Understanding opiate dependence: The influence of personality disorders during detoxification

Kevin Hamdullahpur
Department of Psychiatry
McGill University
Montreal, Quebec, Canada

August 2014

A thesis submitted to McGill University in partial fulfillment of the requirements of the degree of Master of Science Psychiatry

1. Abstract

Background: Dependence on opiates is a major health issue in North America. The recent increases in both prescription and illicit opiate abuse have exacted enormous tolls in terms of health care, mental illness, quality of life, unemployment, and crime, while the difficulty in treating opioid dependent patients with standard abstinence-based therapies is not well understood.

Objectives: The objective of this study was to provide a novel approach to understanding the poor outcomes of opiate dependent patients. Addiction severity, medical, and psychiatric comorbidity among opiate-dependent patients was compared with a sedative-hypnotic control group. In addition, craving, mood, objective and subjective withdrawal symptoms, subjective experiences of pain, and objective measures of hyperalgesia were prospectively monitored during inpatient detoxification. Lastly treatment completion, entry into aftercare, and substance use at three and six months follow-up was examined.

Methods: This study was conducted at the Addictions Unit of the McGill University Health Center in Montreal. A total of 106 patients were prospectively monitored during inpatient detoxification for opiate dependence or sedative-hypnotic dependence in terms of craving, mood, withdrawal symptoms, vital signs, subjective experiences of pain, and objective measures of hyperalgesia and allodynia. Patient psychiatric comorbidity (Axis I and Axis II disorders), chronic medical conditions (pain syndromes), and severity of substance dependence were also considered.

Results: Opiate patients reported more subjective pain and hyperalgesia during inpatient detoxification. 76.7% reported chronic pain compared to 2.3% of sedative-hypnotic patients, and 39.5% of opiate-dependent patients had both chronic pain and a personality disorder. Cluster B

personality disorders were particularly prevalent among both opiate (20.93%) and sedative-hypnotic(16.28%) patients. During treatment patients with cluster B personality disorders reported more negative mood symptoms (anger, anxiety, fatigue, confusion), craving and greater scores on objective measures of withdrawal. Completion rates of detoxification were high (83.5%), although at three months follow-up 51% of patients had slipped or relapsed.

Conclusions: Together these findings suggest that hyperalgesic, highly sensitive opiate-dependent patients with cluster B personality disorders and chronic pain experience substantial difficulty tolerating both the physical and emotion symptoms of withdrawal. These particularly sensitive patients may benefit from the development of targeted interventions focusing on pain management and concurrent treatment of personality disorders

2. 1. Résumé

Contexte : La dépendance aux opiacés est un problème de santé majeur en Amérique du Nord. Les récentes augmentations de cas d'abus d'opiacés prescrits ou illicites ont eu des impacts dramatiques au chapitre des soins de santé, de la santé mentale, de la qualité de vie, du chômage et de la criminalité. Par ailleurs, la difficulté de traiter les patients dépendants aux opiacés avec les thérapies standards à base d'abstinence n'est pas bien comprise.

Objectifs : L'objectif de cette étude était de développer une nouvelle approche pour comprendre les piètres résultats de patients dépendants aux opiacés. La gravité de la toxicomanie et la comorbidité médicale et psychiatrique chez les patients dépendants aux opiacés ont été comparées à celles d'un groupe témoin de patients dépendants aux sédatifs hypnotiques. De plus, l'état de besoin, l'humeur, les symptômes objectifs et subjectifs de sevrage, les expériences subjectives de la douleur, et les mesures objectives de l'hyperalgésie ont fait l'objet d'un suivi prospectif pendant la désintoxication en milieu hospitalier. Enfin, la conclusion du traitement, l'entrée en postcure, et la consommation de substances constatée lors des suivis de trois et six mois ont été examinés.

Méthodes : Cette étude a été menée à l'Unité d'alcoologie et de toxicomanie du Centre universitaire de santé McGill à Montréal. Un total de 106 patients a fait l'objet d'un suivi prospectif pendant leur désintoxication en milieu hospitalier pour une dépendance aux opiacés ou une dépendance aux sédatifs hypnotiques. Ce suivi portait sur l'état de besoin, l'humeur, les symptômes de sevrage, les signes vitaux, les expériences subjectives de la douleur et les mesures objectives de l'hyperalgie. La comorbidité psychiatrique des patients (troubles de l'Axe I et de l'Axe II), les problèmes de santé chroniques (syndromes de la douleur), et la gravité de la dépendance aux substances ont aussi été pris en considération.

Résultats : Les patients dépendants aux opiacés ont rapporté plus de douleur subjective et d'hyperalgie pendant la désintoxication en milieu hospitalier. Dans ce groupe, 76,7 % ont déclaré de la douleur chronique, comparativement à 2,3 % des patients dépendants aux sédatifs hypnotiques, et 39,5 % souffraient à la fois de douleur chronique et d'un trouble de la personnalité. Les troubles de la personnalité du groupe B étaient particulièrement présents à la fois chez les patients dépendants aux opiacés (20,93 %) et les patients dépendants aux sédatifs hypnotiques (16,28 %). Durant le traitement, les patients avec des troubles de la personnalité du groupe B ont signalé des symptômes thymiques plus négatifs (colère, anxiété, fatigue, confusion), un état de besoin et ont enregistré des pointages plus élevés lors des mesures objectives de sevrage. Les taux d'achèvement de désintoxication étaient élevés (83,5 %), bien qu'au moment du suivi de trois mois 51 % des patients avaient succombé ou avaient fait une rechute.

Conclusions : Ensemble, ces résultats suggèrent que les patients dépendants aux opiacés qui sont hyperalgésiques, très sensibles et qui souffrent de troubles de la personnalité du groupe B et de douleur chronique éprouvent des difficultés importantes à tolérer les symptômes physiques et émotionnels du sevrage. Ces patients sont particulièrement sensibles et pourraient bénéficier du développement d'interventions ciblées axées sur la gestion de la douleur et le traitement simultané des troubles de la personnalité.

3. Acknowledgments

I would like to acknowledge my supervisor Dr. Kathryn Gill, and express my gratitude for her persistent and patient guidance. I am appreciative for her clinical expertise and knowledge of statistical analysis that made this work possible.

A big thanks to Emily Campbell and Katie Boodhoo for their continual support during my time at the Addictions Unit. I would also like to acknowledge Laura Heath, whose assistance with data collection, data entry was invaluable.

I would like to express my gratitude to the entire Addictions Unit for their input on this study, their involvement in recruitment, contributing to my education, and for giving me the opportunity to be a part of their team. A special thanks to Dr. Ronald Fraser for his work with inpatient detoxification.

Finally I would like to thank all of the participants involved in this project for their continued collaboration, for sharing their experiences, and for allowing this research to progress.

Table of Contents

1. Abstract ……...ii
2. Résumé ……...iv
3.Acknowledgements……...vi
4. Introduction
4.1 Opiate dependence in North America……..……..……..1
4.2 Harms associated with opiate dependence……..……..……...2
4.3 Treatment of opiate dependence ……...…….……2
4.4 A focus on comorbidity……...…..……4
4.5 Continued opiate use and heightened pain sensitivity…….....5
4.6 Objectives…….6
5. Methods
5.1 Participants ……..7
5.2 Materials and procedures……..7
5.3 Detoxification procedures and Addictions Unit treatment program……..12
5.4 Data analysis……...12
6. Results
6.1 Sample description and baseline differences…….…14
6.2 Baseline comparisons of opioid versus sedative-hypnotic dependent patients……..14
6.3 Baseline comparisons of patients with and without personality disorders…….17
6.4 Comparison of opioid versus sedative-hypnotic patients during detoxification……17
6.5 Comparison of PD groups during detoxification ……...……...19
6.6 Treatment outcomes……...20
7. Discussion
7.1 Differences between drug groups at baseline…….……22
7.2 Psychiatric and medical comorbidity…….……22
7.3 Group differences during detoxification……24
7.4 Outcomes of detoxification……26
7.5 Limitations…….……26
8. Conclusions and Future Directions……27
9. References…….……28
10. Appendix
10.1 English Consent Form…….……..……41
10.2 French Consent Form……45
10.3 Clinical Chart Coding Forms……50

4. Introduction

4.1 Opiate dependence in North America

Opioid dependence is a serious Global Health issue, exacting high costs in terms of health care, crime and loss of life (Fischer et al., 2014A). Global increases in the consumption of prescription opioids (PO) are striking; morphine production has doubled from 1992 to 2011 while the production of Oxycodone tripled from 2002 to 2011 (INCB, 2013). U.S. data has shown that from 1997 to 2006 hydrocodone sales increased by 244%, methadone use by 1,177% and Oxycodone use increased 732% (Trescot et al., 2008). Canada is the world's highest consumer of opioids (INCB, 2013) with rates more than double those of similar regions including the European Union, Australia and New Zealand (Fischer et al., 2014A).

While information on the prevalence of PO abuse in Canada is largely unavailable, data from Ontario have shown similar trends. In 2010 it was reported that 6% of adults engaged in non-medical PO use (Fischer et al., 2013A), while multiple studies indicate even greater rates of past year opioid use among high school students ranging from 15% to 20% (Brands et al., 2010; Fischer et al., 2013). From 2000 to 2004 treatment for OxyContin use increased from 3.8% to 55.4% of opioid-related admissions (Sproule et al., 2010), while PO-related admissions nearly doubled from 10,564 per year in 2005-2006 to 21,448 in 2011-2012 (DATIS, 2012; Fischer et al., 2014A). A recent study by Fischer et al. (2014B) examined patterns of PO use between 2005 and 2012, finding that dispensing steadily increased in all regions of Canada until 2012 where four provinces (British Columbia, Alberta, Manitoba, and Ontario) reduced opioid dispensing (methadone not included).

4.2 Harms associated with opiate-dependence

The dramatic rise in PO dispensing, specifically Oxycodone and Hydromorphone, has been linked to an increase in opioid-related mortality (Fischer et al. 2013B). In 2006 POs were the leading cause of accidental overdoses resulting in death, implicated in more drug-related deaths than both heroin and cocaine together (Warner et al. 2009). As of 2010 opioid-related deaths comprised 75.2% of pharmaceutical related overdoses in the United States (Jones et al 2013), while in Ontario annual opioid-related deaths have nearly tripled between 2006-2011, increasing from 187 to 535, higher than all other illicit drugs combined.

Blood-borne viruses are another major consequence of opioid abuse. A 2006 report on intravenous(IV) Canadian drug user risk behaviours (PHAC, 2006; Fischer et al., 2014A) demonstrated high levels of both hepatitis C (HCV) and human immunodeficiency virus (HIV), 64.7% and 13.2% respectively, as well as prevalent IV non-medical PO use. High-risk injection behaviors including needle sharing have also been reported among street PO users in Montreal (Roy et al., 2011; Bruneau et al. 2012), and in 2010 the director of Public health called for increased availability of addictions treatment in response to the increased prevalence of PO abuse, HCV, and HIV (Lessard & Valiquette, 2010).

4.3 Treatment of opiate dependence

Opioid dependence is a chronic relapsing condition, and is acknowledged to be exceptionally difficult to treat as evidenced by poorer retention in treatment and worse outcomes compared to patients with other substance use disorders (Paraherakis et al., 2000; Coupland et al., 2014). Detoxification is generally regarded as the first step in treating substance dependence (Kleber, 1982), however there is variation in both its implementation and in the research methods

used for evaluation. Patients can be detoxified as an inpatient or outpatient using a variety of opioid (e.g. methadone, buprenorphine) or non-opioid medications (e.g. clonidine). Treatment completion and relapse rates following detoxification have repeatedly been shown to be high (Gossop et al. 1989). A study by Day & Strang (2011) found 51.4% of inpatients and 36.4% of outpatients completed detoxification, with only 16% abstinent at one month, while Gossop et al. (1989) reported that 82% of patients were able to complete treatment, with 51% abstinent at 6-months. Another study by Broers et al. (2000) reported 73% of patients were able to complete inpatient detoxification and 37% were abstinent at a 6-month follow-up. Collectively the outcomes of detoxification are variable, however this may be in part due to differences in the methods used across studies. Nonetheless it appears some patients benefit from detoxification while many fail to improve (Day & Strang, 2011). Given the current prevalence of PO abuse it is important to note that the majority of data concerning treatment outcomes have focused on heroin users, or have not differentiated between illicit and prescription opioid users, and it is unknown if PO users and illicit opioid users respond differently to detoxification (Fischer et al., 2008; Coupland et al., 2014).

Poor outcomes of detoxification and abstinence-based treatments have contributed to the development of harm reduction approaches (Reimer et al., 2011) including needle exchange programs, safe injection sites, and maintenance therapies using methadone (MMT), buprenorphine (BMT) or heroin. While maintenance programs can be effective in managing the negative impacts of opioid abuse, both retention and continued illicit drug use remain as major barriers to patient recovery. Similar to detoxification, maintenance therapies show substantial variation in treatment outcomes. Gruber et al. (2008) found 6-month retention in MMT to be 50%, reporting extremely high rates of continued illicit opioid use (58.6 to 87.5% of urine

samples tested positive). Other studies have reported retention rates for MMT and BMT to be 55.3% and 48.3%(Soyka et al., 2008) at 6-months, or 60% for MMT and 34% for BMT at 12 months (Reisinger et al., 2009). Furthermore a recent large sample study (n=1,269) by Potter et al. (2013) found 6 month retention for methadone (73.9%) to be significantly greater than buprenorphine (45.9%), and reported heroin users were significantly more likely to be using opioids at the end of treatment, and less likely to complete treatment overall compared those using POs only. This supports the idea that PO and illicit opiate users respond differently to treatment, and may represent a major methodological flaw inherent to many treatment outcome studies. Altogether it remains unclear what therapies and patient factors are critical to the successful treatment of opioid dependence, in particular what treatments are effective for treating the growing treatment seeking population of PO users.

4.4 A focus on comorbidity

Psychiatric comorbidity has been a recent focus in trying to understand the difficulty in treating opioid dependence (King et al., 2014), with previous studies demonstrating high rates of polysubstance abuse, psychiatric comorbidity, and chronic pain syndromes among opioid dependent patients (Fischer et al. 2006; Coupland et al., 2014). A recent retrospective study by Coupland et al. (2014) examining outcomes of detoxification found that the largest predictors of treatment failure overall were opioid dependence and the presence of a cluster B personality disorder (PD), borderline personality disorder (BPD) being the most prevalent. Borderline Personality disorder is characterized by unstable interpersonal relationships, identity disturbances, negative affect and impulsivity (Leichsenring et al., 2011). BPD patients with substance use disorders show greater impulsivity compared to those without (Coffey et al.,

2011), demonstrate higher rates of IV drug use (Saint-Lèbes et al., 2012), and worse long term treatment outcomes, particularly related to crime, mental health and overdose (Dark et al., 2007).

Significantly greater rates of chronic pain syndromes have also been reported among opioid dependent patients (57% vs 6% in non-opioid patients), many of which were undiagnosed or untreated (Coupland et al., 2014). These findings are consistent with the overall literature; PD patients have demonstrated an increased risk for PO abuse (Breckenridge & Clark, 2003), 18.5%-42% of opioid dependent patients meet the diagnostic criteria for borderline personality disorder (Trull et al., 2000; Ball 2005; Coupland et al. 2014), and up to 30% of chronic pain patients have BPD (Sansone & Sansone, 2012).

4.5 Continued opiate use and heightened pain sensitivity

There is accumulating evidence that while opioid use is often aimed at pain relief, prolonged use leads to a state of hypersensitivity and exaggerated responses to noxious stimuli, also termed opioid-induced hyperalgesia (Angst & Clark, 2006; Bekhit, 2010). The increased sensitivity to pain has been recognized among methadone maintained patients (Alford et al., 2006; Younger et al., 2008).), and other studies have indicated heroin addicts become severely hyperalgesic during detoxification, with the state of enhanced pain sensitivity persisting for a prolonged period following detoxification (Carcoba et al., 2011). Pud et al. (2006) have also reported that patients completing a 4-week inpatient detoxification for opioid dependence show a hyperalgesic response to a cold-presser pain test as long as one month after discontinuing opioid use.

Highly sensitive, impulsive individuals with BPD, comorbid opioid dependence, and chronic pain syndromes may experience great difficulty tolerating opiate withdrawal including

somatic symptoms (fever, chills, pain, muscle cramps), emotional distress (agitation, anxiety, sleep disturbance), and mood symptoms (dysphoria, irritability).

4.6 Objectives

Objective 1: To assess the baseline characteristics of all participants in terms of substance use history, psychiatric and medical comorbidity.

Hypothesis 1: Based on previous studies it is hypothesized that opiate dependent patients assessed during inpatient detoxification will have higher rates of both cluster B PDs and chronic pain syndromes compared to sedative hypnotic patients.

Objective 2: To examine withdrawal severity, craving, mood, pain intensity, hyperalgesia and allodynia among all patients as they undergo detoxification.

Hypothesis 2: It is hypothesized that opioid dependent patients will demonstrate significantly more emotional distress, greater withdrawal severity, and higher ratings on both subjective and objective measures of pain including hyperalgesia and allodynia, compared to other patients.

Objective 3: To examine treatment completion, entry into aftercare, and substance use at 3 and 6 months among all patients.

Hypothesis 3: It is hypothesized that failure to complete detoxification and relapse at follow-up will be associated with opioid dependence, cluster B PDs, lower pain thresholds and greater mood dysregulaiton.

5. Methods

5.1 Participants

This study was conducted at the McGill University Health Center (MUHC) Addictions Unit in Montreal, Quebec. Participants were recruited following admission to the MUHC Psychiatry ward for inpatient detoxification. Only patients meeting DSM-IV criteria for opioid-dependence or sedative-hypnotic dependence were included in primary analysis. Sedative-hypnotic patients were used as a comparison group for several reasons including a well-defined, measurable withdrawal syndrome, and similar rates of admission for inpatient detoxification compared to opiate patients (Coupland et al., 2014). Prior to initiating treatment all participants completed a standard two-hour assessment at the Addictions Unit consisting of a clinical interview by a staff therapist, and a brief assessment by a psychiatrist using DSM IV guidelines (American Psychiatric Association, 1994). Patients requiring inpatient detoxification were identified based on risk of experiencing severe withdrawal, medical complications, or inability to achieve abstinence during outpatient treatment. The MUHC Research Ethics Board provided approval for all protocols.

5.2 Materials and procedures

On admission to inpatient facilities all prospective participants were approached by a team psychiatrist and asked if they were willing to meet with a research assistant who explained study protocols and obtained informed consent. Following consent procedures, the research assistant completed baseline assessments using various research interviews and self-report questionnaires. The Addiction Severity Index (ASI ; McLellan et al., 1990), a semi-structured

interview, was used to examine several problem areas: medical, employment, legal, and psychiatric status, family/social relationships, alcohol use and drug use. Lifetime data, and information on the past 30 days are collected, and items measuring severity in each domain are used to compute composite severity scores. The ASI has strong psychometric properties with high interrater reliabilities ranging from 0.86 - 0.96 and test retest reliabilities of 0.92(McLellan et al., 1990).

The Computerized Diagnostic Interview Schedule (CDIS: Robins et al., 2000) was used to obtain psychiatric diagnosis (Axis I). This fully structured diagnostic research interview contains questions based on DSM-IV criteria.

Participant impulsivity was measured using the Barratt Impulsiveness Scale (BIS; Patton et al., 1995), a 30-item self-report questionnaire that measures 3 domains: motor, non-planning and attention-cognitive. Good internal consistency (Cronbach's 0.79 to 0.83) and test–retest reliability (0.60) have been shown at a 1-year follow-up (Patton et al., 1995).

Baseline sensory sensitivity was measured using the Adolescent/Adult Sensory Profile (AASP; Brown et al., 2001). This 60-item self-report questionnaire looks at 6 aspects of sensory experience: taste/smell, movement, vision, touch, activity level, and audition. For each modality patients are categorized as low registration, sensation avoiding, or sensation seeking. Construct validity of this measure was established by demonstrating a relationship between responsiveness and habituation scores with skin conductance measures. Internal consistency is excellent for each category (Cronbach's alpha values range 0.6- 0.78) (Brown et al., 2001).

Objective withdrawal symptoms were measured using various standardized instruments including the Clinical Opiate Withdrawal Scale (COWS; Wesson & Ling,2003), the Clinical

Institute Withdrawal Assessment Alcohol (CIWA-Ar; Sullivan et al, 1989),the Benzodiazepene Withdrawal Symptom Questionnaire (BWSQ; Tryer et al., 1990) and the Cannabis Withdrawal Assessment Scale (CWAS; De Crespigny et al., 2003). For each instrument withdrawal severity ratings were determined by a research-assistant based on participant observation during each assessment.

Craving was measured using a visual analog scale. Patients were asked to rate subjective cravings in the past 48 hours on a scale from 0 "no craving at all" to 100 "the most you've ever craved".

The Profile of Mood States (POMS; (McNair et al., 1971) was used to assess participants' mood dysregulation. The POMS is a 65 item self-report that asks about 6 mood states on the day of assessment: anxiety, depression, anger, vigour, fatigue, and confusion. Each question is rated from zero (not at all) to four (extremely). A total mood disturbance (TMD) subscale is also calculated by adding each subscale and subtracting viogour. Internal consistency for the POMS is high (range 0.65 for confusion-bewilderment to 0.96 for depression-dejection) and it has demonstrated good test-retest reliability (0.65-0.74; Shacham, 1983).

The long form and short form McGill Pain Questionnaire (MPQ-LF/ MPQ-SF: Melzack, 1983; Melzack, 1975) were used to quantify the quality and intensity of participant pain. The MPQ-LF consists of a list of words organized into 20 categories representing aspects of subjective pain. Four dimensions are assessed: affective, sensory, evaluative and miscellaneous pain. The MPQ-SF contains a list of 15 describing pain; each rated on a likert scale from zero to three. Both questionnaires contain a global pain rating questing ranging from zero to five. The

MPQ-SF has been shown to correlate highly with the MPQ-LF (Melzack, 2005), and internal consistency has been shown to be high (Cronbach's alpha-0.9) (Melzack, 1983).

Sensory processing sensitivity was measured by the Highly Sensitive Persons Scale (HSP; Aron and Aron, 1997), a 27 item self-report questionnaire aimed at determining how participants respond to both emotional and physical stimuli and was adapted to measure the past 7 days, and measures traits such as shyness, behavioural inhibition, introversion and neuroticism. Responses are given on a scale from one(not at all) to seven(extremely). The HSP has demonstrated strong discriminant and convergent validity (r=0.85; Aron and Aron, 1997), and construct validity has been confirmed through neural correlates of the traits defined by the HSP (Jagiellowicz et al., 2010).

The Von Frey Hair Test was used to assess tactile sensitivity throughout detoxification. This measure consists of a series of nylon monofilament fibers of increasing diameter, which require progressively greater force when applied until each fiber bends. Increasingly larger fibers were pressed on the skin of participants' wrist until they were able to detect the stimuli. This procedure was performed once on each wrist and, again with continually decreasing fiber sizes until the participant was no longer able to detect the stimulus. The instrument was explained by a research assistant and participants were able to touch the fiber set before use. While this measure was developed in 1896 and continues to be used in research and clinical practice little research has investigated the reliability and validity of these measures (Bryce, et al., 2006).

Pressure pain thresholds were measured using a pressure algometer. This consists of a rubber probe attached to a digital reader. The probe was pressed on participants' thumbnail until they indicate the stimulus has reached a noxious threshold. The thumbnail was selected as it has been described as a neutral region, and accurately represents pressure pain sensitivity (Geisser,

2008). This procedure was explained to participants before implementation and they were allowed to handle the algometer. The algometer has been used frequently as a research tool in both pain patients and healthy controls (Buchanan, 1987). Through identifying patients with lower pain thresholds this instrument is used as a measure of hyperalgesia during detoxification.

After completing baseline assessments numerous measures were repeated twice weekly for the entire duration of inpatient treatment to identify any changes throughout detoxification, and group differences during treatment. These measures included the visual analogue craving scale, withdrawal scales, POMS, HSPS, MPQ-SF, Von Frey hair test, and pressure algometer.

Following patient discharge, clinical charts were coded and data regarding treatment outcome, health status, psychiatric diagnoss, use of medication, and continuation into aftercare programs were obtained. All PD diagnoses were obtained by clinical diagnosis from Addictions Unit team psychiatrists using DSM-IV criteria.

Regardless treatment outcome all participants were contacted for a confidential research interview at three and six months after signing consent, each of which they were compensated with a $20 gift certificate. These interviews consisted ASI and two additional measures: the Symptom Checklist-90 (SCL 90-R; Derogatis, 1983) and the Beck Depression Inventory (BDI).

The SCL 90-R was used to measure psychological distress. This self-report questionnaire contains 90 questions and asks about anxiety, depression, hostility, paranoid ideation, obsessive compulsiveness, interpersonal sensitivity, somatization and psychoticism in the past 7 days. The SCL 90-R has demonstrated good internal consistency for its various subscales (range 0.77-0.90) and test-retest reliability (range 0.78-0.90).

Depression was measured using the BDI, a 21 question self-report questionnaire that measures the type and intensity of depressive symptoms in the past 7 days (Beck & Steer, 1987).

The BDI has been shown to be highly reliable (Coefficient Alpha = 0.92) in a variety of populations with good internal consistency and construct validity.

5.3 Detoxification procedures and Addictions Unit treatment program

Detoxification was carried out using standard Addictions Unit procedures. Opiate dependent patients received a methadone taper for managing withdrawal during detoxification, while sedative-hypnotic patients were given a diazepam taper. Additional PRN medications (valium, clonidine, naproxen, seroquel) were prescribed as need to manage breakthrough withdrawal symptoms and minimize discomfort.

The Addictions Unit provides a multidisciplinary treatment program, concurrently treating psychiatric conditions, and pursues complete patient abstinence. Following a stabilization period during inpatient detoxification, participants begin a standard day program consisting of twice-daily 90-minute group therapy sessions from Monday to Friday, in addition to one 50-minute individual therapy session per week. Group therapy sessions focus on motivational, psycho-educational and supportive interventions.

5.4 Data analysis

The sample was divided into two groups based on their primary substance of abuse, those treated for opiate dependence and those treated for sedative hypnotic dependence. Using clinical diagnosis a separate group analysis was performed stratifying the sample based on personality disorder diagnosis; patients were categorized into three groups, no PD, cluster B PD(narcissistic, histrionic, borderline, and antisocial) , and other PD (paranoid, schizoid, schizotypal, avoidant, dependent, obsessive–compulsive). Drug groups and PD groups were separately compared across various factors including demographic, addiction severity, social and psychiatric

variables. Separate group analyses were also performed with repeated measures taken during detoxification using ANOVA techniques. Categorical data was analyzed using chi-squared tests. Continuous data was compared using *t* tests when analyzing drug groups, while ANOVA techniques were used when comparing across PD groups. Scheffe Post hoc tests were performed, and a Bonferroni correction was used in analysis involving multiple comparisons with the same set of data. All statistical analysis were conducted using IBM SPSS statistics version 21 for windows, and an alpha level of .05 was used for all statistical tests.

6. Results

6.1 Sample description and baseline differences

Among 106 participants roughly half were male (46.9%), and the mean age was 46.6 ± 11.4. Most were Caucasian (87.8%), unmarried (30.3% married/remarried, 33.7% separated/divorced, 33.7% single), and employed (30.3% employed full-time, 15.8% employed part time, and 22.5% unemployed) with an average of 13.5± 3.63 years of education.

6.2 Baseline comparisons of opioid versus sedative-hypnotic dependent patients

When stratifying the sample by primary substance of abuse, 41% (n=43) were categorized as opiate dependent (illicit and prescription opioids) and 41% (n=43) as sedative-hypnotic dependent (alcohol, benzodiazepines, barbiturates). The remaining 18% (n=20) were treated for other substances (marijuana, cocaine, amphetamines) and were excluded from analysis comparing drug groups. Demographic information for opiate and sedative-hypnotic dependent patients can be found in Table 1. There were no significant differences between groups in relation to age, sex, race, martial status, or level of education. There was a significant difference in employment status [$\chi^2(6, n = 73)=18.649$, p=0.005], with fewer opiate dependent patients employed full time (21.6% vs 30.6%), or part time (10.8% vs 19.4%), and more retired or disabled (51.4% vs 8.3%).

Data on drug use history, and ASI composite severity scores collected at the beginning of detoxification are shown in Table 2. Opiate dependent patients were significantly older at the onset of problem drug use compared to sedative-hypnotic patients [t(81)=7.09, p<0.001], with fewer years of problem use [t(1)=5.48, p<0.001], less previous detoxifications [t(81)=3.33, p=0.001], and they were significantly more likely to have a secondary substance of abuse [χ^2 (1, n = 86)=6.103, p=0.013]. Opiate patients also had significantly higher ASI medical [t(66)=4.39,

p<0.001] and ASI drug use [t(64)=7.45, p<0.001] composite severity scores, while sedative-hypnotic dependent patients showed higher ASI alcohol use composite severity scores [t(64)=13.59, p<0.001].

Table 1
Sample Demographics Stratified by Primary Substance of Dependence

Variables	Opiates (n=43)		Sedative-Hypnotic (n=43)	
Age (±SD)	48.19	±11.60	47.35	±1.70
Sex (%)				
Male	47.62		51.16	
Female	52.38		48.84	
Race (%)				
Caucasian	89.47		88.90	
Black	5.26		5.60	
Other	5.26		5.60	
Marital Status (%)				
Single	21.62		38.89	
Married/Remarried	43.24		33.33	
Divorced/Separated	32.40		18.60	
Widowed	2.70		2.30	
Employment (%)**				
Full Time	21.60		30.56	
Part Time	10.80		19.44	
Retired/ Disabled	51.40		8.33	
Unemployed	13.50		33.30	
Level of education (no. of years ± SD)	12.47	±2.33	13.87	±0.71
Psychiatric Status				
Any Axis I Disorder (%)	25.60		18.60	
Axis II				
No Personality Disorder (%)	55.81		72.09	
Any Personality Disorder (%)	44.20		27.90	
Cluster B Personality Disorder (%)	20.93		16.28	
Chronic Pain (%)**	76.74		2.30	
Chronic Pain + PD (%)**	39.53		0	

Values represent the group mean (±SD) or % of sample. Groups were compared using independent t-tests or chi-square analysis. ** Significantly different, p < .05 corrected for multiple comparisons

Of the entire sample 37.7% were diagnosed with a personality disorder, and while the prevalence was greater among opiate patients (44.2% vs 27.9%) the difference was not statistically significant. Cluster B personality disorders were particularly prominent in the sample comprising 20.93% and 16.28% of the opiate and sedative-hypnotic groups respectively. Significantly greater rates of chronic pain were also reported among opiate dependent patients (76.7% vs 2.3%) compared to sedative-hypnotic users [χ^2 (1, n = 86)=49.81, p<0.001]. There was significant additional comorbity between opiate dependence, personality disorders and chronic pain syndromes [χ^2 (1, n = 86)=21.19, p<0.001]; 39.5% of the opiate dependent patients were diagnosed with both a personality disorder and chronic pain, while no sedative-hypnotic patients had both diagnoses.

Table 2
Drug Use History, Stratified by Primary Substance of Dependence

Substance use variables	Opiate (n=43)		Sedative-Hypnotic n=(43)	
Age first use primary drug (± SD) **	37.71	±14.48	19.22	±1.32
Years of Problem Use (± SD) **	6.62	±7.77	19.13	±1.91
% with Secondary Substance**	77.0		51.2	
# Prior Detoxifications (± SD) **	1.30	±1.67	3.23	±0.50
Medical Severity[a]**	0.70	±0.39	0.30	±0.34
Employment Severity[a]	0.60	±0.29	0.70	±0.28
Drug Severity[a] **	0.37	±0.11	0.13	±0.15
Alcohol Severity [a]**	0.05	±0.17	0.72	±0.23
Drug/Alcohol Mean Severity[a]**	0.21	±0.10	0.43	±0.13
Legal Severity[a]	0.06	±0.16	0.03	±0.12
Social Severity[a]	0.25	±0.22	0.24	±0.21
Psychiatric Severity[a]	0.39	±0.20	0.37	±0.22

Values represent the group mean (±SD) or % of sample. Groups were compared using independent t-tests or chi-square analysis.
[a]ASI composite severity scores (CS) range from 0.00 to 1.00, with 1.00 being the most severe.
** Significantly different, p < .05 corrected for multiple comparisons

6.3 Baseline comparisons of patients with and without personality disorders

To identify any baseline differences among participants with and without personality disorders the entire sample was stratified into three groups based on the presence/absence of a current PD diagnoses as follows: No-PD (n = 59), Cluster B PD (n= 18), and Other PD (n=22). When comparing groups no differences were present in terms of age, race, or employment, although there was a significant group difference in gender [χ^2 [2, n = 98)=10.53, p=0.005]; patients with a cluster B PD were predominantly female (81.8%). Drug use history and ASI composite severity scores stratified by PD group is shown in Table 3. There were no differences in drug use history including age of first use, years of problem use, or number of prior detoxifications. Comparison of the groups using analysis of variance yielded significant differences in terms of the ASI composite severity scores for drug use [F(2,75)=4.15, p=0.019] and psychiatric status [F(2,76)=5.46, p=0.006] . Post hoc tests showed greater severity among cluster B PD patients compared to patients without PDs for both the drug use (p=0.043) and psychiatric composite severity scores (p=0.007), although after correcting for multiple comparisons only the differences in psychiatric scores remained significant.

6.4 Comparison of opioid versus sedative-hypnotic patients during detoxification

Overall opiate-dependent patients had a significantly longer inpatient treatment duration compared to sedative-hypnotic patients [t(81)=4.07, p<0.001], and requested more supplementary medications during detoxification [t(66)=5.62, p<0.001]. To compare patients with varying treatment lengths, and number of research assessments, three standardized time points were selected for each participant corresponding to the percentage of detoxification completed (16.6%, 50%, and 83.4%). These time points were selected to best represent early,

middle and late treatment periods. Repeated measures taken during inpatient treatment showed no significant differences between opiate and sedative-hypnotic patients in terms of craving, withdrawal, sensory sensitivity, or tactile sensitivity. Measures of patient mood states showed significant group differences for vigour [$F(1,72)=6.14$, $p=0.016$] and fatigue [$F(1,72)=4.64$, $p=0.035$] scores, with opiate dependent patients reporting lower vigour and greater fatigue. After a bonferonni correction for multiple comparisons these results were no longer significant. Pain thresholds and intensity differed significantly between groups during treatment; MPQ present pain intensity scores were significantly higher among opiate patients [$F(1,36)= 17.30$, $p<0.001$], while pressure pain thresholds measured using an algometer were significantly lower among opiate dependent patients [$F(1,27)=6.70$, $p=0.014$]. Group differences in pain intensity and pain thresholds are displayed in Figure 1.

Table 3
Drug Use History, Stratified by Personality Disorder Diagnosis

Drug Use History	No PD (n=59)		Other PD (n=18)		Cluster B PD (n=22)	
Age first use primary drug (± SD)	26.41	±14.52	33.22	±14.36	27.22	±14.93
Years of Problem Use (± SD)	14.01	±12.26	9.19	±8.73	13.68	±12.19
Secondary Substance (%)	58.93		66.67		77.27	
# Prior Detoxifications (± SD)	1.98	±2.51	1.94	±3.00	3.14	±3.11
Medical Severity[a]	0.45	±0.39	0.55	±0.49	0.48	±0.46[b]
Drug Severity[a]	0.39	±0.39	0.26	±0.36	0.26	±0.36
Alcohol Severity [a]	0.22	±0.17	0.32	±0.16	0.34	±0.13
Psychiatric Severity[a]**	0.34	±0.22	0.42	±0.18	0.51	±0.13[b]

Values represent the group mean (±SD) or % of sample. Groups were compared using one-way ANOVAs.
[a]ASI composite severity scores (CS) range from 0.00 to 1.00, with 1.00 being the most severe.
[b] Significantly different from the no PD group, $p<0.05$
** Significant group difference, $p < .05$

6.5 Comparison of PD groups during detoxification

To determine if PD groups differed in terms of craving, subjective and objective withdrawal symptomatology, pain ratings, and mood dysregulation during detoxification a number of analysis were conducted using ANOVA (corrected for multiple comparisons). There was no difference in the length of stay in hospital, but there was a significant difference in the frequency of patient requests for supplementary PRN medications [$F(2,78)=9.74$, $p<0.001$]; cluster B PD patients used significantly more medication ($p<0.001$) compared to those without PDs (Figure 2).

Repeated measures analysis of sensory sensitivity, subjective pain ratings, allodynia and hyperalgesia showed no significant group differences. Self-reports of craving were significantly different between PD groups [$F(2,83)=4.12$, $p=0.02$], with greater craving among cluster B patients compared to those without PDs, although this difference was not significant after correcting for multiple comparisons. Similar differences were present for patient withdrawal severity [$F(2,84)=5.06$, $p=0.008$]; those with cluster B PDs were more symptomatic during detoxification compared to those without PDs ($p=0.009$).

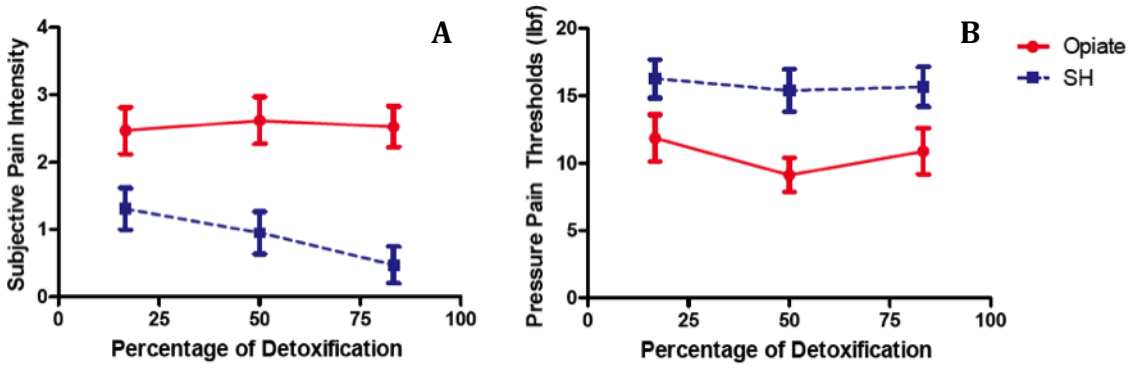

Figure 1. Subjective pain ratings (A) and Algometer pressure pain thresholds (B) during detoxification among opiate and sedative-hypnotic patients.

Numerous POMS mood disturbance subscales showed significant PD group differences over the course of detoxification including anxiety-tension [$F(1,82)=10.97$, $p<0.001$], anger-hostility [$F(2, 82)=6.27$, $p=0.003$], vigour [$F(2,82)=8.28$, $p=0.001$], fatigue [$F(2, 82)= 9.31$, $p<0.001$], confusion [$F(2,82)=3.43$, $p=0.037$], and total mood disturbance [$F(2,82)=8.923$, $p<0.001$]. Post hoc tests showed that compared to patients without PDs, those with cluster B PDs had significant greater anxiety ($P<0.001$), anger ($p=0.003$), fatigue ($p=0.001$), confusion ($p=0.043$), and lower vigour ($p=0.002$). Group differences for anger-hostility and total mood disturbance can be seen in Figure 3. The "other PD" group also showed less vigour and greater fatigue compared to those without PDs, although after correcting for multiple comparisons these differences were not significant.

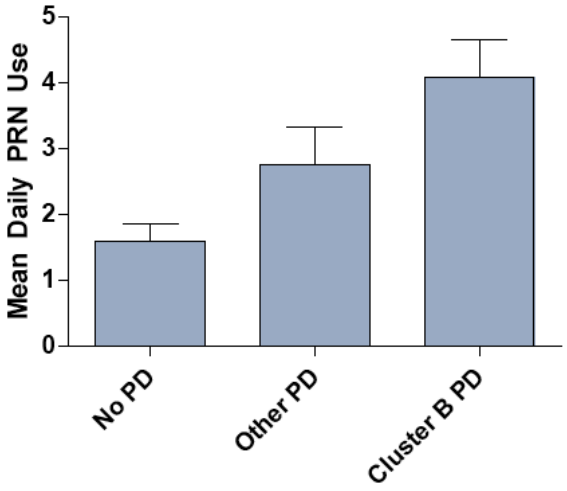

Figure 2. Daily use of supplementary PRN medications during detoxification stratified by personality disorder diagnosis. Values represent mean ± s.e.m.

6.6 Treatment outcomes

Over all completion rates of inpatient detoxification were high. Only 16.5% of the entire sample did not complete the prescribed program, and no significant group differences (drug or PD) were apparent. Of the subsample of participants who signed consent allowing contact for

follow-up interviews (n= 37), 73% attended at three months. Of the 10 participants who did not attend follow-up interviews, data on drug use at three months was available from clinical charts for five participants. Overall at three months roughly half (51%) of patients had either slipped or relapsed. The availability of follow-up data was insufficient for analysis regarding any group differences.

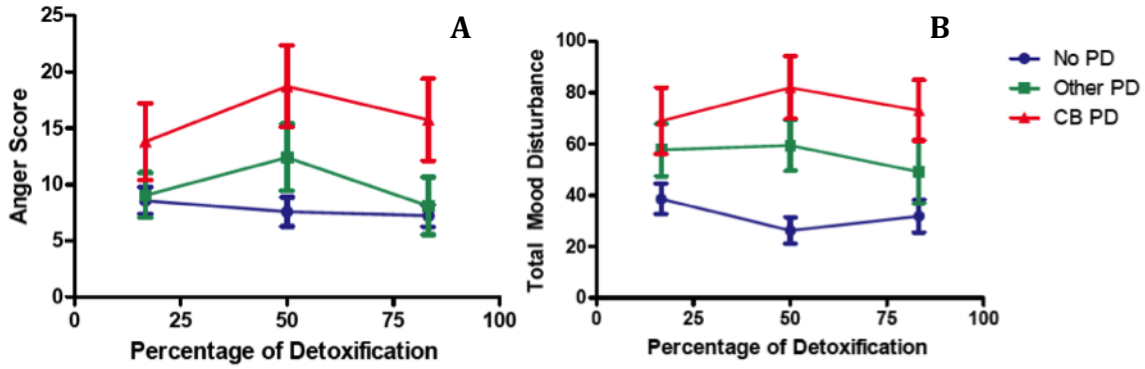

Figure 3. Anger(A) and total mood disturbance(B) scores measured using the Profile of Moods States during detoxification.

7. Discussion

7.1 Differences between drug groups at baseline

Opiate and sedative hypnotic-dependent patients were found to differ at baseline. Opiate-dependent patients were older when they first began to use, had fewer previous detoxifications, and were more likely to be polydrug abusers. As expected, opiate-dependent patients had greater overall ASI drug use severity composite scores at intake while sedative-hypnotic patients had greater alcohol use severity. Nearly all opiate patients were dependent on prescription drugs (95%), and significant group differences were evident regarding medical status, opiate patients having greater ASI medical composite severity scores at the beginning of detoxification, more past month medical problems, and a greater rate of chronic pain syndromes (76.7% vs 2.3%). Recent studies have suggested PO patients are also distinct from illicit opiate users, with fewer years of problem use and less previous treatments for substance dependence (Moore et al., 2007; Banta-Green et al., 2009). Rosenblum et al.'s (2007) multi-site survey of 5663 patients entering MMT reported nearly identical rates of chronic pain syndromes among PO users (78.2%), which was significantly greater that those found in heroin users (52.0%). These findings suggest the presentation of PO users at the beginning of detoxification is distinct from other drug users, including those using illicit opiates.

7.2 Psychiatric and medical comorbidity

There was considerable psychiatric comorbidity in the sample; Axis I disorders were prevalent among both the opiate and sedative-hypnotic groups, with no significant group differences (25.6% vs 18.6 %). There was also a notable but non-significant difference in the rates of any Axis II disorder diagnosis across groups; 44.2% of opiate dependent patients

compared to 27.9% of sedative hypnotic patients. A previous study by Ball (2005) estimated higher rates of PDs among treatment seeking opiate-dependent patients (79%), however this may be due to sampling mainly heroin users or failing to distinguish illicit and prescription opioid users.

Bandelow et al. (2010) have suggested that BPD may involve dysregulation of the endogenous opioid system, specifically low levels of β endorphin or reduced sensitivity of μ opioid receptors. It has been proposed that behaviours such as non-suicidal self injury, disordered eating, and substance dependence frequently seen in BPD may be an attempt to stimulate endogenous opioid release (Bandelow et al., 2010; Stanley et al., 2010). This biological hypothesis of the underlying mechanisms of BPD may in part explain the high rates of opioid use in patients with cluster B PDs. Coupland et al. (2014) reported higher rates of Cluster B disorders among inpatients treated for opiate dependence compared to those using sedative hypnotics (42.0 % vs 21.9%), however there is considerable variance in the reported prevalence among opiate patients. Using results from numerous studies Trull et al. (2000) estimated that 18.5% of treatment seeking opiate-dependent patients have BPD, while an Australian study by Dark et al. (2005) examining psychiatric comorbidity among heroin users in various treatment settings found much higher rates of BPD (45%). In the present study cluster B disorders were the most common Axis II diagnosis among both opiate and sedative-hypnotic patients, although there was no significant difference in the prevalence between drug groups (21% vs 16%). No study to date has specifically compared the prevalence of cluster B PDs among illicit and prescription opiate users, and it is possible that the variation reported in the literature is due to differences in the sample distribution between illicit and prescription opioid users.

While no group differences in Axis II diagnosis were found, there was significant comorbidity of personality disorders, chronic pain syndromes and opiate dependence, with nearly a third of opiate patients having both. These findings support previous reports showing 31.6% of opiate patients had both PDs and chronic pain compared to only 4% of sedative hypnotic patients (Coupland et al., 2014). Furthermore a recently published longitudinal study by Frankenburg et al (2014) reported that at 10 year follow-up, patients with BPD were significantly more likely to be using prescription opioids compared to patients with other PDs. The strongest predictors of opioid use reported were the presence of chronic pain syndromes (i.e. fibromyalgia, osteoarthritis) and a past history of drug abuse, both of which are highly prevalent among individuals with BPD (Coupland et al., 2014; Sansone et al., 2012). Patients with comorbid chronic pain and BPD represent a major clinical challenge and are often reported as uncooperative, difficult to deal with, and have their pain symptoms regarded with skepticism(Kalira et al., 2013). These difficulties may undermine the therapeutic relationship between caregivers and patients, perpetuating both borderline personality behaviours and pain related distress (Kalira et al., 2013).

7.3 Group Differences During Detoxification

As previously mentioned, various studies have indicated that opiate-dependent patients have worse engagement in treatment and poorer treatment outcomes (Paraherakis et al., 2000; Coupland et al., 2014). It was hypothesized that opiate patients would be more symptomatic than sedative-hypnotic users during detoxification, demonstrating greater ratings of withdrawal, more emotional distress, higher ratings of sensory sensitivity, and greater ratings of pain. Opioid dependent patients had significantly longer stays in hospital and used more supplementary

medications during treatment. Present pain intensity ratings throughout detoxification were significantly higher, and pain thresholds measured using a pressure algometer were significantly lower among opiate dependent patients. Considering 61% of opiate patients reported chronic pain, these higher pain intensity ratings were expected. The finding that opioid-dependent patients have lower pain thresholds supports the notion that chronic opiate use results in a hyperalgesic state, potentially augmenting existing pain syndromes (Carcoba et al., 2011).

While it was initially hypothesized that compared to sedative-hypnotic patients opiate-dependent patients would show more severe craving, objective and subjective withdrawal and emotional distress during detoxifcation there were no differences between groups. Interestingly when the sample was stratified into three groups according to PD diagnosis (no PD, cluster B PD, other PD), collapsing across substances of abuse, significant differences were noted; cluster B patients reported significantly more craving, withdrawal, and mood symptoms during detoxification compared to those with no PD diagnosis. No differences in pain intensity or pressure pain thresholds were found between PD groups. Sansone et al. (2007) have remarked that BPD patients demonstrate high thresholds for acute self-inflicted pain, while paradoxically being unable to tolerate chronic pain or discomfort. It is possible that sensitivity to pain among BPD patients may not have been accurately assessed using a pressure algometer given it is an anticipated and acute measure. It remains highly significant that patients with cluster B PDs report higher ratings of craving and withdrawal during detoxification, supporting the hypothesis that they experience more difficulty tolerating the process.

The results of this study emphasize the clinical relevance of comorbid PD diagnosis and chronic pain among patients in treatment for prescription opioid dependence. The effects of cluster B diagnosis on craving, withdrawal severity and emotional distress were striking, and the

tendency to reach for additional medications during treatment suggests the absence of effective coping strategies. Given the high rates of comorbidity, PO patients should be thoroughly screened to accurately detect chronic pain syndromes or personality disorders.

7.4 Outcomes of Detoxification

It was initially hypothesized that opiate patients would more frequently drop out of treatment, however rates of attrition were low among all groups, with no significant differences. This may in part be explained by the near equal rates of cluster B PDs among sedative and opioid patients. While cluster B PDs have been previously demonstrated as a negative predictor of treatment outcome (Charney et al. 2010; Coupland et al 2014), associated with poorer retention, shorter time to relapse, and worse long term outcomes, no link between completion of detoxification and PD group was evident due to limitations in sample size. It is possible that longer-term outcomes including continuation into aftercare and continued abstinence after discharge differed however due to insufficient sample size this could not be determined.

7.5 Limitations

There a several limitations of the limitations in this study that should be noted. Due to sample size it was not possible to perform two-way analysis and examine the interactions between drug group and PDs. Similarly, due to limitations in the availability of follow-up data it was not possible to analyze the relationship between craving, withdrawal, mood symptoms, pain intensity, and hyperalgesia with longer term treatment outcomes.

8. Conclusions and future directions

The present study confirms high rates of comorbid personality disorders and chronic pain among opiate dependent patients. Opiate dependence was associated with higher ratings of pain intensity and lower pain thresholds, while patients with cluster B personality disorders demonstrated higher ratings of craving, withdrawal and emotional dysregulation during detoxification. The difficulties experienced by patients with cluster B PDs emphasizes the importance of proper screening in both clinical and research settings. Future research should examine the relationship between the heightened somatic and emotional distress seen among PD patients with longer-term outcomes including entry into after care and continued abstinence. Future interventions should target non-pharmacological methods of pain management in addition to managing the emotional distress and physical discomfort inherent to the detoxification process.

9. References

Alford, D.P., Compton, P., Samet, J.H. (2006). Acute pain management for patients receiving maintenance methadone or buprenorphine therapy. *Ann Intern Med,* 144:127-134.

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders (4th ed.). Washington, DC

Angst, M.S., Clark, J.D. (2006). Opioid-induced hyperalgesia: A qualitative systematic review. *Anesthesiology*. 104: 570-587.

Aron, E.N., Aron, A. (1997). Sensory-processing sensitivity and its relation to introversion and emotionality. *Journal of Personality and Social Psychology.* 73(2):345-368.

Ball, J.D. (2005). Personality traits, problems, and disorders: Clinical applications to substance use disorders. *Journal of Research in Personality*. 39: 84–102

Bandelow, B., Schmahl, C., Falkai, P., Wedekind, D. (2010). Borderline personality disorder: a dysregulation of the endogenous opioid system? *Psychol Rev,* 117(2):623-36.

Banta-Green, C.J., Maynard, C., Koepsell, T.D., Wells, E.A., Donovan, D.M. (2009). Retention in methadone maintenance drug treatment for prescription-type opioid primary users compared to heroin users. *Addiction,*104(5):775-83.

Beck, A.T., Steer, R.A. (1987). Beck Depression Inventory. New York: Harcour Brace.

Bekhit, M.H. (2010). Opioid-Induced Hyperalgesia and Tolerance. *American Journal of Therapeutics*, 17: 498–510.

Brands, B., Paglia-Boak, A., Sproule, B.A., Leslie, K., Adlaf, E.M. (2010). Nonmedical use of opioid analgesics among Ontario students. *Can Fam Physician*, 56(3):256-62.

Breckenridge, J., Clark, J.D. (2003). Patient characteristics associated with opioid Versus nonsteroidal anti-inflammatory drug management of chronic low back pain. *Journal of Pain,* 4, 344– 350.

Broers, B., Giner, F., Dumont, P., Mino, A. (2000). Inpatient opiate detoxification in Geneva: follow-up at 1 and 6 months. *Drug Alcohol Depend*. 58(1-2):85-92.

Brown, C., Tolefson, N., Dunn, W., Cromwell, R., Filion, D. (2001). The adult sensory profile: measuring patterns of sensory processing. *American Journal of Occupational Therapy.* 55:75-82.

Bruneau, J., Roy, E., Arruda, N., Zang, G., Jutras-Aswad, D. (2012). The rising prevalence of prescription opioid injection and its association with hepatitis C incidence among street-drug users. *Addiction,* 107(7):1318-27

Bryce, T.N., Budh, C., Cardenas, D.D., Dijkers, M., Felix, E.R., Finnerup, …Widerstrom-Noga E. (2006). Outcome measures for pain after spinal cord injury: an evaluation of reliability and validity. *Asia Spinal Injury Association,* 30(5): 421–440.

Buchanan, H.M. (1987). Evaluation of pain threshold using a simple pressure algometer. *Clinical Rheumatology,* 6(4):510-517.

Carcoba, L.M., Contreras, A.E., Cepeda-Benito, A, Meagher, M.W. (2011). Negative affect heightens opiate withdrawal induced hyperalgesia in heroin dependent individuals. *Journal of Addictive Diseases,* 30: 258-270.

Cescon, A., Chan, K., Raboud, J.M., Burchell, A.N., Forrest, J.I., Klein, M.B., … Cooper C. (2014). Significant differences in clinical outcomes between HIV-hepatitis C virus coinfected individuals with and without injection drug use history. *AIDS,* 28(1):121-7. doi: 10.1097/QAD.0000000000000020.

Charney, D.A., Zikos, E., Gill, K.J. (2010). Early recovery from alcohol dependence: factors that promote or impede abstinence. *J Subst Abuse Treat.* 38(1):42-50.

Coffey, S.F., Schumacher, J.A., Baschnagel, J.S., Hawk, L.W., Holloman, G. (2011). Impulsivity and risk-taking in borderline personality disorder with and without substance use disorders. *Personality Disorders: Theory, Research, and Treatment.* 2(2), 128–141.

Coupland, S., Fraser, R., Palaciox-Boix, J., Charney, D.A., Negrete, J.C., Gill, K.J. (2014). Illicit and Prescription Opiate Dependence: The Impact of Axis II Psychiatric Comorbidity on Detoxification Outcome. *J Addict Res Ther*. S10:008. doi: 10.4172/2155-6105.S10-008

Darke, S., Ross, J., Williamson, A., Teesson, M. (2005). The impact of borderline personality disorder on 12-month outcomes for the treatment of heroin dependence. Addiction 100:1121-1130.

Darke, S., Ross, J., Williamson, A., Mills, K.L., Havard, A., Teesson, M. (2007). Borderline personality disorder and persistently elevated levels of risk in 36-month outcomes for the treatment of heroin dependence. *Addiction,* 102(7):1140-6.

Day, E., Strang, J. (2011). Outpatient versus inpatient opioid detoxification: A randomized controlled trial. *Journal of Substance Abuse Treatment,* 40: 56–66.

De Crespigny, C., Talmet, J., Modystack, K., Cusack, L.V., Watkinson, J. (2003). Alcohol, tobacco and other drugs. Guidelines for nurses and midwives: clinical guidelines. Adelaide: Flinders University and Drug and Alcohol Services Council.

Derogatis, L. (1983) SCL-90-R: Administration, Scoring and Procedures Manual II, Clinical Psychometrics Research, Maryland

Drug and Alcohol Treatment Information System (DATIS). (2012). Substance Abuse Statistical Tables: Fiscal Year 2007/2008 to Fiscal Year 2011/2012. Toronto, ON: Centre for Addiction & Mental Health, 2012

Fischer, B., Firestone-Cruz, M., Rhem, J. (2006). Illicit opioid use and its key characteristics: A select overview and evidence from a Canadian multisite cohort of illicit opiod users (OPICAN). *Can J Psychiatry*, 51:624-634.

Fischer, B., Argento, E. (2012). Prescription opioid related misuse, harms, diversion and interventions in Canada: a review. *Pain Physician,* 15(3):ES191–ES203.

Fischer, B., Ialomiteanu, A., Boak, A., Adlaf, E., Rehm, J., Mann, R. (2013A). Prevalence and key covariates of non-medical prescription opioid use among the general secondary student and adult populations in Ontario, Canada. *Drug Alcohol Rev,* 32(3):276-87.

Fischer, B., Jones, W., Rehm, J. (2013B). High correlations between levels of consumption and mortality related to strong prescription opioid analgesics in British Columbia and Ontario, 2005-2009. *Pharmacoepidemiol Drug Saf.* 22(4):438-42

Fischer, B., Gooch, J., Goldman, B., Kurdyak, P., Rehm, J. (2014A). Non-medical prescription opioid use, prescription opioid-related harms and public health in Canada: An update 5 years later. *Can J Public Health.* 105(2):e146-9

Fischer, B., Jones, W., Rehm, J. (2014B). Trends and changes in prescription opioid analgesic dispensing in Canada 2005-2012: an update with a focus on recent interventions. *BMC Health Serv Res.;*14:90. doi: 10.1186/1472-6963-14-90.

Fischer B, Patra J, Cruz MF, Gittins J, Rehm J. (2008). Comparing heroin users and prescription opioid users in a Canadian multi-site population of illicit opioid users. Drug Alcohol Rev. 27(6):625-32. doi: 10.1080/09595230801956124

Frankenburg, F.R., Fitzmaurice, G.M., Zanarini, M.C. (2014). The use of prescription opioid medication by patients with borderline personality disorder and axis II comparison subjects: a 10-year follow-up study. *J Clin Psychiatry,* 75(4):357-61

Geisser, M.E., Donnell, C.S., Petzke, F., Gracely, R.H., Clauw, D.J., Williams, D.A. (2008). Comorbid somatic symptoms and functional status in patients with fibromyalgia and chronic fatigue syndrome: sensory amplification as a common mechanism. *Psychosomatics,* 49(3): 235-242.

Gossop, M., Green, L., Phillips, G., Bradley, B. (1989). Lapse, relapse and survival among opiate addicts after treatment: A prospective follow-up study. *British Journal of Psychiatry*, 154:348-353

International Narcotics Control Board (INCB). (2013). Narcotic Drugs Technical Report: Estimated World Requirements for 2013 – Statistics for 2011. New York, NY: United Nations; 2013.

Jagiellowicz, J., Xu, X., Aron, A., Aron, E., Cao, G., Feng, T., Weng, X. (2010). The trait of sensory processing sensitivity and neural responses to changes in visual scenes. *Social Cognitive and Affective Neuroscience.*

Jones, C.M., Mack, K.A., Paulozzi, L.J. (2013). Pharmaceutical overdose deaths, United States, 2010. *JAMA,* 309(7):657–9.

Kalira, V., Treisman, G.J., Clark, M.R. (2013). Borderline personality disorder and chronic pain: a practical approach to evaluation and treatment. *Curr Pain Headache,* 17(8):350.

King, V.L., Brooner, R.K., Peirce, J., Kolodner, K., Kidorf, M. (2014). Challenges and Outcomes of Parallel Care for Patients with Co-Occurring Psychiatric Disorder in Methadone Maintenance Treatment. *J Dual Diagn.* 10(2):60-67.

Kleber H.D., Riordan, C.E. (1982). The treatment of narcotic withdrawal: a historical review. *Journal of Clinical Psychiatry.* 43(6):30–4.

Leichsenring, F., Leibing, E., Kruse, J., New, A.S., Leweke, F. (2011). Borderline Personality Disorder. *Lancet,* 377: 74– 84.

Lessard, R., Valiquette, L. (2010). Sexually transmitted and blood-borne infections: Reach More, Screen More, Treat More. Report of the Director of Public Health, Published by: Direction de santé publique, Agence de la santé et des services sociaux de Montréal, Montréal, Québec

Madadi, P., Hildebrandt, D., Lauwers, A.E., Koren, G. (2013). Characteristics of opioid-users whose death was related to opioid-toxicity: A populationbased study in Ontario, Canada. *PLoS On,* 8(4):e60600.

McLellan, A.T., Parikh, G., & Braff, A. (1990). Addiction severity index administration manual (5th ed.). Philadelphia: Pennsylvania Veterans Administration Center for Studies on Alcohol.

McNair, D.M., Lorr, M., Droppleman, L.F. (1971). Manual for the Profile of Mood States. San Diego, CA: Educational and Industrial Testing Services.

Melzack R. (1975). The McGill pain questionnaire: major properties and scoring methods. *Pain.* 1(3):277-299.

Melzack, R. (1983). The McGill pain questionnaire. *Pain Measurement and Assessment.* 41-47.

Melzack, R. (2005). The McGill pain questionnaire: from description to measurement. *Anesthesiology,* 103: 1999-2002.

Moore, B.A., Fiellin, D.A., Barry, D.T., Sullican, L.E., Chawarski, M.C., O'Connor P., Schottenfeld R.S. (2007). Primary Care Office-based Buprenorphine Treatment: Comparison of Heroin and Prescription Opioid Dependent Patients. *J Gen Intern Med.* 22(4): 527–530.

Paraherakis, A., Charney, D.A., Palacios-Boix, J., Gill, K. (2000). An abstinence-oriented program for substance use disorders: poorer outcome associated with opiate dependence. *Can J Psychiatry*. 45(10):927-31.

Patton, J.H., Stanford, M.S., Barratt, E.S. (1995). Factor structure of the Barratt Impulsiveness Scale. *J Clin Psychol*, 51:768–774.

Potter, J.S., Marino, E.N., Hillhouse, M.P., Nielsen, S., Wiest, K., Canamar, C.P., … Ling W. (2013). Buprenorphine/naloxone and methadone maintenance treatment outcomes for opioid analgesic, heroin, and combined users: findings from starting treatment with agonist replacement therapies (START). *J Stud Alcohol Drugs.* 74(4):605-13.

Public Health Agency of Canada (PHAC). (2006). I-Track: Enhanced Surveillance of Risk Behaviours Among People Who Inject Drugs--Phase I Report. Ottawa, ON: Surveillance

and Risk Assessment Division, Centre for Infectious Disease Prevention and Control, Public Health Agency of Canada, 2006.

Pud, D., Cohen, D., Lawental, E., Eisenberg, E. (2006). Opioids and abnormal pain perception: New evidence from a study of chronic opioid addicts and healthy subjects. *Drug & Alcohol Dependence,* 82(3):218-23.

Reimer, J., Verthein, U., Karow, A., Schäfer, I., Naber, D., Haasen, C. (2011). Physical and mental health in severe opioid-dependent patients within a randomized controlled maintenance treatment trial. *Addiction,* 106:1647–1655.

Reisinger, H.A., Schwartz, R.P., Mitchell, S.G., Peterson, J.A., Kelly, S.M., O'Grady, … Agar, M.H. (2009). Premature Discharge from Methadone Treatment: Patient Perspectives. *J Psychoactive Drugs,* 2009 Sep;41(3):285-96.

Robins, L.N., Cottler, L.B., Bucholz, K.K., Compton, W.M., North, C.S., Rourke, K.M. (2000). Diagnostic Interview schedule for the DSM-IV (DIS-IV).

Rosenblum, A. Parrino, M., Schnoll, S.H., Fong, C., Maxwell, C., Cleland, C.M., … Haddox, J.D. (2007). Prescription opioid abuse among enrollees into methadone maintenance treatment. *Drug Alcohol Depend.* 90(1):64-71.

Roy, E., Arruda, N., Bourgois, P. (2011). The growing popularity of prescription opioid injection in downtown Montreal: New challenges for harm reduction. *Subst Use Misuse.* 46(9):1142-50.

Saint-Lèbes, J., Rodgers, R., Birmes, P., Schmitt, L. (2012). Personality differences between drug injectors and non-injectors among substance- dependent patients in substitution treatment. *Am J Drug Alcohol Abuse,* 38(2):135-9. doi: 10.3109/00952990.2011.643982.

Sansone, R.A., Sansone, L.A. (2007). Borderline personality and the pain paradox. *Psychiatry*, 4(4):40-6.

Sansone, R.A., Sansone, L.A. (2012). Chronic Pain Syndromes and Borderline Personality. *Innov Clin Neurosci.* 2012;9(1):10–14

Shacham, S. (1983). A shortened version of the Profile of Mood States. *J Pers Assess*, 47(3):305-6

Soyka M, Zingg C, Koller G, Kuefner H. (2008). Retention rate and substance use in methadone and buprenorphine maintenance therapy and predictors of outcome: results from a randomized study. *International Journal of Neuropsychopharmacology.* 11:641-653.

Sproule, B., Brands, B., Li, S., Catz-Biro, L. (2010). Changing patterns in opioid addiction: Characterizing users of oxycodone and other opioids. *Canadian Family Physician*, 55:68-

9.e1-5

Stanley, B., & Siever, L.J. (2010). The Interpersonal Dimension of Borderline Personality Disorder: Toward a Neuropeptide Model. *American Journal of Psychiatry*, 167(1) : 24-39

Sullivan, J.J., Sykora, K., Schneiderman, J., Naranjo, C.A., Sellers, E.M. (1989). Assessment of alcohol withdrawal: the revised Clinical Institute Withdrawal Assessment for Alcohol scale (CIWA-Ar). *Britis Journal of Addiction*, 84:1353-1357.

Tragesser, S.L., Jones, R.E., Robinson, R.J., Stutler, A., Stewart, A. (2013). Borderline personality disorder features and risk for prescription opioid use disorders. *J Pers Disord*, 27(4):427-41.

Trescot, A.M., Helm, S., Hansen, H., Benyamin, R., Glaser, S.E., Adlaka R, … Manchikanti S. (2008). Opioids in the Management of Chronic Non-Cancer Pain: An Update of American Society of the Interventional Pain Physicians' (ASIPP) Guidelines. *Pain Physician*, 11:S5-S62.

Trull, T.J., Sher, K.J., Minks-Brown, C., Durbin, J., Burr, R. (2000). Borderline personality disorder and substance use disorders: A review and integration. *Clinical Psychology Review*. 20(2), 235–253.

Tryer, P., Murphy, S., Riley, P. (1990). The Benzodiazepine Withdrawal Symptom Questionnaire. *Journal of Affective Disorders,* 19:53-61.

Vaillant, G.E. (1989). What can long-term follow-up teach us about relapse and prevention of relapse in addiction?. *British Journal of Addiction.* 83(10):1147–57.

Warner, M., Chen, L.H., & Makuc, D.M. (2009) Increase in fatal poisonings involving opioid analgesics in the United States, 1999-2006. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics: Hyattsville, MD, U.S.

Wesson, D.R., Ling, W. (2003). The Clinical Opiate Withdrawal Scale (COWS). *Journal of Psychoactive Drugs,* 35: 253-259.

Younger, J., Barelaka, P., Carroll, I., Kaplan, K., Chu, L., Prasad, R., … Mackey , S. (2008). Reduced cold pain tolerance in chronic pain patients following opioid detoxification. *Pain Medicine,* 9(8): 1158-63.

10. Appendix
10.1

INPATIENT CONSENT FORM

"Outcome of Detoxification from Substance Dependence".

Investigators
Dr. Kathryn Gill, Director of Research, Addictions Unit, MUHC
Dr. Dara Charney, Director, McGill RUIS Addiction Program
Dr. Ronald Fraser, Director, Detoxification Program, Addictions Unit, MUHC
Dr. Gail Gauthier, Clinical Director, Addictions Unit, MUHC
Dr. Juan C. Negrete, Senior Consultant, Addictions Unit MUHC
Dr. J. Palacios-Boix, Medical Director, Addictions Unit, MUHC
Kevin Hamdullahpur, Research Assistant, Addictions Unit, MUHC
Laura Heath, Research Assistant, Addictions Unit, MUHC

Introduction
You are being invited to participate in this study because you are currently undergoing detoxification treatment at the Addictions Unit of the McGill University Health Centre (Montreal General Hospital site).

Before deciding to participate in the study, you should clearly understand its requirements and benefits. This document provides information about the study. Please read it carefully and ask the study staff any questions you may have. If you decide to participate, you will be asked to sign this form and a copy will be given to you.

Purpose of the Study
The purpose of this study is to monitor symptoms and sensory sensitivity during withdrawal and any feelings you may experience over the course of detoxification. We want to see if these factors are related to the outcome of your treatment and whether your detoxification was successful. As well, we will look at how certain traits of your personality, i.e. concurrent conditions, affect your treatment outcome.

Description of the Study
If you agree to take part in this study, you will be asked to come to the clinic or 4West at the Montreal General Hospital where you will meet with the Research Assistant Kevin Hamdullahpur or Laura Heath. At this visit, you will be asked to complete interviews and self-report questionnaires in two 1.5 hour sessions. During these sessions you will be asked questions about mood, anxiety, personality and substance use. This will occur prior to the beginning of your treatment at the Addiction's Unit (to answer questions related to the drugs you are abusing, such as the frequency and amount of consumption and your baseline sensory sensitivity). After beginning detoxification, you will be asked to meet with the Research Assistant two times per week on the inpatient ward, for approximately 45 minutes. During these meetings, you will be asked to fill out forms and answer questions about your craving or withdrawal symptoms that you are experiencing. You will be asked a number of questions about your comfort during your detoxification treatment in the hospital. There will be questions like, "Do you feel like your

appetite has changed?" and "Do you feel more irritated than usual?" Some of these questions will be about how you are feeling and some of them will be about physical discomfort and sensory sensitivity (like watery eyes, sensitivity to light, cramps, and being tired). As well, in order to better understand the sensitivity changes you may experience during detoxification, we will administer a test of sensitivity to touch and pressure discomfort threshold once per week. The touch sensitivity is measured by touching hairs of different diameters across your inner forearm until you

notice them. Pressure discomfort threshold is measured using an algometer, a tool used to apply small amounts of pressure. This will be placed against your thumb, and you will feel increasing amounts of pressure until you indicate that you feel uncomfortable. All of these measures will give us a global indication of how sensitive (both physically and emotionally) you may be during the course of detoxification.

You access your hospital and clinic charts to examine the information related to your initial presenting problems, diagnoses and progress in treatment. Note that the study does NOT involve any changes to your detoxification procedure or medications.

After completion of your detoxification you will be contacted to take part in two follow-up interviews at 3 and 6 months. During these interviews detailed information on drug and alcohol use will be collected, and urine samples will be obtained. Information collected from these interviews will remain confidential and will not be placed in your hospital or clinic charts. $20 compensation will be offered for attending follow-up interview sessions.

Following discharge you may be asked to take part in another interview asking open ended questions about your experiences during detoxification. If you decide to participate in this interview your responses will be recorded. All information collected will remain anonymous and confidential.

Risks and Discomforts
There are no risks of permanent physical damage of any kind when participating in the pressure discomfort threshold test or the test of sensitivity to touch. If at any point, you wish to stop the test prematurely or feel uncomfortable continuing, we encourage you to do so. It is unlikely, however, that you may experience some discomfort and/or anxiety when responding to some of the questions on the questionnaires.

Potential Benefits
You should not expect any direct benefits from participating in this study. However, the information collected from this study may benefit future patients undergoing detoxification.

Alternative to Research Participation
You do not need to take part in this study to receive treatment, the study doctor will discuss with you the alternatives.

Indemnification
The McGill University Health Centre, the Research Institute of the MUHC Research Institute, and the investigators would not be able to offer compensation in the unlikely event of an injury resulting from your participation in this research study. However, you are not giving up any of your legal rights by signing this consent and agreeing to participate in this study.

Cost and Compensation
You will not be offered any compensation for your participation in this study. There will be no costs associated with the study.

Voluntary Participation and/or Withdrawal
Your participation in this study is strictly voluntary. You may refuse to participate or you may discontinue your participation in this study at any time, without explanation and without penalty or loss

of benefits to which you are otherwise entitled. As well, if you are uncomfortable with a specific test within the protocol, you are free to decline to participate in that aspect alone. If you decide to discontinue, you will suffer no prejudice regarding medical care. You will be informed of any new findings that may affect your willingness to continue your participation.

The study doctor may end your participation if you experience excessive side effects or deterioration in your health, if you do not follow study procedures, or if you need a medication that is not allowed during the study. In addition, one of McGill University Health Center Research Ethics Boards may terminate the study.

Confidentiality
The research team will consult your medical file to collect information relating to your medical history and take note of the data relevant to this research project.

All information obtained during this study will be kept strictly confidential. Your name will be coded and the coded information will be locked in a filing cabinet in the investigator's office with limited access. The results of this study may be published, and other researchers participating in this study may have access to your records related to this research; however, your identity will not be revealed in the combined results.

In order to verify the research study data, the Quality Assurance Officers of the MUHC Research Ethics Office may review these records and report to the REB of record.

By signing this consent form, you give us permission to inform your treating physician of your participation in this research study and you give us permission to review your medical records. Your confidentiality will otherwise be protected to the extent permitted by applicable laws and regulations.

Significant Findings

During the course of this study, investigators may generate new research findings. The research results will be shared with you and you are welcome to discuss the findings with the investigators.

Control of the Ethical Aspects of the Research Project
The Ethics Research Board of the MUHC approved this research project and ensures the follow-up. In addition, it will first approve any review and amendment made to the information/consent form and to the study protocol.

Funding of the Research Project:
The principal investigator will not be paid for this research project. The funds received cover the expenses of the research.

Quality Assurance Program:
The MUHC implemented a Quality Assurance Program that includes active continuing review of projects (on site visits) conducted within our establishment. Therefore, it must be noted that all human subject research conducted at the MUHC or elsewhere by its staff, is subject to MUHC Routine and Directed Quality Improvement Visits.

Questions and Contact Information
If you have any questions regarding the study, you should contact the investigator, Dr. Kathryn Gill at (514) 934-1934 x42395 (office-voicemail). If you have any questions regarding your rights as a study participant, you should contact the Ombudsman, tel. 514-934-1934, ext. 48306.

DECLARATION OF CONSENT

I have read this consent form, and I agree to participate in this research study. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction. I have been given sufficient time to consider the above information and to seek advice if I chose to do so. I understand that I will be given a signed copy of this consent form. By signing this consent form, I have not given up any of my legal rights.

Participant	**(Print Name)**	**Date**
Investigator	**(Print Name)**	
Witness	**(Print Name)**	

10.2

FORMULAIRE DE CONSENTEMENT
Patient interne

Dépendance aux drogues – résultat de la désintoxication

Chercheurs
Dr Kathryn Gill, Ph. D., directrice de recherche, Unité des toxicomanies, CUSM
Dr Dara Charney, directrice, RUIS McGill programme de toxicomanie
Dr Ronald Fraser, directeur, Programme de désintoxication, Unité des toxicomanies, CUSM
Dr Gail Gauthier, directrice d'activités clinique, Unité des toxicomanies, CUSM
Dr Juan C. Negrete, conseiller en chef, Unité des toxicomanies, CUSM
Dr J. Palacios-Boix,directeur médical, Unité des toxicomanies, CUSM
Kevin Hamdullahpur, assistant de recherche, Unité des toxicomanies, CUSM
Laura Heath, assistant de recherche, Unité des toxicomanies, CUSM

Introduction
Vous êtes invité à participer à cette étude parce que vous suivez actuellement une thérapie de désintoxication à l'Unité des toxicomanies du Centre de santé de l'Université McGill (Hôpital général de Montréal).

Avant que vous décidiez de participer à cette étude, vous devez en comprendre pleinement les exigences et les avantages. Le présent document fournit de l'information sur cette étude. Veuillez le lire attentivement et poser toute question au personnel de l'étude, le cas échéant. Si vous décidez de participer à l'étude, on vous demandera de signer le présent document, dont nous vous remettrons une copie.

Raison de l'étude
Cette étude vise à surveiller les symptômes de sevrage ainsi que toute sensibilité sensorielle que vous pourriez ressentir au cours de votre désintoxication. Nous voulons déterminer si ces facteurs ont un lien avec l'issue de votre régime thérapeutique et si votre désintoxication a été fructueuse. En outre, nous examinerons en quoi certains traits de votre personnalité, par ex. des états pathologiques concomitants, influent sur l'issue de votre régime thérapeutique.

Description de l'étude
Si vous acceptez de participer à cette étude, vous serez invité à vous présenter à la clinique, située à l'étage 4-Ouest de l'Hôpital général de Montréal, où vous rencontrerez Kevin Hamdullahpur, assistante de recherche. À cette visite, on vous demandera de compléter des interviews et des questionnaires d'auto-évaluation en deux sessions de 1.5 heures. Lors de ces visites, on vous posera des questions concernant votre humeur, anxiété, personnalité et l'usage de substance. Celles-ci auront lieu avant le début de votre régime thérapeutique à l'Unité des toxicomanies (pour répondre à des questions touchant les drogues dont vous abusez, entre autres la quantité consommée et la fréquence ainsi que votre sensibilité sensorielle de base). Après avoir commencé la désintoxication, vous rencontrerez l'assistant de recherche deux fois par semaine au service des malades hospitalisés pour environ 45 minutes. Durant ces rencontres, on

vous demandera de remplir des formulaires et de répondre à des questions concernant les symptômes de votre état de manque ou de sevrage que vous ressentez. On vous posera un certain nombre de questions sur votre confort durant le régime de désintoxication à l'hôpital. Ces questions pourraient inclure, par exemple, « Avez-vous remarqué un changement dans votre appétit? » et « Vous sentez-vous plus irascible qu'à l'habitude? ». Certaines de ces questions porteront sur ce que vous ressentez, tandis que d'autres porteront sur tout inconfort de la sensibilité sensorielle et physique (yeux humides, sensibilité à la lumière, crampes et

fatigue). Aussi, afin de mieux comprendre les changements de sensibilité que vous pouvez éprouver durant votre processus de désintoxication, nous vous administrerons un test de sensibilité tactile ainsi qu'un test pour établir le seuil de tolérance à la douleur, dû à une pression, une fois par semaine. La sensibilité tactile est mesurée en touchant des poils de différents diamètres sur le côté antérieur de votre avant-bras jusqu'à ce que vous les notiez. Le seuil de tolérance à la douleur, dû à une pression, est mesuré en utilisant un algomètre, un instrument utilisé pour appliquer un peu de pression. Ceci sera placé contre votre pouce, et vous sentirez des pressions croissantes jusqu'à ce que vous nous indiquiez que vous vous sentez inconfortable. Toutes ces mesures nous donneront une indication globale de votre degré de sensibilité (physique et émotionnelle) que vous ressentez durant votre processus de désintoxication.

Vous devez savoir que nous consulterons vos dossiers hospitaliers et cliniques pour examiner les renseignements concernant vos problèmes présentés initialement, les diagnostiques et les progrès réalisés grâce à des thérapies. À noter que l'étude proposée ne prévoit AUCUN changement à votre procédure de désintoxication ni à vos médicaments.

Suite à votre désintoxication, on vous invitera à participer à deux interviews de suivi à 3 et 6 mois. Lors de ces interviews, de l'information détaillée concernant votre usage de drogue et alcool sera recueillie, ainsi que des spécimens d'urine. L'information recueillie restera confidentielle et ne sera pas inclure dans vos dossiers hospitalier ou clinique. Un honoraire de $20 vous sera offert pour votre participation aux interviews de suivi.

Suite à votre séjour en hôpital vous pouvez également être invité à participer à une autre entrevue avec des questions ouvertes concernant vos expériences durant la détoxification. Si vous décidez de participer à cette entrevue vos réponses seront enregistrées. Toutes information recueilles resteront anonymes et confidentielles.

Risques et malaises

Il n'y a aucun risque de dommage physique permanent en participant au test du seuil de tolérance à la douleur dû à une pression ou au test de la sensibilité tactile. Si, à un point quelconque, vous souhaitez arrêter le test prématurément ou que vous vous sentez inconfortable si le test continue, nous vous encourageons à arrêter. Il est peu probable que vous ressentiez de l'inconfort ou de l'angoisse en répondant à certaines questions des questionnaires.

Avantages potentiels

Vous ne devez vous attendre à aucun avantage direct de votre participation à cette étude. Toutefois, l'information qui sera recueillie grâce à cette étude pourrait comporter des avantages pour de futurs patients qui suivent une thérapie de désintoxication.

Substitution à la participation à l'étude
Vous n'êtes pas tenu de participer à cette étude pour faire l'objet d'un régime thérapeutique. Le médecin de l'étude discutera avec vous de solutions de rechange.

Indemnisation
Ni le Centre universitaire de santé McGill, ni l'Institut de recherche du CUSM, ni même les chercheurs ne seraient en mesure de vous indemniser dans le cas peu probable d'une blessure liée à votre participation à cette étude de recherche. Toutefois, vous ne renoncez à aucun de vos droits légaux en signant le présent formulaire de consentement et en acceptant de participer à cette étude.

Coûts et rémunération
Aucune rémunération ne vous sera offerte pour votre participation à cette étude. Il n'y a aucun coût associé à cette étude.

Participation et/ou retrait volontaire
Votre participation à cette étude est entièrement volontaire. Vous pouvez refuser de prendre part à cette étude maintenant ou vous pouvez décider de vous en retirer en tout temps pendant l'étude, sans explication et sans aucune pénalité ni perte des avantages auxquels vous avez droit. En outre, si
vous êtes inconfortable avec un test spécifique dans le protocole, vous êtes libre de refuser de participer à ce test. Si vous décidez d'interrompre votre participation, vous ne subirez aucun préjudice concernant vos soins médicaux. On vous communiquera toute nouvelle conclusion qui pourrait influer sur votre volonté de poursuivre votre participation.

Le médecin de l'étude peut mettre fin à votre participation si vous ressentez des effets secondaires excessifs ou si votre état de santé se détériore, si vous n'adhérez pas aux procédures de l'étude, ou si vous avez besoin d'un médicament proscrit dans le cadre de l'étude. En outre, un membre du Bureau d'éthique de la recherche (BER) du Centre universitaire de santé McGill peut mettre fin à l'étude.

Confidentialité
L'équipe de chercheurs consultera votre dossier médical pour collecter l'information concernant vos antécédents médicaux et prendre note des renseignements pertinents à ce projet de recherche.

Tous les renseignements recueillis durant cette étude demeureront strictement confidentiels. Votre nom sera chiffré, et toutes les données chiffrées seront conservées sous clé dans un classeur dans le bureau du chercheur, bureau auquel l'accès est limité. Les auteurs de cette étude pourraient en publier les résultats, et d'autres chercheurs qui participent à cette étude pourraient avoir accès à vos dossiers liés à cette étude; toutefois, les résultats cumulés ne révéleront pas votre identité.

Par ailleurs, il se peut que des agents d'assurance de la qualité du Bureau d'éthique de la

recherche (BER) du CUSM examinent ces dossiers pour vérifier les données de cette étude et fassent rapport au BER concerné.

En signant le présent formulaire de consentement, vous nous donnez la permission d'informer votre médecin traitant de votre participation à cette étude de recherche, et vous nous donnez la permission d'étudier vos dossiers médicaux. Nous protégerons votre droit à la vie privée dans la mesure permise par les lois et règlements applicables.

Conclusions importantes
Durant le cours de cette étude, les chercheurs pourraient arriver à de nouvelles conclusions. Ceux-ci vous feront part des résultats de leurs recherches, et vous pourrez en discuter avec eux.

Vérification des aspects éthiques du projet de recherche
Le Bureau d'éthique de la recherche du CUSM a approuvé ce projet de recherche en fera le suivi. En outre, il doit approuver d'abord toute révision ou tout amendement apporté à l'information et/ou au formulaire de consentement ainsi qu'au protocole de l'étude.

Subvention du projet de recherche
Le chercheur principal ne sera pas rémunéré pour ce projet de recherche. Les fonds reçus couvrent uniquement les frais liés à la recherche.

Programme d'assurance-qualité
Le CUSM a mis en place un programme d'assurance-qualité (AQ) qui comprend une évaluation active continue (visites sur place) des projets qui se déroulent dans ses établissements. Il est donc à noter que tous les travaux de recherche sur des sujets humains menés par le personnel du CUSM, dans les établissements du CUSM ou ailleurs, peuvent faire l'objet de visites régulières ou dirigées d'amélioration de la qualité.

Questions et coordonnées
Si vous avez des questions concernant cette étude, veuillez contacter la chercheuse, D^{r} Kathryn Gill, au 514 934-1934, poste 42395 (boîte vocale au bureau). Pour toute question touchant vos droits en tant que sujet de recherche, veuillez contacter l'ombudsman du Centre de santé de l'Université McGill (CUSM) au 514 934-1934, poste 48306.

CONSENTEMENT

J’ai lu le présent formulaire de consentement et j'accepte de participer à cette étude de recherche. J’ai eu l’occasion de poser des questions, et on a répondu à celles-ci à ma satisfaction. On m’a laissé le temps voulu pour réfléchir à l’information qui précède et pour demander conseil, si je le souhaitais. Je comprends que je recevrai une copie signée du présent formulaire. En signant le présent formulaire de consentement, je ne cède aucun de mes droits légaux.

Participant	**(Lettres moulées)**	**Date**
Chercheur	**(Lettres moulées)**	
Témoin	**(Lettres moulées)**	

10.3

Addictions Unit, Griffith Edwards Centre
1547 Pine Avenue West, Montreal H3G 1B3
TEL# (514) 934-1934 x 42399
FAX# (514) 934-8262

DETOXIFICATION SUMMARY- Coding Sheets

PATIENT NUMBER:_____ **CODE ONLY**

Please do not write notes

AGE: (at admission to 4 West) .....

SEX: (1=Male, 2=Female) …….

LENGTH OF STAY (days) ……..

DATE OF ADMISSION TO 4 WEST DETOX:(day, month, year) .....

PATIENT ATTENDED 4 WEST PRE-ADMISSION VISIT? 0) no 1) yes .....

ADMISSION TYPE: (refers to 4 WEST)_____ .....
1) first admission to 4W--referred from Addictions Unit outpatient after assessement only
2) first admission to 4W--referred from Addictions Unit outpatient after some Tx (i.e. patient was attending group prior to detox) 3) readmission after previous Tx in 4W and outpatient Addictions Unit
4) other

DISCHARGE DATE FROM 4 WEST: (day, month, year) .....

DISCHARGE STATUS FROM 4 WEST:_____ .....
1) Completed all recommended detox and continued with outpatient Tx in Addiction Unit
2) Completed all recommended detox and was referred to other Tx facility (e.g. Foster)
3) Completed pre-admission visit only 4) Did not complete recommended detox Tx--left before/on 5th day
5) Did not complete recommended detox Tx--left after 5th day 6) Discharged due to non-compliance
7) Death 8) Methadone maintained 9) Slip during detox but completed 10) Slip during detox not completed

DETOXIFICATION FOR WHICH DRUG?: 1) heroin 2) morphine 3) non-Rx methadone 4) codeine 5) demerol 6) percodan/other opiates 7) alcohol 8) benzodiazepines 9) barbiturates 10) cocaine/crack 11) other stimulants 12) cannabis 13) other

PRIMARY DRUG_____ .....

SECONDARY DRUG_____ .....
(Code 999 if only being detoxified for one drug)

OTHER DRUGS_____ …….
(code 999 if only being detoxified for one or two drugs)

Primary Substance Diagnosis_____
(notes only, no coding)

AGE AT FIRST REGULAR USE OF PRIMARY DRUG:_____ .....

YEARS OF PROBLEMATIC USE OF PRIMARY DRUG:_____ .....

FREQUENCY OF USE OF PRIMARY DRUG:(last month of use)_____ .....
1) once per week or less 2) 2-3 days per week 3) 4-5 days per week 4) 6-7 days per week 5) binge (sporadic, intense)

QUANTITY:_____ .....

(last month of use, in ounces, mg or gm per day)

ROUTE:_____ .....
1) oral (alcohol, pills) 2) smoking/freebase 3) snorting 4) intravenous 5) transdermal

LAST CONSUMPTION:_____ .....
(# hours prior to admission to 4West)

PRIOR DETOX ATTEMPTS FROM PRIMARY DRUG: (lifetime)_____ .....

DATE OF LAST DETOX ATTEMPT: (day, month, year)_____ .....

Years between current and last detox attempt_____ ……..

PREVIOUS WITHDRAWAL COMPLICATIONS:_____ .....
0) none 1) seizure 2) hallucinations, D.T's 3) other

WITHDRAWAL COMPLICATIONS DURING CURRENT DETOX:_____ .....
0) none 1) seizure 2) hallucinations, D.T's 3) other

MEDICAL STATUS AT ADMISSION TO 4-WEST:
0) Patient has never been diagnosed with problem 1) Current problem--patient treated **during** stay on 4 West 2) Past history of problem--no treatment during stay on 4 West 999) Unsure or data missing

Alcoholic Hepatitis_____ .....

Infectious Hepatitis (specify A,B,C) _____ .....

Pancreatitis_____ .....

Gastritis_____ .....

Polyneuritis_____ .....

Heart Condition (specify)_____ .....

Diabetes_____ .....

High Blood Pressure_____ .....

Complications related to IV drug use_____ .....
(endocarditis, sepsis)

Other disorders (specify)_____ .....

HIV STATUS: 0) Negative 1) Positive 99) Not known_____ .....

Axis I: _____

Axis II: _____

Pain Patient: _____

Total # of PRNs:

Average # of PRNs:

***Note that you should code 999 for items where there is insufficient data to determine the answer or where data is missing or if the question does not apply.

Coded by:_____
Date:_____

Medications

Taper: