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Access and Engagement in Treatment-Aided Addiction Recovery: Differences between Men and Women

by

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Abstract

Background. Addiction treatment research increasingly recognizes the importance of access factors (i.e., systematic barriers and facilitators) and engagement factors (i.e., perceptions of coercion, motivation, and social networks) as determinants of clients' response to treatment programs. While gender differences in the natural history of drug use are well documented, few studies examined whether access and engagement systematically differ for adult women versus men seeking treatment for addictions. This study is divided into three Research Objectives. Objective 1: To determine whether men and women differ in variables associated with treatment access. Objective 2: To determine whether men and women differ in perceptual variables associated with treatment engagement. Objective 3: To determine whether men and women differ in quality of engagement early in the process of addiction treatment using a regression analysis including coercion, motivation, social support as independent variables and treatment engagement subscales as dependent variables. **Methods**. Secondary analysis of data collected from a cohort of clients seeking treatment at an Alberta-based residential program. Baseline (N = 328) instruments assessed treatment access variables, including the Social Control Index (SCI), the MacArthur Perceived Coercion Scale (MAPCS), the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES), and Perceived Social Support from Friends and from Family (PSS Fa-Fr) (Polcin & Weisner, 1999; Gardner et al., 1993; Miller & Tonigan, 1996; Procidano & Heller, 1983). One month later, follow up surveys (n = 273) assessed treatment engagement (TE) variables using a

treatment engagement scale from Simpson and Joe, 2004. **Results**. Demographic analysis revealed gender difference in treatment and drug history. Objective 1: Men and women differed significantly in treatment access; women were more likely mandated to treatment from a formal referral source. Formal referral sources are agencies or individuals external to the individuals operating at an institutional or organizational level. Objective 2: Men and women differed significantly in their perceptions of coercion and social networks but not motivation; women perceived greater coercion from formal sources and more support from their friends. Objective 3: Among alcohol clients only the TE-commitment subscale was significant and the SCI and the SOCRATES- AMREC subscale were significant. Among the drug clients the main effects were significant for all TE subscales. The SOCRATES - AMREC subscale and the PSS-Fa for TE - confidence and rapport were significant, while the SOCRATES-TS subscale was significant for all three subscales of the TE. **Conclusion**. Men and women differ in their experiences prior to entering treatment, engagement in treatment, and perceptions of coercion, motivation, and social networks. These differences reflect to varying degrees socially constructed gender roles.

Preface

From an economic perspective, the cost of addiction to Canada is estimated to be close to $40 billion per year, by taking into account health care costs, lost productivity, and criminal justice system costs (Rehm et al., 2006; National Anti-Drug Strategy, 2009; Department of Justice, 2010; National Crime Prevention Centre, 2007-2008). Beyond the financial costs, addictions are associated with a number of social costs related to death, illness, criminal offenses including violent and petty crimes, and costs to families including those associated with minors in government care (Wallace, 2003; Gannon, 2005; http://www.ccsa.ca/Pages/Splash.htm). As a result, the Government of Canada through federal agencies such as Health Canada and the Justice Department and provincial health departments such as Alberta Health and Wellness, as well as many private organizations, have created numerous federal policies, legislative, programs, and guidelines to address addiction as a public health concern. Addiction treatment programs represent one important response by these organizations to the economic, health, and social costs of addictions.

Perhaps hidden in the population burden of addictions is the reality that addiction affects men and women differently. Indeed, epidemiologic data provide one of many differences between men and women, in this case, differences in progression; for example, while alcohol use is higher in men than women, the drug of choice for women is alcohol, and illegal drugs of choice for most women is marijuana or hashish as opposed to ‘harder’ drugs such as cocaine or heroin (Glantz, Weinberg, Miner, & Colliver, 1999; Tjepkema, 2004; Canadian Center

on Substance Abuse, 2005; Health Canada, 2001/09; Statistics Canada; 2009; Morton & Konrad, 2009; Gannon, 2005). In addition, the resulting impact on society, families, and health differs between men and women as evidenced by the differences in arrests related to addiction, with men more often incarcerated for violent crimes related to addiction, while women are more frequently incarcerated for theft, fraud, and prostitution (Begun, Rose, LeBel & Teske-Young, 2009; Gannon, 2005; Kong & AuCoin, 2008; Rush & Wild; 2003).

The following chapter will review selected addiction recovery research with a focus on treatment access and treatment engagement. In the area of treatment access, research on barriers and facilitators to addiction treatment access will be reviewed, with an emphasis on referral sources and how treatment access issues may differ for men and women seeking help for addictions. In the area of treatment engagement, research on the key role of motivation, perceptions of coercion to enter treatment, and the role of social networks will be reviewed. This review will examine potential differences between men and women across these categories and how these differences affect treatment engagement. By highlighting what is known and not known about women across these categories I will build a case for studying differences between men and women further in order to better understand women's experiences in accessing and engaging in treatment-aided recovery.

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Chapter 1. Addiction Research

Addiction research is a multidisciplinary area that includes diverse perspectives including medicine, epidemiology, sociology, and psychology. Each of these disciplines has produced a body of theoretical and empirical findings on factors that influence, produce, and maintain addictions, as well as factors that influence access to and engagement in addiction treatment programs.

1.1. Preliminary Background

Before delving into the literature on addiction recovery, I will provide definitions for relevant terms that will be used throughout this paper. First, the term addictions is often used simultaneously and interchangeably with substance use/abuse, drug use/abuse, etc. and typically refers to the misuse of alcohol, drugs, cigarettes, gambling, and more recently the misuse of prescription drugs. For the purposes of this paper I will use the term addiction to refer to the misuse of alcohol and all drugs.

When comparing men and women, gender and sex differences are terms used often interchangeably. While there are many definitions of gender depending on the discipline or field of study, in this paper I will use the definition provided by the Canadian Institute of Health Research: gender is "[associated] with socially constructed roles, relationships, behaviours, relative power, and other traits that societies ascribe to women and men" (2011). The definitions of sex focus more on the biological differences between men and women. In addiction research both sex and gender differences are of interest but the terms are often poorly defined. Unless discussing literature clearly examining differences

in the physiology or biology of men and women, I will use the term *gender* rather than sex differences.

Epidemiology. Addiction is common in North America. Alcohol use by adults is estimated to be between 75%-80%, while dependence is around 2.6%. Ten to fourteen percent of adults report marijuana use and dependence on illicit drugs is around 1% (Statistics Canada, 2010; Tjepkema, 2004; Canadian Center on Substance Abuse, 2005; Health Canada, 2009).

In a more recent Statistics Canada (2011) survey over 4.9 million citizens self-report heavy drinking (defined as more than five drinks on one occasion at least once a month); over 1.4 million of these respondents were women. In the United States, 13% of women and 16% of men reported a lifetime dependence of any one type of substance (Glantz, et al., 1999). These results are similar in Canada, where which heavy alcohol use among men was significantly higher (47%) than among women (24%) (Tjepkema, 2004). Although men typically drink more than women, alcohol is the drug of choice for women who do use substances. Recently, prescription drug misuse among women has been on the rise. In terms of illegal drug use women are most likely to use marijuana or hashish as opposed to 'harder' drugs such as cocaine or heroin.

Health Canada (2001) has also noted many differences in the effects of drug and alcohol use between men and women. For example, because of the physiological differences between men and women, men can sustain a heavy drinking for longer periods of time before their bodies begin to show the effects such as liver problems. In addition, women's reproductive systems are affected by

addictions differently, including changes in menstrual cycles and sexual dysfunction (Schliebner, 1994 & Finkelstein, 1997 in Health Canada 2001, p. 22). Finally, women with addictions consistently report higher rates of childhood sexual abuse or victimization compared to men with addictions, which often deter women from seeking treatment. Indeed as Morton and Konrad (2009) demonstrate, effective addiction treatment requires trust and rapport between the client and health care practitioner, something made more difficult by the trauma and mistrust women often experience as a result of childhood sexual abuse.

These data highlight the prevalence of addiction across North America, with clear differences between men and women in the epidemiology of addiction. While research in all areas of addiction consistently show higher rates of addiction among men compared to women, it is important not to discount women altogether. In a US sample of Child Services clients, 80% of the mothers involved with Child Services were affected by addiction. Among pregnant women, close to 10% report drinking alcohol and 4% report using an illicit substance (Morton & Konrad, 2009). In a 2004 Canadian survey, women represented 15% of those charged with a drug related offence. In the same study, 21% of women over the age of 12 smoked cigarettes and 51% drank alcohol (Gannon, 2005). Although these rates are lower compared to men, they still have a social impact. Furthermore, the epidemiological differences between men and women can influence the choices each make during the recovery process. For example, the differences in substances abused and resultant health impacts between men and

women can determine when/if they seek treatment as well as to whom they turn to for that help.

1.2. Recovery from Addiction

Research investigating recovery from addictions can be grouped under two broad categories: studies focusing on natural recovery and studies on treatment aided recovery. *Natural recovery* is the process by which individuals with an addiction resolve this problem themselves or with the support of family and friends to the point where they no longer use or are non-problem users. *Treatment aided recovery*, the most commonly studied form of recovery, is the process by which individuals utilize a formal treatment center, detoxification, or community-based self-help programs, such as Alcoholics Anonymous (AA), to help them overcome their addiction (Tucker & King, 1999; Best, Day, & Morgan, 2006).

Natural Recovery. Ironically, while treatment aided recovery is the more often researched, most people recover naturally, without benefit of treatment interventions (Best, et al., 2006; Hao, Tan, & Tang, 2010; Wild & Wolf, 2009). In fact, one study estimated that only 22% of those who recover from addictions used formal treatment programs (Bischof, Rumpf, Hapke, Meyer, & John, 2000). In the natural recovery process, negative events are believed to motivate individuals to make changes in their behaviour. On the other hand, positive life events are associated with maintenance of abstinence or reduced substance use once the natural recovery process has begun. Often people with alcohol and other drug problems begin a change process by weighing the costs of addiction

compared to the benefits of quitting (Cunningham, Wild, & Koski-Jannes, 2005). Wild and Wolf (2009) also note that those who seek out treatment have more problems associated with their addictions, which relates back to the negative events preceding attempts to quit.

Recovery from addiction can happen gradually over months or years, and in the case of addiction specifically, often involve moving towards a 'softer' drug such as marijuana. In other cases, cessation can occur abruptly. When people with addictions change their environment and stop socializing with other substance misusers, changes in the social norms help to promote the maintenance of the recovery process (Tucker & King, 1999). This is characterized as the process of 'maturing out' of addiction. Best et al., (2006) note that 'maturing out' can occur at two stages in life. The first stage occurs when young adults emerge out of their teen years and is associated with changes in lifestyle and social role-related responsibilities. The second stage can occur later in life and is linked to a later onset of addiction and less severe drug related problems. Although both of these patterns represent a 'maturing out' of addiction problems, differences exist in age of onset and severity of addictions and the age at which natural recovery occurs. Tucker and King (1999) highlight the importance of environmental and contextual variables when considering factors that help people resolve addictions without exposure to treatment.

Although age has been a primary variable of interest in research on 'maturing out' of alcohol and other drug misuse, gender differences have also been observed in the natural recovery process. Bischof et al. (2000) examined

gender differences among individuals who self-reported to have drinking problems and recovered on their own. In that work, women differed from men in the number of negative and positive events leading up to their decision to stop drinking or using drugs. When questioned about the differences before and after their recovery, the women in the study reported less satisfaction in the life domains (i.e., work, relationship, health) included in the questionnaire (Bischof, et al., 2000). Hao et al., (2010) also note gender differences in natural recovery in their review of epidemiological research; specifically, they cited research showing that men are less likely than women to seek treatment and that problem-gambling men are more likely than women to be successful at recovering naturally from this addiction (Hao et al, 2010).

Treatment-Aided Recovery. The formal addiction treatment includes psychopharmacological approaches such as medical detoxification and pharmacotherapy, harm-reduction approaches such as methadone maintenance, and psychotherapeutic approaches such as cognitive behavioural therapy. Different approaches to treatment reflect the various theoretical perspectives on what causes and maintains addictions and how best to combat these factors (Robinson & Berridge, 2003). For example, cognitive-behavioural approaches focus on altering maladaptive thinking in order to change affect and behaviour related to addictions, as well as to support relapse prevention. Other programs focus on the medical side of addiction by detoxifying the body and trying to combat the reward pathways in the brain associated with addiction (Hartel & Glanz, 1999). However, research comparing the results from different types of

treatment approaches shows little difference in the effectiveness of one treatment strategy over another (Tucker & King, 1999). This finding is replicated in Best et al.'s (2006) review of a large scale analysis of success rated among recovery modalities in both the United States and United Kingdom and by Wild and Wolf (2009) in their review of the addiction treatment literature.

One of the issues that Tucker and King (1999) note is that many of the treatment aided recovery studies lack attention to help-seeking behaviour. These authors contend that a greater understanding of help-seeking behaviour may help to identify why formal treatment programs are underutilized. Firstly, they note that help-seeking behaviour usually occurs at the end of the phase of the drug addiction when individuals use drugs regularly and few seek formal help from a health care professional. This assertion is supported by epidemiological evidence comparing the rates of those entering formal treatment with self-reported rates of addiction (Hao et al, 2010). In general, women more often than men seek out health care services for a variety of needs and are the primary procurer of health care for the family (Nam, Chu, Lee, Lee, Kim & Lee, 2010; Bryant, Leaver, & Dunn, 2009). Secondly, Tucker and King (1999) also note there are many barriers to seeking formal help including lack of availability of these services, negative encounters with health care professionals, coercion, and stigma (Morton & Konrad, 2009).

Wild and Wolf (2009) provide further evidence to support gender differences in help seeking behaviour noting those "who initiate treatment for addiction are more likely to be male, older, and to have no disability" (p.26).

Indeed, many of the gender specific barriers women face in dealing with addictions are a result of the socially constructed roles and power differences women experience in Western society. For example, women are usually ascribed the role of caregiver and are held responsible for their health and the health of the family. When they are unsuccessful in fulfilling these roles as a result of addictions, women often report feelings of guilt and shame associated with the fear of being stigmatized or having experienced stigma in the past from health care professionals. As a result, some women may avoid health care providers because of fear of the unknown, negative health care provider attitudes, and lack of appropriate care (Morton & Konrad, 2009; Health Canada, 2001). Women may feel powerless and may avoid seeking help for fear of being punished, legal repercussions (i.e., children taken away), and problems with childcare while participating in a residential treatment program (Morton and Konrad, 2009; Wild & Wolf, 2009; Health Canada, 2001).

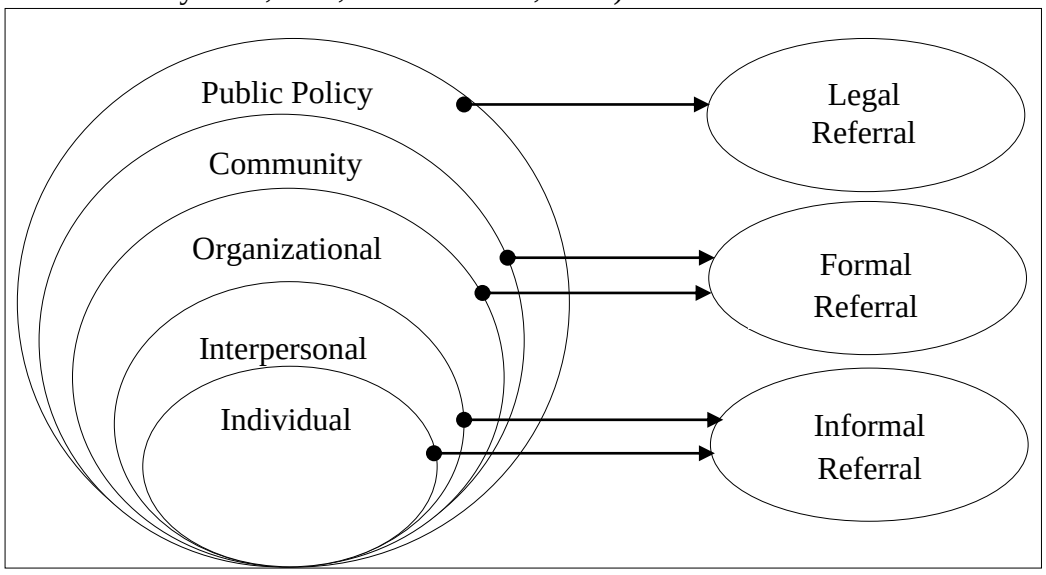
In recent years, research on treatment-aided recovery from addictions has expanded to include a focus on factors associated with entering treatment and variables associated with treatment engagement. In the following section, I will outline the areas of research that can be used to elucidate these issues. I will be focusing on treatment-aided recovery from this point forward.

1.3. Accessing Treatment

Social Ecological Models (SEM) provides a useful heuristic framework for understanding how individuals access treatment and the varied factors that affect treatment access. Since Bronfenbenner developed his ecological systems

theory in the late 1970's, SEMs are often conceived of in terms of concentric spheres of influence ranging from the small (individual/micro) to the large (environmental/macro) variables (Minkler & Wallerstein, 2006). These environmental systems, which are reciprocally related and vary in their degree of complexity, have been influential in the study of human development and health promotion (Kaplan, Everson, & Lynch, 2000; Richard & Gauvin, 2007).

Figure 1. *Social-Ecology Framework in Relation to Referral Sources* (adapted from McLeroy et al.,1998; Wild & Wolf, 2009)



McLeroy, Bibeau, Steckler, and Glanz (1988) describe a five-level model (see Figure 1) that has been used and adapted in health promotion to develop programs to build healthy environments which, in turn, affect the health of individuals and larger populations (Minkler & Wallerstein, 2006).

McLeroy et al.'s (1988) social-ecological model provides a useful framework for understanding the external factors that facilitate or prevent people from accessing addiction treatment programs (Wild & Wolfe, 2009; Nishimoto & Roberts, 2001). For example, although entry into addiction treatment programs is commonly understood as a voluntary choice made by people who are concerned

about their addictions, Wild (2006) argued that a variety of social control tactics have been increasingly implemented to pressure people to seek addiction treatment. Wild describes three types of social control tactics that are commonly used to facilitate entry into addiction treatment, which correspond to different levels of influence in McLeroy et al.'s (1988) SEM. *Legal* social controls use public policy (i.e., laws) to mandate or force individuals to enter addiction treatment. *Formal* social controls include community and organizational based influences designed to pressure people into addiction treatment programs and include requirements to seek treatment from family social services, financial assistance programs, or employers. *Informal* social controls refer to the interpersonal level in McLeroy et al.'s SEM and include persuasion, threats, and ultimatums to enter addiction treatment issued by social networks such as family and friends (Wild, 2006). This distinction has also been made by Witbrodt and Romelsjo (2010), who considered formal and informal levels of influence in help-seeking behaviour in their study of gender differences among AA members in Sweden and the U.S.

Much of the literature concerning mandated and compulsory addiction treatment includes the assumption that mandating individuals to treatment, especially through legal and formal referral sources, is coercive. However, research by Wild, Newton-Taylor, and Alletto (1998) shows that this is not the case. Referral sources are *external* variables that can affect whether or not an individual attends treatment, but coercion is a perception or an *internal* variable defined by the individual. With this distinction in mind, this section highlighting

treatment access deals primarily with *external* variables related to treatment and the following section discussing treatment engagement will outline *internal* variables.

Legal and Formal Influences. As defined earlier, legal and formal level influences come from institutional sources such as the court system, employers, or social-aid workers. In these cases, individuals are either mandated to attend treatment or are encouraged to do so through a system of incentives and penalties such as losing their job or maintaining access to their children. In Canada adults with addictions can be formally mandated to treatment through the criminal justice system (e.g., parole orders that include a requirement to attend addiction treatment), specialized Drug Treatment Courts (DTC) designed to divert low-risk offenders with addiction problems into treatment programs, and through the Child Welfare Authority (CWA). As well, youth in Alberta can be brought into addiction treatment through the Protection of Children Abusing Drugs Act (PChaAD). Through this Act, minors using drugs are given the opportunity to enter treatment voluntarily or be incarcerated and mandated to attend a detoxification program (http://www.albertahealthservices.ca/2846.asp). The attendant ethical issues are debatable and not germane to this thesis and will not be discussed further.

Studies investigating the effectiveness of formal and informal referral to treatment tactics are mixed (Nace et al., 2007; Perron & Bright, 2008; Sung, Belenko, Feng, & Tabachnick, 2004). A systematic review of such research by Wild, Roberts, and Cooper (2002) documents the way in which effectiveness was

conceptualized (i.e., retention, completion, recidivism) and, based on this, found differences in the results. This could explain in part why effectiveness of mandated treatment is not yet well established.

Surprisingly little gender focused research has examined legal and formal referral mechanisms. This could be in part due to differences in experiences with legal and formal referral sources between men and women. For example, in a study examining AA membership, men were more likely to enter treatment through legal and formal means compared to women (Witbrodt & Romeljso, 2010). However, this was the case only with the Swedish sample and not the United States sample of AA members (Witbrodt & Romeljso, 2010). These outcomes could be the result of having more men in a workplace than women or alternatively differences in what is accepted behaviour in men versus women. Indeed, in the Canadian court system the differences in the number of men and women in the DTC's and court diversion programs is a reflection of gendered roles and behaviour and numbers. For example, in Canada, men are more likely than women to commit crimes, including violent crimes (Canadian Centre for Justice, 2003; Statistics Canada, 2011). This increases the overall number of men compared to women in the judicial system. Further, in part due to the numbers, more men are given custodial sentences each year compared to women. As noted in the preface this is in part due to the types of crimes committed by men versus women (Statistics Canada, 2010-2011). Together these factors result in more men than women having access to DTC's and judicial diversion programs.

Looking specifically at women, Nace et al., (2007) studied women who were referred into treatment by the court including cases where the custody of children was involved. That study showed that when the parent retained custody of their children, they stayed in treatment longer. Women who were able to keep custody of their children and participate in a gender- specific treatment showed stronger results. In this case the gender focused treatment included "family therapy, childcare arrangements, transportation, and an infant assessment and tracking system" (Nace et al., 2007, p. 19).

Others have examined this issue in the context of barriers to accessing treatment. For example, Jessup, Humphreys, Brindis, and Lee (2003) conducted a qualitative study of prenatal and parenting women to examine what external barriers exist that influence treatment access. The women in their study reported fear of legal and formal sources including incarceration as a result of their addiction, loss of child custody, and stigma or judgement from individuals within those institutions. Social pressures associated with appropriate levels of drinking or drug use, especially during pregnancy, can also influence how women perceive their own actions and may impact their help seeking behaviour. Policy level barriers to treatment were also reported by the women when discussing their inability to bring their children to treatment (Jessup et al, 2003).

While research has been done by the DTC's in Canada, the number of women mandated to treatment by legal or formal referral sources is unknown. Understanding how women come to be referred by these sources, the influence of the referral on treatment entry (including barriers), and the outcomes of such

referrals are unknown. This is due, in part, to the overlap of *external* referral source and *internal* perceptions of coercion in research on mandated treatment, where the focus is on perceptions of coercion, ethics, and policy. Further research on each of these topics is warranted.

Informal Level Influence. Informal levels of influence to engage in addiction treatment can come from family, friends, co-workers, neighbours, and other individuals in a social network. It is more difficult to track the number of individuals who enter treatment as the result of informal influences. The types and effects of influence from this group vary. These issues will be discussed with a focus on gender specific issues in the follow section.

Gregoire and Burke (2004) examined the effects of formal and informal pressure to seek addiction treatment. They found that social pressure may be less consistent and more easily manipulated than mandates from the courts or employers. More explicit and consistent pressure from legal and formal sources should have a greater impact on clients (Gregoire & Burke, 2004). As some external variables act as barriers to treatment at the legal and formal level, so too can external variables act as treatment barriers at the *interpersonal* level. Although some men and women seem to experience equal amounts of pressure from informal sources, the sources acting as barriers can affect men and women differently and in ways that reflect the socially constructed gendered roles (Witbrodt & Romeljso, 2010; Royce, Corbett, Sorensen, & Ockene, 1997). For example, in a study by Jessup et al. (2003), women reported two major concerns in regards to accessing addiction treatment: the need to maintain the family unit

and negative reactions to their addiction by their partners. This is supported by Witbrodt and Romeljso's (2010) US study of an AA program, in which women who maintained custody of their children were significantly more likely to attend at 1-year follow-up compared to men. As previously discussed, the gendered ascribed caregiver role given to women can impact women's decisions about which addiction program, if any, they seek out.

Health Canada (2001) produced a best practices document for treatment of women with addictions. In this document, the authors examine the impact of many social ecological factors affecting women before, during, and after treatment and identify the role of informal relationships as potential barriers or aids to entering treatment. For example, Beckman and Amaro (1986) report family members, in particular spouses with alcohol addictions, will discourage women from entering treatment. This interpersonal barrier to treatment for women, as noted above by Jessup et al., (2003) is an enduring problem effecting women in Canada for decades.

The importance of social relationships is echoed in an article by Morton and Konrad (2009) who discuss nursing and social work theories, which advocate integrating the family unit into health care. These authors contend that quality health care requires taking into account the larger context of people's lives and the influence of informal social networks. As with legal and formal referral sources, information about informal referral sources in relation to women is limited. One clear concept is the importance of the family unit to women, though how those within the family unit affect treatment access can vary.

1.4. Treatment Engagement

Research indicates that merely accessing addiction treatment programs does not guarantee successful client outcomes. In fact, drop-out from treatment is very common, with some studies estimating that half or more of people seeking addiction treatment fail to complete the treatment course (Stark, 1992). In light of these findings, researchers have begun to investigate factors that promote engagement early in the treatment process, with a particular focus on motivation, perceptions of coercion, and the role of social networks.

Motivation. Motivational theories attempt to understand how people make decisions and come to action; motivation to action can be a change in behaviour such as quitting smoking or a continued action such as showing up to treatment sessions. A growing body of research focuses on motivation in the context of addictions and the recovery process. Some researchers, notably Prochaska and Norcross, describe a heuristic tool for understanding motivation termed a transtheoretical model defined by the stages of change an individual traverses in their motivational process. Most common in these models is a stage prior to action where the individual contemplates their problems, followed by some form of cost/benefit analysis, then one or more series of behavioral steps geared towards positive change (Prochaska and Norcross, 1994, cited in Longshore & Teruya, 2006).

Other examples include the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) describing processes by which people reason, plan, and act on their decisions. In addition to describing the processes of

behaviour change, measures have been created to assess where the person is in the process, with the goal of predicting and supporting successful change (Blanchard, Morgenstern, Morgan, Labouvie, & Bux, 2003). Examples of these measures include the University of Rhode Island Change Assessment (URICA) and the Recovery Attitude and Treatment Evaluator (RAATE). The results from trans-theoretical studies using these measures are mixed (Longshore & Teruya, 2006).

These models have been applied in clinical settings. For example, Perkins et al., (2007) conducted a systematic review of publications documenting this application with clinicians as the target population and most articles showed some positive results. However, the authors note that in many cases the guidelines set out by these models were not followed as originally described.

The Circumstances, Motivation, Readiness, and Suitability (CMRC) model, the Treatment Motivation Model (TCU), the SOCRATES, and the Alcohol and Drug Consequence Questionnaire are examples of motivational measurements that have been used in the context of addiction treatment (Mullins, Suarez, Ondersma, & Page, 2004; Begun, Rose, LeBel, & Teske-Young, 2009; Cunningham et al., 2005). While the CMRC and TCU model include stages similar to transtheoritical models, the former focus on *internal* and *external* variables that influence people specifically in an addiction context (Mullins et al., 2004; Begun et al., 2009). The SOCRATES and the Alcohol and Drug Consequence Questionnaire measure motivation in terms of one's readiness to change and their cost/benefit analysis, thereby assessing motivation in a broad context.

In a clinical setting, motivation is viewed as an important variable correlating with enrolment and retention rates (Webster, Rosen, Krietemeyer, Mateyoke-Scrivner, Staton-Tindall, & Leukefeld, 2006). As such, clinicians often try to enhance motivation through external means such as monetary benefits, increased treatment options, and/or increased treatment time. Among individuals, referred for treatment, those with enhanced external motivation show higher enrolment and retention rates in treatment, suggesting external variables influence client behaviour (Kidorf, King, Neufeld, Perice, Kolodner, & Booner, 2009).

Self-Determination Theory (SDT) provides another perspective on motivation, specifically examining the relationships between external factors and motivations to change behaviour or enter treatment (Wild et al., 2006). SDT is based on the premise that individuals have a need for "autonomy, relatedness, and competence" (Wild et al.,2006, p. 46), and proposes that individuals' actions can be conceived as ranging from those supporting these needs to those that oppose them, depending on whether they are undertaken by the individual or at the behest of outside forces. From this, three types of motivation are defined: external, introjected, and identified. *External Motivation*, much like the name implies, is defined by clients' perception that external sources or pressures motivated them to seek treatment. *Introjected Motivation* occurs when the client is motived to enter treatment based on their feelings (i.e., guilt, anxiety) or other conflicted emotions. Finally, *Identified Motivation* occurs when an individual's perceptions and beliefs align with treatment goals and clients choose to seek help (Wild et al., 2006; Ryan & Deci, 2000).

Wild et al. (2006) use SDT to examine referral sources and help-seeking behaviour among clients in treatment for illicit drugs. The authors found that help-seeking behaviour was influenced by motivation independent of referral sources and that *Identified Motivation* in particular had a positive association with client engagement. Others have also examined SDT in research focusing women specifically, women compared to men, and gendered focused research across a variety of health related subjects (Gaucher, Friesen, & Kay 2011; Ferrand, Perrin, & Nasarre, 2008; Perry, Rosenfeld & Kendall, 2008; Ryan, La Guardia, Solky-Butzel, Chirkov & Kim, 2005).

Other researchers across disciplines have studied the interplay between external factors and motivational (Chirkov, Ryan, Kim, & Kaplan, 2003; Wild, Cunningham & Ryan, 2006; Moskowitz & Ignarri, 2009). An addiction treatment a therapeutic technique called Motivational Interviewing (MI) engages both client and clinician in a guided process to encourage and enhance the clients *identified motivation* to increase treatment engagement (Mullins et al., 2004; Begun et al., 2009; Markland, Ryan, Tobin, & Rollnick, 2005). The results from this technique prove largely successful with a variety of populations. When examined in a sample of incarcerated individuals Hiller et al. (2009) demonstrated older prisoners and those with higher problem severity higher motivation levels. Additionally, motivational enhancement therapy (MET), a therapy using MI more frequently, shows positive results (Kidorf et al., 2009). Specifically, Kidorf et al., (2009) note with high-risk populations, and in particular syringe-drug users, MI therapy while helpful can be challenging due to enrollment and drop-out in

treatment programs. Increasing what the authors describe as the 'potency' of the MI technique by offering the sessions more often (MET) produces better results in treatment. Indeed many studies demonstrate the effectiveness of including some form of motivation related therapy in clinical treatment with various populations and for various health related problems (Baer, Beadnell, Garrett, Hartzler, Wells, & Peterson, 2008; Markland et al., 2005; Kelly, Magill, & Stout, 2009).

Focusing on gender differences, Webster et al. (2006) documented differences in motivation between men and women using the TCU motivation assessment discussed previously. Specifically, women showed higher rates of problem recognition and desire for help than did men, after controlling for other demographic variables (Webster et al., 2006). Mullins et al., (2004) documented the outcome MI with mothers mandated to addiction treatment by the child welfare system. The results showed no significant difference between the population receiving MI treatment and corresponding control population.

There is a strong body of literature outlining gender differences in *internal* and *external* variables that influence motivation. Fear and guilt are examples of *internal* variables shown to consistently affect women and more specifically mothers or pregnant women to seek treatment (Morton & Konrad, 2009; Wild & Wolf, 2009). *External* variables that affect men and women differently include the accessibility and option to enter treatment (Wild & Wolf, 2009). Individuals who are part of a social network can also act as motivating influences for seeking treatment for both men and women; for example, parents of young children are more likely to seek and complete treatment (Webster, 2006).

Coercion. Compulsory, mandated, and coerced treatments are often discussed in the literature alongside theories of motivation. This is because in treatment-aided recovery the involvement of the client in a program is not always voluntary. As noted earlier, individuals may enter treatment voluntarily or through a court system, work, or pressure from friends and family, all of which are often categorized in the addiction recovery literature as mandated or coerced treatment. For example, Longshore and Teruya (2006) discuss two motivational dimensions often assessed at intake into treatment, readiness and resistance, under compulsory treatment conditions. The authors argue that these dimensions of motivation should be assessed as separate constructs by documenting the predictive power for retention in treatment in their study. However, the authors only include court-mandated treatment in their coercion criteria. While the authors note that previous studies document external non-legal pressure paired with motivation increases treatment retention, there is a trend to include only court-mandated treatment as a coercion criteria. This is only one example of how coercion and motivation are studied together. The following section will expand on this idea though I separate these two areas briefly to define pertinent concepts and discuss the role coercion and motivation in treatment. I will not discuss the ethical implications associated with coerced or externally motivated treatment or the public policy associated with coercion as it is not germane to the thesis of this paper.

While the terms mandated, compulsory, and coerced treatment are often used interchangeably, they are separate constructs and should be defined clearly.

The concept of coercion is often defined in terms of the loss of liberty and autonomy (Clark, Becker, Giard, Mazelis, Savage, & Vogel, 2005). In a clinical treatment, setting one way to differentiate between *coercive* and *compulsory*/*mandated* treatment is to focus on the availability of *choice*. Namely, with *coercion* the treatment program is the alternative to other more negative consequences such as loss of job, parental rights, or incarceration (Miller & Flaherty, 2000). This differs from *compulsory or mandated treatment* in which case the individual is not given a choice of alternatives but forced to attend treatment, often by the court, as part of sentencing (Nace et al., 2007). While this definition focuses on the role of choice, there is an underlying assumption that coercion occurs in all cases. In addition, compulsory or mandated treatment refer to situations external to the individual that compel them to enter treatment, while coercion refers to individuals' perceptions of those situations (Wild, 2006).

Although much of the current literature defines coercion in terms of referral source as discussed in the previous section (see Figure 1), the referral source is *external* to the individual. Coercion is more appropriately defined as an *internal* variable because it is a perception held by the individual about of referral source (Wild et al., 1998). By examining structural (i.e., referral source) and psychological (i.e., perceived influence, addiction) variables, Wild et al. (1998) demonstrated that not all clients entering treatment from the same referral source held similar beliefs about how coercive the referral source was. Clients claiming to enter treatment voluntarily or those who enter treatment other than through the

court system, may still feel coerced through significant pressure from friends and family (Wild et al., 1998; Clark et al., 2005).

This view of coercion is supported by a review of coerced treatment by Miller and Flaherty (2000), in which referral sources was used to determine coercion. The referral sources included family (through the Johnson Intervention Therapeutic Technique), criminal courts, employers and the Employment Assistance Programs, driving while-intoxicated (DWI), and public aid. In all cases, the referral source had no negative effect on treatment compliance or success rates. In other words, those clients who entered treatment programs through the various referral sources complied/completed their treatment programs at the same or better rates than those who entered on their own (Miller & Flaherty, 2000). While Miller and Flaherty (2000) used the term coercion to differentiate those who entered on their own from those referred by some other source, their results actually do not support the claim that all referral sources are coercive. One interpretation of these results could be that some find entering treatment through supposed coercive means as an impetus to address their addiction.

Individuals who enter treatment due to organizational or interpersonal factors (i.e., formal or informal social controls) differ in their interpretation of external 'coercive' factors as it relates to their "autonomy, relatedness and competence" (Wild et al., 2006). The results of this study show perceived coercion is inversely related to motivation. This adds support to the idea that it is not solely the external circumstances by which an individual enters treatment, but

their *perceptions* of these external circumstances that determine if they feel coerced and/or motivated to change their behaviour (Wild et al., 2006).

In their gender-based study of coercion, Clark et al., (2005) examined between coercion among clients in treatment with co-occurring disorders and histories of interpersonal violence. In this case, interpersonal violence was defined as a history of physical or sexual abuse by another person and self-abuse was defined as cases of cutting or other self-harm behaviours. The authors' predictions were rooted in assumptions about gender roles, power differences, and relationships, specifically those regarding partnerships, parenting, and women's experiences in the judicial system previously discussed. The authors made three predictions: a positive relationship between interpersonal violence and/or self-abuse and high levels of coerced treatment, women mandated to treatment would perceive they had less choice about their treatment service options, and women would not be referred to treatment based on clinical needs but rather contextual factors. A number of quantitative measures were used to assess perceptions of coercion and perceptions of autonomy and choice. Data included a life history and information from client records. The authors found that self-abuse but not interpersonal violence were positively correlated. Many of the women reported a low sense of control over their choice of treatment and were more often mandated to treatment because of *contextual* factors (e.g., CWA or the judicial system) rather than *clinical* needs of the women themselves.

Looking closer at this last finding two issues come to the fore: coercion based on socially defined gender roles for women as individuals, especially with

co-occurring disorders, and women as caregivers. First, Clark et al., (2005) note that best practices for mandated treatment of women with addictions and co-occurring disorders is not yet well-defined. As a results treatment practices can vary widely and women may find themselves feeling coerced when mandated to treatment or psychiatric care. Second, care for pregnant women, or women with children, is a complex issue requiring health care professionals to balance ethics and practice. The needs of the patent (the mom) and the health and safety of a child must both be taken into account when deciding care. In other words, the experiences of women within our health care system can be impacted based on socially derived beliefs about gender roles (Clark et al., 2005).

Later Clark and Young (2009) examined the issue of coercion among women populations in a study comparing mandated to voluntary treatment and treatment outcomes. They found women mandated to treatment and those who received integrated treatment (treatment that includes mental health and trauma along with addiction issues) had better outcomes compared to those who volunteered to treatment. This is consistent with the previous literature demonstrating referral source does not on its own indicate coercion nor will it predict engagement (Wild, 2006; Wild et al., 1998; Miller & Flaherty 2000).

Social Networks. Another important set of factors influencing treatment engagement are social networks. The definition of social networks differs by type of network and researchers have come up with varying taxonomies to differentiate and study. For example, Kelly, O'Grady, Schwartz, Peterson, Wilson, and Brown (2010) identify networks using a similar heuristic to some of

the social ecological variables, namely community, friends, family, and household members in the development of their social support scale. The support from these sources can be categorized and defined in various ways. For example, Longabough, Wirtz, Zywiak, and O'Malley (2010) discuss two broadly defined forms of support: general and alcohol-specific. In another study Groh, Jason, and Keys (2008) reviewed a number of studies investigating social support using categories such as structural, functional, general, and alcohol-specific support along with recovery helping. A number of scales and questionnaires exist to measure types of social networks and various dimension of social support: the Life Stressors and Social Resources Inventory (LSSRI), the Social Support Network Inventory (SSNI), the Community Assessment Inventory (CAI), and the Important People Inventory (IPI) that later became the Important People and Activities Inventory (IPA), and the Social Relationships Index (SRI) (Groh et al., 2008; Kelly et al., 2010; Longabough et al, 2010; Campo, Uchino, Vaughn, Reblin, Smithm & Holt-Lunstad, 2009).

Manuel, McCrady, Epstein, Cook, and Tonigan (2007) use the framework developed by Beattie and Longabough (1997) to combine the social category of individuals and type of support to describe social networks. In this approach, social networks are conceptualized in terms of the structure (number, duration, frequency of contact) of relationships, the function (type of support) of relationships, and finally the quality and perceived importance of relationships. These networks can be assessed using a number of methods and indexes including network centrality, density, and coefficient of variation. These particular

calculations indicate ones place in the social network (i.e., how important they are), how many influencers there are in any given network (i.e., how many people influence and are influenced by another in their network), and finally which individuals may be leaders in their group by comparing the number of influencers with the centrality of individuals (Gockel & Werth, 2010). When these aspects are combined, it becomes clear that influences from differing social-networks may overlap and sometimes contradict (Manuel et al., 2007, Goldbarg & Brown, 2010). For example, one may live in a community with high rates of addiction and have peer-groups who encourage this behaviour, while also having a family support system that discourages addiction. Depending on the strength, type, amount of contact, and relative influence of the social networks, overall support for addiction or treatment may differ between individuals engaging in treatment (Kelly et al., 2010; Longaboug et al., 2010; Boisvert, Martin, Grosek, & Clarie, 2008; Webster, 2006).

When focusing on the topic of addiction treatment, social networks can have a positive or detrimental effect on treatment entry and engagement depending on the network involved (Boisvert et al, 2008). For example, if the individual seeking help and engaging in treatment has friends and/or family who are addicted and discourage recovery, the support for the individual in recovery is diminished and the influence of the social network is more detrimental than beneficial. In contrast, individuals who have supportive and strong social networks show better results during treatment and have better treatment outcomes (Kelly et al., 2010; Rocye et al., 1997; Wild & Wolf, 2009).

Lonagbough et al., (2010) further differentiate social network influences by examining both the response and behaviour of those in the social network on the individual in recovery; more specifically, the influence of social network drinking-behaviour versus social network response to drinking-behaviour. The results of their study show the response to drinking by those in the social networks has a greater impact on drinking behaviour than the actual behaviour of those in the social network. The authors did not examine differences between men and women, choosing rather to use gender and age as control variables. Despite the mixed influence of social networks on recovery the inclusion of social support from one or more source is increasingly included in treatment programs and evaluation of treatment programs (Boisvert, et al., 2008; Groh et al., 20008; Wild & Wolf, 2009).

While social networks affect addiction behaviour and treatment in both men and women, the influence differs in ways that reflect societal gendered norms regarding types of relationships men and women have with one another, the relative power and the roles each play in these relationships. For example, addiction in men is more commonly linked to social peer groups, whereas primary sexual partners often introduce women to substance misuse. Men have slightly more drug users in their social networks compared to women. Although this result from their study was not significant (Goldbarg & Brown, 2009) it is consistent with the literature reviewing gender differences in motivation and coercion discussed previously.

When examining social networks in the context of gender Manuel et al., (2007) categorized social-network differences between men and women such as the types of partner-relationships and family-relationships. Specifically, women with alcohol addiction are more likely to have a spouse with an alcohol addiction, receive less support from family and spouses, and receive more support from friends compared to men. When examining the structure, function, and quality of women's social networks these researchers also demonstrated that the size and amount of contact with social networks differs between men and women, and that women report the importance of their social networks differently than men (Manuel et al., 2007).

Looking further at women's intimate partner relationships, domestic violence is strongly linked to addiction. Indeed some estimates show that close to 70% of women engaged in drug treatment have experienced some form of intimate partner violence (James, Johnson, & Raghavan, 2004). James et al., (2004) noted among women who live in impoverished neighbourhoods with little education and smaller social networks are also more likely to use heavier drugs such as cocaine and experience domestic violence. The intergenerational transmission of risk for addiction is also well documented. In this case, children from families with an addicted parent are at higher risk for addiction themselves (Mylant, Ide, Cuevas, & Meehan, 2002).

Witbrodt and Romeljso (2010) demonstrated that compared to men, both Swedish and American women, showed significant increase in odds for attending an AA group 1 year after follow-up when social network factors such as support

from friends were present. Men and women's social networks also show differing influences when it comes to smoking cessation; namely men report more pressure from friends and co-workers, whereas women report more pressure from their children (Royce et al., 1997). While it may appear obvious the social networks between men and women differ, the exact nature and influence of these differences can be difficult to explicate. This is further compounded when including the epidemiological differences in addiction between men and women.

1.5. Research Objectives and Questions

Research into differences in addiction treatment between men and women is limited. A review of the literature by Bushway and Heiland (1995) in the mid-1990 demonstrates an increase in women in treatment research but the increase was specific to a population of pregnant women with addictions, rather than women generally. Further, the focus in this literature review was on the pregnant women and did not include larger gender/treatment issues.

As reviewed above, men and women differ when it comes to treatment access and treatment engagement. Men are more likely referred to treatment through legal sources, while women are more often referred through child welfare (Rush & Wild, 2003; Morton & Konrad, 2009). Barriers to treatment for women relate to fear of punishment , loss of custody, stigmatization (Jessup et al, 2003; Health Canada, 2001) and can act as external factors in motivational assessments and be used in MI with some women (Morton & Konrad, 2009; Wild & Wolf, 2009; Mullins et al.,2004). Women and men are exposed to differing coercive factors and women experience perceptions of coercion in ways that reflect their

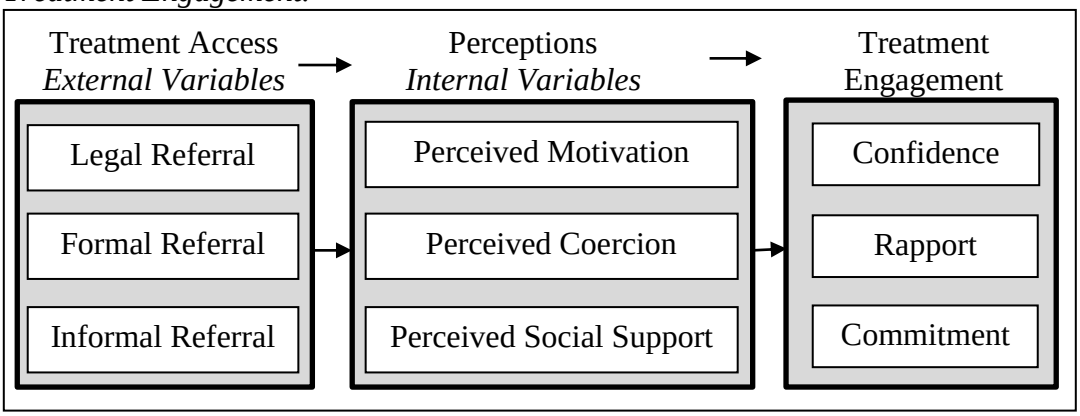
gendered roles as caregivers, spouses, and parents (Clark et al., 2005). Finally, men and women have different social networks, and the effects of these networks on addiction are reflective of the types of relationship men versus women have in with members of their social networks (Manuel et al., 2007; Royce et al., 1997). Taken together, there is a body of evidence supporting the existence of gender difference in addiction, which warrants the attention of researchers. The study of gender differences in the process of addiction opens up a wide avenue of potential research questions and methodology. In the following section, I will outline how I will examine this using a model created with the social-ecological approach described above.

The ultimate aim of this thesis is to examine gender differences in the early stages of addiction treatment. To conduct an exhaustive examination of gender differences a larger and more comprehensive study, potentially including in-depth qualitative research, would be required to understand issues potentially contributing to gender differences. This is beyond the scope of the proposed study. However, the groundwork for such research can begin here by examining the differences between men and women engaged in addiction treatment. Using the social-ecological taxonomy described above in Figure 1, I have created a model (Figure 2, below) that I will use to understand and examine the initial addiction treatment process.

In this model, I focus on referral sources as the external variables that influence treatment access. The internal variables are the perceptions individuals have about their motivation for treatment, coerciveness of the treatment episode,

and supports from social networks. Both the external referral source variables and internal perception variables will influence treatment engagement. Like perceptions of coercion and motivation, treatment engagement is defined by the individual.

Figure 2. *Initial Process of Treatment-Aided Recovery from Treatment Access to Treatment Engagement.*



Research Objectives. The overall purpose of this research is to examine gender differences between men and women in the beginning stages of treatment recovery. In this case, external (referral source) and internal variables (perception of motivation, coercion, and social support) are the independent variables. The dependent variable is treatment engagement, a self-reported measure. The research questions can be categorized under three broad areas of analysis all examining differences between men and women in referral source, perceptions, and differences in the prediction of treatment engagement based on perceptions of motivation, coercion, and social networks. The objectives of the research proposed here are described below.

Objective 1: To determine whether men and women differ with respect to treatment access.

1. I predict gender differences in the referral between men and women. Specifically, more women than men enter treatment under the influence

of informal social network pressure (i.e., informal referral source) or through formal referral sources related to gendered roles and social networks (i.e., parenting) such as the CWA; more men than women enter under formal organizational or legal pressure (i.e., formal or legal referral source).

Objective 2: To determine whether men and women differ in their perceptions of treatment engagement

Based on past research documenting gender differences in social networks and values associated with those networks, experiences with referral factors and other external agents I predict that:

1. Women will differ from men in the level of their perceptions of motivation. Specifically women will show a greater level of motivation, measured in terms of recognition, ambivalence, and taking-steps, compared to men.
2. Women will perceive less coercion compared to men.
3. Women will have a greater perception of social support from their family compared to men, while men will have greater support from friends.

Objective 3: To determine whether men and women differ in quality of engagement early in the process of addiction treatment.

I predict two outcomes of the multiple regression analyses:

1. The main effect of the regression models will show men and women differ in treatment engagement outcomes. Specifically, women will have better treatment outcomes compared to men.
2. The second step of the regression models will show the perceptions of coercion, motivation, and social networks affects treatment engagement outcomes differently for men and women.

While other studies have examined these issues, my analysis will differ from others by including these multiple predicting variables in my analyses. Rather than focusing on one topic, motivation, coercion, social networks, at a time I will examine the influence of each variable on treatment engagement by including in the same analysis. As noted previously this study cannot provide nuanced and in-depth information required for a comprehensive gendered study.

Indeed, much of the information that can be gleaned will include a combination of differences more aptly described as sex differences rather than gendered. These issues, however, are so intertwined it will be difficult to tease apart in the analysis. The results of these analyses while limited, can allude to larger gendered issues associated with the early stages of treatment engagement and can be used as a basis for further research.

Chapter 2: Methods

To address these research objectives, I conducted a secondary analysis of data collected as a part of a research study on social control and coercion in addiction treatment. The primary purpose of the original study was to determine whether social control (the objective use of social pressure), coercion (client perceptions), and motivational variables derived from SDT influence treatment processes and outcomes using a longitudinal study design.

Secondary data analysis is becoming more common as data is being collected and stored electronically, making such analysis simpler and more feasible. There are various advantages and disadvantages to using an existing data set and conducting a secondary analysis. Obvious advantages include ready access to data that an individual researcher may or may not be able to collect due to time, cost, or feasibility. In addition, a single researcher or research team may not be able to collect large amounts of data at one time. Conducting a secondary analysis using a larger secondary data allows researchers in this position access to larger amounts of data. The strongest disadvantage to using a pre-existing data set is the inherent lack of input in the data collection process, including the methods used, questions asked, types of data obtained, and the manner in which the data was stored. This can limit the types of questions a researcher can ask and the types of analyses one can perform. In addition, a singular data set may not contain the necessary data required to answer the questions a researcher may wish to investigate (Boslaugh, 2007).

2.1. Sample and Data Collection Methods

Individuals attending a residential addiction treatment program in Edmonton were contacted and asked to participate in the original study. The original study consisted of a baseline and follow-up questionnaires administered by a research assistant (RA) between 2008 and 2009. Clients of the treatment center were informed of the purpose of the study, what would be involved, and given information on consent and confidentiality of their information. A total of 333 individuals consented to participate in the study, 161 (49%) male and 157 (48%) female and 328 (97%) completed the baseline questionnaire. Participants who consented did but not complete the in-take most often did so because they left the treatment facility early. This was done within the first week of treatment and the questionnaire took between 30-40 minutes to complete. The follow-up questionnaire was administered four weeks after treatment entry and took 10-30 minutes to complete. From the original group 273 (80%) completed the follow-up questionnaire, 248 while still in treatment, 21 via telephone, and four via email. From the original group 55 (17%) of individuals could not be reached for the follow-up.

2.2. Materials

The original study used a longitudinal, pre-/post- design, with a number of measures and scales included in the baseline questionnaire. The follow-up questionnaire included measures to assess change in drug use patterns using a self-reported measure of alcohol and drug within the past 30 days, assessment of substance problem severity, and treatment engagement and participation. In

addition to basic demographic information, I used four scales and one additional questionnaire item measuring treatment requirement; the Social Control Index (SCI), the MacArthur Perceived Coercion Scale (MPCS), the SOCRATES, and Perceived Social Support from Friends and from Family (PSS Fa-Fr) (Polcin and Weisner, 1999; Gardner et al., 1993; Miller & Tonigan, 1996; Procidano & Heller, 1983). These scales were included in the baseline questionnaire, while at follow-up treatment engagement was measured using a modified version of a self-reported therapeutic instrument developed by Simpson and Joe (2004). Ideally, I would use proxies that could further reflect gender differences to add support to my comparison of men and women using this data set. Unfortunately, the data collected in this study does not contain measures that can reasonably be used as proxies. As noted previously, not controlling the specific information or measures included is a limitation when using a pre-existing data set and secondary analysis.

Baseline Measures. The Perceived Treatment Requirement question was used to ascertain the conditions of entry into the treatment program and asks individuals to indicate the reason(s) they have entered treatment. Clients were able to select among 11 items: none, choice between treatment/jail, condition of probation/parole, CWA, condition of employment, condition of school, condition of family, other, unknown/missing, condition of community, myself. When clients wrote-in or substituted ‘myself’ or ‘voluntary’ after indicating ‘none’, ‘other’, or ‘unknown/missing’ it was re-coded as ‘myself’. No one reported condition of school or community so these were removed and the list recoded into 8 categories.

The SCI and MPCS measured perceptions of coercion. The SCI, developed to assess perceptions of coercion among those entering treatment for alcohol dependence, measured ultimatums given by nine different individuals in the clients' life (Polcin & Weisner, 1999). The items were rated on a Likert scale ranging from 1 (no pressure) to 5 (extreme pressure). These nine sources were then grouped into three groups labeled as *informal*, *formal*, and *legal*. An example of *informal* included family, *formal* included Children's Aid Authority, and legal authorities were listed under *legal*. The MPCS was originally developed to measure perceptions of coercion among clients entering mental hospitals (Gardner et al, 1993). The scale consists of five items measured using a dichotomous true (0) false (+1) response set. The responses were then totalled to give a score out of five, with high scores indicating higher levels of perception of coercion.

A search of the literature was conducted to ensure the applicability of each scale for the purposes of this proposed research. The SCI, first conceived by Polcin and Weisner (1999) as a series of questions concerning the number of ultimatums given by different sources in their study, did not include a psychometric study of the SCI and its applicability across populations. While the authors did provide data comparing the number of ultimatums across demographic groups only one third of their participants were women versus men and the authors did not include a gender comparison in their results. One group of researchers, Marlowe, Merikle, Kirby, Festinger, and McLellan (2001) did find gender differences when examining how coercion sources indicated in the SCI cluster among addiction populations. Five clusters were created: financial, social,

legal, medical and psychiatric, and family coercion. Marlowe et al. (2001) note that men were more likely to be influenced by financial pressures and women by psychological and familial pressures. However, men were over represented in the first and second cluster, which may have impacted the results.

The MPCS was subject to a psychometric analysis by Gardner at al. (1993) in which just under half the participants were female. In this original paper the authors did not specifically test for applicability across demographic variables such as gender. However, a literature search reveals this scale has been used a number of times in studies examining coerced entry into treatment programs for drugs, mental illness, and other health related issues such as eating disorders. It is not clear from some of the articles what representation women had in the sample of these studies, and in cases where the number of women versus men was given women did not always constitute a large portion of the sample. It has also been used to validate other scales measuring coercion and treatment entry (Marlowe et al., 2001; Katsakou et al., 2010).

The SOCRATES is a self-reported measure of generalized levels of motivation for behaviour change and was originally designed for use with problem drinkers (Cross & Sibley, 2010). This scale was used to measure perceptions of motivation for the second and third research objectives. The original version was based on DiClemente ‘s (1992) transtheoretical model of behaviour change consisting of five stages: Precontemplation, Contemplation, Determination (later Preparation), Action, and Maintenance and/ or Relapse. The SOCRATES focused on the first four stages that were later developed into three

continuous subscales termed Ambivalence, Recognition and Taking Steps. When first tested, the Chronbach alphas were .60, .85, and .83 for Ambivalence, Recognition, and Taking Steps respectively for the 19-item scale, while the 39-item scale (omitting item 6) resulted in higher Chronbach alphas: .66 Ambivalence, .90 (Recognition), and .89 (Taking Steps) (Miller and Tonigan, 1996). The 19-item scale is ranked on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The items in each subscale were summed to create an overall Ambivalence, Recognition, and Taking Steps score (Miller & Toginan, 1996).

The SOCRATES was also tested using psychometric analysis (see below), but not specifically for applicability across populations during the original analysis by the authors (Miller & Tonigan, 1996). A search of the literature reveals a large number of studies examining the validity and reliability the SOCRATES across a variety of populations showing the SOCRATES to be valid for use in other languages, cultures, and populations. The SOCRATES was also used in a number of studies examining addiction related topics with women (Small, Curran & Booth, 2010; Dakof, et al. 2010, Vik & Ross, 2003). Small et al. (2010) noted men and women differ in their willingness to seek help, in which women in their study were more willing to seek help compared to men. Vik and Ross (2003), and Dakof et al, (2010) did not include men in their study so a comparison between men and women was not possible.

The PSS Fr-Fa scales were developed to measure the extent to which individuals feel their needs are being fulfilled by their social networks. The

original scales consisting of 20-items with a categorical ‘yes’/‘no’/‘don’t know’ response option demonstrate homogenous with Chronbach’s alphas of .88 and .90 respectively (Procidano & Heller, 1983). The short form of the scales consisted of seven items each coded so a ‘yes’ response is given a score of +1 and ‘no’ a score of zero so that a higher score indicates a positive perception of support from friends/family.

As with the other studies, Procidano and Hiller (1993) did not specifically test for validity across specific population parameters when conducting the psychometric assessments. However, a search of the literature reveals researchers later used and validated the PSS Fa-Fr in research focusing on social networks across cultures, ages, health topics, among gay and lesbian communities, and women (Goldberg & Smith, 2011; Hurd & Zimmerman, 2010; McMahon & Luthar, 2000). One study of note was conducted by Wohlgemuth and Betz (1991) in which college age men and women were compared using a 20-item form of the PSS Fa-Fr to determine if gender acts as a moderator for social support in their physical health related activities. In this study, 57% of participants were women and 43% men, with both men and women reporting slightly higher scores for support from friends than family. Comparing across genders, women (M = 17.68, SD = 2.72) reported greater support from friends than men (M = 15.98, SD = 4.34) a significant result (t = -2.43, $p < .05$) (Wohlgemuth & Betz, 1991). While this study does indicate gender differences exist in perceived social support for physical health related activities, specifically from friends, the goal was not to check the validity of the PSS Fa-Fr for use in gender specific research.

Follow-up Measures. Finally, treatment engagement was measured using three subscales: rapport with counsellors, commitment to treatment and confidence in treatment. The first two subscales consisted of five items each with summed scores such that high scores indicated high levels of rapport with counsellors and commitment to treatment. The rapport with counsellors scale used a three-point Likert scale ranging from 1 (not at all) to 3 (very much) while the commitment to treatment scale used a four-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree) giving the two scales a response range of 5 to 15 and 5 to 20 respectively. The final scale included two modified questions. The first modification combined two interdependent questions into one question using a three-point scale: "whether this program helped" and "how much" became "how much did this program help". The item "maybe this place will be able to help me" was also rescaled by giving a value of .75 from 1 giving the four-point scale the same number value as the other three-point scale items. In total this scale consisted of 4 questions giving a response total ranging from 4 to 12 (Simpson and Joe, 2004). As with the base-line measures the follow-up measures used to assess treatment engagement developed by Simpson and Joe (2004) did not specifically look at gender or differences between men and women when testing their measures.

Chapter 3: Results

Background Demographics. Data from 328 clients was included in this analysis, 161 of which were males (49%) and 157 were females (48%); 10 respondents (3%) had missing data for this variable. Table 1 presents demographic characteristics of the sample for males and females.

Table 1. Demographic Variable Differences, Men and Women

Socio-Demographic	**N**	***M*(*r*)**	**Men *M*(*r*)**	**Women *M*(*r*)**	**Statistical Test**
Age *18 - 61*	297	32.29 (18-62)	34.39 (18-61)	30.55 (18-62)	$t = 3.32^{***}$
		***n* (%)**	**Men *n* (%)**	**Women *n* (%)**	
			146 (49.16)	150 (50.50)	
Ethnicity	272				$\chi^2 = 9.34^{*}$
Aboriginal		170 (63)	73 (43)	97 (57)	
Caucasian		94 (35)	58 (62)	36 (38)	
Other		8 (3)	5 (63)	3(38)	
Employment Status	316				$\chi^2 = 27.43^{***}$
Employed		90 (28)	60 (67)	30 (33)	
Unemployed		143 (45)	68 (48)	75 (52)	
Student/Retraining		17(5)	6 (35)	11 (65)	
Disabled		54 (17)	26 (48)	28 (52)	
Not in Labor Force		12 (4)	0	12 (100)	
Marital Status	315				$\chi^2 = .35$
Married/Partnered		68 (22)	35 (51)	33 (49)	
Single		247(78)	124(50)	123(50)	
Legal Status	314				$\chi^2 = 1.75$
No Legal Involvement		191(61)	91(48)	100 (52)	
Legal Involvement		123(39)	68 (55)	55 (45)	

Note. $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$.

The average age of clients was approximately 32 years, with a range of 18-62 years; the average age of men in the sample was significantly higher (M = 34.39) than that of women (M = 30.55; t (294) = 3.316, $p < .001$). In the original dataset, participants were able to write in their ethnicity but for analytic purposes

these data were recoded into 3 categories. Aboriginals included respondents who self-identified as Métis, First Nations, Inuit, and Mixed. Most participants were Aboriginal (*n* = 170, 63%); however females in the sample were more likely to be Aboriginal than males (57% versus 43%). Caucasians comprised the second largest ethnic group (*n* = 94; 35%), and there were more men (*n* = 58, 62%) than women (*n* = 36, 38%) in this ethnic category. These differences in ethnicity between men and women was significant ($\chi^2(3)= 9.336$, $p < .05$), though a sizable portion of the data (*n* = 46, 15%) was categorized as '*missing*'.

Most clients in the sample were unemployed (*n* = 143, 45%), followed by those with some form of employment (*n* = 90, 28%). Males and females were about equally represented in the unemployed category (48% vs. 52%, respectively). In contrast, more men than women were employed (67% versus 33%), and all those who said they were not in the labor force were women. The differences in employment status between men and women was statistically significant, $\chi^2(5) = 27.429$, $p < .001$. Most clients were single (*n* = 24, 78%) rather than married or partnered; however there were no significant differences between men and women in terms of marital status. Most clients had no legal involvement (*n* = 191, 61%), compared to those who had some form of legal involvement (*n* = 123, 39%). Women and men in the sample were about equally likely to report legal involvement at the time treatment was being sought (45% vs. 55%, respectively).

Background Treatment and Drug Use History. To understand the circumstances leading up to the current treatment episode, past treatment

experience and drug use history were included in the baseline questionnaire. Most of the clients in the study experienced some form of treatment in the past year (*n* = 107, 66%).

Table 2. Treatment and Drug History Differences, Men and Women.

History	**N**	***M*(*SD*)**	**Men *M*(*SD*)**	**Women *M*(*SD*)**	**Statistical Test**
No. Problem Substances Reported *0-8*	307	2.28 (1.24)	2.30 (1.26)	2.27 (1.22)	*t* =.24
		***n*(%)**	**Men *n* (%)**	**Women *n* (%)**	
Past Treatment Experience	311				χ^2= 1.56
No. treatment experience		107 (34)	53 (50)	54 (50)	
Some treatment experience		204 (656)	106 (52)	98 (48)	
Primary Problem Substance	318				χ^2 = 4.69
Alcohol		209 (66)	107 (51)	102 (49)	
Cannabis		23 (7)	13 (57)	10 (43)	
Cocaine/Crack		49 (15)	20 (41)	29 (59)	
Methamphetamines		10 (3)	7 (70)	3 (30)	
Other		8 (3)	3 (37)	5 (63)	
Missing		19 (6)	11 (58)	8 (42)	
Alcohol		209 (70)	107 (51)	102 (49)	χ^2 = .29
All Other Drugs		90 (30)	43 (48)	47 (52)	
Secondary Problem Substance	318				χ^2 = 6.98
Cannabis		88 (28)	52 (59)	36 (41)	
Cocaine/Crack		86 (27)	46 (53)	40 (47)	
Methamphetamines		12 (4)	4 (33)	8 (67)	
Other		20 (6)	7 (35)	13 (65)	
Missing		112 (35)	52 (46)	60 (54)	

Note. *p<.05, **p<.01, ***p<.001.

While every client surveyed was participating in a treatment program, six clients reported no problem substances. The average number of problem substances reported by participants was between two and three, with *n* = 93 (30%) clients reporting two problem substances and *n* = 102(33%) reporting three

problem substances. Men and women were equally likely to report two or three problem substances. The primary problem substance was alcohol (*n* = 209; 66%), followed by cocaine/crack (*n* = 49; 15%). Again, men and women were similar in their report of alcohol as a primary substance. However, more women (59%) than men (41%) reported cocaine/crack use as their primary problem substance. Men and women did not differ significantly in their primary problem substance when comparing alcohol versus any substance. Cannabis (*n* = 88, 28%) and crack/cocaine (n = 86, 27%) were closely reported as the secondary problem substance. In both cases, more men (59%, 53%) than women (41%, 47%) reported these as the secondary problem substance. While the data in Table 2 (above) shows that men and women differed in the primary and secondary substances used, this difference is not significant.

Table 3 displays the drug use history for alcohol, cannabis, and cocaine/crack. Most men and women used alcohol for the first time between ages 12 and 13. The differences in the age at first use between men and women was significant (men $M = 12.95$ versus women $M = 13.82$; $t = -2.35$, $p < .05$). The average frequency of use was mid-range for women ($M = 3.55$, $SD = 1.26$), as well as men ($M = 3.62$, $SD = 1.38$). Indeed, most clients reported using alcohol daily (*n* = 103, 34.22%), weekly (*n* = 78, 26%), or only a few times (*n* = 82, 27%). Of the few clients who reported never using alcohol most were men (77%) compared to women (23%). The distribution of alcohol use for women focused primarily around the daily, weekly or few times categories. The same pattern held

for men, though among the men most reported daily use (*n* = 58, 38%) compared to any other frequency of use.

Table 3. Primary and Secondary Drug Use History Differences, Men and Women.

Alcohol	**N**	***M*(*r*)**	**Men *M*(*r*)**	**Women *M*(*r*)**	***t* Test**	**CI**
Age at First Use	301	13.33 (4-30)	12.95 (4-20)	13.82 (5-30)	-2.35*	[-1.58, -.14]
		***M* (*SD*)**	**Men *M*(*SD*)**	**Women *M*(*SD*)**	***t* Test**	**CI**
Frequency of Use	301	3.58 (1.33)	3.62 (1.38)	3.55 (1.26)	.43	[-.23, .37]
Concern about Use	301	2.81 (1.24)	2.93 (1.22)	2.69 (1.25)	1.68	[-.04, .52]
Cannabis	**N**	***M*(*r*)**	**Men *M*(*r*)**	**Women *M*(*r*)**	***t* Test**	**CI**
Age at First Use	270	13.48 (6-33)	13.55 (8-32)	13.42 (6-33)	.33	[-.64, .89]
		***M* (*SD*)**	**Men *M*(*SD*)**	**Women *M*(*SD*)**	***t* Test**	**CI**
Frequency of Use	264	2.29 (1.13)	3.26 (1.44)	3.19 (1.52)	.37	[-.29, .43]
Concern about Use	259	2.17 (1.20)	1.94 (1.09)	1.59 (.92)	2.81**	[.11, .61]
Cocaine/ Crack	**N**	***M*(*r*)**	**Men *M*(*r*)**	**Women *M*(*r*)**	***t* Test**	**CI**
Age at First Use	273	20.95 (10-50)	21.36 (12-50)	20.53 (10-50)	1.89	[-1.01, 2.69]
		***M* (*SD*)**	**Men *M*(*SD*)**	**Women *M*(*SD*)**	***t* Test**	**CI**
Frequency of Use	265	3.67 (1.43)	3.70 (1.41)	3.62 (1.46)	.45	[-.27, .43]
Concern about Use	260	3.17 (1.18)	3.33 (1.12)	3.00 (1.24)	2.25*	[.04, .62]

Note. *p<.05, **p<.01, ***p<.001.
Frequency of use ranged from 1 = never to 5 = daily, while concern of use ranged from 1 = none to 4 = a lot.

Most clients reported feeling '*a lot'* of concern about their alcohol use (*n* = 130, 43%); women averaged mid-high range level (*M* = 2.69 *SD* = 1.25) as did men (*M* = 2.93, *SD* = 2.93). Looking at the distribution of scores men (*n* = 73, 56%) were more likely than women (*n* = 57, 43%) to report this high level of concern. However, a quarter of clients (*n* = 76, 25%) did not have any concern about their alcohol use despite the fact that almost 70% of clients reported alcohol

as their primary problem substance. In addition, the difference in concern of alcohol use between men and women was not significant.

Looking at cannabis, men and women reported first using cannabis around age 14 (men M = 13.55 versus women M = 15.84). The differences between men and women across age groups were minimal and not significant. The frequency of use was the same for women (M = 3.19, SD = 1.52) and men (M = 3.26, SD = 1.44). The distribution of frequency showed clients were grouped primarily in two categories: daily users (n = 73, 28%), or those who have used only a few times (n = 86, 33%). Amongst the women, most were likely to have used cannabis only a few times (n = 43, 34%). Amongst the men, most were likely to have used cannabis either a few times (n = 43, 31%) or daily (n = 42, 30%). The difference in frequency of cannabis use between men and women was not significant. The level of concern of use between men and women was significant (women M = 1.59, SD = .92 versus men M = 1.94, SD = 1.09; t = 2.81, $p < .01$). Most clients (n = 146, 57%) reported no concern about their cannabis use, though women (n = 80, 55%) were more likely than men (n = 45%) to feel this way.

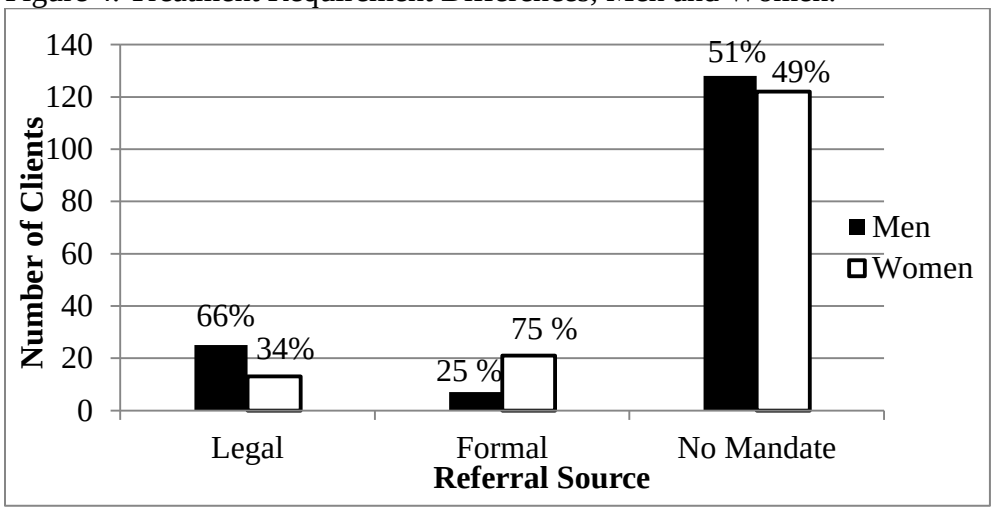
Unlike alcohol and cannabis, most clients had not tried cocaine/crack before their mid-teens and many not before the age of 19. The average age at first use for men was M = 21.36 and for women M = 20.53, this difference was not significant. More women (n = 78, 53%) than men (n = 69, 47%) reported first trying cocaine/crack during their teens, but more men (n = 64, 60%) than women (n = 44, 40%) reported trying cocaine/crack at age 19 or older. Both men and women reported frequent use of cocaine/crack (men M = 3.70 SD = 1.14, women

M = 3.62 *SD* 1.46). As with alcohol, the distribution of use showed most either used cocaine/crack on a daily basis (*n* = 118, 45%) or only have ever used it a few times (*n* = 61, 23%). The level of concern about use between men and women was significant (women *M* = 3.00 *SD* = 1.24 versus men *M* = 3.33 *SD* = 1.12; *t* = 2.25, p < .05). While most clients (62%) reported '*a lot*' of concern about their cocaine/crack use, the distribution of scores showed more men (57%) than women (43%) reported this level of concern.

3.1. Objective 1: Treatment Access

Mandated Treatment Requirements. The baseline treatment requirement question included eight categories which were recoded for analytic purposes into 3 categories: *Legal*, *Formal*, and *No Mandate*. The *Legal* category consisted of those who indicated that treatment was being sought as 'choice between treatment or jail' or as a 'condition of probation/parole'. The *Formal* category consisted of those who answered 'condition of CWA, employment, or school'. Finally, *No Mandate* consisted of those who responded with 'condition of family, community', 'myself', 'other', or 'none' (see Figure 4).

Figure 4. Treatment Requirement Differences, Men and Women.



There were significant differences between men and women across the three categories χ^2 (3) = 10.885, $p < .05$. More men stated they entered treatment based on a *Legal* referral source (*n* = 25, 66%) or *No Mandate* (*n* = 128, 51%) compared to women (*n* = 13, 34% for legal versus *n* = 122, 49% for no mandate). In contrast, more women (*n* = 21, 75%) than men (*n* = 7, 25%) entered treatment based on *Formal* referral sources. However, looking back to the original categorization much of this difference was the result of more women (n = 20, 87%) than men (n = 3, 13%) reporting referral from the CWA.

3.2. Objective 2: Perceptions of Coercion, Motivation, Social Networks.

Perceived Social Pressures to Enter Treatment. The Social Control Index (SCI) required clients to rate their perceptions of coercion from 10 sources on a scale from 1 'no pressure' to 5 'extreme pressure' (Polcin & Weisner, 1999). These 10 sources were then grouped into four categories, and items within each category were summed to yield perceived social pressures to seek treatment associated *informal sources* (partner, family, friends), *formal sources* (employer, CWA, Alberta Works/AISH, health worker), *legal sources* (legal authority), and *other sources* (community, other). Comparisons between men and women on these composite variables are presented in Table 4.

In all categories clients reported perceiving very little pressure to enter treatment, as evidenced by the low total score average *M* = 14.49, with a possible range of scores from range = 1- 50. The only significant difference in responses between men and women was on the composite measure of perceived *formal pressures*, *t* = -2.65, p < 0.05, in which women reported a higher levels of

perceived pressure from employers, CWA, Alberta Works/AISH, or a health worker to enter treatment (*M* = 6.04, *SD* = 2.44) compared to men (*M* = 5.35, *SD* = 2.10). This result may be explained by referring back to the treatment requirement questionnaire results previously discussed and displayed in Figure 4. These data indicated that more women (*n* = 21, 75%) than men (*n* = 7, 25%) reported being mandated to treatment by a *formal* referral source, with most of these women (*n* = 21, 84%) being referred to treatment by the CWA. It could be the same group of clients referred to treatment by the CWA who accounted the significant differences between men and women on the SCI *Formal* subscale scores.

Table 4. Coercion and Social Network Scale Differences, Men and Women.

Scale	***n***	**Men *M*(SD)**	**Women *M*(SD)**	***Statistical Test***	**CI**
SCI					
Total	313	14.59 (5.40)	15.53 (5.77)	*t* = -1.50	[-2.19, .29]
Informal	310	6.29 (2.79)	6.66 (3.18)	*t* = -1.10	[-1.04, .29]
Formal	308	5.35 (2.10)	6.03 (2.44)	*t* = -2.65**	[-1.19, -.17]
Legal	304	1.92 (1.46)	1.75 (1.34)	*t* = 1.046	[-.148, .49]
Other	232	1.63 (1.26)	1.77 (1.41)	*t* = -.78	[-.48, .21]
MPCS		.63(1.04)	.86(1.16)	*t* = -1.88	[-.47, .01]
		Men *n* (%)	**Women *n* (%)**		
No Coercion	186	104 (55.91)	82 (44.08)	$\chi^2 = 4.73^{*}$	
Some Coercion	131	57 (43.51)	74 (56.48)		

Note. *p<.05, **p<.01, ***p<.001.

Perceived Coercion Associated with Treatment Decision. The MPCS required clients to give 'yes'/ 'no' responses to five questions about whether or not they were in control of the decision to enter treatment. Scores ranged from zero to five where higher scores indicated higher levels of perceived coercion (Table 4). The average score for men (*M* = .63, *SD* = 1.04) was not significantly

different to the average score for women (M = .86, SD = 1.16), t = -1.88, p = .062. However, when these data were dichotomized to measure perceptions of coercion versus no perceptions of coercion, the resulting Pearson Chi-square analysis comparing men to women was significant. More women (n = 74, 56%) than men (n = 57, 44%) perceived that their decision to enter treatment was coerced, whereas more men (n = 104, 56%) than women (n = 82, 44%) did not perceive any coercion χ^2 (1) = 4.73, $p < .05$.

Motivation for Behaviour Change. The SOCRATES measured self-reported motivation for behaviour change across three stages of change: ambivalence, recognition, and taking steps (Miller v Tonigan, 1996). Later, Maisto, Conigliaro, McNeil, Kraemer, O'Connor and Kelley (1999) examined the factor structure of the SOCRETES using a sample of primary care clients. They used confirmatory factor analysis and reported the items represent two underlying dimensions: (1) a combination of ambivalence and recognition items, and (2) a second factor consisting of six items from the original Taking Steps subscale, with Cronbach alpha's of .91 and .89 respectively (Maisto et al., 1999). Figlie, Dunn, & Laanjeira (2004-05) compared the two factor structure proposed by Maisto et al. (1999) to the three factor structure originally proposed by Miller and Tonigan (1996) using confirmatory factor analysis using a sample of gastroenterology clinic as well as an alcohol treatment clinic, and replicated this two- factor structure.

Clients were asked to complete the 19-item SOCRATES for both alcohol and drug use (Table 5). However, based on the results of Maisto et al. (1999) and

Figlie et al. (2004-05) the data were recombined to conform to the two factor AMREC/TS form. This new combination excluded three items from the original scale.

Table 5. Coercion and Motivation Differences, Men and Women.

Scale	***n***	**Men *M*(SD)**	**Women *M*(SD)**	***Statistical Test***	**95% CI**
SOCRATES					
AMREC – Alcohol	256	32.12 (10.08)	32.64 (9.63)	t = -.422	[-2.95, 1.91]
Taking Steps - Alcohol	265	23.81 (5.69)	24.03 (5.93)	t = -.304	[-1.62, 1.18]
AMREC - Drugs	265	37.07 (5.93)	37.24 (6.65)	t = -.231	[-1.70, 1.34]
Taking Steps - Drugs	271	26.65 (3.71)	26.38 (4.41)	t = .544	[-.70, 1.24]

Note. *p<.05, **p<.01, ***p<.001.

There were no significant differences between men and women on any of the SOCRATES subscales. The mean scores across subscales for both men and women were within the high range of possible scores.

Perceived Social Support. The PSS-Fr and PSS-Fa required clients to respond ‘yes’/ ‘no’ to a series of seven questions about their perceptions on the support they received from their friends and family (Procidano & Heller, 1983).

Table 6. Perceived Social Support-Fa/Fr Differences, Men and Women.

Scale	***n***	**Men *M*(SD)**	**Women *M*(SD)**	***Statistical Test***	**CI**
PSS-Fa		3.58(2.44)	3.52(2.44)	t = .203	[-.48, .59]
		***n* (%)**	***n* (%)**		
No Support	54	28 (51.85)	26 (48.5)	χ^2 = .039	
Some Support	262	132 (50.38)	130 (49.62)		
		***M*(SD)**	***M*(SD)**		
PSS-Fr		3.09(2.35)	4.37(2.32)	t = -4.86***	[-1.79, -.76]
		***n* (%)**	***n* (%)**		
No Support	38	28 (73.68)	10 (26.31)	χ^2 =9.18**	
Some Support	278	132 (47.48)	146 (52.52)		

Note. *p<.05, **p<.01, ***p<.001.

As with the MPCS the mean and standard deviations were compared for both the subscales (Table 6). Men (M = 3.58, SD = 2.44) and women (M = 3.52, SD = 2.44) did not differ significantly in the degree of perceived social support from their family, t = -4.86, p = .83. When these data were dichotomized to reflect if clients perceived any versus no social support from their family the results were also not significant, χ^2 (1) = .039, p = .844.

Turning to perceived social support from friends, men (M = 3.09, SD = 2.35) perceive less social support from their friends than do women (M =4.37, SD = 2.32), and this difference was significant, t = -4.86, p < .001. When the data was dichotomized to reflect perceptions of support versus no support the results were significant, χ^2 (1) = 9.18, p < .01. More men than women perceived no support from their friends, whereas more women than men did perceive some degree of support.

3. 3. Objective 3: Treatment Engagement.

A hierarchical regression analysis was used in which the first step consisted of entering the main predictor variables, followed by the second step, which included the interactions between gender and the predictor variables. The independent variables used as main predictors included gender (male = 1, female = 2), the SCI, the MPCS, the SOCRATES, and the PSS-Fa/Fr. The dependent variable was the treatment engagement (TE) which consisted of three subscales (confidence, rapport, and commitment) described in the measurement section. The subscales for the SCI and MPCS were used to create total SCI and MPCS scores. These totals were used in the regression analysis below. The SOCRATES subscales used in this analysis included the adapted AMREC/TS scores created by

Maisto et al. (1999). The Family (Fa) and Friends (Fr) subscale were included separately for the PSS scale.

The interactions in the second step of the regression models were used to test part of my third objective, specifically the prediction I made in which I expected women and men to differ in influence of perceptions of coercion and motivation in early treatment engagement. Including the variable *gender* in the first step of the regression showed if men and women differ in terms of TE, as well as the strength and direction of those differences (Aiken & West, 1991). However, this did not answer any questions about how men and women differ in terms of the other independent variables on TE. The interaction terms, the product of the one independent variable with the *gender* variable, indicated if men and women differ in the influence of one independent variable on TE, which could then be graphed to make clear differences if any existed (Aiken & West, 1991).

Regression analyses were conducted separately for alcohol and drug use (Tables 7 and 8, below). At baseline, clients were asked a series of questions regarding their use of various drugs and alcohol including one question asking clients to answer which substance was their primary problem substance (see Table 2). This question was recoded to group clients into those who indicated alcohol or any other drug as their primary problem substance. This recode resulted in n = 299, 91% clients included in the total sample with n = 29, 9% missing. Most clients (n = 209, 70%) reported alcohol as their primary problem substance, while the remainder (n = 90, 30%) listed an illicit drug as their primary problem substance.

Alcohol Clients. Among the clients who listed alcohol as their primary problem substance $n = 107$ (51%) were male and $n = 102$ (49%) were female. From the regression analyses only the model examining the effects of gender, coercion, motivation, and social support on the *Commitment* aspect of TE was significant, $F(7) = 2.664$, $p < .05$ with an $R^2 = .109$ meaning the independent variables in the model explained 10% of the variance in TE *Commitment*. Looking at each independent variable, the beta for the SCI total score was significant, $\beta = -.195$, $p < .05$, and the modified SOCRATES AMREC subscale showed a trend towards significance $\beta = .156$, $p = .057$. In all three regression models the second step which included the interaction terms was not significant.

Drug Clients. Among the clients who listed any illicit drug as their primary problem substance $n = 43$ (48%) were male and $n = 47$ (52%) were female. In all three cases, there were significant main effects of the independent variables on each of the TE subscales for drug clients.

The first regression model used the TE subscale *Confidence* as the dependent variable; the main effect trended towards significance, $F(7) = 2.003$, $p = .071$ and $R^2 = .200$ indicating the main effects of the model accounted for 20% of the variance. Looking at each independent variable both the modified SOCRATES subscales were significant, TS $\beta = .375$, $p < .01$, while the AMREC only trended towards significance, $\beta = -.270$, $p = .059$. Additionally, social support from family was also significant, $\beta = .279$, $p < .05$. The second step examining the interaction between gender and coercion, motivation and social support was not significant.

The results were similar when examining the regression model using the TE *Rapport* subscale as the dependent variable. The main effect was significant, $F(7) = 2.747$, $p < .016$, with an $R^2 = .256$ indicating the main effects accounted for 26% of the variance. Again, both SOCRATES subscales AMREC and TS, along with the subscale PSS-Fa was significant. Furthermore, the direction of the relationships remained the same. Namely, ambivalence had an inverse relationship to *Rapport* in treatment $\beta = -.2720$, $p < .05$, while taking steps and social support from family had positive relationships to *Rapport*, $\beta = .470$, $p < .001$, and $\beta = .289$, $p < .05$ respectively. Again, the second step to the model examining the interaction between gender and the main independent variables was not significant.

Finally, the main effects of the independent variables were significant for the regression predicting *Commitment* subscale scores, $F(7) = 2.403$, $p < .05$, with an $R^2 = .231$ indicating the model accounted for 23% of the variance. In this case, the only independent variable with a significant effect was the SOCRATES-TS subscale. As with the previous two regression models, as *taking-steps* increased so too did *Commitment*, $\beta = .386$, $p < .01$. Again, there second step of the analysis examining the interaction between gender and the other independent variables was not significant.

Table 7. Relationship between Coercion, Motivation, and Social Support Measures and Client Engagement (Alcohol Clients).

Predictor	**Treatment Engagement - Confidence**			**Treatment Engagement - Rapport**			**Treatment Engagement - Commitment**		
	R^2	F	β	R^2	F	β	R^2	F	β
Main Effect (Step 1)	.014	.298		.026	.575		.109	2.664*	
Constant									
Gender									
SCI									-.195*
MPCS									
SOCR - AMREC									.156a
SOCR - TS									
PSS-Family									
Pss-Friends									
Interactions (Step 2)	.022	.546		.021	.530		.024	.673	
Gender x SCI									
Gender x MPCS									
Gender x SOC - AMREC									
Gender x SOC - TS									
Gender x PSS-Family									
Gender x PSS-Friends									

Note. Gender was coded as 1 = male and 2 = female

Predictors: SOCRATES (SOC), Ambivalence/Recognition (AMREC), Taking Steps (TS), Social Control Index (SCI), MacArthur Perceived Coercion Scale (MPCS), and Perceived Social Support (PSS) -Family/Friends.

Dependent Variables: Treatment Engagement - Confidence, Rapport, Commitment subscales.

*p < .05, **p < .01, *** p < .001, ap < .08.

Table 8. Relationship between Coercion, Motivation, and Social Support Measures and Client Engagement (Drug Clients).

Predictor	Treatment Engagement - Confidence			Treatment Engagement - Rapport			Treatment Engagement - Commitment		
	R^2	F	β	R^2	F	β	R^2	F	β
Main Effect (Step 1)	.200	2.003_a		.256	2.747^*		.231	2.403^*	
Constant									
Gender									
SCI									
MPCS									
SOCR - AMREC			$-.270_a$			$-.2720^*$			
SOCR - TS			$.375^{**}$			$.470^{***}$			$.386^{**}$
PSS-Family			$.279^*$			$.289^*$			
Pss-Friends									
Interactions (Step 2)	.099	1.183		.072	.898		.128	1.668	
Gender x SCI									
Gender x MPCS									
Gender x SOC - AMREC									
Gender x SOC - TS									
Gender x PSS-Family									
Gender x PSS-Friends									

Note. Gender was coded as 1 = male and 2 = female

Predictors: SOCRATES (SOC), Ambivalence/Recognition (AMREC), Taking Steps (TS), Social Control Index (SCI), MacArthur Perceived Coercion Scale (MPCS), and Perceived Social Support (PSS) -Family/Friends.

Dependent Variables: Treatment Engagement - Confidence, Rapport, Commitment subscales.

$^*p < .05$, $^{**}p < .01$, $^{***}p < .001$, $_ap < .08$.

Chapter 4. Discussion

Research Purpose. To review, the overall purpose of this research was to further the understanding of gendered differences in the early stages of addiction treatment. To that end, I began my analysis by reviewing the demographic, substance use, and treatment history of the client base from the original study. The background demographics gave a foundation that was used to understand and interpret the results from later analyses. In this sample, women were approximately 30 years of age, most were Aboriginal (*n* = 97, 71%), not working or currently employed (*n* = 126, 80%), single (*n* = 123, 78%), and had no legal involvement (*n* = 100, 64%). Men were approximately 34 years, Aboriginal (53%) or Caucasian, either employed (*n* = 60, 35%) or unemployed (*n* = 68, 40%), single (*n* = 124, 77%), had no legal involvement (*n* = 91, 57%). Compared to women, 57% (*n* = 91) reported having some involvement with the legal system.

The results of the background drug use and treatment history did not replicate major trends evidenced in the epidemiological and natural history of addiction literature. For example, larger studies examining alcohol and drug use among Canadian and US samples consistently show women more often use alcohol than drugs, but men drink more and more often than women. Furthermore, women are more likely to use marijuana rather than other drugs (Tjepkema, 2004; Glantz et al., 1999; Morton & Konrad, 2009). In this sample, similar numbers of men and women claimed alcohol as their primary problem substance, and more women claimed cocaine/crack as their primary or secondary substance rather than cannabis. This difference could reflect the nature of comparing epidemiological and natural history data from a large population

survey with the data resulting from a small, sample specific, dataset that includes clients meeting specific criteria. The clients in this sample do not reflect the larger population of Canada and as such, their drug use history will not reflect the general populations' drug use history.

While literature suggests most individuals do not seek out formal treatment for their addictions, almost a third of clients in this sample have experienced some form of treatment in the past (Bischof et al., 2000). A further review of the demographic data does support the claim by Wild and Wolf (2009) in which those "who initiate treatment for addiction are more likely to be male [and] older…" (p.26).

4.1. Objective 1: Treatment Access.

Before examining gender differences associated with treatment access I predicted women would enter treatment through informal or formal referral sources related to their social networks (i.e., CWA), while men would enter treatment through formal or legal referral sources. The difference seen in the responses between men and women when asked about pressure to enter treatment confirms, in part, supported my hypothesis. Most men and women entered treatment without referral (78%). However, more women entered because of a formal referral (13%) than through a legal referral (8%), while more men entered through a legal referral (16%) than a formal referral (4%). The gendered difference in *legal referral* reflects the overall trend in the Canadian court system discussed in Chapter 1: *Legal and Formal Influences*. If we examine the chain of events that result in individuals being legally referred to treatment, gendered

differences emerge at every stage. First, as noted previously men are more likely than women to commit crimes, especially violent crimes, increasing their representation in the Canadian court system. Then too, men are more often given custodial sentences compared to women (Canadian Centre for Justice, 2003; Statistics Canada, 2010-2011). It is not surprising then that more men are mandated to treatment compared to women, a result replicated in this analysis. Finally, one other possibility for this difference could be attributed to the barriers outlined by Jessup et al., (2003) study of prenatal and parenting women. Those women reported fear of the judicial system, specifically being incarcerated and losing custody of their children. While the current data cannot confirm my supposition, the differences in legal referrals for men versus women could be attributed to the actions of women compared to men that would keep them away from the judicial system, actions that would reflect the responses of women in the Jessup et al., (2003) study.

The reason why more women than men reported receiving pressure from a *formal referral*, in this case the CWA, could reflect a larger gendered norm in our society concerning parenting and custody. Namely, women most often have custody of their children and therefore may come into contact with these organizations. The original in-take information did not address custody or existence of children so it is not possible to test if this was the case. Also not included in the original in-take was the option of "homemakers" or "stay-at-home" for employment status. As with parenting, home-making can be considered a gendered role in that it is often ascribed to women in our society.

Clients who responded *unemployed* (women *n* = 75, 52%) or *not in labor force* (women *n* = 12, 100%) may be included in this category, though follow-up would have to confirm this. These results, combined with the fact that no women answered "condition of employment" in the in-take, provides strong evidence for gender differences in experiences leading up to entering addiction treatment.

Finally, *informal referral* was the most commonly reported referral source listed by both men and women in this study. Taking a closer look at the distribution of responses reveal differences between men and women within this response category. Further, these differences could reflect gendered roles discussed in Chapter 1: *Informal Level Influences*. Recalling the recoded category *No Mandate* responses included 'condition of family, community', 'myself', 'other', or 'none'. Figure 4 displays the differences between men and women in this response category to be split almost evenly, implying men and women were almost equal in the responses given within this category. However, a closer look at the data reveals this is not the case. More men (*n* = 62, 55%) than women (*n* = 51, 45%) responded 'myself' while more women (*n* = 9, 69%) than men (*n* = 4, 31%) responded 'condition of family'. Men and women responded equally to the 'other' condition. This difference in reporting could reflect the results discussed above regarding *formal referrals* in which more women than men reported being referred by the CWA. This result implies a difference between men and women in familial status; namely, more women in this study either had children or had custody of children (an assumption that cannot be confirmed through this data). Following this line of reasoning, it could be the case women in this study felt

pressure from their family (children) to enter treatment. This supposition cannot be confirmed by the data in this study but is supported by the gendered differences in experiences of informal pressure described in the literature (Royce et al., 1997).

4.2. Objective 2: Perceptions of Coercion, Motivation, Social Networks.

I made three predictions concerning the gender differences between men and women in perceptions of coercion, motivation, and social networks:

1. Women will differ from men in the level of their perceptions of motivation. Specifically women will show a greater level of motivation, measured in terms of recognition, ambivalence, and taking-steps, compared to men.
2. Women will perceive less coercion compared to men.
3. Women will have a greater perception of social support from their family compared to men, while men will have greater support from friends.

First, the results of the coercion analyses proved my prediction to be largely unfounded. Before discussing the results I will reiterate my reasoning for my prediction regarding gender differences in perceptions of coercion. Recall coercion is an internal perception that may or may not relate to referral source (Wild et al., 1998). Further, as discussed throughout Chapter 1 the importance women place on familial networks, and in particular the parent-child relationship, impacts the actions of women when accessing and engaging in addiction treatment (Morton & Konrad, 2009). Based on this cumulative literature I assumed women would experience pressure to enter treatment through informal sources such as friends and family or formal sources that are tied to their social networks such as the CWA. However, because of the importance of familial

networks often described by women I predicted women would not perceive this pressure to be coercive (Witbrodt & Romeljso, 2010).

From the SCI analysis, with the exception of *formal* referral sources of coercion there was no significant gender differences. This is also true of responses on the MPCS, in which women reported greater perceptions of coercion compared to men, though the difference was not significant. However, to understand the results of the SCI it is important to look at the scores of each subscale as well as the total score. Each subscale had a range of possible scores that when summed produced a range of possible scores for the entire scale. A higher score on each subscale indicated higher perceptions of coercion (Polcin & Weisner, 1999). The mean score for both men and women was low on all subscales. The mean total score for both men and women was approximately 15 with a standard deviation of around 5.5, out of a range of possible scores from 1- 50 (Polcin & Weisner, 1999). The dichotomized data showed a significant difference in perception of coercion between men and women in which women in this sample perceived greater levels coercion compared to men, while the low SCI scores indicated both men and women perceived very little coercion from any of these sources. Indeed, 91% of men and women reported a score of two or less on the SCI supported further by the overall low level of the coercion, indicated by the low mean score. Finally, while not significant the higher MPCS dichotomized score for women would appear at first to reflect the findings of the Clark et al., (2005) study, the data actually seems to support the later Clark and Young (2009) study better.

Again, while coercion is a *perception*, I believed those who entered treatment through the court system could, for example, have differing perceptions of coercion compared to those who have entered based on pressure from their family, or those who entered because they recognized a need for change on their own (Wild et al., 1998; Witbrodt & Romeljso, 2010). The demographic and treatment entry questions may explain why these result run contrary to what I had predicted. First, the employment, marital, and legal status questions show that both men and women were not exposed to every potential source of coercion measured by the SCI. Second, the treatment entry question showed most clients entered treatment voluntarily. To follow-up on this line of inquiry, I conducted a chi-square analysis using the 3-category form of the treatment entry question and the dichotomized MPCS, thus comparing perceptions of coercion versus no coercion among those who have entered treatment through no mandate, formal, or legal referral sources. The results were significant, χ^2 (2) = 14.336, $p < .01$, though this was largely due to the number of individuals who entered treatment without a mandate (n = 158, 86%).

Indeed, the most common response to this question was a variant of ‘on my own’ or ‘wanted to come here’ and allude to internal motivation and lack of coercion. Indeed, these responses seem to align with the concept of *identified motivation* as part of SDT described earlier in the literature. Response items such as ‘on my own’ or ‘wanted to come here’ imply increased help-seeking behavior and internal perceptions and goals align with the treatment program. These actions would support ones’ need for ‘autonomy, relatedness, and competence’,

and could also be an explanation for the results of the motivational scores discussed next (Wild et al., 2006; Ryan & Deci, 2000).

Second, my prediction in which women would show greater perceptions of motivation compared to men was not corroborated. Again, this prediction was based on the same line of reasoning described for my prediction of perceptions of coercion. Women in this study scored mid-to-high on the range of possible scores in both subscales for drugs and alcohol. This is true of the men as well. This indicated that both men and women have high levels of problem recognition and motivation to change. There were no significant differences between men and women on either of the subscales AMREC or TS for either alcohol or drug use. This result further supports the conclusions I made regarding *identified motivation* discussed previously. While the SOCRATES, original and modified, was not designed to measure the aspects of motivation described by SDT certain parallels can be made (Cross & Sibley, 2010). For example, aspects of *Recognition* and *Taking-Steps* of the SOCRATES seem to relate to components of *Identified Motivation* regarding perceptions and beliefs aligning with treatment goals and help-seeking behavior. These would include items such as "I have serious problems with drinking" and "I really want to make changes in my drinking" from the *Recognition* subscale and "I want help to keep from going back to the way I used to drink" from the *Taking-Steps* subscale (Miller & Tonigan, 1996). Again, the SOCRATES was not designed based on tenants of SDT, but based on the results of the motivation and coercion measures, and the results from the treatment entry question, it appears that both men and women show *Identified*

Motivation and have acted in ways to support the need for 'autonomy, relatedness, and competence' in their addiction treatment process (Wild et al., 2006). Once again this supposition cannot be confirmed through this data and the measures used in this thesis.

Third, my prediction regarding gender differences and social support showed differences between men and women. Based on the evidence and information about social networks described in Chapter 1, I predicted women would perceive greater social support from family and men would perceive greater social support from their friends. Again, my predictions were not substantiated. Women reported a mid-range score for perceptions of support from their family and a higher score for perceptions of support from their friends. The opposite was the case for men, in which greater social support was perceived to come from their family rather than their friends. However, in both cases the perception of support was in the mid-range for men. When comparing whether women or men felt any support versus no support, only among friends was the difference significant.

Looking back at the literature this could reflect the complex nature of social networks described by Manuel et al., (2007) and Goldbarg and Brown (2010). I had made my original predictions partly on the literature describing barriers to addiction which emphasized the importance of the family unit in addiction treatment for women, as well as the research described by Royce et al. (1997). Specifically, I errantly connected pressure to enter treatment from family and friends with support towards treatment from those same sources. However, as

Manuel et al. (2007) and Goldbarg and Brown (2010) documented, this is not always the case. Again, the demographic questions do not allow for a more in-depth and nuanced examination of the social networks and subsequent perceptions of support for the clients in this sample. Additionally, perceptions about social networks are shaped by ones culture. While ethnicity was not specifically examined and included in this study, the results could be influenced by cultural beliefs around social networks, the family unit, and social support. Further research focusing on culture, and in this case Aboriginal issues, could shed light on this finding.

4.3. Objective 3: Treatment Engagement.

The prediction I made for gender differences in treatment engagement consists of two parts:

1. The main effect of the regression models will show men and women differ in treatment engagement outcomes. Specifically, women will have better treatment outcomes compared to men.
2. The second step of the regression models will show the perceptions of coercion, motivation, and social networks affects treatment engagement outcomes differently for men and women.

It is important to note that these relationships were prospective as the scores for the independent variables were taken during the intake process when clients entered treatment, while the follow-up questionnaire that included the TE items were not administered until four week later. This means that any significant results indicated that perceptions of motivation, coercion, and/or social support effected levels of TE later on in the treatment program.

The first part of the prediction focuses on the main effects of the regression models. The main effects of each regression indicate the effect the predictor

variables have on the dependent variable. For the alcohol clients, the only significant result occurred for the main effects (step 1) of the commitment subscale. The regression model explained 10% of the variance in the commitment aspect of treatment engagement, a result driven by the significance of the coercion (SCI) and motivation (SOCRATES – AMREC) scores. Looking further, the betas reveal that clients who perceived higher levels of coercion at treatment entry had lower levels of commitment during the treatment process, though this relationship reflects a trend in the data rather than showing concrete evidence for this relationship. The significant motivation beta showed that clients with higher levels of ambivalence and recognition at the beginning of treatment reported a greater level of commitment later in the program.

These results conform to the literature discussed in Chapter 1 and the discussion on perceptions of motivation, coercion, and social networks. Specifically, we know that *Identified Motivation* (what I argue could exist and explain the results of the coercion and motivation analyses) is positively associated with client engagement and that coercion is inversely related to motivation (Wild et al., 2006). The direction of the betas replicates this pattern.

The regression models for the drug clients provided significant or near significant main effects (step 1) for all three TE subscales. Additionally, the same three- predictor variables (SOCRATES – AMREC/TS and PSS-Fa) were significant in both the regression analyses of the confidence and rapport aspects of treatment engagement. In both cases, those who reported greater perceptions ambivalence and recognition at in-take reported a lower level confidence and

rapport in TE later on. Clients who reported higher levels of TS and social support from family at in-take later reported greater confidence and rapport in TE. Only the motivation SOCRATES-TS subscale significantly affected the commitment aspect of treatment engagement scores; those who reported greater levels of TS later reported higher levels of commitment. As before, the positive correlation between motivation and social support with treatment engagement is supported by the literature (Wild et al., 2006; Witbrodt & Romeljso's, 2010; Manuel et al., 2007).

What is less clear is the lack of significant results for gender difference across the board for both alcohol and drug clients. Indeed, both women and men scored high on all aspects of treatment engagement. This is surprising considering the literature suggested women would not score as high on the treatment engagement measure based on gendered differences in life-histories and social determinants of treatment access and engagement. For example, women report higher rates of childhood sexual abuse or victimization, many women in addiction treatment programs experience intimate partner violence, and women are less likely to seek formal treatment for their addictions in part due to fear, stigma, lack of appropriate care, and negative past experiences with health care providers (Morton & Konrad, 2009; Wild & Wolf, 2009; Health Canada, 2001; James et al., 2004). This narrative describing women's experiences with addictions painted a picture in which women would be distrustful of clinicians and the treatment process. As the trust and rapport clients and clinicians develop is integral to treatment engagement and the eventual success of a treatment program I would

have expected to see a gender difference in my regression models (Simpson & Joe, 2004). The reason why no such difference exists and scores on engagement were high across the board could be related again to the overall motivation of both men and women in this particular sample.

The second part of my prediction involved the interaction terms between gender and the predictor variables. I hypothesized men and women would differ in the influence of perceptions of coercion, motivation, and social networks on treatment engagement outcomes. In all cases for alcohol and drug clients, the second step (which included the interaction terms) was not significant. Again, this ran counter to the predictions previously listed but is not surprising given the main effect of gender was not significant.

4.4. Conclusions.

While a definitive understanding of the gender differences specific to perceptions of coercion, motivation, social-networks, and ultimately treatment engagement cannot be gleaned from this analysis, some definitive conclusions can be made. Perception of coercion impacts treatment engagement; specifically as perceived social pressures to enter treatment increased, commitment to the treatment process (one aspect of treatment engagement) decreased. In addition, there is evidence to support a gender difference in perceptions of coercion; women perceived greater coercion compared to men and in addition, the source of coercion does matter. Unfortunately, the results regarding motivation based on the data from this study was inconclusive. Men and women did have different mean scores but the differences were small and the data overlapped to such an extent

that not even trends in the data could be discerned. Women perceive more social support from their friends compared to men, but there were no differences in perception of support by family members. Finally, among the alcohol clients, the effects of coercion, motivation, and social support on treatment engagement were minimal and came primarily from coercion (SCI) and motivation (AMREC) scores. This was stronger among the drug clients though driven by the SOCRATES and the PSS-FA scores.

The results of this study, while limited, can be discussed in terms of a broader health promotion perspective. Looking at the social determinants of health, defined by the World Health Organization (WHO) as "the conditions in which people are born, grow, live, work and age, including the health system" as a way to interpret the results of study reveals some similarities and differences between the men and women in this sample, particularly in regards to issues of Socioeconomic Status (SES), early life, and social safety net/exclusion (Raphael, D., 2007; http://www.who.int/social_determinants/en/). Raphael (2007) noted these factors along with Aboriginal status, housing, and the other demographic characteristics captured in this study are some of the major health *inequities* in Canada. While the current study was able to capture to some degree the gender differences in these social determinants of health and the subsequent impact on treatment engagement, the study was also limited by the factors not included. For example, SES and the associated power inequities between groups of people can influence how individuals engage with one another. The inherent power inequity between client and clinician combined with differences in SES could have

influenced or even impede treatment engagement as we know it can impact treatment access (Health Canada, 2001).

Numerous sources in the introductory literature, Raphael (2007) and the WHO also highlight the influence of early life and the relationships and interactions we have with others across ecological levels on aspects of health in general, and addiction specifically. This issue was addressed in a narrow way in this study by including perceptions of support from friends and family and questions regarding past treatment. Implied in PSS-Fa/Fr is the assumption of a social network of friends and family and contact with those individuals, but the exact nature of the social networks of clients in this study cannot be determined by the current data. Nor can we know if the past treatment experience, something listed by a majority of clients, was positive, negative, beneficial, detrimental, etc. However, I can speculate as to the impact of these unmeasured social determinants on treatment engagement based in part on the results and measures included. For example, most clients reported some past treatment experience and their current involvement in treatment was voluntary. This could imply that while past attempts at quitting were not successful the experiences clients had in the programs were not so negative or detrimental they acted as deterrents to seeking-help and subsequent engagement (supported by the overall high engagement scores across the board).

Limitations. The limitations related to with secondary analysis have been outlined in Chapter 2. Here I will discuss the issues of conducting a secondary analysis that became evident with this data set in particular.

Specifically, I found two problems recurring throughout the analysis. The first was an issue of client numbers and the second was the categorization of individuals within each variable.

To begin, the original study was very successful at recruiting participants resulting in a good sized dataset (N = 333) from which I could conduct my secondary analysis. However, from the beginning my investigation necessitated splitting the dataset nearly in half in order to compare the genders. This reduced the number of clients to n = 161 for men and n = 157 for women when first examining the demographic differences between genders. These numbers were then divided further for each proceeding analysis resulting in very small numbers and in some of the cases the numbers were so small I had to recombine the categories or dichotomize the categories in order to understand the difference between men and women. There are risks in dichotomizing continuous variables, including loss of information and an increased risk of making a Type II error. However, in situations where the data is does not form a normal distribution or a linear relationship dichotomizing the data is deemed appropriate (Streiner, 2002). This was the case when comparing the scores of men and women on the MPCS and the PSS-Fa/Fr. For example, in the case the MPCS the data was divided into five categories based on the five questions. Looking to the distribution of scores two of those categories had a count of eight or less. This made the distribution of scores highly skewed towards the lower end making a J-shape distribution rather than a normal distribution of scores. As a result the analyses were inconclusive

until the categories were redefined and the data recombined to reflect the new category definitions (Streiner, 2002).

The second major issue I encountered was trying to understand my results in light of the way individuals were grouped when conducting my secondary data analysis. For example, demographic information was gathered on employment status, marital status, legal status, and other variables including education, income, ethnicity, and language. Participants were then asked a series of questions, some of which required them to think about the answer in relation to various external sources such as the legal system, formal sources such as the CWA or employers, and informal sources such as friends and family. However, when looking back at the demographic information it became apparent that not everyone was exposed to all of these external sources. For example, only 90 individuals were employed at the time they completed the questionnaire, yet all were asked if they received pressure from their employers as part of the treatment requirement question. Clients had three possible responses to this query: yes, no, or leave it blank. If a client responded with 'no' this could be the result of two scenarios: they had no employer and therefore no pressure, or they had an employer but did not experience pressure. This applied as well to the questions relating to client legal status.

The importance of understanding the demographic information in order to understand later analyses became quite clear in the case of my first objective. Specifically, I had difficulty in discerning the *formal* and *informal* pressures relating to family when there was no information about whether or not individuals

had children let alone custody. Specifically, all individuals were asked about pressure from the CWA, and many responded, but questions remained. Did clients who said they did not receive pressure from the CWA do so because they have children and custody but no involvement with the CWA? Have children but do not have custody and also have no involvement with the CWA? Have children, custody, are involved with the CWA but received no pressure? Did not have children and therefor the question does not apply to them? Many similar questions arose when analysing the results of the Objective 2 because of the categorization of *Informal, Formal, Legal,* and *Other*.

While it was clear from previous studies (Wild et al., 1998) that referral sources do not by themselves indicate ones' perceptions, based on previous evidence I believed those who have entered treatment through the court system could, for example, have differing perceptions of coercion those who have entered based on pressure from their family or those who entered because they recognized a need for change on their own. To follow-up on this line of inquiry I conducted a chi-square analysis using the 3-category form of the treatment entry question and the dichotomized MPCS, thus comparing perceptions of coercion versus no coercion among those who have entered treatment through no mandate, formal, or legal referral sources. The results was significant, χ^2 (2) = 14.336, $p < .01$, though this was largely due to the number of individuals who entered treatment without a mandate (n = 158, 86%).

Many avenues are open to deal with such issues in prospective research including measures for intake as well as follow-up questionnaires. First, I will

propose ideas regarding the intake questionnaire and process. One simple, though not easy, solution would be to create a comprehensive and exhaustive questionnaire to allow for as many possible avenues of analysis as possible. Taking the CWA above as an example again, an intake questionnaire could include items that address all of these questions. The positive side of this approach would be a breadth of information that could be gleaned from each client. The downside would be the client can easily become overwhelmed with the size of the questionnaire and may skip items or adopt a response style such as acquiescence, random responding, faking, or deviance to complete a lengthy questionnaire more quickly. Alternatively, the lengthy version of a questionnaire could be distributed as a part of a pilot so that redundant items or items that did not relate specifically to the questionnaires purpose could be removed to create a comprehensive but shorter in-take questionnaire (DeVellis, 2003).

A second solution to the issue I experienced would be to conduct a follow-up study with a questionnaire including items that address the specific issues identified in the first study. Such an approach would take little time to create and distribute. However, it would require clients to be available and willing to participate in the follow-up, something not guaranteed.

Future Research. The genesis of this thesis occurred because of there was a wealth of information readily available on the topic of addiction along with the many permutations resulting from decades of work on this topic. While much effort has been put into understanding sex and gender differences in the early treatment engagement phase of addiction, the process of using multiple indices in

one study, and specifically motivation, coercion, and social support, is not as common. Ultimately, I wanted to further the understanding of gender differences in this process, though much of my analysis was limited and in some cases could only allude to larger gender issues. Even so, my results coupled with previous literature and the limitations I faced conducting a secondary analysis does provide an evidence base that warranting further research. This research could take many forms but I will outline a few key areas that could be addressed along with recommendations.

First, as I pointed out in my limitations section, the examination of differences between men and women necessitates the dataset to be split during the analysis. This will reduce the number of observations for each group in half from the start, and further divisions may be required in later analyses as was the case in this thesis. It is therefore important to ensure enough participants or clients are recruited from the beginning. To do this a clear understanding of the purpose of the study along with measurements to be included in the study and the analyses to be performed is imperative. This is especially true if the purpose of the study is similar to mine in which I studied the effects of multiple independent variables on TE, one dependent variable. This line of inquiry required me to conduct multiple regression analyses, and conducting multiple regression analyses with a large number of independent variables comes with the risk of over-fitting. Over-fitting in multiple regression can be thought of as a result similar to a Type 1 error, namely the results from a multiple regression model with too many independent variables producing significant results are "overly optimistic . . .and don't really

exist in the population and hence will not replicate" (Babyak, 2004, p. 411). In my case I had enough observations in my sample to feel confident any significant results were valid and indicative of the population. Though this may not be the case if a more comprehensive study as I proposed in the limitations section were developed and conducted without the minimum required amount of participants to ensure over-fitting does not occur. Babyak (2004) describes two guidelines that can be used to ensure enough observations are generated.

Second, the subject pool for any future research should include the demographics or characteristics tailored to the purpose of the study. The client base used in this study was not homogenous. My purpose focused on differences between men and women so the demographic groups did not have any specific impact on my analysis. However, given the specific experiences, needs, and perceptions held by differing demographic groups (i.e., ethnicities/cultures, age groups) it may prove more beneficial to examine men and women of a specific demographic group. For example, the women in the original study were largely Aboriginal Canadian women, who we know face different obstacles and have much different experiences with drug use, treatment access, legal involvement, and social networks compared to Canadian women of other ethnicities (Bennet, 2005).

Third and finally, I mentioned in the opening I was originally interested in gender differences, though I was limited in how far I was able to go in my analyses. While not all of my analyses were significant the sum of my study does indicate genuine and replicable gender difference between men and women in

terms of coercion, motivation, and social support along with the effects of these on treatment engagement. A future research project could expand on this topic to include the nuances that come with examining gender including the "socially constructed roles, relationships, behaviours, [and] relative power" described by the Canadian Institute of Health Research (2011). Especially in light of the results found in the demographic and first objective sections regarding women, coercion from formal pressure, and the CWA, that allude to larger gender based issues at play.

References

Aiken, L., & West, S. (1991). Interactions between categorical and continuous variables. In L. Aiken, & S. West. (Eds.) *Multiple Regression: Testing and Interpreting Interactions.* (pp.116-138). Newbury Park, CA: Sage Publications.

Babyak, M. (2004). What you see may not be what you get: A brief, nontechnical introduction to overfitting in regression-type models. *Psychosomatic Medicine, 66*(3), 411-421.

Baer, J., Beadnell, B., Garrett, S., Hartzler, B., Wells, E., & Peterson, P. (2008). Adolescent change language with a brief motivational intervention and substance use outcomes. *Psychology of Addictive Behaviors, 22*(4), 570-575.

Beattie, M., & Longabough, R. (1997). Interpersonal factors and post-treatment drinking and subjective wellbeing. *Addiction, 92*(11), 1507-1521.

Begun, A., Rose, S., LeBel, T., & Teske-Young, B. (2009). Implementing substance abuse screening and motivational intervention with women in jail. *Journal of Social Work Practice with Addictions, 9*(1), 113-131.

Bennet, M. (2005). *Annotated bibliography of Aboriginal women's health and healing research*. Vancouver, Canada: Aboriginal Women's Health and Healing Research Group. Retrieved from http://www.cewh-cesf.ca/.

Best, D., Day, E., & Morgan, E. (2006*). Addiction careers and the natural history of change: Research briefing 20.* National Treatment Agency for Substance Misuse. London, UK.

Bischof, G., Rumpf, H-J., Hapke, U., Meyer, C., & John, U. (2000). Gender differences in natural recovery from alcohol dependence. *Journal of Studies on Alcohol, 61*(6), 783-786.

Blanchard, K., Morgenstern, J., Morgan, T., Labouvie, E., & Bux, D. (2003). Assessing consequences of substance use: Pyschometric properties of the inventory of drug consequences. *Psychology of Addictive Behaviors, 17*(4), 328-331.

Boisvert, R., Martin, L., Grosek, M., & Clarie, A. (2008). Effectiveness of peer-support community in addiction recovery: Participation as intervention. *Occupational Therapy International, 15*(4), 205-220.

Boslaugh, S. (2007). An introduction to secondary data analysis. In S. Boslaugh (Ed.) . *Secondary data sources for public health: Practical guides to biostatistics and epidemiology* (pp. 3). Cambridge, UK: Cambridge University Press.

Bryant, T., Leaver, C., & Dunn, J. (2009). Unmet healthcare need, gender, and health inequalities in Canada. *Health Policy, 9*(1), 24-32.

Bushway, D., & Heiland, L. (1995). Women in treatment for addiction: What's new in the literature? *Alcoholism Treatment Quarterly, 13*(4), 83-96.

Campo, R., Uchino, B., Vaughn, A., Reblin, M., Smith, T., & Holt-Lunstad, J. (2009). The assessment of positivity and negativity in social networks: The reliability and validity of the Social Relationships Index. *Journal of Community Psychology, 37*(4), 471-486.

Canadian Center on Substance Abuse. (2005). *Canadian addiction survey: A national survey of Canadian's use of alcohol and other drugs, prevalence of use and related harms.* Ottawa, Canada: Health Canada.

Canadian Centre for Justice. (2003). *Canadian Crime Statistics*. Catalogue no. 85-205-XIE. Ottawa, Canada: Statistics Canada.

Canadian Institute of Health Research. (2011). *Gender, Sex and Health Research Guide: A Tool for CIHR Applicants.* Ottawa, Canada: Canadian Institute of Health Research.
Retrieved from http://www.cihr-irsc.gc.ca/e/32019.html.

Chirkov, V., Ryan, R., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: A self-discrimination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology, 84*(1), 97-110.

Clark, C., Becker, M., Giard, J., Mazelis, R., Savage, A., & Vogel, W. (2005). The role of coercion in the treatment of women with co-occurring disorders and histories of abuse. *Journal of Behavioral Health Services & Research, 32*(2), 167-181.

Clark, C. & Young, S. (2009). Outcomes of mandated treatment for women with histories of abuse and co-occurring disorders. *Journal of Substance Abuse Treatment, 37*(4), 346-352.

Cross, S., & Sibley-Bowers, L. (2001). *The standardized tools and criteria manual: Helping clients navigate addition treatment in Ontario.* Toronto, Canada: Centre for Addiction and Mental Health.

Cunningham, J., Wild, T., & Koski-Jännes, A. (2005). Motivation and life events: A perspective natural history pilot study of problem drinkers in the community. *Addictive Behaviors, 30*(8), 1603-1606.

Dakof, G., Cohen, J., Henderson, C., Duarte, E., Boustani, M., Blackburn, A., …Hawes, S. (2010). A randomized pilot study of the engaging moms program for family drug court. *Journal of Substance Abuse Treatment, 38*(3), 263-274.

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

Department of Justice. (2010). *Drug Treatment Court Funding Program.* Ottawa, Canada: Department of Justice, Government of Canada. Retrieved from http://www.justice.gc.ca/eng/pi/pb-dgp/prog/dtc-ttt/index.html.

DeVellis, R. (2003). Test construction. In: R. DeVellis (Ed.), *Scale development: Theory and applications (2nd ed*) (pp.60-100). Thousand Oaks, CA: Sage Publications.

Ferrand, C., Perrin, C., & Nasarre, S. (2008). Motives for regular physical activity in women and men: A qualitative study in French adults with type 2 diabetes, belonging to patients' association. *Health and Social Care in the Community, 16*(5), 511-520.

Figlie, N., Dunn, J., & Laranjeira, R. (2004). Factor structure of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) in alcohol dependent outpatients. *Revista Brasileira de Psiquiatria, 26(2),* 91-99.

Figlie, N., Dunn, J., & Laranjeira, R. (2005). Motivation for change in alcohol dependent outpatients from Brazil. *Addictive Behaviors, 30(1),* 159-165.

Fuziah, I., Murni, R., Jusoff, K., Shahraza, W., Lukman, Z., Arifin, Z., & Zainah . (2011). Gender differences among drug abusers in the process of readiness to change. *World Applied Sciences Journal, 12,* 63-67.

Gannon, M. (2005). *Crime Statistics in Canada, 2005*. Catalogue no. 85-002-XIE, Vol. 26, no.4. Ottawa, Canada: Statistics Canada.

Gardner, W., Hoge, S., Bennett, N., Roth, L., Lidz, C., Monahan, J., & Mulvey, E. (1993). Two scales for measuring patients' perceptions for coercion during mental hospital admission. *Behavioral Sciences and the Law, 11*(3), 307-321.

Gaucher, D., Friesen, J., & Kay, A. (2011). Evidence that gendered wording in job advertisements exist and sustains gender inequality. *Journal of Personality and Social Psychology, 101*(1), 109-128.

Glantz, M., Weinberg, Z., Miner, L., & Colliver, J. (1999). The etiology of drug abuse: Mapping the paths. In D. Glanz, & C. Hartel (Eds.). *Drug abuse: Origins*

and interventions (pp. 345). Washington, DC: American Psychological Association.

Gockel, C., & Werth, L. (2010). Measuring and modeling shared leadership: Traditional approaches and new ideas. *Journal of Personnel Psychology, 9*(4), 172-180.

Goldberg, A., & Smith, J. (2011). Stigma, social context, and mental health: Lesbian and gay couples across the transition to adoptive parenthood. *Journal of Counseling Psychology, 58*(1), 139-150.

Goldbarg, R., & Brown, E. (2010). Gender, personal networks, and drug use among rural African Americans. *International Quarterly of Community Health Education, 30*(1), 41-45.

Gregoire, T., & Burke, A. (2004). The relationship of legal coercion to readiness to change among adults with alcohol and other drugs. *Journal of Substance Abuse Treatment, 26*(1), 35-41.

Groh, D., Jason, L., & Keys, C. (2008). Social network variables in alcoholics anonymous: A literature review. *Clinical Psychology Review, 28*(3), 430-450.

Hao, W., Tan, L., & Tang, Q. (2010). Why is natural recovery so common for addictive disorders? *Addiction, 105*(9), 1519-1524.

Hartel, C., & Glanz, M. (1999). The treatment of drug abuse: Changing the paths. In M. Glantz & C. Hartel (Eds.). *Drug abuse: Origins and interventions* (pp.191-217). Washington, DC: American Psychological Association.

Health Canada. (2009). *Drug and alcohol use statistics: Major findings from the Canadian Alcohol and Drug Use Monitoring Survey (CADMUS) 2009.* Ottawa, Canada: Heath Canada. Retrieved from http://www.hc-sc.gc.ca/hc-ps/drugs-drogues/stat/index-eng.php.

Health Canada. (2001). *Best practices: Treatment and rehabilitation for women with substance use problems*. Ottawa, Canada: Health Canada.

Hiller, M., Narevic, E., Webster, J., Rosen, P., Staton, M., Leukefeld, C… & Kayo, R. (2009). Problem severity and motivation for treatment in incarcerated substance abusers. *Substance Use and Misuse, 44*(1), 28-41.

Hurd, N., & Zimmerman, M. (2010). Natural mentoring relationships among adolescent mothers: A study of resilience. *Journal of Research on Adolescence, 20*(3), 789-809.

James, S., Johnson, J., & Raghavan, C. (2004). "I couldn't go anywhere": Contextualizing violence and drug abuse: A social network study. *Violence Against Women, 10*(9), 991-1014.

Jessup, M., Humphreys, J., Brindis, C., & Lee, A. (2003). Extrinsic barriers to substance abuse treatment among pregnant drug dependent women. *Journal of Drug Issues, 33*(2), 285-303.

Kaplan, G, Everson, S., & Lynch J. (2000). The contribution of social and behavioral research to an understanding of the distribution of disease: a multilevel approach. In B. Smedley, & S. Syme (Eds.). *Promoting health: Intervention strategies from social and behavioral research (pp. 37-80).* Washington, DC: National Academy Press.

Katsakou, S., Bowers, L., Amos, T., Morriss, R., Rose, D., Wykes, T., & Priebe, S. (2010). Coercion and treatment satisfaction among involuntary patients. *Psychiatric Services, 61*(3), 286-292.

Kelly, J., Magill, M., & Stout, R. (2009). How do people recover from alcohol dependence? A systematic review of the research on mechanisms of behavior change in Alcoholics Anonymous. *Addiction Research and Theory, 17*(3), 236-259.

Kelly, S., O'Grady, K., Schwartz, R., Peterson, J., Wilson, M., & Brown, B. (2010). The relationship of social support to treatment entry and treatment engagement: A community assessment inventory. *Substance Abuse, 31*(1), 43-52.

Kidorf, M., King, V., Neufeld, K., Perice, J., Kolodner, K., & Booner, R. (2009). Improving substance abuse treatment enrollment in community syringe exchangers. *Addiction, 104*(5), 786-795.

Kong, R., & AuCoin, K. (2008). *Female Offenders in Canada*. Catalogue no. 85-002-XIE, Vol. 28, no.1. Ottawa, Canada: Statistics Canada.

Longabough, R., Wirtz, P., Zywiak, W., & O'Malley, S. (2010). Network support as a prognostic indicator of drinking outcomes: The COMBINE study. *Journal of Studies on Alcohol and Drugs, 71*(6), 837-846.)

Longshore, D., & Teruya, C. (2006). Treatment motivation in drug users: A theory-based analysis. *Drug and Alcohol Dependence, 81*(2), 179-188.

Manuel, J., McCrady, B., Epstein, E., Cook, S., & Tonigan, S. (2007). The pretreatment social networks of women with alcohol dependence. *Journal of Studies on Alcohol and Drugs, 68*(6), 971-878.

Markland, D., Ryan, R., Tobin, V., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology, 24*(6), 811-831.

Marlowe, D., Merikle, E., Kirby, K., Festinger, D., & McLellan, A. (2001). Multidimensional assessment of perceived treatment-entry pressures among substance abusers. *Psychology of Addictive Behaviors, 15*(2), 97-108.

Maisto, S., Conigliaro, J., McNeil, M., Kraemer, K., O'Connor, M., & Kelley, M. (1999). Factor structure of the SOCRATES in a sample of primary care patients. *Addictive Behaviors, 24(6),* 879-892.

McLeroy, K., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education and Behavior, 15*(4), 351-377.

McMahon, T., & Luthar, S. (2000). Women in treatment: Within-gender differences in the clinical presentation of opioid-dependent women. *The Journal of Nervous and Mental Disease, 118*(10), 679-687.

Miller, N., & Flaherty, J. (2000). Effectiveness of coerced addiction treatment (alternative consequences) A review of the clinical research. *Journal of Substance Abuse Treatment, 18*(1), 9-16.

Miller, W., & Tonigan, J. (1996). Assessing drinkers' motivation for change: The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES). *Psychology of Addictive Behaviors, 10*(2), 81-89.

Minkler, M., & Wallerstein, N. (2006). Improving health through community organization and community building: A health education perspective. In M. Minkler (Ed.), *Community organizing and community building for health* (pp.29-52). London, England: Rutgers University Press.

Morton, J., & Konrad, S. (2009). Introducing a caring/relational framework for building relationships with addicted mothers. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 38*(2), 206-213.

Moskowitz, G., & Ignarri, C. (2009). Implicit volition and stereotype control. *European Review of Social Psychology, 20*(1), 97-145.

Mullins, S., Suarez, M., Ondersma, S., & Page, M. (2004). The impact of motivational interviewing on substance abuse treatment retention: A randomized control trial of women involved with child welfare. *Journal of Substance Abuse Treatment, 27*(1), 51-58.

Mylant, M., Ide, B., Cuevas, E., & Meehan, M. (2002). Adolescent children of alcoholics: Vulnerable or resilient? *Journal of American Psychiatric Nurses Association, 8*(2), 57-64.

Nace, E., Birkmayer, F., Sullivan, M., Galanter, M., Fromson, A., Frances, R., …Westermeyer, J. (2007). Socially sanctioned coercion mechanisms for addiction treatment. *American Journal on Addictions, 16*(1), 15-23.

Nam, S., Chu, H., Lee, M., Lee, J., Kim, N., & Lee, S. (2010). A meta-analysis of gender differences in attitudes towards seeking professional psychological help. *Journal of American College Health, 59*(2), 110-116.

National Anti-Drug Strategy: For Safer and Healthy Communities. (2009). *Drug Treatment Court.* Ottawa, Canada: National Anti-Drug Strategy: For Safer and Healthy Communities. Retrieved from http://www.nationalantidrugstrategy.gc.ca/comm-coll/dtc-ttt.html.

National Crime Prevention Centre. (2007). *Toronto Drug Treatment Project: Building the evidence-evaluation summaries.* Ottawa, Canada: Public Safety Canada.

National Crime Prevention Centre. (2008). *Drug Treatment Court of Vancouver (DTCV). Building the evidence – evaluation summaries.* Ottawa, Canada: Public Safety Canada.

Nishimoto, R., & Roberts, A. (2001). Coercion and drug treatment for postpartum women. *American Journal of Drug and Alcohol Abuse, 27*(1), 161-181.

Perkins, M., Jensen, P., Jaccard, J., Gollwitzer, P., Oettingen, G., Pappadopulos, E., & Hoagwood, K. (2007). Applying theory-driven approaches to understanding and modifying clinicians' behaviour: What do we know? *Psychiatric Services, 58*(3), 342-348.

Perron, B., & Bright, C. (2008). The influence of legal coercion on dropout from substance abuse treatment: Results from a national survey. *Drug and Alcohol Dependence, 92*(1-3), 123-131.

Perry, C., Rosenfeld, A., & Kendall, J. (2008). Rural women walking for health. *Western Journal of Nursing Research, 30*(3), 295-316.

Polcin, D., & Wesiner, C. (1999). Factors associated with coercion in entering treatment for alcohol problems. *Drug and Alcohol Dependence 54*(1), 63-68.

Procidano M., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of Community Psychology, 11*(1), 1-24.

Raphael, D. (2007). Addressing health inequalities in Canada: Little attention, inadequate action, limited success. In M. O'Neill, A. Pederson, S. Dupéré, & I. Rootman. (Eds.) *Health Promotion in Canada: Critical Perspectives* (2nd ed.) (pp 108-122). Toronto, Canada: Canadian Scholars' Press Inc.

Rehm, J., Bullunas, D., Brochu, S., Fischer, B., Gnam, W., Patra, J., …Single, E. (2006). *The cost of substance abuse in Canada 2002: Highlights.* Ottawa, Canada: Canadian Center on Substance Abuse.

Richard, L., & Gauvin, L. (2007). Building and implementing ecological health promotion interventions. In M. O'Neill,, A. Pederson, S. Dupéré, I. Rootman (Eds.). *Health Promotion in Canada: Critical Perspectives* (2nd ed.) (pp 317-329). Toronto, Canada: Canadian Scholars' Press Inc.

Robinson, T., & Berridge, K. (2003). Addiction. *Annual Review of Psychology, 54*(1), 25-53.

Royce, J., Corbett, K., Sorensen, G., & Ockene, J. (1997). Gender, social pressure, and smoking cessations: The community intervention trial for smoking cessation (COMIT) at baseline. *Social Science and Medicine, 44*(3), 359-370.

Rush, B., & Wild, T. (2003). Substance abuse treatment and pressure from the criminal justice system: Data from a provincial client monitoring system. *Addiction, 98*(8), 1119-1128.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 44*(1), 68-78.

Ryan, R.M., La Guardia, J.G., Solky-Butzel, J., Chirkov, V., & Kim, Y. (2005). On the interpersonal regulation of emotions: Emotional reliance across gender, relationships and culture. *Personal Relationships, 12*(1), 145-163.

Simpson, D., & Joe, G. (2004). A longitudinal evaluation of treatment engagement and recovery stages. *Journal of Substance Abuse Treatment, 27*(2), 89-97.

Small, J., Curran, G., & Booth, B. (2010). Barriers and facilitators for alcohol treatment for women: Are there more or less for rural women? *Journal of Substance Abuse Treatment, 39*(1), 1-13.

Stark, M. (1992). Dropping out of substance abuse treatment: A clinically oriented review. *Clinical Psychology Review, 12*(1), 93-116.

Statistics Canada. (2010a). *Canadian Community Health Survey – Annual Component (CCHS)*. Ottawa, Canada: Statistics Canada. Retrieved from

http://www.statcan.gc.ca/cgi-bin/imdb/p2SV.pl?Function=getSurvey&SDDS=3226&lang=en&db=imdb&adm=8&dis=2.

Statistics Canada. (2010b). *Adult correctional services, admissions to provincial, territorial and federal programs, CANSIM Table 251-0001.* Ottawa, Canada: Statistics Canada. Retrieved from http://www5.statcan.gc.ca/cansim/a26?lang=eng&retrLang=eng&id=2510001&paSer=&pattern=&stByVal=2&p1=-1&p2=37&tabMode=dataTable&csid=.

Statistics Canada. (2011a). *Adult criminal court survey, number of cases, by sex accused, CANSIM Table 252-0044*. Ottawa, Canada: Statistics Canada. Retrieved from http://www5.statcan.gc.ca/cansim/pick-choisir;jsessionid=5814F594DC6317467B3E1C544A0DE0DA.

Statistics Canada. (2011b). *Heavy drinking, by sex, provinces and territories, Table 105-0501*. Catalogue no. 82-221-X. Ottawa, Canada: Statistics Canada.

Streiner, D. (2002). Breaking up is hard to do: The heartbreak of dichotomizing continuous data. *Canadian Journal of Psychiatry, 47*(3), 262-266.

Sung, H., Belenko, S., Feng, L., & Tabachnick, C. (2004). Predicting treatment noncompliance among criminal justice-mandated clients: A theoretical and empirical exploration. *Journal of Substance Abuse Treatment, 26*(1), 13-26.

Tjepkema, M. (2004). Alcohol and illicit drug dependence. *Supplement to Health Report, 15,* 9-63.

Tucker, J., & King, M. (1999). Resolving alcohol and drug problems: Influences on addictive behavior change and help-seeking processes. In J. Tucker, D. Donovan,& G. Marlatt (Eds.). *Changing addictive behavior: Bridging clinical and public health strategies.* (pp.97-126). New York, NY: The Guilford Press.

Vik, P. & Ross, T. (2003). Research Report: Methamphetamine use among incarcerated women. *Journal of Substance Use, 8*(2), 67-77.

Wallace, M. (2003). *Crime Statistics in Canada, 2003.* Catalogue no. 85-002-XIE, Vol. 24, no. 6. Ottawa, Canada: Statistics Canada.

Webster, J., Rosen, P., Krietemeyer, J., Mateyoke-Scrivner, A., Staton-Tindall, M., & Leukefeld, C. (2006). Gender, mental health and treatment motivation in a drug court setting. *Journal of Psychoactive Drugs, 38*(4), 441-448.

Wild, T. (2006). Social control and coercion in addiction treatment: Towards evidence-based policy practice. *Addiction, 101*(1), 40-49.

Wild, T., Cunningham, J., & Ryan, R. (2006). Social pressure, coercion, and client engagement at treatment entry: A self-determination theory perspective. *Addiction Behaviors, 31*(10), 1858-1872.

Wild, T., Newton-Taylor, B., & Alletto, R. (1998). Perceived coercion among clients entering substance abuse treatment: Structural and psychological determinants. *Addictive Behaviors, 23*(1), 81-95.

Wild, T., Roberts, A., & Cooper, E. (2002). Compulsory substance abuse treatment: An overview of recent findings and issues. *European Addiction Research, 8*(2), 84-93.

Wild, T.C. & Wolfe, J. (2009). The clinical course of addiction treatment: The role of nonspecific therapeutic factors. In P. Miller (Ed.) *Evidenced-Based Addiction Treatment*. San Diego, CA: Elsevier.

Witbrodt, J., & Romelsjo, A. (2010). Gender differences in mutual-help attendance one year after treatment: Swedish and U.S. samples. *Journal of Studies on Alcohol and Drugs, 71*(1), 125-135.

Wohlgemuth, E., & Betz, N. (1991). Gender as a moderator of the relationships of stress and social support to physical health in college students. *Journal of Counseling Psychology, 38*(3), 367-374.