

A Qualitative Exploration of Injection Cessation among Youth in Vancouver, BC

by

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Abstract

Cessation of injection drug use among youth is an important public health objective that has potential to reduce injection-related harm. We undertook this qualitative study to examine experiences of injection cessation and relapse among young people living in Vancouver, BC. Participants were recruited from the At-Risk Youth Study (ARYS), a longitudinal cohort of street-involved youth who use illicit drugs. Twelve semi-structured interviews were conducted with 7 females and 5 males, ages 20 to 30 years. Interviews were audio-recorded, transcribed verbatim, and a thematic analysis was conducted, drawing on the risk environment framework. In this study, facilitators of injection cessation were low-barrier and integrated youth services, supportive housing, access to methadone maintenance therapy (MMT), and the use of marijuana. Based upon these findings, recommendations for promoting injection cessation include increasing access to low-barrier supports for youth, and promoting non-injection routes of administration to reduce the health consequences of injection drug use.

Keywords: Injection cessation; injection drug use; youth; substance use; treatment

Dedication

To the loving memory of Grandma Hobbins

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I hope this work will give back to the research community and help provide appropriate services and safer environments for young people who are looking to cease their injection drug use.

Table of Contents

Approval.....	ii
Partial Copyright License.....	iii
Ethics Statement.....	iv
Abstract.....	v
Dedication.....	vi
Acknowledgements.....	vii
Table of Contents.....	viii
List of Acronyms.....	ix
Glossary.....	x
Chapter 1. Introduction.....	1
1.1. Injection Cessation.....	2
1.2. Relapse.....	4
1.3. Current Injection Cessation Interventions.....	5
1.4. Youth in Vancouver.....	7
1.5. Risk Environment.....	9
1.6. Constant Comparative Method.....	10
1.7. Qualitative Research using a Risk Environment Framework.....	12
Chapter 2. Methods.....	14
2.1. At-Risk Youth Study (ARYS).....	14
2.2. The Injection Cessation Study.....	16
2.3. Data Analysis.....	18
Chapter 3. Results.....	20
3.1. Facilitators of Injection Cessation.....	20
3.2. Barriers to Injection Cessation.....	25
3.3. Challenges Transitioning to and Maintaining Injection Cessation.....	27
Chapter 4. Discussion.....	30
Chapter 5. Recommendations.....	37
5.1. Conclusion.....	39
References.....	41
Appendix A. Semi-Structured Interview Guide.....	51

List of Acronyms

AA	Alcoholics Anonymous
AIDS	Acquired Immunodeficiency virus
ARYS	At-Risk Youth Study
HCV	Hepatitis C Virus
HIV	Human immunodeficiency virus
MMT	Methadone maintenance therapy
NA	Narcotics Anonymous
NIROA	Non-injection routes of administration
PWID	People who inject drugs
SRO	Single-room occupancy

Glossary

At-risk youth

Young people whose lives are affected by mental health issues, drug and alcohol dependency issues, sexually exploited, and may be experiencing homelessness (Ministry of Children and Family Development, n. d., “Youth Services”)

Methadone
Maintenance
Therapy

Methadone is a “long-acting synthetic opioid agonist” (Health Canada, 2008, para. What is Methadone Maintenance Treatment?) prescribed to treat opiate addiction. MMT programs offer additional supports to the methadone dose, such as counselling and education (Health Canada, 2008)

Chapter 1. Introduction

Injection drug use is associated with high risk behaviours which may increase one's risk of acquiring communicable diseases such as human immunodeficiency virus (HIV) (Roy et al., 2003) and hepatitis C virus (HCV) (Hyamathi et al., 2005; Vlahov, Fuller, Ompad, Galea, & Des Jarlais, 2004; Kerr, 2009). Continued injection drug use is associated with more severe drug dependence and increased risk of drug overdose (Hunt, Griffiths, Southwell, Stillwell, & Strang, 1999). A reduction of the number of injections or the complete cessation of injection drug use among people who inject drugs (PWID) is an important public health goal, with the potential to reduce their morbidity and mortality by decreasing their involvement in high risk behaviours (Evans, Hahn, Lum, Stein, & Page, 2009; Mackesy-Amity, Ouellet, Golub, Hudson, Hagan, & Garfein, 2010).

Young PWID in Canada display many negative health impacts related to inject drug use including unstable housing (Krusi, Fast, Small, Wood, & Kerr, 2010) and involvement in dangerous income generation such as drug dealing and sex work (Fast, Small, Wood, & Kerr, 2009). A Vancouver study of young PWID found that those who initiated injection drug use during their adolescence were more likely to enter the study already HIV and HCV positive (Miller, Kerr, Strathdee, Li, & Wood, 2007). In addition, two studies in different Canadian cities found that young PWID have a higher mortality rate compared to the rest of the Canadian population (Miller et al., 2007; Roy et al., 2004).

Illicit drug use costs the Canadian Health Care system an estimated \$1.37 billion per year, with the majority of this cost attributed to injection drug use (Health Canada, 2002) underscoring the need to support injection prevention and cessation. While there is some evidence for supporting the prevention of injection drug use among young people, there are few studies that have explored injection drug use cessation among young people who use injection drugs despite its public health importance. This study

seeks to address this gap by exploring injection cessation among young people who use injection drugs in Vancouver, BC, Canada.

1.1. Injection Cessation

Cessation rates from various young injection drug user studies have typically identified a relatively low rate of cessation with high rates of subsequent relapse. A Montreal study found a crude rate of injection cessation to be 32.6 per 100 person-years among street youth; however, the study reported that many of the youth began injecting again within one year after cessation (Steensma, Boivin, Blais, & Roy, 2005). Despite lower reported rates of complete cessation among young people, a Chicago study found that 16.4% of injection drug users reported injection cessation at least once within a 2.5 year period, with a median duration of 16 months; however, of those who quit injecting, 15.5% began again (Huo, Bailey, & Ouellet, 2006). Other studies have found that, while some youth quit injecting drugs, they may continue using non-injection illicit drugs through alternate routes of administration (Huo et al., 2006). In a Baltimore study, 34% of PWID identified in the study reported cessation from injection drug use, with 13% using non-injection drugs within the first year of cessation (Shah, Galai, Celentano, Vlahov, & Strathdee, 2005). These results indicate that for some young people, there is a transition period from injection drug use, where continued illicit drug use through non-injection routes of administration may support injection cessation. To date, studies examining injection cessation among young people have been largely been epidemiological in orientation, which may limit the ability of these studies to identify how contextual forces help shape cessation events. There has been a dearth of qualitative research studies that explore contextual factors beyond individual behaviours that support injection cessation among young people who use injection drugs.

Studies have indicated varying individual, social and structural forces that shape the potential for injection cessation among both youth and adult populations with injection drug use experience. Individual factors that support injection cessation among youth include: injecting drugs less than daily (Evans et al., 2009) or less than weekly (Steensma et al., 2005), and injecting two or fewer different types of drugs (Steensma et al., 2005). Age (≤ 30 years) and HIV-positive status were also found to predict injection

cessation among young PWID (Shah et al., 2005). Other studies have found that longer periods of injection drug use prior to cessation and frequent or daily injections are associated with decreased likelihood of injection cessation (Shah et al., 2005; Evans et al., 2009; Mehta et al., 2011). Sharing drug injection equipment, such as needles, cookers, or filters, was also reported among those who did not cease injection drug use (Evans et al., 2009), suggesting that ongoing injection without intervention is associated with behaviours that increase risk for blood borne infection (Lloyd-Smith, Kerr, Zhang, Montaner, & Wood, 2008).

Poly-substance use through non-injection and injection practices have also been associated with continued injection of drugs. Using crack cocaine (Latkin et al., 1999), powder cocaine (Deren et al., 2007), and speedballs (Shah et al., 2005) were all associated with continued injection drug use. Additionally, individuals who used alcohol (Shah et al., 2005; Evans et al., 2009), benzodiazepines, and cigarettes were more likely to report continued injection drug use, suggesting the severity of poly-substance use (Shah et al., 2005) should be considered within treatment programs (Deren et al., 2007). Other factors identified in the literature that contribute to continued injection drug use include pooling money to buy drugs and experiencing an overdose (Evans et al., 2009).

Social factors have also been found to facilitate the cessation of injection drug use. In a Montreal study, it was found that youth who had at least one parent who was born outside of Canada were more likely to stop injecting drugs, which the authors stated might be due to cultural aversions to drug use (Steensma et al., 2005). Having fewer PWID in one's social network was also associated with injection cessation (Latkin et al., 1999). In a Vancouver qualitative study, it was found that young people who did not identify themselves as an injector were less likely to continue injecting (Small, Fast, Krusi, Wood, & Kerr, 2009). Additionally, this study found that when peer groups discouraged injecting practices, young people tended to cease injection practices after initiation rather than becoming an established injector (Small et al., 2009).

In addition to individual factors, structural factors that have been shown to support injection cessation among young people include access to methadone maintenance therapy (MMT) (Shah et al., 2005; Latkin, Knowlton, Hoover, & Mandell,

1999; Deren, Kang, Colon, & Robles, 2007). While few studies have evaluated MMT and the cessation and relapse trajectories of young people, Shah et al. found that receiving MMT use was associated with a shorter duration of injection drug use prior to cessation among adult PWID. Another study found that being in a drug treatment program was related to greater likelihood of cessation of injection drug use (Deren et al., 2007). Additionally, youth who had accessed drug treatment or mental health treatment within three months prior to being interviewed were more likely to report cessation from injection drug use (Evans et al., 2009). Experiences of incarceration were negatively associated with cessation of injection drug use (Evans et al., 2009; Mehta et al., 2011); however, a study conducted in Puerto Rico found that incarceration was a predictor of cessation (Deren et al., 2007).

Housing has also been found to influence the injection and cessation trajectories of young people. Recent homelessness was identified as an independent predictor of continued drug use among street-based youth (Steensma et al., 2005). Additionally, unstable housing prolonged the time to cessation in a study of injectors in Baltimore, MD (Shah et al., 2005). The Baltimore study also indicated that those who were homeless continued to use drugs intravenously for a longer period of time compared to those with stable housing. Youth who had reported injection cessation and subsequent homelessness, reported relapsing back to injection 50% faster than those with housing (Shah et al., 2005) indicating that safe housing is an important facilitator of cessation among young people.

1.2. Relapse

Relapse is defined as a return to drug use after having a period of abstinence from using (Doweiko, 2006). Relapse is often part of the injection drug use trajectory among individuals who achieve cessation. A cumulative relapse rate of 39.2 per 100 person-years was found among a study of adult injection drug users in Baltimore, MD (Shah et al., 2005). Of interest, one study indicates that youth (30 years and younger) had a higher incidence rate for relapse than among older counterparts (55.5 per 100 person-years vs. 30.2 per 100 person-years respectively) (Evans et al., 2009). This study also found that 47% of young PWID relapsed back to injection drug use within 6

months of cessation, of which 55% had a single relapse, while 45% experienced multiple episodes of cessation and relapse. Only a quarter of the study participants displayed prolonged cessation of 3 or more months (Evans et al., 2009).

Relapse is a common occurrence among both youth and adult injection drug users who are attempting injection cessation. There has been very little exploration of the cessation and relapse trajectories of young PWID resulting in a dearth of evidence to guide public health approaches to help support young people during these important transitions (Mehta et al., 2011). Additionally, there is a lack of knowledge around social and structural supports available to youth and their influence upon drug use trajectories, despite the opportunity to provide education to help reduce substance use and lessen the likelihood of acquiring or transmitting HIV/HCV during these periods (Huo et al., 2006).

1.3. Current Injection Cessation Interventions

Current methods used to help individuals cease injection drug use include abstinence-based programs, such as detoxification, inpatient or outpatient addiction treatment facilities, methadone maintenance therapy (MMT) for opioid users, and the promotion of non-injection routes of administration (NIROA) of drugs.

Abstinence-based programs often include detoxification, inpatient addiction treatment facilities, outpatient counselling, and self-help groups, such as Twelve Step groups. Inpatient programs usually have a strong emphasis on the Twelve Step philosophy, which focuses on complete abstinence from all addictive substances, and includes individual and group counselling sessions (Doweiko, 2006). These programs tend to have more rigid and structured policies, prohibiting any use of illicit drugs, strict in/out times, and policies around the types of medications that may be used while in the program. In the Greater Vancouver region, there are several inpatient treatment programs available for adults, with a minimum stay being 30 days, depending on the facility. For Vancouver youth, there are more limited options with 5 inpatient and outpatient treatment programs (Vancouver Coastal Health, 2013).

Methadone maintenance therapy is the standard pharmacotherapy for opioid dependence in Canada (Nosyk, Marsh, Sun, Schechter, & Anis, 2010), and is long-acting synthetic opioid taken orally once a day (Greenstein, Fudala, & O'Brien, 1997). Prescription MMT helps reduce the health harms resulting from opioid use, including the reduction or elimination of opioid withdrawals and cravings (Centre for Addiction and Mental Health, 2011), reduced risk of infectious disease, and injection-related morbidity and mortality (Caplehorn, Dalton, Cluff & Petrenas, 1994; Kleber, 2008; Office of the Provincial Health Officer, 2013). Additionally, MMT has reduced criminal activity (Ward, Hall, & Mattick, 2007), including property and drug related criminal behaviours (Marsch, 1998), among those receiving methadone maintenance program. Individuals who are prescribed a higher dose of methadone tend to remain in the MMT program for longer than those taking a smaller dose (Hunt, Griffiths, Southwell, Stillwell, & Strang, 1999). A Vancouver study of young Aboriginal drug users reported that 32% of Vancouver participants who injected drugs reported ever being on MMT, with 14% currently receiving treatment (Spittal et al., 2007)

A less common intervention used to help individuals cease injection drug use is to encourage them to transition to non-injection routes of administration (NIROA) of drugs. Bridge (2010) identifies efforts to promote other means of administering drugs to include “prescription oral substitutes; providing non-injecting equipment; providing safer smoking facilities; and training individuals to prevent transitions to injecting” (p. 125). The transition to NIROA has been found to reduce the risk of acquiring HIV and HCV, as well as avoid the physical signs of drug use such as track marks on one’s arms and maintain vein health (Des Jarlais et al., 2014). Hunt et al. (1999) indicated that despite short-term results that indicate success in transitioning young people who use injection drugs to NIROA, the authors could not determine whether such transitions had long-term, lasting results. A service provider to drug users in Scotland called Drug Action offers a leaflet providing information on alternative means of using illicit drugs other than injecting, including descriptions on how to use NIROA, and the risks and benefits of each method (Drug Action, n. d.). This brochure includes information on methods such as smoking, snorting, and rectal administration, and information for current injectors to help prevent the initiation of injection drug use among current non-injectors and is provided to PWIDs through the needle exchange program. There is little focus on NIROA towards

youth in the academic literature and in programs offered to street-involved youth. Further information should be provided to young PWIDs around NIROA to help reduce the negative effects of injection drug use.

1.4. Youth in Vancouver

Vancouver, B.C. is home to the downtown eastside, a neighbourhood known for low-income residences, single-room occupancy hotels, open drug-scene, and HIV epidemic of the 1990's (Wood & Kerr, 2006). As a means to curb transmission of HIV among PWID, the City of Vancouver incorporated a Four Pillars Drug Strategy, which included prevention, treatment, enforcement, and harm reduction approaches to dealing with illicit drug use (City of Vancouver, 2012). The goal of the Four Pillars Drug Strategy was to provide a safer and healthier community for all, with the goal of reducing open drug use in the streets, reducing the number of overdose deaths, and reduce the rates of HIV and HCV (City of Vancouver, 2013). Vancouver opened North America's first supervised injection facility in 2003 as part of the Four Pillars harm reduction approach. A report by the Urban Health Research Initiative (2013) found that drug use in Vancouver has remained consistent; however, injection drug use has decreased over the past several years. The report also indicated that the use of addiction treatment, including methadone maintenance has increased and needle sharing has dramatically decreased. A recent study found a reduction in the number of new infections of HIV in Vancouver between the years 1995-2011 (Hogg et al., 2013). These studies show that harm reduction programs in Vancouver's downtown eastside are highly effective in reducing needle sharing.

Street-involved youth in Vancouver typically congregate within two locations to use illicit drugs, one being in the downtown eastside and the other in downtown south due to the availability of youth services, such as drop-in centres and youth health clinics, as well as "shadow economics" (p. 53), such as income generation through sex work, drug dealing, and selling stolen goods (Fast, Shoveller, Shannon, & Kerr, 2010). Youth have identified the downtown south location as safer compared to the downtown eastside due to the number of youth services available, places to rest, either indoor or outdoor, and being safe from potential arrest and street violence (Fast et al., 2010). In

both locations, illicit drugs are widely available and relatively inexpensive, prices ranging from \$10-\$20 for a point (0.1 gram) of powder cocaine, crack cocaine, heroin, and crystal methamphetamine (Urban Health Research Initiative, 2013). All illicit drugs have been found to be easily accessible to youth within Vancouver (Urban Health Research Initiative, 2013).

The Public Health Agency of Canada (2006) reported that 95% of street youth reported non-injection drug use and 22.3% reporting injection drug use. The ARYS study found that 30% street-involved youth in Vancouver are injecting drugs (Lloyd-Smith et al., 2008), higher than the national average (Public Health Agency of Canada, 2006). Additionally, a study found that 29% of Vancouver street-youth who inject drugs reported sharing syringes, thus increasing their risk of transmission to HIV and HCV (Lloyd-Smith et al., 2008), indicating an increased need for harm reduction programs for young PWID in Vancouver.

A recent homeless count found that homeless youth represent 20% of the total homeless population in Metro Vancouver, and the homeless youth population has increased by 3% in 2014 compared to 2011 (Greater Vancouver Regional Steering Committee on Homelessness, 2014). A Canadian wide study found that nearly 60% of street-involved youth have been homeless and living on the street full time at some point in their lives (Public Health Agency of Canada, 2006). Strict rules in shelters, the inflexibility of shelter staff, difficulties obtaining housing due to their age, a lack of support in their housing search, and being on income assistance were identified as barriers to attaining stable housing among Vancouver youth who have experienced homelessness (Krusi et al., 2010). Consequently, homelessness has been found to be a predictor to injection drug use initiation for Vancouver's street youth (Feng, DeBeck, Kerr, Mathais, Montaner, & Wood, 2013).

In addition to easily available illicit drugs, high reported drug use among street youth and an increase in homelessness among youth, an At-Risk Youth Study (ARYS) report found that over 30% of participants have attempted to access addiction treatment within 6 months of enrolment into the study (Hadland et al., 2009). The remaining participants reported that they did not feel they had a drug problem that required

addiction treatment, were not ready to stop using, or they did not want to conform to the behavioural requirements of addiction treatment programs (Hadland et al., 2009).

1.5. Risk Environment

The risk environment framework is a contemporary and well-researched perspective on the production of drug-related harms (Rhodes et al., 1999). The risk environment framework looks at social, structural, and environmental influences, shifting away from a focus on blaming the individual for engaging in risky behaviours that has typically informed the development of public health interventions that require individual behaviour change (Rhodes, 2002). The risk environment is defined as “the space – whether social or physical – in which a variety of factors interact to increase the chances of drug-related harm” (Rhodes, 2002, p. 88). The author suggests that when an individual is participating in risk activities, such as injection drug use, using individualistic paradigms emphasizes blaming the individual for their behaviour rather than focusing on the influences which are socially constructed in the environment within which the person lives. Moreover, using this framework for research purposes supports the exploration of social and structural factors extenuating beyond individual level control that mediate risk behaviours, thus producing evidence that supports structural interventions that have been shown to be more effective in reducing risk behaviours among people who use injection drugs.

A successful intervention at the structural level is evident through the implementation of harm reduction policies and programs that have been shown to reduce the risk for blood-borne infections and other poor health outcomes among PWID (Rhodes, 2002). Risk environment research contributed to our understanding of the rapid spread of HIV among PWID in Vancouver during the 1990’s (Rhodes, 2002). This research attributed environmental conditions found in the city at that time, such as a concentrated injection drug using population, limited access to sterile syringes which resulted in increased needle-sharing within this community, and the shift to injecting cocaine rather than heroin due to an increase in cocaine availability, as causes of the rapid spread of the HIV virus among PWID (Rhodes, 2002). The implementation of

multiple harm reduction policies in Vancouver since that time has helped reduce needle-sharing and the number of new HIV infections within the community.

The risk environment framework supports examination of the micro-, meso-, and macro- contexts that are exogenous to the individual including physical, social, economic, and policy forces (Rhodes, Singer, Bourgois, Friedman, & Strathdee, 2005). The micro-environment refers to the structure of social relationships and networks, the influence of peer groups, and the settings where drugs are used, and how drug use is negotiated (Rhodes, 2002; Rhodes et al. 2003; Rhodes et al., 2005; Rhodes & Simic, 2005). The meso-environment refers to the social norms and acceptable behaviours, such as drug using and injecting behaviours, found within a peer group (Rhodes et al., 2005). The macro-environment can be defined as “comprising large-scale social, physical, economic, organizational, and policy systems which combine with the micro-level factors to ‘structure’ the risk environments in which HIV risk and harm is produced and reproduced” (Rhodes et al., 2005, p. 1028). The four types of environmental influences within the risk environment (physical, social, economic, and policy) can be examined at the micro-, meso-, and macro-levels (Rhodes, 2002), and there is often an interplay between the three levels (Rhodes et al., 2005).

The risk environment approach allows us to not only explain “the conditions giving rise to harm ... but also assists in predicting, and thus also preventing them. Crucially, a risk environment approach seeks to maximize risk reduction at the community level” (Rhodes, 2002, p. 91). Risk reduction, such as promoting injection cessation, can be viewed as a multi-level activity which should be promoted through individual, community, policy and environmental change (Rhodes, 2002).

1.6. Constant Comparative Method

A constant comparative method used in qualitative research has been stated to be beneficial in studies that examine social problems considered sensitive, taboo, or stigmatized, such as drug addiction (Glaser, 1965). Using an inductive approach to gathering and analyzing data (Maxwell, 2005), using a constant comparative method can support ideas and concepts that emerge from the voices and experiences of the

participants through the data collection process, rather than testing pre-determined hypotheses (Charmaz, 2006; Engward, 2013; Glaser, 1965). The constant comparative method allows for flexibility in the coding process, where multiple coders may generate different results (Glaser, 1965). The researcher is a part of the research process, acknowledging the researcher's presence during the research process, including interviews and data analysis (Charmaz, 2006), although care is taken to ensure that the researcher remains as objective as possible throughout the process of data collection and analysis (Snape & Spencer, 2003). The research participants are selected based on their personal experiences with the topic being studied (Swanson, 2001). Qualitative inquiry situates the participant as a knowledge expert and allows the data to drive the emergent categories and themes (Simmons, 2006).

Through the use of a constant comparative method, data analysis begins during data collection, allowing information gathered in previous interviews to inform future ones (Engward, 2013). An inductive approach to data analysis allows the researcher to generate ideas from early data (Engward, 2013). As coding becomes more focused and particular to the data set, theoretical concepts begin to emerge (Engward, 2013). The codes are informed by existing academic literature (Engward, 2013). Typically, interviews are conducted until the research has reached data saturation and no new information is being elicited in the interviews (Charmaz, 2006).

Glaser (1965) describes qualitative inquiry as a means to examine marginalized populations and typically taboo subjects as the researcher has the ability to observe the environment and through gaining the trust of the research participants, the researcher can access information other research projects may have difficulty receiving. This method, combined with a risk environment framework, allows this study to explore the themes of the social, structural, and environmental factors that young people identify as influencing their injection cessation and relapse trajectories, as well as barriers or challenges they have faced and how they were able to overcome them.

1.7. Qualitative Research using a Risk Environment Framework

Qualitative research allows the researcher to interview, and at times observe, subjects in their natural setting thus allowing the research to take place within a realistic environment and observations to be closer to reality (Snape & Spencer, 2003). Qualitative research participants provide personal accounts describing how they understand their personal reality (Snape & Spencer, 2003). Through the use of in-depth interviewing, the researcher is able to elicit the meanings, through thick-descriptions, that participants give “their social and material circumstances, their experiences, perspective and histories” (Snape & Spencer, 2003, p. 3).

Qualitative research used in public health elicits an understanding of the various factors that influence health, and how individuals and communities understand and interpret health (Baum, 1995). Moore (2011) explains the various contribution of qualitative research which resulted in the bettering of our understandings of people’s experiences in health related situations, such as accessing health care, the illness experience, and recovering from illness.

A risk environment framework within a qualitative study allows the researcher to generate hypotheses rather than test them (Rhodes & Simic, 2005). This form of qualitative research allows for efforts to “systematically delineate how micro- and macro-environmental influences combine to increase or reduce ... risk” (Strathdee et al., 2010, p. 277). Qualitative methods have been found to help inform, complement and interpret epidemiological studies, which measure one’s risk environment (Rhodes et al., 1999). Risk environment qualitative studies support scientific rigor in interdisciplinary research (Rhodes et al., 1999).

Using a risk environment framework supports this study to examine ways in which the environment presents barriers and facilitators to young people’s drug use patterns including cessation from injection drug use and relapses back to injection drug use, and will help support the development of appropriate and effective public health interventions to reduce the harms of injection drug use among young people. Qualitative methods were used in this study as a means to elicit an in-depth understanding of the

youth's perspective on how the environment within which they live has impacted their ability to cease injecting drugs, including the barriers and challenges they faced when attempting to cease injecting.

There is a lack of evidence regarding the cessation and relapse trajectories of injection drug use among young people. Existing research has tended to quantify individual behaviours which influence injection cessation, rather than examine and understand how the risk environment and risk reduction strategies affect the individual's ability to cease injection drug use. To help address these research gaps, this qualitative research was conducted to examine social, structural, and environmental forces which shape the injection cessation and relapse trajectories among youth who have a history of injection drug use and were living in Vancouver, BC, Canada.

Chapter 2. Methods

This qualitative study is nested within the At-Risk Youth Study (ARYS), an ongoing prospective cohort study in Vancouver, BC. This qualitative study seeks to explore social and structural influences on injection cessation and relapse, and the role that service utilization plays in the injection cessation/relapse trajectory.

2.1. At-Risk Youth Study (ARYS)

The At-Risk Youth Study was established in 2005 to examine drug-related harms among street-involved youth in Vancouver (Wood, Stoltz, Montaner, & Kerr, 2006). ARYS was created to help evaluate the effectiveness of secondary prevention programs developed to prevent the spread of communicable diseases, specifically on how these programs impact street youth in Vancouver (Wood et al., 2006). The authors began with the working hypothesis that exposure to harm reduction programs and being educated about drug using harms would reduce the number of transitions into injection drug use (Wood et al., 2006). In addition, the ARYS study hoped to determine the impact of methamphetamine use on health-related harms, including transition into injection drug use (Wood et al., 2006).

ARYS is a prospective cohort study, which used community outreach to recruit study participants, which is effective in recruiting hidden populations, including at-risk youth. Street outreach is used to help maximize the representation of street youth within Vancouver. Outreach is conducted at night and within specific neighbourhoods around Vancouver where street youth are known to gather. Participants are encouraged to refer their peers to participate in the study, and health and social services professionals can also refer their clients to the study.

Youth who were interested in participating in the study had study details explained to them by ARYS staff and must provide informed consent prior to being enrolled in the study. Eligibility for the ARYS study includes being 14-26 years old and having used any drug other than marijuana in the past 30 days. Both youth who had initiated injection drug use as well as those who used non-injection illicit drugs other than marijuana are able to participate in the study.

ARYS participants are tested at baseline and at 6 months follow-ups for HIV and HCV antibodies. Baseline and biannual follow-up visits consist of interviewer-administered questionnaire and blood tests. The questionnaires collect data pertaining to socio-demographic information, risk behaviours, including drug and sex behaviours, and experiences attempted to access, or accessing, drug and alcohol addiction services (Hadland, Kerr, Li, Montaner, & Wood, 2009). Pre- and post-test counselling is provided in relation to HIV and HCV tests, and referrals to health service agencies are available upon the request of the participant or if the interviewer thinks a referral is needed.

To reduce loss to follow up, contact information (phone numbers and/or email addresses) are obtained from each participant. Participants are eligible for follow-up interviews at the ARYS office and follow-up blood work to test for HIV and HCV antibodies is conducted every 6 months. Participants are given a \$30 honorarium for their participation. Participants are also invited to check in with the office 3 months after their interview and update their contact information, and they receive a \$5 incentive.

All participants are informed of the limits of confidentiality related to interviews, including the legal duty to report child abuse, and if a participant reported feeling actively suicidal or homicidal. Participants are informed of this limit to confidentiality and are told that they have the right to refuse to answer any question, if they are uncomfortable answering it. ARYS staff are trained to report disclosure of current risk of physical or sexual abuse of anyone under the age of 19, and all efforts are made to report the abuse with the participants consent and full knowledge. Participants are offered referrals to free counselling services.

2.2. The Injection Cessation Study

This qualitative study used the risk environment framework to examine social, structural, and environmental factors associated with injection cessation and relapse among youth. The study examined the ecological and contextual forces perceived to facilitate injection cessation. The goal of this study is to provide new information by examining the experiences and perspectives of youth to advance scientific knowledge regarding the transition to cessation in order to facilitate the development of targeted interventions to promote and support injection drug use cessation among young people who use injection drugs.

The specific objectives of this study are to:

1. Identify contextual forces that influence youth's injection cessation and relapse trajectories.
2. Explore the ways in which utilization of youth services influences injection cessation among youth.
3. Explore the role of services during the cessation/relapse transitions among youth.

A semi-structured interview guide (see Appendix A) was created by this author to help ensure the discussion of key topics in each interview, and to generate data regarding study objectives. The interview guide contains questions about the participant's injection drug use history, including injection initiation, injection cessation, and the services accessed during periods of injection drug use and cessation from injecting. The objective was to help determine how the risk environment experienced by participants influenced injection initiation, cessation, and service utilization.

The study received ethical approval from the University of British Columbia Research Ethics Board (UBC-PHC REB #H10-00838) and Simon Fraser University Research Ethics Board (Study Application #2012s0825). All participants provided written informed consent to participate in the study.

Participants for this qualitative study were selected from the ARYS cohort as injection experienced youth between the ages of 19-30 who had no reports of injection for at least one 6-month follow-up period. Survey data from the ARYS cohort was examined in January, 2013 to identify eligible participants. According to this data, a total of 251 participants reported having been injection experienced. Of these participants, 121 reported at least one 6-month period of injection cessation, 9 had reported 2 cessation episodes, and 1 had reported 3 cessation episodes. There were 39 participants who had been lost to follow-up; therefore, 82 participants were eligible to participate in the qualitative study. The list of potential participants was examined to determine which participants had recently been in contact with the ARYS office to determine which potential participants were most likely to be reached through outreach efforts. Phone calls, emails and messages using social media were used to contact eligible participants who had more recent contact with ARYS. There were attempts to contact 28 interviewees: 14 agreed to be interviewed, 1 participant was not interviewed due to scheduling conflicts, and 13 did not return phone calls, emails, or social media messages. Attempts were made to contact an additional 13 other eligible ARYS participants through email and/or phone messages but this did not result in any further responses. The biggest challenge was contacting eligible participants as contact information, such as phone numbers and email addresses, had changed.

During the interviews, 2 participants reported that they had not previously attained a 6-month period of injection cessation, therefore their interview data were not included in this analysis. While these participants may have reported a period of injection cessation on their quantitative surveys, when asked more detailed questions about their injection cessation period in this qualitative study, it was determined that they did not have a 6-month period of cessation.

Interviews were conducted between May 2013 to September 2013. The interviews were conducted by this author with the guidance and help of two other experienced qualitative interviewers (one female and one male). The interviews were guided by the semi-structured interview guide. Interview topics included initiation of injection drug use, cessation from injection, relapses back to injection if applicable, and service utilization. Interviews lasted between 30-75 minutes. There were no dropouts

during the interviews. All interviews were audio-recorded and transcribed by professional transcribers. The interview transcripts were checked for accuracy by this author.

After each interview, this author wrote a summary of the interview to capture each participant's experiences in terms of their initiation into injection drug use, what was happening in their lives that influenced their cessation period, and what influenced any slips or relapses, if any, back to injection drug use. These summaries also captured what services each person accessed, and the services that the participant's found particularly helpful. These summaries helped to inform subsequent interviews. Additionally, the summaries helped inform the preliminary analysis of the data and identify themes used to code the data.

2.3. Data Analysis

All interviews were transcribed verbatim and any identifying information, including names was removed. NVivo 10 software was used to assist in the analysis of interview data. This author coded and analyzed the data using a risk environment framework and a constant comparative approach. Through the use of the risk environment framework, themes were identified to examine the forces which support the injection cessation trajectory and how these forces change depending on the participant's injection status. The written summaries of each interview helped inform the initial round of data analysis, which produced the following codes: injection initiation, accessing addiction treatment, accessing support services, social influence to injection cessation, cessation experiences, and change in drug of choice, change in method of using, pregnancy, prison, and relapse/slips. Initial themes were explored during subsequent interviews. Further reviews of the transcribed interviews were conducted and sub-categories identified, which included: methadone maintenance therapy, inpatient addiction treatment, twelve-step meetings, housing, mental health, peer groups, partners, family support, and marijuana. As interviews were being conducted and the data were being coded, discussion and consensus building by multiple collaborators identified specific categories and subcategories.

Validity in this study refers to ensuring the findings accurately reflect the lived experience and conditions of the study population (Lewis & Ritchie, 2003). The constant comparative method facilitates the achievement of internal validation through checking and comparing a hypothesis achieved from one part of the data is consistent with that found in another part of the data (Lewis & Ritchie, 2003). Validity was developed in this study through data triangulation and comparison between interviews, reviews of the published academic literature, and having multiple reviewers of the coded data, all of which are common techniques used to assure the validity of a study (Creswell, 2009).

Reliability in a study refers to whether the study can be replicated, where similar findings would emerge from another study using similar methods (Lewis & Ritchie, 2003). Attention was made to ensure that the study results are dependable and trustworthy. Transcribed interviews were verified for correctness by the researcher, the definitions of the codes were consistent throughout data coding, the coded data was cross-checked by multiple reviews of the data, and analysis and interpretation were supported by evidence in the academic literature.

Chapter 3. Results

This analysis is based upon a series of 12 in-depth qualitative interviews, which were conducted to elicit accounts of the trajectory from injection drug use to injection cessation, and the barriers and challenges the participants faced in maintaining injection cessation. The interview participants consisted of 7 females and 5 males. The age of the interviewed participants ranged from 20 to 30 years, and the mean age was 26.25. The age range of first injection was between 12 and 29 years, with the mean age being 18.25 years. The age of first cessation ranged between 16 to 29 years, with the mean age being 22 years.

Analysis for this study examined the participants' experiences with injection cessation and relapse to identify forces that were perceived to support injection cessation, barriers to cessation, as well as challenges to maintaining long-term cessation from injection drug use. The findings below highlight that addiction treatment and youth services, such as MMT, housing, and employment facilitate the transition away from injection drug use towards cessation. Additionally pregnancy was identified some female participants as a facilitator for injection cessation. Barriers to injection cessation identified by participants included difficulties accessing addiction treatment programs due to long wait lists, particularly for residential treatment programs and difficulty accessing methadone maintenance programs. Challenges to maintaining injection cessation included peer influences. Several participants stated the need for supportive services for transitioning off methadone once the individual is stabilized.

3.1. Facilitators of Injection Cessation

This analysis identified several facilitators supporting youth transitioning from injection drug use to injection cessation. Access to addiction services was identified as important in the transition to cessation. Most detox and residential addiction treatment

facilities have policies against any drug use which is not prescribed by a medical doctor while an individual is attending the program. These abstinence-based policies help create a drug-free space that some young people find supportive and create a therapeutic environment for healing within the treatment program. Several participants identified having spent time in youth detox facilities in the Vancouver area, and some identified having accessed residential treatment facilities that helped support injection cessation. Some participants accessed treatment facilities within the Vancouver area, while others stated that they attended treatment facilities outside the province.

In addition to detox and residential treatment facilities, a small number of youth in this study identified the benefits of twelve step programs during the initial phase of transitioning from injection to cessation:

"I went to lots of meetings. I don't really go anymore but I went to a lot. I got a sponsor. I did the step work, and it really helped in the beginning. It was a good stepping stone."- Female participant, age 27, interview #4

Some of the participants identified challenges with injection cessation through accessing abstinence-based and detox programs alone, but found success through access to the methadone program. All participants who identified having a period of cessation away from injecting opioids reported that MMT contributed to their success. Participants stated that MMT helped them to avoid opioid withdrawals during their transition period away from illicit opioid use. One young woman described her desire to stop injecting but her lack of success with treatment programs that were not methadone based:

"I always wanted to [...] get on methadone 'cause [...] I had tried rehab many times and it just didn't work for me. Like, I think the longest I've ever lasted was like twenty-two hours or something in a place, so I always wanted to get on methadone."- Female participant, age 29, interview #2

Opioid withdrawals are associated with severe physical discomfort, including hot/cold sweats, body aches, restlessness, vomiting, and diarrhea, which opioid users typically avoid by continuing the use of heroin or other opioids or initiating methadone

maintenance. One female interviewee identified the challenge of her reliance on her boyfriend to obtain and inject heroin which became an issue after he got arrested, leaving her sick with opioid withdrawals. An unplanned separation from her boyfriend and the subsequent dope sickness resulted in her accessing MMT:

“My boyfriend went to jail and I didn’t know how to make money on my own. I didn’t know how to, you know, get the drugs and all this stuff, and I was always going sick. So I was like, I need to get on methadone or something, and figure out what to do. So I went to [a methadone prescribing doctor] and got on methadone there.” - Female participant, age 27, interview #4

Initiating MMT was described by participants as a means of providing stability in their lives. Participants described the uncertainty of how they will find the money to buy their next fix and their unsanitary living conditions prior to accessing the MMT program. One participant described his life while he was still injecting drugs, being involved in crime, living in single-room occupancy (SRO) housing, and having had thoughts of suicide, but concerned staff helped him get the initial support he needed by connecting him with an outreach doctor to help him make changes in his life. This participant’s experience, whilst rare, shows the benefit of having flexibility in youth services:

“...I had given up a little bit. [...] My place is like, such a mess. It was disgusting. [...] My dresser was in the bathroom and like, it was just, you know condoms and needles and, uh, nastiness all over the place, bed bugs and cockroaches [...] I had given up, pretty much. I had lost my heroin in my room and I just didn’t give a fuck about anything anymore. And, uh, I had no way of getting it [heroin] because I was just so awful looking that nobody would [...] want sex from me. [...] I was done doing crime. You know I was waiting for welfare cheques. While waiting for, to die basically, so, um, yeah, I was tired of it but I just had no motivation. [...] So my doctor, who I had seen once before, who goes into the hotel and everything to check up on people, [...] came across me into my room ‘cause the manager of the building, uh, said I needed some help. [...] ‘cause I had just come back from the hospital, for trying to kill myself. Well, wanting to kill myself. Um, so he said you need some help, and he kinda just directed me towards some help.” - Male participant, age 24, interview #3

After initiating MMT, participants described their lives as more manageable as they transitioned away from injection drug use. The participant noted above went on to explain how he was initiated on MMT and entered a youth shelter. The staff at the

shelter allowed him to stay much longer than a normal stay, which helped him gain stability in his life, including seeing his methadone doctor regularly, having support staff available to him, and being able to transition into an independent living facility supported by the shelter:

"...I was there [at youth shelter] for eleven months... Then I went to [independent living apartments]. So, um, [youth shelter] will choose a youth [...] to go live in one of [the] suites, and then [they] will furnish it, and the rent is cheap. ...When you leave you get all your money back, and you get to keep the furniture and everything." - Male participant, age 24, interview #3

Several other participants described the role that housing played to provide stability in their lives and help them transition away from injection drug use. Despite the struggle of finding housing on welfare rates, when housing was found, participants associated having stable and secure housing with having routine in their lives, and a way to keep their time occupied with activities other than drug use or injecting:

"As soon as I got clean, I started looking for housing. And it took a little while but then I finally got it and that kept me stable. And [it] got me, like, into a routine and a schedule and stuff like that, which for me is important. Like, I'm the kind of person that if I don't have stuff to do lined up, like, I get really bored and lonely and that's when it's trouble." - Female participant, age 27, interview #4

One participant spoke about his involvement in a work program offered through a local youth drop-in centre. The participant stated that he was one of a few youth chosen to go work outside of the city for a few months. The interviewee stated that having this time away from the city and the social influence of the drug scene and the networks of fellow injectors really helped change his life around:

"...I got in that program and that really helped me out. Clear my head, that's for sure, 'cause I was getting in the down path and could actually be, it could have been worse, you know, like, that's why I got in that program. I want to get away, like, try to do something better. It actually helped. I didn't, yeah, I didn't get into to it too hard-core or too bad. Ever since, I've tried it [drugs] a few times after the program but not as much as I was." - Male participant, age 24, interview #5

The social stigma around injection drug use viewed by other people was influential for some participants in their transition to non-injection drug use. Participants described the importance of close relationships and how this was influential in helping them quit injecting drugs and transition to non-injection drug use:

“When we first started dating he didn’t like the fact that I injected drugs [...] ‘cause he only smoked it. And he just quit alcohol and crack himself, so, you know. [...] He threatened to break up with me if I didn’t stop injecting.” -Female participant, age 26, interview #12

The visible track marks from injecting drugs were described as an undesirable side effect of continued use. One participant described how having track marks on her arms was a deciding factor for her to cease injecting after her mom noticed them:

“...I went to go visit my mom and I was wearing a short sleeve shirt and she’s like, ‘what happened?’ My vein was like popped out and [...] there was [...] needle pokes, and [...] then I realized, like, when I had to tell her that I went to the doctor to get some tests done, and that was kind of like, it brought awareness to it for me. It was like, that’s really embarrassing, you know.” -Female participant, age 27, interview #11

Substituting the drug of choice for an alternate drug was identified as supporting participants in transitioning away from injecting drugs. Several participants identified marijuana as a substitute and support for ceasing the use of injection drugs. The increased or continued use of marijuana as a substitute was reported to assist several participants in coping with the stressors associated with their transition away from injection drug use. Participants identified using both medicinal and illicit marijuana use as an aid in ceasing injection drugs. The use of marijuana allowed some participants to cope with feelings of discomfort while avoiding injection drug use:

“Being on drugs for such a long period of time is like, that’s how you’re normal. Like, I don’t know how to explain it but ... you feel comfortable in it and you think [...] you have this whole outlook on everything and, like, this is the way things are and now when I stopped using, like, I’m still having a hard time adjusting, but [...] now my outlook on life is totally different and [...] I notice things that I never noticed before and it’s really hard to deal with and that’s why I started smoking weed ...” - Female participant, age 27, interview # 11

Finally, pregnancy was reported to be a facilitator of cessation of injection drug use for 5 female participants. Some females reported substituting their injection drug use with marijuana or tobacco. Others stated that they used only once after finding out they were pregnant, or would reduce the amount of times they used to only a few times a week rather than daily use. One participant stated that as soon as she found out she was pregnant, she handed over her drugs and paraphernalia to the doctor, and quit using drugs immediately:

“I found out I was pregnant with my son and I remember handing all my equipment and drugs to the doctor. I was like, ‘here, take this’. The doctor was like, ‘um, it’s great that you’re quitting and all, like, good for you, but what am I supposed to be doing? And, is this drugs?’... And I was clean throughout my pregnancy.” -Female participant, age 26, interview #12

3.2. Barriers to Injection Cessation

Several significant barriers to injection cessation were reported by participants, which posed difficulty for youth as they attempted or contemplated stopping injecting drugs. Some youth reported barriers to accessing addiction treatment options, such as MMT and residential treatment facilities, others stated that social influences within their peer networks and living in a building where drug use is common contributed to their struggle to remain injection free.

One participant described her struggle to access the MMT program, stating that the daily dispensing fee required was a major barrier for her. In Canada, individuals who are receiving income assistance are able to get the daily dispensing fees required for methadone paid directly to their pharmacy through provincial medical coverage. If an individual is not receiving income assistance or does not have personal medical coverage and wants to receive MMT, they are responsible for paying the daily dispensing fee to the pharmacy themselves. One participant, who initially was not on welfare, described how she needed to be on the MMT program to access welfare and she needed welfare to help pay the dispensing fee. The participant stated that she was finally able to get on the methadone program when her father helped her pay the daily dispensing fee:

"I had my dad that was giving me the money every day for the methadone so that's why it worked out for me, ... and then once I was on methadone [...] I got on welfare right away [...] I had help [from] the girl at the clinic [who] helped, came with me to welfare and helped but yeah, then 'cause I was on methadone, [...] that gave me a medical reason to [...] be able to get on welfare..." -Female participant, age 29, interview #2

Another barrier described by participants was the difficulty trying to access inpatient addiction treatment programs. For example, one young man described how waitlists to get into detox and treatment facilities are too long, indicating that there are not enough detox and treatment beds in the Lower Mainland of Vancouver. This participant indicated that long waitlists have been a barrier for him in the cessation of his injection drug use. He continued to say that wait times vary depending on the program, stating that some recovery houses are easier to get into, however, they provide less support than treatment centres that have longer waitlists.

Additionally, this above interviewee stated that because he is prescribed benzodiazepines, he is limited in the treatment programs that he is able to access. Some treatment facilities have policies indicating that clients cannot take certain types of medications, such as benzodiazepines or methadone. These treatment facilities tend to operate under strict abstinence-based policies and follow the Twelve-Step model for recovery from addiction.

Social influences encouraging individuals who have stopped injecting to return to injection drug use was a theme that arose throughout the interviews. Participants described encountering situations where they would meet old using friends or living in apartments where other people were actively using drugs making it difficult for them to maintain injection cessation. Some participants who continued to live in SRO housing where drug use was prominent, stated that they would continue to use non-injectable drugs, such as marijuana. Additionally, one participant stated that he would isolate himself in his room, not answer his door, not talk with anyone, and smoke marijuana to avoid the temptations to use injection drugs:

"I don't [...] talk to anybody I have no friends I don't go out and hang out with nobody. [I] just stay by myself." -Male participant, age 28, interview #6

One participant described that when she was using drugs, she witnessed some friends relapse back into drug use after returning from treatment, and she was able to learn from their experience. When she stopped using injection drugs, she knew that she needed to physically remove herself from her using friends and the locations where she previously used drugs. She moved in with family in another part of the city and made an effort not to spend time in areas where she previously used drugs:

“Well that’s the problem with a lot of people they’ll get clean and then they don’t have anywhere to go [so] they’re going to go right back to the same friends and the same [area], like I know, a lot of people would go to rehab and come back and they were clean and hanging out with us and they’re like, yeah, I’m not going to use and like, within the day or two they’re using with us again... I was lucky, I took myself out of [the drug scene].” -Female participant, age 29, interview #2

3.3. Challenges Transitioning to and Maintaining Injection Cessation

Challenges maintaining long-term cessation from injection drug use identified by participants included social influences with drug using peers and romantic partners. A male participant reported that every time he relapsed back into injection drug use, a female partner who was actively injecting was involved. Another participant described her struggle to remain in a treatment program when her friend entered the same program. They began using together and she soon left the treatment program:

“[I relapsed after the] first month and a half, two months [of treatment] ‘cause we were.... a friend of mine had just come in. [...] I was still in Phase One (the assessment and stabilization phase of the program), [...] and fuck, we were caught smoking crack on the property, so, [...] then she came in, and then I [...] like started using again.” -Female participant, age 28, interview #14

Specific times in the month when people receive government support, such as income assistance cheque-issue days, were described as a particularly challenging time as there is often an increase in drug use in during this time of the month. One participant described his experience, stating that he found it hard not to use when most others in the building where he was living in were using, and he would use once a month around cheque issue day:

"I still like, started doing drugs a little bit more, up to like once a month type of thing cause I got back on welfare. [...] When I get my cheque you know it's always habit sometimes, you know. People, they [are] always, like, partying and it's like kind of okay [to use] once a month type of thing." -Male participant, age 24, interview #5

Several participants, who described successful experiences on the MMT program, having achieved a significant period of time away from drug use, stated that they had difficulty transitioning off the MMT program. Participants who expressed interest in wanting to initiate a taper from MMT to their doctor reported resistance from their methadone doctor when discussing this possibility:

"Well, the only thing that bugs me is every time I say I wanna come off, he's (doctor) kinda like, oh, uh, it's a bad time right now. You're going through a lot, if you get sick, you might relapse. And then I start to like, kinda agree with him. But then, at the same time I'm like, you know what, [...] if I'm ready, I can do it. But you know, they just-they're like drug dealers. They wanna keep you on it so that they can make money, right." -Female participant, age 27, interview #4

Participants reported that they sometimes felt trapped on the MMT program, which was perceived to limit the participants in what they are able to do in their lives. Participants reported frustration in the way the MMT program is set up with daily visits to a pharmacy for witnessed ingestion, and rarely being able to take carries of the medicine home. The program has been established in this way to prevent individuals from selling their methadone on the streets. While this is important to prevent accidental methadone overdoses, it eliminates the ability to travel without receiving a carry or purchasing illicit methadone or other opioids off the streets:

"I'll eventually get off it right... It is a, like [...] a barrier right now [...] It's hard to go, like, visit people, [like] my mom in Montreal and that's 'cause you can't... um, I always have to have it." -Female participant, age 29, interview #2

"I'm gonna start getting off the methadone though... This week I'm gonna tell them I'm going down ten mls a week. I don't give a fuck; I'm getting off of it 'cause I can't go nowhere. I can't." -Male participant, age 28, interview #6

These accounts describe dissatisfaction felt by some young participants of the MMT program. None of the participants had initiated a methadone taper with their doctor; therefore, it is unknown how a methadone taper would affect their cessation from injection drug use.

Chapter 4. Discussion

This study is one of few to qualitatively examine the influences of the risk environment on youth trajectories of injection drug use cessation. These findings describe the facilitators, barriers and challenges to maintaining long-term injection cessation that young people experience. Access to services and supports, such as addiction treatment, housing, and work programs were attributed to successful injection cessation. Additionally, having access to MMT facilitated injection cessation for opioid injection drug use. Pregnancy represented a critical condition for supporting injection cessation. Difficulties accessing detox and residential treatment programs, and MMT was challenging for some young people. Also the daily dispensing fees presented a barrier to obtaining MMT for young people while attempting to achieve injection cessation. Additionally, peer relationships and social influences were identified as barriers to injection cessation and challenges to achieving long-term cessation. Individuals who had been receiving MMT for a long period expressed a desire to begin a methadone taper but reported barriers, including the reluctance of physicians to support a methadone taper.

This qualitative study indicates that having access to MMT helped participants who were injecting opioids to cease injection drug use. All participants who reported injection opioid addiction had accessed methadone as part of their injection cessation. Opioid dependent participants reported that methadone helped them achieve and maintain stability in their lives, and provided them with an opportunity to move beyond injection drug use in a way that other addiction treatment services had not. MMT has previously been reported as the most effective treatment for opioid use (Callon et al., 2006; Guarino et al., 2009; Yang et al., 2011). A study among young heroin users found that nearly half of those who remained on MMT (48%) for at least one year reported a significant reduction in heroin use, as well as lower rates of cocaine use (Kellogg et al., 2006). The findings from this study add to the existing research on the benefits of MMT for many injection drug users by eliciting youth perspectives on MMT including the role

that MMT played in supporting injection cessation and providing opportunities for stability in the lives of participants.

This study found that some youth experienced barriers to accessing the MMT program including the daily dispensing fee, preventing or delaying youth from receiving MMT. Individuals on income assistance are eligible for full coverage of the dispensing fee (Office of the Provincial Health Officer, 2013). However without being on income assistance or alternate income generation, having to pay this dispensing fee proved to be a barrier for youth. This is consistent with other research, which also found the dispensing fee to be a barrier for accessing MMT (Nyamathi et al., 2007; Parkes & Reist, 2010; Yang et al., 2011).

One of the challenges for young people that this study found with regards to MMT, was the lack of support for tapering off of MMT from physicians. It is possible that doctors expressed reluctance to initiate methadone tapers with their patients due low success rates ceasing methadone use (Calsyn, Malcy, & Saxon, 2006; Gold, Sorensen, McCanlies, Trier, & Dlugosch, 1988). Previous research has found that relapse back to opioid use is common after withdrawing from methadone maintenance programs (Kleber, 2008). Under half (46%) of those on methadone maintenance in BC have initiated a methadone taper, however, many of these tapers were reverted back to maintenance doses (Reist, 2010). A literature review on methadone detoxification conducted by Ksoudo et al. (2013), suggests that tapers may be successful when the client has the will to begin the taper and live without methadone, and the prescribing physician supports the client in this choice. A population-based retrospective study conducted in BC found that successful methadone tapers were done gradually over a longer period of time, where the taper is paused for a period of time to allow for periods of stabilization on certain doses of methadone, with the most successful tapers lasting over 52 weeks (Nosyk et al., 2012). In the current study, none of the participants had begun a methadone taper, only expressed the desire to begin a taper. Future research should include the examination of supportive practices for young people wanting to initiate MMT tapers and cease use altogether.

Accessing a variety of addiction treatment facilities, including detox and residential addiction treatment centers was found to be a facilitator to injection cessation among youth in this study. In other literature, recent participation in addiction treatment programs was positively associated with injection cessation (Evans et al., 2009; Galai, Safaeian, Vlahov, Bolotin, & Celentano, 2003), and those who spent more time in treatment were more likely to not be using at follow-up interviews (Goldstein, Deren, Magura, Kayman, Beardsley, & Tortu, 2011). In this study, twelve-step programs, such as Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) were found to provide some youth support with injection cessation. This finding is consistent with other research studies, that found higher participation in twelve-step groups through meeting attendance and step-work was associated with lower levels of problematic drug and alcohol use (Toubourou, Hamilton, U'Ren, Stevens-Jones, & Storey, 2002). High attendance and the perceived helpfulness of the meetings were also found to be attributed to greater success of abstinence among individuals receiving MMT and participating in AA and NA programs (White, Campbell, Spencer, Hoffman, Crissman, & DuPont, 2014).

This study found that some barriers to addiction treatment include the long waitlists and abstinence-based policies which discouraged the use of some medications, such as benzodiazepines and methadone. Previous research has found that longer wait times were associated with decreased interest in wanting to attend treatment (Downey, Rosengren, & Donovan, 2003). Similarly, a Canadian study found that wait times were considered a deterrent to accessing or seeking treatment (Pascoe, Rush, & Rotondi, 2013). The emphasis on Twelve Step philosophies in some addiction treatment facilities (Doweiko, 2006) can discourage the use of some medications while attending the treatment program representing a barrier for youth finding injection cessation support through prescription drugs and wishing to also access other treatment supports.

The need for supportive, integrated youth services was clearly illustrated in this study. Through the accounts of participants, it was evident that those who were offered several support services experienced fewer barriers or challenges during their transition away from injection drug use. In this study, support mechanisms that were identified included supportive housing, access to employment services, and outreach services.

The literature underscores the need for integrated youth services. Youth who have access to healthcare services tend to have better access to addiction treatment facilities and other supports, such as mental health support, which may be attributed to more intense outreach efforts targeting the street youth population (Hadland et al., 2009). Access to supportive housing was found to also support cessation of injection drug use for the youth in this study, and this finding is confirmed in other studies that report access to stable and secure housing is associated with a decrease in substance use (Cheng et al., 2013; Fast et al., 2009; Roy et al., 2011). Low-threshold employment opportunities have also been identified in a study of adult drug users as a means to aid in reducing the harms associated with continued drug use (DeBeck et al., 2011; Fast et al., 2009), and this approach may have potential to support injection cessation among youth.

This study found that the use of marijuana helped in the cessation from injection drug use for study participants. These findings were contrary to those found in a study conducted with young PWID in San Francisco which did not find that marijuana use aided in the cessation from injection (Evans et al., 2009). In Evans et al. (2009), data were examined looking at those who reported injection cessation at 3 months or more. The study found that being in addiction treatment within the last 3 months was associated with injection cessation. This may explain why marijuana use was not associated with injection cessation in the San Francisco study because most inpatient addiction treatment are abstinence-based and have policies against any drug use, including marijuana. None of the participants in the injection cessation study had recently been in a treatment program, and those who identified using marijuana to aid in maintaining their injection cessation reported having at least a year of injection cessation.

Positive family relationships were found to be a facilitator in the cessation of injection drug use among study participants. Family was identified as being particularly helpful for participants with the means to initiate MMT. Family support has previously been identified as having a positive impact on an opioid user's decision to initiate and remaining on MMT (Lin, Wu, & Detels, 2011).

Peers can have both a positive and negative influence on one's injection cessation. While this study found that peers impeded efforts to cease injecting and facilitated relapses for the participants in this study, additional findings in the literature examined peer influence on relapse back to addiction, including social temptations and peer influence (Ramo, Prince, Roesch, & Brown, 2012). This is consistent with research conducted on injection initiation, which reports a strong influence by social networks, including friends, romantic and sex partners, and family members who inject drugs (Small et al., 2009; Malekinejad & Vazirian, 2011; Roy et al., 2003; Harocopos, Goldsamt, Kobrak, Jost, & Clatts, 2009). Other research indicates the opposite, suggesting that the reduction of drug use within one's social network influences others to cease drug use themselves, although the study did not indicate whether participants ceased injection drug use or non-injection drug use (Buchanan & Latkin, 2008).

The perceived negative views of injection drug users were identified as a facilitator to cease injection drug use. One participant reported experiencing embarrassment when asked about her track marks by her mother. Another reported experiencing a strain in her romantic relationship because of her injection drug use and his disapproval of the same. The experienced or anticipated stigma felt by PWID by family and friends has previously been reported as an influence to cease injection drug use (Earnshaw, Smith, & Copenhaver, 2013).

Relocating one's place of residence away from areas where drug use was rampant was found to aid in successful injection cessation. A study of injection drug users in Baltimore, Maryland also found that a relocation to "less deprived" neighbourhood was associated with longer-term injection cessation (Genberg et al., 2011). Neighbourhoods which experience higher levels of social disorder and psychological distress show higher levels of injection drug use (Latkin, Williams, Wang & Curry, 2005). Thus moving away to neighbourhoods with less disorder and lower levels of stress aids in lessening the frequency of injection drug use.

Pregnancy was also found to be a facilitator to injection cessation among female participants. The women who reported having been pregnant also reported that this was often a time when they would reduce their injection drug use, use non-injection drugs,

such as marijuana or tobacco, or cease drug use completely. This is similar to what is found in the academic literature. Harrison and Sidebottom (2009) found that 55.6% of female drug users ceased drug use after finding out that they were pregnant. Another qualitative study which explored women's perceived risk of drug use and cessation during pregnancy and they found that complete abstinence during pregnancy was not something that the women deemed as a personal goal (Leppo, 2012). Rather, the study found that women "feared the physical and mental pain of withdrawal and the suffering and bleakness of life without drugs" (p. 371). Although the women in our study did not explain why they reduced their injection drug use or continued to use non-injection drugs, the findings in the Leppo (2012) study may help explain why ongoing drug use was common.

The current study found that pregnancy among female participants was a facilitator for injection cessation. It may be that participants reported low levels of drug use during pregnancy due to the potential for social desirability bias with this subject. Alternatively, women who reported a reduction in or cessation from their injection drug use also reported being connected with a local community project for pregnant women who are dealing with drug and alcohol issues. It may be that the increased support they received from the program aided in their cessation of injection drug use during their pregnancy. In addition, other programs for women who use injection drugs and are pregnant have been shown to facilitate access to additional healthcare supports during pregnancy including education, referrals and support for their drug and/or alcohol use (Shewey, n.d.). Programs for women who are pregnant and coping with addiction that emphasize harm reduction as opposed to abstinence have also shown success in supporting women's transition to non-injection drug use (Poole, 2000). These findings support the need for women to have access to low barrier programs, including MMT, during pregnancy to increase successful pregnancy outcomes (Svikis et al., 1997).

This study has a number of limitations. The data may be subject to recall bias, as the accounts from participants were based on retrospective narratives of a period of injection cessation; however research has indicated that PWID provide accurate accounts of HIV-risk behaviours in retrospective interviews (McElrath, Chitwood, Griffen, & Comerford, 1994). Due to the subject of the interviews, it is possible that the

responses from the participants are subject to social desirability bias, reporting what they feel the interviewer wants to hear rather than what is their truth, particularly with topics pertaining to drug use while pregnant, injection drug use, and relapse. This study has a small sample size, therefore, it is possible that these findings are not reflective of the larger injection drug using youth community. Also, the youth participants were older in age for this study, and may not represent the experiences of younger youth. For example, previous research has found that younger PWID have been denied access to MMT due to their young age (Methadone Strategy Working Group, 2001).

In summary, this study highlights the importance of low threshold integrated youth services to help young people cease injection drug use. In this study, MMT was confirmed as being a highly successful program to support injection cessation, although access to the program and the daily dispensing fee were a barrier for some young participants. Increasing access to MMT and removing fee barriers for young PWID should be prioritized. In addition, more research regarding successful MMT tapers for young people should be conducted. Access to youth housing and employment services was found to support injection cessation for young people. In addition, education about, and access to, marijuana substitution programs may help support young people in transitioning away from chronic injection drug use. Young women who use injection drugs and become pregnant should be prioritized for access to integrated harm reduction support services during pregnancy.

Chapter 5. Recommendations

The results of this study indicate the importance of low-barrier, integrated support services for youth who use injection drugs. Supportive housing integrated with other youth services, such as MMT, outreach workers and employment opportunities may increase periods of stability and cessation of injection drug use. Education programs focused on explaining the health benefits of using non-injection routes of drug administration should be offered to young PWIDs in conjunction with other harm reduction programs. Further research should be conducted to examine the doctor/patient relationship when methadone tapers are requested, as well as the use of marijuana to help cease injection drug use.

Youth services should provide support to young people who are ready and willing to initiate a transition away from injection drug use. Programs that provide support for at-risk youth, whether it is shelters, housing, school, and/or employment programs, should develop harm reduction policies for young people who struggle with addiction. Such policies may help facilitate the identification of youth struggling with injection drug use and provide increased access to supportive services that emphasize a harm reduction approach to injection drug use for young people. Access to safe and supportive housing should be made a priority, as housing aids in providing stabilization in young people's lives and can help decrease their drug use (Cheng, Wood, Nguyen, Kerr, & DeBeck, 2014).

Access to the MMT program should be examined to ensure that those wanting to access the program are able to receive methadone without existing barriers, such as the financial barrier to pay the dispensing fee (Nyamathi et al., 2007; Parkes & Reist, 2010; Yang et al., 2011). Easier access to income assistance would be beneficial for young people who are trying to cease injection drug use and want access to MMT and need

financial support paying the daily dispensing fee, as MMT will help these individuals' lives stabilize and improve their overall health due to a reduction in illicit drug use.

Current drug users should be made aware of their influence on their peers who have ceased injection drug use (Small et al., 2009). Several youth that were interviewed stated that their relapse was influenced by drug using peers. Education programs may want to encourage current PWID not to inject in front of peers who have ceased injecting to help reduce a relapse back to injection drug use.

Promotion of non-injectable routes of administration of illicit drugs should be promoted to PWIDs including easy to understand instructions on how to use drugs in a variety of non-injectable ways, such as smoking, snorting, and rectal administration (Bridge, 2010). This information may be provided through workshops in drop-in centers for front-line staff and peers, as well as through written information used to inform injection drug users of the health benefits of transitioning away from injection drug use to other means of using illicit drugs (Des Jarlais et al., 2014).

Future research should be conducted to examine the relationship between the physician and patient when a methadone taper is requested. This study found that participants with periods of stability on methadone who spoke to the prescribing doctor about initiating a taper were often met with resistance. Research on this subject is limited, and additional research on what factors are associated with successful methadone tapers among young people. Providing education for doctors and their patients about how to conduct a successful methadone taper, based on previous research evidence including slower tapers conducted over a long period of time may help young people transition off MMT (Bohdan et al., 2012; Ksoudo et al., 2013).

There is limited research conducted on the use of marijuana as a substitute for injection drug use. It may be beneficial to further explore the use of marijuana as an aid to cease injection drug use. Participants in this study reported that the use of both medicinal and illicit marijuana helped in the cessation of their injection drug use. These results are contrary to findings in other studies that found that continued marijuana use was associated with continued injection drug use (Evans et al., 2009).

5.1. Conclusion

The existing literature on injection cessation is largely quantitative and focuses on identifying predictors of injection cessation. The literature notes low rates of injection cessation and high relapse rates. Several studies have reported continued non-injection drug use among those who have ceased injecting. This study explored the social, structural, and environmental factors that influence the injection cessation and relapse trajectories.

Informed by a risk environment framework, this qualitative study invited participants from the ARYS study who had personal experiences of injection cessation to participate in an in-depth qualitative interview. The objectives of the study were to understand the ecological factors that influence the injection cessation and relapse trajectories, and to determine how service utilization influences injection cessation. The interviews were transcribed and subsequently coded using NVivo 10 software, and a thematic analysis was conducted to identify emerging themes and explore the social, structural, and environmental facilitators of injection cessation, barriers to ceasing injection drug use, and challenges to maintaining the participant's injection cessation status.

This study found that having access to MMT, the use of various youth services, such as addiction treatment, housing, outreach, and employment services, and the use of non-injection drugs, such as marijuana, aided in the cessation of injection drug use. Additionally, the perceived stigma felt by PWID was noted as a facilitator of injection cessation, as was being pregnant. Several barriers were identified to injection cessation, such as difficulties accessing the MMT program due to the daily dispensing fee and difficulties accessing addiction treatment facilities and programs. Peer influence was identified as a challenge in maintaining injection cessation. Also, the unwillingness of methadone doctors to initiate withdrawals from the MMT program was identified as a challenge for individuals who have successfully ceased injection drug use using the MMT program.

Low-barrier, integrated youth services should include support staff, and programs that help stabilize the lives of young PWID. Such services should include MMT, housing

and employment programs. Youth programs should employ harm reduction policies that will continue to support young people during both periods of injection cessation and relapse. Future research should be conducted to determine if these findings are transferable to other populations in various settings. Additionally, further research should be conducted on the relationships between methadone doctors and their patients, specifically examining the initiation of methadone tapers, as well as the use of marijuana as a substitute to aid in injection cessation.

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Appendix A.

Semi-Structured Interview Guide

The purpose of this interview is to get an understanding of the perspectives of youth involved in Vancouver's street scene. Through this study, we hope to learn more about what it is like for youth who inject drugs, the course of their injection drug use, including how they came to quit and how they may continue to inject occasionally. We are hoping to use the information that young people, such as yourself, provide to improve services for youth who are struggling with injection drug use. I am going to ask you some questions about your history of drug use and how it evolved to facilitate a discussion of your personal experiences. The interview should last approximately one hour.

The answers that you provide will be confidential, so please provide honest and open answers. The interview will be recorded and transcribed, but all names and identifying information will be removed from the written transcripts. You can refuse to answer any question if you are not comfortable answering or just don't want to answer it. Your perspective is important to us because your experiences as a young person make you the expert on the topics we will be talking about today.

A. Injection Drug Use

First, I am going to ask you some questions about your transition to injection drugs.

<p>Questions: Tell me about the first time you tried injecting drugs?</p> <p>How often were you injecting when you started?</p> <p>How did injecting drugs change your life?</p>	<p>Probes: What drug was it? Had you ever used this drug before? Who was with you when you first injected? Did someone help you inject, or did you inject yourself? Was it planned, or spontaneous? Was there a reason why you decided to try injecting drugs? Probe regarding: friends or family who injected, withdrawal, to get a better high, economic reasons, homelessness</p> <p>Did you inject only one type of drug? What type of drug did you inject? Were you injecting only with certain people? Who were they? Were you only injecting in a certain place? Where? Where you injecting daily? Weekly?</p> <p>Did your living situation change? Did you quit school? Did your friends change?</p>
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Did you take any steps to help you maintain your decision to quit after a slip?	What help did you seek? Did you go to detox? Did you go to treatment?
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