

Evaluating an On-Reserve Methadone Maintenance Therapy Program for First Nations Peoples

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Abstract

The use of alcohol and drugs is a significant issue faced by First Nations communities in Canada, which is accentuated by high rates of mortality and morbidity resulting from opioid use. The frequency of opioid-related emergency room visits and the higher prevalence of illicit prescription drug use disorders in First Nations populations suggest challenges. Methadone maintenance therapy programs are consistently found to be the most effective treatment for opioid dependence; however, due to financial, geographic, and cultural factors, Aboriginal individuals are less likely to initiate methadone maintenance therapy. Cree Nations Treatment Haven is the first on-reserve methadone maintenance therapy program in Canada and the present study aimed to evaluate this program from clients' perspectives. Results indicated that individuals in treatment with higher rated improvement showed greater engagement, life quality, psychological functioning, physical health, relationships with family and friends, and a more positive opinion of services and less motivation for treatment, psychological distress, problems with alcohol, criminality, employment and life difficulties, and overall risk. Individuals with a more positive opinion of services reported higher engagement and lower motivation. Finally, individuals in treatment reported a decrease in drug use, high-risk, and criminal behaviours, and improvements in housing, employment status, and family support, since admission to the program. Future evaluation would be beneficial to solidify the present findings and clarify the importance of culture in treatment effectiveness.

Evaluating an On-Reserve Methadone Maintenance Therapy Program for First Nations Peoples

The use of alcohol and illegal drugs is a primary concern among First Nations populations in Canada (Currie & Wild, 2012; Elton-Marshall, Leatherdale, & Burkhalter, 2011). Eighty-two percent of First Nations people rate alcohol and illegal drugs as the most significant issue encountered by their community, coming before both housing (70.7%) and employment (65.9%; First Nations Information Governance Centre, 2011). The history of colonialism and assimilation that First Nations peoples have faced has led to serious health inequities (Reading & Wien, 2013) including the use of alcohol and illegal drugs. There is a need for culturally appropriate treatments to address these disparities in First Nations communities.

When compared to the non-First Nations population in Canada, First Nations peoples are more likely to use all types of illegal drugs and tend to start using substances at a much younger age (First Nations Centre, 2005). In addition, First Nations peoples are 2 to 4 times more likely to experience illicit prescription drug use disorders than the general population (Currie & Wild, 2012; Elton-Marshall et al., 2011; Wardman, Khan, & el-Guebaly, 2002). First Nations peoples also experience greater rates of mortality due to drug overdose than the general population (Milloy et al., 2010).

Use of Opioids in the General Population

There are approximately 50 million people globally who use opiates and opioids (United Nations Office on Drugs and Crime, 2014); opiates (e.g., heroin, morphine, and codeine) are pain relieving drugs derived specifically from naturally occurring alkaloids in the resin of the opium poppy, while opioids (e.g., oxycodone, hydrocodone, and methadone) include synthetic or manmade substances that have opiate-like effects (National Institute on Drug Abuse, 2011). The term opioid can be used to describe both natural and synthetic drugs that act on opioid receptors,

thus all opiates are opioids, but not all opioids are opiates. For example, heroin and morphine (produced with natural opium) can be classified as both opiates and opioids, while oxycodone and methadone (produced synthetically) can only be classified as opioids (National Institute on Drug Abuse, 2011). Aside from pain relief, opiates and opioids also offer anxiolytic, antidepressant, and antipsychotic effects, which make them commonly used drugs for self-medication (Khantzian, 1997).

Illicit use of prescription opioids such as oxycodone now represents the most common and problematic category of opioids even when compared to heroin (Compton & Volkow, 2006), and prescription opioids are currently the most frequently misused drug class (Currie & Wild, 2012). In the United States prescriptions for opioids have risen from 40 million in 1991 to 180 million in 2007 (Substance Abuse and Mental Health Services Administration, 2007), and in 2010 enough opioid pain relievers were prescribed to medicate every adult in the United States with the equivalent of 5-mg of hydrocodone every 4 hours for 1 month (Centers for Disease Control, 2013). However, the United States is not the only country prescribing large amounts of opioids. Between 2007 and 2009 Canada was the highest per capita consumer of codeine, hydromorphone, morphine, and pethidine; the second highest per capita consumer of fentanyl and oxycodone; and the third highest per capita consumer of prescription narcotics in the world (International Narcotics Control Board, 2011).

Opioid-Related Consequences

Opioids are the single largest contributor to illicit drug-related mortality and morbidity worldwide (Brown & Lawrence, 2009), and there are more deaths resulting from prescription opioid overdose than from heroin and cocaine combined (National Institute on Drug Abuse, 2014). Untreated heroin dependence kills between 1 and 3% of users each year, and half of these

deaths are due to heroin overdose (Darke & Hall, 2003; Sporer, 1999). In a Toronto sample of untreated heroin users half reported at least one almost fatal overdose experience in their lifetime (Caplehorn & Drummer, 1999), and between 1994 and 2000, British Columbia was reporting one heroin-related overdose death per day (Fischer, Rehm, & Blitz-Miller, 2000). Regular heroin users have a mortality rate that is 13 times greater than the general population (Hulse, English, Milne, & Holman, 1999), and the risk of death among heroin users is 29% by age 40 and 53% by age 50 (Davoli et al., 1997).

Opioid use related morbidity is also quite serious. Morbidity refers to the increased incidence of disease due to opioid use and includes illnesses such as cardiac arrhythmia, respiratory depression, chronic liver disease, chronic renal disease, tuberculosis, human immunodeficiency virus (HIV) and other sexually transmitted diseases and infections, chronic pain, injuries, non-fatal overdoses, and comorbidity with other substance use disorders (Currie & Wild, 2012; Kreek, 1978; Veilleux, Colvin, Anderson, York, & Heinz, 2010). Also common among opioid dependent individuals are high comorbidity rates of non-substance related psychological disorders, particularly affective disorders (e.g., depression and anxiety), posttraumatic stress disorder, and antisocial personality disorder (Veilleux et al., 2010).

Chronic opioid use is linked with impairment on many dimensions of cognitive functioning (Gruber et al., 2006) including deficits in memory, learning, and attention (Davis, Liddiard, & McMillan, 2002; Grant, Adams, Carlin, & Rennick, 1977; World Health Organization, United Nations Office on Drugs and Crime, & UNAIDS, 2004). Findings in this area are relatively new and under examined, so it is uncertain whether these deficits are permanent or if they diminish once opioid use ceases (Davis et al., 2002). For example, Davis and colleagues (2002) found a higher occurrence of cognitive impairment on various Wechsler

Adult Intelligence Scale-Revised subtests in a group of individuals on methadone compared to past opioid users. Their results did not reach statistical significance, but suggested that if opioids do in fact cause cognitive impairment, some recovery in cognitive ability may occur during abstinence (Davis et al., 2002). Other studies conducted by Darke, Sims, McDonald, and Wickes (2000) and Ornstein and colleagues (2000) concluded that individuals using methadone or heroin show cognitive deficits that are irreversible; however, both of these studies used inappropriate control groups. Because of the difficulties in studying opioid users and the many aspects of cognitive impairment, current results are not conclusive (Davis et al., 2002).

Opioids are also considered one of the most harmful illicit drug classes due to the risks associated with the illegal market of opioids (United Nations Office on Drugs and Crime, 2014) and injection drug use (Karon, Fleming, Steketee, & De Cock, 2001). Users of illicit opioids often spend most of their time finding, buying, and taking the drug, which can create a vicious cycle of criminal pursuits (Amato et al., 2005). To obtain illicit opioids users often become involved in criminal activities such as theft, violence, or prostitution (in exchange for money or drugs), which have legal and health implications such as incarceration and an increased risk of contracting infectious diseases (Amato et al., 2005; Kreek & Vocci, 2002; Ward et al., 1999; Wood et al., 2005). Injection drug use is also associated with health compromising practices such as needle sharing, which is closely related to the spread of HIV (Karon et al., 2001). In North America one quarter of new HIV cases are due to injection drug use (Karon et al., 2001).

Defining Opioid-Related Disorders

Opioid-related disorder, as outlined in the *Diagnostic and Statistical Manual of Mental Disorders* (5th edition; DSM-5), involves a problematic pattern of opioid use causing clinically

significant distress or impairment (American Psychiatric Association, 2013). This is determined by the presence of at least two of 11 circumstances/behaviours in the past 12 months, including

- consumption of opioids in larger amounts or for longer periods of time than intended;
- a persistent desire or unsuccessful efforts to control opioid use;
- spending a great deal of time obtaining, using, or recovering from opioids or opioid use;
- cravings for opioids;
- failure to fulfill obligations at work, school, or home due to recurrent opioid use;
- recurrent social or interpersonal problems caused or made worse by the effects of opioids;
- giving up or reducing time spent on social, occupational, or recreational activities because of opioid use;
- use of opioids in physically hazardous situations;
- persistent or recurrent physical or psychological problems caused or made worse by the effects of opioids;
- tolerance to the effects of opioids (either through the need to use more of the drug to achieve intoxication or a diminished effect when using the same amount of the drug); and
- withdrawal from opioids (experiencing dysphoric mood, nausea, vomiting, muscle aches, lacrimation [watering eyes], rhinorrhea [runny nose], pupillary dilation, piloerection [goose bumps], sweating, diarrhea, yawning, fever, or insomnia when stopping opioid use, or taking closely related substances to avoid withdrawal symptoms; American Psychiatric Association, 2013).

Opioid-related disorders are also classified according to severity (mild, moderate, and severe) based on the number of symptoms present (American Psychiatric Association, 2013). Related diagnoses include opioid intoxication, opioid withdrawal, other opioid-induced disorders (i.e.,

depressive, anxiety, sleep-wake, sexual, or neurocognitive disorders, which have been demonstrably induced by opioid consumption), and unspecified opioid-related disorder (American Psychiatric Association, 2013).

While the terms dependence and abuse are no longer included in the most recent edition of the *Diagnostic and Statistical Manual of Mental Disorders* (i.e., DSM-5; American Psychiatric Association, 2013) this language is used throughout literature published prior to the 5th edition of the manual. In the fourth edition, text revision of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR) dependence and abuse fall under the broader category of substance use disorders denoting that these disorders result from the act of using the substance, whereas the disorders of substance intoxication and withdrawal fall under the category of substance-induced disorders denoting that these disorders result from the effects of the substance itself (American Psychiatric Association, 2000). The DSM-IV-TR defines substance dependence as a troublesome pattern of substance use that leads to clinically significant distress or impairment (American Psychiatric Association, 2000). This is determined by the presence of at least three of seven circumstances/behaviours in the past 12 months, including

- tolerance;
- withdrawal;
- consumption of a substance in larger amounts or for a longer period of time than intended;
- a persistent desire or unsuccessful efforts to control substance use;
- spending a great deal of time obtaining, using, or recovering from the substance;
- giving up or reducing time spent on social, occupational, or recreational activities because of substance use; and

- persistent or recurrent physical or psychological problems caused or made worse by the effects of the substance (American Psychiatric Association, 2000).

The DSM-IV-TR defines substance abuse as a troublesome pattern of substance use that leads to clinically significant distress or impairment (American Psychiatric Association, 2000). This is determined by the presence of at least one of four circumstances/behaviours in the past 12 months, including

- failure to fulfill obligations at work, school, or home due to recurrent substance use;
- recurrent use of substances in physically hazardous situations;
- recurrent legal problems related to substance use; and
- recurrent social or interpersonal problems caused or made worse by the effects of a substance (American Psychiatric Association, 2000).

The diagnostic criteria for substance dependence and abuse are now encompassed under the term opioid-related disorder; however, when the literature discusses substance dependence it is referring to the cognitive, behavioural, and physiological symptoms that demonstrate an individual continues to use the substance despite substance-related issues (American Psychiatric Association, 2000). When the literature discusses substance abuse it is referring to the problematic pattern of substance use as demonstrated by recurring adverse consequences related to the repeated use of the substance (American Psychiatric Association, 2000).

Given the relatively recent emergence of illicit prescription opioid use, data surrounding its abuse and dependence potential is not currently well understood (Ward, Hall, & Mattick, 1999). There appears to be a genetic predisposition for opioid dependence with some family members sharing lower-than-average levels of endorphins (Drug Policy Alliance, 2006), which could contribute to an individual's inclination to use opioids to self-medicate. However, genetics

are not the only factor contributing to opioid dependence; a genetics-environment interaction is a more realistic model (Conrod, Pihl, Stewart, & Dongier, 2000; Drug Policy Alliance, 2006; Khantzian, 1997).

Definition of Cultural Terms

The use of the term First Nation comprises a diversity of populations, each possessing a unique expression of language, culture, and geographical influence (Kirmayer, Simpson, & Cargo, 2003; Romanow, 2002; Stephens, Nettleton, Porter, Willis, & Clark, 2005). The term First Nations is used in this document to describe members of Indigenous groups in Canada who are neither Inuit nor Métis (Milloy et al., 2010), while the broader term Aboriginal, refers to First Nations, Inuit (originating from the Arctic and sub-Arctic regions), and Métis (descendants of marriages between First Nations individuals and European settlers) populations (*Constitution Act*, 1982, s 35; Milloy et al., 2010; Policy Research Initiative, 2003). Approximately 4.3% of the Canadian population (1,400,685 people) reported Aboriginal identity in the 2011 Census, of which, 60.8% identify as First Nations, 32.3% identify as Métis, and 4.2% identify as Inuit (Statistics Canada, 2011). The term Indigenous refers to populations on an international scale and is used to delineate the first inhabitants of an area from European colonial settlers (I. Anderson et al., 2006; Montenegro & Stephens, 2006; Sylvain, 2002). First Nations populations are the focus of this study, with Aboriginal and Indigenous health being described to provide context, or when no other data is available. Where possible, specific group names are used.

Opioid Use Among First Nations Peoples

First Nations populations experience many adverse consequences associated with opioid use; the most serious consequence experienced is mortality. Injury and poisoning are the leading causes of death among First Nations individuals in Canada, and the use of substances are a major

contributing factor (Jacobs & Gill, 2002). In Canada, First Nations identification is associated with a highly elevated burden of overdose mortality with First Nations individuals experiencing overdose mortality at up to 5 times the rate of non-First Nations individuals (Milloy et al., 2010). From 2001 to 2005, 13.3% of First Nations deaths were due to overdose mortality compared to 4.8% of deaths in the general population (Milloy et al., 2010). Injection-related deaths specifically are also approximately 2 times as frequent among First Nations individuals (Milloy et al., 2010). National-level data for opioid-related deaths is not currently available, but data surrounding emergency room visits for opioid-related issues (e.g., withdrawal, overdose, and intoxication) are accessible; in 2010 there were 55 opioid-related emergency room visits by First Nations individuals for every 10,000 people in Ontario, compared to 3.7 visits per 10,000 for all of Ontarians (Canadian Centre on Substance Abuse, 2013).

The medical implications for Aboriginal opioid use also include HIV infection (Public Health Agency of Canada, 2012). While Aboriginal peoples account for less than 5% of the population in Canada, they currently represent about 8.9% of the total number of HIV infections and are becoming HIV positive 3.5 times more often than non-Aboriginal Canadians (Public Health Agency of Canada, 2012). Aboriginal individuals who use injection drugs are the fastest growing group of new HIV cases in Canada (Wardman & Quantz, 2006), and 58.1% of Aboriginal individuals with HIV were exposed through injection drug use (Public Health Agency of Canada, 2012).

The psychological difficulties experienced by Aboriginal individuals who use opioids differ from their non-opioid using counterparts. Aboriginal individuals who use opioids tend to experience higher rates of depression, have more trouble managing aggressive behaviour, and may be more bothered by the presence of a psychological difficulty than their non-using

counterparts (Jacobs & Gill, 2002). In relation to these psychological difficulties, Aboriginal individuals who abuse substances report being quite bothered by family issues and also have problems getting along with friends (Jacobs & Gill, 2002). These individuals are more likely to live with someone who is currently, or has in the past, abused drugs or alcohol as well (Jacobs & Gill, 2002). These psychological concerns have effects on health in relation to suicide, family disruption and violence, accidents, and legal problems (Jacobs & Gill, 2002).

When it comes to the risks associated with the illicit use and injection of opioids, Aboriginal populations experience higher levels of risk as well (Canadian Foundation for Drug Policy, 1998). Aboriginal populations experience higher rates of crime related to substance use; Aboriginal individuals currently represent 22% of the incarcerated population in Canada with many offenses relating to illicit drug use (Canadian Foundation for Drug Policy, 1998; Prison Justice, 2007). When considering injection related risks, HIV infected drug users are significantly more likely to report lending a used syringe if they had been incarcerated during the past 6 months (Wood et al., 2005). Because Aboriginal peoples are also incarcerated at a much higher rate than non-Aboriginal peoples (Canadian Foundation for Drug Policy, 1998; Prison Justice, 2007), these unsafe injection acts practiced in prison may represent an increased risk for Aboriginal individuals.

There are several commonly speculated reasons for why substance use is higher among First Nations peoples; the use of substances is a way to cope with and provide escape from challenging life situations and constant stressors (Health Canada, 2011). Some of these challenges come from a long history of colonization, which includes the criminalization of culture and language, rapid cultural change, the creation of the reserve system, the change from an active to a sedentary lifestyle, systematic racism, forced assimilation through residential

schools, and child-welfare policies (Health Canada, 2011; Reading & Wien, 2013). All of these factors affect the health and wellbeing of communities in many ways, contributing to lower social and economic status, poor nutrition, violence, crowded living conditions, and high rates of substance use and associated problems (Health Canada, 2011; Reading & Wien, 2013). Other authors have found similar vulnerabilities to drug use; Aboriginal individuals who live in poverty with low education, unstable family structure, frequent physical abuse, or poor social support networks, are at a high risk of substance abuse (Duran et al., 2005; Methadone Strategy Working Group, 2001).

Understanding the historical connection behind higher substance use rates among First Nations populations is vital to overcoming culturally specific treatment access barriers. Wing, Crow, and Thompson (1995) have identified two cultural barriers as obstacles to obtaining help with substance abuse for Aboriginal populations with traditional beliefs. First, an effective relationship between a therapist and an Aboriginal client may take more time to grow, as developing trust and intimacy with new people demands time and experience (Wing et al., 1995). The history of colonization for Aboriginal communities has made it difficult for some Aboriginal peoples to trust medical professionals of different cultural backgrounds (Wing et al., 1995). Second, for traditional Aboriginal peoples it can be shameful to admit having problems with substances, because they perceive their difficulties as resulting from having lost touch with the spiritual world; where it is believed that a spiritual person does not abuse substances, admitting substance abuse problems is synonymous with admitting loss of spirituality (Wing et al., 1995). Other cultural treatment barriers arise around the stigmatization, negative stereotypes, and lack of cultural awareness that Aboriginal peoples experience from service providers (Wardman & Quantz, 2006).

When western health care is the only service available for a particular difficulty, access barriers remain for Aboriginal communities (Pal, Das, Sengupta, & Chaudhury, 2002; Simmons & Voyle, 2003; Wilkinson, Ryan, & Hiller, 2001). Access is constrained, not only by cultural barriers, but also by financial and geographic obstacles, especially in remote areas where services are challenging and expensive to provide (Palafox, Buenconsejo-Lum, Ka'ano'I, & Yamada, 2001). Many individuals in remote communities have low finances, few treatment choices, inconvenient treatment hours where treatment is available, and lack of transportation to treatment centres and hospitals (Chong & Herman-Stahl, 2003). All of these things represent serious barriers to treatment for First Nations populations.

These barriers to treatment in Aboriginal communities outline the necessity of the creation of culturally relevant treatment approaches. Culturally relevant treatment does not necessitate that treatment follow traditional practices, as First Nations communities differ when it comes to connection to traditional culture (Jiwa, Kelly, & St. Pierre-Hansen, 2008); when treatment as usual may be effective and/or desired in a First Nations community, these services are not easily accessible (Chong & Herman-Stahl, 2003). Where traditional practices are desired, however, this is essential for treatment success. The degree to which an Aboriginal person identifies with their culture, has been identified as a key protective factor associated with reduced rates of substance use, reduced rates of suicide, and improved mental health outcomes (Bals, Turi, Skre, & Kvernmo, 2011; Fleming & Ledogar, 2008; McIvor & Napoleon, 2009). Spiritual practices have been found to be a direct measure of protection against substance use problems as they often include cultural teachings that promote abstinence or only moderate use of psychoactive substances (Currie, Wild, Schopflocher, Laing, & Veugelers, 2013). Aboriginal elders and healers often believe that the connection to culture, community, and spirituality is

healing, and that it is the disconnection from these aspects that makes people unhealthy (McCormick, 2000). Health can be understood by some First Nations populations as a state of unity and balance across the biological, psychological, social, and spiritual aspects of life, rather than simply the absence of disease (Dell et al., 2012). This factor is necessary to consider when searching for effective treatments for substance-related disorders in First Nations populations with traditional views.

Treatment for Opioid-Related Disorders

Opioids represent a serious clinical problem for drug treatment (Brown & Lawrence, 2009). One challenge surrounding treatment for opioid use is that it is often difficult to motivate long-term, high-risk opioid users to enter drug treatment (Darke & Hall, 2003). One reason for this is that opioids are difficult to withdraw from as the somatic symptoms of withdrawal (e.g., severe insomnia, weakness, nausea, vomiting, diarrhea, chills, fever, and muscle spasms; Capital Health, 2005) last several days and the motivational and cognitive impairments last several months (McLellan, Lewis, O'Brien, & Kleber, 2000). The learned aspects of opioid tolerance may never return to normal (Wise & Bozarth, 1981). Related to this difficult withdrawal process, opioid dependent individuals rarely enter treatment on their own or with the plan to become abstinent (Hser, Anglin, & Powers, 1993); most dependent users enter treatment due to pressure from family or friends, or because of legal requirements (Gerstein & Harwood, 1990).

Only 5% of those who enter treatment have the intent to become totally abstinent from opioids (Hser et al., 1993), and many individuals who are opioid dependent consider treatment to be a transitional phase to help them through a certain period in their lives (Potik, Adelson, & Schreiber, 2007). Those who do attempt to become abstinent have little success (Hser, Hoffman, Grella, & Anglin, 2001; Termorshuizen, Krol, Prins, & van Ameijden, 2005). Longitudinal

studies have consistently found that most patients are unable to complete tapering off of opioids successfully and those who are able, relapse to opioid use within 1 year (Latowsky, 1996; Magura & Rosenblum, 2001; Milby, 1988). Understanding the patient's perspective and expectations for treatment is another challenge; in order for the treatment to be effective, it must be tailored to the patient's needs whether that means achieving abstinence or getting through a transitional phase (Beresford, 2007; Bridges & Jones, 2007; Oliver et al., 2001; Trujols et al., 2011).

The persistent susceptibility to relapse among opioid users regardless of the time spent abstinent is another challenge surrounding the treatment of opioid dependence (Kalivas & Volkow, 2005; O'Brien, 1997). Historically, 60% of heroin users in treatment programs tend to relapse after 3 months, while 75 to 85% relapse after 12 months of treatment (Hunt, Barnett, & Branch, 1971). A more recent study of opioid dependent individuals found that after completing three years of treatment, 56% of individuals relapsed within 1 year (Tang, Zhao, Zhao, & Cubells, 2006). While the withdrawal process from opioids is quite difficult, maintaining abstinence is much more arduous, as demonstrated by the fact that relapse is so common (Amato et al., 2005; Gerstein & Harwood, 1990; Ward et al., 1999), making this challenge particularly crucial to consider when determining treatment options.

Because of the prevalence of relapse, most opioid dependence treatment strategies are aimed at preventing relapse rather than eliminating dependence altogether (Amato et al., 2005; Gerstein & Harwood, 1990; Ward et al., 1999). In the past, drug dependence has been treated as an acute illness, but with such high relapse rates commonly realized, long-term care strategies are being used to produce lasting benefits (McLellan et al., 2000). It is now understood that drug dependence should be evaluated and treated like other chronic illnesses and as a chronic

relapsing disorder (McLellan et al., 2000). Reasons for relapse include long-term depression, low energy, drug cravings, and sudden attacks of withdrawal sickness (Drug Policy Alliance, 2006); stress also represents a risk factor for opioid relapse (Sinha, Kimmerling, Doebbrick, & Kosten, 2007). For some these relapse triggers diminish over time, but for others they do not (Drug Policy Alliance, 2006). Regardless of how relapse is triggered it is not considered an issue of will power, but rather a result of cumulative neurochemical changes to the brain (Brown & Lawrence, 2009; Drug Policy Alliance, 2006; Gossop, Green, Phillips, & Bradley, 1989).

There are several different approaches to treating opioid-related disorders including detoxification and relapse prevention treatment programs, therapeutic communities, outpatient drug-free counseling, and long-term opioid substitution (Amato et al., 2005). Detoxification is often considered the first step in the treatment of opioid dependence when the primary goal is abstinence (Gerstein & Harwood, 1990; Ward et al., 1999), but consistently, the most effective treatment for opioid dependence is long-term opioid substitution (J. F. Anderson, 1999; National Institutes of Health, 1999). This consists of substituting a safer substance (e.g., methadone) for the substance being abused to help the user gain control over their opioid use (Ward et al., 1999).

During long-term maintenance treatment an individual is physically dependent on the maintenance medication, however, once the dose of the new substance is stabilized, intoxication and withdrawal occur infrequently (Ward et al., 1999). This leads to less time being spent on drug-related activities and life returning to a more regular state (Ward et al., 1999). This type of treatment helps to increase the time between relapses and reduces the intensity, frequency, and length of relapses if they do occur (Leshner, 1998). Enrollment in long-term maintenance treatment also substantially reduces the risk of fatal and nonfatal overdose from opioids (Caplehorn, Dalton, Cluff, & Petrenas, 1994; Stewart, Gossop, & Marsden, 2002), criminal

activity, and HIV seroconversion, and promotes psychosocial adjustment (Farrell et al., 1994; Leshner, 1998; Ward et al., 1999). Long-term maintenance treatments are known as harm reduction programs as they attempt to reduce risky behaviour rather than achieve total abstinence (Rogers & Ruefli, 2004).

Methadone maintenance therapy. Methadone is a full opioid agonist at the μ receptor and has a slow onset and a long half-life, which makes it useful for alleviating the symptoms of opioid withdrawal and also decreasing the chronic craving for opioids (Capital Health, 2005; McLellan et al., 2000). It is administered orally in the form of a tablet, powder, or liquid syrup, and reduces the euphoric effects of other opioids, which makes it particularly helpful in treatment (Capital Health, 2005; Drug Policy Alliance, 2006; Tetrault & Fiellin, 2012). Peak plasma concentration is reached 2 to 4 hours after methadone is orally administered, and when methadone is taken once a day, withdrawal symptoms are eliminated for 24 to 36 hours (Faggiano, Vigna-Taglianti, Versino, & Lemma, 2008; Koob, 1992). Tolerance to methadone develops very slowly, if at all, so individuals can be maintained on the same dose of methadone for many years (Capital Health, 2005; Curran, Kleckham, Bearn, Strang, & Wanigaratne, 2001).

Methadone was developed in Germany to be used as a substitute for morphine during World War II (Capital Health, 2005), but has been in use for the treatment of opioid dependence since 1963 (Fullerton et al., 2014; Veilleux et al., 2010). Methadone is used in long-term maintenance therapy where an individual is maintained on methadone for an indefinite period of time (Capital Health, 2005). In this type of treatment program methadone is dispensed daily at a treatment facility to minimize risks of diversion, but after a period of time of appropriate clinic attendance (usually 3 months), the absence of behavioural problems at the clinic, lack of known

criminal activity, and evidence of a stable home with a place to store methadone safely, individuals may be eligible for take-home doses, also known as “carries” (Fullerton et al., 2014).

To prescribe methadone in Canada, physicians are required to obtain an exemption from the Controlled Drugs and Substances Act by taking a 1-day course and a 2-day practicum in a methadone maintenance therapy practice (Strike, Urbanoski, Fischer, Marsh, & Millson, 2005). Methadone maintenance physicians were once restricted to having 20 patients on methadone at one time, but this restriction was lifted in 1996, which increased the number of individuals able to receive treatment (Strike, Urbanoski, et al., 2005). In 1996, 46% of methadone maintenance therapy prescribing physicians had 21 patients or more; in 2001, 56% of physicians had more than 21 patients with a median caseload of 29 patients (ranging between one and 426 patients; Strike, Urbanoski, et al., 2005). In Ontario in 2011, there were 29,442 active methadone maintenance therapy clients (Doukas, 2011).

Methadone maintenance therapy is the primary and most effective treatment for opioid dependence in Canada (J. F. Anderson, 1999; National Institutes of Health, 1999), and the goal of maintenance treatment is to reduce or eliminate illicit opioid use, which can in turn have several other positive outcomes (Fullerton et al., 2014). Positive outcomes of methadone maintenance therapy include

- reduced criminal activity (Ball, Lange, Myers, & Friedman, 1998; Dole & Nyswander, 1965; Fullerton et al., 2014; Joseph, Stancliff, & Langrod, 2000; Judson, Ortiz, Crouse, Carney, & Goldstein, 1980; McLellan et al., 2000; Simpson, Joe, & Bracy, 1982; Ward et al., 1999);
- reduced risks associated with injection drug use (e.g., reduction in shared needles; Ball et al., 1998; Capital Health, 2005; Chatham, Hiller, Rowan-Szal, Joe, & Simpson, 1999; Dolan et

al., 2003; Metzger et al., 1993; Simpson et al., 1982; Stark, Muller, Bienzle, & Guggenmoos-Holzmann, 1996);

- reduced spread of infectious diseases (e.g., HIV and hepatitis C; Abbott, Weller, Delaney, & Moore; 1998; Avants et al., 1999; Ball et al., 1998; Fullerton et al., 2014; Gibson, Flynn, & McCarthy, 1999; Joseph et al., 2000; McLellan et al., 2000; Simpson et al., 1982; Ward et al., 1999);
- decreases in multiple sex partners or exchanges of sex for drugs (Camacho, Bartholomew, Joe, Cloud, & Simpson, 1996; Chatham et al., 1999; Grella, Anglin, Rawson, Crowley, & Hasson, 1996);
- reduced mortality (Caplehorn et al., 1994; Fullerton et al., 2014; Joseph et al., 2000);
- less substance use in general (Capital Health, 2005; Dole & Nyswander, 1965); and
- improved life functioning (Capital Health, 2005; Dole & Nyswander, 1965; Judson et al., 1980; Simpson et al., 1982; Ward et al., 1999).

Capital Health (2005) found that 95.5% of participants reported decreased participation in high-risk behaviours since their admission into a methadone maintenance program. Over 84% of participants reported improved housing conditions, 61.4% reported improved employment status, 84.1% reported a decrease in criminal activity involvement, 80% reported abstaining from using alcohol and other drugs, and 81.2% reported an increase in family support since admission to a methadone maintenance program (Capital Health, 2005). Opioid users entering treatment frequently report a low quality of life, but the first months of treatment lead to a significant increase in many areas of life quality (e.g., health, employment status, and relationship status; De Maeyer et al., 2011).

Five dominant themes emerge when methadone clients discuss quality of life including the status of social relationships, psychological wellbeing, occupation status, independence, and having a meaningful life (De Maeyer et al., 2011). After spending time in treatment, individuals' overall health improves, although this depends largely on the time dependent on opioids, the reason for entering treatment, and the length of treatment (Dole & Joseph, 1978; Joseph et al., 2000). Another positive outcome of methadone treatment is that when appropriately prescribed, methadone normalizes the physiological functions that have been damaged by opioid use such as stress responses of the central nervous system and the ability to experience normal emotions as well as acute and chronic pain (Joseph et al., 2000).

No differences have been found in the rates of long-term abstinence between individuals who enter methadone maintenance treatment and drug-free residential treatment (Maddux & Desmond, 1992), which suggests that methadone maintenance therapy does not extend opioid dependence in any way. This is particularly important as longer times spent in treatment are more effective, and the best results from opioid dependence treatments have been observed in individuals in long-term methadone maintenance therapy (McLellan et al., 2000). The longer an individual stays in methadone treatment, the better chance they have of stopping the abuse of opioids and other substances (Health Canada, 2002; Zanis & Woody, 1998). More time spent in methadone treatment also lowers an individual's risk of death (Health Canada, 2002; Zanis & Woody, 1998).

Methadone maintenance therapy has been particularly effective and reduces crime costs for individuals who are in treatment for at least 1 year (Flynn, Porto, Rounds-Bryant, & Kristiansen, 2003; Simpson, Joe, & Brown, 1997). Additionally, individuals who remain in methadone treatment for 1, 2, or 3 years or more, also tend to do better in all areas, including the

reduction or elimination of illicit opioid use and other illicit substances, improvement in health status, improved socialization, increased employment, the ability to receive higher education, and decreased criminality (Kreek & Vocci, 2002). There are also 6% fewer deaths among those in methadone maintenance therapy compared to those who have been discharged (Woody, Kane, Lewis, & Thompson, 2007).

Short-term methadone detoxification treatment of approximately 21 days has been tested as an alternative to methadone maintenance therapy, but has poor retention and high relapse rates (Mann & Feit, 1982; Sorensen, Hargreaves, & Weinberg, 1982). In fact, it is recommended that individuals remain in methadone maintenance therapy indefinitely due to extreme difficulty with tapering off methadone (Calsyn, Malcy, & Saxon, 2006). Methadone maintenance therapy is consistently found to be superior to other treatments in retaining individuals in treatment (Amato et al., 2005; Gossop, Marsden, Stewart, & Treacy, 2001). When comparing retention of individuals on a placebo to individuals on methadone, placebo groups show a 10% retention rate after 32 weeks, while methadone groups show a 76% retention rate (Newman & Whitehill, 1978). More recently, it was found that 50% of methadone patients remain in treatment for 730 days or longer, and retention rates differ by region so that in areas with fewer methadone prescribing physicians, retention rates are higher; it is suspected that a shortage of prescribers may dissuade dropout (Strike, Gnam, et al., 2005).

The dose of methadone prescribed also affects retention in long-term maintenance therapy (Amato et al., 2005; Fullerton et al., 2014). Methadone is a dose dependent substance, meaning that higher doses are more effective than lower doses in retaining patients, reducing the use of other substances, and reducing symptoms of withdrawal (Amato et al., 2005; Connock et al., 2007; Fletcher & Battjes, 1999; Fullerton et al., 2014; Mattick, Breen, Kimber, & Davoli,

2009; Veilleux et al., 2010). When different doses are compared, higher doses are more effective than medium and low doses, and methadone maintenance therapy effectiveness increases when methadone is prescribed at doses of 60-mg or more (Amato et al., 2005; Fullerton et al., 2014).

While length of time in treatment and dose are required considerations, in order for methadone maintenance therapy to be effective, it is necessary that other services be offered with the methadone prescription (National Institutes of Health, 1999). The addition of social, medical, and psychological services to methadone maintenance therapy has the highest probability of being effective (McLellan, Arndt, Metzger, Woody, & O'Brien, 1993; National Institutes of Health, 1999). Even very brief motivational support and counseling can have an effect on recovery from opioid dependence (Plater-Zyberk, Varenbut, Daiter, & Worster, 2012).

Another key aspect to the effectiveness of methadone maintenance therapy is considering the clients' perspectives. Those who believe their opinions influence their methadone dose a great deal are more satisfied with their treatment overall (Pérez de los Cobos, Trujols, Valderrama, Valero, & Puig, 2005). Also, the better patients feel about methadone as a medication for opioid dependence, the more satisfaction they find with their methadone maintenance therapy (Pérez de los Cobos et al., 2005).

While methadone maintenance therapy is consistently shown to be the most effective treatment for opioid-related disorders, there are some concerns related to taking methadone in general and long-term. The side effects of methadone include backaches, constipation, sweating, body aches, weight gain, headaches, nausea, sleepiness, loss of sex-drive, numbness, and seizures (Fischer, Chin, Kuo, Kirst, & Vlahov, 2002). Aside from these side effects, there are also concerns about possible cognitive effects of acute and long-term methadone use, but little research has investigated this (Gruber et al., 2006). Some aspects of neurocognitive functioning

such as attention, appear to be unaffected by long-term methadone maintenance, but other areas, such as learning and memory, may be more affected by long-term methadone use (Gruber et al., 2006). One study found that when giving participants their full dose of methadone, delayed recall of prose was impaired (Curran et al., 2001), and another study found that methadone patients performed worse on measures of verbal fluency than drug free controls (Gruber et al., 2006). Methadone maintenance patients have, however, been found to improve in verbal and visuospatial encoding, recall, and psychomotor speed after 2 months in treatment, which suggests that the impairments found before treatment begins may actually be reversible with methadone treatment (Gruber et al., 2006).

The initial phases of methadone administration must be carefully monitored in order to prevent overdose, therefore daily dispense and supervised ingestion of methadone are utilized (Joseph et al., 2000; Neeleman & Farrell, 1997; Ward et al., 1999). Another serious concern is the possibility of household members, such as children, accidentally ingesting methadone when individuals are permitted to have their medication at home (Smialek, Monforte, Aronow, & Spitz, 1977; Ward et al., 1999). There is also the risk of an individual ingesting more than their prescribed dose or diverting their methadone to people who are not patients (Ward et al., 1999). There are stringent controls in place to minimize these dangerous possibilities, such as ensuring a good drug-response and practitioner-client relationship before allowing take-home doses, properly educating clients of the dangers of their medications, providing childproof containers and lockboxes, and obtaining regular urine screens (Peles, Schreiber, Sason, & Adelson, 2011; Ward et al., 1999).

Another issue to consider is the long-term risk of mortality associated with methadone use. Between 1999 and 2004, deaths attributed to methadone were reported to increase by 390%,

but evidence has found that this change was primarily due to increased prescriptions for methadone for pain rather than for methadone maintenance (Webster et al., 2011). The death rate from methadone prescriptions could also have increased due to the high rate of co-prescription of other opioids to those in methadone maintenance therapy. For example, a 7 year study found that over 18% of patients treated with methadone had been prescribed at least one prescription for a non-methadone opioid (Kurdyak et al., 2011). There are guidelines in place that specify drug monitoring during methadone maintenance through urine screening, which assists in limiting the possibility for clients to take an opioid prescription during their methadone maintenance treatment (Kurdyak et al., 2011). While there are concerns related to methadone use, medical studies have consistently shown that methadone maintenance is medically safe and nontoxic (Joseph et al., 2000). The benefits of methadone maintenance therapy outweigh the risks; in fact, the risk of mortality due to illicit opioid overdose or suicide among those untreated is much greater (Neeleman & Farrell, 1997).

Aside from the obstacles experienced uniquely by First Nations populations, other common barriers to entering methadone maintenance treatment exist. There appear to be misperceptions about methadone held by some opiate users; for example, it is believed that because methadone is synthetic and manmade, its side effects are worse, while heroin is organic and natural and therefore less harmful to use (Fischer et al., 2002). Along with this is the feeling that withdrawal from methadone is much worse than withdrawal from heroin (Fischer et al., 2002). Many individuals also explain that because there is no high associated with methadone, the boredom is astronomical (Fischer et al., 2002).

Others choose not to enter methadone maintenance treatment because they believe that the structure of the treatment is too disciplinary, controlling, regimented, and disempowering,

which ultimately demands too much for too little benefit (Fischer et al., 2002). Individuals often want more choice and freedom in their course of treatment than they believe methadone maintenance therapy can offer (Fischer et al., 2002). Convenience of dispensing that allows for efficient use of time (e.g., seeing a counselor during the same visit) has also been listed as a noteworthy factor, as well as good relationships with the staff that dispense the medication (Anstice, Strike, & Brands, 2009). Where negative interactions with dispensing staff were reported, the complaints tended to focus on discriminatory feelings; clients felt that a program dispensary was more pleasant to deal with and less stigmatizing than having to visit a pharmacy (Anstice et al., 2009). The only trouble noted with using a program dispensary was the possibility of running into former friends who could be potential drug using triggers (Anstice et al., 2009). This was not as important an issue to individuals as the stigma associated with methadone use, as stigma and discrimination appear to be the most powerful forces preventing people from entering methadone treatment (Joseph et al., 2000; National Institutes of Health, 1999).

The Matrix Model of Intensive Outpatient Alcohol and Drug Treatment. Methadone maintenance programs are most effective when coordinated with other services (De Maeyer et al., 2011; Ruefli & Rogers, 2004). Since substance abuse is most often interconnected with other health, social, economic, family, and mental health problems, a multidisciplinary approach is required (Miller & Miller, 2009). Additionally, because of the holistic conceptualization of health espoused by Aboriginal culture, multiple approaches to addressing health problems, often a combination of traditional and western medicine, is required (Stephens et al., 2005). Furthermore, given the prevalence of relapse among patients, extensive supports, services, and planning are necessary (Magura & Rosenblum, 2001; Veilleux et al., 2009).

The ultimate goal of substance use health care is not just to address dependence, but also to enhance the quality of life of individuals who use substances and reduce the severity of problems associated with use (Joseph et al., 2000; Ruefli & Rogers, 2004); thus, there is value in incorporating practical, social, and environmental supports alongside methadone therapy (De Maeyer et al., 2011; Ruefli & Rogers, 2004). Methadone maintenance therapy programs typically consist of a variety of components including assessment, induction, methadone dosage, continual monitoring of illicit drug use, and counseling (Ward et al., 1999), but this cannot be accomplished by methadone maintenance therapy alone (De Maeyer et al., 2011).

The Matrix Model of Intensive Outpatient Alcohol and Drug Treatment is a program that addresses some of the additional needs of methadone maintenance therapy by combining multiple evidence-based practices such as cognitive-behavioural strategies, relapse prevention, motivational interviewing strategies, psychoeducation, and 12-step program involvement into an outpatient program (Rawson & McCann, 1995). The traditional Matrix program is 16 weeks, with structured group sessions and some individual sessions, and individuals are required to undergo weekly urine testing and are also highly encouraged to attend weekly support groups, as this group cohesion and support is instrumental in ensuring continued program adherence (Rawson & McCann, 2005). The program is guided by the principles of building a positive and collaborative relationship with the individual, creating structure and expectations, positively reinforcing behaviour change, and educating family regarding the expected course of recovery so that they may serve as supports (Jackson, Dykeman, Gahagan, Karabanow, & Parker, 2011; Rawson & McCann, 2005). The Matrix program has shown significantly higher retention, completion, and drug-free samples per week when compared to other usual treatments (Rawson & McCann, 2005).

Methadone Maintenance Therapy for First Nations Populations

Methadone is the best treatment for the general population, but there are unique challenges of treating opioid dependence with methadone maintenance therapy among First Nations populations. Aboriginal individuals who use injection drugs are less likely and slower to initiate methadone maintenance therapy compared to non-Aboriginal individuals (Wood et al., 2007). Aboriginal identity has been consistently negatively associated with methadone maintenance therapy (Kerr, Marsh, Li, Montaner, & Wood, 2005) and it is likely that Aboriginal individuals initiate this type of treatment less often because of treatment access issues (i.e., financial, geographic, and cultural barriers; Chong & Herman-Stahl, 2003).

There are also challenges for First Nations individuals who are able to access treatment; the current model for alcohol and substance abuse treatment in remote Aboriginal communities involves referral to residential treatment centres for 3 to 6 weeks (Chong & Herman-Stahl, 2003; Wiebe & Huebert, 1996), which is challenging for many reasons. When individuals from remote communities are able to attend treatment centres, they are often unable to remain on the maintenance medication they were prescribed because of difficulties getting the medication when they return home (Chong & Herman-Stahl, 2003). Methadone maintenance therapy requires medical supervision, which makes it unavailable in communities without resident physicians; therefore, individuals who wish to receive treatment have to move to areas where methadone programs are available (Webster, 2013). This causes long-term changes for individuals in treatment, as methadone maintenance therapy is often a lifelong commitment (Methadone Strategy Working Group, 2013). When individuals wish to remain in their communities, they will attempt to remain abstinent when they return home, which is quite difficult because of the widespread use of substances in home communities (Chong & Herman-

Stahl, 2003). With these stressors and little or no aftercare, relapse rates among Aboriginal populations are 35 to 85% and relapse most often occurs within 90 days (Chong & Herman-Stahl, 2003; Wiebe & Huebert, 1996). These issues are serious and when the cultural importance of treatment is considered, it is understood that changes must be made and these problems must be resolved.

The keys to revitalizing communities and reducing alcohol and substance abuse are in providing effective healing programs and reclaiming cultural identity (Health Canada, 2011). Programs are being set in place to address substance abuse, particularly prescription drug abuse, in Aboriginal communities including multi-sectoral collaboration, research and surveillance, demand reduction, supply reduction, and treatment (Health Canada, 2011). Honouring Our Strengths, a combined publication from Health Canada, the National Native Alcohol and Drug Abuse Program, and the Assembly of First Nations, has a goal of matching people affected by substance use issues to the appropriate services and supports they need at the specific time in their journey (Health Canada, 2011). Honouring Our Strengths aims to coordinate among sectors to provide effective, client-centered, and also culturally safe services and supports (Health Canada, 2011). Many First Nations communities wish to achieve a balance between the mental, physical, emotional, and spiritual aspects of life, and culture is often vital in achieving this balance (Health Canada, 2011). However, each First Nations community is unique; the problems of substance use and the levels of aspiration towards traditional culture differ, and accordingly, problems must be identified individually and flexibly to address specific needs (Jiwa et al., 2008).

Cree Nations Treatment Haven

Cree Nations Treatment Haven is the first methadone maintenance therapy program to be offered in a First Nations community in Canada and is located in Ahtahkakoop Cree Nation, in Canwood, Saskatchewan. Ahtahkakoop Cree Nation has a population of 1,101 (Statistics Canada, 2006) and is located 72 kilometers northwest of Prince Albert and 165 kilometers south of Saskatoon. Established in 1986 as a fully accredited addiction service centre, Cree Nations Treatment Haven is a 20-bed facility that runs a 5-week inpatient program, a 16-week outpatient Matrix program, and other culturally relevant programs to assist in the full recovery of clients (e.g., sweats, church services, and group therapy; Ahenakew, 2012; Andkhoie, 2012).

The centre targets four partnering bands (Ahtahkakoop Cree Nation, Pelican Lake, Witchehan Lake, and Big River), but has clients from several other First Nations communities and clients do not have to be First Nations or a resident of the four bands to access services (Andkhoie, 2012). The centre has partnerships with First Nations and Inuit Health, provincial and regional health authorities, and the College of Physicians and Pharmacists to ensure that while services are culturally appropriate, quality is not compromised (Andkhoie, 2012). The services offered at Cree Nations Treatment Haven aim to balance each component of the First Nations medicine wheel (physical, emotional, mental, and spiritual wellbeing) with the inclusion of traditional sweats, smudging, drumming, and art, among other cultural activities (Andkhoie, 2012).

Cree Nations Treatment Haven's methadone maintenance treatment program began in January 2011 and was developed with the help of the community and through evidence-based approaches demonstrating the importance of culturally appropriate treatment (Andkhoie, 2012). In Saskatchewan, there are 2,136 individuals receiving methadone maintenance therapy and 30

prescribing physicians for all addictions (Luce & Strike, 2011). There are three provincially funded methadone maintenance clinics, with Cree Nations Treatment Haven being the first to be funded federally (Andkhoie, 2012).

Cree Nations Treatment Haven's Matrix program. Cree Nations Treatment Haven has taken the evidence-based Matrix model and adapted it to best fit the culture, values, and needs of its clients (Ahenakew, 2012). The program is more compressed than the original model, running daily for 6 weeks, but maintains the same number of overall sessions (Ahenakew, 2012). This new schedule was adopted at the request of clients in order to facilitate full immersion in the program and permit the provision of additional programming throughout the day (Ahenakew, 2012). As well, from the perspective of Cree Nations Treatment Haven, the prior schedule imposed a longer delay for clients requesting to re-enter the treatment program after having left for any reason (Ahenakew, 2012). Through group sessions, the clients progress from developing early recovery skills (10 sessions), to relapse prevention (13 sessions), then to family education (15 sessions), culminating with a final follow-up and graduation (two sessions; Ahenakew, 2012).

Past program evaluation. In 2012, a detailed report of the first 15 months of operation was created of the 53 opioid-dependent clients at Cree Nations Treatment Haven where valuable demographic data was gained about the burden of disease that this First Nations population experiences (Andkhoie, 2012). While 53 clients went through the program, 82 requests were received and 29 clients were waitlisted (Andkhoie, 2012). These numbers indicate a definite interest and need for services among the surrounding communities.

Out of this evaluation it was found that more females than males were seeking methadone maintenance therapy (57.9% vs. 42.1%), which revealed that the program was overcoming

barriers usually faced by women that prevent them from seeking necessary assistance (Andkhoie, 2012; Health Canada, 2011). Most clients were between the ages of 30 and 39 (57.9%), most were Cree (81.6%), and most had a spiritual belief system (60.5%), which emphasized the importance of culturally appropriate programming (Andkhoie, 2012). Most clients were unemployed (73.7%) and/or receiving welfare support upon entering treatment (86.8%; Andkhoie, 2012). The unemployment rate for clients at Cree Nations Treatment Haven was much higher than for adults in northern Saskatchewan First Nations communities (47.2%; First Nations Information Governance Centre, 2011), however, this is consistent with the fact that social and income factors are associated with substance use problems (Ahnquist, Wamala, & Lindstrom, 2012). Most clients also had a history of psychological problems (81.6%; Andkhoie, 2012), which further underscores the importance of treatment.

The methadone maintenance therapy program was found to drastically decrease opioid use among clients (82% terminated use; Andkhoie, 2012). Upon completion of the evaluation, most clients used at least one less opioid, one less stimulant, and 1.5 less depressants than they were using before beginning treatment (Andkhoie, 2012). Clients were treated for non-opioid substance dependence prior to entering the program, so clients should not have been using any substances throughout the methadone maintenance program (Andkhoie, 2012). Also, few clients (5.3%) were involved in any form of illegal activity during a 30-day follow-up period (Andkhoie, 2012). Overall, the results of this evaluation were positive, but limited, and further evaluation was requested.

The Current Study

This study contributed to the on-going evaluation of Cree Nations Treatment Haven's methadone maintenance therapy program.

1. It was hypothesized that individuals in the methadone maintenance therapy program at Cree Nations Treatment Haven with higher rated improvement would report greater motivation for treatment and engagement in treatment.
2. Individuals with higher rated improvement would report greater life quality, psychological functioning, physical health, and relationships with family and friends, and less psychological distress, problems with alcohol, criminality, employment and life difficulties, and overall risk.
3. Individuals with higher rated improvement would report a more positive opinion of services.
4. Individuals with a more positive opinion of services would report higher motivation and engagement.
5. Individuals would report a decrease in drug use, high-risk, and criminal behaviours, and improvements in housing, employment status, and family support, since admission to the program.

Method

Participants

Participants in this evaluation consisted of 30 clients in the methadone maintenance therapy program at Cree Nations Treatment Haven. Clients ranged in age from 23 to 55, with a mean age of 41 ($SD = 8.18$). Most of the clients were male ($n = 16$; 53.3%), and 93.3% ($n = 28$) identified as First Nations, with 70% ($n = 21$) also identifying as Cree. The majority of clients were single ($n = 13$; 43.3%) or cohabiting ($n = 8$; 26.7%), and lived alone in their own dwelling ($n = 15$; 50%) or with family or relatives ($n = 8$; 26.7%). The majority completed some high school ($n = 11$; 36.7%) or some post-secondary school ($n = 7$; 23.3%).

Procedures

Clients at Cree Nations Treatment Haven were informed of the details of this project by the staff at the centre. Clients who were currently receiving methadone maintenance therapy answered questions regarding their experiences during treatment through a series of questionnaires related to demographic information, quality of life, psychological functioning, health, social functioning, alcohol use, criminal involvement, motivation and engagement, level of risk, satisfaction with services, and impression of improvement. These clients were at various stages in treatment, but were asked to report when their treatment began. The majority of clients were unsure of their treatment start date ($n = 8$; 26.7%). Two clients (6.7%) began treatment in 2015, six (20%) began in 2014, five (16.7%) began in 2013, one (3.3%) began in 2012, four (13.3%) began in 2011, and four (13.3%) began prior to 2010¹. The questionnaires completed were of the paper-and-pencil format and were completed on average, within 60 to 90 minutes. Upon completion, clients returned their questionnaires to the treatment centre staff who debriefed them and provided them with resources if they required mental health services. All questionnaires were de-identified by Cree Nations Treatment Haven staff to ensure anonymity of the clients to the evaluators.

Measures

Demographic information. A demographic questionnaire was created to obtain information regarding age, sex, ethnicity, relationship status, level of education, and living situation. The demographics questionnaire also included questions asking the date of treatment entry, and whether they were part of the Matrix program. If they were in the Matrix program, they were asked to include the date they enrolled in and completed the program as well.

¹ Cree Nations Treatment Haven began its methadone maintenance therapy program in January 2011; however, it is possible and likely that these clients began methadone treatment elsewhere prior to Cree Nations Treatment Haven's methadone maintenance therapy program development.

Life Situation Survey (LSS; Chubon, 1999). This is a 20-item self-report questionnaire that asks clients about their current life situation. Items are scored on a 7-point scale with response options ranging from 1 (*Agree Very Strongly*) to 7 (*Disagree Very Strongly*). Statements on this scale include things like “My income is a constant source of worry” and “I like myself the way I am.” The reliability and validity of this measure have been supported by many studies and the internal consistency of the rating scale items are at acceptable levels with diverse populations (Chubon, 1999). It also shows good discriminant validity and is sensitive to both health and non-health factors affecting quality of life (Chubon, 1999).

User Generated Outcomes (UGO; Ruefli & Rogers, 2004). This is a 10-item self-report questionnaire that asks clients about their current situation compared to their situation at treatment entry. Items are rated on a scale from *Better* to *Worse* by placing a mark on a line for where their current situation falls. For example, under “Places to live” there are statements given from, “House you rent or own” representing the best situation to “Sleeping in tunnels/roof/parks/stairways” representing the worst situation. Ruefli and Rogers (2004) recommend utilizing client-driven assessments such as this, rather than clinician-driven assessments. In an effort to develop an evaluation of health services that is based on desirable outcomes as identified by clients themselves, 240 clients in a harm reduction program were interviewed, and the items on this measure emerged as indicators of self-sufficiency and dignity (Ruefli & Rogers, 2004). The measure was validated with a second group of clients who reported the same indicators (Ruefli & Rogers, 2004).

TCU Client Evaluation of Psychological Functioning (PSY; Garner et al., 2007; Joe et al., 2002). This is a 33-item self-report questionnaire that asks clients about their psychological functioning over the past month. Items are scored on a 5-point scale with response

options ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). Questions on this scale include things like “You feel interested in life” and “You feel hopeless about the future.” This scale is broken down into five subscales including self-esteem, depression, anxiety, decision-making, and expectancy. This measure has good internal consistency (Simpson et al., 2012) and is reliable for use in treatment programs (Joe et al., 2002).

TCU Physical and Mental Health Status Screen (HLTH; Joe et al., 2004). This is a 21-item self-report questionnaire that asks clients about physical and mental health issues over the past month. The first question asks “How many times in the past month have you gone to a hospital or clinic or seen a doctor or nurse for health problems?” with response options of 0 (*None*), 1 (1 time), 2 (2-3 times), 3 (4-10 times), or 4 (*over 10 times*). The next 10 questions ask about problems and diseases experienced in the past month, such as “Stomach problems or ulcers” and “Skin disease or skin problems” and these items are rated on a 5-point scale with response options ranging from 0 (*None of the time*) to 5 (*All of the time*). These 11 questions make up the physical health subscale. The last 10 questions ask how often in the past month feelings such as being nervous or depressed were felt, and these items are rated on the same 5-point scale mentioned above. These questions make up the psychological distress subscale. This measure has high levels of reliability and validity in groups of injection drug users (Hides et al., 2007).

TCU Family and Friends Assessment (FMFR; Joe et al., 2004). This is a 21-item self-report questionnaire that asks clients about their relationships with family and friends in the past month. Items are scored on a 5-point scale with response options ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). Statements on this scale include things like “Your family got along well together” and “Your friends usually worked regularly on a job.” This scale is broken

into four subscales including family relationships, family drug use, peer socialization, and peer criminality. This measure has good reliability and validity (Joe et al., 2004).

TCU Alcohol Use and Problem Symptoms (ALC; Joe et al., 2004). This is a 15-item self-report questionnaire that asks clients about their alcohol use and problem symptoms over the past month. The first four questions are about weekly alcohol use and include things like, “On average, how many days each week did you ever have 5 or more drinks in a row,” which are rated on a 5-point scale from 0 (*0 days per week*) to 5 (*7 days per week*). The next 11 questions are *Yes* or *No* questions and ask if in the past month the client’s alcohol use ever led to things like “Fights or arguments with family or friends” and “Craving or having strong urges to take a drink.” Self-report measures of alcohol consumption and related activities are valid and reliable (Del Boca & Darkes, 2003).

TCU General Crime, Employment, and Life Status (CEL; Joe et al., 2004). This is a 10-item self-report questionnaire measuring risks associated with crime, employment, and life status over the past month. The first seven items ask questions such as “On average, how many days each week did you ever get into fights or loud arguments?” and are scored on a 5-point scale with response options ranging from 0 (*0 days per week*) to 5 (*7 days per week*). The final three items ask questions such as “How many times were you arrested?” scored on a 5-point scale with response options ranging from 0 (*0-2 times*) to 5 (*11+ times*). This scale is broken into four subscales including crime problems, employment problems, life status problems, and CEL total. Self-report measures of criminal behaviour and activity have high reliability (Darke, 1998; Thornberry & Krohn, 2000).

TCU Client Evaluation of Motivation (MOT; Garner et al., 2007; Joe et al., 2002). This is a 36-item self-report questionnaire that asks clients about their motivation to be in

treatment over the past month. Items are scored on a 5-point scale with response options ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). Questions on this scale include things like, “You need to be in treatment now” and “You feel a lot of pressure to be in treatment.” This scale is broken into five subscales including problem recognition, desire for help, treatment readiness, pressures for treatment, and treatment needs. This measure has good internal consistency reliability (Simpson et al., 2012) and is reliable for use in treatment programs (Joe et al., 2002).

TCU Client Evaluation of Social Functioning (SOC; Garner, Knight, & Simpson, 2007; Joe, Broome, Rowan-Szal, & Simpson, 2002). This is a 36-item self-report questionnaire that asks clients about their level of social functioning over the past month. Items are scored on a 5-point scale with response options ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). Questions on this scale include things like “You have people close to you who can always be trusted” and “You like others to feel afraid of you.” This scale is broken into four subscales including hostility, risk taking, social support, and social desirability. This measure has good internal consistency (Simpson, Joe, Knight, Rowan-Szal, & Gray, 2012) and is reliable for use in treatment programs (Joe et al., 2002).

TCU Global Risk Assessment - Adult (RSK; Joe, Simpson, Greener, & Rowan-Szal, 2004). This is an 11-item self-report questionnaire measuring global risk over the past month. The first item asks “How much of the time in the past month were you locked up?” and the following 10 questions ask a variety of *Yes* or *No* questions about the past month including things like, “Were you ever employed full time?” and “Were you ever treated in an emergency room?” This measure has acceptable test-retest reliability and good internal consistency (Bernstein et al., 2010; Broome, Joe, & Simpson, 2001).

Addiction Prevention and Treatment Services' Methadone Evaluation

Questionnaire (MEQ; Capital Health, 2005). This is a 13-item self-report questionnaire that asks a variety of questions, mostly with *Yes* or *No* options, on the subjects of drug use/high risk behaviours, housing, employment status, criminal convictions, and family.

Verona Service Satisfaction Scale for Methadone Treatment (VSSS-MT; Pérez de los Cobos et al., 2002). This is a 17-item self-report questionnaire that asks questions about the experience in using the treatment centre's methadone maintenance therapy program over the past month. Questions are rated on a 5-point scale with response options ranging from 1 (*Terrible*) to 5 (*Excellent*). Some questions also include an option for *Not Applicable*. Questions include things like, "What is your overall feeling about the effect of the program in helping you deal with your problems?" and "What is your overall feeling about the effectiveness of the program in helping you to improve your relationships with your close relatives?" This measure has excellent internal consistency, good test-retest reliability, and good concurrent validity (Pérez de los Cobos et al., 2002).

TCU Client Evaluation of Treatment Engagement (ENG; Garner et al., 2007; Joe et al., 2002). This is a 36-item self-report questionnaire that asks clients about their level of treatment engagement over the past month. Items are scored on a 5-point scale with response options ranging from 1 (*Disagree Strongly*) to 5 (*Agree Strongly*). Questions on this scale include things like "Your treatment plan has reasonable objectives" and "The staff here are efficient at doing their job." This scale is broken into four subscales including treatment participation, treatment satisfaction, counselling rapport, and peer support. This measure has good internal consistency reliability (Simpson et al., 2012) and is reliable for use in treatment programs (Joe et al., 2002).

Patient Global Impression of Improvement scale (PGI; Trujols et al., 2011). This is a one-item self-report measure that asks, “Compared to your condition at admission to the centre, how much have you changed?” The answer is rated on a 7-point scale, with response options ranging from 1 (*Very much improved*) to (*Very much worse*). This measure has demonstrated good test-retest reliability and concurrent validity (Srikrishna, Robinson, & Cardozo, 2010).

Client Global Impression of Improvement scale (CGI; Guy, 1976; Trujols et al., 2011). This is a one-item clinician completed measure. Referring to the patient, the question asks, “Compared to his/her condition at baseline, how much has he/she changed?” The clinician is asked to rate only the improvement that they feel is due entirely to the drug treatment. The answer is rated on a 7-point scale, with response options ranging from 1 (*Very much improved*) to (*Very much worse*). This measure has shown good psychometric properties (Guy, 1976).

Patient Opinion of Services (POS; Pérez de los Cobos et al., 2005). This is a one-item self-report measure that asks, “Taking into account your overall experience, what is your impression about methadone as a medication for carrying out maintenance treatment of opioid dependence?” This question is rated on a 5-point scale with response options ranging from 1 (*Terrible*) to 5 (*Excellent*).

Open Forum Questions (Capital Health, 2005). Clients have the opportunity to write their comments about things they have liked about their experience and things they have disliked about their experience.

Data Analysis

To test our first four hypotheses, bivariate correlations were performed, with subsequent follow-up linear regressions completed where correlations were significant. Our final hypothesis was examined through descriptive analyses that looked at clients’ reported change in drug use,

high-risk, and criminal behaviours, housing, employment status, and family support. Other descriptive information was examined, such as quality of life and opinions of services.

Qualitative questions were examined manually for common themes and summarized.

Results

Social Desirability and Accurate Responding

The TCU Client Evaluation of Social Functioning scale contained a subscale measuring social desirability. Scores on this measure were explored for each client, with higher scores representing possible biased responding. The mean score on this subscale was 6 ($SD = 2.53$), with a maximum score possible of 11. This suggests that there may have been a bias towards responding desirably. Also, when relating self-rated improvement to clinician-rated improvement only a weak correlation was found (see Table 1). Most individuals rated themselves as slightly more improved compared to ratings of improvement by staff at the treatment centre. This also suggests possible biased responding.

Three measures completed by clients also included checks for accurate responding. The TCU Client Evaluation of Psychological Functioning, the TCU Client Evaluation of Motivation, and the TCU Client Evaluation of Social Functioning measures contained items that requested a specific answer (e.g., “Please fill in the ‘Uncertain’ box as your response for this question.”). Client’s responses to these items were checked for accuracy and where items were answered inaccurately or left blank, total scale scores for the individual were compared to average scale scores on the measure of the entire sample. There were no issues of importance to note.

Bivariate Correlations and Linear Regressions

The relationships between self- and clinician-rated improvement and motivation and engagement scores were explored through bivariate correlations (see Table 1) with no

statistically significant findings. While not statistically significant, the directions the variables correlated in provided a meaningful indicator of how the variables interact, therefore these relationships were included in our results. Relationships with r values of less than $\pm.20$ represented very weak correlations and are not discussed. Self-rated improvement correlated positively with all subscales of treatment engagement, which suggests that greater improvement is related to greater engagement and vice versa. Clinician-rated improvement correlated positively with all treatment engagement subscales as well, again, suggesting that greater improvement is related to greater engagement. Self- and clinician-rated improvement had negligible correlations with all motivation subscales, which suggests a very weak relationship between improvement and motivation.

The relationships between self- and clinician-rated improvement and quality of life, psychological functioning, psychological distress, physical health, social functioning, problems with alcohol, criminality, employment difficulties, life difficulties, and overall risk scores were explored through bivariate correlations (see Tables 2-4) and where correlations were significant, through linear regressions (see Table 5). Self-rated improvement correlated significantly in a positive direction with scores on the expectancy subscale of the psychological functioning measure, indicating that those with greater self-rated improvement had a lower expectancy to use drugs or relapse in the past month. Regression analysis revealed that expectancy accounted for 14.9% of the variance in self-rated improvement and vice versa. Self-rated improvement also correlated significantly in a negative direction with scores on the life status problems subscale of the crime, employment, and life measure, indicating that those with greater self-rated improvement had less life status problems in the past month. Regression analysis revealed that life status problems accounted for 16% of the variance in self-rated improvement and vice versa.

Aside from these two significant findings, correlational significance was not observed between these variables and self- or clinician-rated improvement. Again, however, the directions of the correlations provided an indicator of how the variables interact. Self-rated improvement correlated positively with self-esteem, decision-making, family relationships, and peer socialization, suggesting that greater improvement relates to greater self-esteem, better decision-making, and greater family and peer relationships. Self-rated improvement correlated negatively with depression, peer criminality, life status problems, and overall problem scores, suggesting that greater improvement relates to less depression, less association with peers who are committing crimes, and to less life status and overall problems. Clinician-rated improvement correlated positively with decision-making, expectancy, physical health, peer socialization, and overall risk scores, suggesting that greater clinician-rated improvement relates to better decision-making, less expectancy to use drugs or relapse, greater peer relationships, and lower risk. Clinician-rated improvement correlated negatively with depression, hostility, crime related problems, life status problems, and overall problems, suggesting that clinician-rated improvement relates to less depression and hostility, and less crime related, life status, and overall problems.

The relationships between self- and clinician-rated improvement and opinion of services were explored through linear regressions (Table 6). Both self- and clinician-rated improvement significantly predicted opinion of services, indicating that greater improvement leads to a greater opinion of services. Opinion of services accounted for 17.3% of the variance in self-rated improvement and 14% of the variance in clinician-rated improvement.

The relationships between opinion of services and engagement and motivation scores were explored through bivariate correlations (Table 7) and where correlations were significant,

through linear regressions (see Table 8). Opinion of services correlated significantly in a positive direction with scores on the treatment participation, counselling rapport, and peer support subscales of the engagement measure, indicating that those with a higher opinion of services had greater participation in treatment, had better relationships with counsellors, and had better support from peers. Regression analysis revealed that patient opinion of services accounted for 18% of the variance in treatment participation, 23.3% of the variance in counselling rapport, and 16% of the variance in peer support. Opinion of services correlated significantly in a negative direction with scores on the problem recognition subscale of the motivation measure, indicating that those with a higher opinion of services had less recognition of having a drug use problem. Regression analysis revealed that patient opinion of services accounted for 31.1% of the variance in problem recognition.

No further significant results were observed, however, the directions the variables correlated with the subsequent subscales provided an indicator of how the variables interact. Opinion of services correlated positively with the remaining engagement subscale, treatment satisfaction, suggesting that a positive opinion of services relates to greater satisfaction with treatment. Opinion of services also correlated negatively with the desire for help and pressures for treatment subscales of the motivation measure, suggesting that a more positive opinion of services relates to less desire for help and less pressures for treatment.

Descriptive Information

The majority of clients in the methadone maintenance treatment program at Cree Nations Treatment Haven ($n = 24$; 80%) reported a decrease in drug use and high-risk behaviours since admission to the program. Forty percent of clients ($n = 12$) reported a decrease in criminal behaviour since admission and 40% ($n = 12$) reported no decrease in criminal behaviour, while

20% of clients ($n = 6$) chose not to answer this question; 13.3% of clients ($n = 4$) reported having new criminal convictions since admission to the program. Seventy percent ($n = 21$) reported that their housing condition improved since admission, and 73.3% ($n = 22$) reported having adequate housing. Most clients reported an improvement in employment status ($n = 17$; 56.7%), although 43.3% of clients ($n = 13$) reported themselves as unemployed. The majority of clients reported an increase in family support since admission ($n = 23$; 76.7%), and 93.3% ($n = 28$) reported having family support. Most clients ($n = 20$; 66.7%) reported an average quality of life, 26.7% ($n = 8$) reported a very good quality of life, and 6.7% ($n = 2$) reported a poor quality of life. Those who scored in the poor range on this measure of quality of life were at most, only two points away (out of 140) from being in the average quality of life range. Clients' opinions of the services provided at Cree Nations Treatment Haven were positive. These results can be seen in Tables 9 and 10.

Qualitative Data

Two qualitative questions were asked and manually examined for common themes. Both questions yielded useful data. The first question, "The thing I have liked most about my experience of the methadone program is:," was answered by 93.3% ($n = 28$) of clients. Seven common themes emerged from this question including being off of drugs, program praise, new beginnings and pride, social relationships, money, psychological health, and physical health. The first theme, being off drugs, was the most highly recognized with 64.3% ($n = 18$) commenting in this area. This theme included things like not chasing drugs and not having to worry about getting the next fix, being sober, and not getting/being "dope sick" anymore. Others also made comments about no longer having cravings and staying off of "hardcore" drugs.

The next most dominant theme, program praise, was recognized by 53.6% ($n = 15$). Under this theme individuals mentioned things like the program's closeness to home, learning that others experience similar difficulties, the caring and supportive staff, and the program's effectiveness when you follow it. Many individuals used this portion of the questionnaire to thank the program and its staff for their help. New beginnings and pride was another dominant theme with many individuals reporting things like having their life back, having their life saved, enjoying life, being proud of themselves, and feeling worthy. Individuals also reported freedom, stability, feeling like a good person, and achieving success as positive outcomes of the program. This theme was recognized by 42.9% ($n = 12$).

Many clients endorsed the theme of social relationships with ideas surrounding positive change in different relationships commonly appearing. Individuals reported things like being closer to and having more time for their families and others, being more reliable, receiving respect from children and others, getting along with everyone, and being grateful that there are people who care. This theme was recognized by 39.3% ($n = 11$). Under the theme of money, things like having money to spend, being more responsible with money, and not always trying to save money for drugs or alcohol emerged. Employment was also mentioned as a positive outcome of the program. This theme was recognized by 21.4% ($n = 6$).

Psychological health also emerged as a common theme, with individuals reporting things like being able to think more clearly and cope with thoughts, having time to better oneself, and having a better relationship with God or religion. This theme was recognized by 21.4% ($n = 6$). Under the theme of physical health, individuals reported improved sleep and feeling healthy again. One individual also noted remaining arthritis pain, but a belief that this pain would go away with continued treatment. This theme was recognized by 14.3% ($n = 4$).

The second question, “The thing I have disliked most about my experience of the methadone program is:,” was answered by 86.7% ($n = 26$). Four themes emerged out of the responses to this question including being on/getting methadone, social concerns, other treatment programming interests, and recommendations. Under the theme of being on/getting methadone, many individuals commented on not having enough time to get to the treatment centre, not being permitted carries, and having to walk a long way to the centre (especially in the winter). Some also mentioned things like incorrect dosing, worry about relapse, weight gain, and the doctor’s discouragement surrounding discontinuing methadone. This theme was recognized by 80.8% ($n = 21$). Under the theme of social concerns individuals reported things like people gossiping or making assumptions about those in the program, people abusing the program, and difficulty finding employment because of the program’s methadone dispensing times. This theme was recognized by 15.4% ($n = 4$).

The theme of recommendations was recognized by 23.1% ($n = 6$). Recommendations surrounded different or longer dispensing times, allowing carries to those who are doing well, providing transportation for those who need it, and allowing everyone to have one male and one female counsellor. Under the theme of other programming interests individuals mentioned a lack of after work programming, concerns with only being permitted to have one counsellor, and an interest in switching to suboxone. This theme was recognized by 11.5% ($n = 3$). Two individuals (7.7%) also reported having no dislikes about the methadone program.

Discussion

The purpose of this study was to evaluate the methadone maintenance therapy program at Cree Nations Treatment Haven. Results demonstrated that individuals in treatment reported a decrease in drug use and high-risk behaviours, and improvements in housing, employment status,

and family support since admission to the program. Individuals with higher rated improvement reported greater engagement, life quality, psychological functioning, physical health, and relationships with family and friends. Improvement also related to less psychological distress, problems with alcohol, criminality, employment and life difficulties, and overall risk. Higher rated improvement also correlated with a more positive opinion of services, and those with a positive opinion of services reported higher treatment engagement. It was also hypothesized that improvement and opinion of services would relate to higher motivation, however very weak correlations were found.

Results suggested a bias towards socially desirable responding; however, the utility of measuring socially desirable response styles to validate self-report measures has been questioned. Uziel (2010) reported that of over 2,500 published studies that include measures of socially desirable responding, these scales have mostly failed to detect deception. This is not to say that there are no biases in self-reports; however, it advises that response bias should not be assumed from results on another self-report measure. Also, in samples of substance users, higher levels of socially desirable responding have been observed when individuals are using substances less often (Zaldivar, Molina, Lopez Rios, & Garcia Montes, 2009). Higher rates of social desirability have also been found to relate to longer periods in treatment (Zenmore, 2012). Because most of the individuals included in this evaluation have been in treatment for long periods of time and are no longer abusing substances, slightly elevated levels of socially desirable responding are expected and acceptable.

Cultural differences in self-presentation may also affect responding on social desirability scales. Cultural characteristics such as power distance, collectivism, uncertainty avoidance, and extraversion have been found to influence response styles, as well as respondents' proficiency

with the language of the questionnaire items (Harzing, 2006). Because of these cultural aspects, it is possible that the scale used may have over-identified socially desirable responding in the current group.

Clients in the methadone maintenance therapy program reported greater self-rated improvement overall when compared to clinician ratings. It has been considered that individuals may recognize their own improvement in different ways than the clinicians, and the clinicians may not have insight into all areas of an individual's life; therefore the clients' ratings are accepted as reliable. Self-report has frequently been overlooked as an outcome measure in substance use research (Darke, 1998; Del Boca & Noll, 2000); however, this study affirms the utility of measuring subjective experience, as has been suggested in the literature.

Greater levels of engagement in treatment were related to greater overall improvement; the more engaged an individual was in treatment, the more improvement they experienced. A similar relationship was also expected between motivation towards treatment and level of improvement, however correlations were not significant. Because motivation was measured as problem recognition, desire for help, treatment readiness, pressures for treatment, and treatment needs, it is possible that client endorsement of motivation showed a ceiling effect. That is, individuals who are experiencing substantial improvements in functioning may no longer feel they have a problem with substance abuse, desire help, be ready for treatment, experience pressure from others to enter treatment, or feel that treatment is needed at this time.

The fact that individuals are no longer highly motivated to be in treatment may actually signify a greater level of improvement, as individuals may feel that they have overcome their addiction. The type of motivation measured with the scale used may represent a motivation to begin treatment, rather than continue with treatment. It is likely that through the engagement and

motivation measures used, engagement measured the dedication to continue treatment, while motivation measured the desire to begin treatment. With engagement and motivation measured in this way, it is understandable that engagement would have a stronger relationship with improvement than motivation in the current group.

Greater improvement was related to a lower expectancy to use drugs or relapse in the past month, which shows that those who are doing well see little chance of relapse. This suggests that clients who are doing well have little or no intention to use drugs and may believe they can effectively deal with drug-related cues as they arise. Greater improvement also related to less life status problems, where life status problems included things like spending little time doing “sober” activities with family or friends, not attending self-help meetings, not having a regular place to live and sleep, and getting in arguments or fights. This relationship shows that the more clients feel they have improved, the less difficulties in life they seem to be having.

Greater improvement was related to greater self-esteem, better decision-making, and greater family and peer relationships as well. These findings are supported by the self-medication hypothesis of addictive disorders, which suggests that individuals use substances to relieve or change painful affect states (Khantzian, 1997). Self-medication occurs during the course of difficulties with self-esteem, relationships, and self-care (Khantzian, 1997). The relationship between improvement and self-esteem, decision-making, and social relationships suggests that individuals may be less likely to use substances to self-medicate, which may lead to greater overall improvement.

While improvement was found to relate to better decision-making, Wang and colleagues (2012) found that drug-related cues continued to interfere with decision-making in former heroin addicts after being drug free for between 1 and 24 months. This suggests that while strong

decision-making skills are important to recovery, individuals may need other strategies in place to avoid relapse, specifically surrounding the reduction of drug-related cues. The present study found that individuals are not only strengthening decision-making skills, but are also improving in other areas of life functioning, which can help reduce the likelihood of reacting to drug-related cues.

The relationship between improvement and having better family and peer relationships is supported in the literature. For example, Lavee and Altus (2009) found that those who remained drug-free had closer relationships with family members. Also, some First Nations populations understand health as a state of balance across all aspects of life, including social aspects (Dell et al., 2012), therefore this relationship between improvement and family and peer relationships may contribute to the balance of health.

Self-rated improvement was associated with fewer subjective depressive symptoms, less association with peers who are committing crimes, and less overall problems. Depression, negative social support, and overall problems are risk factors for relapse. Davis and O'Neill (2005) found that thinking differently about life, maintaining self-care, and relying on positive social support (all factors protecting against depression) are important strategies for relapse prevention. Drug Policy Alliance (2006) indicated depression as a common reason for relapse as well. When individuals are less depressed they may have less of a need to self-medicate with substances. Also, individuals report the association with criminally involved peers as one of the most difficult, yet crucial parts of changing substance using behaviour (Anstice et al., 2009). The relationship between association with criminally involved peers and improvement suggests that the treatment program may be overcoming this common and difficult challenge. Additionally, greater clinician-rated improvement was associated with less hostility. Because Aboriginal

individuals who use opioids have more difficulty managing aggressive behaviour than their non-using counterparts (Jacobs & Gill, 2002), their improvement may be helping to reduce hostility.

Both self- and clinician-rated improvement predicted opinion of services indicating that the more an individual improved, the greater opinion of services they reported. A more positive opinion of services was also related to greater engagement; those who participated more in their treatment had a better opinion of services. The relationships developed with the counselors at the centre related to opinion of services, as well as support from peers in the program. This suggests that relationships and support from staff and peers are important to individuals in treatment.

Due to the history of colonization that Aboriginal individuals have faced, effective relationships between therapists and Aboriginal clients often take more time to grow when therapists are of a different cultural background (Wing et al., 1995). While demographic information was not collected from the therapists and staff at the treatment centre, this information may have clarified the meaning of this result. Regardless of the demographics of the staff at the centre, the association between relationships with staff and peers at the centre and opinion of services suggests that these relationships are meaningful to clients. Particularly surrounding the implication of peer support, it has been found that group cohesion and support is instrumental in ensuring continued program adherence (Rawson & McCann, 2005).

A greater opinion of services was also related to less motivation, specifically, less recognition of having a drug use problem, less desire for help, and less pressure for treatment. Similar to the relationship between greater improvement and less motivation, those who rated the program more positively may no longer feel that their drug use is a problem, desire help, or feel pressure to be in treatment because of the help the program has provided thus far. The low motivation shown by clients does not suggest that clients are not motivated for ongoing

treatment, but instead suggests that the program has helped to the extent that clients no longer feel that they have a substance abuse problem, desire help, or feel pressure to be in treatment.

While the majority of clients in the present evaluation reported a decrease in drug use and high-risk behaviours since admission to the program, less than half reported a decrease in criminal behaviour. The individuals who reported no decrease in criminal behaviour may have answered this way because they were not engaging in criminal behaviour before beginning treatment; also, many chose not to answer this question and the reason for this is unknown. A higher rate of criminal activity was reported in the present evaluation than the original evaluation of Cree Nations Treatment Haven completed in 2012. The current evaluation, however, asked about criminal convictions since beginning treatment, while the previous evaluation looked at past 30-day criminal involvement. Given that most individuals have been in treatment for many years, the slightly higher rate of new criminal convictions may reflect the difference in the time period being referred to, rather than an increase in convictions since the initial evaluation. It is also possible that clients were ambivalent about reporting criminal activity due to being identifiable by treatment centre staff. While clients were anonymous to the evaluators, they were not anonymous to the staff at the treatment centre.

The majority of clients in the present evaluation reported an improvement in their housing condition since beginning methadone treatment and also reported having adequate housing. The improvement in housing condition for those in the treatment program is important for individuals living in First Nations communities particularly, as a large majority of First Nations people in Canada have identified housing as a major concern in the past (First Nations Information Governance Centre, 2011). The literature explains that achieving adequate housing can begin a process of change so that as an individual's living situation begins to improve, other

areas of daily functioning can improve and be maintained (Tsemberis, 2010). While substance abusing individuals are often classified as “hard to house” due to difficulties maintaining sobriety, gaining permanent housing is frequently associated with participation in treatment for substance abuse and sobriety (Tsemberis, 2010).

The improvement in employment status is also a success of Cree Nations Treatment Haven’s methadone maintenance therapy program. While slightly less than half of the current group reported themselves as unemployed and this unemployment rate is much higher than it is for the general population, the majority of clients reported that their employment status had improved since beginning treatment. The initial evaluation of Cree Nations Treatment Haven’s methadone maintenance therapy program reported that 73.7% of clients were unemployed; this indicates that in 3 years, the unemployment rate among clients has dropped by 30% and it is now lower than the average unemployment rate of adults living on-reserve in northern First Nations communities in Saskatchewan (47.2%; First Nations Information Governance Centre, 2011). Because individuals with poor health are more likely to be economically disadvantaged and have more difficulties overcoming their economic hardships compared to those with better health (Bloom & Canning, 2000), the improvement in employment status may signify an improvement in health.

An improvement in education status was also found. In the initial Cree Nations Treatment Haven study 2.6% had any level of post-secondary education, while the current study found 23.3% with some post-secondary education and 6.7% with post-secondary education completed. These results suggest that in the 3 years since the previous study was completed, some individuals have received further education. The increased wellbeing and stability that clients gain from participation in the program may allow them to pursue further education.

Research has found that Aboriginal individuals who abuse substances report being extremely bothered by family issues and have difficulty getting along with friends (Jacobs & Gill, 2002); however, most clients at Cree Nations Treatment Haven reported an increase in family support since admission and almost all clients reported having family support. While clients reported an increase in family support, further research may clarify if the methadone maintenance therapy program increases family values, which in turn, contribute to better health and a stronger overall community. Family values have been ranked as a community strength in the past (First Nations Information Governance Centre, 2011), so the identification of such a relationship would suggest the strengthening of the community.

Almost all clients rated their quality of lives in the average or very good ranges, and only two individuals scored in the poor range on quality of life; the scores for these two individuals, however, were on the borderline of average quality of life. Typically when discussing quality of life, methadone maintenance therapy clients mention themes of social relationships, psychological wellbeing, occupation status, independence, and having a meaningful life (De Maeyer et al., 2011). Most of these themes emerged throughout this evaluation.

Demographic results showed that males and females were accessing the methadone maintenance treatment equally, suggesting that the program is accessible to both sexes. While women experience opioid related problems more often, they tend to seek treatment less frequently than men (Health Canada, 2011); however, it appears that Cree Nations Treatment Haven may be overcoming some of the barriers women face when seeking treatment.

The age range of clients accessing services at Cree Nations Treatment Haven is broad, revealing that the program is appropriately reaching most age groups. There is, however, a gap in clientele between the ages of 17 and 23. Cree Nations Treatment Haven accepts clients aged 17

and older, however the youngest client receiving methadone maintenance treatment currently is 23 years old. This suggests that the treatment program may not be reaching younger individuals appropriately, as First Nations people tend to start using substances at a younger age (First Nations Centre, 2005).

Many clients at Cree Nations Treatment Haven did not report the date they began treatment. Of those who reported a treatment start date, four individuals had been in treatment for 5 or more years, four clients for 4 years, one client for 3 years, five clients for 2 years, and two clients for 1 year or less. Because Cree Nations Treatment Haven's methadone maintenance therapy program began in January of 2011, individuals in treatment for longer than 4 years may have begun methadone treatment elsewhere before transferring to Cree Nations Treatment Haven. While these lengths in treatment are only estimations of initiation and may include treatment beginning prior to the opening of Cree Nations Treatment Haven's methadone maintenance therapy program, they suggest success for individuals in treatment. Research has found that individuals who remain in methadone maintenance treatment for 3 years or more tend to have better success in all areas of functioning (Kreek & Vocci, 2002).

Clients rated the services received at Cree Nations Treatment Haven positively. The majority of clients felt excellent or mostly satisfied about all aspects of the program, including the program's effectiveness at helping them deal with their problems, the information given about their addictions, instructions received regarding self-care, and help received to deal with the side effects of methadone. One area that was rated positively, but left room for improvement was clients' feelings about the instructions they were given for what to do on their own between appointments. The majority of clients felt mostly satisfied or had mixed feelings about this, which suggests that further direction could be provided on activities of daily living.

The majority of clients felt either excellent or mostly satisfied about methadone as a maintenance medication, considering their overall treatment. There is often a belief that methadone has worse side effects and withdrawal symptoms than other opioids and that methadone treatment is too disciplinary, controlling, regimented, and disempowering (Fischer et al., 2002). Individuals receiving treatment at Cree Nations Treatment Haven, however, report an accepting attitude of methadone maintenance therapy as an overall treatment for opioid use problems, suggesting that the current group may not hold these common beliefs about methadone.

The majority of clients felt either mostly satisfied or mixed feelings about the program's effectiveness at helping close relatives to better understand their problems, suggesting an area for improvement. While providing services and education for family members of clients may not be a direct priority of methadone maintenance treatment, programming that educates family members on their loved ones' struggles can assist the client's development of effective social functioning.

The majority of clients felt excellent or mostly satisfied with the personal manner of the staff, the knowledge the staff had about their past diseases, and the overall ability of the staff to listen to and understand problems. A good relationship with the staff who dispense the medication has been listed as an important factor to those receiving treatment (Anstice et al., 2009); in fact, the stigma associated with methadone use and discrimination experienced from dispensing staff are the most powerful forces preventing people from entering methadone treatment (Joseph et al., 2000; National Institutes of Health, 1999). Positive reports such as this may assist in encouraging others to enter treatment in the future.

Most individuals reported that they received help to improve their capacity to cope with life. Most who received this help were satisfied and no clients who had not received the service reported wishing they had. Few clients received practical help at home from the program, but those who did rated these services highly. Of those who did not receive these services, however, some would have liked to and this represents an area for future consideration.

Few clients had the opportunity to take part in leisure activities organized by the treatment centre and those who did were either mostly satisfied or had mixed feelings. Of those who were not given this opportunity, many reported they would have appreciated the option. This indicates clients' desires for leisure activities to be included as a part of programming. This may suggest that the treatment centre is creating an environment where people want to be involved. The majority of clients had not taken part in the Matrix program at the centre in the past month, but some would have liked to, which is another area for improvement. Of those who did take part, the program was rated highly. Few clients reported receiving help in joining activities outside of the program, but many would have liked to, which is also an area for improvement. Those who did receive these services rated them highly.

Themes that emerged out of the open-ended questions were congruent with the opinion of services results, with the addition of details. The most common theme that emerged as the most liked aspect of the methadone program was being off drugs, followed by program praise, and new beginnings and pride. These themes show that in the eyes of the clients, the program is making a positive difference and is well received. The other themes that emerged in this area included social relationships, money, psychological health, and physical health. All of these things are indicators of an effective substance use treatment program as they are directly related to reduced substance use (Capital Health, 2005; Currie & Wild, 2012; De Maeyer et al., 2011;

Veilleux et al., 2010). Clients noticed and described improvements in everyday functioning, and recognizing these changes from the perspectives of the clients is essential to appreciating program success.

Four themes emerged as the least liked aspects of the program, including being on/getting methadone, social concerns, other treatment programming interests, and recommendations. Many of the concerns presented are consistent with program evaluation literature and not unique to Cree Nations Treatment Haven. For example, Chong and Herman-Stahl (2003) reported client concerns of few treatment choices, inconvenient treatment hours, and a lack of transportation to treatment centres.

The qualitative questions also allowed for the presentation of recommendations from the clients' perspectives. If improvements were to be made to the program, the clients' opinions and recommendations would be an excellent place to look for guidance. Individuals expressed concern about dealing with side effects and worries of relapse. The social stigma clients felt from the community was also presented as a concern. Clients requested longer dispensing times that would allow them more employment opportunities, transportation to and from the treatment centre (especially in the winter), and being assigned both a male and female counselor.

Another common recommendation arose surrounding the allowance of take-home doses of methadone, also known as carries. This was a frequent request, and while clients' opinions should be considered, evidence suggests a large decrease in risk with the prohibition of carries. There is a serious concern of the possibility of household members, such as children, accidentally ingesting methadone when individuals are permitted to have their methadone at home (Smialek et al., 1977; Ward et al., 1999). Clients could also potentially ingest more than their prescribed dose of methadone or divert their medication to others (Ward et al., 1999). Often

this diversion of methadone is for altruistic reasons, for example, helping a friend avoid withdrawal symptoms, but this does not minimize the risk.

Methadone maintenance therapy programs that allow carries have stringent controls in place to minimize risks, such as ensuring a good drug-response and relationship with the treatment centre staff before allowing carries. Other risk prevention strategies include educating clients of the risks associated with having their methadone at home and providing childproof containers and lockboxes for the methadone (Peles et al., 2011; Ward et al., 1999). While there are ways to effectively minimize risks associated with methadone carries, the only way to eliminate these risks is by not permitting clients to have any take-home doses.

Finally, there were requests for additional programming, such as increased after-work program availability and the addition of suboxone as a treatment option. Suboxone is another medication used for long-term maintenance treatment and is a combination of buprenorphine and naloxone. Buprenorphine is the main component of this maintenance medication, but it is combined with naloxone to prevent abuse. Buprenorphine is a partial agonist at the μ receptor, (Jones, 2004) and it has been available since the 1980s in low doses to treat pain (Parks Thomas et al., 2014). It has similar effects to methadone, but is less intense and also detaches from the μ receptor more slowly, which makes it effective when taken every other day or even less frequently (Jones, 2004).

Buprenorphine also produces less respiratory depression or overdose risk compared to other opioids and has milder withdrawal symptoms; however, it does present some abuse potential when not combined with naloxone (Jones, 2004). While buprenorphine blocks other opioids from reaching receptors and producing effects, it can be injected into the bloodstream and will cause euphoric effects this way (Jones, 2004). The solution to this problem is the

addition of naloxone, which induces withdrawal symptoms when it is injected, but not when taken orally (Jones, 2004; Parks Thomas et al., 2014). This combined substance, known as suboxone, is a relatively new treatment for opioid addiction that is presently being researched as an alternative to methadone (Parks Thomas et al., 2014). Because of suboxone's low potential for abuse, it may be a good option for beginning opioid dependence treatment or for those who do not have access to or meet criteria for a methadone maintenance program (Fudala et al., 2003; Jones, 2004).

Studies investigating the effectiveness of suboxone compared to placebo have achieved positive results (Amato et al., 2005; Fudala et al., 2003; Kakko, Svanborg, Kreek, & Heilig, 2003; Ling et al., 1998; Mattick, Breen, Kimber, & Davoli, 2014). Suboxone has been found to have less drug interactions than methadone, especially with HIV medications, but several overdoses have been reported, particularly when high doses are combined with benzodiazepines (McCance-Katz, Sullivan, & Nallani, 2010; Reynaud, Petit, Petard, & Courty, 1998; Singh, Mattoo, Malhotra, & Varma, 1992). While suboxone is effective in treating opioid dependence in some circumstances, methadone is currently the gold standard in opioid dependence treatment.

With appropriate dosing, methadone is consistently the most effective treatment, but not by so much that suboxone is advised against (Mattick et al., 2014). Research has shown no differences in unwelcome side effects between suboxone, placebo, or methadone, but greater retention and less illicit opioid use is most often seen with methadone, which is important to opioid dependence treatment due to the high potential for relapse (Amato et al., 2005; Mattick et al., 2014). It is suggested that suboxone treatment be used in situations where high doses of methadone are not possible or for clients who do not react well to methadone (Johnson et al., 2000; Mattick et al., 2014).

Limitations and Future Directions

The results of this evaluation must be interpreted while considering some limitations. First, the sample size in this study was small, however, the present sample contained half of the clients in treatment at Cree Nations Treatment Haven. Because the purpose of this study was to evaluate the methadone maintenance therapy program at Cree Nations Treatment Haven, the relationships found may be meaningful despite not reaching statistical significance. The relationships and descriptive information discussed provide indicators of the numerous strengths and minimal limitations of the program.

This evaluation intended to incorporate the entire in treatment population at the centre and a waitlist control group; however, Cree Nations Treatment Haven is a busy treatment centre with clients to provide for. Because of the requirements of operating a treatment centre, completion of evaluation measures may need to be set-aside during particularly demanding times. Due to the nature of secondary data analysis, particularly the need to maintain the anonymity of the clients to the evaluators, the researchers were unable to provide assistance to the centre in completing the evaluation measures. While assistance may have allowed for quicker completion of the entire evaluation, the researchers felt it was important to continue with the procedure of a secondary data analysis to ensure Cree Nations Treatment Haven's ownership of the data.

The administration of the questionnaires was another limitation of the present evaluation. There is concern that questionnaires may have been provided to all clients in treatment at the beginning of the evaluation to take home and return upon completion. This is a concern because there is a risk that the clients who returned their questionnaires and are included in this evaluation are more improved than those who did not. Perhaps those who did not return the

questionnaires are continuing to struggle with their substance use or have less positive opinions of the treatment centre, and therefore chose not to return their questionnaires. While all clients were anonymous to the evaluators, they were not anonymous to the staff at the treatment centre. This may have caused a bias in the current sample; however, this issue is yet to be verified with the treatment centre.

There was also concern with the reporting of treatment entrance dates as many clients were unsure of when they began treatment. This limited the exploration of how improvement and outcome factors related to time spent in treatment. This could be addressed in the future stages of the evaluation by gathering treatment entrance dates from the centre's records. Also, many clients reported beginning methadone maintenance therapy prior to Cree Nations Treatment Haven's methadone maintenance therapy program creation, which presents the possibility that centres other than the one being evaluated were included in clients' responses. This concern will be addressed in future evaluations.

One of the questionnaires included in the package, the User Generated Outcomes measure (Ruefli & Rogers, 2004), was not completed consistently. There was confusion about how to complete this measure, but in the future, staff supervising the completion of the questionnaires will be specifically educated on instructions to provide, or the instructions for the measure will be reviewed for clarity. In future evaluations a different motivation measure should be used for clients in treatment. The motivation measure should ask specifically about motivation to continue with treatment, rather than to begin treatment. It would also be helpful to ask individuals about relapse incidents while in treatment as relapse rates among Aboriginal populations are between 35 and 85%, and relapse most often occurs within 90 days (Chong & Herman-Stahl, 2003; Wiebe & Huebert, 1996). This is a major component of treatment for

opioid using individuals and understanding how relapse occurs during treatment would further identify strengths or areas for improvement.

Finally, future evaluations should investigate clients' feelings about the cultural aspects of the methadone maintenance therapy program at Cree Nations Treatment Haven and their personal identification with culture. The degree to which First Nations individuals identify with culture is a protective factor associated with substance use (Bals et al., 2011; Fleming & Ledogar, 2008; McIvor & Napoleon, 2009). A recent scoping literature review found evidence from 19 studies showing that culturally-based interventions for Indigenous individuals with addictions may be effective at improving functioning in all areas of wellness (Rowan et al., 2014). Understanding clients' identification with culture and opinions about the cultural aspects of the treatment program would solidify some of the programs' strengths and identify some areas for improvement. It would also be helpful in future studies to develop or use already developed culturally relevant measures, such as the Native Wellness Assessment (NWA), which is a holistic strengths-based measure that focuses on the relationships in a client's life and reflects the impact of cultural programming on client wellness (Dell, 2012).

Conclusion

The use of alcohol and drugs is currently rated as the most significant issue faced by First Nations communities in Canada (First Nations Information Governance Centre, 2011), which is further underscored by the high rates of mortality and morbidity resulting from opioid use worldwide (Brown & Lawrence, 2009). While opioid-related problems are not fully documented yet in First Nations populations, the frequency of opioid-related emergency room visits (Canadian Centre on Substance Abuse, 2013), and the higher prevalence of illicit prescription drug use disorders in First Nations populations (Currie & Wild, 2012; Elton-Marshall et al.,

2011; Wardman et al., 2002) suggest challenges. Aboriginal individuals are less likely to initiate methadone maintenance therapy and Aboriginal identity is consistently negatively associated with methadone maintenance therapy (Kerr et al., 2005; Wood et al., 2007) due to financial, geographic, and cultural factors. Because of this, the development and evaluation of culturally relevant treatment programs is imperative to appropriately address the issue of opioid use in First Nations communities.

Substance use treatment commonly focuses on the goal of abstinence, with little attention to the quality of life of those who use substances. Harm reduction methods of treating substance use, however, aim to address more than substance dependence; harm reduction programs have a goal of reducing the severity of problems associated with substance use, and in turn, enhancing the quality of life of those who use substances (Joseph et al., 2000; Ruefli & Rogers, 2004). Considering this harm reduction approach, the outcomes of the beginnings of the evaluation of Cree Nations Treatment Haven's methadone maintenance therapy program are promising. While some limitations have emerged, the positive opinions of services endorsed and the improvements in everyday functioning reported indicate that the program is succeeding in the eyes of the clients. Future evaluation is likely to solidify the present findings and support the community developed and evidence-based services being provided at Cree Nations Treatment Haven.

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Table 1

Bivariate Correlations Between PGI, CGI, MOT, and ENG Scales

Variable	1	2	3	4	5	6	7	8	9	10	11
1. PGI		.23	-.11	.05	.11	-.12	.09	.30	.27	.31	.27
2. CGI			-.11	.00	.12	-.12	-.04	.37	.24	.28	.20
3. MOT Problem Recognition				.60**	-.06	.83**	.28	-.52*	-.40	-.53*	-.48*
4. MOT Desire for Help					.46*	.52*	.39	.15	-.08	.18	.29
5. MOT Treatment Readiness						.07	.15	.45*	.30	.42	.46*
6. MOT Pressures for Treatment							.61**	-.48*	-.40	-.45*	-.42*
7. MOT Treatment Needs								-.25	-.41*	-.12	-.06
8. ENG Treatment Participation									.77**	.91**	.79**
9. ENG Treatment Satisfaction										.70**	.65**
10. ENG Counseling Rapport											.80**
11. ENG Peer Support											

Note. PGI = Patient Global Impression of Improvement scale (Trujols et al., 2011); CGI = Clinician Global Impression of Improvement scale (Guy, 1976; Trujols et al., 2011); MOT = TCU Client Evaluation of Motivation scale (Garner et al., 2007; Joe et al., 2002); ENG = TCU Client Evaluation of Treatment Engagement scale (Garner et al., 2007; Joe et al., 2002).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2

Bivariate Correlations Between PGI, CGI, LSS, PSY, and HLTH Scales

Variable	1	2	3	4	5	6	7	8	9	10
1. PGI		.23	.29	.29	-.22	-.14	.33	.39*	-.11	-.01
2. CGI			.09	.10	-.24	-.13	.28	.28	.29	-.18
3. LSS				.66**	-.59**	-.54**	.42*	.64**	-.20	-.23
4. PSY Self Esteem					-.79**	-.60**	.64**	.51**	-.26	-.20
5. PSY Depression						.70**	-.42*	-.53**	.14	.46*
6. PSY Anxiety							-.19	-.65**	.17	.45*
7. PSY Decision Making								.22	.01	-.04
8. PSY Expectancy									-.20	-.40
9. HLTH Physical Health										.06
10. HLTH Psychological Distress										

Note. PGI = Patient Global Impression of Improvement scale (Trujols et al., 2011); CGI = Clinician Global Impression of Improvement scale (Guy, 1976; Trujols et al., 2011); LSS = Life Situation Survey (Chubon, 1999); PSY = TCU Client Evaluation of Psychological Functioning (Garner et al., 2007; Joe et al., 2002); HLTH = TCU Physical and Mental Health Status Screen (Joe et al., 2004).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3

Bivariate Correlations Between PGI, CGI, FMFR, ALC, and CEL Scales

Variable	1	2	3	4	5	6	7	8	9	10	11
1. PGI		.23	.24	-.02	.26	-.21	.01	.12	-.04	-.40*	-.30
2. CGI			.05	.15	.26	-.19	-.15	-.24	-.12	-.25	-.32
3. FMFR Family Relationships				-.18	-.00	-.00	-.21	-.01	.03	-.47*	-.33
4. FMFR Family Drug Use					.26	.24	.17	.04	-.27	.15	.05
5. FMFR Peer Socialization						-.35	-.18	.10	.14	-.28	-.11
6. FMFR Peer Criminality							.56**	.16	-.10	.34	.41*
7. ALC								.29	-.44*	.12	.08
8. CEL Crime Problems									.03	.04	.55**
9. CEL Employment Problems										-.17	.37
10. CEL Life Status Problems											.67**
11. CEL Total											

Note. PGI = Patient Global Impression of Improvement scale (Trujols et al., 2011); CGI = Clinician Global Impression of Improvement scale (Guy, 1976; Trujols et al., 2011); FMFR = TCU Family and Friends Assessment (Joe et al., 2004); ALC = TCU Alcohol Use and Problem Symptoms (Joe et al., 2004); CEL = TCU General Crime, Employment, and Life Status (Joe et al., 2004). * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4

Bivariate Correlations Between PGI, CGI, SOC and RSK Scales

Variable	1	2	3	4	5	6
1. PGI		.23	-.14	.02	-.12	-.03
2. CGI			-.30	-.19	.19	.32
3. SOC Hostility				.24	-.20	-.09
4. SOC Risk Taking					-.25	-.32
5. SOC Support						.19
6. RSK						

Note. PGI = Patient Global Impression of Improvement scale (Trujols et al., 2011); CGI = Clinician Global Impression of Improvement scale (Guy, 1976; Trujols et al., 2011); SOC = TCU Client Evaluation of Social Functioning (Garner et al., 2007; Joe et al., 2002); RSK = TCU Global Risk Assessment Adult (Joe et al., 2004).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5

Simple Linear Regression Analyses Predicting PGI

Predictors	R^2	Adj. R^2	β	F	df	d
PGI						
PSY Expectancy	.15	.18	.39	4.56*	1, 26	.84
CEL Life Status Problems	.16	.13	-.40	4.94*	1, 26	.87

Note. PGI = Patient Global Impression of Improvement scale (Trujols et al., 2011); PSY = TCU Client Evaluation of Psychological Functioning (Garner et al., 2007; Joe et al., 2002); CEL = TCU General Crime, Employment, and Life Status (Joe et al., 2004).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 6

Simple Linear Regressions Predicting POS

Predictors	R^2	Adj. R^2	β	F	df	d
POS						
PGI	.17	.14	.42	5.87*	1, 28	.91
CGI	.14	.11	.37	4.23*	1, 26	.81

Note. POS = Patient Opinion of Services (Pérez de los Cobos et al., 2005); PGI = Patient Global Impression of Improvement scale (Trujols et al., 2011); CGI = Clinician Global Impression of Improvement scale (Guy, 1976; Trujols et al., 2011).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 7

Bivariate Correlations Between POS, MOT, and ENG

Variable	1	2	3	4	5	6	7	8	9	10
1. POS		-.56**	-.25	.17	-.39	.06	.42*	.36	.48*	.40*
2. MOT Problem Recognition			.60**	-.06	.83**	.28	-.52*	-.40	-.53*	-.48*
3. MOT Desire for Help				.46*	.52*	.39	.15	-.08	.18	.29
4. MOT Treatment Readiness					.07	.15	.45*	.30	.42	.46*
5. MOT Pressures for Treatment						.61**	-.48*	-.40	-.45*	-.42*
6. MOT Treatment Needs							-.25	-.41*	-.12	-.06
7. ENG Treatment Participation								-.77**	.91**	.79**
8. ENG Treatment Satisfaction									.70**	.65**
9. ENG Counseling Rapport										.80**
10. ENG Peer Support										

Note. POS = Patient Opinion of Services (Pérez de los Cobos et al., 2005); MOT = TCU Client Evaluation of Motivation scale (Garner et al., 2007; Joe et al., 2002); ENG = TCU Client Evaluation of Treatment Engagement scale (Garner et al., 2007; Joe et al., 2002).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 8

Simple Linear Regressions Predicting POS

Predictors	R^2	Adj. R^2	β	F	df
POS					
ENG Treatment Participation	.18	.15	.42	5.26*	1, 24
ENG Counseling Rapport	.233	.20	.48	7.58*	1, 25
ENG Peer Support	.16	.13	.40	4.94*	1, 26
MOT Problem Recognition	.311	.28	-.56	9.92**	1, 22

Note. POS = Patient Opinion of Services (Pérez de los Cobos et al., 2005); MOT = TCU Client Evaluation of Motivation scale (Garner et al., 2007; Joe et al., 2002); ENG = TCU Client Evaluation of Treatment Engagement scale (Garner et al., 2007; Joe et al., 2002).

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 9

Clients' Opinions of Services

Items	Excellent (n; %)	Mostly satisfied (n; %)	Mixed (n; %)	Mostly dissatisfied (n; %)	Terrible (n; %)
Overall feeling about effect of program in helping deal with problems	3; 10%	11; 36.7%	3; 10%	-	-
Overall feeling about all services received	9; 30%	16; 53.3%	5; 16.7%	-	-
Overall feeling about personal manner of staff	17; 56.7%	8; 26.7%	5; 16.7%	-	-
Overall feeling about effectiveness of program in helping to improve relationships with close relatives	14; 46.7%	14; 46.7%	2; 6.7%	-	-
Overall feeling about effectiveness of services in helping close relatives to better understand problems	7; 23.3%	15; 50%	8; 26.7%	-	-
Overall feeling about knowledge of nursing staff on current and past diseases	10; 33.3%	10; 33.3%	5; 16.7%	-	-
Overall feeling about information received about diagnosis and evolution of addiction	6; 20%	18; 60%	6; 20%	-	-
Overall feeling about effectiveness of service in helping establish good relationships with people outside family	7; 23.3%	16; 53.3%	6; 20%	-	-
Overall feeling about instructions about what to do on own between appointments	5; 16.7%	15; 50%	10; 33.3%	-	-
Overall feeling about effectiveness of service in helping to improve self-care	12; 40%	13; 43.3%	4; 13.3%	-	-
Overall feeling about ability of staff to listen to and understand problems	12; 40%	13; 43.3%	4; 13.3%	-	-
Overall feeling about help received for side effects of methadone	9; 30%	14; 46.7%	6; 20%	-	-
Overall impression about methadone as a medication for carrying out maintenance treatment of opioid dependence	14; 46.7%	11; 36.7%	5; 16.7%	-	-

Table 10

Clients' Opinions of Services

Items	If yes: Rating of service					If no: Would have liked to receive service?		
	Excellent (n; %)	Mostly satisfied (n; %)	Mixed (n; %)	Mostly dissatisfied (n; %)	Terrible (n; %)	Yes (n; %)	No (n; %)	Don't know (n; %)
Did you receive help from staff to improve capacity to cope with social and working life?	9; 45%	9; 45%	-	1; 5%	-	-	2; 22.2%	6; 66.7%
Did you have opportunity to take part in leisure activities organized by methadone program?	-	3; 42.9%	3; 42.9%	-	-	9; 39.1%	2; 8.7%	8; 34.8%
Did you take part in Matrix program?	1; 16.7%	3; 50%	1; 16.7%	-	-	5; 22.7%	4; 18.2%	10; 45.5%
Did you receive practical help at home from centre?	2; 66.7%	1; 3.3%	-	-	-	4; 15.4%	6; 23.1%	13; 50%
Did you receive help from centre to join leisure activities separate from methadone program?	2; 33.3%	2; 33.3%	1; 16.7%	-	-	7; 30.4%	4; 17.4%	11; 47.8%

APPENDIX

Measures

Demographics

1. Your age: _____ years
2. Your sex: Male _____ Female _____ Other _____
3. Your ethnicity (e.g., First Nation, Cree): _____
4. Your relationship status:
 - Single _____
 - Dating _____
 - Separated _____
 - Married _____
 - Divorced _____
 - Cohabiting (i.e., living with your partner) _____
 - Widowed _____
 - Other (please specify) _____
5. What is the highest education you have completed?
 - Less than Elementary _____
 - Elementary Completed _____
 - Some Junior High _____
 - Junior High Completed _____
 - Some High School _____
 - High School or GED Completed _____
 - Some Post-Secondary _____
 - Post-Secondary Completed _____
6. Where are you living currently?
 - With family or other relatives _____
 - With a group of friends (or non-family members) _____
 - Alone in your own dwelling _____
 - Homeless _____
 - In a hospital, rehabilitation facility, or nursing home _____
 - In a jail, prison, or other correctional facility _____
 - Other (specify) _____
7. How long have you been living at that place? _____

8. Where were you living before you began treatment with CNTH?

With family or other relatives _____

With a group of friends (or non-family members) _____

Alone in your own dwelling _____

Homeless _____

In a hospital, rehabilitation facility, or nursing home _____

In a jail, prison, or other correctional facility _____

Other (specify) _____

9. When did you begin treatment at Cree Nations Treatment Haven?

(month) _____ (day) _____ (year) _____

10a. Are you currently part of the MATRIX program? Yes _____ No _____

10b. When did you first enter the MATRIX program?

(month) _____ (day) _____ (year) _____

10c. When did you first complete the MATRIX program?

(month) _____ (day) _____ (year) _____

10d. How many times have you participated in the MATRIX program? _____

User Generated Outcomes

Under each section, please place a slash through the line in the place that best fits your current situation (from better to worse), compared to your situation when entering treatment.

<p>1. Ways of Making Money</p> <p>Better ←</p> <p>Entitlements (welfare, disability)</p> <p>Job (employment, peddling, odd jobs, volunteer)</p> <p>Family money, gifts</p> <p>Borrowing</p> <p>-----</p> <p>Hustling, police informant</p> <p>Stealing (boosting, embezzle)</p> <p>Drug trade (selling, holding, transporting)</p> <p>Pan handling, collecting cans</p> <p>More serious criminal acts (robbery, loan shark, hit man)</p> <p>Sex work</p> <p>Selling blood, body organs</p> <p>→ Worse</p>	<p>2. Places to Live</p> <p>Better ←</p> <p>House you rent or own</p> <p>Friend's home</p> <p>Apt/room you rent or own</p> <p>Drug program</p> <p>Family member's home</p> <p>Housing with social program</p> <p>Institutionalized housing (shelter, hospital, hotel)</p> <p>Living on street/subway/bus station</p> <p>-----</p> <p>Jail</p> <p>Sleeping in cars/tent/abandoned building</p> <p>Sleeping in tunnels/roof/parks/stairways</p> <p>→ Worse</p>	<p>3. Ways/Places to Get Something Good to Eat</p> <p>Better ←</p> <p>Cook food yourself</p> <p>Food from friends/family</p> <p>Food from market</p> <p>Free food</p> <p>Buy food (food stamps/money)</p> <p>Go out to restaurant</p> <p>-----</p> <p>Beg for food</p> <p>Steal food</p> <p>Food from facilities (jail, hospital)</p> <p>Provide your own food (hunt, fish)</p> <p>Food from garbage</p> <p>→ Worse</p>	<p>4. Types of Services/Programs</p> <p>Better ←</p> <p>Housing</p> <p>AIDS related</p> <p>Mental health</p> <p>Drug treatment</p> <p>Entitlements</p> <p>Harm reduction</p> <p>-----</p> <p>Mainstream institutions (churches, library, legal)</p> <p>Get connected services (transport, escort)</p> <p>Support services (AA, NA, women's group, friends)</p> <p>Prevention services (parenting, domestic violence)</p> <p>Stress reduction</p> <p>Work-related (WEP)</p> <p>→ Worse</p>	<p>5. Ways to Handle Legal Problems</p> <p>Better ←</p> <p>Pay for a legal professional</p> <p>Go see a legal professional</p> <p>Speak with a legal professional</p> <p>Address the problem yourself (do research, write to judge)</p> <p>Speak to non-legal person (counselor, case manager)</p> <p>Respect the law (serve time in central booking, make court appearances)</p> <p>Learn from legal mistakes</p> <p>-----</p> <p>Disrespect the law, authorities</p> <p>Face consequences (give up parental rights, go to appeal)</p> <p>Avoid legal responsibility (jump bail, don't pay fines)</p> <p>Get help from friends</p> <p>→ Worse</p>
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<p>Better</p> <p>←</p>	<p>B</p> <p>←</p>	<p>6. Types of Family Relations</p> <ul style="list-style-type: none"> Love for family Special family gatherings Interactive activities (picnics, play games) Argue Support, respect Spend quality time together Passive activities (TV, movies, music) ----- Lack of respect Negative attitudes (jealous, judgmental) Conflicting lifestyles between members Abusive relations (physical, sexual) Difficult financial relations Abandonment of family Deceitful relations (lying, stealing, gossip) 	<p>B</p> <p>←</p>	<p>7. Ways of Improving Yourself</p> <ul style="list-style-type: none"> Developing more self respect Relating better to others Getting/ staying clean Becoming more spiritual Taking part in self-help groups Working/ developing work skills Reducing stress (meditation, yoga) ----- Helping others (get a job, babysit for children) Caring for self (go to dentist, taking medications, diet) Being more responsible (live on a budget accomplish goals) Behaving myself (staying out of trouble, stop lying) Taking up hobbies (artwork, fishing, hunting) 	<p>B</p> <p>←</p>	<p>8. Ways to Handle Negative Feelings</p> <ul style="list-style-type: none"> Get support (support groups, friends) Spiritual help (pray, church) Professional help (case manager, counselor, doctor) Work a job or volunteer Diversions (ball game, beach, singing) Stress reduction (meditation, smoking) ----- Physical activities (sports, cooking) Self abuse (anorexia, suicide) Abuse of others Social relationships (visit person in jail, get married) Withdrawal, isolate Illegal activities (drugs, gamble) 	<p>B</p> <p>←</p>	<p>9. Ways to Handle Health Problems</p> <ul style="list-style-type: none"> Home remedies (cleansing, praying) Stress reduction (positive affirmations, meditation) Drug treatment/ therapy Clean living (reduce drug use, take meds, stop smoking) See doctor Health screening (check for diabetes, STDs, etc.) ----- Nutritional diet Educate yourself about health Exercise Alternative therapies (psychic, herbs, fasting) Negative emotions (denial, anger, depression, suicide) Use illegal drugs 	<p>B</p> <p>←</p>	<p>10. Ways to Handle Problems with Drug Use</p> <ul style="list-style-type: none"> Admit the problem Pray Get social support Go into treatment Quit using Get help from therapist Stay distracted Avoid drug culture ----- Follow treatment plan Get family support Get spiritual guidance (NA, AA, minister) Jail Reflect on pain associated with drug use Be deceitful (lie, manipulate) Take part in illegal activity Isolate Use drugs, binge 	<p>Worse</p> <p>→</p>
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TCU PSY

Please indicate how much you agree or disagree with each statement based on the LAST MONTH.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
1. You have trouble sleeping.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. You have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. You consider how your actions will affect others. ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. You plan ahead.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. You feel interested in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. You feel like a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. You have trouble concentrating or remembering things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. You feel afraid of certain things, like elevators, crowds, or going out alone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. You feel anxious or nervous.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. You wish you had more respect for yourself. ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. You are likely to feel the need to use drugs in the next few months.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. You feel sad or depressed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. You think about probable results of your actions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. You feel extra tired or run down.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. You have trouble sitting still for long.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. You think about what causes your current problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. You are likely to drink alcohol in the next few months.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. You think of several different ways to solve a problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. You feel you are basically no good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
--	------------------------------	-----------------	------------------	--------------	---------------------------

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 20. You worry or brood a lot. | <input type="radio"/> |
| 21. You have trouble making decisions. | <input type="radio"/> |
| 22. You feel hopeless about the future. | <input type="radio"/> |
| 23. You make good decisions. | <input type="radio"/> |
| 24. You are likely to relapse in the next few months. | <input type="radio"/> |
| 25. In general, you are satisfied with yourself. | <input type="radio"/> |
| 26. You make decisions without thinking about
consequences. | <input type="radio"/> |
| 27. Please fill in the "Disagree" box as your
response for this question. | <input type="radio"/> |
| 28. You feel tense or keyed up. | <input type="radio"/> |
| 29. You feel you are unimportant to others. | <input type="radio"/> |
| 30. You feel tightness or tension in your muscles. | <input type="radio"/> |
| 31. You are likely to have problems in quitting
drug use. | <input type="radio"/> |
| 32. You feel lonely. | <input type="radio"/> |
| 33. You analyze problems by looking at all the
choices. | <input type="radio"/> |

TCU HLTH

1. How many times in the PAST MONTH have you gone to a hospital or clinic or seen a doctor or nurse for health problems?

- None 1 time 2-3 times 4-10 times Over 10 times

During the PAST MONTH, how often have you had any of these problems or types of diseases –

<i>None of the time</i>	<i>A little of the time</i>	<i>Some of the time</i>	<i>Most of the time</i>	<i>All of the time</i>
-------------------------	-----------------------------	-------------------------	-------------------------	------------------------

- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 2. stomach problems or ulcers? | <input type="radio"/> |
| 3. bone/joint problems? | <input type="radio"/> |
| 4. kidney infection or problems? | <input type="radio"/> |
| 5. bladder infection or problems? | <input type="radio"/> |
| 6. liver or gall bladder problems? | <input type="radio"/> |
| 7. intestinal or bowel problems? | <input type="radio"/> |
| 8. heart disease or problems? | <input type="radio"/> |
| 9. sexually transmitted disease (STD)? | <input type="radio"/> |
| 10. skin disease or skin problems? | <input type="radio"/> |
| 11. other medical or physical problems? | <input type="radio"/> |

During the PAST MONTH, how often did you feel –

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 12. tired out for no good reason? | <input type="radio"/> |
| 13. nervous? | <input type="radio"/> |
| 14. so nervous that nothing could calm you down? .. | <input type="radio"/> |
| 15. hopeless? | <input type="radio"/> |
| 16. restless or fidgety? | <input type="radio"/> |
| 17. so restless that you could not sit still? | <input type="radio"/> |
| 18. depressed? | <input type="radio"/> |
| 19. so depressed that nothing could cheer you up? .. | <input type="radio"/> |
| 20. that everything was an effort? | <input type="radio"/> |
| 21. worthless? | <input type="radio"/> |

TCU FMFR

Describe your relationships with your FAMILY – that is, parents, brothers/sisters, grandparents, aunts/uncles, etc. – during the LAST MONTH.

How strongly do you disagree or agree with the following statements?

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
1. Your family got along well together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. You really enjoyed being together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Your family drank alcohol together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. You got drunk together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. You used other (illegal) drugs together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. You had serious talks about each other's interests and needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Your family helped each other deal with problems. .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. You got blamed or fussed at about things YOU did or did not do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. You and your family often had disagreements. .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. You had serious arguments or fights in your family.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Describe your relationships with people you consider to be your FRIENDS in the LAST MONTH.

How strongly do you disagree or agree with the following statements?

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
11. Your friends spend time together with their families eating meals or watching TV.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. They liked being with their families.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Your friends usually worked regularly on a job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. They felt hopeful about their future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
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- 15. They got into loud arguments or fights with other people.
- 16. Your friends liked to get drunk.
- 17. They used other (illegal) drugs.
- 18. They traded, sold, or dealt drugs.
- 19. Your friends did other things against the law. .
- 20. Some spent time in “gang” activities.
- 21. Some got arrested or had problems with the law. ..

TCU ALC

Please mark answers based on drinking alcohol during the PAST MONTH.

<i>0</i>	<i>1-2</i>	<i>3-4</i>	<i>5-6</i>	<i>7</i>
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- 1. On average, how many days each week did you drink any beer, wine, wine coolers, or hard liquor?...
- 2. On average, how many days each week did you ever have 5 or more drinks in a row?
- 3. On average, how many days each week did you ever have 3 or more drinks within a 1-hour period? ..

<i>0-2</i>	<i>3-4</i>	<i>5-6</i>	<i>7-10</i>	<i>11+</i>
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- 4. On average, how many drinks (cans, glasses, shots) did you have on each of those drinking days?

In the LAST MONTH, did your alcohol use ever lead to...

YES	NO
------------	-----------

- 5. problems getting to work or school on time, or caring for children?
- 6. dangers for you or others while driving or operating machinery?
- 7. fights or arguments with family or friends?.....
- 8. needing to have more drinks to feel their effects?
- 9. drinking early in the day to avoid having shakes or tremors?
- 10. having more drinks than you really wanted or intended?
- 11. trying without success to reduce your drinking?
- 12. giving over more of your time for drinking?
- 13. forgetting about meetings or events with family or friends?
- 14. having poor attention and concentration, or emotional troubles?
- 15. craving or having strong urges to take a drink?

TCU CEL

Please mark answers based on the PAST MONTH

<i>0</i>	<i>1-2</i>	<i>3-4</i>	<i>5-6</i>	<i>7</i>
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1. On average, how many days each week did you spend time while “clean and sober” doing things with your family or friends?
2. On average, how many days each week did you ever attend group support (AA/NA/CA) or other self-help meetings?
3. On average, how many days each week did you spend time hanging out with someone “high” on alcohol or drugs?
4. On average, how many days each week did you have “no regular place” to live or spend the nights? ..
5. On average, how many days each week did you ever get into fights or loud arguments?
6. On average, how many days each week did you spend working the “full day” on a paid job or at school?
7. On average, how many days each week did you spend working just “part of the day” for pay, or to help someone in need?

<i>0-2</i>	<i>3-4</i>	<i>5-6</i>	<i>7-10</i>	<i>11+</i>
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8. Altogether, how many TIMES have you needed a doctor (or medical care) for an injury or sickness?
9. How many TIMES were you arrested (taken to the police station)?
10. How many TIMES were you locked up in a jail or prison?

TCU MOT

Please indicate how much you agree or disagree with each statement based on the PAST MONTH.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
1. You need help dealing with your drug use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. You need to be in treatment now.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. You have family members who want you to be in treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. This treatment gives you a chance to solve your drug problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Your drug use is a problem for you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. This kind of treatment program is not helpful to you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. You need help with your emotional troubles.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Your drug use is more trouble than it's worth. ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. You are concerned about legal problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Your drug use is causing problems with the law. ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Your drug use is causing problems in thinking or doing your work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. It is urgent that you find help immediately for your drug use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. You will give up your friends and hangouts to solve your drug problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. You feel a lot of pressure to be in treatment. ...	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. You need individual counseling sessions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Your drug use is causing problems with your family or friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. You expect to be sent to jail or prison if you are not in treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. This treatment program gives you hope for recovery.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
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- 19. You need educational or vocational training services.
- 20. Your drug use is causing problems in finding or keeping a job.
- 21. You want to be in drug treatment.
- 22. Your life has gone out of control.
- 23. You need group counseling sessions.
- 24. Your drug use is causing problems with your health.
- 25. You are ready to leave this treatment program.
- 26. You are tired of the problems caused by drugs.
- 27. You are at this treatment program only because it is required.
- 28. Your drug use is making your life become worse and worse.
- 29. You have serious drug-related health problems.
- 30. You want to get your life straightened out.
- 31. You need medical care and services.
- 32. Several people close to you have serious drug problems.
- 33. Your drug use is going to cause your death if you do not quit soon.
- 34. You have legal problems that require you to be in treatment.
- 35. You are not ready for this kind of treatment program.
- 36. Please fill in the "Uncertain" box as your response for this question.

TCU SOC

Please indicate how much you agree or disagree with each statement based on the LAST MONTH.

<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
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- | | | | | | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 1. You have people close to you who motivate and encourage your recovery. | <input type="radio"/> |
| 2. You have never deliberately said something that hurt someone's feelings. | <input type="radio"/> |
| 3. You only do things that feel safe. | <input type="radio"/> |
| 4. You are sometimes irritated by people who ask favours of you. | <input type="radio"/> |
| 5. You have close family members who want to help you stay away from drugs. | <input type="radio"/> |
| 6. You have good friends who do not use drugs. ... | <input type="radio"/> |
| 7. When you do not know something, you do not at all mind admitting it. | <input type="radio"/> |
| 8. You have carried weapons like knives or guns. . | <input type="radio"/> |
| 9. You have people close to you who can always be trusted. | <input type="radio"/> |
| 10. You feel a lot of anger inside you. | <input type="radio"/> |
| 11. You sometimes try to get even rather than forgive and forget. | <input type="radio"/> |
| 12. You have a hot temper. | <input type="radio"/> |
| 13. You like others to feel afraid of you. | <input type="radio"/> |
| 14. You are always willing to admit it when you make a mistake. | <input type="radio"/> |
| 15. You feel mistreated by other people. | <input type="radio"/> |
| 16. You avoid anything dangerous. | <input type="radio"/> |
| 17. You have people close to you who understand your situation and problems. | <input type="radio"/> |
| 18. You are very careful and cautious. | <input type="radio"/> |

<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
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- 19. There have been occasions when you took advantage of someone.
- 20. You work in situations where drug use is common.
- 21. You have people close to you who expect you to make positive changes in your life.
- 22. You can remember “playing sick” to get out of something.
- 23. No matter who you are talking to, you are always a good listener.
- 24. You get mad at other people easily.
- 25. You have people close to you who help you develop confidence in yourself.
- 26. You like to do things that are strange or exciting. ..
- 27. You have felt like rebelling against people in authority even when they were right.
- 28. You have urges to fight or hurt others.
- 29. Please fill in the “Agree” box as your response for this question.
- 30. You like to take chances.
- 31. You have people close to you who respect you and your efforts.
- 32. Occasionally, you gave up doing something because you thought too little of your ability. .
- 33. You like the “fast” life.
- 34. You like friends who are wild.
- 35. You sometimes feel resentful when you do not get your way.
- 36. Your temper gets you into fights or other trouble. .

TCU RSK

Please mark answers to the series of questions listed below.

1. How much of the time in the PAST MONTH were you locked up (i.e., not living in the ‘free world’)?

- None
- Less than 1 week
- 1-2 weeks
- 2-4 weeks

In the PAST MONTH were you ever –

- 2. employed full time (35+ hrs/week)? *No* *Yes*
- 3. unemployed and NOT looking for work? *No* *Yes*
- 4. receiving any public financial support (food stamps, disability, public assistance)? .. *No* *Yes*
- 5. on parole or probation? *No* *Yes*
- 6. treated in an emergency room? *No* *Yes*
- 7. treated for a mental health problem? *No* *Yes*
- 8. treated for an alcohol use problem? *No* *Yes*
- 9. treated for illegal drug use? *No* *Yes*
- 10. arrested? *No* *Yes*
- 11. in jail or prison? *No* *Yes*

MEQ**DRUG USE / HIGH RISK BEHAVIOURS**

1. Would you consider your drug use and high-risk behaviours have been reduced since admission to the CNTH methadone program? (check one)

Yes No

HOUSING

2. Are you homeless? (check one)

Yes No

3. Do you have adequate housing? (check one)

Yes No

4. Have you changed residences since admission to the CNTH methadone program? (check one)

Yes No

5. If you have changed residence since admission, how many times? _____

6. Would you consider your housing condition has improved since admission? (check one)

Yes No

EMPLOYMENT STATUS

7. Please select which employment status currently applies to you (check one)

- full-time employment
- part-time employment
- seasonal employment
- homemaker
- student
- disabled
- retired
- unemployed

8. Would you consider your employment status has improved since you started the program at CNTH? (check one)

Yes No

CRIMINAL CONVICTIONS

9. Have you had any new criminal convictions since you started the program at CNTH? (check one) Yes No

10. If you have had new criminal convictions since you started the program at CNTH, how many? _____

11. If you had previously engaged in criminal behaviour, would you consider there has been a decrease in your criminal behaviour since you started the program at CNTH? (check one) Yes No

FAMILY

12. Do you have family support? (check one) Yes No

13. Would you consider your family support has increased since you started the program at CNTH? (check one) Yes No

VSSS-MT

Please choose the answer which is the best description of your experience in using the Cree Nations Treatment Haven methadone program over the LAST MONTH:

1. What is your overall feeling about the effect of the program in helping you deal with your problems?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

2. What is your overall feeling about, in general, all services you have received?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

3. What is your overall feeling about the personal manner of the staff?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

4. What is your overall feeling about the effectiveness of the program in helping you to improve your relationships with your close relatives?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

5. What is your overall feeling about the effectiveness of services in helping your close relatives know and better understand your problems?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

6. What is your overall feeling about the knowledge on the part of the nursing staff of your current and past diseases?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

7. What is your overall feeling about the information you received about the diagnosis and possible evolution of your addiction?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

8. What is your overall feeling about the effectiveness of the service in helping you establish good relationships with people outside your family (e.g., friends, neighbors, colleagues at work, etc.)?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

9. What is your overall feeling about the instructions about what to do on your own between appointments (e.g., the clarity, practicality etc. of recommendations)?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

10. What is your overall feeling about the effectiveness of the service in helping you to improve your self-care (e.g., taking care of your personal hygiene, your diet, your room)?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

11. What is your overall feeling about the ability of the staff to listen to and understand your problems?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

12. What is your overall feeling about the help you have received for side effects from medications (if occurred), particularly methadone (e.g. constipation)?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

13a. In the last month, did you receive help from staff to improve your capacity to cope with your social and working life (e.g. going to public offices, doing housework, getting on with your family and others)?

- YES (answer 13b)
- NO (answer 13c)

13b. If YES, what is your overall feeling about this/them?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

13c. If NO, do you think you would have liked to receive this/them?

- Yes
- No
- Don't know
- Not applicable

14a. In the last month, did you have the opportunity to take part in leisure activities organized by the methadone program?

- YES (answer 14b)
- NO (answer 14c)

14b. If YES, what is your overall feeling about this/them?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

14c. If NO, do you think you would have liked to receive this/them?

- Yes
- No
- Don't know
- Not applicable

15a. In the last month, did you take part in the Matrix program?

- YES (answer 15b)
- NO (answer 15c)

15b. If YES, what is your overall feeling about this?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

15c. If NO, do you think you would have liked to take part in this?

- Yes
- No
- Don't know
- Not applicable

16a. In the last month, did you have practical help at home from the service (e.g., visits from the nursing staff because you were sick, help caring for your children, etc.)?

- YES (answer 16b)
- NO (answer 16c)

16b. If YES, what is your overall feeling about this/them?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

16c. If NO, do you think you would have liked to receive this/them?

- Yes
- No
- Don't know
- Not applicable

17a. In the last month, did you receive help from the service to join in leisure activities separate from the methadone program (e.g., sports clubs, adult education, etc.)?

- YES (answer 17b)
- NO (answer 17c)

17b. If YES, what is your overall feeling about this/them?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent
- Not applicable

17c. If NO, do you think you would have liked to receive this/them?

- Yes
- No
- Don't know
- Not applicable

TCU ENG

Please indicate how much you agree or disagree with each statement based on the LAST MONTH of treatment.

	<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
1. You trust your counselor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Time schedules for counseling sessions at this program are convenient for you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. It's always easy to follow or understand what your counselor is trying to tell you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. This program expects you to learn responsibility and self-discipline.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Your counselor is easy to talk to.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. You are willing to talk about your feelings during counseling.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. This program is organized and run well.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. You are motivated and encouraged by your counselor.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. You have made progress with your drug/alcohol problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. You are satisfied with this program.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. You have learned to analyze and plan ways to solve your problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. You have made progress toward your treatment program goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. You always attend the counseling sessions scheduled for you.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Your counselor recognizes the progress you make in treatment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Your counselor is well organized and prepared for each counseling session.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Your counselor is sensitive to your situation and problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Your treatment plan has reasonable objectives.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<i>Disagree Strongly</i>	<i>Disagree</i>	<i>Uncertain</i>	<i>Agree</i>	<i>Agree Strongly</i>
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- 18. Your counselor views your problems and situations realistically.
- 19. Other clients at this program care about you and your problems.
- 20. You have stopped or greatly reduced your drug use while in this program.
- 21. Your counselor helps you develop confidence in yourself.
- 22. You always participate actively in your counseling sessions.
- 23. You have made progress in understanding your feelings and behavior.
- 24. Other clients at this program are helpful to you.
- 25. You have improved your relations with other people because of this treatment.
- 26. The staff here are efficient at doing their job. ...
- 27. You are similar to (or like) other clients of this program.
- 28. You have made progress with your emotional or psychological issues.
- 29. Your counselor respects you and your opinions.
- 30. You have developed positive trusting friendships while in this program.
- 31. You give honest feedback during counseling. .
- 32. You can depend on your counselor’s understanding.
- 33. There is a sense of family (or community) in this program.
- 34. You can get plenty of personal counseling at this program.
- 35. This program location is convenient for you. ...
- 36. You are following your counselor’s guidance.

PGI

Compared to your condition AT ADMISSION to the centre, how much have you changed?

- Very much improved
- Much improved
- Minimally improved
- No change
- Minimally worse
- Much worse
- Very much worse

POS

Taking into account your overall experience, what is your impression about methadone as a medication for carrying out maintenance treatment of opioid dependence?

- Terrible
- Mostly dissatisfied
- Mixed
- Mostly satisfied
- Excellent

CGI

Rate total improvement that, in your clinical judgment, is due entirely to drug treatment.

Compared to his/her condition at baseline, how much has he/she changed?

- Very much improved
- Much improved
- Minimally improved
- No change
- Minimally worse
- Much worse
- Very much worse