

QUALITATIVE EXPLORATION OF THE COMMUNITY PHARMACISTS
EDUCATION AND SKILL NEEDS CONCERNIN DRUG ADDICTION IN
SASKATOON

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ABSTRACT

Community Pharmacists are the most accessible health care providers in Canada. Utilizing these cadres in effectively addressing substance abuse and addiction problems would help minimize the health and socioeconomic negative outcomes associated with the disease of addiction. Therefore, the purpose of this project is to: 1) Comprehend pharmacists' encounters with PWSAD including satisfaction, feelings, situation management, red flags, and outcome(s), 2) Identify skills and educational needs for community pharmacists concerning providing optimum services to PWSAD, 3) Define the types of educational/training programs pharmacists require to improve their services toward PWSAD, 4) Identify immediate needs to improve current services (e.g. referral guide) and inquire about possible obstacles facing community pharmacists in providing services to PWSAD. Qualitative methodology was deemed as the most appropriate method for the research purpose. To recruit study participants, a questionnaire was sent to all community pharmacists in the city of Saskatoon. The survey results also provided general understanding of community pharmacists' perspectives about addiction. Another survey was sent to all pharmacy schools in Canada, inquiring about the main educational material concerning addiction in undergraduate curricula. The inquiry concerned with the type of educational knowledge covered including pharmacological aspects, social aspects or others.

Those pharmacists selected to be interviewed were asked to comment on the education and skill needs for community pharmacists and the suitable means to address such needs. Data analysis revealed four major themes; Work Environment, Lack of Knowledge, Health System and Educational and Training Needs. Each theme represents barriers facing community pharmacists to provide optimum health care for PWSAD. It was evident for

educational and training needs that the demand is to have training on the social aspects of the disease such as communication skills and inter-professional interactive learning sessions. The need to focus on the social aspects of addiction was one of the major demands, expressed by participants. This work will influence future educational plans as well as provide suggestions to improve the contemporary educational plans based on a view from the practice field. It is not surprising as the university survey also showed lack of emphasis on the social aspects of addiction within the pharmacy curricula across Canada.

Based on research findings, recommendations were categorized to two main streams; recommendations at the undergraduate level and recommendations at the continuous education and practice level. It is recommended to shift the focus of addiction educational material from pharmacology and law endorsement to social issues and patient care at the undergraduate level. On the other hand, implementing inter-professional sessions as well as protocol that pharmacists can follow during their encounter with PWSAD are key recommendations at the continuous education and practice level.

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DEDICATION

In the loving memories of my beloved aunt Norah. Your memories will always be my personal source of motivation. You are truly missed.

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LIST OF ABBREVIATIONS

PWSAD People who suffer from addiction disease

CHAPTER 1: INTRODUCTION

Addiction is a growing problem that affects individuals, families, and communities both nationally and internationally. (1) Health care providers are expected to be on the front line addressing addiction and reducing its consequences, however, the inadequacy of education and training of health care professionals regarding addiction has been widely documented.(2, 3) No matter how good treatments and interventions are, they can be neither effective nor well utilized with ill-equipped health care professionals. Incompetent health care providers will miss great opportunities to intervene and treat PWSAD. An incompetent health care provider will fail to make the right referral when needed, which will hinder the utilization of other health services. Improving the quality of available services through increasing the competence level among health care providers is probably much more effective than simply implementing new services. In addition, educating and training practicing health care providers will probably save time, money and lives.

Among the various health care providers, community pharmacists are especially poorly equipped with information about the disease of addiction. (4) However, they are positioned to be a key element in any intervention strategy for PWSAD. Community pharmacists are the most accessible health care provider in Canada; they are a trustworthy source of medical advices when needed. (4) Adequate training and education concerning addiction would allow community pharmacists to act as mediators between the health care system, social services and PWSAD. Theoretically, they could provide critical information about treatment options to people suffering from addiction as well as connect them with the right services within the health/social system.

Utilizing community pharmacists to help PWSAD would be a great step in minimizing addiction consequences.

Pharmacists' lack of involvement in addressing the disease of addiction could result from one of two possible hypotheses. First, pharmacists' formal education and training fail to equip them with the needed skills, knowledge concerning addiction and how to encounter PWSAD. The alternative hypothesis is that pharmacists have the educational background and skills concerning addiction, but do not utilize them in their practice. Therefore, this study was designed to test these two hypothesis and generate recommendations to improve pharmacists' engagement level regarding the disease of addiction. This study was set to explore and investigate four main aspects:

1. Comprehend pharmacists' encounters with PWSAD e.g. satisfaction, feelings, situation management, red flags, and outcome(s).
2. Identify the type of skills and education that community pharmacists need to provide optimal services to PWSAD.
3. Define the format of educational/training programs pharmacists require to improve their services toward PWSAD.
4. Identify immediate needs to improve current services (e.g. a referral guide) and inquire about possible obstacles facing community pharmacists in providing services to PWSAD.

The lack of term consistency in the field of addiction created a challenge to use an appropriate term describing people involved in drug addiction behavior. Numbers of terms are being used in the field. The use of the term “Addicts” was not an option since the term is associated with negative image and may be linked to stigma and discrimination. Other terms as People Who Use Drugs (PWUD) is general and encompass people who are not involved in addiction behavior. People Who Abuse Drugs (PWAD) encompasses individuals who abuse drugs for both recreational and non-medical use including addiction. Other terms as substance abusers or drug dependents are not accurately describing individuals suffering from the disease of addiction.

Therefore, for the purpose of this study the term People Who Suffer from Addiction Disease (PWSAD) will be used throughout this thesis to describe people who are addicted to drugs. Throughout this dissertation, I am advocating to the recognition of addiction as chronic illness that can be successfully managed and totally recovered in some cases. (5, 6) The term PWSAD is sought to be the most suitable term for the study purpose. In the field of addiction, there is inconsistency concerning terminology. This thesis is set to investigate “addiction”, which will be defined later on in this document. However, some resources had used “addiction” and “substance abuse” interchangeably. Therefore, although addiction is the preferred term to use in this thesis, the term substance abuse will also be used when citing studies that used the latter term to maintain integrity of discussed information.

Community pharmacists working in the City of Saskatoon (i.e. urban) are the focus of the research. It is understood that community pharmacists working in urban areas are easily accessible by clients. In addition, they have rich resources and available services to support their professional practice.

CHAPTER 2: LITERATURE RIVEIW

Addiction has a negative impact on individuals and societies. The negative consequences of addiction are not limited to the health aspects as it affects the economic level as well as the social fabric of a community. Therefore, addiction has been the subject of many studies since the 18th century (7) and remains an important area for research in the 21st century.(8) Unfortunately, despite all these efforts to understand addiction and respond to its negative consequences, addiction remains one of the most prevalent diseases worldwide.(9) In the following section, addiction will be discussed from different points of view including definition, prevalence and consequences in order to understand the reasons and develop hypotheses for its continuity. In addition, addiction will be examined at the biological level, emphasizing neuroscience, the human brain and human behaviours. Finally, the profession of pharmacy and its part in treating addiction will be examined covering the pharmacists' role, education and responsibilities concerning addiction and PWSAD.

2.1 Addiction Prevalence and Consequences

2.1.1 Addiction Prevalence

Drug addiction is a growing burden on societies worldwide. Globally, the United Nation Office on Drug and Crime (UNODC) estimates that about 230 million adults between the ages of 15 and 64 used an illegal drug at least once in 2010, representing 5% of the world's adult population. (10) Twenty seven million people are using drugs in a way that exposes them to very serious health problems. (10, 11) One behavior that exposes many drug users to serious health problems is injecting drugs, a practice which has been found in 148 countries around the world. (12) China, USA, and Russia representing the three countries with the largest populations of injection drug users in 2007.(12)

It is documented that North America has become the world's largest market for illicit drugs and a major producer for synthetic drugs. (11) In the UNODC report, North America was mentioned on the list for regions with the highest use of cannabis, cocaine and opiates. (10, 11) In 2008, 2.8% of the US population of age 12 and older was considered substance dependent, including illicit substances. (10) Furthermore, prescription drug abuse has recently emerged as a new health challenge in western nations. In the United States, a national survey showed that in 2013, approximately 15.3 million Americans, ages 12 and older, used prescription drugs for non-medical uses. (13) Prescription drug abuse is considered the main driver of unintentional drug overdose death occurring in the United States with approximately 27,000 deaths in 2007, or one death every 19 minutes. (14) Drugs abuse and drug addiction are spreading all over the world exerting negative consequences on individuals and societies.

2.1.2 Health and Social Consequences

Addiction is considered a major burden on the health care system because of its various negative effects on an individual's health and wellbeing. The adverse health effects of drug addiction can be categorized into four broad categories: a) acute toxic effects, such as overdose; b) acute effects of intoxication, such as car accident injuries and violence; c) development of dependence; and d) adverse health effects due to the chronic and continuous abuse of an illicit substance, such as infectious diseases, blood borne diseases, mental illnesses and chronic illnesses (e.g. cardiovascular diseases and cirrhosis). (15) These adverse effects have an impact on almost every aspect of a person's health and wellbeing and consequently affect both society and the health care system.

Internationally, drug abuse and addiction have affected at least 15.3 million persons. (16) Another 27 million people have developed severe drug-related diseases, (16) such as HIV/AIDS,

hepatitis and many other blood-borne diseases. The WHO reported that injection drug use (IDU) has played an important role in the global HIV/AIDS epidemic, (17, 18) the spread of other infectious diseases, and an increase in the number of overdose cases. (19) Statistics showed that in 2003, HIV infection associated with IDU transmission was documented in more than 130 countries. (10) In addition to HIV/AIDS, injection drugs contributes to the spread of many other blood borne diseases, such as hepatitis C. (20)

2.1.3 Addiction Prevalence and Consequences in Canada

Illicit drug use has reached a critical level in Canada; it has been reported that 2.7% of the population aged 15 and older have experienced at least one type of harm due to illicit drug use. (10) Harm includes physical and mental health; social consequences, such as homelessness; loss of employment; and legal issues. (21) It is estimated that there are approximately 125,000 injection drug users and a substantial number of heroin and cocaine users. (22) As a result, the number of HIV cases in Canada has increased. A surveillance study by Health Canada reported that in 1999 there was a 28% increase in the overall number of newly discovered HIV cases that were directly related to the use of injection drugs, compared to a 9% increase during 1985-1994. (23) Unfortunately, the number of people who test positive for HIV in Canada continues to raise from an estimated 64,000 cases in 2008 to 71,300 cases in 2011. (24) Approximately 17% of those living with HIV acquired their HIV infection from Injection drug use. (25) Since 2005, Saskatchewan has displayed a continuous increase in the number of HIV cases. Saskatchewan including Saskatoon Health Region (SHR), reported the highest rate of HIV infection in Canada, with 19.2/100,000 population in 2008 (SK) and 31.3/100,000 in 2009 (SHR). (26)

New data from year 2009 to 2013 showed that injecting drugs continue to be the primary risk for HIV transmission risk in Saskatoon (Figure 1). (27) IDU is reported as the major HIV

transmission risk among all age groups followed by heterosexual sex (Hetero) and male sex with men (MSM). However, heterosexual sex reported as the primary HIV transmission risk in the group aged 60 and above. Seventy five percent of all HIV cases since 2009 reported injecting drugs as a main source for HIV transmission in Saskatoon. In fact, seven out of ten individuals with HIV in Saskatoon reported a history of IDU. However, Saskatchewan Health Region showed a steep decline in the rate of positive HIV cases, however, in Saskatoon the number of HIV cases fluctuated over the years 2010 and 2011 (Figure 2). (28) The highest reported number of HIV cases was in 2009 for both Saskatchewan and Saskatoon Health Region. Furthermore, in Saskatchewan it is estimated that 63% of positive HIV cases are co-infected with hepatitis C and 2.4% are infected with tuberculosis. (28) It is clear that Saskatchewan including the city of Saskatoon is seriously affected by the health consequences of addiction.

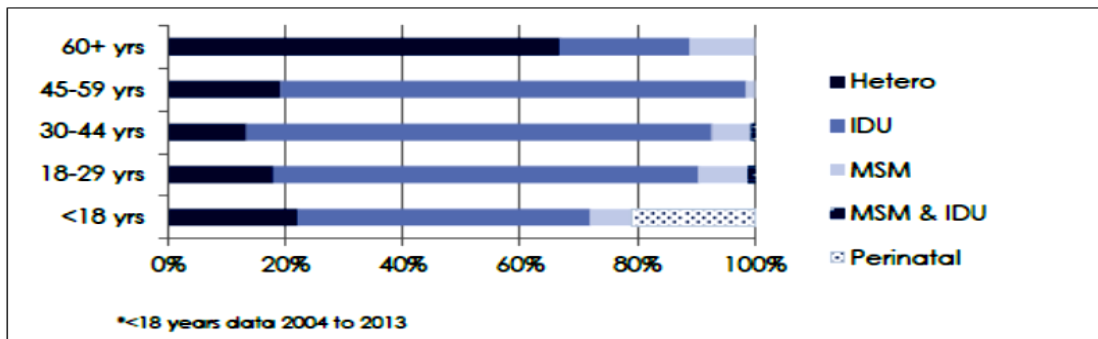


Figure 1: Age Group by Primary HIV Transmission Risk, Saskatoon Health Region, 2009 to 2013*

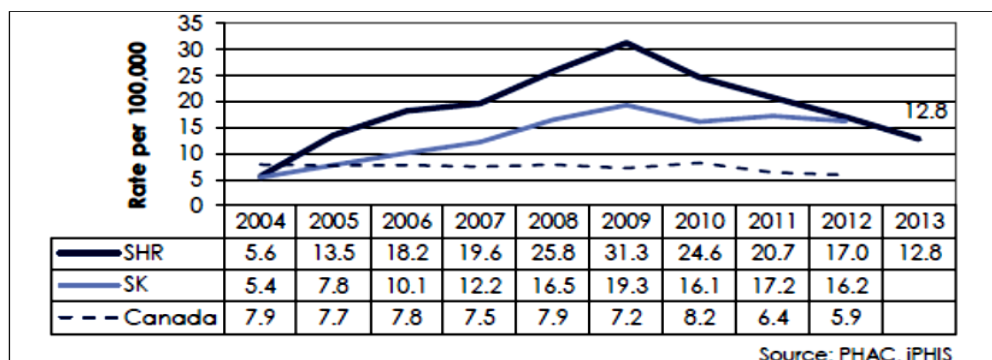


Figure 2: HIV Rates per 100,000 population, Saskatoon Health Region, Saskatchewan, and Canada, 2004 to 2013

In addition to illicit drugs, prescription drug abuse is an escalating problem in Canada that negatively affects the health care system. The incidence of morbidity and mortality cases among prescription drug abusers has shown a noticeable increase. In Ontario, the numbers of opioid-related deaths increased by 416% between 1999 and 2004. (29) A study held by the Centre for Addiction and Mental Health (CAMH) revealed that in Ontario 11% of those enrolled in addiction treatment programs were there because of their abuse of prescription drugs. (30) This indicates a clear correlation between the recreational use of prescription drugs and addiction. In addition, the use of prescription drugs for recreational purposes is increasingly replacing heroin use. A recent study estimated the incidence of abusing Dilaudid® (hydromorphone hydrochloride) to be 37% of participants compared to 30% using heroin. (31) Another cohort study provided evidence that the use of heroin has become negligible compared to that of opioid except in a few cities (e.g. Vancouver and Montréal) where heroin can be smuggled easily. (32) Prescription drug abuse is an alarming trend, which is rapidly spreading in Canada and leading to higher rate of addiction. Canada's health care system, as well as its social and economic fabric, is adversely affected by the consequences of the disease of addiction.

Canadians are considered the heaviest users of psychotropic medication in the world (33) ; however, the exact extent of prescription drug abuse in Canada requires additional studies.

The Canadian Centre on Substance abuse (CCSA) reported in 2002 that the impact of the abuse of tobacco, alcohol and illegal drugs cost \$39.8 billion: while the use of illicit drugs alone estimated to cost \$8.2 billion. Sixty percent of illicit drug users are 15 to 24 years old. The average age for first time use among youth is 11. (23) Closer monitoring of drug addiction could alleviate the economic burden on the health care system and open the opportunity for better health outcomes. Table 1 summarizes costs associated with substance abuse in Canada in 2002.

(23) It should be noted that health costs are strongly linked to HIV and HCV infections, as there is a causal relationship between these infections and injection drug use. The cost of HIV lifetime treatment for every each case is estimated at \$ 150,000. (34) It is expected that the total cost of treating hepatitis C in Canada will rise to \$ 3.96 billion between 2006 and 2026. (35-37) In addition to the treatment cost associated with HIV and HCV, the cost of ambulances responding to overdose cases is approximately \$500,000 in the city of Vancouver alone. There are also substantial downstream costs in the health care system, such as the cost of brain injury treatment caused by delayed resuscitation. (35)

In summary, addiction consequences affect multiple aspects, namely the health care system, security/safety of the community, the economy, and the social fabric. Therefore, there is an urgent need to contain the disease of addiction and limit its effects on society. To accomplish this, a deeper understanding is required of all involved elements in addiction as a disease, so treatment can be approachable and available through various means.

Table 1: Costs Associated with Substance Abuse in Canada 2002

Major Substance Abuse Expenses	Cost in Dollars	Percentage of Total Cost
Loss of productivity	\$24.3 billion	61%
Direct health care expenses	\$8.8 billion	22%
Law enforcement expenditures	\$5.4 billion	14%
Other direct costs	\$ 1.3 billion	3%

2.2 The Definitions of Addiction

Addiction, a centuries old phenomenon, was traditionally linked to alcohol addiction. In the 17th century, being involved in addiction behavior (alcoholic) was seen as a social choice; that people could drink with complete control over their habit. (7) Therefore, at that time, addiction was not regarded as a disease. The first recognition of addiction (still the disease of alcoholism) was in the late 18th century. (38) Some Americans started to describe their alcohol drinking behaviour as addiction, that they had a continuous desire to drink alcohol. (7) Members from the Temperance organization – a social movement against the consumption of alcohol- started to form some theories around alcohol consumption. In the early 19th century, addiction began to be recognised as a disease or disease-like condition. A number of other substances beside alcohol also began to be associated with addiction, such as opium. The nature of the disease of addiction has been controversial ever since. Although addiction has been recognized as a disease for more than 200 years, many drug addicts are still stereotyped for their condition and deprived of their right for adequate health care (39); therefore, a clear understanding of addiction should be developed as it can aid in setting the base for medical interventions.

The concept represented by the term “addiction” does not have a unanimously agreed upon definition in the medical field. The complex, multifactorial nature of addiction makes it hard to define precisely. The urgent need to have a clear and specific definition evolves from the necessity to differentiate addiction from other disorders, such as substance abuse and drug misuse. Differentiation between diseases has critical implications in the medical field for diagnosis, management and treatment planning. The most frequently acknowledged definitions in North America are those attributed to the following organizations: Canadian Society of

Addiction Medicine (CSAM), American Society of Addiction Medicine (ASAM), The World Health Organization (WHO), and The Diagnostic and Statistical Manual 4th edition (DSM-IV).

According to both CSAM and ASAM, addiction is “

“A primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors. Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.”(40)

This definition recognizes the multiple-manifestations of addiction by acknowledging its two major aspects: biological and behavioral. While addiction has been defined as a chronic disease, none of the major health associations in Canada has included addiction on their list of chronic diseases. Canadian Chronic Diseases Surveillance System (CCDSS) tracks chronic diseases such as diabetes, hypertension, and asthma. Although addiction is defined as a chronic disease according to CSAM, it is not included within the surveillance. After contacting the CCDSS (private e-mail), the reason provided was that CCDSS relies on data provided by the health system, including hospitals and clinics, physicians' offices, and hospitalization billing systems, while the services available for addiction and substance abuse tend to be community-

focused (Appendix A). Therefore, addiction could not be tracked through the same means used to track other chronic diseases.

Unlike CSAM and ASAM, the WHO's definition addresses the matter solely from a biological and drug-related aspect. (41) Tolerance and withdrawal were mentioned as the major predominant characteristics associated with addiction. The WHO's definition did not differentiate between addiction and abuse, however, from the 1920s to the 1960s, attempts were made to differentiate between addiction and "habituation", a less severe form of psychological adaptation. In the 1960s, WHO recommended that both terms be abandoned in favor of the term dependence, which can exist at various degrees of severity. (41) Addiction is not included in the current version (ICD-10) of the International Classification of Diseases; (41) however, it is expected to be included in the next edition (ICD-11), as it was reported in the WHO document "lexicon alcohol and drug terms".

Finally, the DSM-IV definition differentiates between *Dependence* and *Abuse* by providing specific guidelines, unlike other definitions. According to DSM-IV criteria, dependence mainly differs from abuse by the presence of tolerance and withdrawal symptoms. (42) In addition to dependence and abuse, misuse is another term used to describe a drug-related behavior. Misuse is interpreted as using medications without proper instructions from health care providers for the sake of favorable side effects, which can include such actions as using laxatives to lose weight. The DSM-IV definition has a great importance in addiction diagnosis. (43) On May 2013, DSM-5 was released with some changes on substance abuse disorder. In DSM-5 substance abuse disorder combine the categories of substance abuse and substance dependence in DMS-IV in to a single disorder, which can range from mild to severe. In addition, substances have been separated under different use disorders e.g. alcohol use disorder, sedative use disorder.

The symptoms in DSM-5 has been strengthen, which a use disorder diagnosis requires two to three symptoms. (44) See Appendix B for the full text of all four definitions.

As discussed above, there is no consensus concerning the definition of addiction. Although each definition highlights important element(s) of the disease, none of them provides a holistic description. Therefore, it is important to consider all four definitions when addiction is being evaluated or addressed.

Since addiction is a very complex disease, many theories have been developed striving for a deeper understanding of addiction. Acknowledging the proposed theories regarding addiction could yield some benefits at the clinical level. However, theories are primarily useful to demonstrate the uniqueness of addiction as a disease and the varied domains involved in its etiology, signs and symptoms, which are important to consider before initiating any medical intervention.

2.3 Theories of Addiction

Addiction is a topic replete with controversy and theories. Acknowledging the theories around addiction will help understand its complex nature and to what extent different factors are involved in the manifestation of this disease. Theories of addiction have been developed as endeavors to comprehend addiction's conceptualization, causations and conditions; stimuli and related factors; susceptibilities among individuals; as well as recovery and relapse. (45) Theories around addiction conceptualization, causation and susceptibilities will be addressed to demonstrate the point.

2.3.1 Theories About Addiction Conceptualization

Theories around addiction's conceptualization split into two main views: biological or behavioral and social. One approach believes that addiction has a mainly biological nature.

Therefore, addiction is seen as a manifestation of biochemical alteration in the central nervous system. This means that people could be born with that defect in their biological system, which will cause their addiction later in life. (46-48) Others postulate that addiction is a result of a biochemical alteration in the human brain due to self-administration of addictive drugs. These chemical and biological alterations can lead to permanent dysfunction in the brain and the nervous system. (49-51) In contrast, other theories consider addiction to be the result of behavioral traits and/or social situations that people experience, which affect them on the psychological level and manifest as addiction in their lives. For example, excessive gambling (52) has been linked with complex personal and social problems. (53)

In addition, drug addiction has been thought of as a “weakness of will”(54) or as a motivation pathology. (55) Motivation pathology is one precise description for addiction, as the personal motivation of a PWSAD toward other activities would be diminished in favor of drug seeking behavior. Therefore, the drug seeking behavior would overpower the strength of personal motivation toward positive goals such as productivity, health and wellbeing. Hofler and Kooyman(56, 57) believe that interruption of important social relationships could be the reason behind addiction, while Stilerman (58) considers addiction a result of negative social experiences, such as discrimination. All of these theories of addiction conceptualization have a certain degree of accountability; however, addiction is a result of an interaction between all these factors. Therefore the concept behind addiction remains ambiguous and far from certain.

2.3.2 Theories About Addiction Causation

A set of theories has investigated the causation and conditions leading to addiction. These theories link environmental and social conditions with the likelihood of addiction. It is postulated that certain environmental factors could be the reason for addiction. DeFeudis believes that some

environmental situations could initiate a cascade of intrinsic biological actions that would increase or decrease the propensity to addiction. (59) For example, it has been found that long term isolation of experimental animals will increase their sensitivity for morphine-induced analgesia. (60) The study may suggest that people suffering from social isolation will have a high tendency to develop drug addiction because of their high sensitivity to morphine-induced analgesia. In addition, the nature of the relationships inside a family has been proposed as one of the environmental catalysts for addiction. A prototypical pattern is seen in the families of males suffering from heroin addiction, where mothers tend to be overprotective and permissive, (61, 62) while fathers were reported to be disconnected or absent. (63) Family experiences were always reported negatively by the addicts. (64) Therefore, family relationships and history is assumed to be on the top of the paradigm of environmental factors that could trigger addiction.

Other environmental related theories include economic, (65) stress, (66) traumatic, (67) and sociological models. (68) In the economic model, it is hypothesised that the use of legally controlled drugs is the gateway for addiction and use of other illicit drugs; this based depending on two main observations. First, the use of legal drugs for adult usually precedes the use of illicit drugs. Secondly, individuals with an active illicit drug use profile simultaneously report active legal drug use simultaneously. (65) Therefore, addiction is seen as a multi-commodity habit formation. In the stress model, (66) work stress was correlated with excessive alcohol consumption and absence due to sickness, while in the traumatic model (67) the relationship between traumatic experiences and addiction has been examined for the influence it could exert on addiction recovery and treatment. In this theory, interventions used for posttraumatic stress disorder has been investigated for a possible role in addiction treatment. The sociological model has investigated drug addiction in relation to the social fabric, where drug use provides

connection at the social level. (68) In this case, addiction is seen as a tool to enhance support and affiliation within the society, even though it contradicts logical reasoning. These models represent many factors that contribute to the formation of the disease of addiction. Therefore, the multidimensional etiological nature of addiction should be considered whenever an addiction intervention is approached. Addiction should be addressed as a medical illness and not be limited to a stereotyped point of view.

2.3.3 Theories About the Susceptibilities to Addiction

Additional theories have been developed in relation to an individual's susceptibility for addiction. Cheng et al., 2000, conducted a genetic study of susceptibilities to smoking among three generations. A genetic model of transmission was identified for the susceptibility to become a smoker. (69) This study shows the effects of the interactions between genes and environmental factors in increasing the probability of transmitting a certain phenotype through generations. In addition to genetic factors, a link between attachment and addiction has been found. In 2000, Canadian researchers published a study that investigated the pattern of attachment between adult children of alcoholics (ACOAs) and adult children of non-alcoholics (ACONAs). (69) They found a significant dysfunctional attachment profile for female ACOAs but not for males. Therefore, gender is considered another factor that influences the susceptibility to addiction within environmental factors. Gender is proposed as a risk factor for a highly susceptible segment of the population (ACOAs). These findings were supported by Jaeger, Hahn & Weinraub (2000), who found that adult daughters of alcoholic fathers had less secure attachment organizations than their counterparts with non-alcoholic fathers. (70) Other theories propose a link between adolescence problematic behavior, (71) personality type (72) and susceptibility for addiction. Studies suggested that problematic behavior in young adults such as

fighting; arrest and antisocial personality type are indicators for alcoholism and drug addiction on a later onset of an individual's life. (71)

A clear overlap exists among the various theories regarding the conceptualization of addiction, its causation, and stimulation. It would be misleading to discuss addiction from one aspect while neglecting other involved factors. Therefore, addiction most likely results from a combination of biological dispositions and environmental and/or social conditions. In conclusion, addiction is a chronic multifactorial disease that necessitates a holistic approach for optimum disease management.

2.4 Neurobiology and Addiction

Neuroscience has the credit in revealing ambiguity of human behavior and brain function. In this section addiction will be discussed and explained in relation to its effect on the human brain and behavioral system. Nervous system and learning behavior will be discussed as well to demonstrate the similarity between developing addiction and the natural learning process. Finally neuronal connectivity and how addiction can affect the stability of neuronal connection in the brain.

2.4.1 Neurosciences and Drug Addiction

Many studies have evaluated neurobiological changes in response to drug exposure. Drugs are considered re-enforcer or stimuli that produce a sequence of changes in the biological system, (73-75) and some investigations have found that the route of drug administration plays a role in the type of subsequent response. (76) Self-administration of drugs is assumed to be the main factor differentiating between developing addiction or physical dependence, terms that are wrongly treated as interchangeable. It is believed that self-administration involves activation of the dopaminergic pathways "*reward system*". (77) The reward system response is the main

incentive system that motivates the activation of natural reinforcements, such as looking for food when hungry or for water when thirsty. In addition, another interesting function for the reward system is establishing a rewarding parent-infant relationship. (78) The activation of the reward system builds attachment between parents and infants, which provides comfort and emotional stabilization. It can be expected that whenever the reward system is activated by any stimuli, it will provoke the feeling of need, similar to the urge to look for food and the feeling of belonging and attachment as in parent-infant relationships. Therefore, it is assumed that with self-administration of drugs and the activation of the reward system, the potential for sensitization will increase. As a result, the individual learns the behavior of drug self-administration along with the development of physical dependence due to neurobiological adaptation (79) in response to the drug administration. This can explain why pain medications under medical supervision - in most scenarios - does not lead to addiction, while the self-administration can lead to addiction. It has been proven that physical dependence is a phenomenon that involves only the neurobiological adaptation to the effect of administered drugs. However, addiction mainly involves sensitization. (80)

2.4.2 Human Brain and the Behavioral Systems

The neurobiological basis of addiction has led some researchers to state that “*Addiction is a brain disease*”. (51, 81) Scientific studies over the past 30 years support this statement. Advances in both neuroscience and behavioral sciences have identified the effects of drugs on the human brain; what areas of the brain are most affected; and why it leads to compulsive drug seeking behavior. (81) Neurobiological studies have generated an immense amount of information relating to the neuronal responses to drugs. In fact, addictive substances affect the nervous system, (82, 83) cells adaptation, (84, 85) as well as impact tolerance and withdrawal.

(86-88) The brain is responsible for complex human behavior such as thinking, memory, judgment, reasoning and planning. The brain performs hard tasks and complex behaviors mainly through two systems: Behavioral Approach System (BAS) and Behavioral Inhibition System (BIS). (89) These systems work simultaneously to maintain homeostasis status.

First, BAS involves two circuits, a reward circuit and a punishment circuit, which work in opposing directions to maintain human survival. BAS is responsible for the functions that are vital for human survival, including eating, drinking, and reproduction. In order to maintain these vital functions, the reward circuit produces a pleasure feeling (hedonic effect). The process, where the pleasure or reward effect is achieved, starts in the ventral tegmental area (VTA). VTA increases the release of the neurotransmitter dopamine in nucleus accumbens (NA), amygdala, septum and prefrontal cortex. NA works on reinforcing the behavior by which satisfaction was reached for fundamental needs, such as hunger and thirst, while the prefrontal cortex works to plan and create future strategies to maintain enough supply of the vital stimuli, namely food and water. In addition, medial forebrain bundle (pleasure bundle) is activated, which is responsible for the repetition of that gratification action to strengthen the associated pathways in the brain over time. The amygdala region of the brain stores the memory resulting from that action to motivate future attempts to conduct the same gratification actions. This complex process and the associated biochemical changes occur in response to the natural reward to insure survival through various means, creating a habit of that action.

On the other hand, the punishment circuit is activated in response to aversive stimuli, such as pain, or extreme heat or cold, which provoke fight or flight responses to cope with the unpleasant situation and reduce the likelihood of reoccurrence. (89) The punishment circuit is activated via the following structures in the brain: thalamus, hypothalamus, amygdala, and

hippocampus. Once the punishment circuit is activated, it increases the release of the neurotransmitter acetylcholine. In turn, acetylcholine stimulates the release of adrenocorticotrophic hormone (ACTH), which activates the adrenal gland, producing adrenaline. The latter stimulates the body's organs for compulsory actions, such as running, fighting, or pushing, in order to stop the unpleasant situation or remove the aversive stimuli. Activation of the punishment circuit inhibits the reward circuit, which explains why a person in pain does not feel any type of pleasure. (89)

Unlike the behavioral approach system, the behavioral inhibition system (BIS) is the last to be activated. It is considered a last resort when BAS (punishment circuit) decides that the fight or flight response will not help the situation and the only viable behavioral approach is to submit passively. BIS is believed to function through the neurotransmitter serotonin. Between these two systems, the behavioral approach system (reward circuit and punishment circuit) and the behavioral inhibition system, the brain ensures the provision of vital needs, such as food, and inhibits any unpleasant condition from reoccurring, such as pain. (90)

Older and Milner, in 1954, were the first scientists to discover the reward circuit. (91) They found that experimental rats learned how to press the lever in a repeated fashion, which produced a direct electrical stimulation to specific area in the brain called the "septal area". The rats' behavior suggested that reward was the motivation for repeating the action. Subsequent studies evaluated the brain's stimulation rewards* phenomena. It was found that electrical stimulation of specific areas of the brain can establish and maintain a reward response habit, which is very similar to the natural reward responses. (92) Similarly, it was found that intravenous injection of drugs (e.g. morphine) produced and maintained a pleasure response (habit forming) equal to those produced and sustained by natural rewards. (93) Therefore, some

addictive substances are known for their high propensity to become addictive substances while others are not. Opioid, cocaine and morphine are common examples of drugs with high a propensity to activate the natural reward pathways within the brain. (94) In other words, abusing addictive substances results in the initiation of the neurobiological reward system similar to the processes occurring naturally under certain circumstances, such as those involving food and reproduction. (85) Therefore, addictive drugs vary in their propensity for addiction depending on their pathways in the neurobiological system. Brain stimulation reward* is believed to play an important role in habit forming with both natural rewards (95) and addictive drugs. (96-98)

2.4.3 Nervous System and Learning Behavior

Learning is another essential behavior controlled by the behavioral systems. Learning is one of the critical functions necessary for human development. Two main types of learning have been identified: operant conditioning and classical conditioning. B.F. Skinner 1948 discovered operant conditioning (99) which is a type of learning that involves strengthening or weakening voluntary responses depending on the reinforcement applied after the action or behavior. With respect to addiction, the hedonic effect that follows intravenous injection of an addictive drug will act as a positive reinforcement, encouraging the repetition of such action in the future. The faster the behavior is rewarded, the faster the learning process to repeat the behavior.

On the other hand, classical conditioning, discovered by I. Pavlov in 1890, provokes involuntary and automatic responses to stimuli. (100) This type of learning involves pairing between neutral stimuli with unconditional response. A well-known example of classical conditioning is Pavlov's dog experiment in 1890, when it was observed that the dog's salivation increased with the bell sound that had been associated with providing food. The dog's salivation increased after hearing the bell even when the food was not served. This meant that the bell

sound had become a conditioned stimulus and salivation a conditioned response. Such stimuli and responses can explain the reason for relapse among PWSAD, particularly when an PWSAD returns to the same environment associated with the drug seeking behavior (i.e. conditioned stimulus). The PWSAD will then start using drugs again (i.e. conditioned response). Such responses are involuntary reactions, provoked by the brain of PWSAD. The association between certain environments with the feeling of being functioning, normal, focused and rewarded may be irreversible, which makes it harder for a recovered PWSAD to stay abstinent. On the other hand, other PWSAD could succeed in linking that experience with punishment. If they activate the punishment side of the operant conditioning, they will have the ability to reduce or reject the negative behavior. It has been speculated that the reward and pleasure experiences outweigh the negative and displeasure experiences, which could be the reason behind the high number of relapses and low number of successful abstinences.

2.4.4 Neuronal Connectivity

The stability of neuronal connectivity patterns varies depending on different factors(101). Highly stable connections are formed in response to an experience that persists over a long period, and the behaviours attached to those connections will dominate. For example, a childhood characterized by hostility and problematic parenting is expected to cause antisocial and hostile behaviours during adulthood, (102, 103) Therefore, childhood experiences are critical for forming adulthood behaviors and performance. The correlation between drug addiction and a childhood that was negatively affected with agonizing experiences, such as sexual abuse, (104) an alcoholic family history,(105) or physical abuse is well documented in the literature. Opiate users were 2.7 times more likely to have a history of childhood sexual and/or physical abuse than were non-opiate users, after controlling for diagnostic and sociodemographic variables. (105)

Similarly, a study of adult and adolescent patients in a chemical dependency rehabilitation program reported histories of childhood sexual abuse for 75% of adult women and up to 90% of adolescent girls, 16% of adult males and 42% of adolescent boys. (106) In addition, 84% of drug- and alcohol-dependent patients were found to have histories of childhood abuse and neglect. (107) It is not clear how a traumatic experience in childhood affects an individual's behavior and choices in the future (adolescence and adulthood). However, the activation of the punishment circuit might be the reason. When the punishment circuit is activated the fight or flight response will try to escape that aversive experience. However, because of the incapability of a child to repel and avoid the hurtful stimuli, he/she will remain passive; the only way to flee is by forcing the reward circuit to work through external stimulus such as opioid that will force dopamine release and provide a moment of pleasure in a stressful environment.

Therefore the neuronal connection responsible for drug addiction and drug seeking behavior may be the most stable and strong connection in the brain of PWSAD. Result in permanent change in the human brain connections. As a result the only treatment option in some cases is the maintenance therapy e.g. Methadone Maintenance Therapy.

2.5 PWSAD and the Utilization of Health Care Services

2.5.1 Addiction-Related Services in Saskatoon

Due to the fact that this study was conducted in the city of Saskatoon, current addiction services available in the city will be highlighted and summarized. Saskatoon is considered one of the fastest growing cities in Canada. (108), and this rapid growth could be one the elements that rise health disparities between different community segments. (109) These disparities are evident through the high incidence of adverse health consequences reported in the core neighbourhoods compared with other neighbourhoods around the city. The prevalence of, addiction and other

health consequences in the core neighbourhood side of Saskatoon prompted the provincial government to institute several health initiatives to provide services for the different segments of the society, including PWSAD. (110)

In 2012, the Ministry of Health reported an investment increase in addiction treatment facilities such as the youth treatment center in Prince Albert. (111) In addition, the Ministry appointed a special committee (The Addiction Advisory Committee) to provide advice and recommendations to strengthen the continuum of care for alcohol and drug services. (112) The terms of reference of the committee were to provide “independent review and advice on the creation of an independent Agency” concerned with addiction in Saskatchewan. The consensus decision was not to create an independent agency rather to improve an integrated system of care through Mental Health and Addiction. One of the major committee recommendations was to facilitate the navigation of patients and health care providers through the health system to find services available for PWSAD and provide a continuum care for addiction patients.

Therefore, an online website was developed to facilitate navigation through available addiction services. The Sask Street Signs website was a good resource of information regarding the available services for addiction and mental health and other related services including, “housing and shelters”, “crisis and emergency services”, and “family and childcare” <http://www.saskstreetsigns.ca/>. The website provided brief information about each service that directed both clients and health care providers to the appropriate source.

As of September of 2013, a new community services website (211 Saskatchewan) was launched to replace the “Sask Street” website. It lists over 2000 organizations and over 5000 programs and services including mental health and addiction. (113) This initiative theoretically could facilitate referral, accessibility and utilization of many needed services. The utilization rate

of the website would be a good indicator of its efficacy, thus I contacted the website administrator via email requesting an estimate of the utilization rate of the website especially the searches for addiction services. The total number of visits was provided for the period of 20 months (September 16, 2013 – May 31, 2015), as indicated in Table 2. It should be noted that only 1.5% of the total number of visits to 211 Saskatchewan were devoted to mental health and addiction services. This indicates that the website is not adequately utilized to find addiction treatment and other related services such as “housing and shelters” or “education and employment”.

The SWITCH (Student Wellness Initiative Toward Community Health) clinic in the Saskatoon downtown area is another initiative that is dedicated to after-hours delivery of medical and health services for people in need. It is interesting to note that the SWITCH program is a student-managed initiative, where students from interdisciplinary professions volunteer to care for drug addicts and other unfortunate individuals. The SWITCH program provides a variety of services, including clinical services, educational programs, childcare and hot meals. AIDS Saskatoon is another service organization that provides outreach education and support for people living with or affected by HIV/AIDS and Hepatitis C (<http://www.aidssaskatoon.ca/>). AIDS Saskatoon services communities in Saskatoon, Prince Albert, La Ronge and Yorkton. In addition, other services are available through the Westside Community Clinic, Methadone Assisted Recovery Program and various detox services.

Table 2: The Total Numbers of Visits to the Website 211 Saskatchewan

Visits to 211 Saskatchewan	Visit Numbers
Total visits	75,797
Total searches	42,570
Total Details Pages viewed	78,285
Total Searches using mental health/addiction Quick link	1,132
• Searches using the addiction Counselling sub-category	101
• Searches using the addiction support group sub-category	173
• Searches using the addiction treatment sub-category	88

2.5.2 Social Determinants of Health

“Poor social and economic circumstances affect health throughout life. People further down the social ladder usually run at least twice the risk of serious illness and premature death as those near the top. Nor are the effects confined to the poor; the social gradient in health runs right across society, so that even among middle-class office workers, lower ranking staffs suffer much more disease and earlier death than higher-ranking staff”.

(World Health Organization: Social Determinants of Health—The Solid Facts 2003). (114)

The wellbeing of an individual results from the interaction between different elements, including life experiences and choices as well as living conditions. The health care system is one element of this collection that provides medical assistance when needed. Health is greatly affected by the living conditions that individuals experience throughout their lifetime. These living conditions – called social determinants of health (SDH) – are the primary factors in shaping health. They may have a role as health promoter or as health oppressor. According to the WHO, social determinants of health are “the conditions in which people are born, grow, live,

work and age. These circumstances are shaped by the distribution of money, power and resources at global, national and local levels”. (115) SDH are usually imposed on person’s life rather than being chosen. It is believed that SDH are responsible for health inequities and force choices—good or bad—on an individual’s lifestyle.

SDH have been acknowledged by Canadian government policy documents since the mid-1970s(116). Canada is greatly involved in health promotion and acknowledges health inequities among Canadians. (117) It is evident that people with higher socioeconomic status will enjoy better health while people with lower socioeconomic status will suffer from poor health. Therefore, SDH are highly instrumental in determining the health status of individuals. SDH vary across countries, cities, and communities. From a Canadian perspective, 14 SDH were recognized (Table3). (116); each one exhibits a strong impact on the health of Canadians. Their impact is assumed greater than the impact of the factors related to behavioral issues, such as diet and physical activities. (118)

Table 3: Social Determinants of Health: Canadians Perspective

<p>Social Determinants of Health Canadian Perspective</p>	<ol style="list-style-type: none"> 1. Income and Income Distribution 2. Education 3. Unemployment and Job Security 4. Employment and Working Conditions 5. Early Childhood Development 6. Food Insecurity 7. Housing 8. Social Exclusion 9. Social Safety Network 10. Health Services 11. Aboriginal Status 12. Gender 13. Race 14. Disability
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Housing is one determinant of SDH that offers a baseline for self-expression and identity. Lack of, or inadequate housing is expected to exert a high load of stress and frustration on

people. (119) Therefore, homeless people exercise some methods to cope with their stressful lifestyle, unfortunately including substance abuse and drug addiction. (120, 121) Unstable housing increases the likelihood for injection drug users to visit emergency departments for various health-related issues. In addition, social exclusion keeps some segments of society marginalised and discriminated for who they are. Feeling helpless and abandoned by their society forces these isolated groups to exhibit some behavioral reactions such as aggressive behavior, (122) low self-esteem and depression. (123) Social exclusion is a critical factor in creating poor living conditions that result in myriad educational, social and behavioral problems. Furthermore, early childhood experiences shape adult physical and mental health. (124) Early childhood development has been linked strongly to adult coping skills and resistance to health negative consequences. (125) In conclusion, SDH should be taken in consideration when any health initiative is approached because of the huge impact it has on the health and wellbeing of individuals and addiction development.

2.5.3 Accessibility to the Health Care Systems

PWSAD show a high rate of utilization of health services due to their high-risk behaviors e.g. injection drug use and unprotected sexual contact, which increase their chances of acquiring adverse health consequences. Frequent hazardous actions associated with drug addiction such as injecting drugs, sharing needles, and overdosing contribute to high use of health services by PWSAD. Chronic substance abusers display frequent and costly use of emergency rooms and social services (126-128) while at the same time preventing timely access for non-substance abuse patients in urgent need. It was found that chronic substance abusers use hospitals emergency rooms 30% more than occasional or nondrug users. (129) Instead of consuming emergency services, PWSAD should be treated in specialized facilities that are devoted to their

condition, such as rehabilitation centers. One study compared chronic drug users and non-drug users regarding their need for and appropriate utilization of the health care system. As expected, chronic drug users reported higher need for health care services; however, the results showed that both groups had received almost the same percentage of health care, (130) and indicates a lack of optimum care for PWSAD according to their actual needs.

Another study in Glasgow, Scotland found that chronic IDUs showed a lower utilization rate of conventional health care services. (131) The authors of the study reported that the reason for that low utilization was the reluctance of IDUs to seek help for their health problems. It is critical for PWSAD to receive the proper care services within a reasonable time to limit the negative consequences associated with addiction. Unfortunately, studies reported that IDUs and chronic drug users are not receiving health care when it is needed. (130, 132) Late presentation of the PWSAD health problems is expected to be costly and ineffective. In the domain of health accessibility, Canada still suffers from poor health equality between society segments especially for PWSAD (133) with their high rate of utilization for hospital services and emergency rooms. Most hospital utilization is related to the complications of injecting drugs. (128) Many of these visits can be reduced by creating community based harm reduction and preventive services where drug addiction can be addressed and detected early. However, research efforts are mostly focused on reasons for health inequity for PWSAD across Canada to solve this issue. (134)

A new Canadian-based study conducted in Ontario found a strong correlation between the dispensing level of prescription opioid analgesic and mortality and morbidity indicators. (135) High rates of morbidity and mortality have negative consequences for productivity and the cost of the health system and are associated with harm to the individuals, their families and society. Many adverse health consequences of drug addiction can be avoided through preventive

services, such as screening, vaccinating and counseling.(136) Therefore, proper use and access to the correct health services would probably improve health outcomes for PWSAD, particularly in early stages.(137) Unfortunately, 49% of the clients who are regular visitors to syringe exchange programs reported receiving no preventive services. (138) It has been documented that utilizing preventive services in an effective way could to save costs of the health system and other services such as emergency rooms. It has been estimated that prevention programs could save \$15 – 18 dollars of other health care expenses for every dollar spent on the preventive services. (139) Adequate utilization of health care services for people suffering from drug addiction reduces drug abuse related consequences and costs. (140) Preventive services utilization will not only reduce the harm caused by drug addiction, it will facilitate proper referral to other health services when needed.

 Methadone maintenance therapy (MMT) and needle exchange program (NEP) are two examples of the benefit of proper utilization of health services by PWSAD. It is proven that MMT has very positive outcomes at both the social and health levels. (141-143) One study measured the relationship between the number of admissions to MMT programs and the social and medical consequences of drug addiction, reporting a noticeable reduction in many drug-related offences (Table3). (144) Other studies reported similar positive outcomes for MMT programs, such as reduction in HIV infection transmission. (145) and improvement in employment status, (145) and improvement in employment status. (146, 147) Furthermore, a study accomplished over three years investigated the relationship between the behaviour of drug injecting and the admission to six different MMT clinics in different states for addiction treatment. (148) The results showed a sharp reduction in the injecting behaviour when entering an MMT program. Such positive outcomes persisted with people who continued treatment. It

was noticed that participants in MMT programs did not only display a reduction in drug injection behaviour, they also displayed a positive attitude about needle sharing. (141) Therefore, it is expected that once such services are appropriately referred to when needed and adequately utilized, the medical and social conditions of drug addicts will improve.

Table 4: The reduction in drug related negative incidents after MMT admission(144).

Drug related events	Property Crime	Arrest	Hospitalization	Death
Number of reduction /1000 cases admitted to MMT	3,869	1251	75	16

The needle exchange program is another example of a health initiative that has a positive impact on the health of PWSAD. Sharing needles between PWSAD is the main source for transmission of blood-borne diseases. A reduction in HIV-contaminated needles was reported, showing a decrease in positively tested needles from 60% to less than 45% in a five-month period. (149) Needle exchange programs and MMT should also be used as a way to expose participants to other beneficial health services, including education, social support and counselling. (150) In fact, clients referred from a needle exchange program to a more comprehensive addiction treatment program showed better treatment retention than other clients with standard referrals (88% vs. 76%) respectively.

2.5.4 Barriers to Accessing and Utilizing Health Care Services

Better accessibility and referral systems will allow PWSAD, who desire change, to challenge their addiction. Therefore, poor accessibility correlates with higher morbidity and mortality which is often reported in vulnerable groups with lower socioeconomic status. (151, 152) Investigating the barriers facing PWSAD to utilize and access health care services

effectively has been the core of several studies. (153-156) Such barriers can be divided into two main categories: mechanical and behavioral barriers. Mechanical barriers include barriers that hinder a PWSAD from reaching the needed health services; these may include lack of knowledge about the available services, lack of transportation, cost, and insurance, or the unavailability of childcare services. (157-159) Mechanical barriers prevent PWSAD from utilizing treatment programs and place them in the risk zone as they continue their drug addiction. In Vancouver, for example, IDUs who reported difficulty accessing the needle exchange program were 3.5 times more likely to share needles than those who did not report such difficulty. (156)

Behavioral and attitudinal barriers are referring to the negative experiences PWSAD encounter after they successfully access the health system, such as stigma, prejudice and discrimination, as well as lack of social support (155, 160). Stigma is one of the major behavioral barriers that prevent PWSAD from utilizing health care services, especially when health care providers are the source of the stigma. (161-164) PWSAD are already stigmatized and marginalized by the community, however, it is challenging when PWSAD face stigmatization and judgment from health care providers yet add another barrier for PWSAD. Therefore, behavioral barriers could have a detrimental negative impact on the client's (i.e. PWSAD) adherence and willingness to treat his/her condition.

In Saskatoon, a recent study identified five different barriers that hinder IDUs from accessing health care services (Table 5). (160) The recognized barriers included both categories (i.e. behavioral and mechanical). Two main behavioral barriers mentioned in this study are poor communication with health services, and discrimination and stigmatization. Poor communication with health services will limit the opportunities for treatment and lower the utilization of the services available for PWSAD. Participants also mentioned lack of viable sources for

information related to the social services and other health care services offered for them within the city. Discrimination and stigmatization from service providers was a major barrier reported by PWSAD in this study. Health care providers should be competent, educated to help, and providing optimum care for their clients. One important mechanical barrier was insufficient financial resources. Acknowledging and working on eradicating these barriers can facilitate providing the intended level of services for PWSAD.

A subsequent study, by the same research team, investigated the barriers from healthcare providers’ perspectives in Saskatoon. (165) Four major barriers were identified (Table 6). Inadequate education and inefficient use of resources were the two major barriers. Services providers agreed that their formal education had a huge gap in terms of lack of information and training related to the disease of addiction. For example, providers who participated in the study mentioned that they rarely received training regarding effective strategies for managing encounters with PWSAD. Furthermore, identifying the proper services that could address the diverse needs of PWSAD was extremely difficult. Additionally, the lack of adequate resources to help their client was another barrier. Long waiting lists and lag time were among the major reasons for frustration among services providers. They reported that the long time between accessing the services and provision of the services leads to the loss of a client’s interest in treatment and recovery.

Table 5: Identified barriers in Saskatoon city to access health care for IDU

<p>The five identified barriers to access health care for IDU in Saskatoon</p>	<ol style="list-style-type: none"> 1- Poor communication with health services 2- Lack of system resources and system policies 3- Insufficient financial resources 4- Discrimination and stigmatization 5- Lack of social support
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Table 6: Identified barriers in Saskatoon city to access health care for IDU from service provider perspective.

The four identified barriers to access health care for IDU in Saskatoon from the service provider perspectives	1- insufficient use of resources 2- stigma and discrimination 3inadequate education 4- the unique and demanding nature of PWIDs
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2.6 Pharmacy Profession and Addiction

2.6.1 The Evolving Role of the Pharmacy Profession

Pharmacists, who are identified as drug experts, (166) can play a leading role in addressing, managing and reducing the adverse impact of addiction on society. They could contribute to the screening, assessment, and referral for PWSAD as well as provide appropriate counseling. Utilizing pharmacists in the battle against addiction is expected to have promising outcomes.

The pharmacy profession is unique, as pharmacists get to deal equally with the two sides—the patient and the drug(s)—of any health issue. Unfortunately, pharmacists often are acknowledged for their drug-dispensing role but little or no attention is paid to their role as it relates to their daily encounters with patients. Over the past decades, the pharmacy profession went through a massive evolution in terms of roles and professional responsibilities.

Pharmaceutical care is a term that describes pharmacists' professional mission as members of a health care team. Pharmaceutical care is defined as:

“The direct, responsible provision of medication-related care for the purpose of achieving definite outcomes that improve a patient’s quality of life. The principle elements of pharmaceutical care are that care is directly provided to the patient, it is provided to produce definite outcomes, these outcomes are intended to improve the patient’s quality of life, and the provider (pharmacist) accepts personal responsibility for the outcome”. (167)

The modern concept of pharmaceutical care was first introduced in 1990. (168, 169)
Pharmacists were asked to “*abandon functionalism and adopt patients-center pharmaceutical*

care as their philosophy of practice” (169), where the social role is a critical element. The Commission on the Future of Health Care in Canada released a report in 2002 that reinforced the growing importance of pharmacists’ roles as members of the primary health care system. This report focuses specifically on the pharmacist’s major role toward patients and as a member of the health care team, in addition to delivering optimum health outcome by effective use of medication. (170) Currently, pharmacists are greatly involved in patient care beyond the mere function of drug dispensing. The recent evolution was influenced mainly by the published report from the WHO and the International Pharmaceutical Federation (FPI) on 2011 (171). It indicated that one of the major pharmacist functions is improving access to health care and closing the gap between patient and health care systems by providing services as a part of a comprehensive health plan.

2.6.2 Community Pharmacists: Position and Privileges

Community pharmacists are among the most accessible health care professionals. Their position gives them the advantage of interacting with patients and other health care professionals on a daily basis. Pharmacists’ knowledge base encompasses a wide range of medical sciences, including pharmacology, therapeutics, pharmacokinetics, pharmacodynamics, adverse drug effects (ADE), and patient care. This wide range of knowledge makes pharmacists the best health care experts in drugs interactions, toxicology, drug regimen, and overdose issues. Furthermore, pharmacists could play a leading role in community sitting in closing the gap between the patient and the health care system. The latter concept was mentioned in the FPI/WHO report as “Good Pharmacy Practice”, an expected role for community pharmacists. FPI/WHO report states,

“In the community setting, pharmacists should be acknowledged as health-care professionals whom patients can consult for health-related problems. Because

health-care products and services are available from the pharmacist, some problems can be managed at this point of care. Problems that require additional diagnostic skill or treatments not available from a pharmacist can be referred to an appropriate health-care professional or site of care, such as a hospital. This should be done in good collaboration between the health-care providers”. (171)

The mix between their ease of accessibility and their wide knowledge base make community pharmacists a valid source for medical information and counseling. In a survey conducted annually by the Gallup organization, pharmacists were rated among the highest trustworthy professionals in the United States. (172) The survey results state,

“Respondents to the 2010 poll gave pharmacists the largest one-year percentage increase in trustworthiness of any profession included in the 2009 survey. Pharmacists are knowledgeable, accessible and take time to answer patients' questions. So it's no wonder that pharmacists are held in high regard”.

Similar results were found in Canada, where pharmacists ranked first for two consecutive years as the most trusted health professional (IPSOS Reid survey, 2011, 2012).(173)

The practice of community pharmacists has evolved, moving away from compounding and dispensing to an almost exclusive focus on patient care. Community pharmacists are seen as the best resources to promote for public health. They have many initiatives directed toward public health and safety e.g. smoking cessation services, healthy eating and life advices and blood pressure control and management. (174) Therefore, it is natural to expect a greater role for community pharmacists to address drug addiction. In fact, pharmacists have proven their competencies as health care providers and their value as members of the medical team.

The Fredericton Pharmacy Initiative study results provide clear evidence for such value, as pharmacists played a key role in improving the health outcome of asthmatic and gastrointestinal patients. (175) In this study, pharmacists were asked to work closely with 262 patients and expand their services to include; medication education and suggestions to improve adherence. In addition, pharmacists were asked to focus on the importance of incorporating recommendations for some lifestyle changes in their discussion with their clients. The study showed that the pharmacist-patient encounters resulted in a 24% reduction in the number of physician visits, and 47% reduction in specialist visits. It also resulted in better medication management, improved work attendance and fewer emergency room visits. (175) Therefore, it can be predicted that if a similar initiative was applied toward PWSAD, great outcomes could be achieved. Drug addiction has been viewed for a long time as a social problem and not a health problem. Drug addiction has been reviewed and compared with other chronic illnesses such as type 2 diabetes, asthma and hypertension. It was found that genetic heritability, personal choice, and environmental factors were equivalently involved in the etiology and course of all these diseases, including addiction. (176, 177) Therefore, the old view regarding drug addiction as a social problem should be eliminated. Health care providers, including community pharmacists, should expand their professional roles to include drug addiction.

2.6.3 Pharmacists: Role and Responsibilities Regarding Addiction

Pharmacists can have a significant role in limiting the negative impact of drug addiction. The American Society of Health-System Pharmacists (ASHP) released a statement about the importance of the pharmacist's role regarding substance abuse issues. (178) The Association of Schools of Public Health (ASPH) stated that pharmacists have the unique knowledge, skills, and responsibilities to assume an important role in substance abuse prevention, education, and

assistance. (178) Looking collectively to the pharmacists' knowledge/skills and their professional responsibilities, pharmacists are anticipated to be effective participants in addressing drug addiction related issues. Unfortunately, community pharmacists are currently underutilized as health care providers. (179, 180) It is natural to question the reasons behind the passive participation of pharmacists in addiction treatment and interventions.

2.7 Barriers Facing Pharmacists to Effectively Addressing Addiction

2.7.1 General Barriers

Many barriers have been identified in the literature that hinder the effective use of pharmacists for drug addiction and harm reduction services. These barriers include: 1) fear, especially fear of losing other clients with no addiction behavior and fear of harming pharmacy staff (181-183); 2) lack of knowledge about the laws regarding harm reduction services (184); 3) inability of pharmacists to refer their clients to proper social or health services (185, 186); and 4) lack of time, training, space, and proper compensation. (183, 184) In Canada, pharmacists also mentioned the lack of clear policy as a major obstacle against their participation in harm reduction services. (187)

2.7.2 Educational Barriers

One important identified barrier is education. Pharmacists spend a minimum of 5 years in undergraduate education. During that time, they have a concentrated curriculum that includes many fields of science. Unfortunately, drug addiction as a disease and the appropriate ways to deal with PWSAD were absent or limited in most curricula. (188) This gap in the educational knowledge of pharmacists regarding addiction and substance abuse has been identified in the literature. Educational hours dedicated to substance abuse and addiction in pharmacy curricula are either limited to one or two or absent in some programs.(31, 188) In Florida, USA, a survey

was conducted at three separate continuing education programs to explore the relationship between the perceived educational level and the actual knowledge of pharmacists. The results showed that the majority of pharmacists (67.5%) reported receiving two hours or less in the pharmacy school regarding addiction and dependency, and the rest of the pharmacists (29.2%) reported no educational hours. (188) Pharmacists who reported formal educational hours on substance abuse were more confident and more likely to provide counseling and right referral than pharmacists who received no or little education. (188) The educational barrier is a huge hindrance for pharmacists' involvement in substance abuse issues. The need to address educational barriers is urgent, so pharmacists can assume an effective role in the field of addiction.

The attempt to enrich pharmacy curricula with drug addiction education is not new. In 1991, The American Association of Colleges of Pharmacy (AACP) issued curricular guideline for pharmacy programs regarding substance abuse. (189) In a follow up survey, pharmacy programs were asked about implementing AACP recommended guidelines. Results were discouraging, as only 50% of AACP guidelines were implemented in 83% of AACP member colleges. (190) The results support the impression that pharmacy schools are still not discussing addiction as a chronic disease. Therefore, pharmacists' professional duty does not entail addressing addiction and delivering optimum care to people suffering from addiction. Unfortunately, the lack of educational sessions was also reported in the continuing education programs. In addition, postgraduate pharmacy training for drug addiction was absent in most programs, including residency programs. (191)

Drug addiction is a critical topic that needs to be well managed for the safety of the public and the community. The evolution of the pharmacist's role as public health practitioner

obligates pharmacists to address drug addiction and help alleviate its consequences on society. Therefore, pharmacy schools should provide programs that would enhance and improve students' skills to the competence level regarding addiction and encounters with PWSAD. (192) In Canada, there is no information about the educational material in pharmacy programs in relation to drug addiction. Therefore, more investigation is needed in this area.

Pharmacists need a clear set of information about the disease of addiction and a clear set of communication skills for encounters with PWSAD. Adding some educational hours about the social(193) and cultural(194, 195) causes behind the disease of addiction in the curriculum is anticipated to encourage empathy toward PWSAD. **This is the merit behind my research;** to understand and explore the educational and skill needs for community pharmacists to be active health care providers in the field of drug addiction. Active participation is not only about providing MMT and NEP services through community pharmacies; it also includes proper referral, counseling, motivation, and education. The addiction and substance abuse problem has reached a crisis level in Canada and it needs to be addressed. Pharmacists could play a key role in addressing addiction. (196)

CHAPTER 3: METHODOLOGY

3.1 Qualitative Approach

A qualitative research approach is chosen to capture the opinions and beliefs of community pharmacists regarding their educational and skill needs in the area of drug addiction. The choice of qualitative methodology over quantitative was determined by the research question. In quantitative studies, the focus is on generalization by testing predetermined theories, while qualitative studies tend to explore and understand in-depth human-related issues with no preconceived process about the phenomena under study. (197) Four differences were identified by Colaizzi(198) that summarize the major differences between quantitative and qualitative research methods (Phenomenology). Firstly, quantitative methods tend to be experimental while qualitative methods are mainly descriptive. Qualitative methods describe the experience or phenomena by words while quantitative methods measure theories with numbers. Secondly, quantitative research focuses on finding causal relationships in the data; however, qualitative research tries to identify concepts and meanings in the data. Thirdly, the principle concept behind quantitative research is calculative; whereas in qualitative research the major concept is reflective and meditative. Finally, it is believed that quantitative methods aim to improve efficiency by dominating and controlling.

Qualitative methods, on the other hand, promote for comprehensive understanding of the interaction between the human nature and the experience under study. Therefore, a qualitative methodology was deemed most appropriate for my project. In fact, a qualitative approach is usually suggested for early stages of interventions or system development. (199) It is designed to answer questions about the nature of complex phenomena with the purpose of describing, explaining, and understanding the phenomena being investigated. (200) Another reason to choose the qualitative approach for this research is that the researcher will gain insights into

participants' attitudes, behaviors and values regarding the phenomena under study. Furthermore, the qualitative methodology was described as an exploratory research tool, which can respond to 'why' 'what' and 'how' inquiries. Qualitative research methods can provide significant and rich descriptions of complex phenomena, to generate and test a hypothesis and to interpret an event or experience from different perspectives. (201) Therefore, qualitative methodology was deemed the most appropriate research method for the purpose of this research.

Phenomenology and grounded theory are the most commonly used qualitative approaches. (202) Phenomenology was deemed the most appropriate qualitative approach for this study purpose. One major prerequisite in phenomenology is to have no preconceived notion, expectation or framework that will guide the researcher through the data collection and analysis. (203) Phenomenology keeps the data as raw as possible without any bias to generate themes that represent the experiences of study participants. (204) In grounded theory, however, it is recommended to have previous research in the area related to the topic under investigation and to form preconceptions or a framework before data collection and analysis. (205) Furthermore, in grounded theory there is a process that govern the social experience under study, (206) while in phenomenology no prior assumption is speculated. In phenomenology, the researcher is open to whatever the data might indicate and whenever it may direct the research. (207) In addition, phenomenology aims at describing the experience or phenomena accurately as perceived by the participants, while grounded theory aims to develop a theory and incorporate it to a model and come up with a generalization about the experience. (205)

3.2 Phenomenology

In this research, an interpretative phenomenological approach will be used. The phenomenological method is an inductive research method, which describe the phenomena from

all aspects with focus on the human experience. (208) Phenomenology is a philosophical approach for discovering the meaning of people's life experiences and understanding their perspectives. Phenomenology studies the essence of the experience lived by the participants and produces in-depth understanding of the phenomenon under study from the participants' standpoint. A phenomenological study tries to understand a small, selected group of people's perceptions, understandings, and beliefs concerning a particular situation or event. (200, 209) Using phenomenology assumes the need to understand the cognitive side of the phenomena, the perspective of the participants, and the effect that the experience has on individuals who lived it. (210) This is concisely the merit of my study: to understand community pharmacists' encounters with substance abusers and what it meant to them. The goal is to devise appropriate recommendations about the education and skills needed to improve the pharmacist's role as a health care provider in the field of addiction. The phenomenological qualitative approach is commonly used in health sciences research, including nursing (211-213) and psychology. (214)

In phenomenology, the only source of information and data is verbal expression, written reports and artistic expression of the people who experienced the phenomena. (215) Van Manen believes that phenomenological research is an in-depth representation of others' experiences to comprehend the whole experience from their perspectives. (215) Therefore, the research participants must have the ability to describe the phenomena with ease in the language that the study is using. They have to be able to understand and express their inner feelings about the experience without any inhibition. It is important that participants have experienced the phenomena recently or have the experience as a component of their daily routine. (202, 203)

In my research, the concern is to assess the educational and skill needs for community pharmacists in the City of Saskatoon regarding drug addiction. The research focuses on the

experiences of community pharmacists when encountering PWSAD. It aims at understanding the dimensions of the encounter, what does the encounter mean and how do community pharmacists feel about it. This will be the probe to comprehend pharmacists' educational and skills needs to improve future encounters.

3.3 Research Sample (Participant) and Recruitment

In qualitative methodology, sampling is a critical stage that will affect the quality of the research findings. Participants should be selected carefully to obtain the information needed to provide in-depth understanding of the phenomena under study. Participants' reflection and experience with the phenomena will generate the answers for the research question. (197). Knowing that people vary in their ability to provide insightful interpretation and understanding of their own and other peoples' experiences, (216) qualitative research depends on recruiting informants with solid understanding of the phenomena as well as adequate communication abilities to describe the phenomena. Therefore, a non-probability purposive sampling technique was utilized to recruit participants for this study. The target population was community pharmacists in the Saskatoon health region. Participants had to be registered pharmacists, practicing in a community pharmacy in the Saskatoon health region at the time of data collection to be eligible to participate. Also, study subjects must have experienced at least one encounter related to the disease of addiction during the past 4 months, regardless if this experience was positive or negative. Negative encounters would include, for example, when pharmacists did not offer the client any advice or referral, or if the pharmacist felt dissatisfaction about the information he/she provided to the client about addiction related inquiry.

Sample size in qualitative studies is usually determined by the research question. There is no precise number of participants to develop rigor and valid qualitative findings. It is totally

dependent on the richness of the information that participants provide during data collection. According to Poltinghorne, (217) 5 to 25 participants are enough to develop general themes from different experiences.

In order to recruit participants that met the research criteria, the recruitment process was accomplished by a survey (Appendix F). A survey was developed and mailed to all community pharmacists in Saskatoon to reach them at their work addresses. Pharmacists' work addresses were available publically at the website of the "Saskatchewan College of Pharmacists". The main purpose of the survey was to recruit community pharmacists to participate in one-to-one interviews. Participants had to meet the above criteria to participate in the interviews.

The survey also collected demographic information about the participants, such as age, gender and graduation year. General understanding about the seriousness of the disease of addiction in Saskatoon and the amount of the educational hours pharmacists received about addiction was collected in the last section of the survey questions. Participants who agreed to participate in the interviews were provided with a small honorarium (\$40 gift card) to show our gratitude for their time and input.

3.4 Data Collection

3.4.1 University Survey

Information about the curriculums and types of information being taught in pharmacy programs in Canada was not available. Therefore, a small survey was conducted to find what is being taught in Canadian pharmacy programs about the disease of addiction. A general e-mail inquiry about the educational material that is being taught regarding addiction was sent to the ten pharmacy schools in Canada (Appendix C). In particular, there was an interest in identifying if

the social, cultural and causal aspects attached to the disease of addiction are being incorporated in curricula and if pharmacy students are trained on how to screen, motivate, refer, and deal with substance abusers.

3.4.2 One-to-One Interviews

Semi-structured interviews were conducted with each participant individually. (218) These interviews were recorded with participants' knowledge and consent. Semi-structured interviews are conducted to allow focused, conversational two-way communications. This allows the participants to feel comfortable sharing their experiences and thoughts. In this setting, participants were at ease declaring any information or personal experiences, in contrast to in a more public setting like a focus group. (219) One of the major benefits of this data collection technique is the ability to develop rapport and gain participant's trust, as well as to develop detailed understanding of participants' responses.

The interview guide had a list of open-ended and closed questions derived from the goals and objectives of the study (Appendix D). These questions were carefully designed to be balanced, unbiased, sensitive, and clear. Probing questions were also prepared to be used if further clarification was required after response to the questions. (220) The same interview guide was used for all participants in an attempt for standardization. In order to test the interview guide, it was piloted prior to implementing the study. (220, 221) The interview guide was piloted and reviewed by four faculty and pharmacy graduate students in the College of Pharmacy and Nutrition to maintain rigor and measure relativity of the questions to the field. All those who participated in the pilot were practicing pharmacists. The question guide was modified based on the responses and feedback provided by the pilot group. Data collected during the pilot was not included in the study.

Ethical approval was obtained from Behavioral Research Ethics Board of the University of Saskatchewan before data collection. Information about the study purposes, objectives, goals and findings will be shared with participants. Informed consent was read and signed from respondents prior to the interview (Appendix E).

3.5 Data Analysis

The recorded interviews were transcribed verbatim, coded, and analyzed. An important and initial aspect of the data analysis is phenomenological reduction (bracketing), which involves determining the natural “meaning unit” as experienced by participants. Data analysis is conducted to assess the data records, organize, and give meaning to the themes that emerge. (222) This is achieved through the coding process, which is the process of identifying the concepts that emerged, their properties and dimensions. The interviews were read as a whole to create general understanding of the experience as described by participants. Some ideas and concepts were mentioned frequently in the interviews. These sentences were merged and collapsed into meaning units and broader themes that were identified frequently in participants’ interviews. (220)

All the interviews were transcribed verbatim into Microsoft Word on the computer. After that, NVivo 10 was used to help in data coding and analysis. The researcher began the open coding by an iterative careful reading of the data. (223) The next step included selecting and naming emerging categories. Through this process, the researcher was able to create a short description of the data content and themes. The themes were then merged into refined higher-level themed groups of codes (categories).

3.6 Validation of the Results

In qualitative studies, there is no precise measurement tool to assess the rigor and trustworthiness of the investigation. Therefore, researchers always seek some measures to increase the rigor of qualitative studies, such as triangulation, respondent validation (224) and data auditing. In this research, two strategies were used triangulation and auditing.

The response rate from the recruiting survey was unexpectedly high (41%). This high response rate provides a great opportunity to utilize the data for in-depth statistical analysis. The quantitative data gathered from the questionnaires supported the themes generated from the interviews. This triangulation of different research approaches developed a seamless overall interpretation. In addition, interview transcripts were sent to corresponding participants for verification. Participants made some minor changes to their interviews transcripts.

Data auditing was employed, with themes and subthemes reviewed and audited by an external researcher, who is not a member of the research team. All the interview transcripts, themes, quotations, and consent forms, were sent to the external researcher for review. The external researcher read all the interviews transcripts to get a sense of the general context and then reviewed the generated themes. It took about a month for the external researcher to send the auditing report (Appendix G). The report indicated general agreement on generated themes and subthemes. However, a few suggestions were made to combine some subthemes and reword the names of a few themes.

CHAPTER 4: RESULTS

4.1 Surveys

4.1.1 Universities Survey

One of the study objectives was to recognize the type of education/training programs community pharmacists would prefer to receive in order to enhance the quality of the services they provide to PWSAD. In order to achieve this objective, knowledge was needed about what is currently available in the undergraduate educational curricula regarding addiction in pharmacy programs. Therefore, an inquiring email was sent to all pharmacy schools in Canada about the educational material used for undergraduate pharmacy students concerning addiction. Four out of ten schools responded on the first round (December 2012) (Table 7). A second inquiry was sent a year after (January 2014) to follow up with the responding universities about any updates to their curriculums, and to encourage those who did not respond to the first inquiry to answer the second one. Out of the ten pharmacy schools, six responded and the results are summarized in Table 7.

A key interest of the inquiry was to identify the focus of the addiction-related educational material, particularly whether the social aspects of the disease (e.g. social, cultural, causes) are covered. In addition, the email included an inquiry about students' training concerning addiction e.g. how to screen, motivate, refer, and deal with PWSAD in general. The summary of the results of the survey is presented in (Table 7). It was not fully clear if the area of interest (social aspects of the disease of addiction) was adequately discussed. However, it was noted that all the curricula had been newly implemented within the last five years, which may indicate addiction related knowledge gap in the educational background of practicing pharmacists who graduated prior to that timeframe. Most concerning is that all curricular descriptions focused on pharmacology and therapeutics and ignored the social aspects.

There was a variation in the number of hours devoted for addiction between the pharmacy programs. Some programs devoted a full course for addiction like, university of Toronto, while other devoted number of hours through various courses likes the University of Saskatchewan. In addition, the year in the program where addiction was addressed also varied. In Memorial University, addiction was mainly addressed in the final year while addiction was addressed for the third year pharmacy student at the University of Montreal. Training was an attached component to addiction education in Memorial University and was absent in other programs. The University of Toronto offered an elective course of addiction and the University of Waterloo was planning to offer elective course of addiction in winter 2014. However, all responded Canadian pharmacy programs emphasized the importance of the pharmacology of addiction, its detection and treatment strategies with little acknowledgment to the social aspects of addiction as well as proper ways of interventions when encountering PWSAD. It should be noted that some programs reported that their curriculum are currently being revised. Therefore, a follow up investigation in the future is needed for updated information.

The inquiry regarding the educational elements concerning addiction was directed to the undergraduate associate deans in each pharmacy school. The associate dean then directed the inquiry to the faculty member responsible for teaching addiction-related materials. It has to be acknowledged as a limitation that the topic of addiction could be covered in other courses during various stages of the program. Therefore, the survey may not have captured all the educational elements regarding addiction in the Canadian pharmacy programs. However, the results provide an overall assessment of the main addiction courses taught through pharmacy programs. Detailed investigation concerning addiction education in pharmacy undergraduate programs would be an interesting topic for future research. Another limitation is that the information obtained from

each program was not consistent like the year the course was taught, numbers of hours and attached training component to the course. Number of universities provided the details of their educational component while others replied briefly with no details.

Due to the complexity and many attached attributes to the disease of addiction, curricula should ideally cover a variety of elements, including: the nature of the disease; social and pharmacological attributes; signs, symptoms and red flags; counseling; referral procedures to other services; and motivational interviews to facilitate change in clients. In addition, the advancements in the neuroscience and the effect of drug addiction on the human brain as well as human behaviors should be discussed.

Memorial University of Newfoundland and Labrador has the most promising program. Pharmacy students are introduced to the pharmacology of drug addiction early in the program. Subsequently, in the final year of the program, students are introduced to numerous addiction-related materials (see table 7). One course devotes two hours to drug diversion (signs to watch for and what to do) and two hours to assessment and treatment. In the assessment and treatment lectures, students learn how to assess patients with drug addiction, how and where to refer, harm reduction strategies, motivational interviewing and the wheel of change. The wheel of change is a process developed by DiClemente & Prochaska in 1982 (225, 226) in order to understand how and why people decide to change risky behaviors on their own or with professional help (225, 227). Motivational interviewing is another process that helps people to overcome their personal barriers and ambivalence (228, 229). Understanding such processes by health care professionals in general and pharmacists, in particular, will allow providers to provide the best possible medical service/advice. There is an evolving movement in pharmacy programs in Canada;

however, there is need for improvement so that pharmacists are more involved in addressing drug addiction issues.

Since this study is investigating the educational needs for community pharmacists, with Saskatoon being the location of the study, additional emphasis will be given to addiction-related educational materials at the University of Saskatchewan. In the College of Pharmacy and Nutrition, University of Saskatchewan, addiction is included under the “Issues in Pharmacy I – Ethics and Professional Responsibility” course. This course is delivered to third-year pharmacy students over two terms. The objective of the course is to equip students with a set of skills that allows them to apply professional judgment in daily practice situations. It is unique for addiction and substance abuse education to be taught under such a course, and implies that pharmacists have significant professional responsibility towards PWSAD. Introducing drug addiction and substance abuse under the umbrella of ethics and professional responsibilities for pharmacists strongly indicates to the students that drug dependency intervention is one of their professional duties.

Furthermore, the course “Ethics and Professional Responsibility” focuses on providing students with background knowledge regarding ethics and the principle of professional judgment. Another goal of the course is to give students background knowledge regarding drug dependency and toxicity-related emergency situations; it highlights pharmacists’ roles in these areas by providing opportunities to interact with practitioners familiar with these issues.

The course is divided to three modules Module I: Professional Ethics and Judgment, Module II: The Pharmacist’s Role in Toxicological Emergencies and Module III: The Pharmacist’s Role in Drug Dependency/ Issues Related to Drug Misuse and Abuse. Fifteen hours are devoted to the drug dependency modules. This module starts with defining addiction using

the American Medical Association definition, epidemiological prevalence, etiology, pathophysiology of substance abuse, etiology, diagnosis and substance abuse rating scales. Subsequently, students are introduced to four main topics: hallucinogens, alcohol, stimulants and opioids.

Although the course intended to provide the students with the skills of professional judgment, the drug dependency section lacks practice and skills training. The focus is on drug categories and the pharmacological aspects of drug dependency. Using the term “drug dependency” was an indicator of the lack of the social aspects attached to the disease, including PWSAD personalities and social needs. There is little acknowledgement to the multi-nature (i.e. social, pharmacological, behavioural, etc.) of the disease of addiction. It is emphasized throughout the course that pharmacists have a significant role and professional responsibilities toward PWSAD. Despite this, the course does not propose strategies to deal with pharmacist-PWSAD encounters. In addition, the course lacks the training piece such as pharmacy skill lab and tutorials. It generally involves group discussions and self-directed study in addition to lectures and presentation from guest speakers.

In addition, students are exposed to one-hour lecture that concerns with caring for PWSAD. The one-hour class is taught under Patients Care III course, which is taught in the final year of pharmacy program. This class emphasizes the concept that PWSAD are patients, who deserve attention and caring similar to other patients. The one-hour lecture highlights the stigma and discrimination PWSAD suffer from in the health care system.

Table 7: Summary of universities responses

The name of the University	Number of years	Source	Summary
1. Memorial University	5 years	Leslie Phillips	Pharmacology of substance of abuse in the 1 st year The bulk in the final year PHAR5302 : <ul style="list-style-type: none"> • 14 hrs. didactic lecture • 2 hrs. tutorial in substance abuse • 2 pharmacy skill labs - one is on methadone and the other on change/year
2. University of Alberta	2 years	Rene Breault	Two lectures devoted to substance abuse disorder: <ul style="list-style-type: none"> • Overview of commonly abused substances (street drugs) • Etiology of substance disorders • Overview of addictions: abuse vs. misuse. • Treatment of alcohol withdrawal • Treatment of opioid addiction
3. University of Toronto	--	Beth Sproule	Fourth year pharmacy course “Alcohol and Substance Use Disorder” include: <ul style="list-style-type: none"> • Alcohol use disorder • Prescription drug abuse /Sedative and hypnotics • Addiction Neuroscience/Abuse Liability Testing • Undergoing change and will have a core component on addiction in their new pharmacotherapies courses
4. University of Saskatchewan	5 years	Fred Remillard	Third year pharmacy course “Issues on pharmacy 1- Ethics and Professional Responsibility” Fifteen hours are devoted to drug dependency part including: <ul style="list-style-type: none"> • Substance Abuse Introduction • Opioids -Substance Abuse • Alcohol -Substance Abuse • Stimulants –Substance Abuse • Hallucinogens-Substance Abuse At Fourth year one hour on the social aspects of addiction was provided under Patient Care III course
5. Waterloo	-	Elaine Lillie	<ul style="list-style-type: none"> • “Don’t place a large emphasis on addiction” • Planning to offer an elective Winter 2014 • Online elective on addiction and chemical dependence • Opioid Lecture: define addiction VS tolerance, screening for opioid addiction as a part of pain assessment, opioid withdrawal, methadone and buprenorphine for addiction
6. Montreal	-	Ema Ferreira	<ul style="list-style-type: none"> • Entry level Pharm D program • Third year pharmacy: 9 hours dedicated to drug addiction

4.1.2 Recruiting Survey

In order to recruit community pharmacists for the study a short survey was developed (Appendix F). The survey** was mainly developed to recruit participants for one-to-one interviews. Another advantageous purpose was to have general understanding of addiction from the pharmacists' perspective. Therefore, the questions were oriented to explore pharmacists' current practice and encounters with PWSAD, and their education related to addiction. In addition, the survey inquired about harm reduction services provided through their pharmacies. Pharmacists were also surveyed on their perspective about addiction in Saskatoon; and finally, questioner respondents were asked if they were willing to participate in the interviews. The questioner* was mailed out to all community pharmacists in Saskatoon. In addition, an online option was available through FluidSurveys™ to complete and submit the questioner. Based on the Saskatchewan College of Pharmacists website, Saskatoon has 556 Pharmacists, 294 of which are community pharmacists (Table 8). Therefore, 294 surveys were mailed out in February 2014 to all community pharmacists in Saskatoon.

Table 8: The number of pharmacists in Saskatoon in different sectors

City	Hospital	Community	Others	Total
Saskatoon	150	294	112	556

By one month after the survey mailing, 124 surveys had been returned. Six surveys were undeliverable; therefore, the sample size of community pharmacists in Saskatoon was reduced to 288. The final response rate was 40.6% (118/288) (Table 9). With such a high response rate, it was reasonable to draw conclusions about community pharmacists' practice in Saskatoon

*Questioner is the instrument for collecting data, which is the written questions in this study

**Survey is the process of gathering information, which could involve other methods of data collection

concerning addiction. In addition, the number of community pharmacists who were willing to participate in the interview (31 pharmacists) exceeded expectations. Limitation to the survey included the lack of detailed responses, as it was not designed to obtain in-depth information but rather being simply a recruitment tool. For example, with almost 50% of survey participants reporting five times or more for their monthly encounters with PWSAD, it is not clear what is the exact number of encounters. In addition, it would be useful if the questioner were extrapolated to have a comparison between numbers of encounters and the neighbourhoods. Another limitation is that participants might not display accurate remembering of the number of the educational hours concerning addiction received during their undergraduate. However, the questioner was mainly developed to recruit participants for one-to-one interviews. Yet the response rate was high, which obligate the researcher to draw some quantitative data despite limitation.

Table 9: Illustration the surveys number

Category	Valid	Undeliverable	No response	Total	Response rate
Number of Surveys	118	6	170	294	40.97%

Community pharmacists in Saskatoon indicated their strong need for education regarding addiction during their undergraduate training, with 71% agreed and 22.2% strongly agreed (Table 10). In addition, 69.2% indicated their need for continuing education concerning addiction (Table 10). These results were not surprising, knowing that 50.4% of community pharmacists reported that addiction is a serious disease in Canada (Table 11). The seriousness of the disease of addiction in Saskatoon was evident from the number of encounters per month pharmacists reported. Forty-nine percent of community pharmacists stated that they have five or

more encounters per month with confirmed PWSAD and/or observe behaviour suggestive of drug addiction (Table 12). Two hours or less was the number of educational hours community pharmacists received in their undergraduate (51.3%) and continuing education (40.2%) concerning addiction. The results of this survey support literature findings (188) that pharmacists lack education and skills to provide optimal health care services to their clients who suffer from drug addiction. In addition, the impact of gender on responses was also assessed showing that there is no significant difference between the two genders regarding various issues such as addiction prevalence in the workplace and the need for additional educational hours in the undergraduate education.

Table 10: Illustration for the survey responses with percentage

Likert scale	Addiction is a serious disease in Canada	Addiction is a prevalent in my working area	There is a need to emphasize on addiction in the undergraduate education	I would benefit from more educational hours about addiction through CE
Strongly agree	50.4%	11.1%	22.2%	28.2%
Agree	45.3%	17.1%	71.8%	69.2%
Dis agree	3.4%	55.6%	6%	2.6%
Strongly disagree	0.9%	16.2%	0%	0%

Table 11: Table showing the number of encounters with PWSAD per month

Number of encounters/month	Percentage
None	4.2%
1-2 times	28%
3-4 times	18.6%
5 times or more	49.2%

Table 12: Table showing the number of received educational hours regarding addiction with percentages

Number of educational hours received	Undergraduate education	CE hours
5 hours or more	7.1%	21.4%
4 hours	14.2%	12%
2 hours or less	51.3%	40.2%
Noun	27.4%	26.5%

4.2 The Interviews

4.2.1 Participants

Among the 118 individuals responded to the questioner, thirty-one respondents agreed to conduct one-to-one interview regarding addiction. Therefore, some criteria were developed to prioritize participants' selection until saturation was reached. The criteria included location, graduation year, education level and gender. Diversity in participants working locations was intended. It was predetermined to have participants working in different areas of Saskatoon to broaden the working experiences influencing the study. Different areas mean different communities, socioeconomic status and experiences. Therefore, participants were selected from downtown (the core neighbourhood) as well as southern and northern regions of Saskatoon.

Regarding the graduation year, we desired to obtain a wide range of graduation years among participants. A few graduates from the 90s, the 80s and the 70s agreed to conduct one-to-one interviews; however, the majority of respondents were newly-graduated (Figure 3). Eight out of the 31 individuals agreed to conduct the interview graduated before 2000 and twenty-three respondents graduated in or after 2000. Educational level also was considered in the selection criteria, with different educational levels desired. Among the thirty-one respondents, only one participant had a master degree, while the rest were educated at the bachelor level. This is not surprising, as those with additional post-graduate training often choose hospital, government or corporate jobs. It was noticed that the majority of participants agreed to conduct the interview has similar perspectives concerning the prevalence of addiction and the need for education (Figure 4). Finally, the goal was to have an equal number of each gender to balance gender perspectives in the findings. However, saturation was achieved with five male and six female participants.

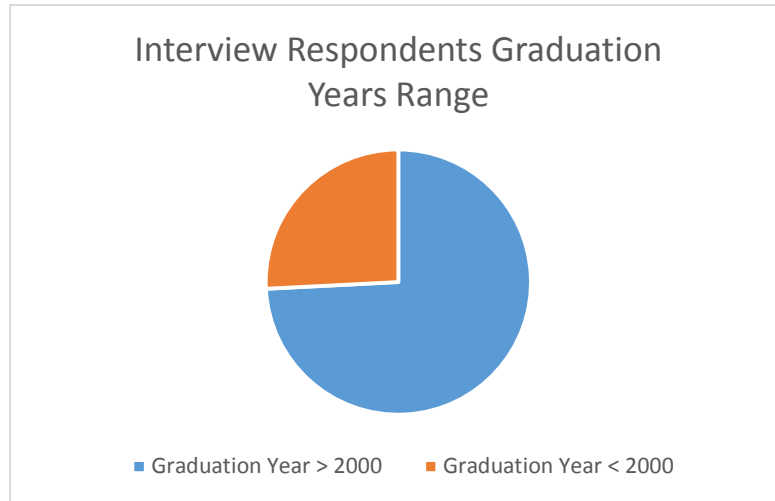


Figure 3: The Graduation Years of Individuals Agreed to Conduct Interviews

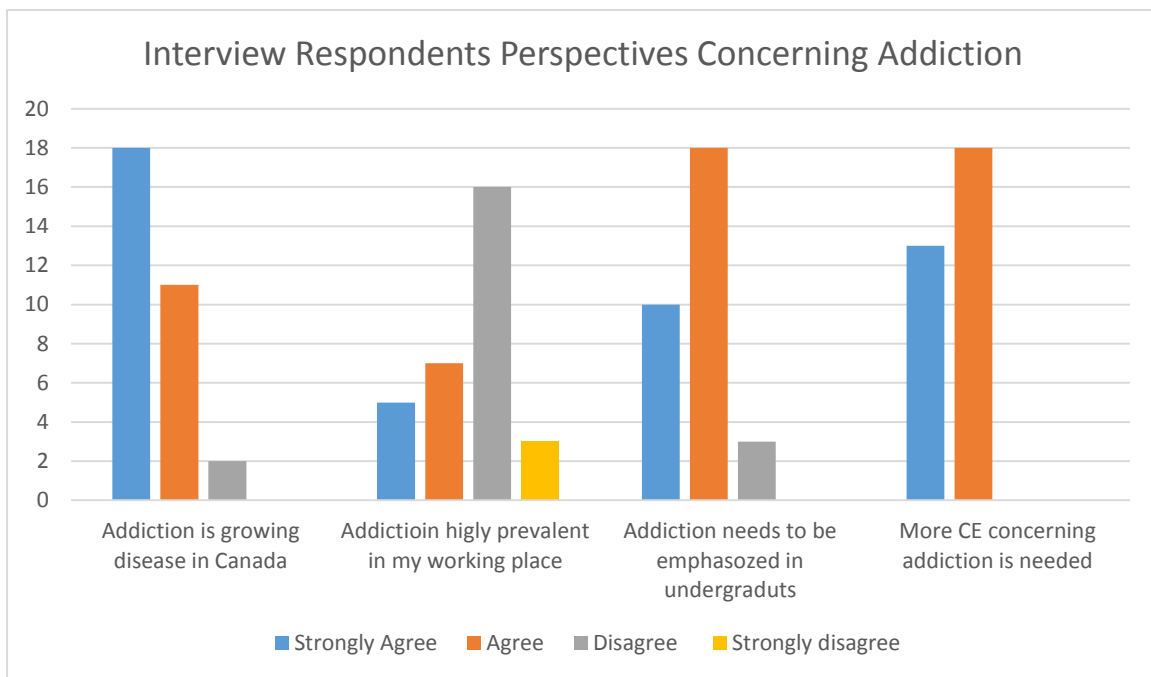


Figure 4: The Perspectives of 31 Survey Respondents who Agreed to Conduct Interviews Concerning Addiction

In this study, eleven community pharmacists were interviewed (Table 13). They were selected from different locations in the City of Saskatoon. Ten of the participants completed their bachelor degree at the University of Saskatchewan and one pharmacist obtained his credentials from a foreign school. All participants showed great interest in improving their services to

provide optimum health care for PWSAD. Four participants held manager positions, and were in position to implement recommendations.

Working experience in methadone maintenance therapy program was a common factor among participants. The majority of participants graduated in or after the year 2000. During the interviews, the input of newly graduates was notable specific with direct suggestions regarding curriculum improvements concerning addiction. In contrast, the input from the respondent who graduated prior to 2000 was scattered and not specific to current curriculum, as it was hard for that individual to recall the undergraduate curriculum. Therefore, it was preferred to interview respondents, who graduated in or after the year 2000 until saturation reached. The participants sample has one participant graduated in 1976 and the other ten participants graduated after 2000.

In addition, as the research aimed at identifying recommendations to improve training for pharmacy students and practitioners recent graduates were found to be more suitable. Notably, 73% of the survey respondents who were interested in participating in the study were recent graduates (Figure 3). Saturation was reached with 11 interviews as no new major themes emerged from the data.

It is clear that the participants are genuinely motivated and interested in the topic – addiction. This could be claimed to be a source of bias or intentionally directing the results to certain direction. However, my justification for this is that the phenomena under study – the knowledge gap in the community pharmacists concerning addiction- is a new phenome that had not been investigated from the perspective of involved individuals before. Therefore, purposive sampling was needed to create basic understanding of the phenomena.

Table 13: Participants' related demographic, educational and practice information

Name	Graduation Year	Gender	Methadone Experience	MMT	School of graduation	Management position	Degree
Participant no.1	2005	male	yes	no	U of S	Yes	Bachelor
Participant no.2	2000	male	-	no	U of S	Yes	Bachelor
Participant no.3	2007	male	yes	yes	International Graduate	Yes	Master
Participant no.4	2006	female	yes	no	U of S	-	Bachelor
Participant no.5	2012	female	-	no	U of S	-	Bachelor
Participant no.6	2012	female	-	no	U of S	-	Bachelor
Participant no.7	2009	female	yes	yes	U of S	-	Bachelor
Participant no.8	2012	female	yes	no	U of S	-	Bachelor
Participant no.9	1976	male	yes	no	U of S	-	Bachelor
Participantno.10	2000	female	yes	yes	U of S	Yes	Bachelor
Participantno.11	2004	male	yes	no	U of S	-	Bachelor

4.2.2 Themes

Thematic analysis of the interviews generated four major themes and eleven subthemes (Table 14). Two themes illustrate challenges facing community pharmacists in Saskatoon at the educational level: Lack of Knowledge, and Educational and Training Needs. In addition, two additional themes were related to environmental factors: Work Environment and the Health System.

Table 14: The generated themes and subthemes from the interviews

Themes	Subthemes
1- Work Environment	Red Flags
	Demographics and Location
2- Lack of Knowledge	Addiction and PWSAD
	Harm Reduction
	Social Aspects and Disease Management
3- Health System	Referring and Resources
	Promotion For Pharmacists Role
	Lack of Management Protocol
4- Educational and Training Needs	Training
	Recognizing the Social Aspects
	Direct and Interactive Education

4.2.2.1 Work Environment:

Study participants mentioned work environment as a critical factor that influences their practice. Participants were asked to describe a regular day of their work in relation to drug addiction. Regardless of their working locations, participants reported at least one monthly encounter with clients whom they suspected of drug addiction. The rate of encounters with PWSAD, and pharmacists' views of them, varied immensely depending on the demographics and location of the pharmacy. However, participants all reported the same addiction-related behaviours that raised their suspicion about certain clients.

4.2.2.1.1 Red Flags:

There was general consensus among participants regarding signs and behaviours (red flags) that indicate potential drug addiction. During the interviews, participants shared similar scenarios for these warning signs of addiction-related behaviours. Regardless of the location, early refills were a major red flag identified by participants (Quote 1). Early refill is one of the major challenges and a source of confusion for community pharmacists because of the high number of enquiries and the difficulty of determining legitimate situations. Prescription painkillers (e.g. Tylenol#1), narcotics and other prescription drugs (e.g. gabapentin) are the most common drugs that make pharmacists suspicious of addiction-related behaviours (Quote 2). Other drugs were mentioned such as Mersyndol[®], an analgesic drug with codeine, and Gravol[®], an antiemetic drug that produces “high effect” when mixed with alcohol, where participants related them to drug addiction.

“Oh the time frame. ... looking for early refills..... specifically asking for no substitution..... seeking certain types of drugs perhaps that we.....[question] whether they need that therapy so there are those kinds of red flags out there”. Quote 1

“Then again we have a lot of our customers to which I feel could be addicted to their narcotic pain killers”. Quote 2

In addition, pharmacists indicated that it is very challenging to determine which client has a legitimate condition (i.e. truthful) versus those who “bluff”. However, participants mentioned that the Prescription Information Program (PIP) aids in identifying those who seek drugs for addiction. PIP allows pharmacists to track prescription drugs, including filling history, which helps them with decision-making. Participants acknowledged PIP as a critical tool in their day-to-day practice, especially with new patients or clients (Quote 3). There are some patterns pharmacists can notice using the PIP system that helps them identify clients with drug addiction

behaviours, namely obtaining an opiate formula from multiple doctors or multiple requests for early refills. In addition, PIP allows pharmacists to notice that some clients have opiate prescriptions from hospital doctors in addition to their family doctor. Participants indicated that they suspect that clients are using hospital prescriptions to fill the gap for their addiction needs between the regular prescriptions provided by their family doctors. This was another dilemma, as participants indicated that they are not sure whether to fill these hospital prescriptions or not.

“For people, who are not on methadone we can tell through PIP their drug seeking behavior. It is one of the greatest systems ever built in Saskatchewan. You can even track Tylenol#1 and how people are abusing it. From my experience in Ontario where I took that International pharmacy graduate program even in Ontario they don't have it [PIP program]. Basically they can go to one pharmacy and get hundreds of tablets from Tylenol#1, which is not even allow[ed] in Saskatchewan to carry.... Then after getting it from this pharmacy go to the next pharmacy and decided to get another hundreds, which is very easy because there is no tracking system” Quote 3

Participants mentioned needle requests and needle marks on client arms as another common red flag. Participants indicated that inquiries for a small number of syringes often would be for injecting drugs intravenously (Quote 4). Pharmacists mentioned that this type of client always has the perfect story to explain their small request for needles

“Most of the time when we encounter drug addicts its when the IV drug abusers are coming to the counter and just asking for 10 pack bag of syringes” Quote 4

In addition to body marks due to injecting drugs, body language was another red flag mentioned by participants. Body language includes the way clients talk, eye contact, or shakiness. Participants agreed that clients with less eye contact and overly friendly behaviour trigger their suspicious (Quote 5). Furthermore, calling drugs by nicknames was another red flag for addiction reported by the participants. Participants reported that some clients may call drugs

by nicknames or street names, e.g. Gaby for Gabapentin, Dilly for Dilaudid® (Quote 6).

Gabapentin is a prescribed drug that is mainly used to treat seizures; however, participants reported that some clients get “high” with high doses of Gabapentin. Dilaudid is the brand name for hydromorphone, a morphine derivative. Therefore, many PWSAD use it to get high. . Other signs indicating drug diversion were mentioned, including old dated prescriptions, worn prescriptions, asking for some over the counter drugs that are related to drug addiction (e.g. Graval).

*“What I look for in patients is mostly in their body language
Not making eye contact, looking for specific items that you can associate
with addiction. You know, needles they are looking for, trying to find,
usually looking for small quantities, people looking for one needle or 10
needles versus looking for a box of insulin needles” Quote 5*

*“I hate to be opinionated but you can... [identify PWSAD] if someone is
shaky or if they have needle marks in their arms or hands umm their
demeanor I guess their attitude umm the way that they speak..... if they
nicknamethe drugs, like dilly’s for Dilaudid or something like that to me
that’s a red flag I don’t know if that tends to be [the] norm”. Quote 6*

4.2.2.1.2 Demographics and Location

The type of the community and the location of the pharmacy were mentioned by participants as two important factors affecting their practice. Demographics of the community determine the type of clientele the pharmacist encounters. Participants constantly stated this factor and how it affected their practice, management, and expectation. The consensus was that socioeconomic status of communities immensely affects the number and the type of encounters (Quote 7). Participants agreed that in communities associated with higher socioeconomic status, there were fewer numbers of encounters with PWSAD. Conversely, communities with lower socioeconomic status had more encounters with suspicious behaviours and potential drug diversion (Quote 8, 9). The overall lower number of encounters in communities with higher

socioeconomic status was not an indicator for lower rate of addiction; however, it was justified by one of the participants as the capability of the community members to fulfill their drug needs from other places which cost more, like street drugs.

“I would say drug seeking behavior from a range [of] people specifically lower income, low socioeconomic status but really is [related to] any age rangeit seems to be across a variety even to some elderly patients but definitely it tend to be a large [issue for low] ... socioeconomic status but it is not even addressed or limited to that population” Quote 7.

“Depending on the location of the pharmacy if it’s a lower social-economic ... you will see more tie-ins with prescriptions for pain relievers umm tobacco use umm you definitely do see customers approaching you that are perhaps under the influence of alcohol whereas in a pharmacy of this neck of the woods [high socioeconomic status] you don’t see it quite as much”. Quote 8

“I think we have a fairly good clientele..... we are located near an affluent area so we don’t necessarily see as many people who are proponents to becoming addicted”. Quote 9

In communities with higher socioeconomic status, participants mentioned different alerting behaviors and different community segments involved in drug addiction or abuse. For example, some participants stated that teenagers are the most significant group involved in drug addiction and abuse in communities with higher socioeconomic status (Quote 10). One participant noticed that the teenagers of one of high socioeconomic status community buy rubbing alcohol in large quantities and steal eye drops. Suspecting some drug abuse with that attitude, the participant decided to hold all 99% rubbing alcohol behind the counter (Quote 11). Stealing eye drops was also noticed as these eye drops contain certain amount of Marijuana. The participant did not know exactly how these eye drops could be abused, however, the number of theft incidents required the participant to hold these eye drops behind the counter. Participants

also reported observing of middle age women and men who have prescriptions for narcotics because of injuries or other reasons and become addicted to these drugs (Quote 12).

“A lot of the teenagers in the area, I am finding they are buying a lot of rubbing alcohol.there is a problem ... with the teenagers in the area there is a lot of money, the families have a lot of money, the parents aren't home there is a lot of bored kids” Quote 10

“They use rubbing alcohol, I'll see it, I don't carry the 99% rubbing alcohol up front anymore. I have it specifically behind the counter, I have seen them buy rubbing alcohol and then go buy Pepsi or coke or uhm or they are always in stealing the eye drops for the redness eye drops cause you know they are doing marijuana” Quote 11

“Hand full of ...middle age women and men they have had some sort of accident or whatever. They get put on pain killers and then all of a sudden they are kind of addicted ... I don't know for sure but I have my suspicions that we have a hand full of those type of people” Quote 12.

In communities with lower socioeconomic status, higher numbers of encounters are reported from almost all community segments. Participants working in the core neighbourhood reported high numbers of encounters with PWSAD and daily drug diversion attempts. A comment worth noting by one participant mentioned border shoppers; the participant had work experience in a small border town between Saskatchewan and Alberta. Border shoppers would come across the border to get opioid prescriptions because pharmacists will not be able to identify and confirm their information through PIP (Quote 13).

“I would note that people were trying to come across the border and get opioid prescriptions because we wouldn't be able to confirm their information on prescription information program [PIP], so that we have [to] be concerned about that as well ... But again there is not very much we can do without having a Canada wide database” Quote13

Other factors, for higher number of encounters were mentioned. For example, some participants reported that they encounter more clients with drug seeking behaviours or drug addiction-related inquiries (e.g. needle requests, seeking over the counter drugs) in summer than in winter; at night versus in the morning; and in big retail pharmacies in comparison to small independent pharmacies within a medical building. In addition, the day of the week was mentioned as a factor that increases the number of encounters with PWSAD. One of the participants reported a high number of inquiries for Graval[®] and Tylenol 1[®] during “chequing week”, when government supplementary income cheques are released.

4.2.2.2 Lack of knowledge

During the interviews, there was clear enthusiasm and interest among participants regarding the topic of the research project. Participants showed genuine desire to help solve the prevalent problem of addiction. Unfortunately, lack of knowledge was a big hindrance to utilizing such positive attitudes. It was clear that participants gained knowledge from their everyday practice and not from scientific background knowledge. Therefore, participants’ views and perspectives varied immensely based on their individual experiences with addiction. During the interviews, participants were asked specific questions about the disease of addiction to measure their current knowledge. Interviewed pharmacists showed a lack of knowledge, including overlapping and misconception of different aspects of the disease of addiction. They overlapped the meaning of different addiction related terms, e.g. substance abuse, misuse and addiction, which resulted in misconceptions and misunderstanding of the disease of addiction. The difference between many terms concerning addiction, like misuse, abuse and addiction, were not clear for most of the participants. Limited knowledge was noticed in three main areas in

relation to addiction: the definition of addiction; social aspects of the disease and its management; and harm reduction.

4.2.2.2.1 The Definition of Addiction:

When participants were asked, “What is addiction?” no one clear definition emerged. Participants responded to the question with multiple views and different beliefs. Their respective working experience played the major role in shaping their answers. Therefore, most of the definitions were limited to one aspect, while neglecting the other aspects of the disease. The definitions provided also overlapped with other concepts, such as substance abuse and misuse. Several participants recognized only the physical dependence of addiction (Quote 14) without acknowledging the differences between addiction and physical dependence. One participant described the situation of seniors with physical dependency on their painkillers as “Benign Addiction”, while others described addiction as a social phenomenon that drives involved individual through a series of negative consequences (Quote 15). However, some participants acknowledged both the physical and psychological components of addiction (Quote 16). They were also able to recognize that physical dependence is a component of addiction and that addiction includes not only physical dependence but also other elements, including psychological, social and cultural components (Quote 17, 18).

“Well that is a difficult question to answer we have a number of people who are probably addicted to their prescription medication but it’s pretty benign addictions. Most of them are seniors and they are on a benzodiazepine or something like that and they would be likely feel it[withdrawal symptoms] if they stopped taking it but they are not” Quote 14

“It robs you of your productivity and it robs you of lifespan and I know it can break your bonds with your family and friends I mean it leads you down a bad path” Quote15

“Where a patient has developed a dependency psychologically, physiologically, to a substance over which they may or may not have the control they think they have, it’s probably an addiction” Quote 16

“These are people who are going to rob somebody on the street to create scenes in pharmacies who are going to convince you that something bad happened to them, they are the ones who their car gets broken into 3 times a week and they steal their medication They are the ones who pick up the really good stories, you know that to me is the difference between addiction and dependency. Dependency is a little bit different I mean some of my cancer patients are dependent on narcotics” Quote 17

“Well like I say addictions, substance abuse are synonymous in terminology it just depends on how the patient perceives it whether they wish to have assistance to try to get [rid] off ... it or whether they wish to continue with their habit.” Quote 18

Most concerning was the fact that most participants displayed shallow understanding of the disease of addiction and defined it stereotypically. Some participants defined addiction as dangerous people seeking drugs, who are willing to do anything to obtain them, and display irrational behaviours (Quote 19); these participants did not consider addiction as a disease or drug addicts as patients. Although this could be the case in some situations, a few participants saw addiction as a coping mechanism (Quote 20) for some traumatic experiences. These participants acknowledged that addiction never starts with a previous intention of becoming an addict but is the result of other factors that manifest in addiction (Quote 21). It was noticed that participants with such deep understanding regarding addiction had obtained relevant educational experiences, such as an undergraduate degree in women and gender studies or had a working experience within the methadone program.

“Definition of addiction is somebody who is a drug seeker and will do anything in order to actually achieve a high” Quote 19

“It’s a coping mechanism and then it just ends up into something out of control”. Quote 20

“I think a true addict, once you get [to] the [addictive] situation, the addiction runs your life. Substance abuse maybe be you are choosing before you become an addict ... maybe these kids who are doing rubbing alcohol. Maybe they are not addicted to it yet, but it is substance abuse, they are choosing to do it or a true addict or the addiction controls their life”. Quote 21

The different perspectives and answers provided by participants when defining addiction clearly displayed the lack of knowledge regarding addiction. The misunderstanding and overlapping of the concepts of addiction, dependence, and substance abuse also was clear. Although a number of pharmacists described addiction as a coping mechanisms or self-treatment, the majority of the participants did not differentiate effectively between the above terms. It is important for any future initiative that to ensure that community pharmacists differentiate between these terms and understand the different processes of interventions they could use with each situation.

4.2.2.2.2 Harm Reduction

Harm reduction was one of the areas where participants showed limited knowledge and understanding. The term harm reduction was not a new term for the participants and a couple of them used it during the interviews. However, when they were asked to describe the meaning of harm reduction and define it, the answers reflected an incomplete and limited understanding of its meaning. One participant showed this limited understanding when asked directly about the concept of harm reduction (Quote 22), although it was clear that the participant was genuinely applying harm reduction in professional situations (Quote 23).

“I don’t have a lot of depth [of understanding] in that area [Harm Reduction]. Where I did work, a pharmacy with the methadone it was just more ensuring the patient got their medication and met the legal requirements to provide them that. That’s basically all I saw” Quote 22

“we have had them [clients who ask for needles] and so as to I wouldn't say facilitate them but to help them be cleaner so that there is not the re-use of syringes hopefully we do sell to patients if they do ask for those products”

Quote 23

Almost all participants had honest and genuine intentions to help and provide services to PWSAD through their pharmacies. However, the lack of scientific knowledge and understanding of the basic concept of harm reduction was a barrier. In fact, views around the concept of harm reduction varied immensely. Some understandings were superficial, where the concept of harm reduction centered on specific services, such as methadone maintenance therapy (Quote24). Although there was a general desire to help and provide medical advice to all clients, some participants opposed the concept of harm reduction. They saw harm reduction services like methadone maintenance therapy as a way of feeding a client's addictive behaviour, with little effort to decrease the dose of methadone and reintegrate PWSAD in society (Quote24).

“Harm reduction in my mind is methadone program. And I am not a really big fan of the methadone program You know there is very little attempt to.....get these patients reintegrated in ... society properly. Actually reducing their dose of methadone and getting them off narcotic based medication. that is part of what I don't like with the harm reduction programs and part of the reason why I am hesitant to consider implementing it in my location. ” Quote 24.

Other participants viewed harm reduction as a way to alleviate the suffering, decrease the harm and provide opportunities for positive attitude for PWSAD. Therefore, they were proponents for harm reduction and willing to provide related services through their pharmacies (Quote25).

“basically providing opportunity for people who are suffering from addiction to at least not to ruin their health further all the other ways just like infections and not having places to inject safely not having the supply to do it”. Quote 25

Having different personal views regarding a concept is acceptable in any practical field. However, shallow and superficial understanding of the meaning behind a service from health providers is concerning. Obviously, pharmacists were drawing conclusions about harm reduction from their practical experiences rather than from a clear formal educational point of view.

4.2.2.2.3 Social aspects and disease management

Interviewed pharmacists displayed good background knowledge concerning drugs and other substances that could relate to drug addiction behaviors. They also identified a number of signs and red flags to identify PWSAD. However, all participants agreed that their knowledge and training regarding the social aspects attached to the disease of addiction and how to deal with PWSAD was limited and inefficient (Quote 26). Participants acknowledged that they did not receive formal education regarding the social needs for PSAD, such as childcare, transportation, and food, which could be major barriers for PWSAD to participate in any treatment initiatives.

“In Pharmacy we learned which drugs could cause addiction but there was no training on how we could help people with addiction or refer them to other outside assistance ... I think we have always been focused more on the pharmacology and the beneficial treatment of medications rather than treating the social psychosocial aspects of it”. Quote 26

Pharmacists’ formal education did not prepare them to deal with and respond to non-medical-related issues that PWSAD have (Quote 27, 28). Despite that knowledge gap, participants are trying to provide help as much as they can. One participant shared the story of a client who admitted his addiction to the pharmacist, although he was not looking for a solution at that time (Quote 29). The participant mentioned that he had to ask and consult with his colleague to initiate the appropriate response in that situation. The participant decided to support the client, assuring the patient that the pharmacists would always be supportive whenever help was needed.

The participant preferred not to insist that the client stop taking drugs or forcefully offer solutions for the client's situation.

“I don't feel like coming out of school that's the thing that you are really ready to deal with in general”. Quote 27

“Apparently we know much more about the physical symptoms those are the ones we are taught to recognize and be concerned about. The other ones, the psycho social aspect exists but we are not taught how to deal with it” Quote 28.

“I think he was seeking reassurance that at some point he could get help. He wasn't for say looking for help, he was looking for his drugs and he was looking for his needles. But I think that when he came to us he kind of gave us that affirmation that you know I do suffer from addictions problems that he kind of in the long term wanted to break free, get away from it. The person was also kind of extenuated [with] his habits So I mean we had that big long conversation ... you know he, he ended up actually seeking out professional help” Quote 29.

It was explained that some clients just need someone to listen to them and show them support, and who would motivate them to pick the right path later on. This specific interaction resulted in a positive outcome, as the PWSAD did seek professional help and counselling. A number of participants shared stories of encounters where clients admitted their addiction to pharmacists, asking for help. Unfortunately, not all participants were successful dealing with such requests. The lack of education on the psychosocial element left participants ill-equipped to deal with the social aspects attached to addiction.

It was evident that participants were willing to help and provide services for PWSAD, however, they did not know what their role as community pharmacists should be (Quote 30). It was frustrating for participants as health care providers, witnessing the suffering of their clients without having a clue how to help them.

“I suppose just making us more aware of what’s out there, how these people can be helped, what we as pharmacists might be applicable, or can help these patients, again I have no idea what”. Quote 30

In addition to their limited knowledge of the psychosocial aspects of addiction, participants indicated that they lacked a clear set of steps to guide them through their encounters with PWSAD (Quote 31). One participant mentioned PACT (Partnership to Assist with Cessation Tobacco) program as an example of guidelines. Participants acknowledged that they would still have to face some challenges that would require their clinical judgment; however, such a tool would alleviate the challenge of initiating the conversation and direct pharmacists to the right way during their encounters with PWSAD.

“They didn’t give the tools that I remember, I could be wrong, it was so long ago. But I don’t believe they gave us the tools to actually what to do in these cases”. Quote 31

Knowing the next step after identifying a PWSAD was a critical need for all participants. Participants indicated that after having a suspicious encounter with a client, they usually check PIP and track clients’ inquiries and doctors’ visits. Based on such information, refusing to fill the prescription would be the next step. However, that was not satisfactory for some of the participants as they showed a desire to help beyond that regulatory policing step. A number of participants were willing to follow other approaches by bringing the topic of drug abuse and addiction to the conversation (Quote 32), however, they did not want to insult someone and lose that client forever. Therefore, they preferred to practice caution by just refusing to fill the prescription (Quote 33, 34). It was clear that participants did not know how to proceed with an identified PWSAD in a way that would satisfy their desire to help as a health care provider.

“For example now with the PACT [Partnership to Assess with cessation of Tobacco] program we can ask patients are you a smoker (yes, no) well we

have this little tool for you – tell them what there is. Where there is something that would help us to identify patients, whether just like a pharmacists awareness program, whether it is advertised through the media that would say your pharmacist might be able to help you with this, that might get an initial contact out there” Quote 32

“I don’t feel like I have any tools for actually bringing that up. I am always caution as am I really crossing the line here or am I insulting somebody”.
Quote 33

“We are very diligent and we checking to try just not to over dispense but I don’t think that is really solving the problem by any means by just denying that. You are not providing them with any sort of alternative help”. Quote 34

The dissatisfaction participants showed with the level of the services they provided to PWSAD was justified by their lack of psychosocial education. In addition, the lack of follow up procedures with identified PWSAD. The lack of psychosocial knowledge in the participants’ background education was clear when participants indicated their need to know how to motivate change in their clients’ drug-related behaviour (Quote 35). Participants reported that the nature of community pharmacists, being within the community, provides pharmacists with a window to help, intervene, and build up opportunities through their regular contact with clients suffering from drug addiction (Quote 36). However, participating community pharmacists lacked the proper skills, education and training to utilize such opportunities.

“I would love ... to know the right way of handling it when somebody comes up and asking. I know I can’t spend that much of time [with only one client] I know I am not a social worker or addiction counselor but I would love to know five of six statement[s] that are really powerful and really encouraging and really thoughtful that would be really helpful. ... that moment[s] [could be] gone down the flash and I really want to capitalize on them. it is really important[to] unify four or five prints but I don’t feel that is happening not at all”. Quote 35

“Sometimes we are the only people that they can turn to cause of family situations or whatever. We might be one of the only constants in their life,

right if we are there for them when they need or decide to talk have the tools to be able to help them properly” Quote 36

4.2.2.3 Health System

Participants mentioned the health care system as one of the main factors affecting their practice. The health care system can either facilitate or hinder community pharmacists' role toward PWSAD. Participants mentioned a number of areas that needs improvement to facilitate their services toward PWSAD as community pharmacists. These areas included limited available time, which hinders any attempt for intervention; lack of privacy, which acts as a barrier for some clients to share their stories with pharmacists; physical settings in a pharmacy; and support from the health system and other health care providers. However, there were three major challenges identified by the participants from the health care system in Saskatoon concerning providing services for identified PWSAD. These challenges are: limited resources for available addiction services; need for promotion of pharmacists' role as public health advocates; and lack of management protocol. In general, the health care system is not connecting community pharmacists with the resources and available services for PWSAD. They kept community pharmacists out of the holistic care plan and limited their role to medication-related services only. However, community pharmacists can still play a major role in early stages of the disease of addiction, including identifying addiction cases as well as intervening and referring.

4.2.2.3.1 Limited Resources for available addiction services

Participants agreed that one of the most challenging aspects of caring for PWSAD was providing effective referral to needed services. During the interviews, participants were asked a theoretical question about their reaction and the process they follow if a client seeks help regarding his/her addiction. This question aimed at stimulating participants' professional skills and understanding their reaction to the situation. Surprisingly, it was not merely a theoretical

situation for most of the participants. It was common, as participants reported a number of encounters with clients seeking help for their addiction. Participants with such experiences explained that identifying services that could address the diverse needs of PWSAD was extremely difficult, and indicated that they did not know where to find this type of information (Quote 37). Some participants, especially those with working experience in methadone programs, knew a number of social services, shelters, and food aids. Their knowledge did not exceed sending or receiving clients' prescriptions. Therefore, they were not able to refer or use their knowledge in an effective way with their clients because they do not have phone numbers, locations, or eligibility conditions for those services. One participant mentioned that the pharmacy owner went one-step further by establishing a pharmacy referral guide. That referral guide has some numbers and locations for social services, shelters and addiction rehabilitation around the city, which was developed through individual efforts searching online for such services. However, this effort was not effective as it lacked regular updates and details regarding accessibility and eligibility.

“I need to know what the resources are, I need, it's not about money it's not about time, cause I can make the time for them. So it's about knowing exactly what programs are out there, and I think that is the big thing” Quote 37

Participants also noted that a community pharmacy is the best place to initiate contact with PWSAD and motivate them toward positive change. One participant envisioned that each encounter with clients builds and adds to the level of trust and relationship between pharmacists and clients. Eventually, clients will become comfortable asking pharmacists for help. Participants acknowledged that they already have this privilege over other health care providers; however, the absence of a clear list of community resources (referral guide), such as social and medical

services, is a major barrier to providing suitable care. Pharmacists would spend time searching the internet and make phone calls to identify some available resources when needed (Quote 38), jeopardizing their credibility by appearing incompetent as health care providers.

“It would ...[like] to know where are the best places to refer I mean little leaflet and pamphlet and stuff like that. I think pharmacy is great place for stuff like that for people just to sit down and grab a pamphlet and read it”
Quote 38

4.2.2.3.2 Promotion for Pharmacists’ Role

Participants expressed their willingness to help, intervene and initiate positive changes in the lifestyle of PWSAD. However, participants indicated that the role community pharmacists can play within communities is not well promoted. In fact, it was considered a marginalized role by participants. They indicated that limited promotion for the role of community pharmacist as health care advocate hinders any opportunity for intervention, especially with PWSAD. In addition, the lack of awareness programs or educational campaigns about the role community pharmacists can give some clients an excuse to refuse sharing information with community pharmacists. Therefore, participants indicated the need for awareness programs that promote community pharmacists as health care providers who can connect and refer clients to different health and social services when needed (Quote39). Participants agreed that it required personal effort and time to build good rapport with clients. Therefore, they believed that if personal efforts were supported with awareness and educational campaigns, or even advertisements through the media, pharmacy services would be improved. One participant mentioned that a client resisted sharing some medical information with the pharmacist because the client thought it was useless to share information with the pharmacist that he had already discussed with his physician (Quote40), which implied that the pharmacist’s role is only to fill a prescription. In fact,

participants indicated that most of the time, community pharmacists are seen by PWSAD as law enforcement officers or as a gateway to access drugs, but not as health care providers (Quote41). Pharmacists expressed an urgent need for a community educational campaign about their role as public health advocates. In addition, they desire an endorsement for their role as health care providers, rather than law enforcers (Quote42).

“To get those people (who are a small portion) to talk with us is a big issue now, where they tell us why I should discuss with you. I always discuss with my doctor. Then I go we [pharmacists] are the ones, who provide [you, the client] with medications and explain to you all related medication issues that you need to know. This is a big challenge we face but still that does not mean that we will stop. One-on-one conversations are always the best”

Quote 39

“I think certainly if the word was out there that community pharmacists were capable of helping people, you know deal with addictions I think we would maybe see people seek us out as a regular practitioner in the community, easy to access trying to get them in the right direction. I think there is a possibility there” Quote 40

“One of the reasons is that people don’t want to share what they experienced in their life or they might think that the system do not offer them anything. They are probably unaware of the resources, which need greater advertising. Maybe in the pharmacy, if the ministry of health can provide us with a poster indicating the various resources available I would certainly be more than willing to put that poster up in my pharmacy.” Quote 41

“Just to try [to] break that traditional relationship as being seen as part of the law enforcement rather than possibly an aid to leaving their [clients’] addictions” Quote 42

Participants also mentioned that such educational campaigns would allay some communities’ resistance to implementing harm reduction services. One of the reasons mentioned why harm reduction services were not established was the resistance of community members. Many of them have the perception that such services will make the community unsafe by

attracting unwanted types of people to the neighbourhood. Therefore, pharmacists choose not to implement such services in their pharmacies to keep their clientele base (Quote 43).

“I think a lot of promotion to the public would be helpful which is sort of a weird thing to mention but I thinkthe reasons why we don't have a larger harm reduction programs is because of public backlash or public misunderstanding as to what these services actually are and how they're helping”. Quote 43

4.2.2.3.3 Lack of Management Protocol

A protocol or set of management guidelines was a popular demand by the participants. The individuality and diversity in pharmacist-patient encounters concerning drug addiction issues is a source of confusion. This is particularly critical for the usually time-demanding encounters involving special queries, such as when PWSAD seek help. Participants indicated that there were substantial efforts in providing a plan that meets a patient's unique needs. Participants were willing to invest time and effort; however, pharmacy business and time limitations always acted as barriers. Therefore, participants acknowledged that having a protocol to follow, or at least to direct them through their encounters with PWSAD would save them time, possibly allowing them to provide satisfactory services.

In fact, participants shared stories about clients admitting drug addiction problems and asking for help. It was a moment of frustration for many pharmacists because they were not prepared to provide their clients with a satisfactory level of services at the time. Participants indicated their need for a guide to direct them through such situations (Quote 44, 45) by showing them what they can offer and how they can support their clients in that situation. This is particularly important since intervention is more effective if it is applied quickly after a client admits his/her addiction while seeking help (Quote 46). If such an encounter is not handled appropriately, and the patient is not supported and motivated to follow up and continue on a

recovery direction, it will be a wasted opportunity. The clients may lose their interest in recovery and treatment forever, especially if they feel that the system has failed them.

“It would be nice if we would have a sort of protocol that we could follow again that is why I was interested [to participate in the study] because when you identify those patients and they identify themselves that they do want help. If there is a specific format that are more successful or that sort of thing” Quote 44

“Would love to know the right way of handling it when somebody comes up and asking. I know I can't spend that much of time, I know I am not a social worker or addiction counselor, but I would love to know five of six statement that are really powerful and really encouraging andwould be really helpful because that to me moment gone down the flash and I really want to capitalize on them” Quote 45

“ [The] fact that you want the intervention to happen pretty quickly after they self-admit or follow up with you ...like I said if there was a provincial protocol that or ...like a protocol [that] capable ... us [of] implementing. I think it would maybe lend us to being able to get people in the right direction ... I think protocol guidelines would probably be the biggest win for us”. Quote 46

In addition, there was general demand among participants to have a consistent procedure that would unite steps and behaviours between pharmacists (Quote 47). Participants reported that it is a challenge to have colleagues with different professional attitudes toward the same inquiry or issue (Quote 48). Therefore, it would be helpful to have a general framework that all practicing community pharmacists can use when encountering a PWSAD. Participants repeatedly mentioned smoking cessation and methadone program guidelines as great examples of clear guidelines.

“I want every pharmacists I worked with to be on the same boat and to be as comfortable with discussing mental health issues and addictions with people as I am. Because you can lose somebody on a day where you can't even know it and it takes one dismissive or one disrespectful

connotation toward somebody to lose them for forbidden and nothing you can do to change that". Quote 47

"It's sort of interesting to see maybe the reasons or what's leading people to misuse their prescription medications. I think a lot of the other pharmacists in our store they don't really care to get the full story sometimes or understand reasons why refills might not match up very easily". Quote 48

4.2.2.4 Educational and Training Needs

During the interviews, it was evident that all participants indicated their strong desire to learn more about addiction. Participants acknowledged that their background concerning addiction was not effective, particularly when initiating contact with suspected PWSAD or addressing addicts' diverse needs. Pharmacists did not know how to start, what they should offer, or what kind of services they should provide for PWSAD (Quote 49). In many situations, it was like finding a "needle in the haystack" as one participant described. It was not satisfying for many of the participants to end their encounters with PWSAD by applying the law and merely stopping drug diversion (Quote 50). They believed that they could help beyond that policing point but did not know how. In addition, the amount and type of education participants had received on the topic of addiction was not proportionate to the severity of the situation they faced in practice. In fact, a consensus among participants was reached on the need for formal education concerning addiction and PWSAD. Two main areas of training were particularly emphasized, namely, training on the social aspects and communication skills; and recognizing the social aspects of addiction. It emerged that the preferred method to gain information about addiction was through interactive learning, such as workshops with other health care providers involved in the field of addiction treatment and recovery.

"I suppose just making us more aware of what's out there, how these people can be helped, what we as pharmacists can help these patients, again I have no idea what". Quote 49

“More knowledge and awareness of drug addiction to treatment programs and resources that we can point people to if they are interested, more tools to deal with the psycho social aspects and motivational interviewing would be a help[ful]. Just to try break that traditional relationship as being seen as part of the law enforcement rather than possibly an aid to leaving their addictions” Quote 50

4.2.2.4.1 Training on Social Aspects and Communication Skills

Ideally, community pharmacists should be able to deal with the social instability and other comorbidities associated with addiction. However, participants agreed that their formal education lacked the required training components concerning addiction. Formal education did not provide them with adequate training regarding effective strategies to deal with and manage frequent encounters with PWSAD.

In addition, participants indicated that they are well-positioned in the community to provide services and intervene to help people suffering from addiction. A couple of the participants reported that their long working hours, combined with strong familiarity with their community members, gave them a great opportunity to help when needed (Quote 51, 52). Some acknowledged the value of the information provided through the continuing education program; however, implementing the information is not easy without practical training (Quote 53). It was clear that there is a need to acquire skills, not merely information. The lack of training has led to inconsistency in the level of confidence in managing and dealing with PWSAD (Quote 54).

“I think we as pharmacists with our accessibility, knowledge, I think we could create an opportunity there”. (Quote 51)

“I am there, they see me more than their doctor. And I am there consistently I have been at this new location for 10, 12 years. Yeah so everybody knows me. If somebody walks to my counter and I don't know them its cause they are new to the neighborhood. I know everybody our hours are longwe are open in the evening and on the weekend and stuff”. Quote 52

“Yes all CEUs [Continuing Education Units] are great but implementing is something different.” Quote 53

Participants were somewhat specific on the needed skill set, including how to manage encounters with PWSAD and where to direct such encounters. According to participants, the latter issue is one of the major challenges facing community pharmacists, especially new graduates. Newly graduated community pharmacists have appropriate pharmacological knowledge, which enables them to understand the side effects of controlled/addicted drugs and the consequences of using such drugs inappropriately, but they have no experience on how to handle encounters with PWSAD (Quote 54). Participants indicated that they did not learn how to handle encounters with identified PWSAD effectively (Quote 55). It was clear through the interviews that participants had no clue about their role as community pharmacists when encountering PWSAD and if they want to intervene and communicate with PWSAD, they lacked the adequate training. Study participants asked for training to define clearly their professional role when encountering and following up with PWSAD and provide them with effective strategies to facilitate their engagement in addiction intervention.

*“I think as a new grad [that would] be one of the hardest things to deal with. When you know it is someone who doesn’t want to be forthcoming. ... We’re pharmacists we know how to tell people about a drug and ... the side effects but [we need also to learn] maybe like coping skills or like known pharmacological means in terms of coping with addiction and recovery”
Quote 54.*

“We know it [addiction] is a problem but when [we are] ... in a situation what do you do. There is a lacking of education system about that”. Quote 55

4.2.2.4.2 Recognizing the social Aspect of Addiction

All participants agreed that formal education focused on knowledge related to drug side effects, laws, and ways to limit drug diversion. A couple of participants criticized having police

officers as guest speakers in their undergraduate education regarding addiction. They acknowledged that stopping drug diversion is part of their job as community pharmacists, but their major function is to be health care providers. However, inviting law enforcement personnel to a classroom to talk about addiction was not representative of their roles. Having law enforcement personnel talk about addiction inferred that pharmacists' role supports a police officer's job (Quote 56). A number of participants admitted that their perception of PWSAD had been judgmental and based on stereotypes. However, work experience and encountering PWSAD in the practice changed their view. Participants recognized that PWSAD can be normal people with a traumatic history or an agonizing experience (Quote 57). It was also stated that PWSAD come from a wide range of backgrounds, and have diverse lifestyles with different stories (Quote 58).

“I think it as a police officer and talk about addiction and I think ... we've touched on, on it in school. I could not remember all the lectures but I am guessing at around four hours maybe in total ... and that [was] in the pharmacy program.... It was more to just to let you know about what's being abused on the streets right now and drug seeking potentials of clients, what they will try and stuff that it was a presentation about [addiction] from the police officer”. Quote 56

“If you deal with people like that all the time, then, umm you realize what a hard life they have [had] and you want to help”. Quote 57

“When you actually take the time to talk to these people [addicts] and you get their stories and they tell you about their life [there] you know that they're not this subset of people that can be classified just one way There is all kinds of people that can fit into that category with all different kinds of backgrounds and life experiences”. Quote 58

It is not surprising then that participants agreed that the educational gap primarily relates to the social aspects behind addiction. This gap leaves pharmacists unable to understand the critical social side of addiction and deal with it effectively. Many participants witnessed moments where

their clients shared their addiction stories, indicating a positive relationship between pharmacist and PWSAD (Quote 59). Such moments are great opportunities for community pharmacists to support their clients, providing advice towards positive changes in their lifestyle. Pharmacists can direct clients to different community resources in such situations.

“I even had a lady saying to me Do you know this patient and then I said ok I was getting a little pincer but said yes yes I do and then she said that is my daughter. And her daughter was in the methadone program as well and then she said that was my fault then I said what do you mean. She said well it is my fault that she is in the methadone program I was a bad mom I did this and now she is in. She is not a bad person. it is my fault and then ... I just said you know bad things happens to good people. it is not like you ever meant to this to happen” Quote 59

It was evident that social aspects of the disease of addiction were neglected in the formal educational activities. Therefore, graduates lack the sense that addiction is a result of a failed “support network;” one of the participants only learned that from his working experience (Quote 60). A newly graduated participant remembered precisely the only education hour she received, which clearly was not enough for her (Quote 61). Some participants requested full courses around the social issues as basic courses for all health care providers, and not merely pharmacists. Others asked for some kind of speciality programs post-graduation concerning addiction, similar to the “diabetic educator” program. Such an initiative allows community pharmacists to provide tailored services for PWSAD.

“The problem is ... a support network issue. Yah a 19 years old could get on cocaine but eventually somebody ... probably is going to intervene there and mom and dad are going to handle home finances and all friend and support network to get them through that; sometime they do not have all that and that when you hear about all of those sad stories”. Quote 60

“Really understand where those people are coming from and what impact them. I certainly believe it needs more than an hour. I think for health care

across the board I don't think this just need to be in pharmacy. this needs to be a full class recommended for a prerequisite for a health care like an entire course". Quote 61

4.2.2.4.3 Directive and Interactive Learning

Participants reached consensus regarding the need for both direct and interactive learning. Participants indicated the need to be involved in discussion-type learning with other health care providers and other pharmacists. They wanted to hear others' experiences regarding addiction and how they provided care for PWSAD (Quote 62). Participants recognized their naive background knowledge concerning addiction and its multiple factors. In addition, individuality of situations when dealing with PWSAD makes it hard to generalize certain procedures. However, hearing different stories and how care was provided under various circumstances would be a great learning tool. Direct and interactive types of education offer a number of options to help pharmacists follow in their encounters with PWSAD. Therefore, sharing experiences and stories with other health care providers involved in addiction would broaden pharmacists' views and understanding of the disease. It would also equip them with strategies on how to deal with different scenarios (Quote 63). Furthermore, interactive learning with other health care providers could be a great opportunity to view addiction holistically, which could result in collaboration between different professions.

"Probably like a discussion, I would like to see some meetings happening between the methadone doctors. Being privy to that would be a big help in widening your view of what the whole picture is. Or even if with the social workers and counsellors, just because they see a different view, thinking more the social side of things, their lifestyle and living situations ... nurses who work at the detox facilities. Those types of people would help to have a full overview of what the program entails from their intake, talking with counsellors, meeting with the doctors, pharmacists, and if they get into the hospital. That whole process, we only see a small slice of it" Quote 62

“Because again everybody is different and so it would be good to actually have some success stories as to how people got better and who they turned to and who you can recommend umm if there was a list of good drug addiction counselors in the city that were easily accessible I wouldn’t even know [right now] who to recommend”. Quote 63

Participants acknowledged the importance of self-education and reading. However, having a discussion with others can stimulate questions and share experiences. This was a method of learning that most participants’ felt comfortable with (Quote 64). The majority of the participants mentioned their methadone working experience as an important learning experience that helped them understanding how to identify and deal with PWSAD. The learning gained from working in a methadone pharmacy was mainly from interacting with other health care providers involved in addiction recovery and treatment. One participant reported that working close to a methadone assisted recovery clinic offered the opportunity to interact with methadone doctors and social workers. The direct contact with physicians and other providers involved in addiction treatment allowed the participant to learn more about addiction management (Quote 65). During the interviews, participants with methadone experience displayed a deeper understanding of addiction and more innovative ways to deal with PWSAD.

“People walking through power points at the same time giving examples that’s where I learn more comfortably... you know I can print things off I can read too but this way if you have questions instead of second guessing yourself if you can get answer at that point in time it’s a lot more reassuring and you know you are on the right track”. Quote 64

“we work closely with the methadone clinic so that we did a lot of interaction actually with the methadone assisted recovery clinic and the counselors that work there, also the west side clinic where the doctors there especially [doctor’s name] and [doctor’s name] I worked pretty closely with them and so it was kind of a a team environment that particular setting, that’s kind of where I had the most experience and before I didn’t really have much in the way of experience with managing addiction or didn’t really know much about methadone dispensing and

*things like that so that's where really my eyes were opened and I had to
learn a lot". Quote 65*

In summary, interviewed community pharmacists provided great insights regarding the main challenges facing them in dealing with PWSAD. Challenges were summarized under four main themes, influence of work environment; lack of knowledge; limited support from the health care system; and limited education and training. Participants displayed a desire for each one of these themes to be addressed adequately, resulting in a suitable action plan that could improve their encounters with PWSAD.

CHAPTER 5: DISCUSSION

In this chapter, study's findings will be discussed and compared with other literature findings concerning: education and training needs; stigma and discrimination toward the disease of addiction; the effect of socioeconomic status; and communication between pharmacists and prescriber.

5.1 Education and Training Needs

The community pharmacists interviewed for this study raised a number of issues concerning their practices and their encounters with PWSAD. Some of these findings confirmed the existing body of literature, while others contradicted it. One of the major issues participants raised was the gap in their formal education concerning addiction. The participants were not raising a new issue, as the gap in many health care professions' formal education concerning addiction has been frequently documented throughout the literature. Nursing, (230) medicine, (231) osteopathy, (232) pharmacy, (188, 233) social worker(234)and other health care professions have reported ineffective or limited education concerning addiction . Based on results from the universities surveyed in this study and other supporting studies, (233) addiction-related education is not absent; however, it is not effective. The key question is why the educational material concerning addiction is not adequate to equip health care professionals with the skills and information to provide an optimum level of service for PWSAD. Why do cadres who have graduated from such programs lack the competence and confidence as health care providers to deal with the current situation of addiction?

Participants reported that a major reason for their inadequate performance toward PWSAD was that their training neglected the social aspect of the disease of addiction.

Pharmacists have fair background knowledge on drug addiction and abuse in general; however, there is little they can do besides deny prescriptions and stop drug diversion, once they identify clients with suspicious behavior and red flags. Participants described feeling ill-equipped to intervene and manage encounters with PWSAD. Similar results were reported in a study that used the Substance Abuse Attitude Survey (SAAS). (235)

The SAAS is an instrument to measure the attitude and performance of addiction field workers toward clients and families—that is, to determine the knowledge and attitude of emergency department doctors and nurses regarding problematic substance abuse and PWSAD. (235) Participants in that study indicated that they encountered patients with a drug addiction problem on a daily basis, and the majority of these encounters were inadequately managed. The majority of respondents (73.8%) reported lack of specific education and training concerning addiction; for most, the only education they had received on the topic was in-services training. Our investigation and the SAAS study both show inadequate education regarding appropriate strategies for interventions and nonmedical management (social skills). It is clear that the educational gap among pharmacists concerning addiction is related to social handling and interventions during encounters with PWSAD in pharmacies or hospitals.

A number of participants mentioned their desire to have a special addiction-related program available for all health care professionals to develop their skills and practice in the field. Other participants proposed a mandatory undergraduate course for all health care professionals. Such a class would work on promoting a baseline attitude of tolerance and sympathy toward PWSAD among all undergraduate students in the health care profession to eliminate the negative attitudes and intolerance that some health care providers have toward

PWSAD. Participants reported a preference for classes with educational content that would approach addiction holistically, emphasizing addiction etiology, social aspects of the disease, history of addiction, and the psychology of PWSAD personality rather than the pharmacological and law enforcements aspects; with the end goal of fostering the social understanding of the disease. Courses with similar content have been shown to increase student competence in dealing with PWSAD and to reduce negative attitudes or stereotypes. (236) Examining the literature, a number of attempts have been undertaken to establish programs and courses concerning addiction.

The next logical step is to know how to rectify and fill the recognized gap in the background knowledge of health care providers concerning addiction. The community pharmacists interviewed for this study suggested a number of different ways to alleviate the educational gap in their knowledge concerning addiction; however, there was a consensus that an interactive educational session should be a major component. The participants reported the need for continuous educational meetings with other health care professionals involved in addiction treatment and recovery, including other pharmacists. Hearing from different perspectives about experiences in the field of addiction is the best way to improve medical practice in the addiction field because, as indicated by participants, each encounter with a PWSAD is unique. This individuality was a main concern regarding pharmacists' encounters with PWSD. An interdisciplinary approach to addiction education has proven effective in improving knowledge and developing skills in the field of drug addiction. (237, 238)

Another issue is that continuing education content regarding addiction is inadequate and provides superficial understanding. Participants indicated that independent reading and self-

learning were not effective supplements to the limited material they had learned about the topic. One participant indicated that reading and self-education can improve one's knowledge but cannot enhance practice. Parallel findings (238, 239) reported that educational meetings, either alone or combined with other interventions, can improve professional practice and healthcare outcomes for patients. In this review paper, (239) the authors aimed at examining the effects of continuing education meetings on professional practice and patient outcomes, along with factors that might influence the effectiveness of such educational meetings. Concluding that a program of interactive educational meetings—like role playing, case discussions, or the opportunity to practice skills—either alone or combined with other interventions (e.g. lectures or reading material) is the best educational method to improve professional practice and achieve treatment goals for patients. Furthermore, it was reported that mixed educational interventions (that is, a program featuring both interactive and didactic components) seems to attract a larger audience. Finally, interactive educational sessions were found superior to self-directed education, reading, or didactic educational sessions alone (239, 240); however, mixed educational interventions were preferred to deliver knowledge to a greater number of participants.(239)

Training was among the top priorities for participants. Similar results were found in the literature among practicing pharmacists asked about the best system to deliver continuing substance abuse prevention education. (241) Addiction is a multifactorial topic, which includes a number of factors that affect the practice of health care providers, e.g. knowledge, communication skills, social aspects, pharmacological aspects, individual client motivations, personal perspective, professional duty, community services, and referrals. Presenting all these elements in a theoretical platform would be confusing and ineffective compared to

studying the same material in a training setting. Undergraduate training sessions or practical rotations are thought to be the most effective way to improve the quality of services and standardize attitudes and professional practices among graduates. In addition, implementing such undergraduate training would set a baseline for professional duty, regardless of personal beliefs or perspectives toward PWSAD. This was emphasized by one of the participants, who mentioned that one of the major barriers to interventions with PWSAD is the variable and negative attitudes of other colleagues in the same pharmacy facility. A positive general attitude among practitioners is crucial for effective treatment of PWSAD because, in the participant's words, "It takes only one dismissive or disrespectful connotation toward somebody to lose them." Training is the best educational way to improve attitude, confidence, and competence level among practitioners. (236, 242)

A number of educational interventions have aimed to improve the knowledge and practical competencies of pharmacy and other health care profession students regarding addiction and substance abuse. In 2008, the University of Girona's medical faculty initiated a degree program concerned with teaching students the skills and knowledge required for competent practice in the field of addiction. (243) Problem-based learning (PBL) was adopted as the main methodology for the program. Other reviews looked at a number of different programs available for practitioners, teachers of health professionals, and students. (2) In-depth examination of these programs led to the conclusion that training is a critical, if not primary, educational component in all such programs.

In British Columbia, the Ministry of Health funded a special certificate program for inter-professional substance use practice through Thompson University (Appendix H). In this program, the enrolled student has the opportunity to take five courses focusing on various

knowledge areas, all designed to provide the student with the competence and skills to work with PWSAD in different settings and situations. Throughout these five courses, students are exposed to a number of skills, including motivational interviewing, utilizing the “wheel of change,” brief intervention, cognitive behavioral therapy, relapse and prevention. In addition, students learn a variety of conceptual background foundations regarding the history of addiction, government policies, and social elements that affect PWSAD. Our sample of participants identified these skills and knowledge areas as a critical foundational knowledge for all health care providers to set a baseline of acceptance and understanding for PWSAD. The educational content of this program went even further, providing strategies to support families and individuals suffering from the disease of addiction through community channels. It is noteworthy that no pharmacological or drug-related information is highlighted in this program; the focus is solely on how to support a person with drug addiction. Elements of this program should be introduced to undergraduate students in the health care professions, as one of our participants suggested.

Another important issue was raised indirectly during the interviews—the need to train the trainer. “Train the trainer” is a well-known educational strategy that has proven its efficacy in a number of domains(244), including addiction intervention. (242) In the addiction intervention study, (244) a comparison has been done between the effectiveness of three education strategies to teach community clinicians Motivational Interviewing. The three evaluated strategies were Train-the-Trainer (TTT), Self-Study (SS) and Expert Led (EX). The use of SS was the least effective in comparison with EX and TTT with the latter being more feasible and effective. Therefore, it can be assumed that simply changing the educational material to incorporate the elements mentioned and requested by participants

(e.g., interactivity, continuing education, and communication training) would not guarantee the effectiveness of a program; successful implementation would also require expert faculty who believe in the foundational social concepts concerning addiction. Train-the-Trainer model is a process in which an experienced faculty or trainer trains less experienced instructors on how to teach a specific topic.(245) Such an educational strategy is expected to increase the teaching competency of new instructors or trainers. In addition, it would increase the proficiency level in delivering information and unite believes and attitudes of the members of a certain organization or university. Unfortunately, a shortage of expert faculty and preceptors interested in teaching the social elements of addiction and provide training in communication skills is reported as a barrier to educational intervention regarding addiction. (233)

The lack of expert educators in the field of addiction could be one reason for the limited educational materials in curricula concerning addiction in pharmacy schools. (190)

Therefore, some programs have been developed to train faculty and tutors in addiction education. (246) Preparing faculty and tutors of health care schools to be competent in the field of addiction is critical for systematic changes in attitude and knowledge concerning addiction.

5.2 Stigma and Discrimination toward the Disease of Addiction

Study participants received formal undergraduate education that allowed them to identify clients who suffer from addiction. Unfortunately, it did not provide the same level of professionalism and competence in mapping optimal care for those clients. It was easy for participants to identify the red flags that indicate drug addiction-related behavior. In addition, the Pharmaceutical Information Program (PIP) can track early refills of prescriptions,

prescription shopping, and other addiction-related signs. However, the dilemma lay within the follow-up procedure. The pharmacy education system has focussed mainly on the importance of detecting, identifying, and denying prescriptions to potential PWSAD without stressing enough the importance of supporting and referring such clients to community channels that might assist and provide continuous support for them. Furthermore, when encountering PWSAD, pharmacists should ask questions to verify the creditability of basic assumptions and have accurate understanding of the encounter. The approach that prioritize identifying and detecting PWSAD over providing care and understanding needs in addiction education indirectly reinforces stigma among practitioners.

As expected, there is abundant literature that discusses the hindering effects of stigma and discrimination, which result in low engagement rate of health care providers in addiction interventions. (247, 248) Stigmatization of patients with addiction from health care professionals is a common reported cause of the ineffective and low involvement of health care professionals in any treatment of or intervention for PWSAD. (247) In this study, however, most of the participants showed high level of sympathy, cooperation, and willingness to help people suffering from addiction; lack of education was their main hindrance to doing so. However, almost all participants distinguished between their perspectives and beliefs before and after having a real encounter with a PWSAD. It is worth mentioning that eight out of the eleven participants had work experience in the MMT program, which may have influenced their viewpoint toward PWSAD.

The way addiction is approached in pharmacy programs curricula prevalently focus on identifying PWSAD, and appear to be prepared for law enforcement officers, not health care providers' education. Therefore, a more treatment-centered curriculum would be more

appropriate. Understanding the social aspects of addiction, its history, and treatments available for PWSAD should be more effective than identifying PWSAD and policing prescriptions. (238) Therefore, the focus of educational topics related to addiction should be readjusted to emphasize the need of mapping health care for PWSAD to reduce the negative attitudes, stigma, and discrimination toward PWSAD. In our study, participants indicated that their formal education failed to touch on any appreciation of the social aspects of the disease of addiction and communication skills, except for a one-hour seminar cited by one participant.

Although stigma has been heavily reported in the literature as one of the main reasons for the lower engagement of health care providers in addiction treatment and intervention, we did not observe or report stigma in the responses of the participants in our study. Throughout the interviews, the sample demonstrated high levels of compassion and willingness to help PWSAD. A number of participants reported stereotypical fear incidents when first encountering PWSAD at the beginning of their practice; however, that completely changed after real encounters with PWSAD. Working experience with PWSAD has changed the participants' perspective concerning these individuals. Along with personal experiences with addiction, as one of the participants indicated, the MMT program was one of the reasons for a deeper, holistic understanding of addiction. Nevertheless, participants noticed stigma and discrimination from their colleagues in the same facility. One participant indicated that stigma could also be directed toward pharmacists, who have sincere empathy and interest in helping PWSAD, which matches literature finding. (247)

A few participants mentioned community resistance as one of the causes for lower engagement with harm-reduction services. Community resistance was reported in a

Canadian-based study. (249) The target sample was services providers in addiction agencies in Ontario, Canada. The study aimed to assess external and internal barriers that could hinder the implementation of harm reduction services. Fifty-two percent of the study's participants reported community resistance as one of the major external barriers to implementing a harm-reduction service namely, a needle exchange. (249) However, a number of participants reported the fear of losing clients because of implementing harm-reduction services in the pharmacy. Participants identified a critical need for community educational campaigns regarding addiction, and the importance of implementing harm-reduction services all over the city. Continuing education courses concerning harm reduction are needed for health care providers to clarify the concept of harm reduction and the professional responsibility of implementing it if needed, regardless of one's personal beliefs. Any effort to reduce the negative consequences of addiction on the PWSAD or their families—whether by referral, support, providing services, or motivating them toward positive change without requesting abstinence—is considered harm reduction. (250, 251)

The ultimate treatment outcome goal for addiction harm reduction intervention varied from controlled use and reduction negative consequences (252) to total abstinence. (253, 254) In this study, proponents of controlled use were the majority. However, few participants opposed the idea of controlled use as an outcome goal for harm reduction. Therefore, they were against the implementation of harm reduction services in their pharmacies. One participant justified his opposition to implementing a methadone program in the pharmacy he owned by stating that the way the program currently operates is feeding addiction, rather than treating it. The participant mentioned that some clients were on methadone program for ten years without any attempts to reduce their dose to reach complete abstinence. The lack of

common ground among health care providers regarding their professional role concerning PWSAD and harm-reduction services highlights a critical need for education to define a baseline attitude for every health professional in the field of addiction.

5.3 The Effect of Socioeconomic Status

The location of a given pharmacy and the socioeconomic status of the community surrounding it determine the type and number of encounters with PWSAD. This is one of the major research themes, which was consistent with the literature. A strong correlation was found between neighborhood poverty and drug use. (255) In fact, it was reported that drug influence network and neighborhood poverty are the main indicators for current drug use. (255) Similarly, research participants working in communities labeled with lower socioeconomic status (i.e. core neighborhoods in Saskatoon), reported a higher rate of encounters with PWSAD. The impact of social and cultural environmental factors on individuals' drug addiction and abuse is well-documented. (256) The association between lower socioeconomic status communities and drug addiction was fully clear among the participants. However, the major influence that social networks can exert was less clear to our participants. Social support can play a stronger role in current drug use status when compared with other factors such as neighborhood status and poverty. (257, 258) Social support can play a protective role(255) or act as an influencer. (259) The influence of a social network on addiction must be highlighted because community pharmacists are considered part of the social network for community members. The research participants acknowledged their role in the social fabric of the community and indicated their desire to receive the training necessary to utilize their position as a positive social support. Therefore, it can be

assumed that if community pharmacists played a role as a positive social network, it could limit the consequences of addiction.

Consistent with the literature, (260, 261) participants showed a willingness to participate in addiction intervention and provide referral information for clients seeking help for their addictions; however, the lack of information sources concerning addiction services was a major barrier. The lack of a clear set of information that can guide community pharmacists through addiction services has a negative effect on pharmacists' practice. One participant mentioned that pharmacists can spend time searching for a rehab center or social services when requested; however, that would affect their overall professionalism negatively. Participants explained that when a client is seeking help from a community pharmacist for his or her addiction, that individual is placing a great deal of trust in the pharmacist. However, if the pharmacist is unprepared for that inquiry and start searching through websites to provide an answer, the element of trust in the relationship would definitely be jeopardized.

In addition, it was found that having addiction information in the pharmacy would increase the pharmacist's confidence in delivering related information. (262) Twenty-six percent of respondents in the cited study(262) indicated that they provided treatment-related information to their PWSAD clients. Similarly, one participant in our study reported that the pharmacy owner established an in-house referral guide whereby pharmacy staff could share their findings concerning addiction services. Pharmacists are already providing addiction-related information despite time limitations and a lack of adequate resources.

The interest of community pharmacists in providing brief addiction intervention and screening through the pharmacy has been investigated and documented. (261, 263)

Participants related a number of stories regarding clients (PWSAD or PWSAD' families) requesting information about addiction-related services. The literature supports the notion of people's readiness to utilize pharmacies as a source of addiction services for referral as well as seeking pharmacists for their addiction services and referral. (264) The study aims to assess the readiness of pharmacy clients to utilize screening and brief intervention (SBI) if provided by community pharmacists. Ninety-seven percent of pharmacy users with drinking issues reported a positive attitude and willingness to utilize SBI if provided though a community pharmacist. Community readiness and pharmacists' willingness to have brief interventions in pharmacies cast strong pressure on the education system and policy makers to establish such services. Immediate implementation is requested to alleviate addiction's consequences on societies by early detection and intervention. Therefore, it is critical to have a referral guide available in each pharmacy to improve pharmacists' competency in addiction, providing useful information to clients.

During the interviews, participants acknowledged the need for a fast intervention after a client seeks help for his or her addiction as such an opportunity might never occur again. The moment a client asks for help or shows sincere desire to treat addiction, pharmacists should be prepared to support, motivate, and refer that client to appropriate services in the community. Participants indicated the importance of having a clear set of steps or protocol concerning addiction intervention. They referred to the protocol of the Partnership to Assist with Cessation of Tobacco (PACT) program as a good example. One participant suggested a set of questions that could initiate a conversation when addiction behavior is detected to steer the conversation in a positive direction. Interestingly, this description corresponds to the Motivational Interviewing (MI) technique, although none of the participants were aware of

its existence. MI is an interviewing technique developed over thirty years ago(265) and has been a popular and effective approach in addiction counselling. MI can be defined as client-centered conversational approach to trigger intrinsic and personal motivations toward a positive lifestyle change.(266) The main objective is to work on resolving the ambivalence PWSAD usually suffer. (266) MI has proven effective for a number of other health approaches beside addiction and substance abuse interventions. (267-269) The MI technique was implemented in a number of health science educational programs(270) as it became critical in the field of health promotion. (271) Our research sample, however, showed complete unfamiliarity concerning MI and its utility. Conducting motivational interviews is a critical skill for community pharmacists in delivering a number of health initiatives— besides addiction interventions—e.g., promoting adherence to a drug regimen. (272)

One of the positive experiences participants mentioned in their interviews was the use of PIP. The PIP program is highly utilized by pharmacists to identify drug diversion. Consistent with the literature, pharmacists demonstrated a positive attitude toward using electronic records to detect prescription forging and early refills, which limit drug diversion. (273) Pharmacists are well equipped with background knowledge concerning identifying drug diversion and with the electronic tool for the same purpose. Pharmacists should be similarly educated and equipped with tools that help initiate addiction brief interventions.

5.4 Communication between Pharmacists and Prescribers

Pharmacists and physicians are considered among the health care professionals most involved in addiction treatment. Therefore, the physician-pharmacist relationship is critical for the success of any intervention concerning addiction. Unfortunately, our study indicated a need to improve the pharmacist-physician relationship. The majority of the participants

reported needs for improvement in their communication with physicians. A number of participants with working experience in other provinces compared between the two working settings and indicated a necessity for enhancement in Saskatoon. Similar results were found in a study that investigated prescriber and pharmacist perspectives concerning prescription drug abuse. (274) Interestingly, both prescribers and pharmacists indicated a need for enhancement concerning their communication and identified it as an important element to minimizing prescription drug abuse. Pharmacists and prescribers need better communication to resolve some practice issues. For example, in the same study pharmacists perceived clients as prescription drug abusers at a rate twice as high as that of prescribers. (274) At the same time, 25 percent of pharmacists thought that questioning the prescribing of controlled drugs would damage the pharmacist-prescriber relationship. (274) However, both of the cohorts showed low percentages concerning their confidence level in discussing addiction treatment options with their patients. Better communication between health care providers, namely community pharmacists and physicians, would result in better care plans for clients in general and PWSAD in particular. (275) Similarly, one participant in our study mentioned that community pharmacists felt isolated from the health care system, which results in having different believes and practices between physicians and pharmacists.

Primary health care system is the foundational level within the health care system. It is recognized as the entry-level contact for patients with the health care system. Primary health care services are usually provided through nurses, family physicians or general practitioners, yet pharmacists are not usually available within such settings. The Health Counsel of Canada published a report in 2005 concerning primary health care reforms. (276) Five terms have been highlighted in relation to the merit of primary health care, first point of contact, 24/7

access, continuity of care, multidisciplinary teams, and primary health care information management. Therefore, community pharmacists should be incorporated within primary health care. Community pharmacists are the most accessible health care professional. They are well suited to manage and provide medical information and have the privilege of first contact with community members. Therefore, community pharmacists can be seen as appropriate providers for primary health care.

Participants through this study has acknowledged their role as public health advocates and requested the promotion and support of the health system for that role. Number of the participants declared that they are already taking time to find health and social services in response to their clients' needs and requests despite the lacking of information source and helpful tools e.g. referral guide. Community pharmacists have the perfect components, knowledge, position, relationships and willingness to serve that role in their communities.

5.5 Significance of the Study

Literature has number of suggested guidelines and recommendation in order to improve addiction education for medical professionals. (243, 277, 278) Most of these guidelines were based on theoretical assumptions and expected outcomes while the opinions and perspectives of practitioners were lacking. Only few studies attempted to investigate the educational needs concerning addiction based on practitioners' views. (241, 279) In this study, community pharmacists expressed the need for addiction training based on their experiences. Many of the participants' educational suggestions mirrored strategies available in the literature, such as interactive leaning sessions(240) and referral guides. (262) The uniqueness of this investigation is the privilege of collecting information from both sides of the equation: the educational system and those graduated from the system (i.e. community pharmacists). The

study investigated the content of addiction educational materials in Canadian pharmacy programs and identified the educational aspects that need improvements as declared by practicing pharmacists. Although further investigations are still needed, this study provided the foundation for future research.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

Based on the results, the recommendations are categorized under two main streams; undergraduate level, and the continuous education and practice level. In the undergraduate level, six recommendations are proposed to emphasize the concept that addiction is a chronic disease with multifactorial nature (physical and psychological). Interactive learning style and training are highly recommended methods of learning for undergraduate education. At the continuous education and practice level, three main recommendations are proposed to improve the current practice of community pharmacists and deliver the optimum level of care for drug addiction through community pharmacists.

6.1 Undergraduate Level

6.1.1 Neurosciences: Neuroscience and the biochemical changes in the human brain should be a major component of addiction education. Neuroscience should be linked with human behaviors and the common signs and symptoms associated with these biochemical alterations in the nervous system. Addressing addiction under the neuroscience umbrella would aid in eliminating the roots of stigma and discrimination.

6.1.2 Social Components of the Disease: Educating students about the addiction etiology, history, and the effect of traumatic social experiences with PWSAD should be included within the addiction education component of a curriculum. The correlation between addiction and traumatic social experiences should be highlighted during undergraduate training. The interactions between social, environmental and physical factors, which lead to addiction is good example to illustrate the complexity of the disease of addiction.

- 6.1.3 Incorporating the Concept of Harm Reduction: harm reduction and addiction treatment/recovery is another critical component that requires additional emphasis. The controversy around addiction treatment outcome, abstinence vs controlled use, should be discussed as well. Students should appreciate that addiction treatment aims at gaining productive individuals in the society who is capable of dealing with life challenges without the help of drugs. As addiction education aims to shift student thinking concerning addiction and improve the care for PWSAD; didactic conventional methods should be limited and substituted with training in a harm reduction facility such as MMT pharmacy. Students will have the chance to be exposed to patients suffering from addiction and create their own experiences based on reality rather than preconceived stigmatized perspectives.
- 6.1.4 Introducing Interactive Learning: Addiction education should be introduced in an interactive setting to stimulate discussion concerning personal beliefs, society resistance and duty of a health care provider. Students have to learn how to balance between limiting drug diversion and the importance of initiating a conversation. Problem Base Learning (PBL) is the best learning method for addiction. Students get the chance to have debate among their peers regarding their role as health care providers and the stigma surrounding addiction. Having a recovered PWSAD as a guest speaker would be great idea to rap a PBL case.
- 6.1.5 Training: Training is a primary element in addiction education. Students should be exposed to real life cases of drug addiction to overcome stigma. Communication skills, motivational intervention, brief intervention and wheel of

change are all important to help students grasp major concepts and practice important skills. Students should have basic knowledge about social services that could help PWSAD and their families. Students can learn how to navigate the system to reach services and do referral based on patients' needs.

6.1.6 Train the Trainer: To achieve all the required objectives from the undergraduate addiction education; expert faculty members and trainers are needed. Once addiction education material was taught from a faculty, who believe in the major concept of addiction recovery, treatment, harm reduction; it will be effective and easier for the student to grasp the information and translate it to actual practice upon graduation. However, having faculty with a negative personal beliefs concerning addiction will limit the efficiency of addiction course. Therefore, half-day workshop or short training programs is highly recommended for faculty involved in addiction education.

6.2 Continuous Education and Practice Level

6.2.1 Addiction Protocol: It is highly recommended to implement a protocol to guide community pharmacists through their encounters with PWSAD. Such a protocol would provide set of steps that pharmacists can follow under different circumstances for screening, identifying, and referral e.g. CAGE Substance Abuse Screening Tool. The protocol can be a set of questions that would allow pharmacists to provide effective assessment for the clients' needs. In addition, it will give pharmacists the opportunity to use proper intervention and recommend specific referral according to the situation.

6.2.2 Referral Guides: Designing referral guide with available services e.g. social, rehabilitation, counseling, and its accessibilities was a major need expressed by community pharmacists interviewed in this study. Referral guide should list available accommodation services, such as food and shelters, rehabilitation, and counseling; it has also to illustrate accessibility/eligibility to these services. The referral guide should be accompanied with a promotion tool, namely a poster. This promotional tool or advertising poster should refer for the community pharmacists as a source of information concerning addiction services and treatment. In addition, small pamphlet with main numbers or websites for addiction services in the city, which pharmacists can hand to patients when needed is another suitable tool that would facilitate pharmacists' roles addressing the disease of addiction.

6.2.3 Interactive Learning Sessions: Continuous education for practicing pharmacists has to include interactive educational sessions. It is recommended to be inter-professional interactive educational sessions with other health care providers involved in the field of addiction (addiction physicians, nurses and social workers). Different experiences, approaches and sharing stories concerning positive or negative experiences and best practices concerning addiction should be the core of these sessions. The learning session will give the opportunity for practicing community pharmacists to understand the scope of practice for each profession, which is important to provide optimum care for drug addiction.

6.3 Research Implication

This thesis has provided a basic understanding of the education and skills needs for practicing community pharmacist in the city of Saskatoon. The phenomena of inadequate education and skills concerning addiction is considerably newly investigated phenomena. Therefore, a basic understanding of the phenomena was required to draw attention for future research to this area. The study has provided a foundational knowledge of the phenomena from the perspective of practicing community pharmacists in Saskatoon. Future research would be needed on a larger scale for the generalization of the findings. As indicated through the thesis, a survey that investigate in details the educational contents and training programs concerning addiction in the 10 Canadian pharmacy schools is needed. In addition, the perspectives of the faculty, who are teaching addiction related material, should also be investigated.

Another research opportunity would be a detailed quantitative survey targeting at the practicing community pharmacists to validate their educational needs that were articulated in this study. In addition, any newly implemented educational strategy should be evaluated to assess its effectiveness.

6.4 Conclusion

In conclusion, the research findings support many existing studies concerning the educational gap among health care providers. The knowledge gap is related to the social aspects of addiction, short intervention strategies, and strategies for managing encounters with PWSAD. The current educational system continues to focus on pharmacological and clinical aspects of the disease of addiction, neglecting the social aspects of addiction.

Therefore, it is important to establish a strong foundational knowledge base among practicing community pharmacists about addiction best practices and treatments choices before revising the educational content. This step should be followed by knowledge translation and disseminating research findings concerning best practices in the field of addiction without presuming that the content should be pharmacology-focused.

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APPENSECIES

Appendix A

Hi Sarah:

My apologies for the delay in responding to your question. We did some preliminary feasibility work regarding the addition of substance use disorders to the CCDSS in relation to mental illness surveillance, however this will not be added to the CCDSS for ongoing national surveillance and reporting. The estimates from the feasibility work are thought to grossly under estimate the prevalence of these conditions. CCDSS relies on contacts with the health care system through billing physicians and hospitalization. Services for substance use disorders tend to be more community focussed and are therefore not captured by CCDSS at this time. In the future, it's possible that treatment could become more medicalized warranting surveillance through admin data. We will continue to periodically monitor through the CCDSS to determine if the rates are more in line with those expected in the future.

I hope this helps.

Louise.

Louise McRae

Public Health Agency of Canada / Agence de la Santé Publique du Canada
Surveillance and Epidemiology Division / Division de la surveillance et de
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----- Forwarded by Louise McRae/HC-SC/GC/CA on 07/11/2014 02:21 PM -----

From: Jean-François Godin/HC-SC/GC/CA

To: Louise McRae/HC-SC/GC/CA@HWC

Date: 30/10/2014 03:52 PM

Subject: Fw: Addiction & CCDSS

Appendix B

College of Physicians and Surgeons of Alberta Physician Health Monitoring Committee

Section: Addiction	Approved Date June 25, 2008	Revised Date
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There are a number of differing definitions for the disease of addiction. Currently the most relevant ones in North America are those of the American Society for Addiction Medicine and the Canadian Society of Addiction Medicine who share a common agreed upon definition. The only other definition is that of the World Health Organization (WHO). For legal purposes, the most widely recognized definitions are those of the DSM 4. The DSM does not contain a definition of Addiction per se, but rather gives definitions of Substance Abuse and Substance Dependence. The latter being the closest to a definition of Addiction.

CSAM and ASAM Definition:

Addiction - A primary, chronic disease, characterized by impaired control over the use of a psychoactive substance and/or behaviour. Clinically, the manifestations occur along biological, psychological, sociological and spiritual dimensions. Common features are change in mood, relief from negative emotions, provision of pleasure, pre-occupation with the use of substance(s) or ritualistic behaviour(s); and continued use of the substance(s) and/or engagement in behaviour(s) despite adverse physical, psychological and/or social consequences. Like other chronic diseases, it can be progressive, relapsing and fatal.

World Health Organization Definition:

Addiction, drug or alcohol - Repeated use of a psychoactive substance or substances, to the extent that the user (referred to as an addict) is periodically or chronically intoxicated, shows a compulsion to take the preferred substance (or substances), has great difficulty in voluntarily ceasing or modifying substance use, and exhibits determination to obtain psychoactive substances by almost any means. Typically, tolerance is prominent and a withdrawal syndrome frequently occurs when substance use is interrupted. The life of the addict may be dominated by substance use to the virtual exclusion of all other activities and responsibilities. The term addiction also conveys the sense that such substance use has a detrimental effect on society, as well as on the individual; when applied to the use of alcohol, it is equivalent to alcoholism. Addiction is a term of long-standing and variable usage. It is regarded by many as a discrete disease entity, a debilitating disorder rooted in the pharmacological effects of the drug, which is remorselessly progressive. From the 1920s to the 1960s attempts were made to differentiate between addiction ; and "habituation", a less severe form of psychological adaptation. In the 1960s the World

Health Organization recommended that both terms be abandoned in favour of dependence, which can exist in various degrees of severity. Addiction is not a diagnostic term in ICD-10, but continues to be very widely employed by professionals and the general public alike. *See* also: dependence; dependence syndrome

DSM definitions of Abuse and Dependence:

Substance Abuse - a medical diagnosis, as specified in the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM IV) - A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

**College of Physicians and Surgeons of Alberta Physician
Health Monitoring Committee**

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- recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; neglect of children or household)
- recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
- recurrent substance-related legal problems (e.g., arrests for substance-related disorderly conduct)
- continued substance use despite having persistent or recurrent social or interpersonal problems caused by or exacerbated by the effects of the substance (e.g., arguments with spouse about consequences of intoxication, physical fights)

The symptoms have never met the criteria for Substance Dependence for this class of substance.

Substance Dependence - a medical diagnosis as specified the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM IV) - A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

- tolerance, as defined by either of the following:
- a need for markedly increased amounts of the substance to achieve intoxication or desired effect
- markedly diminished effect with continued use of the same amount of the substance

- withdrawal, as manifested by either of the following:
- the characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for Withdrawal from the specific substances)
- the same (or closely related) substance is taken to relieve or avoid withdrawal symptoms
- the substance is often taken in larger amounts or over a longer period of time than was intended
- there is persistent desire or unsuccessful efforts to cut down or control substance use
- a great deal of time is spent in activities necessary to obtain the substance (e.g., visiting multiple doctors or driving long distances), use the substance (e.g., chain-smoking), or recovering from its effects
- important social, occupational, or recreational activities are given up or reduced because of substance use
- the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption)

The policy of the College of Physicians and Surgeons of Alberta will be to adhere to the DSM definition of Substance Dependence in mandating treatment to addicted physicians. This diagnosis should be included in any assessments performed for the CPSA. It is upon the diagnostic criteria of the DSM 4 that the diagnosis will be made and treatment and maintenance and monitoring programs mandated.

Appendix C

Dear associated dean Academic / undergrad affaire,

I am a graduate student at the College of Pharmacy and Nutrition, University of Saskatchewan. My thesis is concerned with an assessment of the educational needs for pharmacists regarding substance abuse. According to literature, there is shortage in substance abuse-related educational hours as well as practice skills within pharmacy programs. In particular, the complex social element of substance abuse is not properly addressed.

I am contacting you to learn about the undergraduate pharmacy program at the University of.....; in particular, what aspects are currently covered in your curriculum regarding substance abuse. I do anticipate coverage within the pharmacotherapy area; however, I am very curious if the social aspects of substance abuse are discussed within your curriculum. For example, are pharmacists trained how to effectively engage a suspected abuser; are they aware on how to deal with abusers who is seeking help and provide him/her with the right referral; are pharmacists educated with regards to harm reduction strategies and the disease of addiction. Can you please send me the syllabus of any course that addresses the issue of substance abuse whether at pharmacological or social levels?

Thank you for your time reading my e-mail and I look forward to hearing from you. Should you require any additional information, please feel free to contact me.

Best regards,

Sarah Fatani
Pharmacy MSc. Candidate
College of Pharmacy & Nutrition
University of Saskatchewan
Phone: (306) 262-3545

Appendix D

Interview guide

First of all I would like to thank you for your willing to participate in this study. Hopefully by the end of this interview we can understand more about your experience with drug addicts.

Hi my name is Sarah Fatani I am conducting a research project that merit to understand the education and skills needs for community pharmacists concerning the disease of addiction. Again I would like to thank you for your interest in participating in this study. I would like to reassure you that all the collected information from this interview will be treated in highly regard of privacy, secrecy, and anonymity. Also I would like to remind you that you are totally free to refuse answer questions that make you uncomfortable and you can withdraw from the interview at any time.

Interview Questions:

1- Would you please give me brief introduction about yourself?

Probes:

- a. Graduation year
- b. School of graduation
- c. Years of practicing in Saskatchewan

2- Can you please tell me your graduation year, and from what school?

Probe:

- a. How long have you been practicing as a community pharmacist in Saskatchewan?

3- What is harm reduction? How do you feel about providing harm reduction services through your pharmacy?

Probes:

- a. Is there any harm reduction services provided through your pharmacy? E.g. methadone maintenance therapy, needle exchange program. If yes, how much of your time is spent caring for addict patients. (Compare the service time between addicts and other patients)

4- What are your thoughts about addiction in the City of Saskatoon? In your opinion, what is the seriousness of addiction in Saskatoon?

5- Based on your knowledge and practical experience how do you perceive addiction or how would you define addiction? Can you please define addiction?

Probes:

- a. What is the difference between addiction and substance abuse
- b. Do you classify addiction as a physical illness? Should it be approached it holistically? (Holistic view for addiction includes the social issues attached to the disease of addiction)

6- On average how often do you encounter drug addicts in your working hours weekly?

Probes:

- a. Approximately, when was your last encounter
- b. How do these encounters make you feel (about them as a patients, as yourself as a health care provider). Why they make you feel that way?

7- Under which circumstances do you usually encounter drug addicts? E.g. diversion attempt to obtain drugs, seek help for their addiction, prescription refile

Probes:

- a. How do you identify or suspect that you are encountering drug addicts
- b. Does your procedure change under each situation can you elaborate?

8- By providing service to drug addicts under whatever circumstances was and based on your experience, how do you feel about them?

Probe:

- a. Why do you feel that way?
- b. How do you think we can help them?

9- What do you know about the health care services provided for addicts E.g. social services, rehabilitation services, food services, housing, child care.....

10- Based on your level of training how do you encounter an addict in your practice, what do you usually do to manage the situation? Do you follow a known sequence of steps for different situations?

Probes:

- a. Why did you choose this certain procedure?
- b. If you follow a specific procedure, how did you learn it? Do you think it is an effective procedure? How did you measure its effectiveness? What would you recommend to improve it? Did you share it with other colleagues?
- c. If you do not follow a specific procedure, what do you need to effectively handle an encounter with a patient struggling with addiction? E.g. more information about the disease of addiction, information about common characteristics of addicts (Wheel of change), ways to motivate the client (Motivational Interviewing).

11- Based on your practical experience, do you think your education in the undergraduate, postgraduate, and continuing education equipped you with the needed tools to provide services to addiction patients (e.g. screen, counsel, motivate the client to seek help, share other helpful resources with the client)?

Probes:

- a. If yes, can you mention some of the skills or information you learned in your training that was related and helpful to your practice and under which program?
- b. If no, what do you recommend to be possibly incorporated in the pharmacy curriculum and/or continuing education?
- c. what did you learn from your experience in practice that you wished you have learned in the undergraduate program

12- Can you tell me about your preferred settings to receive education and training (best practice) about the disease of addiction and how to deal with addicts that would best fit your schedule? E.g. workshops, online programs or courses, mailed material, addiction counsellor lectures

Probes:

- a. If we want to do something tomorrow in order to improve pharmacists' encounters with addicts, what would it be? What do you like to see happening now? e.g. referral guide to addiction services within the city

13- Would you like to add any other information?

Appendix E

Behavioral Research Ethics Board (Beh-REB)

Consent Form

You are invited to participate in research project entitled “Qualitative Assessment of the Education and Skill Needs for Community Pharmacists Regarding Substance Abuse.” Please read this form carefully, and feel free to ask questions you might have.

Principle Researchers:

Sarah A. Fatani, BSc (Pharmacy MSc Candidate)

Phone: (306) 262-3545

Email: saf250@mail.usask.ca

Anas El-Aneed, MBA, Ph.D., Associate Professor

Phone: (306) 966-2013

Email: Anas.el-aneed@usask.ca

Purpose and Procedure: Thank you for participating in this study! The purpose of this study can be summarized in the following points:

1. Identify the skills and educational needs for pharmacists with regards to providing services to Addicts/Substance Abusers.
2. Recognize the types of educational/training programs community pharmacists would prefer to receive in order to improve their services to substance abusers and in what areas of science (social or basic science).
3. Identify immediate needs to improve contemporary services e.g. referral guide.
4. Inquire about possible obstacles facing community pharmacists in providing services to addicts.

The data collection tool in this study will consist of a personal, one-to-one interview, which will last approximately 40 minutes. The interviews will be audio recorded in order to be transcribed at a later date. You may request that the audio tape to be stopped at any time. As a small measure of our gratitude, a small honorarium (\$40 gift cards) will be provided at the end of the interview.

The finding of this study will be presented at health/scientific conferences, and to policy makers. Also, the finding may be submitted for publication in peer-reviewed journals, and be distributed to key stakeholders in a report written in non-technical language. All disseminated

materials will include the themes generated from the all interviews, so your identity cannot be identified. If after completion the interview, and prior to the data being disseminated, you have any second thoughts about your participation, please feel free to contact the researcher in order to withdraw your data from the project.

Potential Benefits and Risks: You may not personally benefit from participation in this study. The information you provide may help Saskatoon Health Region or other regulatory bodies such as Saskatchewan College of Pharmacists to implement useful tool to help community pharmacists improving their services for people who is suffering from the disease of addiction like, service referral guide, workshops or training sessions. Also, the results of this study may be important factor in changing the curriculums in the pharmacy school to equip future pharmacists with skills needed to make a difference in the life of people with the disease of addiction.

There is no anticipated risk associated with participating in this study. To protect your anonymity, no direct quotation that contains the name of a specific service will be used.

Storage of Data: This interview will be audio-taped. The audio records electronic files of all the interviews will be stored in the password secured computer in a locked office of Dr. Anas El-aneed at the University of Saskatchewan. The data will be stored for five years, and when it is no longer required, the audio recording will be appropriately destroyed.

Confidentiality: Your identity and any information provided will be treated in a confidential manner. The data from this research project will be published and presented at conferences and community groups; however, your identity will be kept confidential. Although we will report direct quotations from the interviews, your name, and all identifying information (such as the name of your institution or position) will not be included in any reporting.

Right to Withdraw: Your participation is voluntary, and you can answer only those questions that you are comfortable with. There is no guarantee that you will personally benefit from your involvement. The information that is shared will be held in strict confidence and discussed only with the research team. You may withdraw from the research project for any reason, at any time, without penalty of any sort. If you withdraw from the research project at any time, any data that you have contributed will be destroyed at your request. Your right to withdraw data from the study will apply until the data has been pooled. After this point, it is possible that some form of research dissemination will have already occurred and it may not be possible to withdraw your data.

Questions: If you have any questions concerning the research project, please feel free to ask at any point; you are also free to contact the researchers at the numbers provided if you have other questions. This research project has been approved on ethical grounds by the University of Saskatchewan Research Ethics Board. Any questions regarding your rights as a participant may be addressed to that committee through the Research Ethics Office ethics.office@usask.ca (306) 966-2975. Out of town participants may call toll free (888) 966-2975.

Follow-Up or Debriefing: Notifications will be sent out to all participants by the end of the study. Also, the interviews will be transcribed and sent for you for verification. You will be verifying that the transcript is matching what they said in the interview. You will be allowed to reword, edit your transcript or add more clarification to what you mentioned in the interview.

More information and results summary can be provided as well when inquired via the preferred way of contact.

I have read and understood the description provided; I have had an opportunity to ask questions and my questions have been answered. I consent to participate in the research project, understanding that I may withdraw my consent at any time. A copy of this Consent Form has been given to me for my records.

(Name of Participant)

(Date)

(Signature of Participant)

(Signature of Researcher)

Appendix F

Survey

Understand Pharmacists prospective about addictions

Behavioral Research Ethics Board (Beh-REB)
College of Pharmacy and Nutrition



Dear Community Pharmacist:

I would like to thank you in advance for taking few minutes from your time to review this survey letter. The purpose of this survey is to improve our understanding of community pharmacists' experiences and encounters with drug addicts. This survey is a part of a bigger research project which aims to identify the education and skills needs for community pharmacists; concerning the disease of addiction. The Results of this research will impact policy and future educational plans (undergraduate curriculum and continuous education) for pharmacists.

Drug addiction has reached a critical level in Canada. Approximately more than one million aged 15 and older were reported to have experienced at least one type of harm due to illicit drug use. The harm associated with addiction includes physical, mental and social consequences, such as homelessness; loss of employment; and legal issues. The Canadian Centre on Substance abuse (CCSA) reported in 2006 that alcoholism and illicit drug use costs the Canadian society an estimated **\$22 billion** every year.

Community pharmacists encounter clients with addiction, some of which are seeking help for their disease while others may be drug seeking. Therefore it is important to understand pharmacists' perspectives about the disease of addiction, their encounters with drug addicts and the seriousness of the disease in the city of Saskatoon.

It will take approximately 5 minutes to fill this survey and your participation is important. However, it is completely voluntary and you do not have to complete the questionnaire if you chose so; you may also refuse to answer individual questions. You may withdraw from the study at any time. Only the research team members will have access to the data arising from this study. All information will be stored in secure, locked facilities in the office of the principle investigator (Anas El-aneed) at the University of Saskatchewan. Data will be aggregated and presented in thematic format with no linkage to individual responses. Results will be reported in the student-researcher's thesis, research journals and at health conferences.

Should you inquire more information about the research please contact:

Dr. Anas El-Aneed, Associate Professor
College of Pharmacy and Nutrition
University of Saskatchewan
Phone: (306) 966-2013
Email: Anas.el-aneed@usask.ca

Pharmacists Perceptions Regarding Addiction

Please select the best answer for the following questions:

1. Age

- 20 – 30 31 – 40 41 – 50 51 – 60 61 and older

2. Year of graduation from pharmacy undergraduate program: _____

3. Gender

- Female Male

4. Education

- Bachelors Master Pharm D Other Please identify _____

5. How many educational hours did you receive regarding addiction in your pharmacy undergraduate program?

- 5hr. and more 4hr. 2 hr. and less None

6. How many educational hours did you receive regarding addiction in your continuous education (CE) or any post graduate education?

- 5hr. and more 4hr. 2 hr. and less None

7. Are there any harm reduction services provided through your pharmacy

- No Yes Please specify _____

8. How many times on average you encounter drug addicts in your pharmacy per month?

- 0 time 1-2 times 3-4 times 5 times and more

9. In which of the following situations have you encountered drug addicts (please select all that apply)

- Diversion to obtain drugs Seeking help for their addiction
 Prescription refill Other situations Please specify: _____

10. Addiction is a serious growing disease in Canada

- Strongly Agree Agree Disagree Strongly Disagree

11. Addiction is highly prevalent disease in my working place comparing to other parts of The City of Saskatoon

Appendix G

Thesis: Qualitative Analysis of the Education and Skills Needs for Community Pharmacists
Regarding Drug Addiction.

Student Researcher: Sarah Fatani
Supervisor: Dr. Anas El-Aneed
External Auditor: Scarlett Ewen

***External Audit** – involves having a researcher not involved in the research process examine both the process and product of the research study. The purpose is to evaluate the accuracy and evaluate whether the findings, interpretations, and conclusions are supported by the data.*

- 1. Documentation available**
- 2. General observations**
- 3. Comments on themes**

- 1. Documentation** from audit trail available included: transcripts from all participants, themes and sub-themes from NVivo,, table of emerging themes, and consent form (to see purpose of study).
2. Some **general observations** on the transcripts (from my outside perspective):
 - Transcription was done well. Although I believe some areas of transcription may have been complemented with some researcher's notes. Or perhaps you have this in another document. I only mention this because there were some areas in the transcript where I felt that the participant was not confident with their response or they did not quite understand the question. However, if you sent the transcripts to participants for verification, this would resolve any issues. I guess if there is time, that it might be in your advantage to listen to a few audio recordings a final time, to note any emotions and how

they may have any impact on your final results – you could add these emotions/reactions to your results and discussion section of thesis.

- While reading the transcripts, there were some areas where I think the participant's answers may have been influenced by the way some of the interviewer's questions were asked. Some questions were one-sided and perhaps even "leading participant into an expected answer" rather than being more open. E.g. "... you need something like a referral guide?" Nevertheless, I believe the data collected during the interviews were very in-depth, and addresses the study objectives. **Great job Sarah!**
- The topic of your research project is very interesting! Overall, I thought the interviews were very well done, and it was evident that you were able to establish rapport with most of your participants, which is such a challenge in interviews! The interviews were very focused on collecting the information pertaining to your research objectives, and you were able to hear numerous stories, which provided much more insight for you on this subject.

3. Main comments:

- For the most part I was in agreement with the themes found by Sarah, and drew similar themes. I did however struggle a bit with some of them, and have made some suggestions below. For the most part, I tried to combine some of your sub-themes together, and also reworded some to be more descriptive. I also tried to find another way to organize your results to make it clearer, and have suggested four main themes. I did go back and forth, with lots of word play, trying to decide what would be the best titles, and have thought of many! You have lots of very useful data. Below are only suggestions.

** Sarah, please call me if you would like to bounce some ideas around or brainstorm other ways to organize your data. I have lots of notes written down on my hard copies of the transcripts, so can certainly help with this. It is very fresh in my mind right now. I

think as you start writing up your results and discussion, you may have begin to have some other ideas on how to better organize this data.

- Outside of these four themes, I also saw opportunity to include an “Other” theme, which could include other miscellaneous themes/subthemes that you saw emerging. I wrote one down to start.

Suggested themes/subthemes			
	Theme	Subthemes	Extra notes
1	Many facets of drug addiction	<p>Perceptions of drug abuse/addiction (what is it)</p> <p>Psychosocial aspects of drug addiction (vs. physical aspect)</p> <p>Influence of environment/location*</p> <p>Unique individual needs of clients</p> <p>Signs and symptoms of drug addiction/abuse in the pharmacy</p> <p>Experiences with harm reduction programs</p>	<p>- When you asked your participants what is addiction, there did not seem to be one clear definition of it. Many different perspectives/definitions/perceptions (however all very similar). You might find lots of overlap with this one and psychosocial aspects of drug addiction, so might decide to combine them.</p> <p>-In addition to the higher prevalence of addiction seen in certain areas, you can also talk about housing, transportation, poverty, types of employment, peer pressure, etc., as well as the different views e.g. pharmacy on east side who is reluctant to implement harm reduction program because they think it will attract a certain type of crowd (stigma....)</p> <p>- Importance of addressing individual needs, and recognizing that no two clients are the same, their “stories” are all different * I think this subtheme could fit here or under “challenges”.</p> <p>- Also commonly referred to as “red flags”. You can also talk about addiction behaviours under this one too i.e. aggressive behaviour seen from some patients if denied or even questioned about a prescription.</p> <p>-Not sure if you prefer this as a theme, or if you just want to pull it out and use the information as your background information on your population, before getting into the themes</p>
2	Challenges/barriers in	Limited knowledge, skills and abilities (specific to	- Limited or lack of knowledge of addiction treatment,

	<p>practice (or in providing services to clients)</p> <p>(when dealing with patients with or suspected addiction).</p>	<p>addiction)</p> <p>Limited resources available</p> <p>Lack of guideline/protocol/procedure/policy (<i>Management protocol</i>)</p>	<p>harm reduction, disease management, social aspects of addiction, signs, resources/services available; limited skills in identifying addiction and with next steps to take when encountering, client-communication skills; limited abilities from lack of experience in helping/counselling clients with addictions.</p> <p>-Limited resources can include time (although you had a few participants that said time was not a factor – time is important because of x,y,z you can add lots here); the physical setting (lack of privacy or confidentially, not always a “comfy” space for the client to open up to pharmacist – does not allow for any relationship building or trust/rapport built.; small window of opportunity, etc...), materials available.</p> <p>-Different practices seen in different pharmacies; can lead to difficulties/challenges. Therefore the need for this. Sorry – not sure what the correct term would be “guidelines/procedure/policy”?</p>
3	<p>Strategies to support clients with addiction</p>	<p>Increase public awareness</p> <p>Development of additional resources</p>	<p>-Increased public awareness in e.g. a) concept of harm reduction b) that community pharmacists are “accessible/ available/open to talk to you”.</p> <p>- Resources specific to addiction/abuse/harm reduction programs, etc... (i.e. brochure, pamphlet, wallet card); what is available in the specific area.</p>
4		<p>Increased and enhanced training and education opportunities</p>	<p>- (<i>With emphasis on interactive components, and a focus on social aspects of addiction</i>) learning from other’s experiences; hearing different perspectives (i.e. counsellor specialized in methadone program; a drug user; medical doctor) to obtain big picture to help understand how best to work with these patients. Practical experience from real life clients vs. actors.</p>

		<p>Development of a guideline/protocol/procedure/policy</p> <p>Taking a closer look into resources/services</p>	<p>Conflict management. Effective communication and information exchange. Tools to build confidence. Preferences for workshops, online, lectures, etc... (you have lots here).</p> <p>-For use in pharmacy and specific to addiction; to help ensure a standard and consistent approach from pharmacy to pharmacy (long term goal)</p> <p>- Two important pieces 1) increased awareness of currently available resources/services and 2) development of new tools and resource materials for use in pharmacy i.e. a referral guide; go-to community guide, flow chart, step chart, etc.</p>
5	Other	Holistic and collaborative approach to addiction treatment	

Appendix H

Certificate for Inter-professional Substance Use Practice

The development of this certificate program was funded by a grant from the B.C.
Ministry of Health

This five course certificate program will provide an opportunity for individuals (across disciplines) working in the substance use field or those interested in this area to acquire the knowledge and competencies necessary to work in a variety of substance use treatment settings within facilities, agencies and community. The courses will also be available for upper level, undergraduate students as elective credit who are interested in this field.

The certificate supports the competency based practice established by the Canadian Centre for Substance Abuse (CCSA) to enhance professionalism within the field, support recruitment and retention of a knowledgeable workforce providing evidence based services.

The courses of the certificate program are as follows:

HLTH 4510: Introduction to Problematic Substance Use and Approaches for its Prevention and Treatment (3,0,0)

This course is designed to provide participants with grounding in the theoretical underpinning of substance use practices through a review of conceptual, historical, political, and societal factors that influence values, beliefs, approaches, and practices with persons with problematic substance use. Throughout the course participants will be encouraged to reflect upon their own attitudes and beliefs and to consider how prior knowledge and experiences may have influenced their understanding of substance use disorders and their perceptions of persons experiencing problematic substance use and their families. Foundational concepts and methods in prevention and treatment of problematic substance use will be introduced.

HLTH 4520: Assessment and Intervention 1: Working with Individuals and Families to Support Recovery from Problematic Substance Use (nearing completion)

Building on many of the concepts introduced in HLTH4510, this course will focus on ways of supporting individuals and families who are adversely affected by substance misuse. The intent

of this course is to introduce students with key concepts and basic competencies they will build upon in 4530 in order to be successful in their practicum. It will blend evidence-informed practices and core behavioural and technical competencies for addiction professionals through an interprofessional lens.

Consideration will be given to the social determinants of health and the impacts these have upon case conceptualization and care planning. Topics will include: historical and contemporary theories and perspectives on addiction and addiction treatment; core concepts necessary for client centred care such as ethical decision making; establishing a therapeutic relationship; effective communication; and screening and assessment as not just a precursor but an ongoing and essential component of treatment. Evidence based interventions will be examined with a special emphasis on skills within evidence based practices that illustrates a selection of core technical competencies. Evidence based practices will include: Motivational Interviewing; Brief Intervention; Cognitive Behavioural Therapy; Relapse Prevention; Behavioural Couples Therapy; Community Reinforcement Approach and Family Training; Contingency Management; Behavioural Social Skills Training; and Adjunctive Pharmacotherapy.

HLTH 4530: Assessment and Intervention 2: Working with Individuals and Families to Support Recovery from Concurrent Disorders (under development)

This course will build on HLTH4520 and focus on the integration of more advanced knowledge, skills and tools required in increasingly complex situations. The course will begin with an examination of care from a systems level and explore how systems shape the delivery of frontline services. The central focus will be on servicing individuals (and their families) who are living with serious mental illness and addiction. It will blend evidence-informed practices and core behavioural and technical competencies for addiction professionals through an interprofessional lens. Consideration will also be given to specific populations. Consideration of culture, diversity, gender, sexual orientation and race and the impact on client health and treatment will be a focus in each case study assignment.

HLTH 4540: Population-Based Prevention and Intervention (under development)

This course will require participants to take a broadened view of approaches to reducing risk and harms of substance use for individuals, helping systems and communities, including health promotion, prevention, harm reduction and drug policy. Participants will consider population as individuals, families, social and demographic cohorts, neighbourhoods and larger communities when examining policy, programs, advocacy and legislation aimed at preventing and/or reducing substance use/abuse.

HLTH 4550: Clinical Practicum/Directed Reading (under development)

Clinical Practicum is designed to consolidate addiction treatment and prevention theory and practice. Over the course of 13 weeks, students will participate in a series of online directed readings and assignments and receive 96 hours of clinical experience. Students will be provided the opportunity to demonstrate competency in addiction prevention and treatment practice, integrating aspects of all discipline and health related course theory. Emphasis is placed on demonstration of behavioural and technical skills required to meet the current competency profiles for Canada's substance abuse workforce. This course will enable students to expand their knowledge by providing an opportunity to observe service areas within the addiction prevention and treatment system.