raters completed a set of ratings on pre-rated transcripts and then compared their ratings to identify any discrepancies. Raters and the MI trainer met for group sessions during which they reviewed audio-taped sessions and discussed ratings after each therapist utterance. After completing the review of an MI tape, global ratings were completed and discrepancies in global ratings were discussed as a group. Once the training period was completed (i.e., 40 hours recommended training time), inter-rater reliability was assessed. To reduce rater drift, the MITI raters and the MI trainer met regularly to review MI tapes and discuss ratings.

**Inter-rater reliability for MITI raters.** Transcripts of therapy sessions were used to facilitate the MITI coding. Undergraduate student volunteers were trained to transcribe the MI sessions using secure management of the confidential tapes. To establish inter-rater reliability of the MITI, a random sample of ten tapes were selected from the total dataset of audio-recorded MI sessions. Consistent with the MITI guidelines, only 20-minutes of each session were transcribed and rated. For each session, the start-time for raters was randomly selected and
provided to the transcriptionist so that he/she could transcribe the 20-minute segment. For example, if the randomly selected start-time was 5:06, the transcriptionist would start the tape at 5:06 and then transcribe up to the 20-minute mark, ending at 25:06. Once a session was transcribed, it was made available for MITI ratings and the rater completed the task by first reading through the transcribed session, listening to the audio recording along with the transcribed session and coding the therapist behaviours and then listening one last time to complete the global ratings.

Each rater completed MITI ratings for the selected ten sessions independently. All global ratings and total behaviour counts from both raters were included in the reliability analysis. Intra-class coefficients (ICC) were calculated to evaluate inter-rater reliability of raters for both sets of MITI ratings. ICC is a descriptive statistic that can be used when quantitative measurements are made on units (MITI ratings) that are organized into groups (rater A vs. rater B) and describes how strongly units in different groups resemble one another other (Koch, 1982). It is unique from other type of correlational analysis in that it considers data structured as paired observations unlike other correlation measures, which examine data structured as groups (Koch, 1982). ICCs were computed and then evaluated using the standard guidelines recommended by Cicchetti (1994). The following ranges of ICC were used to determine reliability: below .40 = poor; .40 to .59 = fair; .60 to .74 = good; and .75 to 1.0 = excellent (Cicchetti, 1994). Inter-rater reliability was established when all ICCs were within the fair to excellent range for those selected ten sessions (Table 3).
Table 3

Intraclass Correlation Coefficients for MITI Global Scores and Behaviour Counts.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICC</th>
<th>Alpha</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evocation</td>
<td>0.790</td>
<td>0.790</td>
<td>.021</td>
</tr>
<tr>
<td>Collaboration</td>
<td>0.806</td>
<td>0.806</td>
<td>.016</td>
</tr>
<tr>
<td>Autonomy/Support</td>
<td>0.866</td>
<td>0.866</td>
<td>.005</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.825</td>
<td>0.825</td>
<td>.012</td>
</tr>
<tr>
<td>Giving information</td>
<td>0.950</td>
<td>0.950</td>
<td>.000</td>
</tr>
<tr>
<td>MI adherent</td>
<td>0.665</td>
<td>0.665</td>
<td>.071</td>
</tr>
<tr>
<td>MI non adherent</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closed questions</td>
<td>0.796</td>
<td>0.796</td>
<td>.019</td>
</tr>
<tr>
<td>Open questions</td>
<td>0.970</td>
<td>0.970</td>
<td>.000</td>
</tr>
<tr>
<td>Simple reflections</td>
<td>0.804</td>
<td>0.804</td>
<td>.017</td>
</tr>
<tr>
<td>Complex reflections</td>
<td>0.761</td>
<td>0.761</td>
<td>.029</td>
</tr>
</tbody>
</table>

Note. MITI = Motivational Interviewing Treatment Integrity ratings.

Once inter-rater reliability was established across the two MITI raters, the remaining therapy sessions were divided equally between the two raters. Each rater completed their assigned therapy sessions independently for the remainder of the study.

MI Fidelity Variables

In order to examine differences in MI fidelity, each of the MITI scores (i.e., Global Spirit, percent open questions, percent complex reflections, percent MI adherent and question-to-reflection ratio) was then categorized into a high vs. low grouping variable (i.e., High vs. low...
global spirit, high vs. low percent MI-adherent, high vs. low percent complex reflections, high vs. low percent open questions, high vs. low question-to-reflection ratio) based on the median score for each dimension. Scores at or above the median were the high group and scores below the median were the low group. For example, the median for global spirit was equal to 4.04, those with scores at or above 4.04 were categorized as the high global spirit group and those with scores below 4.04 were categorized as within the low global spirit group.

Additionally, a total MI-proficiency index score was calculated based on the number of MITI measures on which therapists met beginning proficiency as outlined in the MITI and detailed earlier. For each MITI measure, a score of 1 was assigned if beginning proficiency was met and a score of 0 was assigned if beginning proficiency was not met. These were then summed and a total score out of a possible five points (i.e., the five MI fidelity indexes) was calculated for each MI session. For example, if the scores for Global Spirit, percent complex reflections, and MI adherent were above the beginning proficiency level, then they received a score of 3 out of a possible 5 points.

**Client Measures**

All participants completed questionnaires including measures of alcohol and drug use, alcohol and drug use consequences, measures of treatment engagement and motivation, and measures of mental health symptoms, which were completed at pre-and post MI intervention and are outlined in the subsequent section. Although there was an intention to administer the post-MI session measures after one week, there was variability in the timing of the administration of the measures (i.e., ranging between 0 to 38 days from the completion of the MI session and the administration of post measures). Forty-six percent of the sample completed measures within one week following the MI session, 39% completed the measures immediately after the session/same
day, and 14% of the sample completed the post-measures within 2 to 3 weeks after the MI session, and for the remainder of the sample this information was unavailable.

**Stages of Change Readiness and Treatment Eagerness Scale.** Readiness to change was assessed with the alcohol and drug versions of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES; Miller & Tonigan, 1996). The SOCRATES is a 19-item self-report measure that was developed to assess readiness to change based on the Trans-theoretical Model (Prochaska & DiClemente, 1984). Respondents use a 5-point Likert-type scale to indicate the extent to which they agree with each item (1 = *strongly disagree* to 5 = *strongly agree*). The SOCRATES has been validated with an adolescent clinical sample and a reliable two-factor structure (Taking Steps, $\alpha=.93$; Recognition, $\alpha=.88$) was identified (Maisto, Chung, Cornerlius, & Martin, 2003).

**Treatment Entry Questionnaire (TEQ).** The TEQ is a 12-item version of the 30-item Treatment Entry Questionnaire developed by Wild, Cunningham and Ryan (2006) and was used to assess three sources of motivation for seeking treatment: external coercion, internal positive reasons for treatment and internal negative reasons for seeking treatment. Internal positive motivation refers to the individual’s personal interest in and commitment to seeking help for his or her problem through treatment. Internal negative motivation reflects entering and committing to treatment based on feelings of guilt and shame. External coercion refers to the individuals’ belief that he or she is seeking treatment in response to external pressures. Each item on the TEQ is rated on a 7-point Likert-scale, with scores ranging from (1 = *strongly disagree*) to (7 = *strongly agree*). Subscale scores are calculated based on the sum of all items comprising that subscale and higher scores reflect increased motivation in that domain. Internal consistency
coefficients were calculated for each scale with Cronbach’s alphas ranging from .87 to .92 for the subscales (See Table 6 for reliability and sample items).

The University of Rhode Island Change Assessment (URICA). The URICA is a self-report measure that assesses an individual’s readiness to change as they progress through the stages of change (McConnaughey, Prochaska & Velicer, 1983). Three versions of the URICA were used in the current study to assess readiness to change problems (i.e., a problem behaviour that the respondent is considering to change) (URICA-Problem), readiness to change drug use (URICA-Drug) and readiness to change alcohol use (URICA-Alcohol). The URICA consists of four subscales, which are intended to map onto the four stages of change as outlined by Prochaska and Velicer: pre-contemplation (i.e., “As far as I'm concerned, I don't have any problems that need changing”), contemplation (i.e., “I think I might be ready for some self-improvement”), action (e.g. “I am doing something about the problems that had been bothering me”) and maintenance (e.g. “It worries me that I might slip back on a problem I have already changed, so I am here to seek help.”). The questionnaire is comprised of 32 items and respondents rate each item on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Subscale scores are calculated based on the average score across items comprising that scale. Finally, a readiness to change score was calculated for each URICA measure (i.e., URICA-Problem, URICA-Alcohol, URICA-Drugs) from the total scores from each subscale. This is different from the SOCRATES because it provides a single score to summarize the person’s overall readiness to change. Readiness to change scores are calculated by averaging the scores of the items from each subscale (Pre-contemplation, Contemplation, Action & Maintenance). Subsequently, the Precontemplation mean score is then subtracted from the total scores on the Contemplation, Action and Maintenance subscales. Readiness to change scores that
are 8 or lower are classified as Pre-Contemplation, scores between 8 to 11 are classified as Contemplation, and scores that are 11-14 are classified as Preparation or Action.

**Youth Self-Report (YSR).** The YSR is the self-report version of the Child Behaviour Checklist (CBCL) for adolescents between the ages of 12-18 (Achenbach, 1991). It consists of 112 items rated on a 3-point Likert scale (0 = Not True, 1 = Somewhat or Sometimes True, and 2 = Very true or Often True). The YSR includes two broadband scales, which were used for the current study (Externalizing and Internalizing) and eight subscales or syndromes. The Externalizing scale is comprised of the Rule-Breaking and Aggressive behaviour subscales. The Internalizing scale is comprised of the Anxiety/Depressed, Withdrawn/Depressed, and Somatic Complaints subscales. The YSR is widely-used, well-validated, and provides dimensional problem scales including 6 scales which correspond to DSM-IV diagnoses and studies have demonstrated both discriminant and convergent validity (Achenbach, Dumenci & Rescorla, 2002; Gomez, Vance Gomez, 2014).

**Centre for Epidemiological Studies- Depression (CES-D).** The CES-D is a 20-item self-report measure of depressive symptoms (Radloff, 1977). Each item is rated on a 4-point scale (1 = rarely or none of the time to 4 = most or all of the time). Total scores range from 0 to 60. The CES-D has demonstrated good reliability and validity for use with adolescents (Roberts, Andrews, Lewinsohn, & Hops, 1990; Roberts, Lewinsohn, & Seeley, 1991).

**Drug Abuse Screening Test-Adolescents.** The Drug Abuse Screening Test for Adolescents (DAST-A; Martino, Grilo, & Fehon, 2000) was used to assess drug abuse problems. The DAST-A has demonstrated good sensitivity (78.6%) and specificity (84.5%) in detecting DSM-IV substance use disorders among adolescents with psychiatric co-morbidity using a cut-
off of 6 or more. Internal consistency coefficients were calculated for the current sample and are presented in Table 5.

**Alcohol Use Disorders Identification Test.** The 10-item Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993) was used to assess at-risk drinking. The AUDIT has been validated for use with adolescents (Chung et al., 2000; 2002) and compared to other brief screening tools, has shown superior discriminability in identifying adolescents with alcohol use disorders using a cut-off of four or more.

**Rutgers Alcohol Problem Index.** The Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989; 2000) was used to assess drinking problems. The RAPI is a 23-item self-report measure that assesses the frequency with which adolescents have experienced problems related to alcohol use in the past 12 months. Using a 5-point Likert scale (0 = Never; 1 = 2 times; 2 = 3-5 times, 3 = 6-10 times; 4 = more than 10 times), participants rated the number of times each alcohol-related consequence occurred while drinking or because of alcohol use during the past year (e.g., “I neglected my responsibilities” and “I kept drinking when I promised myself not to”). Total item response scores are calculated to obtain a composite score (See Table 3 for reliability analysis). A score of 15 or more was used as the cut-off for problem drinking. The RAPI possesses good internal consistency (alpha = 0.92) (White & Labouvie, 1989).

**Data Analysis Plan**

The results section begins with a description of the sample with regards to baseline scores for substance use and mental health as measured by the AUDIT, DAST, RAPI, CES-D, and YSR. Next, descriptive analyses for baseline motivation measures are presented for the SOCRATES (motivation to change alcohol use) and for each URICA (readiness to change
alcohol, readiness to change drug use and readiness to change problems). The subscales from the TEQ were calculated to assess treatment motivation.

The Statistical Package for the Social Sciences (SPSS), Version 19.0, was used for all data analyses (IBM, 2013). The distribution of scores for all measures was assessed for significant violations of normality (i.e., skewness, kurtosis) and boxplots were used to identify any outliers. No outliers were identified and all variables were held in their original format. The significance level for the statistical analyses was set at \( p < .05 \). The first step in the analysis involved calculating total scores for all measures (i.e., TEQ, SOCRATES-Alcohol, URICA-Alcohol, URICA-Drug, URICA-Problems, DAST, AUDIT, RAPI, CES-D and YSR). In order to examine changes from pre- to post-MI, t-tests were conducted for all motivation measures: SOCRATES-Alcohol, URICA-Alcohol, URICA-Drug, URICA-Problems. These analyses did not include measures of alcohol use, drug use, alcohol consequence, or drug consequences. The rationale for excluding these measures from the analyses was that the time frame between the pre- and post-test sessions was insufficient to allow for a fair evaluation of changes in actual substance use and/or consequences. In addition, the MI was not developed to facilitate changes in alcohol and/or drug use; rather, it was intended to enhance motivation to change and to facilitate greater engagement in the DBT treatment. The MI intervention was developed as a precursor to the DBT group and it was expected that the skills needed to reduce alcohol and/or drug use would be acquired during the DBT session, not during the single session of MI.

To examine group differences in MI fidelity and motivation, Multivariate Analysis of Variance (MANOVA) tests were conducted for the motivation measures: SOCRATES-Alcohol, URICA-Alcohol, URICA-Drug, URICA-Problems). Additionally, t-tests were conducted for examining differences in treatment engagement between high and low MI fidelity groups.
Inter-rater Reliability

To evaluate the degree of inter-rater reliability among the two MI fidelity raters (i.e., MITI raters), interclass correlations (ICC) were calculated. Inter-rater reliability indicates the degree to which two or more raters agree on their judgments or rating (Salkind, 2010). The ICC is the preferred inter-rater reliability method for continuous measures such as the MITI. Cicchetti’s (1994) guidelines for assessing the clinical significance of inter-rater reliability range from poor to excellent. As illustrated in Table 3, the ICCs for the current study, ranged between 0.67 to 1.00, which indicates good to excellent inter-rater reliability across MITI dimensions.
Chapter 3: Results

Descriptive Analyses

Baseline frequency of substance use and mental health symptoms. On average, participants’ scores on a measure of alcohol use frequency and problems (AUDIT) was 12.29 ($SD = 8.98$) and the majority of the sample (93.6%) had scores within the clinical range (four or more for adolescents; Chung et. al., 2000) indicating that a significant proportion of the sample had alcohol use problems and were at risk of meeting criteria for an alcohol use disorder. Participants’ average score on a measure of alcohol problems (RAPI) was 17.72 ($SD = 17.86$), and 43.7% had responses indicating problem drinking (cutoff score of 15 or more; Thombs & Beck, 1994). It should be noted that scores on the RAPI indicate alcohol use consequences only and not consumption per se. Scores on the AUDIT combine both alcohol use and consequences and the threshold for alcohol problems might be lower as a result.

Participants’ average score on a measure of drug use frequency and problems (DAST-A) was 10.68 ($SD = 5.95$), and the majority of the sample (71.8%) had scores falling well above the clinical cut-off of 6 (Martino, Grilo, & Fehon, 2000), indicating that a significant proportion of participants screened positive for substance use problems, abuse or dependence. These adolescents would be considered at high-risk for meeting the diagnostic criteria for a substance use disorder (American Psychiatric Association, 2013). Additional descriptive statistics, ranges and reliability coefficients for the substance use measures are presented in Table 4.
Table 4

*Baseline Alcohol and Substance Use Measures and Descriptive Statistics*

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Cronbach’s α</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUDIT</td>
<td>31</td>
<td>0</td>
<td>41</td>
<td>.89</td>
<td>12.29</td>
<td>8.98</td>
</tr>
<tr>
<td>RAPI</td>
<td>32</td>
<td>0</td>
<td>66</td>
<td>.96</td>
<td>17.72</td>
<td>17.86</td>
</tr>
<tr>
<td>DAST</td>
<td>31</td>
<td>1</td>
<td>21</td>
<td>.81</td>
<td>10.68</td>
<td>5.95</td>
</tr>
</tbody>
</table>

*Note.* Alcohol Use Disorders Identification Test (AUDIT). Rutgers Alcohol Problem Index (RAPI). Drug Abuse Screening Test (DAST).

Mental health symptoms were examined using the YSR and the CES-D. The YSR provides scores on internalizing symptoms and externalizing symptoms. Internalizing symptoms indicate the expression of distress inwards (e.g., depression or anxiety) and externalizing symptoms indicate the expression of distress outwards (e.g., angry outbursts). The majority of adolescents in the current sample endorsed both internalizing symptoms ($M = 33.50$, $SD = 11.53$), and externalizing symptoms ($M = 25.74$, $SD = 7.01$). As illustrated in Table 4, the YSR also provides subscales for internalizing and externalizing symptoms and scores indicate clinically significant difficulties. Additionally, on a measure of depression (CES-D), participants on average endorsed symptoms within the clinical range for major depressive symptoms (i.e., clinical cut off score $>20$) (Radloff, 1977).
Table 5

Baseline Mental Health Measures and Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable Group</th>
<th>Subcomponents</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>YSR scales</td>
<td>Anxious/Depressed</td>
<td>32</td>
<td>1</td>
<td>25</td>
<td>16.22</td>
<td>6.46</td>
</tr>
<tr>
<td></td>
<td>Withdrawn/Depressed</td>
<td>32</td>
<td>2</td>
<td>15</td>
<td>8.69</td>
<td>3.29</td>
</tr>
<tr>
<td></td>
<td>Somatic Complaints</td>
<td>32</td>
<td>3</td>
<td>15</td>
<td>8.66</td>
<td>3.53</td>
</tr>
<tr>
<td></td>
<td>Social Problems</td>
<td>32</td>
<td>1</td>
<td>17</td>
<td>8.53</td>
<td>3.50</td>
</tr>
<tr>
<td></td>
<td>Thought Problems</td>
<td>32</td>
<td>2</td>
<td>17</td>
<td>10.19</td>
<td>4.09</td>
</tr>
<tr>
<td></td>
<td>Attention Problems</td>
<td>32</td>
<td>4</td>
<td>17</td>
<td>10.34</td>
<td>3.12</td>
</tr>
<tr>
<td></td>
<td>Rule-Breaking Behaviours</td>
<td>32</td>
<td>4</td>
<td>23</td>
<td>13.97</td>
<td>4.54</td>
</tr>
<tr>
<td></td>
<td>Aggressive Behaviours</td>
<td>32</td>
<td>4</td>
<td>25</td>
<td>11.88</td>
<td>4.70</td>
</tr>
<tr>
<td>CES-D Depression</td>
<td>32</td>
<td>12</td>
<td>12</td>
<td>51</td>
<td>29.59</td>
<td>9.46</td>
</tr>
</tbody>
</table>

**Baseline motivation.** Scores on subscales assessing both recognition of alcohol use as a problem and taking steps towards changing alcohol use (SOCRATES-Recognition and SOCRATES-Taking Steps) ranged between 7.00 and 28.00 with an average score of 15.34 (SD = 6.59) for Recognition, and ranged between 8.00 and 39.00 with an average of 21.25 (SD = 9.35) for Taking Steps. The average SOCRATES-Recognition score fell within the Very Low range (Miller & Tonigan, 1996), indicating that on average adolescents did not recognize that their alcohol use was problematic at baseline. The average SOCRATES-Taking Steps score also fell within the Very Low range, again suggesting that on average adolescents were taking few steps towards changing their alcohol use.

Average scores on the readiness to change alcohol measure (URICA-Alcohol) were 7.33 (SD = 3.70) and 34.2% of participants were classified in the pre-contemplation stage, 43.5% were classified in the contemplation stage, and 9.3% were classified in the preparation or action stage for readiness to change their alcohol use. Thus, a large proportion of the sample was in the
contemplation stage for changing their alcohol use and was considering making a change, but had not yet made a decision at baseline.

Participants’ average score on readiness to change drug use (URICA-Drug) was 8.13 ($SD = 3.10$). Among the sample, 43.5% were classified as within the pre-contemplation stage, 37.3% were classified as within the contemplation stage, and 18.6% were classified as in the preparation/action stage, suggesting that a significant proportion of the sample were individuals not considering changes to their drug use at baseline.

Participants’ average score on the readiness to change problems measure (URICA-Problems) was 9.31 ($SD = 3.70$). Among the sample, 49.9% were classified as within the contemplation stage, 24.8% were classified as in the pre-contemplation stage and 18.6% were classified as within the preparation/action stage. These results indicate that a significant proportion of the sample was contemplating making changes to a problem in their life at the time of the baseline assessment. The specific type of problem that the participant was considering changing was not identified on the questionnaire.

Scores on the Treatment Entry Questionnaire (TEQ) revealed that a majority of the sample ($N = 23$) endorsed more Internal Positive (i.e., personal choice) motives for attending treatment than Internal Negative (i.e., shame or guilt) and/or External Coercion (i.e., pressure from others) motives. Average scores and sample items for the motivation measures are illustrated in Table 6.
Table 6

*Baseline Motivation Measures and Descriptive Statistics*

<table>
<thead>
<tr>
<th>Variable Group</th>
<th>Subcomponent</th>
<th>Sample Item</th>
<th>No of Items</th>
<th>Cronbach’s α</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCRATES-A</td>
<td>Alcohol</td>
<td>I am a problem drinker</td>
<td>7</td>
<td>.94</td>
<td>15.34</td>
<td>6.59</td>
</tr>
<tr>
<td></td>
<td>Taking Steps-A</td>
<td>I am actively doing things to change my drinking</td>
<td>8</td>
<td>.94</td>
<td>21.25</td>
<td>9.35</td>
</tr>
<tr>
<td>URICA- Readiness to change</td>
<td>Alcohol</td>
<td>I am really working hard to change.</td>
<td>32</td>
<td>.96</td>
<td>7.33</td>
<td>3.70</td>
</tr>
<tr>
<td></td>
<td>Drugs</td>
<td>I am doing something about the problems that had been bothering me.</td>
<td>32</td>
<td>.94</td>
<td>8.13</td>
<td>3.10</td>
</tr>
<tr>
<td></td>
<td>Problems</td>
<td>I have been successful in working on my problem but I'm not sure I can keep up the effort on my own.</td>
<td>32</td>
<td>.94</td>
<td>7.33</td>
<td>3.70</td>
</tr>
<tr>
<td>TEQ</td>
<td>Internal Positive</td>
<td>I decided to enter a program because I really want to make some changes in my life</td>
<td>4</td>
<td>.87</td>
<td>20.53</td>
<td>6.68</td>
</tr>
<tr>
<td></td>
<td>Internal Negative</td>
<td>If I remain in treatment it will probably be because I’ll feel like a failure if I don’t</td>
<td>4</td>
<td>.92</td>
<td>12.53</td>
<td>6.52</td>
</tr>
<tr>
<td></td>
<td>External Coercion</td>
<td>If I remain in treatment it will probably be because others will be angry with me if I don’t.</td>
<td>4</td>
<td>.92</td>
<td>12.06</td>
<td>7.44</td>
</tr>
</tbody>
</table>

*Note. Stages of Change Readiness and Treatment Eagerness Scale - Alcohol (SOCRATES-A), University of Rhode Island Change Assessment (URICA). Treatment Entry Questionnaire (TEQ).*
Analysis for Hypothesis I

The first hypothesis involved examining whether an MI intervention for adolescents with CDs would lead to greater motivation and readiness to change alcohol use, substance use, and general problems. It was hypothesized that delivering the MI session to adolescents with CDs would enhance the adolescents’ motivation and readiness to change their alcohol and drug use following the MI session.

A series of paired-samples t-tests were conducted to assess changes in readiness to change alcohol, drug use and general problems (URICA-Alcohol, URICA-Drugs, and URICA-Problems). As illustrated in Table 7, no significant differences were found between pre- and post-MI scores.

Paired-samples t-tests were also conducted to test whether there were significant changes in adolescents’ recognition that their alcohol use was a problem (SOCRATES-Recognition). No significant differences were found between pre- and post-MI scores. However, a significant difference was found between pre- and post-MI measures of taking steps towards changing their alcohol use. Specifically, average scores on the Taking Steps subscale of the SOCRATES were higher at post-test \( (M = 25.24, SD = 1.85) \), \( t(28) = -2.21, p < 0.05 \), compared to pre-test \( (M = 21.76, SD = 1.69) \). These findings indicate that following the MI session, participants reported taking greater steps and actions towards making positive changes to their alcohol use.
Table 7

Means, Standard Deviations and Results of Paired Samples $t$-tests of Pre- and Post-MI Changes in SOCRATES Recognition, SOCRATES Taking Steps, URICA-Alcohol, URICA-Drugs, URICA-Problem

<table>
<thead>
<tr>
<th>Measures</th>
<th>$T1^a$</th>
<th>$SD$</th>
<th>$T2^b$</th>
<th>$SD$</th>
<th>$df$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOCRATES-Recognition</td>
<td>15.97</td>
<td>6.52</td>
<td>16.76</td>
<td>7.67</td>
<td>28</td>
<td>-.74</td>
<td>.468</td>
</tr>
<tr>
<td>URICA-Alcohol</td>
<td>7.59</td>
<td>3.46</td>
<td>7.38</td>
<td>3.58</td>
<td>25</td>
<td>.34</td>
<td>.737</td>
</tr>
<tr>
<td>URICA-Problems</td>
<td>9.31</td>
<td>1.84</td>
<td>9.69</td>
<td>1.60</td>
<td>28</td>
<td>-.64</td>
<td>.528</td>
</tr>
<tr>
<td>URICA-Drugs</td>
<td>8.40</td>
<td>3.11</td>
<td>8.76</td>
<td>2.61</td>
<td>29</td>
<td>-1.27</td>
<td>.215</td>
</tr>
</tbody>
</table>

*Note. $^aT1$ refers to pre-MI session and $^bT2$ refers to post-MI session. Stages of Change Readiness to Change Alcohol (SOCRATES-A). University of Rhode Island Change Assessment (URICA). *$p<0.05$

Analysis for Hypothesis II

The second hypothesis involved examining the specific dimensions of MI fidelity associated with changes in readiness to change and engagement in group therapy. Based on recommendations for assessing MI fidelity using the MITI (Moyers et al., 2010), the following therapist behaviours were used to assess MI fidelity: percent open-ended questions, percent complex reflections, questions-to-reflections ratio, percent MI-adherent statements and ratings of Global Spirit. These measures of MI fidelity are also consistent with others used in the literature (Catley, et al., 2006; McCambridge et. al, 2011; Knittle, et. al., 2015). It was anticipated that higher MI fidelity would result in greater readiness to change alcohol use, substance use and/or problems in adolescents with CDs. Additionally, it was predicted that greater MI fidelity would
be positively associated with greater treatment engagement (i.e., number of DBT sessions attended by the adolescent).

To examine whether greater use of MI consistent therapist behaviours (high MI fidelity) was associated with greater readiness to change and treatment engagement (i.e., number of DBT sessions attended), pre-post changes in number of DBT sessions and motivation scores were examined for the five MITI fidelity groups: (1) high vs. low Global Spirit (2) high vs. low percent MI-adherent statements (3) high vs. low percent complex reflections (4) high vs. low percent open questions (5) high vs. low question-to-reflection ratio. In addition, changes were examined using the total MI fidelity index score as the independent variable, with sessions categorized as either high (2+ on the MITI proficiency index) or low (less than two on the MITI proficiency index).

A Multivariate Analysis of Variance (MANOVA) was conducted to examine whether MI fidelity was associated with readiness to change, where high vs. low MITI fidelity group was the independent variable and scores on the motivation measures (i.e., Recognition and Taking Steps to change alcohol use) was the dependent variable. As illustrated in Table 8, there were no significant differences in Recognition and Taking Steps scores across high vs. low MI fidelity groups. A MANOVA was also conducted to evaluate differences in readiness to change alcohol, substance use and problems (URICA-Alcohol, URICA-Drugs, URICA-Problems) across high/low MITI fidelity groups. As illustrated in Table 9, there were no differences in scores across the high vs. low MITI fidelity groups.
### Table 8

**Group Comparisons of Taking Steps and Recognition using MANOVA**

<table>
<thead>
<tr>
<th>Groups</th>
<th>SOC-REC</th>
<th>SOC-TAKSTPS</th>
<th>F</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T1</td>
<td>T2</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Global Spirit</td>
<td>Low</td>
<td>14.88 (6.13)</td>
<td>13.50 (7.50)</td>
<td>22.25 (6.76)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>16.38 (6.77)</td>
<td>18.00 (7.53)</td>
<td>21.57 (10.06)</td>
</tr>
<tr>
<td>Percent MI-Adherent</td>
<td>Low</td>
<td>14.15 (5.62)</td>
<td>15.69 (7.04)</td>
<td>21.23 (8.86)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>17.44 (7.00)</td>
<td>17.63 (8.26)</td>
<td>22.19 (9.65)</td>
</tr>
<tr>
<td>Percent Complex</td>
<td>Low</td>
<td>12.07 (7.13)</td>
<td>18.40 (7.20)</td>
<td>22.00 (10.30)</td>
</tr>
<tr>
<td>Reflections</td>
<td>High</td>
<td>14.38 (5.88)</td>
<td>14.54 (8.15)</td>
<td>21.85 (8.36)</td>
</tr>
<tr>
<td>Percent Open Reflections</td>
<td>Low</td>
<td>17.67 (7.19)</td>
<td>17.80 (8.99)</td>
<td>22.20 (9.02)</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>14.14 (5.40)</td>
<td>15.64 (6.07)</td>
<td>21.29 (9.60)</td>
</tr>
<tr>
<td>Question to Reflection</td>
<td>Low</td>
<td>16.07 (7.71)</td>
<td>17.00 (8.48)</td>
<td>18.64 (9.25)</td>
</tr>
<tr>
<td>Ratio</td>
<td>High</td>
<td>15.87 (5.48)</td>
<td>16.53 (7.12)</td>
<td>24.67 (8.33)</td>
</tr>
</tbody>
</table>
Note. T1 refers to pre-MI session and T2 refers to post-MI session. Stages of Change Readiness to Change Alcohol-Recognition scale (SOC-REC). Stages of Change Readiness to Change Alcohol-Taking Steps scale (SOC-TAKSTPS).
Table 9

*Group comparisons of URICA-A, URICA-P, and URICA-D using MANOVA*

<table>
<thead>
<tr>
<th></th>
<th>URICA-D</th>
<th>URICA-A</th>
<th>URICA-P</th>
<th>F</th>
<th>F</th>
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<tbody>
<tr>
<td></td>
<td>T1</td>
<td>T2</td>
<td>T1</td>
<td>T2</td>
<td>T1</td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Global Spirit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>8.18 (2.76)</td>
<td>8.68 (2.32)</td>
<td>6.16 (4.09)</td>
<td>5.62 (3.83)</td>
<td>8.67 (1.82)</td>
</tr>
<tr>
<td>High</td>
<td>8.80 (3.53)</td>
<td>9.32 (2.77)</td>
<td>9.01 (1.96)</td>
<td>9.13 (2.31)</td>
<td>10.12 (1.50)</td>
</tr>
<tr>
<td>Percent MI-Adherent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>7.39 (2.72)</td>
<td>8.12 (2.15)</td>
<td>6.21 (3.59)</td>
<td>6.64 (3.28)</td>
<td>8.76 (1.75)</td>
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<tr>
<td>High</td>
<td>9.43 (3.23)</td>
<td>9.76 (2.65)</td>
<td>8.77 (2.99)</td>
<td>8.00 (3.82)</td>
<td>9.94 (1.71)</td>
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<tr>
<td>Percent Complex Reflections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>8.38 (2.90)</td>
<td>8.70 (2.66)</td>
<td>7.94 (3.22)</td>
<td>8.05 (2.84)</td>
<td>9.26 (1.77)</td>
</tr>
<tr>
<td>High</td>
<td>8.60 (3.66)</td>
<td>9.40 (2.54)</td>
<td>7.04 (3.98)</td>
<td>6.32 (4.39)</td>
<td>9.70 (1.91)</td>
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<tr>
<td>Percent Open Reflections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>8.55 (3.26)</td>
<td>8.68 (2.59)</td>
<td>8.35 (3.29)</td>
<td>7.64 (3.43)</td>
<td>9.69 (1.21)</td>
</tr>
<tr>
<td>High</td>
<td>8.42 (3.09)</td>
<td>9.37 (2.51)</td>
<td>6.70 (3.58)</td>
<td>7.06 (3.87)</td>
<td>9.05 (2.31)</td>
</tr>
<tr>
<td>Question to Reflection Ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>7.97 (3.93)</td>
<td>8.98 (2.03)</td>
<td>7.10 (3.94)</td>
<td>6.56 (3.55)</td>
<td>9.27 (1.73)</td>
</tr>
<tr>
<td>High</td>
<td>9.01 (2.06)</td>
<td>9.01 (3.03)</td>
<td>8.08 (2.98)</td>
<td>8.19 (3.56)</td>
<td>9.52 (1.91)</td>
</tr>
</tbody>
</table>
Note. T1 refers to pre-MI session and T2 refers to post-MI session. University of Rhode Island Change Assessment—Drugs (URICA-Drugs). University of Rhode Island Change Assessment—Alcohol (URICA-Alcohol). University of Rhode Island Change Assessment—Problems (URICA-Problems).
A series of independent-samples $t$-tests were conducted to examine whether MI fidelity (i.e. high vs. low MITI fidelity groups) was associated with treatment engagement (number of DBT group session attended). As illustrated in Table 10, there were no differences in treatment engagement among those in the high MI Global Spirit group vs. those in the low MI Global Spirit group. There was, however, a significant difference in the number of DBT sessions attended between the high percent MI-adherent group compared to the low percent MI-adherent group. Specifically, consistent with the hypothesis, high percent MI-adherent group attended more DBT sessions ($M = 9.36$, $SD = 0.92$), $t(21) = -3.19$, $p = .008$, compared to the low percent MI adherent group ($M = 5.17$, $SD = 4.45$). These findings indicate that MI sessions involving a greater percentage of MI-adherent statements from the practitioner were associated with increased treatment engagement among adolescents with CDs. There were no differences in treatment engagement for high vs. low scores on complex reflections, percent open questions, and question-to-reflection ratio.

Finally, an independent samples $t$-test was conducted to evaluate the hypothesis that greater MI proficiency (attaining at least beginning proficiency or higher across multiple MI fidelity dimensions) would be associated with greater treatment engagement. A significant difference was found in the number of DBT sessions attended between the high MI proficiency group compared to the low MI-proficiency group. Specifically, the number of DBT sessions attended among the high MI proficiency group was greater ($M = 8.57$, $SD = 2.23$), $t(21) = -4.29$, $p = .002$, compared to the low MI proficiency group ($M = 6.56$, $SD = 4.30$). These results were consistent with the hypothesis. These finding indicate that MI sessions involving greater therapist proficiency across multiple MI fidelity dimensions were associated with increased treatment engagement among adolescents with CDs.
Table 10

*T-test analyses for number of DBT sessions attended across MITI grouping*

<table>
<thead>
<tr>
<th>Fidelity Groups</th>
<th>DBT sessions</th>
<th>M (SD)</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Spirit</td>
<td>Low</td>
<td>6.00 (4.47)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>7.69 (3.59)</td>
<td>21</td>
<td>-0.964</td>
<td>.346</td>
</tr>
<tr>
<td>Percent MI-Adherent</td>
<td>Low</td>
<td>5.17 (4.45)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>9.36 (0.92)</td>
<td>12.03</td>
<td>-3.194</td>
<td>.008</td>
</tr>
<tr>
<td>Percent Complex Reflections</td>
<td>Low</td>
<td>6.36 (4.61)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>8.38 (1.92)</td>
<td>20</td>
<td>-1.170</td>
<td>.256</td>
</tr>
<tr>
<td>Percent Open Reflections</td>
<td>Low</td>
<td>6.69 (4.46)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>7.80 (3.01)</td>
<td>20.73</td>
<td>-0.710</td>
<td>.486</td>
</tr>
<tr>
<td>Question to Reflection Ratio</td>
<td>Low</td>
<td>7.00 (3.56)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>7.31 (4.21)</td>
<td>21</td>
<td>-0.185</td>
<td>.855</td>
</tr>
<tr>
<td>MI-Proficiency Index Score</td>
<td>Low</td>
<td>2.83 (3.13)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>8.71 (2.80)</td>
<td>21</td>
<td>-4.292</td>
<td>.000</td>
</tr>
</tbody>
</table>

**Analysis for Hypothesis III**

The third hypothesis involved examining client characteristics (e.g., externalizing vs. internalizing disorders) associated with making changes following the MI intervention. As the only motivational factor that changed following the MI intervention was taking steps towards making positive changes to alcohol use (SOCRATES-Taking Steps), post-hoc analyses were conducted to explore this relationship further. As this is a preliminary study to examine the
relationship between fidelity to MI and outcomes among adolescents with CDs, a more liberal significance criterion was used, which was intended to avoid making a Type II error (i.e., a false negative). Despite conducting a number of post-hoc tests, a $p$-value of 0.05 was used to allow for further generation of research hypotheses based on the results from the current feasibility study (Saville, 1990). In addition, the decision not to use a family-wise error rate is consistent with others who have advised against using Bonferroni adjustments (Nakagawa, 2004). The post-hoc analyses involved examining differences between those adolescents who reported taking greater steps and actions towards changing their alcohol use following the MI session and those adolescents who reported no changes in taking steps or actions to change their alcohol use. Post-hoc analysis included the examination of two groups: (1) those with an increase in their SOCRATES-Taking Steps score post MI session (Changers group); (2) those with a decrease or no change in SOCRATES-Taking Steps score post MI session (Non-Changers group).

To examine whether making changes was associated with greater severity of alcohol and other drug use and depressive symptoms, an independent-samples t-test was conducted to evaluate differences between the Changers and Non-Changers in the areas of alcohol use, substance use frequency and problems, and depressive symptoms. As illustrated in Table 11, there were no differences between groups on baseline measures of substance and alcohol use frequency, problems or depressive symptoms, although an examination of the means indicates higher scores for those in the Changers group.
Further to the analysis of characteristics of those who made changes vs. those who made no changes to alcohol use, an independent samples t-test was conducted to examine whether the Changers group (i.e., showed an increase in taking steps or actions to change their alcohol use post MI session) vs. Non-Changers (i.e., showed no change or a decrease in taking steps or actions to change their alcohol use post MI session) differed in their mental health symptoms. Specifically, t-tests were conducted to examine group differences in internalizing problems, externalizing problems and total problems (YSR broadband scales). There were no significant differences between the Changers and Non-Changers groups on internalizing problems, externalizing problems or total problems (YSR broad scales).

Means and standard deviations of the individual YSR subscales for the Changers and Non-Changers groups are listed in Table 12. Regarding the YSR mental health scales, the only significant difference was for Attention Problems. Specifically, pre-MI attention problems were
greater among the Changers group ($M = 11.82, SD = 2.74$), $t(27) = -3.53$, $p = .002$, compared to the Non-Changers ($M = 8.17, SD = 2.76$). These findings suggest that those adolescents who reported taking steps towards positive changes to alcohol use following the MI session, had significantly greater attention problems at baseline compared to those who did not show an increase in taking steps to changing their alcohol use. None of the other YSR subscales were significantly different for the Changers vs. Non-Changers groups.

Table 12

*Means, Standard Deviations and t-tests Comparing Changers to Non-Changers on the YSR Subscales*

<table>
<thead>
<tr>
<th>YSR Scales</th>
<th>Non-Changers</th>
<th></th>
<th>Changers</th>
<th></th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
<td>$SD$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious/Depressed</td>
<td>15.25</td>
<td>7.07</td>
<td>16.29</td>
<td>6.44</td>
<td>27</td>
<td>-.41</td>
<td>.683</td>
</tr>
<tr>
<td>Withdrawn/Depressed</td>
<td>7.58</td>
<td>2.84</td>
<td>9.18</td>
<td>3.24</td>
<td>27</td>
<td>-1.37</td>
<td>.182</td>
</tr>
<tr>
<td>Somatic Complaints</td>
<td>8.67</td>
<td>3.75</td>
<td>8.59</td>
<td>3.26</td>
<td>27</td>
<td>.06</td>
<td>.953</td>
</tr>
<tr>
<td>Social Problems</td>
<td>7.92</td>
<td>3.09</td>
<td>8.41</td>
<td>3.61</td>
<td>27</td>
<td>-.39</td>
<td>.703</td>
</tr>
<tr>
<td>Thought Problems</td>
<td>9.42</td>
<td>5.21</td>
<td>10.47</td>
<td>3.26</td>
<td>17.03</td>
<td>-.62</td>
<td>.544</td>
</tr>
<tr>
<td>Attention Problems</td>
<td>8.17</td>
<td>2.76</td>
<td>11.82</td>
<td>2.74</td>
<td>27</td>
<td>-3.53</td>
<td>.002</td>
</tr>
<tr>
<td>Rule-Breaking Behaviours</td>
<td>14.50</td>
<td>4.60</td>
<td>14.82</td>
<td>3.76</td>
<td>27</td>
<td>-.21</td>
<td>.837</td>
</tr>
<tr>
<td>Aggressive Behaviours</td>
<td>10.25</td>
<td>2.73</td>
<td>13.18</td>
<td>5.38</td>
<td>27</td>
<td>-1.73</td>
<td>.095</td>
</tr>
</tbody>
</table>

Finally, to determine whether there were any differences in MI fidelity for the Changers vs. the Non-Changers, a series of independent samples t-tests were conducted with Changers
group as the independent variable and MI fidelity ratings as the dependent variable. As illustrated in Table 13, no significant differences emerged.

Table 13

Means, Standard Deviations and t-tests Comparing Changers to Non-Changers on MITI Index Scores

<table>
<thead>
<tr>
<th>Baseline Measures</th>
<th>Non-Changers</th>
<th>Changers</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Global Spirit</td>
<td>3.97</td>
<td>.50</td>
<td>4.22</td>
<td>.43</td>
<td>27</td>
</tr>
<tr>
<td>Percent MI Adherent</td>
<td>0.72</td>
<td>.40</td>
<td>0.85</td>
<td>.20</td>
<td>14.74</td>
</tr>
<tr>
<td>Percent Open Question</td>
<td>0.44</td>
<td>.15</td>
<td>0.43</td>
<td>.13</td>
<td>27</td>
</tr>
<tr>
<td>Percent Complex Reflections</td>
<td>0.16</td>
<td>.09</td>
<td>0.15</td>
<td>.13</td>
<td>27</td>
</tr>
<tr>
<td>Question to Reflection Ratio</td>
<td>0.83</td>
<td>.31</td>
<td>0.92</td>
<td>.40</td>
<td>27</td>
</tr>
</tbody>
</table>

An independent samples t-test was conducted to examine group differences between the changers and non-changers, in therapist level of Evocation, Autonomy/Support, Collaboration and Empathy. As illustrated in Table 14 results were not significant.
Table 14

Means, Standard Deviations and t-tests Comparing Changers to Non-Changers on M1TI Global Ratings

<table>
<thead>
<tr>
<th>MI Global Ratings</th>
<th>Non-Changers</th>
<th>Changers</th>
<th>df</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
</tr>
<tr>
<td>Evocation</td>
<td>4.10</td>
<td>.73</td>
<td>4.37</td>
<td>.50</td>
<td>27</td>
</tr>
<tr>
<td>Collaboration</td>
<td>3.85</td>
<td>.47</td>
<td>4.24</td>
<td>.56</td>
<td>27</td>
</tr>
<tr>
<td>Autonomy/Support</td>
<td>3.94</td>
<td>.57</td>
<td>4.06</td>
<td>.53</td>
<td>27</td>
</tr>
<tr>
<td>Empathy</td>
<td>3.83</td>
<td>.65</td>
<td>3.90</td>
<td>.67</td>
<td>27</td>
</tr>
</tbody>
</table>
Chapter 4: Discussion

Motivational issues have been identified as a significant factor for reducing treatment engagement and limiting treatment outcomes among adolescents with CDs (Feldstein & Ginsburg, 2006; Jensen et. al., 2011). The goal of the current study was to enhance our understanding regarding the use of MI for adolescents with CDs by addressing the following research questions: (1) Does a brief MI intervention lead to positive changes (i.e., greater motivation, readiness to change and treatment engagement) among adolescents with CDs?; (2) What are the dimensions of MI fidelity associated with changes in motivation and treatment engagement among adolescents with CDs?; and (3) What is the relationship between client characteristics (e.g., externalizing vs. internalizing disorders and baseline substance and/or alcohol use) and positive outcomes following an MI intervention?

Research Question 1: Does a Brief MI Intervention Lead to Positive Changes for Adolescents with CDs?

The first research question was to examine whether a motivational intervention would lead to positive changes (i.e., greater motivation and greater readiness to change) among adolescents with CDs. Based on previous research on the use of brief motivational interventions (Jensen et. al, 2011, McCambridge et al., 2011), it was expected that following the MI session, adolescents would show greater readiness to change their alcohol use, substance use and other problems. Research has shown that a single motivational interviewing session, in which the pros/cons of changing and not changing a behaviour are explored within a spirit of acceptance and respect for the client’s autonomy and choice, has been found to be predictive of successful changes in adolescent substance use (Barnett et. al., 2012; McCambridge & Strang, 2004). To date,
however, no previous studies have examined the use of MI as a strategy for enhancing motivation for treatment among adolescents with CDs. The current results are consistent with the prediction that the motivational intervention would lead to an increase in taking steps towards changing alcohol use. However, contrary to the initial hypotheses, recognition of problematic alcohol use did not increase following the MI session. This is inconsistent with previous findings from Tollison and colleagues (2008), who found that alcohol problem recognition increased following a single-session MI intervention among a sample of college students; however in the Tollison study the MI intervention was a single session, stand-alone intervention and was not intended as a precursor to an intensive treatment program. The single session intervention focused on an exploration of the pros/cons of alcohol use and the effects of alcohol use in an effort to reduce drinking behaviours, rather than increasing any treatment engagement.

The current findings may reflect the specific content and focus of the MI intervention that was developed for this CD study. Unlike other MI interventions, which tend to focus on making changes to substance use in particular (D'Amico, Miles, Stern & Meredith, 2008; Martin & Copeland, 2008; Tollison et al., 2008), the current intervention was intended to facilitate engagement in a CD treatment. There was a clear focus within the session on taking steps to change alcohol use via attending the DBT groups. In fact, the specific behaviour change target was group attendance and not changing alcohol or drug use in particular, although this was often discussed as part of the larger treatment discussion. Thus, although participants were not more likely to recognize that their drinking was causing them problems, they indicated greater focus on taking steps to address their alcohol use by attending the sessions and committing to the group therapy. The findings of the current study are consistent with Stein and colleagues (2006) who found that MI was effective at enhancing treatment engagement in group-based treatments
targeting crime and substance use among incarcerated adolescents. Grow (2013) also found that a pre-treatment MI intervention was effective at increasing treatment entry and engagement in relapse prevention groups among a sample of adults in an outpatient setting. Although there were no significant differences in recognition scores from pre- to post-MI in the current study, a cursory examination of scores from the current study indicate that there was a slight increase in recognition of alcohol use problems and future research with a larger sample may yield different results.

Interestingly, although participants reported taking greater steps to change their alcohol use on the SOCRATES-Alcohol, there were no similar increases in readiness to change alcohol use as measured by the URICA-Alcohol. The SOCRATES was developed to parallel the URICA, providing a measure of readiness to change alcohol problems (Miller & Tonigan, 1996). As such, it was expected that readiness to change scores on the URICA-Alcohol measure would increase in conjunction with increases on the SOCRATES Taking-Steps subscale. This discrepancy may be due to measurement differences between the SOCRATES-Alcohol and the URICA-Alcohol measures, which might measure different aspects of motivation and readiness to change. Napper and colleagues (2008) found that the SOCRATES and URICA measure somewhat different underlying constructs and found that the convergent validity of these two measures was questionable. The SOCRATES-Alcohol differs from the URICA-Alcohol in that the SOCRATES-Alcohol questions are specific to alcohol use (e.g., “I really want to make changes to my drinking” or “I was drinking too much at one time, but I’ve managed to change my drinking”). In comparison, the URICA requires respondents to consider each item within the context of alcohol use (e.g., “I am doing something about the problems that had been bothering me” and “I’ve been thinking that I might want to change something about myself” and “I’m
hoping this place will help me better understand myself"). The wording of the URICA items require respondents to rephrase the items specific to their “problem”, which may have been somewhat confusing to participants and resulted in an overall evaluation of problems rather than a specific evaluation of readiness to change alcohol use (Littell & Girvin, 2004). Currently, there is no gold standard for measuring stages of change in the substance abuse literature, and there is a lack of research comparing different measurement approaches (Napper et al., 2008). Nochajski and Stasiewicz (2005) examined differences between the URICA and the alcohol version of the SOCRATES and found moderate agreement between the two for assigning stages of change among adults, but few studies to date have examined the validity of these two measures among adolescent populations (Maisto et al., 2003).

Consistent with the findings regarding readiness to change alcohol use, there were also no pre-post changes in readiness to change drug use and problems (URICA-Drug and URICA-Problem scores) following the intervention. As noted above, these findings may be due to problems with the scales themselves. Participants may also experience varying degrees of readiness to change for different substances (e.g., Action stage for cocaine use and Pre-contemplation stage for marijuana use). Operationalizing readiness to change among individuals with poly-substance use (i.e., using multiple substances) is challenging as their readiness to change may vary depending on the substance being assessed. Raes and colleagues (2010) conducted a study with adults who were diagnosed with poly-substance abuse within an inpatient hospital setting and examined differences in readiness to change across substances. These researchers administered a separate readiness to change measure for each substance that the participants were using and found that participants endorsed different readiness to change depending on the specified drug. In the current study, only a single measure of readiness to
change drug use was administered. A significant percentage of participants in the current study met criteria for both an alcohol use disorder (93.6%) and problematic substance use (71.8%). Participants may have been at different stages of readiness for alcohol vs. drug use changes, but may have also varied in their readiness to change their use of various drugs. Future studies could address this limitation by administering a readiness to change measure for each specific drug among those with poly-substance use.

Additionally, similar to the concern raised above, the readiness to change problems measure was somewhat problematic, as adolescents did not identify what the term ‘problem’ meant to them. As a result, it is not known how participants interpreted these items and what ‘problem’ they referred to when completing the scale. Given that these were adolescents with concurrent disorders, they were likely experiencing a range of problems, including those related to their alcohol use, drug use, and their mental health concerns. Typically, when the URICA measure of readiness to change problems is administered, participants indicate the specific problem they are referring to when completing measure items; however this data was not collected and could possibly explain why the results did not support the hypothesis. Minimal studies to date have examined changes in readiness to change drug use following a brief MI intervention among adolescents with CDs and further research in this area is warranted.

Finally, another possible explanation for the number of null findings in the current study could be that MI may not be an effective intervention for increasing readiness to change or increased recognition of problems among adolescents with CDs. Additionally, the null findings could also suggest that a single-session MI intervention may inadequate for effective changes and that multiple pre-treatment sessions may be necessary among adolescents with CDs. However, given the sample size in the current study and the lower level of therapist MI
proficiency, these conclusions would be premature and further research and replication of this study would be warranted to make this conclusion.

Research Question II: Which Dimensions of MI Fidelity Were Associated with Treatment Engagement and Readiness to Change?

The second objective of the study was to determine whether specific MI dimensions and MI fidelity were associated with changes in treatment engagement, recognition, taking steps, and readiness to change. It was predicted that greater use of MI-adherent statements would result in greater treatment engagement. In the current study, treatment engagement was operationalized as DBT group attendance. The results supported this prediction; greater treatment engagement was associated with the therapist using a greater proportion of MI-adherent vs. non-adherent statements. These results are consistent with findings from the literature (Cox et. al., 2011; Van Keulen, Meisters, Van Breukelen, De Vries, & Brug, 2010), but also extend previous findings by providing evidence for the importance of a particular therapist behaviour. For example, Carroll and colleagues (2006) found that the use of MI in general was associated with greater early retention in treatment and suggested that the use of MI in the earliest phases of treatment can have positive effects on retention over the course of treatment. Similarly, Bailey, Baker, Webster, and Lewin (2004) found that adolescents who were engaged in an MI session prior to CBT treatment were more engaged in treatment and showed significant reductions in alcohol use.

In contrast, Walker and colleagues (2006) found that a motivational enhancement intervention did not significantly increase engagement for marijuana treatment in a sample of adolescents. The Walker et al. study is consistent with a few other studies that have found
minimal or no effect of an MI intervention on treatment engagement (Sussman et al., 2011; Winhusen et al., 2008). However, these studies failed to examine fidelity to MI and poor MI fidelity might explain some of the inconsistent findings in the literature. One of the primary purposes of the current study was to better understand the relationship between MI fidelity and treatment outcomes.

The current findings highlight the importance of MI adherent statements as part of the overall spirit of MI and suggest that MI adherent statements might be particularly important for adolescents with CDs. MI-adherent statements include attempts by the practitioner to ask permission of the client before offering information, affirming the client’s strengths, abilities or efforts, and emphasizing their control, freedom of choice and ability to make decisions independently (Miller & Rollnick, 2012; Moyers & Martin, 2006). MI-adherent statements may be particularly important due to their alignment with the developmental tasks of adolescence, which include autonomy seeking and independence. MI-adherent statements convey respect for the adolescent’s values and goals and may have the effect of reducing resistance and subsequently increasing treatment engagement (Naar-King, 2011).

In addition, the nature of concurrent disorders may further contribute to the importance of MI adherent statements. Adolescents with CDs are more likely than others to have experienced failed attempts at making changes in treatment (Ziedonis & Trudeau, 1997) and previous research has shown that MI may be particularly useful for those who have experienced rejection or societal pressures for attaining recovery (Hettema, Steele, Miller, 2005; Lundahl, Kunz, Brownell, Tollefson, & Burke, 2010). Although specific data regarding the treatment history of participants was not included in the current analyses, a review of the MI sessions revealed common themes in the content of sessions among the adolescents who were involved in the
treatment. The majority of adolescents reported significant experience with the mental health and child welfare service systems and this previous system involvement may have resulted in the clients feeling demoralized or unsure of whether treatment could be useful. The use of MI adherent statements promotes connection and collaboration and may increase the therapeutic alliance, thereby increasing trust in the treatment process (Miller & Rollnick, 2012). Future studies should examine this relationship further, exploring from the client’s perspective whether MI adherent statements are associated with greater therapeutic alliance and whether previous treatment history moderates this relationship.

It might also be the case that the relationship between MI-adherent statements and treatment engagement is due to using MI-adherent statements that affirm client’s strengths, efforts and ability. These qualities have been associated with building self-efficacy and confidence (Miller & Rollnick, 2002). Self-efficacy is an essential element for behaviour change within the MI framework (Rollnick, Miller & Butler, 2007). Research with adolescents with CDs has demonstrated that confidence in the ability to change substance use is predictive of readiness to change (Apodaca, Abrantes, Strong, Ramsey, & Brown, 2007; McMillan, 2000). Brown and colleagues (2003) conducted a randomized control trial comparing an MI intervention to brief advice for adolescents hospitalized due to a concurrent mental health and substance use disorder. The MI intervention consisted of two individual sessions (45-minute sessions) and the brief advice was only 5 to 10 minutes. The MI intervention was found to be more effective at increasing self-efficacy compared to the brief advice; furthermore, the MI intervention was more effective for those adolescents with little or no intention to change their smoking. Walpole and colleagues (2013) found contrary results in a randomized controlled trial, which was designed to determine whether adolescents receiving MI along with a standard care program (nutrition and
physical activity behaviours) would significantly increase in their self-efficacy and sustain behaviour changes in comparison to a control intervention (social skills training). These researchers found that the MI intervention was not more effective at enhancing self-efficacy compared to the control condition. Apodaca and colleagues (2007) conducted a similar study examining the use of MI to increase adolescent’s readiness to quit smoking and found that confidence was associated with greater readiness to quit. In the current study, there was an explicit focus on self-efficacy and clients were guided through an exercise in which they rated their confidence to make changes using the “confidence ruler.” Although the specific use of MI behaviours during various components of the current intervention were not assessed, this exercise involves reviewing past successes and identifying the client’s resources to make changes, which often requires the use of MI adherent statements. Future research examining whether self-efficacy moderates the relationship between MI-adherent statements and treatment engagement would provide a more nuanced understanding of the mechanisms through which MI adherent statements contribute to changes.

In the current study, individual scores for higher percent of open questions, percent complex reflections, and question-reflection ratio were not associated with greater adolescent treatment engagement. These results are consistent with Gaume and colleagues (2009) who found that open questions were not related to change outcomes in a sample of adults from an outpatient hospital setting who received a brief MI intervention targeting hazardous alcohol use. However, the current findings are in contrast to several other studies in the MI literature, where previous researchers found that specific MI behaviours were associated with better outcomes. For example, Knittle and colleagues (2015) found that the ratio of questions-to-reflections was predictive of change outcomes in a study of motivation to change physical exercise. Similarly,
percent complex reflections have been identified as a significant predictor of change in substance use (Gaume et al., 2009; McCambridge et al., 2011; Knittle et al., 2014).

Complex reflections in particular can be helpful for identifying unstated barriers and/or challenges of participating in treatment and facilitating subsequent treatment engagement. Complex reflections go beyond what the client has verbalized within a session; with complex reflections, the therapist captures what is implied by the client’s statement, emphasizing the emotion, the values, the ambivalence or continuing the client’s thought in the direction of change. Complex reflections often become more comfortable later in MI training. In the current study, the average percent complex reflections (16%) was below beginning proficiency standards (40%) as recommended in the MITI. The low percentage of complex reflections may explain the lack of findings regarding percent complex reflections and the reflection to question ratio. In previous studies, the percent complex reflections was much higher and ranged from 42% to 60% (McCambridge, Day, Thomas & Strang, 2011). Because the current study was a feasibility study, there was no set level of proficiency required prior to initiating the MI sessions. This likely impacted scores on the more nuanced MI skills, such as complex reflections.

Reflections are considered the cornerstone of MI. Miller and Rollnick (2002) originally suggested that skilled MI practitioners use a ratio of more reflections to questions, but current discussions of MI emphasize not only the quantity of reflections, but the quality of reflections and, in particular, the use of complex reflections that are directed towards resolving ambivalence about change (Miller & Rollnick, 2012). Similarly, open questions can range in quality. Questions that elicit change talk or more evocative questions that reveal the pros and cons of change may be more powerful than open questions that are not specifically directed at exploring the change process (Tollison et al., 2008). Evocative questions used in combination with
complex reflections may be essential for facilitating treatment engagement, but are not part of current ratings of MI fidelity. Further exploration of the rhythm of questions and reflections rather than a specific ratio, may provide an in-depth understanding of the association between question-to-reflection ratio and treatment engagement. For example, the timing of questions and reflections might be important rather than the overall count of these behaviours (e.g., asking several questions in a row compared to asking a question and then reflecting).

One interesting and important relationship that emerged from the current study was the relationship between total MITI proficiency as assessed by the index score (i.e., Percent MI-adherent, percent complex reflections, percent open questions and question-reflection ratio) and adolescent treatment engagement. Higher proficiency scores across multiple dimensions were associated with greater group attendance. Within the MI literature there has been significant discussion about the ‘Gestalt’ or overall MI attitude that is part of the successful delivery of MI (Gaume, 2009, Knittle et. al., 2014). MI trainers and practitioners emphasize that, although the technical skills are necessary for MI, it is the overall MI spirit (i.e., practitioner interpersonal style) that is important for positive outcomes (Miller & Rollnick, 2012). Interestingly, in the current study Global MI Spirit was not significantly associated with treatment engagement, which is inconsistent with findings from other studies of MI fidelity (Knittle et. al., 2014; McCambridge & Strang, 2011). However, most sessions in the current study received MI Spirit ratings between three and five, indicating that there was little variability in MI spirit, which might explain the non-significant findings. Instead, it might be that the proficient use of several MI skills better captures the integration of multiple MI techniques to guide change. These results are consistent with the literature, which has suggested that, when it comes to MI, the “whole is greater than sum of its parts” (Resnicow et. al., 2002, pp.449). Emphasizing the quantity of
questions and reflections may not fully capture the process through which MI contributes to
treatment engagement. The use of a MITI index score has clear benefits over the use of
individual behaviour counts for assessing MI fidelity and may be the best measure of the overall
use of MI, rather than the independent use of single MI-consistent behaviours.

**Research Question III: What is the Relationship Between Client Characteristics (e.g.,
Externalizing vs. Internalizing Disorders) and Positive Outcomes Following the MI
Session?**

Taking steps to change alcohol use was the primary outcome that changed following the MI
session. Specifically, there was an increase in taking steps to change alcohol use from pre to
post-MI. To further explore specific client characteristics associated with change following the
MI intervention, a series of analyses were conducted. Changers and Non-Changers were
compared on several substance use and mental health variables and the findings revealed that
adolescents who made progress on taking steps had significantly more attention problems at
baseline. The attention problems subscale of the YSR is commonly used as an indicator of
possible ADHD symptoms. Previous studies have found that those with ADHD may be more
likely to use alcohol excessively compared to individuals without ADHD (Smith, Molina &
Pelham, 2002; Weiss & Hechtman, 1993). Although excellent discriminant validity has been
found between YSR attention problems subscales and other internalizing disorder subscales,
research by Ivarsson and colleagues (2002), suggested that the attention problems subscale was
highly correlated with several other internalizing mental health issues such as depression
(Ivarsson, 2002). These findings suggest that the attention problems could serve as a proxy for
other mental health diagnoses and be a potential indicator of greater symptom severity, which
has been associated with greater motivation to change.
None of the substance use or MI fidelity scores were associated with increased taking steps following the MI intervention. It may be the case that other client factors, which were not explored in the present study, could explain why the MI intervention was effective for some adolescents (i.e., those who changed vs. those who showed no change in taking steps). Within the literature, several client characteristics have been studied as possible moderators of the efficacy of brief MI interventions. For example, Barnett and colleagues (2003) examined client characteristics as moderators of the efficacy of a two-session brief MI intervention for alcohol use in a hospital emergency department and found that the perceived seriousness of the event which led to the emergency room visit, amount of alcohol use prior to the event, the client’s attribution about the role of alcohol in the event, and readiness to change alcohol use were all significant moderators of MI efficacy. Although Barnett et al. (2003) did not find a moderating effect for gender, other researchers have found gender differences, although the findings have been inconsistent, with some studies indicating that women are more responsive to MI interventions compared to men (Blow et al., 2006) and others indicating that men are more responsive than women (Anderson & Scott, 1992). Due to the small number of men in the current study, it cannot be determine whether young women would respond better to this intervention than young men. In addition, there might be other moderators that are specific to adolescent CD populations, such as specific mental health diagnoses, severity of mental health symptoms and possible poly-substance use. Randomized control studies examining client differences of mental health severity and substance use would further elucidate these preliminary findings. Additionally, exploring beliefs about the seriousness of substance related consequences and gender differences among adolescents as moderators of treatment efficacy could promote improved intervention implementation.
Limitations

This study is one of the first to examine the relationship between therapist fidelity to MI and treatment outcomes in a sample of adolescents with CDs. The intervention was developed specifically to elicit ideas about change that address the adolescent’s concurrent concerns. Although this is an important first step in identifying aspects of MI that are important for addressing readiness to change and treatment engagement among adolescents with CDs, several limitations should be noted.

**Lack of a Control group.** Because the current study was designed as a pilot study and was part of a larger study on the feasibility of implementing a pre-treatment MI in a community mental health setting, there was no control group (e.g., psycho-education or waiting list controls). As a result, no conclusions can be made regarding the efficacy of MI relative to other treatments or relative to no treatment. Without a control group it is not possible to determine whether the MI intervention itself is responsible for the significant effects (i.e. greater taking steps to change alcohol use) or whether these changes would have occurred, regardless of the MI intervention. However, it should be noted that the findings regarding MI fidelity are not limited by the lack of a control group. Nevertheless, future studies should employ a randomized controlled design to establish whether a brief MI intervention for adolescents with CDs is effective for enhancing motivation to change relative to a control.

**Duration of MI sessions.** At the beginning of the study, adolescents attended two MI sessions (each session was 60-minutes in length) within a two to three week period prior to group treatment. As the study continued, these two sessions were condensed into one single 90-minute session incorporating the same content from the two-session MI protocol. This change in session
length reflects the overall design of the larger study, which was to develop an intervention that was feasible to administer to adolescents with CDs in an outpatient setting. Scheduling and logistical issues with coordinating three individual sessions (i.e., two MI sessions and one DBT introductory session) prior to group treatment became a challenge and the decision was made to conduct a single-90 minute MI session on the grounds of feasibility. Although the same content was discussed in both formats, it is uncertain whether this had a differential impact on outcomes. The number of participants who received two sessions was small ($N=11$), therefore examination of differences between those who received two versus one single MI session was not possible. A future study comparing a single session MI intervention versus multiple sessions would identify whether multiple MI sessions is necessary to increase treatment initiation and attendance. Given the complexity of concurrent mental health and substance use difficulties, additional sessions could prove useful and further research is warranted.

**Concurrent diagnosis.** Within the CD literature, internalizing disorders (e.g., depression) and externalizing disorders (e.g., ADHD, Conduct Disorder) have been found to differentially influence motivation (Storr, Pacek, & Martins, 2012). Symptoms of depression include apathy and amotivation and adolescents experiencing depression may be more likely to drop out of treatment (Feingold, Weiser, Rehm, Lev-Ran, 2015; Khantzian, 1997). Other studies have noted the opposite effect, whereby internal distress serves to increase motivation as treatment engagement and/or adherence could lead to depressive symptom relief (Kaminer et. al., 1992; Tapert et. al., 2003). Within the literature, adolescents with externalizing disorders (ADHD, Conduct Disorder) and CDs involving externalizing problems (i.e., aggression) tend to have poorer treatment retention compared to those with internalizing disorders (Winters, Stinchfield, Latimer & Stone, 2008) and shorter lengths of stay in treatment (Adams & Wallace,
In the current sample, a significant number of participants reported both externalizing and internalizing mental health issues; thus, we were unable to examine the independent effects of internalizing vs. externalizing problems. Future research could explore these differences by examining differences in MI treatment effects among those with different CD combinations, such as internalizing + SUD, externalizing + SUD, and combined internalizing-externalizing + SUD.

Similarly, in the current study, we were unable to examine differential responses to treatment for those with various types of SUDs. A significant proportion of participants met criteria for an alcohol use disorder (93.6%) and problematic substance use (71.8%), which excluded any analyses looking at single substance SUDs (i.e., alcohol use disorder only) vs. poly-substance SUDs. Previous researchers have found that greater adolescent substance use were related to greater levels of motivation to change (Austin, Hospital, Wagner, & Morris, 2010; Vik et al., 2000); however most of these studies focused on one substance rather than multiple substances (i.e., alcohol in both studies). In contrast, Battjes and colleagues (2003) found no association between substance use severity and motivation and examined a sample of adolescents within an adolescent outpatient substance abuse treatment setting and studied multiple substances. In the current study, due to the brief nature of the single MI session, clients were more likely to focus on their primary substance (e.g., alcohol) with less discussion of other secondary substances. Although the current study highlights that research in the field is often complicated and rarely do clients present with very specific profiles of mental health and/or substance use issues, to better understand how to tailor MI for different populations, further research should explore the association between poly-substance use and MI fidelity.
In the current study, the rationale for implementing the MI intervention as a precursor to the DBT group therapy was to increase treatment engagement, which was measured based on the number of DBT sessions attended. Pullman and colleagues (2013) suggest that this definition of treatment engagement may be incomplete, especially with adolescent populations since compliance and attendance in therapy could be a result of family, court, school or other systemic demands rather than actual intrinsic motivation. In the current study, adolescent participants may have been involved with other service systems, but none were mandated for treatment and all participated on their own volition. Nevertheless, treatment engagement assessed by treatment initiation and attendance can be considered behavioural domains that may not capture authentic engagement (i.e., verbalized understanding of group content, attitude to treatment, application of skills). An attitudinal component of treatment engagement would be an interesting area of research, since MI is characterized as a collaborative and client centered approach that is intended to enhance intrinsic motivation to change.

**Drop outs.** The current study did not examine therapist MI fidelity among those who received the MI session and did not attend group (i.e., those who dropped out). Due to the low number of participants in the sample, we were unable to explore this question. Two participants attended the MI session and did not initiate the group treatment and it would be interesting to explore dimensions of MI fidelity within this sub-group of participants. Examining client characteristics (i.e., substance use severity, mental health symptoms and baseline motivation) within this sub-group would be useful for informing assessment practices and identifying risk factors for low treatment initiation.

**Sample size, power analysis, and variability.** One of the major limitations of the current study was the small sample size (N=32). Previous studies examining the relationship
between MI fidelity and outcomes have used samples sizes ranging between 65 and 95 participants (Gaume, Gmel, Faouzi, Daeppen, 2009; McCambridge et al., 2011; Tollison et. al., 2008). Thus, the current sample size is lower than what is typical for studies of MI fidelity. Furthermore, because this study was part of a larger study on the feasibility of implementing MI and DBT within larger adolescent service systems, no power analysis was completed prior to data collection. In addition, there are no previous studies of MI for treatment engagement among adolescents with a CD. Thus, the goal of the current study was to determine whether MI and fidelity to MI would be associated with increased treatment engagement. This study was exploratory and utilized a more liberal approach to Type I error, focusing instead on avoiding Type II errors. Thus, future studies with larger samples and more diverse samples are needed.

**Client assessment measures timing and delivery.** Another significant limitation of this study was variability in the timing for the administration of measures. For some adolescents, the post-test assessments were administered immediately after the MI session or two weeks later. For others, the post-test assessment was administered just prior to the DBT group start date. Because some measures were administered immediately after the MI session, participants may not have had enough time to consider and reflect on what was discussed in the session, which may have contributed to the lack of findings regarding recognition and readiness to change. Longer-term outcome evaluation (i.e., time following the intervention) has been suggested as an important aspect related to the strength and effectiveness of an approach (McCambridge & Strang, 2005), and it is possible that the limited amount of time between the end of the MI session and completion of outcome measures was inadequate for significant changes to emerge in readiness to change alcohol, drug, and general problems. The only variable that was timed consistently
across participants was treatment engagement (i.e., number of DBT sessions), which did emerge as an important outcome of the MI intervention.

**Additional Areas for Future Research**

This current study focused on therapist utterances and not client statements during the MI intervention session. Within the literature, client statements that reflect a need, desire and reasons to change – referred to in the literature as ‘change talk’ – have been shown to be an important predictor of client outcomes and potential mediator of the effects of MI (Amrhein, et al., 2003). Client change talk statements involve clients arguing for change (e.g., “If I smoked less marijuana then I wouldn’t feel so foggy”). These statements are in contrast to sustain talk statements, which involve clients arguing for the status quo (e.g., “I don’t think my marijuana use is a problem”). One major goal of MI is to elicit and promote client change talk and reduce sustain talk through the use of open-ended questions, reflections, affirmations and summaries (OARS; Miller & Rollnick, 2012). Expressing more change talk is indicative of readiness to change in clients, whereas sustain talk reflects ambivalence towards change (Barnett et al., 2014). Several studies have evaluated the relationship between adolescent change talk and MI outcomes and have found that the frequency of change talk is associated with fewer substance use days (Amrhein, Miller, Yahne, Palmer & Fulcher, 2003) and fewer drinks per week (Bertholet et al., 2010). Studies examining sustain talk have found that more sustain talk statements are associated with poorer drinking outcomes (Vader, Walters, Pradbhu, Houck, & Field, 2010) and fewer days of abstinence following treatment (Baer et. al., 2008). These results highlight that change talk in particular is an important indicator of MI effectiveness and future studies should examine the association between MI fidelity and client change talk among adolescents with CDs.
Within the literature there is limited research examining the client’s subjective experience of MI spirit and subsequent outcomes following a brief MI intervention. Research has found that the client’s subjective experience of the therapeutic alliance can influence treatment outcomes (Shirk & Karver, 2003). The term convergence is a theoretical construct, defined as the two-way process whereby differences in client and therapist perspectives, beliefs and judgments are lessened. Greater convergence has been identified as a significant predictor of treatment outcomes (Swift & Callahan, 2009). Understanding the relationship between client’s ratings of therapeutic alliance and MI spirit and its impact on subsequent treatment outcomes is an important area for future research. For example, a future study could examine agreement between client and therapist global ratings of MI spirit and the association with treatment engagement and treatment outcomes. These findings would allow us to understand whether the convergence of the client’s subjective experience of MI spirit and the practitioner’s self-ratings of MI spirit, influence the client’s engagement in treatment.

Clinical Implications

MI was developed as an intervention to increase commitment to change and enhance treatment engagement, retention and outcomes. Within the literature there is limited research regarding the effectiveness, feasibility and sustainability of delivering a brief MI intervention to adolescents with CDs. The findings of this study provide some important preliminary implications that MI is a feasible and effective intervention for adolescents with CDs, highlighting that a brief motivational intervention can increase taking steps to change alcohol use. Additionally, the results of this study identify the importance of exploring specific dimensions associated with MI fidelity. In the current study, greater MI fidelity (i.e., total MITI index score) was associated with greater treatment engagement. Practitioners learning to apply
MI techniques may benefit from less focus on specific technical skills (questions and reflections) and a greater focus on the integration of these skills, emphasizing that the whole is greater than the sum of its parts.

However, in considering specific MI techniques, the current findings highlight the important role of MI-adherent statements, which emphasize the client’s autonomy and freedom to make independent decisions and convey to the adolescent that their values, thoughts and opinions are respected. Adolescents may be more likely to see value in attending treatment sessions when they feel that their opinions are validated and have a meaningful impact on the session. Prescriptive styles of treatment where the practitioner advises the adolescent as the expert, typically lead to increased resistance and reduced treatment engagement. MI adherent statements, even during a brief intervention, may allow clients to feel personally invested and shift the decision making power to the client.

One of the main ways MI practitioners emphasize the client’s control and decision-making is through the use of the ‘elicit-provide-elicit’ technique, which involves first eliciting from the client their ideas about change, then asking for permission from the client before providing information and then eliciting from the client their ideas about the information itself (Rollnick et al., 2008). For example, when addressing the relationship between alcohol use and depression, the therapist might ask the client: “What do you already know about the effects of alcohol on depression?” Once the client has provided their own thoughts, the therapist would then fill in the gaps (“There are some other things about alcohol use that can impact depression – is it okay if I share some of these with you?”). This provides the adolescent with the opportunity to decide whether or not they want the information and increases their autonomy to accept (or reject) the therapist’s input. Finally, after the practitioner shares the information, they would
elicit the client’s view regarding the information discussed (e.g., “What are your thoughts on what I shared?”). Given the developmental stage of this group, adolescents might benefit from therapist’s use of MI-adherent statement that involve: 1) affirming the client’s strengths and abilities; 2) emphasizing their autonomy and ability to decide; 3) supporting the client with statements of compassion; 4) asking for permission before engaging in a task or giving information.

As a result of the complexity of their symptoms, adolescents with CDs are more likely to have received multiple diagnoses and may have experienced feelings of defeat, failure, low self-efficacy in their abilities. Many treatment services incorporate a deficits-based model where assessment and treatment target deficits with less attention to the client’s strengths. However, the results of the present study suggest that highlighting a client’s strengths and abilities using affirmations can have a significant impact on treatment engagement. As individual practitioners, shifting our treatment perspective from an entirely deficits based model (i.e., focusing on client’s weaknesses) to additionally focusing on a more strengths-based approach could be useful at promoting treatment engagement and retention among adolescents with CDs.

**Summary and Conclusions**

MI is an evidence-based method for enhancing treatment engagement and reducing substance use among adolescents (Naars-King & Suarez, 2011). There is growing evidence from the adult literature that prefacing evidence-based treatments with brief MI interventions may be a useful method for engaging individuals in treatment. To date, there have been limited studies to examine the effectiveness of MI as a pre-treatment intervention among adolescents with CDs. The current pilot study was embedded within a larger feasibility study examining a MI as a brief,
pre-treatment intervention for adolescents with CDs. The results indicate that a brief MI intervention can increase taking steps to change alcohol use and, when MI involves more MI adherent statements and is delivered with greater proficiency, it will contribute to greater treatment engagement. These findings are consistent with the literature that has suggested that the skilful use of MI involves less of a focus on technical skills and a greater focus on the integration of both MI spirit and skills, emphasizing that the whole is greater than the sum of its parts. Future studies exploring the effectiveness of a brief MI intervention using a randomized controlled study design would further elucidate the relationship between MI fidelity and outcomes among adolescents with CDs.


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Appendix A: MI session outline

Overview

Motivational Interviewing (MI) is a systematic intervention approach for evoking change. According to Miller and Rollnick (2002), MI is “a client centred, directive method for enhancing intrinsic motivation to change by exploring and resolving ambivalence.” Thus, MI is based on the idea that ambivalence is a normal stage in the change process and that it is at the heart of motivation. The treatment employs motivational strategies to mobilize the client’s own change resources. It may be delivered as an intervention in itself or used as a prelude to further treatment. This manual was prepared for MI offered to adolescents with concurrent disorders as a prelude to group treatment (DBT). Several researchers have suggested that MI interventions are particularly well suited to adolescents. MI approaches are a good fit for some of the developmental struggles of adolescence, such as increasing autonomy and individuation. The approach is respectful, non-confrontational, and non-judgmental. It acknowledges ambivalence and emphasizes personal choice in an attempt to enhance motivation for change.

Rationale and Basic Principles

The MI approach begins with the assumption that the responsibility and capability to change lie within the client. The therapist’s task is to create a set of conditions that will enhance the client’s own motivation for and commitment to change. MI seeks to support intrinsic motivation for change, with the goal of having the client initiate, persist in, and comply with behaviour change efforts.

Miller and Rollnick (2002) have described five basic principles that underlie this approach:

1. **Express Empathy**
   - Acceptance frees people to change
   - Reflective listening
   - Ambivalence is normal

2. **Develop Discrepancy**
   - Develop discrepancy between client’s current behaviour and self-defined goals and values
   - Goal is to direct the client towards a resolution of ambivalence, in the direction of readiness to change, without using pressure or coercion
   - It is the client who presents the reasons (and hence desire) for change

3. **Avoid Argumentation**
• Non-confrontational – avoid arguing

4. Roll with Resistance
   • Reframe resistance to create momentum for change
   • Use resistance as a marker for changing the approach

5. Support Self-Efficacy
   • Self-efficacy = belief in own ability to carry out and succeed with a specific task
   • Enhance confidence to cope with obstacles
   • Expressed belief in client’s ability to change (self-fulfilling prophecy)

In addition to the five key principles of MI, there is a set of MI skills that are often employed in the context of more structured MI approaches. This treatment manual involves several exercises that guide the two MI sessions. It is important to note, however, that MI skills should be used while engaging in these structured activities. Specifically, the MI skills can be summarized with the acronym: OARS.

Open-ended questions

Affirmations

Reflections

Summaries

Finally, a key feature of MI is that it is a directive intervention: “In MI, the counsellor strategically listens for, elicits, and responds selectively to certain forms of speech that are collectively termed ‘change talk’.” (Miller & Rollnick, 2009). The structured exercises throughout this manual are intended to move the client forward in the change process by helping the client to resolve his/her ambivalence about change (i.e., tip the balance in favour of change) and to elicit change talk from the client.

Remember, change talk is DARN-C:

Desire to change – I want, I wish

Ability to change – I can, I think I could

Reasons to change – It would be better, I’d be less anxious

Need to change – I should, I must, I have to

Commitment to change – I will, I’m going to, I intend to, I’ll try
When you hear change talk, it is important to reinforce it (  

, “So changing your substance use is something you’ve thought about and you’re wondering now what you might do to make some changes”).

Note: Throughout the manual, the content of the sessions (i.e., the session guide) is presented in bold. Possible prompts (i.e., possible responses or probes for elaboration) are presented in bold, but are in boxes.
MI SESSION OUTLINE

The session is divided into two phases. The goal of phase I is to explore the client’s ambivalence about substance use and seeking treatment for CD, with a focus on resolving ambivalence and eliciting reasons for change. The goal of phase II is to increase commitment to change and plan for treatment.

Phase I:

1. Rapport building, introduce MI session
2. Begin to understand client’s motivation for treatment – what brought them here
3. Decisional balance exercise – reviewing pros/cons of substance use and pros/cons of starting treatment for concurrent disorders
4. Addresses substance use, problems with substance use, mental health symptoms and their interaction

Phase II:

5. Develop discrepancy between substance use and goals and values via the things that are important to me exercise – review goals and values (choose three) and discuss how substance use and mental health concerns interfere with these goals/values or how continued substance use interferes with goals/values that reflect improved mental health
6. Assessing importance of starting treatment for concurrent disorders
7. Assessing confidence for changing substance use
8. Discuss change plan
9. Set stage for orientation session

Setting the stage

I’m glad you could make it today. You may already have some information about what we’ll do today and at our next meeting, but I’d like to tell you a bit more if that’s okay.

We’ll spend time talking about your [alcohol and/or drug] use and some of the other issues you mentioned in the assessment like [feeling sad, having trouble in school, having a hot
temper, being shy, etc.)¹. I’m interested in hearing about your reasons for wanting to start treatment and any concerns you have about starting. But mostly I want to listen to what you have to say and make sure I have a good understanding of what’s happening for you. How does that sound?

It’s important to get a sense of the client’s motivation for treatment (i.e., how did they end up in your office). Although there is a set agenda for the session, the basis of MI is the empathic, collaborative relationship. The first phase should focus on building rapport with the client and beginning to elicit from them their reasons for change (or their reasons for wanting to maintain status quo). This initial phase also allows for an assessment of the client’s readiness to change.

Start with an open-ended query to explore the client’s motivation for seeking treatment:

**So, what brings you here today?**

**What made you decide you’d like to take part in this?**

**Decisional Balance Exercise:**

*But Not All Clients Are Ambivalent...*

The goal of the decisional balance exercise is to further elicit from clients their own ideas about change. It is assumed that the client is ambivalent about making changes, but not all clients will be ambivalent – some are already motivated to make changes and have thought through many of the consequences of their use and the positive things about pursuing treatment. It is best not to focus extensively on the “good” things about using with these clients since the goal is to enhance and reinforce commitment to change in those already fairly committed.

For those clients who are in pre-contemplation or contemplation (i.e., they are not yet thinking about change or are still ambivalent about it), this exercise is a good opportunity to facilitate insight into some of the consequences of substance use and its relationship to mental health issues.

The goal here is to explore the pros/cons of substance use and the pros/cons of starting treatment with a specific emphasis on the relationship between substance use and mental health symptoms.

**Using Elicit-Provide-Elicit and Providing Feedback from the Assessment**

¹ These symptoms will come from the screening measures. For example, symptoms of depression on the YSR include “I don’t have much energy” “I am unhappy, sad, or depressed” “I cry a lot” – these should be used to provide feedback to the client regarding some of the mental health concerns they may be experiencing.
Some clients will come up with many consequences of their substance use. For others, you might provide some feedback on their consequences (based on their responses to the questionnaires). In these cases, you can use Elicit-Provide-Elicit to first elicit from clients their ideas about problems, then provide information based on the assessment and then elicit the client’s thoughts about these consequences, encouraging further exploration and establishing a link between substance use and mental health symptoms.

**Introduce the Decisional Balance**

I’d like to start by talking you about some of the reasons you use [alcohol, marijuana, other drugs]. Would that be okay?

**WORKSHEET**

Drug/Alcohol Use: Positives and Negatives

Starting Concurrent Disorders Treatment: Positives and Negatives

**Reasons for Use**

Start by prompting the client to tell you about some of their reasons for use – the positives about using substances

**What are some of the good things about using [alcohol, other drugs].**

<table>
<thead>
<tr>
<th>Possible Prompts for Reasons for Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most teens have little difficulty identifying their reasons for using alcohol and other drugs. But some might need some prompting to help them verbalize these reasons or just to get them talking.</td>
</tr>
<tr>
<td>Tell me about the last time you used alcohol or drugs – what was happening? What made you decide to use at that time?</td>
</tr>
<tr>
<td>When do you usually use alcohol or drugs (at night, with friends, before bed, etc.)? What do you hope to get out of using (at night, with friends, before bed)?</td>
</tr>
<tr>
<td>What do you like about how alcohol or drugs make you feel/think/act?</td>
</tr>
<tr>
<td>This is also a good opportunity to help the client make a connection between their alcohol/drug use and their mental health symptoms. You might bring in some information from the assessment here.</td>
</tr>
<tr>
<td>For example, for a client whose primary symptoms are within the internalizing cluster – mostly related to anxiety or depression, you could elicit some ideas about the connection between their anxiety and their substance use:</td>
</tr>
</tbody>
</table>
How is your drinking connected to some of the feelings of anxiety that you mentioned during the assessment? What’s it like when you use alcohol when you’re feeling anxious?

Eliciting Reasons For Change

What are some of the not-so-good things about using [alcohol, other drugs].

This is a good opportunity to use elicit-provide-elicit and give feedback from the questionnaires. If the client has difficulty coming up with some not-so-good things, you might be more specific and elicit consequences in specific areas:

How has your [alcohol, drug use] affected your:

School

Friendships

Relationships with family

Health

Sleep

Symptoms of [depression, anxiety, attention problems, other relevant mental health symptoms]

You can also draw on the consequences that the client mentioned in the assessment and ask for some elaboration – you don’t need to list them all off, but this is a good way to begin to elicit some more ideas from the client about how their substance use is causing them problems:

As part of the assessment, you filled out some questionnaires about some of the problems you’ve had with [alcohol, drug use]. Is it okay if I share some of those with you?

Summarize findings from the AUDIT

You mentioned that your alcohol use has led to:

Summarize findings from the DAST

You mentioned that your drug use has led to:

You can request elaboration to generate further ideas from the client:

You mentioned that it is an issue with your parents. Can you give me an example of that? What’s that like for you?
When was the last time you missed school because of your drinking? What happened that day? How did you feel?

You’ve been using marijuana because it helps you get to sleep. What does it feel like the next day? What’s it like for you after a week? Have you noticed any differences in your mood or your energy since using marijuana to help you sleep?

Eliciting Concerns About Treatment and Reasons to Start Treatment

Okay, now let’s move over to this section, what are some of the not so good things about starting treatment? These may be things you’re worried about, things that make you feel uncomfortable or uneasy, or just thoughts you have about treatment.

The goal with this section is to answer some of the client’s questions about treatment and address some of their concerns to help tip the balance in favour of change. Keep in mind that this is a conversation about change and worries about treatment are very normal, but can contribute to feelings of ambivalence. It is helpful to normalize these feelings with clients. Again, you can provide information about the group, but consistent with MI, this should be done in a collaborative way.

For example:

Client: I’m worried that it will be weird to talk about this stuff in front of strangers.

Therapist: You’re wondering how it will feel to share these personal things with other people who don’t know you.

Client: Yeah – like maybe they’ll judge me. Or maybe they’ll think I have more problems than they do – or that I don’t really have any problems.

Therapist: It’s uncomfortable talking about this stuff with other people.

Client: Yes, I’m not used to it.

Therapist: Lots of people have these kinds of worries about the group – wondering how others will react to them and whether they’ll be judged. These are really common things to be thinking about as you prepare to start the group. What would be helpful for you to know about the group that might ease some of these worries a bit?
Now we’re at the last section. What are some of the good things about starting treatment?

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<th>You can help the client make a connection between some of the consequences of his/her substance use and some of the positive things about starting treatment. This is also a good opportunity to explore expectations about treatment and elicit from the client some ideas about how treatment might be helpful, particularly in relation to some of the mental health symptoms that were identified on the YSR.</th>
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You can use this as an opportunity to review some of the client’s mental health symptoms and make connections to the benefits of treatment:

**During the assessment, you mentioned that you’ve had problems with:**

[Worrying, poor sleep, sadness, attention, getting in trouble at school, etc.]

You can also make a connection between substance use and mental health symptoms:

**You mentioned that using marijuana when you’re tense is something that’s important to you and that one of the negative things about starting treatment would be that you’re not sure how you’ll handle feeling anxious or tense. And it sounds like feeling anxious is really uncomfortable for you – and something you just want to avoid feeling altogether. Thinking about this, what would you hope to get out of treatment?**

You may also need to provide some information about some of the ways treatment could be helpful. Remember, to use your MI skills when giving information – ask permission and elicit from the client their responses to the information you have provided.

**Is it okay if I tell you a bit about the treatment? One of the main goals of the treatment is to teach you some new skills to help you cope with some of the anxiety/sadness/strong emotions that you feel. What would that be like for you, to have some new ways of dealing with your anxiety/sadness/strong emotions?**

This would generate some ideas from the client and would help facilitate discussion of the positive aspects of treatment.
Okay, so treatment would be a good thing if it helped you deal with your anxiety – helped you feel less anxious and also provided you with some ways to handle anxious feelings. And maybe having these new ways of managing anxiety may help you reduce your marijuana use too.

TRANSITIONAL SUMMARY

This is a good opportunity to bring together the information that emerged from the decisional balance. It is also a good idea to focus on aspects of the interview where you began to see a shift towards change. Finally, as with all parts of the intervention, you want to continue to help the client make a connection between his/her substance use and his/her mental health symptoms.

Sample Summary

We talked about a lot of different good and not-so-good things about use and about starting treatment. Here’s what I got from our conversation – but please let me know if I’m not really getting it. It sounds like drinking helps you when you’re feeling down – it helps you forget about your problems and also just be more social, fun, and friendly when you’re hanging out with your friends. At the same time, after these nights of drinking you wake up feeling really crappy and then your problems seem worse and you end up feeling worse – even more down than you were before you went out drinking. Your biggest worry about starting treatment is that you’re not sure how you’ll handle feeling down and it will be hard to be out with your friends and not be drinking. You also talked about wanting to find other ways to handle your low mood, new ways to relax and have fun that don’t leave you feeling worse the next day. Is that about right?

Phase 2

Goals of Phase 2: Develop discrepancy between current behaviours and goals or values (i.e., continued substance use and non-use of adaptive strategies for managing mental health symptoms INTERFERE with goals/values), assess confidence and importance (argue for change), brief discussion of next session

Developing Discrepancy

Examining current goals and values

- Exploring things that are important to me
- How does substance use and mental health issues interfere?
The goal of this activity is to help clients verbalize a) their goals and values, b) the negative effects of their substance use on achieving their goals and c) possible positive effects of not using substances on achieving goals and values.

This activity is about your goals and values – the things that are important to you (show the client the worksheet). I have here a list of goals and values that other teens have identified as important to them. If it’s okay with you, I’d like to hear about some of your goals and values and talk about how they fit in with some of the things we’ve been talking about. Some people find it helpful to look through the list, but you may have other goals or values that aren’t on here. If you want, you can take a few minutes to go through the list and choose 2-3 things that are important to you.

Using the worksheet, help the client identify 1-3 goals and values. You can ask the client to rank them in order of importance. In some cases, the client may be looking to maintain something (stay in school, maintain good relationships) and that can be the focus as well. The client might also have some ideas that aren’t on the list.

Once the client is done, ask for some elaboration about their goals/values so that you can begin to get a better idea about them. Go through one goal/value at a time, starting with the most important and going from there.

As you go through the list, you may find that some goals or values lend themselves very easily to discussing negative impacts of substance use (e.g., going to school, getting a job). For other goals/values, the link is less clear. In these cases, you might spend less time on some goals and more on others. It is also helpful to draw from earlier discussions, bringing in some previously identified goals/values or consequences of substance use that relate to the current discussion.

Sample open-ended questions to more fully explore goals/values:

Tell me what you mean by [goal/value]?
What does it mean to you to be [value]?
What would it be like to meet this goal?
What kinds of things need to happen for you to get to this goal?
How important is this [goal/value] to you?

What steps have you already taken towards this goal/value?

What might stand in your way of achieving this goal?

It’s also important to address how substance use and not getting treatment would impact their goals/values. Elicit from them how their goals/values might not be achieved if things were to stay the same (i.e., they decided not to change their substance use or not to enter treatment).

Some prompts to more fully explore how not changing interferes with goals/values:

What effect do you think [alcohol/drug use] would have on you achieving this?

How might it be different if you weren’t using [alcohol/drug]?

How might receiving treatment for your [feelings of sadness, anxiety, problems sleeping, problems at school, etc.] help you with your goals/values?

If you decided not to change your [alcohol/drug] use and not to get treatment, what might happen with this goal/value?

This is a good opportunity to support self-efficacy in terms of identifying strengths that would help client achieve goal or live life according to identified value. Sometimes it’s helpful to have the client reflect back on other successful experiences or changes – helps elicit from them ways they’ve been successful at achieving goals/values in the past. Provides opportunity to reinforce strengths (affirmations) and enhance self-efficacy for making changes now.

Some people find it helpful to think about a past experience – a past success or a time when they felt challenged and made a change. Can you think of a time when you made a change in your life or when you set your mind on something and did it? What was that like? What helped you get to your goal? How can that experience help you here – as you think about moving forward with treatment?

Transitional Summary
Summarize the main ideas that emerged from the ‘things that are important to me’ exercise. Highlight the parts of the discussion that focused on how substance use would interfere with achieving goals/values and how seeking CD treatment would help facilitate achievement.

Sample Summary

So, to summarize some of what we talked about, you identified three important things from the list – having a boyfriend, being grounded, and being independent. Right now, you feel like you’re pretty grounded, so that goal is going well right now. And even though you have a boyfriend, things aren’t going that well in the relationship. You guys are fighting a lot and you feel anxious about the relationship – wondering if it’s going to end or if he’s going to cheat on you. So you’re looking for ways to help deal with that anxiety – and wondering whether treatment could be useful for that. You’d also like to be more independent, but your parents are constantly bothering you about your pot use and you think that if you cut down, then you’d get closer to that goal since your parents would be off your case a bit. Is that about right?

Assessing importance and confidence

Use of importance and confidence rulers for exploring current motivation, barriers to change, arguing for change, eliciting change talk.

The goal of this exercise is to have clients further verbalize their current motivation for change and self-efficacy for change. This is also an opportunity to explore perceived barriers to change and to come up with some practical strategies to help facilitate involvement in the treatment group. Using the rulers provides a framework for having clients argue for change, elicit reasons for change, elicits strengths from the client and gives the clients an opportunity to voice what they need to do to begin making changes. The use of the ‘lower number’ technique is a good way to elicit from the client his/her reasons for change. Remember, when you hear change talk (DARN-C), reinforce it.
This is the last activity for today. I’d like to explore with you some of your thoughts and feeling about making changes and starting treatment. Let’s look at this rule (show the ruler visual).

On a scale of 0 to 10, with 0 being the least confident you’ve felt and 10 being the most confident, how confident are you that you could change your alcohol/drug use right now?

Why are you at a _____ rather than a _____ (lower number)?

What would need to happen for your confidence score to move up from a ____ to a ____ (higher number)?

What might be helpful for you to increase your confidence?

Some prompts for this exercise:

When change talk emerges, it is important to reinforce it, to ask for elaboration, and to evoke new ideas about change.

Reflect it back when you hear it:

Okay, so you’re at a 6 and not a 4 because you’ve already made some changes to your drinking and you’ve made some important changes before. What kinds of things helped you make changes in the past?

This is also an opportunity to make a link between increasing confidence and starting treatment. One of the primary reasons clients are not confident in their ability to change is that they don’t yet have the tools. Treatment would provide these tools and is one way to increase the client’s confidence about making changes.
So you might feel more confident if you had some other things in place to help you when you feel depressed. That makes a lot of sense. How might treatment be useful to you then? What kinds of things would you want to get from treatment to help you in this area?

Okay, now let’s focus a bit on starting treatment. Using that same 0-10 scale, how important is it for you to start treatment?

Why are you at a _____ rather than a _____ (lower number)?

What would need to happen for your importance score to move up from a ____ to a ____ (higher number)?

What do you think you might do to increase the importance of starting treatment?

What is standing in your way of starting treatment right now?

Discussion of change plan and setting stage for Orientation session

The goal here is to summarize the main issues that were raised over the two sessions, to reinforce commitment to change and identify any leftover barriers that might stand in the way of the client attending the orientation session.

Is it okay if I take a minute to summarize what we’ve talked about over the past two sessions? Again, let me know if I’m getting this right. The last time we met, we talked about some of the good things about your marijuana use, like it helps you get to sleep, it helps you relax and it also makes things not so boring. It also has a negative effect on some parts of your life – like it makes it hard to get to class on time and your parents are worried about your use, which makes things more difficult for you at home. You think that starting treatment will be tough, because right now you don’t have any other ways to cope with
your anxiety. At the same time, you’re open to learning new strategies, which is great – and you think it could be helpful to start treatment. Does that sound right?

Today you mentioned that it’s really important to you to finish school and that you think your pot use probably makes it hard to study and focus on your schoolwork. You’re not sure you’ll be able to give up your pot use, but there’s a part of you that really wants to try – and you’ve clearly been successful at making other difficult changes in your life, like making new friends when you switched schools. And you’re here today, which is already a big step.

The next step is coming to the first session for the treatment group. This session will also be a one-on-one session and the therapist you meet next week will be working with me in the group. So, you’ll have a chance to meet ________________ (therapist’s name) and hear more about the group and ask questions about what to expect.

How does that sound?

Provide information about the orientation session.
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<tr>
<th>Using Substances (Alcohol, Drugs)</th>
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<td><strong>Good Things</strong></td>
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<td><strong>Starting Treatment</strong></td>
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<td><strong>No So Good Things</strong></td>
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