

**Becoming a Medicinal Marijuana User: Applying
Becker's Analysis of Recreational Cannabis
Users to a Medicinal Framework**

by

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Abstract

This study examines the process involved in becoming a medicinal marijuana patient, drawing upon Becker's (1953) analysis of recreational marijuana users as a guide. Semi-structured open ended qualitative interviews were conducted with a purposively chosen sample (n=22) of medical marijuana patients currently using cannabis to alleviate symptom(s) of an underlying medical condition(s). Nine participants (50%) describe a seamless transition without any period of desistance, seven participants (39%) indicate a period of desistance between recreational use and medicinal use, and two participants (11%) indicated that they had a period of cessation or fragmented use after the onset of their symptoms or after acknowledging a medicinal benefit and then resumed medicinal use at a later point. Despite the different pathways individuals may take to become medical cannabis patients (i.e. life course persistent versus those with a period of cessation between their phases) it is evident that one's recreational experience alone does not provide sufficient knowledge and understanding to effectively treat one's medical symptoms. All participants engaged in some form of learning post transition. Participants received limited information from their health care providers regarding the therapeutic use of cannabis. They often had to seek out information on their own, either through social avenues such as like minded peers or dispensary staff, but also through their own independent research and experimentation. Overall, treating one's symptoms with cannabis is a complex undertaking and is subject to change as individual needs, preferences, and access to product changes. Patients who access cannabis through different means- the Federal program, dispensaries, and or compassion clubs- would benefit greatly from more knowledgeable health care providers.

Keywords: medicinal; cannabis; marijuana; therapeutic; learning; dispensary

Dedication

*To my best friend and confidant who provided
copious amounts of love, support, and motivation
to help me see this through.*

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List of Acronyms

CAMCD	Canadian Association of Medical Cannabis Dispensaries
CBD	Cannabidiol
CBM	Cannabis Based Medicine
CDSA	Controlled Drugs and Substance Act
CMA	Canadian Medical Association
DPD	Drug Product Database
FDR	Food and Drugs Act
HCP	Health Care Provider
IOP	Intraocular Pressure
MMAR	Marihuana Medical Access Regulations
MMPR	Marihuana for Medical Purposes Regulations
NCR	Narcotic Control Regulations
PAH	Polycyclic Aromatic Hydrocarbon
SFCBC	San Francisco Buyers Club
TCP	Therapeutic Cannabis Patient
THC	Δ^9 Tetrahydrocannabinol
UEM	Urban Earth Med
VAS	Visual Analogue Scale
VCD	Vancouver Cannabis Dispensary
WHO	World Health Organization

Chapter 1.

Introduction

Becoming a Marijuana User (1953) by Howard Becker illustrates the process a person goes through to become a recreational marijuana user. Becker addresses the influence of one's social group in facilitating an individual's drug use, as well as the key techniques one must master in order to identify the sensations of the high, connect those sensations to the drug itself, and then internalize the sensations as favourable (1953). Marijuana remains a popular subject within academic discourse. According to the *World Health Organization* (WHO) cannabis is the most globally pervasive illicit substance ("WHO Cannabis," n.d.). Under the Canadian *Controlled Drugs and Substances Act* (CDSA), cannabis and its derivatives are classified as Schedule II drugs (1996). Accordingly, it is a criminal offence to possess cannabis except as authorized under the regulation (CDSA, 1996, c 19). Based on the findings from the 2013 *UNICEF Office of Research Report*, Canada has the highest prevalence of illicit cannabis use among young people from developed countries (Adamson, 2013). Interestingly, according to findings from the 2012 Canadian Alcohol and Drug Use Monitoring Survey (2014) illicit cannabis use among adults 25 years and older has increased from 6.7 percent in 2011 to 8.4 percent in 2012.

The information above pertains to the illicit use of cannabis. In 2001 the *Marijuana Medical Access Regulations* (MMAR) were passed, which permitted individuals suffering from debilitating ailments to possess marijuana and use it in the treatment of their medical condition(s) (2001). The MMAR is no longer in effect, replaced by the *Marihuana for Medical Purposes Regulations* (MMPR) in April of 2014. As it stands, the only current legal avenue to obtain medicinal marijuana in Canada is through the MMPR program, though court challenges to this legislation have yet to be decided ("Statement: Medical Marihuana Access Regulations Update," 2014).

Despite the government's monopoly on the industry many people obtain medicinal cannabis through membership with various community based medical cannabis dispensaries and compassion clubs (Hathaway & Rossiter, 2007; Lucas, 2008). These organizations emerged in the late 1980s during the AIDS epidemic and were comprised of a few underground dispensaries in the San Francisco area (Lucas, 2008). In Canada the first organization, the British Columbia Compassion Club Society (BCCCS) located in the city of Vancouver opened its doors in 1997 and continues to provide its members with high quality cannabis for medicinal purposes (Lucas, 2008; "Our Story-BCCCS", n.d.).

Over the past forty years contemporary research has attempted to separate the folklore and hearsay around medicinal marijuana by examining the therapeutic utility of cannabis through a more objective process. By incorporating a degree of empiricism (blind, double blind and placebo controlled methods) these studies have demonstrated some therapeutic benefit to using cannabis for a wide range of symptoms. With regard to social science research, much of the literature so far has focused on amassing demographic data on medical users, addressing the reasons for use, illustrating the impact medicinal marijuana has had on an individuals' life, and the role it has played in their treatment (Belle-Isle et al., 2014; Botorff et al., 2011; Pedersen & Sandberg, 2013; Reinerman, Nunberg, Lanthier, & Heddleston, 2011; Walsh et al., 2013; Ware, Adams, & Guy, 2005). Interestingly, there has been little research specifically focusing on the process of becoming a medicinal cannabis patient and how therapeutic patients acquire the necessary information to treat their symptoms.

This thesis draws upon the research from noted sociologist Howard Becker, in particular, his 1953 study examining the process involved in becoming a marijuana user. His early work will help to develop a better understanding of the sequence of actions and behaviours that foster medicinal use. How does one become a therapeutic cannabis patient (TCP)? What sources of information inform their medicating practices? What information do individuals need to seek out to be able to effectively use cannabis in a medicinal capacity? Chapter seven will analyze the variables associated with medicinal use. Chapter eight will discuss the process involved in becoming a TCP, analyze how people learn to use cannabis in a medicinal capacity, and address the sources of

information that guide and inform TCPs medicating practices. The overall objective of this thesis is to bring to light the sequence of events and behaviours that encourages medicinal marijuana use.

Chapter 2. Efficacy of Cannabis Based Medicines

The following section will discuss the effectiveness of cannabis medicine in the treatment of pain, spasticity associated with multiple sclerosis, appetite stimulation in cancer and AIDS patients, antiemetic benefits for individuals undergoing chemotherapy and AIDS treatment, and glaucoma. The majority of the information that will be presented in this section comes from randomized, double blind placebo controlled studies.

2.1. Spasticity

There is no single definition of spasticity; rather it is a series of symptoms (Collin, Davies, Mutiboko, & Ratcliffe, 2007). It is typically characterized by increased muscle tone and sufferers often report loss of muscle control (Collin et al., 2007; Petro, 1997; Zajicek et al., 2003). This condition brings considerable pain, reduced mobility, weakens the muscles, causes postural abnormalities and muscle spasms (Collin et al., 2007, Vaney et al., 2004; Zajicek et al., 2003; Vanek, 2014). Spasticity is often associated with certain neurological disorders including; stroke, cerebral palsy, spinal cord injury and multiple sclerosis (Vanek, 2014). The majority of studies presented in this section will focus on spasticity associated with multiple sclerosis.

There are a number of anecdotal accounts and a few single case studies that indicate a relationship between smoking marijuana and a reduction in spasticity (Meinck, Schönle, & Conrad, 1989; Petro, 1997). The findings of several studies using cannabis extract and cannabis based medicines (CBMS) indicate a reduction in spasticity and related symptoms as reported by the patient (Maurer, Henn, Dittrich, & Hofmann, 1990; Ungerleider, Andyrsiak, Fairbanks, Ellison, & Myers, 1988; J. Zajicek et al., 2003). Often there are no significant results in mean Ashworth scores, but in some cases active

treatment (i.e. cannabinoid treatment) showed promising results even if not statistically significant (Collin et al., 2007; Vaney et al., 2004; Zajicek et al., 2003).

The Ashworth score is a tool used to assess a patient's level of spasticity. Although there are modified versions of the test the objective is to assess the amount of resistance in a given limb as it passively rotates (Fleuren et al., 2010). The Ashworth scale assesses biological impairment rather than disability and does depend on the estimation of the examiner administering the test (Vaney et al., 2004). An example of the scale is provided below:

“Ashworth scale of muscle tone is (0=normal, 1=slight increase when the limb is moved, 2= more marked increase but not restricting movement, 3= considerable increase limiting passive flexion and 4= limb rigidity in flexion or extension)” (Vaney et al., 2004, p 418)

Despite its popularity it does appear to be flawed, which has some researchers questioning its effectiveness and usefulness in assessing this disorder. Some researchers argue that the Ashworth score might not be sensitive enough to detect small but clinically significant changes (Vaney et al., 2004; Zajicek et al., 2003). There may also be some issues in regards to inter-rater and intra-rater reliability. One study found that the inter-rater reliability of the Ashworth score and its modified version ranged from moderate to good and the intra-rater reliability ranged from poor to good (Mutlu, Livanelioglu, & Gunel, 2008). Some researchers believe that the Ashworth score is a poor assessment tool and that alternative methods of assessment are needed (Fleuren et al., 2010).

Interestingly Zajicek et al. (2005) in a follow up study found a small, but statistically significant treatment effect on change in Ashworth score from baseline to 12 months for the delta-9-THC treatment condition. Although patients reported that both the delta-9-THC condition and cannabis extract condition were effective in reducing their spasticity, the delta-9-THC condition was the only one confirmed by the Ashworth score (Zajicek et al., 2005). The authors suggest that there might be some long term benefits of cannabis based medicines for the treatment of spasticity (Zajicek et al., 2005).

Not all evidence supports the use of cannabis for the treatment of spasticity, including evidence from both patients' subjective ratings and clinical assessment.

Killestein and colleagues (2002) conducted a study investigating the safety tolerability and efficacy of oral THC and cannabis sativa extract (i.e. Sativex). They found that both cannabis extract and THC produced no significant results in Ashworth scores or the Expanded Disability Status Scale (EDSS) scores and found a worsening of brainstem Functional System Scores (FSS) in the Sativex condition (Killestein et al., 2002). Patients Visual Analogue Scale (VAS) scores for spasticity were not statistically significant and patients in the THC condition exhibited a trend towards a deterioration in VAS scores for walking (Killestein et al., 2002). Similarly Centonze et al. (2009) conducted a study measuring the effects of Sativex and found no statistically significant results for clinical, neuropsychological and laboratory parameters (Centonze et al., 2009). The spasticity scores (both patient subjective NRS scores and Ashworth scores) did not achieve statistical significance (Centonze et al., 2009). The researchers acknowledge that their study could be influenced by the low sample size (n=20) and lack of a placebo (Centonze et al., 2009). The findings appear to be mixed regarding the efficacy of cannabinoid medication in the treatment of spasticity. Although patients generally report positive results, clinical ratings and physician assessment tend to indicate otherwise. There also appear to be some issues with the Ashworth score, which may make it an undesirable rating tool.

2.2. Pain

Several randomized placebo control studies show that cannabinoid treatment is moderately effective in providing relief of pain (Abrams, Jay, Shade, & Vizoso, 2007; Ellis et al., 2009; Jain, Ryan, McMahon, & Smith, 1981; Maurer et al., 1990; Narang et al., 2008; Noyes, Brunk, Bram, & Canter, 1975; Svendsen, Jensen, & Bach, 2004; Mark a Ware et al., 2010). The types of pain addressed in these studies include; neuropathic pain, post-operative pain, cancer related pain, pain caused by spinal cord injury, central pain caused by multiple sclerosis and pain caused by familial Mediterranean fever (Abrams, Jay, et al., 2007; Holdcroft et al., 1997; Jain et al., 1981; Maurer et al., 1990; Noyes, et al., 1975; Rog, Nurmikko, Friede, & Young, 2005). Ellis and colleagues (2009) examined the efficacy of smoked marijuana on neuropathic pain in HIV patients in a

phase II¹, double blind, placebo controlled crossover study². They found that active treatment (i.e. smoked marijuana) was more effective in reducing pain than placebo (Ellis et al., 2009).

In a single sample case study examining the subjective response to delta-9-THC compared to codeine and placebo, both THC and codeine were comparable in terms of their analgesic properties, but only THC produced a significant positive effect on spasticity (Maurer et al., 1990). Narang and colleagues (2008) examined the efficacy of dronabinol as an adjuvant treatment for chronic pain patients on opioid therapy. The two phased study showed a significant difference in total pain relief at eight hours for the 10 and 20 mg cannabinal treatments compared to placebo (Narang et al., 2008). In the second phase (cannabinoid with opioid treatment) dronabinol significantly relieved pain compared to baseline measures (Narang et al., 2008). Lastly a pilot study was conducted by Rintala, Fiess, Tan, Holmes and Bruel (2010) on the effectiveness and safety of dronabinol compared to diphenhydramine for the relief of neuropathic pain in spinal cord injuries. Their findings suggest that dronabinol was not significantly more effective than diphenhydramine (Rintala, et al., 2010). In the cases presented so far, cannabinoids (typically smoked marijuana or dronabinol) do seem to have a modest, but statistically significant effect on pain. The majority of the studies presented do rely on patient self-report data and some clinical judgement.

2.3. Anorexia Cachexia

AIDS and cancer patients often experience a significant amount of weight loss as a result of their condition as well as due to the medications and treatments for their condition (Dansak, 1997a; Dansak, 1997b; Esper & Harb, 2005). People afflicted with AIDS may develop a symptom known as Wasting Syndrome (Krampf, 1997). Its defining feature is excessive weight loss (>10 percent body weight) (Krampf, 1997). It is a very

¹ A phase II clinical study involves a larger sample group. The primary objective is to assess the drug's effectiveness and to continue monitoring its safety ("FAQ ClinicalTrials.gov - Clinical Trial Phases," 2001).

² In crossover trials participants serve as their own control. Two or more treatments are applied to each participant and the outcomes of each treatment are compared (Bland, 2010)

common occurrence among AIDS patients; the presence of this symptom alone is sufficient to diagnose an individual with AIDS (Krampf, 1997). Cancer patients may also experience significant amounts of weight loss, partly due to chemotherapy treatment as well as disease related factors (Dansak, 1997b; Esper & Harb, 2005; Plata-Salamán, 2000). Unlike starvation where fat tissue is reduced while the proteins in muscle tissue remains intact, cachexia affects both fat stores and muscle tissue (Esper & Harb, 2005). Significant weight loss further impairs the individual's health, increases fatigue and weaknesses (Esper & Harb, 2005; Plata-Salamán, 2000). Anorexia refers to a reduction of food intake and in cancer patients this may be due to a number of factors, including chemotherapy induced nausea and vomiting (Esper & Harb, 2005).

There are a lot of anecdotal accounts of cannabis increasing appetite. Empirical evidence does suggest that cannabis and other cannabinoid medications may increase appetite and thereby increase body mass. In three separate studies researchers had patients reside in a laboratory setting for varying periods of time (studies ranged from 13-25 days) (Foltin, Brady, & Fischman, 1986; Foltin, Fischman, & Byrne, 1988; Haney et al., 2007). The patients' behaviours including food consumption patterns, caloric intake and other behaviours were monitored to see if active treatment (i.e. smoked marijuana compared to placebo in two studies and smoked marijuana and dronabinol compared to placebo in one study) increased subject food consumption and weight (Foltin et al., 1986; Foltin et al., 1988; Haney et al., 2007). In all three studies there was significant caloric intake and weight gain during active treatment compared to placebo (Foltin et al., 1986; Foltin et al., 1988; Haney et al., 2007). Interestingly, the active treatment was associated with an increase in caloric intake due to snacking in between meals rather than during meal time (Foltin et al., 1986; Foltin et al., 1988; Haney et al., 2007). In some cases the increase in caloric intake was most evident during the time where participants were allowed to socialize, but it was also evident that caloric intake increased during both private and social periods (Foltin et al., 1986; Foltin et al., 1988). There are other findings that support the use of cannabinoid treatment in stimulating weight gain and caloric intake in HIV/AIDS subjects (Haney, Rabkin, Gunderson & Foltin, 2005; Beal et al., 1995; Beal et al., 1997).

With regards to the use of cannabis treatment for cancer related weight loss the empirical evidence has not been as compelling. Standard oral cannabis extract (2.5 mg THC and 1 mg cannabidiol) and oral THC have been shown to have no significant effect on appetite compared to placebo (Strasser et al., 2006). Jatoi et al. (2002) conducted a study looking at whether dronabinol on its own or taken in combination with megestrol acetate was more, less or equal in its effect to stimulate appetite in cancer patients compared to Megestrol Acetate alone. Findings indicate that megestrol acetate by itself was more effective in inducing appetite compared to dronabinol treatment (Jatoi et al., 2002). Combined treatment produced no significant differences in appetite or weight gain when compared to just the megestrol acetate treatment (Jatoi et al., 2002).

It appears that the literature is divided in terms of the efficacy of cannabinoid medicines to stimulate appetite and weight gain. While HIV and AIDS research has shown that marijuana and dronabinol are effective appetite stimulants it has not been as well documented in cancer patients. In the study by Strasser and colleagues (2006) the trial period was six weeks which is considerably less than other studies. They suggest exercising caution when interpreting their weight findings (Strasser et al., 2006).

2.4. Nausea and Vomiting

Emesis (i.e. vomiting) is a common side effect of many different ailments and conditions. In cancer patients, chemotherapy may cause vomiting episodes because it activates the release of serotonin in cells located in the small intestine; this in turn activates the 5-HT receptors, which induces vomiting (Likun et al., 2011; Navari, 2009). There are a number of studies looking at the efficacy of cannabinoid medication in the treatment of nausea and vomiting induced by chemotherapy treatments. Söderpalm, Schuster and de Wit (2001) conducted a randomized double blind placebo controlled comparative study examining the antiemetic efficacy of smoked marijuana to ondansetron. Emesis was induced by way of syrup of ipecac (Söderpalm, Schuster, & Wit, 2001). Their results indicate that smoked marijuana reduced participants' subjective rating of nausea as well as vomiting episodes, compared to placebo (Söderpalm et al., 2001). Compared to ondansetron for both nausea and vomiting, marijuana had a modest effect at best, with ondansetron being the more effective antiemetic (Söderpalm et al.,

2001). Interestingly, the lower dose of marijuana decreased the number of times the participant vomited, but it did not decrease their subjective feeling of nausea, whereas the moderate dose of marijuana had the opposite effect (Söderpalm et al., 2001). The researchers suggest that the subjective experience is not always in line with the physiological response (Söderpalm et al., 2001). The researchers suggest that the modest effect of smoked marijuana might be attributed to the relatively low dose of marijuana administered and the duration between smoking the marijuana cigarette and consuming the syrup of ipecac (Söderpalm et al., 2001).

There has been several studies examining the efficacy of nabilone to other antiemetic agents including; prochlorperazine, metoclopramide, alizapride and dexamethasone (Chan, Correia, & MacLeod, 1987; Cunningham et al., 1988; Niiranen & Mattson, 1987). The literature suggest that nabilone is an effective antiemetic agent. It is significantly more effective in combination with dexamethasone than on its own (Niiranen & Mattson, 1987). Chan, Correia, and MacLeod (1987) found that retching and vomiting showed a 70% (21/30) improvement during the nabilone treatment versus 30% (9/30) in the prochlorperazine treatment condition, patients showed more preference towards nabilone than prochlorperazine; both figures were statistically significant. Other findings indicate that the alternative treatment option was the more superior antiemetic agent (Cunningham et al., 1988; Lewis, Campbell, & Barrowcliffe, 1994). Lewis, Campbell and Barrowcliffe (1994) investigated the use of nabilone given as a premedication for postoperative nausea and vomiting in patients undergoing a complete abdominal hysterectomy (Lewis, Campbell & Barrowcliffe, 1994). Patients (n=60) were randomly assigned to receive either 2 mg of nabilone or 10 mg metoclopramide before anaesthesia (Lewis et al., 1994). There was no difference between the nabilone condition and the metoclopramide condition for incidences of postoperative nausea and vomiting (Lewis et al., 1994). The majority of patients in both conditions rated the drug they respectively received as favourable (Lewis et al., 1994). In a randomized trial of oral nabilone and prochlorperazine compared to intravenously administered metoclopramide and dexamethasone, the metoclopramide/dexamethasone treatment was more effective (Cunningham et al., 1988). It is suggested that drug preference might be related to the type of chemotherapy the patient undergoes. Patients that underwent cisplatin analogue carboplatin treatment rated the nabilone/prochlorperazine condition more favourably; 16

compared to 5, 1 patient indicated no preference (Cunningham et al., 1988). The authors suggest that dexamethasone/metoclopramide treatment is effective for cisplatin chemotherapy and therapies containing carboplatin are more effectively treated with nabilone/prochlorperazine (Cunningham et al., 1988).

2.5. Glaucoma

There are several eye conditions that fall under the general ailment known as glaucoma (“Eye Anatomy -Glaucoma Research Foundation,” 2013). The eye contains a translucent fluid known as the aqueous humour (AH); this fluid is produced in the eye and supplies nutrients and oxygen to eye tissue (“Eye Anatomy -Glaucoma Research Foundation,” 2013; "Facts About Glaucoma"- NEI, n.d.). If the channels that carry this fluid become blocked a build-up of pressure will result; this is referred to as intraocular pressure (IOP) and the condition can lead to blindness ("Facts About Glaucoma"- NEI, n.d.). Evidence suggest that cannabis is effective in reducing IOP in the AH of glaucoma patients. Many of the studies conducted use animal subjects to test the effectiveness of cannabinoid medication in reducing IOP. These animal studies demonstrate a modest positive effect on IOP in test subjects (Colasanti, Craig, & Allara, 1984; Colasanti, Powell, & Craig, 1984; Naveh, Weissman, Mughtar, Benita, & Mechoulam, 2000). In one study researchers applied an 11-hydroxy- delta⁸-THC (HU-211) submicron emulsion to the eyes of rabbits (Naveh et al., 2000). The single dose resulted in a 24 percent reduction from baseline measures (Naveh et al., 2000).

In human subjects cannabinoids (smoked marijuana, oromucosal spray of THC, and CBD) have been shown to reduce IOP. Smoked marijuana showed a decrease in IOP in the first 30 minutes after treatment while the placebo condition did not achieve significant results in IOP (Merritt, Crawford, Alexander, Anduze & Gelbart, 1980). Tomida et al. (2006) conducted a randomized, double blind placebo controlled pilot study looking at the efficacy of an oromucosal application of either THC or CBD on IOP. Their findings indicate that 5 mg THC significantly reduced IOP in glaucoma patients compared to placebo (Tomida et al., 2006). The CBD treatment did not show a reduction in IOP in both the 20 mg and 40 mg dose (Tomida et al., 2006). The 40 mg dose of CBD

actually had the opposite effect, causing an increase in IOP four hours post administration (Tomida et al., 2006).

Chapter 3. Route of Administration of Cannabis

The term for the process in which a drug enters a living organism from the external environment into the blood stream, is known as drug absorption (Julien, Advokat, & Comaty, 2008). The path the drug takes to enter the body is referred to as the route of administration (Julien et al., 2008). Studies examining the effects and efficacy of cannabis as a therapeutic medicine have used various dosage forms and routes of administration; from marijuana cigarettes which enters the body by way of inhalation to synthetic dronabinol which is administered orally (Grotenhermen, 2003). The following section will examine the different forms of cannabis based medicines and their route of administration to better understand how cannabis and its derivatives are handled by the human body (Julien et al., 2008) More importantly this will shed some light on the choices researchers make in selecting the route and type of cannabinoid medication administered to their participants in studies examining the therapeutic value of cannabis based treatments.

3.1. Inhalation

Marijuana is commonly smoked in cigarette form. With this method of administration THC is detectable in plasma within a very short period after initial use (Huestis, Henningfield, & Cone, 1992). The amount of THC available in the smoke is approximately a quarter to one-half of the available THC content in the cigarette and the amount actually absorbed into the blood stream is approximately 5-10 milligrams (Julien et al., 2008). Heavy smokers generally show greater THC plasma levels than light smokers, even when controlling for amount smoked (Lindgren, Ohlsson, Agurell, Hollister, & Gillespie, 1981). Researchers attributed these differences to more efficient smoking techniques by the heavy user group (Lindgren et al., 1981).

Lindgren et al. (1981) found a statistically significant difference in Area Under the Curve³ from 0-240 minutes between heavy and light users. Bioavailability⁴ was 23± 16% for heavy smokers compared to 10± 7% for light smokers (Lindgren et al., 1981). Again researchers attribute this to more efficient smoking techniques by the heavy smoker group (Lindgren et al., 1981). In laboratory studies using smoked marijuana as the treatment condition, researchers often seek out participants with smoking experience to ensure they possess the proper techniques and the ability to distinguish the psychotropic effects of cannabis (Abrams et al., 2007; Clark, Janal, Zeidenberg, & Nash, 1981; Gorelick & Heishman, 2006).

Although smoked marijuana is a popular recreational drug there are concerns for its use as a therapeutic medication (Hall & Solowij, 1998; Moore, Augustson, Moser, & Budney, 2005; J. Zajicek et al., 2003). Some researchers feel that exposing participants to the risks associated with smoked cannabis is unethical and therefore choose other modes of administration such as orally administered cannabinoid medication (Zajicek et al., 2003). The major health concern for smoked cannabis is its effect on the respiratory system (Hall & Solowij, 1998). Continual heavy use can result in bronchitis, coughing and wheezing, and other pulmonary conditions associated with the inhalation of combustion products (Bloom, Kaltenborn, Paoletti, Camilli, & Lebowitz, 1987; Taylor, Poulton, Moffitt, Ramankutty, & Sears, 2000; Wu, Tashkin, Djahed, & Rose, 1988).

Given these concerns, some medical professionals do not see smoked marijuana as a viable treatment option. However, recently there has been a growing body of research on the use of vaporizers in the administration of inhaled cannabis. Vaporizers work by heating the cannabis to a temperature between 180⁰ to 200⁰ Celsius (Abrams, et al., 2007). This temperature range vaporizes the cannabis without resulting in the combustion of the product (Abrams et al., 2007). Combustion occurs at temperatures greater than or equal to 230⁰ Celsius (Abrams et al., 2007). Unlike smoked

³ The area under the plasma concentration/time curve (Lindgren et al., 1981) . "AUC is a measure of total systemic exposure to the drug" (Turner, 2013, p. 126).

⁴ The portion of a given drug that reaches the bloodstream ("Cannabis : a health perspective and research agenda," 1997)

cannabis the remnants of vaporized material do not turn to ash, but rather maintain a brownish green complexion (Gieringer, St. Laurent, & Goodrich, 2004).

One particular model that has been tested is the Volcano Vaporizer. The suggested temperature for this model is 202⁰ Celsius (Gieringer et al., 2004). The objective of the device is to reduce the harmful byproducts produced through pyrolysis (Abrams et al., 2007; Gieringer, et al., 2004). Unlike smoked marijuana, preliminary evidence suggests that vaporization does not produce increased carbon monoxide (CO) after inhalation of THC and greatly reduces the number of compounds in the vapor gas including Polycyclic Aromatic Hydrocarbons (PAHs) which are believed to be carcinogenic (Abrams et al., 2007; Gieringer, et al., 2004). This holds true even at different temperatures (Pomahacova, Van der Kooy, & Verpoorte, 2009). Gieringer, Laurent and Goodrich (2004) found three compounds in the vapour gas and one in the solvated condensate, compared to cannabis smoke which produced 37 identified compounds; five of which were known PAHs. The amount of cannabinoids present in the vapor increases with increased temperature; this is also true for the amount of byproducts in the vapor (Pomahacova et al., 2009).

Administration of cannabis through inhalation is advantageous due to its fast onset and easy dose titration (Abrams, et al., 2007; F Grotenhermen, 2001; Hering, Hooker, & Jones, 1986). This makes it a desirable medication for acute conditions that require a fast effect (Grotenhermen, 2001). There is also no risk of expelling the smoked product as a result of patient vomiting, unlike oral administration (Grotenhermen, 2001). However, the respiratory complications as discussed above may deter some individuals from this mode of administration. With more research, vaporizers may prove to be a viable alternative to smoked cannabis and there is already a growing number of patients using vaporizers in the administration of their marijuana (Gieringer et al., 2004).

3.2. Oral Administration

Cannabis can be administered orally in several different forms including; edibles (cannabis based food products), oral capsules containing cannabis extract and synthetic medications such as dronabinol and nabilone (Gorelick & Heishman, 2006). Edibles are

not frequently used in contemporary research, most studies use synthetic cannabinoids due to their accessibility, legality and their relative safety (Gorelick & Heishman, 2006). Dronabinol (Marinol) is a THC synthetic and comes in a gelatin capsule suspended in sesame oil; it is available in 2.5, 5 or 10 mg doses (Gorelick & Heishman, 2006). There are also several plant based cannabis extracts that can be administered orally, such as delta-9-THC and cannabidiol to name a few (Killestein et al., 2002).

Oral absorption in comparison to other modes of administration is characterized as slow and erratic with effect delays of approximately 30-60 minutes (Hollister et al., 1981). Oral administration is also subjected to a high degree of individual variability in absorption as a result of metabolism in the liver and GI tract (Gorelick & Heishman, 2006; Julien et al., 2008). However, this mode of administration produces more constant and prolonged activity (Grotenhermen, 2001). Oral medications must be able to withstand the gastrointestinal acids; delta-9 THC does degrade somewhat in the gastrointestinal acids (Grotenhermen, 2003; Julien et al., 2008). Oral drugs also require a certain degree of lipid solubility; THC is highly lipid soluble (Julien et al., 2008; Tomida et al., 2004). The more lipid soluble a drug is the faster it will be absorbed (Julien et al., 2008).

In a study investigating the plasma concentrations of THC after oral, intravenous and inhaled administration, the orally administered THC (contained in a cookie) reached peak plasma levels in 60-90 minutes (Ohlsson et al., 1980). In some subjects it took significantly longer to reach peak plasma levels (240-300 minutes) (Ohlsson et al., 1980). Out of the three modes, the oral route took the longest to reach peak plasma levels (Ohlsson et al., 1980).

3.3. Oral Mucosal Cavity

This method involves the absorption of the drug through the membranes inside the mouth as opposed to the gastrointestinal tract (Julien et al., 2008; Shojaei, 1998). There are three main sites of delivery within the oral mucosal cavity; this includes, sublingual delivery where the site of drug absorption is through the membrane lining the floor of the mouth, buccal delivery where the drug is absorbed through the cheek

membranes, and local delivery where the drug is administered into the general oral cavity of the mouth (Shojaei, 1998). A relatively new pharmaceutical on the market, Sativax is administered in a sublingual spray, sublingual tablet and inhaled form ("Cannabis-Based Medicines - GW Pharmaceuticals," 2003). Sativax is a cannabis plant based medicine and includes the psychoactive compound delta-9-THC and cannabidiol ("Cannabis-Based Medicines - GW Pharmaceuticals," 2003). Research is underway to assess the therapeutic benefits of this drug and it is currently being considered as a viable medication for neuropathic pain, spasticity in multiple sclerosis, urinary incontinence and as an antiemetic (Karschner et al., 2011)

3.4. Injection

Injected drugs can be divided into three modes of administration; intravenous, intramuscular and subcutaneous (Julien et al., 2008). The former two have been used in cannabinoid research; however, the literature on injected cannabinoids is not as extensive as the other modes of administration discussed so far. Intravenous administration injects the drug directly into the blood stream through a vein (Julien et al., 2008). This makes for a more precise and controlled dosage; however, it is also the most dangerous mode of administration because of its rapid onset of action (Julien et al., 2008). Individuals also run the risk of injecting insoluble matter in the aqueous solution which can cause embolisms or blood clots (Julien et al., 2008). There is also the risk of transmitting disease through the use of unsterilized equipment and needle sharing (Julien et al., 2008). However this is typically associated with recreation use rather than clinical use. In the study by Ohlsson and colleagues (1980) previously discussed, intravenous injection of 5mg THC over a two minute period produced an instant high in subjects. THC plasma levels three minutes post infusion range from 161-316 ng/ml followed by a rapid decline to an average of 62 ng/ml ten minutes after infusion (Ohlsson et al., 1980)

3.5. Ophthalmic

Ophthalmic administration involves the delivery of medication to the intraocular tissue usually by way of ointment, or aqueous solution (“Data Standards Manual (monographs) - Route of Administration,” 2006; Tomida, Pertwee, & Azuara-Blanco, 2004). It is a common mode of delivery in the treatment of glaucoma. Cannabinoids are lipid soluble but have poor water solubility (Tomida et al., 2004). This does hinder their use in ophthalmic administration; however, alternative vehicles have been used that enable this application such as a mineral oil suspension (Tomida et al., 2004). Unfortunately oil solutions have been known to cause eye irritation (Tomida et al., 2004). HU211 (11-hydroxy- delta 8-THC) seems to reduce intraocular pressure without the psychotropic effects of THC, which may make it a viable option in the treatment of glaucoma (Naveh et al., 2000).

Chapter 4. Social Science Research

Several survey studies have been conducted examining the therapeutic use of cannabis. The respondents who use cannabis typically indicate that marijuana is effective in managing their ailments, that it is a favourable drug compared to their standard medication, that it helps them cope with their condition, improves their mood and disposition, and overall has a positive impact on their lives (Bottorff et al., 2011; Pedersen & Sandberg, 2013; Walsh et al., 2013; Ware, Adams, & Guy, 2005; Ware, Doyle, Woods, Lynch, & Clark, 2003). Many of these studies provide an account of the individuals medical characteristics such as their medical conditions and using behaviour (Pedersen & Sandberg, 2013; Reinerman et al., 2011; Walsh et al., 2013).

Survey data has also been conducted for specific ailments such as; chronic non cancer pain, multiple sclerosis and emesis in chemotherapy patients. Some of the findings from these studies indicate that cannabis is frequently used among chronic pain patients (Ware et al., 2003). Ware and colleagues (2003) found that 10 percent of participants surveyed (out of 209 completed surveys) indicated that they were currently using cannabis to alleviate pain and 15 percent of respondents indicated they had at some point in their life used cannabis specifically to alleviate their pain (Ware et al., 2003). Among multiple sclerosis patients who use cannabis over 80 percent of respondents indicated that the reason for use was to alleviate pain and muscle spasms (Chong et al., 2006). There was also a positive correlation seen with increased disability and cannabis use (Chong et al., 2006). Interestingly 71 percent of respondents who indicated that they had never used cannabis stated that they would try marijuana if it were legal and offered by prescription (Chong et al., 2006).

Schwartz, Voth and Sheridan (1997) conducted a survey on the antiemetic use of marijuana in cancer patients; their population of interest was clinical oncologists. From 1500 surveys, 1122 were completed (Schwartz, Voth, & Sheridan, 1997). A key point of

interest was how often in the past 24 months respondents recommended smoking marijuana, prescribing synthetic cannabinoids or 5HT3 antagonists to their patients (Schwartz et al., 1997). Out of the respondents who prescribe or recommend the use of antiemetic drugs, 98 percent prescribed or recommended 5HT3 antagonists, 6 percent dronabinol and only 1 percent recommended marijuana (Schwartz, et al., 1997). More than 300 oncologists indicated that they support the rescheduling of marijuana for medicinal purposes; however, they would not write many prescriptions for their patients (67% indicated one per month) (Schwartz, et al., 1997). The survey does illustrate the trepidation of the medical community to endorse smoking marijuana as an antiemetic agent. However, given the age of the survey the data might not be as relevant or reliable today as they were back in the 90s.

In a qualitative study examining the health effects of medicinal marijuana, researchers conducted a gendered analysis to note the differences in perceptions among males and females (Bottorff et al., 2011). Based on their findings they suggest that there are key gender differences (Bottorff et al., 2011). For example, women often conceptualized marijuana as life preserving; cannabis for them was a “holistic therapeutic tool” which afforded them the ability to keep on living in the face of their illness (Bottorff et al., 2011). Women described cannabis as their “lifesaver”, “life force” and “lifelong partner” (Bottorff et al., 2011, p. 772). Men on the other hand had a much more pragmatic account of the role cannabis plays in their lives (Bottorff et al., 2011). Several respondents described marijuana as a “medicine that works quite well when you need it” or “necessary product” (Bottorff et al., 2011, p. 772). Women also indicated that marijuana played an important role in maintaining good mental health, while men generally highlight the physical benefits (Bottorff et al., 2011). When men did express a mental health component it often had to do with controlling anger and rage, both masculine characteristics (Bottorff et al., 2011).

Not much research has focused on the process of becoming a medical cannabis patient or how they acquire the necessary information to treat their medical condition with cannabis. Feldman and Mandel (1998) touched upon this issue in their study examining the importance of cannabis clubs. Their research discussed the ways in which individuals got involved with the San Francisco Cannabis Buyers Club (SFCBC)

through word of mouth or through social interaction with key individuals and the role that group has played in their lives. For many of the respondents the group served as a support network for them (Feldman & Mandel, 2011). Although patients initially sought out membership with the SFCBC for the purpose of obtaining their medicine (i.e. cannabis), participants overwhelmingly reported that the greater benefit was the social interaction and activities they engaged in through the SFCBC (Feldman & Mandel, 2011). A few studies have been conducted examining the use of medical marijuana among individuals who engage in small scale cannabis cultivation. For example, Dahl and Frank examined the use of medical marijuana among a group of small scale cannabis growers in Denmark. Much of their work parallels the finds from this thesis regarding the reasons for use, defining of behaviour, and participant life trajectories, all of which will be addressed at a later point. Medicinal cannabis use in their sample was typically used in either an analgesic capacity or for psychological and or emotional maladies (Dahl & Frank, 2011). Those who used cannabis for pain relief did so after acquiring the information through hearsay from various medical and recreational social groups with the intent to manage their pain symptoms (Dahl & Frank, 2011). Participants who used cannabis to alleviate psychological and or emotional problems describe their entry into medical use as more of a “sliding scale” from recreational use as they discovered these benefits more organically through using cannabis (Dahl & Frank, 2011). Hakkarainen and colleagues (2014) conducted a study examining small-scale cannabis cultivation for medical purposes in six countries. The participating countries included Australia, Belgium, Denmark, Finland, Germany, and the United Kingdom (Hakkarainen et al., 2014). Some of their findings indicate that medical growers cultivate for a wide range of medical issues and that the medical problems were generally of a serious nature (Hakkarainen et al., 2014). Participants often had a medical diagnosis for their condition, ailment and or symptom (Hakkarainen et al., 2014). Interestingly, one in five respondents indicated that their doctor suggested the use of cannabis in the treatment of their ailments (Hakkarainen et al., 2014).

Chapter 5. Medical Use of Cannabis in Canada

In 2001 the Federal Government passed legislation making it legal for individuals suffering from debilitating medical conditions to possess marijuana under the *Marihuana Medical Access Regulation* or MMAR (Marihuana Medical Access Regulations [MMAR], 2001). The establishment of the Federal MMAR program was largely in response to growing public discontent as evident in prominent cases challenging the CDSA, such as *Wakeford v. Canada*, (2000) and *R. v. Parker*, (2000). The MMAR is no longer in effect. The repeal of this program came about as a result of growing concerns stemming from the increase volume of MMAR license holders and the issues relating to personal use and appointed grower production licenses (“Canada Gazette-MMAR- Regulatory Impact Analysis Statement,” 2012). Under the former program, cannabis patients could access their medicine through an Authorization to Possess, Personal Use Production Licenses, or a Designated Person Production Licenses (MMAR, 2001). The latter two license options enabled the individual to grow their own cannabis or appoint a designated grower to do so (MMAR, 2001). The increase in MMAR license holders, the ability for one production site to grow for up to four license holders, and the general rise in daily quantity since 2002 created a situation where an increasingly large amount of cannabis was being grown in a given dwelling (“Canada Gazette-MMAR- Regulatory Impact Analysis Statement,” 2012). This raised concerns among municipal leaders, and first responder services (i.e. fire departments and police) largely citing issues around health, safety, and potential for criminal activity (“Canada Gazette-MMAR- Regulatory Impact Analysis Statement,” 2012).

As of April, 2014 the *Marijuana for Medical Purposes Regulations* MMAR came into force, amending the licensing, and possession regulations from the previous MMAR (*Marijuana for Medical Purposes Regulations* [MMAR], 2014). Under the new system *Health Canada* no longer issues licenses as they have moved to a practitioner authorized prescription-based system (MMAR, 2014). Other changes include the

establishment of a network of authorized producers, and the prohibition of individual production licenses (MMPR, 2014).

Shortly after the repeal of the MMAR program an injunction was issued by the court, permitting individuals under the former program who held valid (at time of repeal) Authorization to Possess, Personal Use Production Licenses, and Designated Person Production Licenses to continue to possess and grow cannabis as authorized under the MMAR (Allard v. Canada, 2014). The concerns raised in the Charter case of Allard v. Canada (2014) regarding the new MMPR include the increased cost patients will incur as well as the possible decrease in the safety and quality of cannabis they will receive. As it stands authorized producers can set their own prices (“Frequently Asked Questions [FAQ]: Medical Use of Marihuana - Health Canada [HC] ,” 2014). There is still ongoing litigation concerning this injunction and no decision has been rendered at this time (“Statement: Medical Marihuana Access Regulations Update,” 2014). Under the MMPR authorized persons are able to possess up to a maximum of 150 grams of dried marijuana or 30 times their daily quantity, as specified by their authorizing health care practitioner (MMPR, 2014).

Advocates of the amendments argued that the former system was vulnerable to abuse, posed harm to the community, and was costly to tax payers due to government subsidies (“Harper Government Announces Proposed New Marihuana for Medical Purposes Regulations- Changes improve public safety, maintain patient access,” 2012; (“Canada Gazette-MMPR- Regulatory Impact Analysis Statement,” 2012). According to Stephen Gamble, the President of the Canadian Association of Fire Chiefs an average of “one in 22 grow operations (legal and illegal) catch fire, which is 24 times higher than the average home” (“Harper Gov Announces Proposed New MMPR- Changes improve public safety, maintain patient access,” 2012). By restricting the production of cannabis to the network of authorized producers, the government hopes it will reduce the risk of fire and other harms associated with residential cannabis cultivation. A second concern is the cost to taxpayers due to government subsidies (“Harper Gov Announces Proposed New MMPR-Changes improve public safety, maintain patient access,” 2012). Although many welcome these changes, the amendments do raise some concerns.

As previously mentioned, one of the amendments streamlines the process by transferring the authorization procedures from the Federal Government onto medical practitioners (MMPR, 2014). Under the former system, physicians prepared and signed off on the necessary documentation and paperwork for *Health Canada*, but the Federal Government authorized licenses (MMAR, 2001). Under the new system physicians approve patients and provide the necessary documentation, which is then sent to an authorized producer (MMPR, 2014). This has many concerned that the authorization process begins and ends with the individual's practitioner. The President of the Canadian Medical Association Anna Reid argued that there is insufficient evidence to allow for the medical use of marijuana (Sullivan, 2013). Accordingly, she is concerned that physicians are ill informed about what they are being asked to prescribe. Her concerns are expressed below:

"Expecting doctors to write prescriptions for marijuana without the existence of such evidence is akin to asking them to work blindfolded and to potentially jeopardize the safety of patients." (Sullivan, 2013)

Fischer, Kuganesan, and Room (2015), raise interesting questions regarding Canada's new MMPR program. They argue whether the current medical marijuana reforms in Canada, which legitimize the use of cannabis through medicalization create a "sneaky side door" or alternatively, a "better third way" to cannabis regulation in Canada (Fischer et al., 2015, p. 17). They suggest that the new reforms may be representative of both perspectives:

"In the end, however, Canada's new 'medical marijuana' policy may simply be both: the 'better third way' and the 'sneaky side-door' towards cannabis control reform, for the principal reason that it has been the one and only effective way to bring any tangible reforms that are at least bypassing universal criminalization of cannabis use, after half a century's worth of other efforts which have, more or less, utterly failed." (Fischer et al., 2015, p. 18)

They do raise concerns for the current MMPR reform, particularly if and when Canada moves towards a fully legalized system (Fischer et al., 2015). The private interests arising under the MMPR may create complications for future Canadian governments to establish a legalized cannabis system that is still mindful of public health interests (Fischer et al., 2015). They point towards the Colorado and Washington state experience regarding the significant role private enterprise has had in shaping their cannabis policy (Fischer et al., 2015). Overall they raise some interesting questions

regarding the future of cannabis reform in Canada. One criticism of their argument lies in their assumption of the relative ease in accessing cannabis under the new MMPR at least in practice. However, in actuality accessing cannabis in Canada through the Federal system is generally not an easy endeavor as there are roadblocks at both the institutional level and general practice level (Belle-Isle et al., 2014; "CMA Policy Medical Marijuana", 2011).

Currently the only legal avenue to obtain medical marijuana in Canada is through the aforementioned means. However, many medical patients, obtain their cannabis through membership with various community based medical cannabis dispensaries and compassion clubs (Hathaway & Rossiter, 2007; Lucas, 2008). Lucas (2008) conducted a study focusing on licensed Canadian cannabis users and found that 50% (n=100) of participants admitted to frequenting compassion clubs or dispensaries. His sample at the time represented about 5% of all patients enrolled in the Federal program. Compassion clubs and dispensaries emerged in the late 1980s during the AIDS epidemic and were comprised of a few underground organizations in the San Francisco area (Lucas, 2008). The first club to open in Vancouver back in 1997 was the British Columbia Compassion Club Society (BCCCS) (Lucas, 2008). Their mandate is to provide medicinal cannabis and related resources to its members (Lucas, 2008; "Our Story-BCCCS", n.d.). They are still in operation today and have become key advocates against the criminalization of marijuana ("Our Story-BCCCS," n.d.). According to 2007 figures, it was estimated that there were approximately 10,000 members belonging to about a dozen compassion clubs across Canada (Hathaway & Rossiter, 2007). Under the current MMPR Health Canada does not authorize compassion clubs or dispensaries to possess, distribute or produce marijuana for medicinal purposes ("Health Canada Statement on Medical Marijuana Compassion Clubs," 2010). These organizations are operating illegally in this country; however, in recent years they have experienced relatively little interference from police in the city of Vancouver (Lee, 2014)

Under the MMPR authorized producers are only permitted to sell dried cannabis, although they are not inhibited by strain variety; they are not sanctioned to produce alternative products such as resins, oils, extracts, and edibles ("FAQ: Medical Use of Marijuana- HC," 2014). The most recent regulation places restrictions on authorized

producers regarding the advertising of products. This excerpt of a statement released by Health Canada illustrates their concerns:

“...the publishing of promotional materials and advertisements are of serious concern. Health Canada is especially concerned about advertisements of any kind which are false, misleading or deceptive and those which advertise marijuana in relation to particular therapeutic claims. Licensed Producers found not to be in compliance with the FDA or the NCR may be subject to compliance and enforcement action by Health Canada.” (“Advertising Prohibitions Pertaining to Marijuana,” 2014)

As it stands 20 authorized producers received warning letters and had until January 12, 2015 to comply with the advertisement regulations (“Advertising Prohibition Pertaining to Marijuana”, 2014). This means that words describing the benefits of cannabis and or of particular strains is prohibited (Beeby, 2014). Cannabis dispensaries and compassion clubs are not bound by these regulations and therefore fill a need within the medical cannabis market.

Chapter 6. Methodology

A purposive sample of 22 participants was selected to take part in semi-structured in-depth qualitative interviews. An eligible participant was defined as an individual whose main purpose for using marijuana was to alleviate the symptom or symptoms of an underlying health condition. Participant recruitment was conducted via in store (through poster and staff word of mouth) and online advertising through the Vancouver Cannabis Dispensary (VCD) from June of 2012 to July of 2013, as well as in store poster advertisement with Urban Earth Med (UEM) in late October of 2012. Recruitment and data collection were completed by July 2013.

Dispensaries and compassion clubs operate to provide marijuana to individuals with medical need and issue memberships on this basis. Therefore, advertising through the above dispensaries was selected to ensure that the sample was drawn from the population of self-described medical marijuana patients. In addition to holding a dispensary membership, some participants were also Federally licensed under the former MMAR licensing process. All advertisements included a brief description of the study, as well as the contact information of the lead investigator and senior supervisor. The above methods of recruitment were selected as they were unobtrusive and did not interfere with the daily operations of either dispensary.

This study was approved by Simon Fraser University's Research Ethics Board in 2012 (File No: 2012s0247). Although there was minimal foreseeable risk in participating, due to the controversial nature of medical cannabis use and the potential stigmatization therapeutic cannabis patients sometimes experience, written consent was deemed unfavourable and therefore a combination of implied and oral consent was used. After a verbal briefing by the lead investigator regarding the goals, objectives, risks, confidentiality statement, and information pertaining to withdrawing from the study, each participant was asked by the lead investigator if they wanted to

continue with the interview or terminate the interview at that point. If the respondent verbally agreed to continue with the interview and participated, then consent had effectively been given. Participants were informed that confidentiality is guaranteed to the full extent permitted by law and that information with respect to child abuse or the threat of physical harm would have to be reported to the relevant authorities. Participants were also provided with the study details, confidentiality clause, and contact information of the lead investigator and her senior supervisor for their own reference. Communication regarding study details, study inquiries, clarification questions, and general information was conducted via Hushmail email. Interviews were conducted at an agreed upon location prior to the interview and via telephone. Participants had the option of completing an agreement to future contact form. This was used for the sole purpose of keeping track of which participants did not object to future contact regarding this study and to future follow up interviews, in order to avoid unwanted solicitation.

Interviews were recorded using an audio recording device to ensure that the participants' statements were transcribed and interpreted accurately. Participants were informed about the use of the recording device before the interview and were given the opportunity to decline its use prior to commencing the interview. All digital recordings and field notes were transcribed verbatim, and subjected to a thematic analysis using NVivo 10 software. Participants' names and other personal identifiers were removed from this study and replaced with a numerical designation to ensure confidentiality and maintain anonymity. The interviews were conducted over the course of one year from June 2012 to July 2013. The interviews ranged from 40 minutes to approximately 1 hour in duration. All participants were over the age of 19 and using cannabis to alleviate their medical symptom(s) at the time of the interview.

The objective of this study is to uncover the process an individual goes through to become a medical marijuana patient, with an emphasis on learning. The semi-structured open-ended qualitative interviews were conducted through the use of an interview guide. The interview guide encouraged discussion about the participant's marijuana use over the course of their life, both prior to and after the onset of their symptom(s). The interview guide was developed in consultation with a multitude of

sources including news articles, peer reviewed medical studies, peer reviewed social science research, and legislation pertaining to the use of medical marijuana in Canada. The themes that I followed throughout the interviews followed seven dimensions: 1- previous social/recreational cannabis use, 2- the medical symptom(s) for which they were treating with cannabis, 3- their medicating routine/process (i.e. methods of administration, strains, quantity and frequency), 4- their sources of information and learning process about medicinal cannabis use, 5- the relationship with their physician/healthcare provider regarding their cannabis use, 6- issues and or challenges they have faced regarding their use of medical marijuana, and 7- any other issues or unique circumstances participants wanted to express at the time of the interview. Although some themes of interest were conceptualized prior to commencing the interviews, participants were afforded a high degree of flexibility to express their thoughts, feelings, and opinions, as well as any other content not addressed through the interview guide. This flexibility facilitated the development of new themes and additional areas of exploration, which proved valuable, particularly during the formative stages of data collection.

At the onset of analysis text search queries were developed to identify similar and repetitive words and phrases. These queries proved useful in aggregating the content. The aggregated data were then reviewed for latent meaning and common ideas and assigned to the appropriate coding category. Due to the extensive terminology associated with cannabis use, a list of words was generated during the data collection process to familiarize myself with the cannabis vernacular and to keep track of important terms. For example, when I was coding for the “smoking” method of administration I also wanted to search for words such as “drag”, “hoot”, and “hit”, as they are all synonymous with smoking cannabis. The vocabulary list ensured these important terms were included in the search criteria. Twenty-one coding categories emerged; although coding categories prove useful in organizing the data for analysis, articles by Silverman and Marvasti, (2008) and Atkinson (1992) illustrate the potential rigidity of coding categories. As Silverman and Marvasti (2008) point out, this can “deflect attention away from uncategorized activities” (225). Therefore good coding schemes should account for this un-coded activity (Silverman & Marvasti, 2008). To

reduce this coding bias both the presence and absence of a given behaviour/activity was coded for, not just the given activity under investigation.

Qualitative research is sometimes criticized for being anecdotal in nature (Seale & Silverman, 1997). To avoid anecdotalism counting was used when analyzing the data to quantify the number of participants who exhibited a given behaviour, trait, and or phenomenon under investigation. According to Seale and Silverman (1997) “Presenting simple counts of events can help readers gain a sense of how representative and widespread particular instances are” (p. 380). The count of events is included for most themes addressed in this thesis. Quotes are also considered in both the context of the interview and as stand alone representations of a given theme, and since all transcripts were recorded verbatim, they represent the participants natural account of events.

Chapter 7. Characteristics of Medical Cannabis Patients

The findings below are based on the sample of qualitative interviews conducted with 22 purposively chosen participants. Direct quotations from the interviews are provided in order to represent the central themes that emerged in this study. The first section will address the participants' medical characteristics which include their sources of cannabis for therapeutic purposes, medical condition and symptoms, cannabis strains used, methods of administration, and quantity of cannabis used. The second section will address themes that pertain to the acquisition of information, specifically how participants have come to learn about medicinal cannabis, their process of acquiring that information and their sources of information that have informed their understanding of medicinal marijuana. The first section provides insight into the medicating process to illustrate the information that must be acquired, while the second section addresses the learning process to acquire that information. The cross case analysis identifies considerable overlap in the aforementioned thematic areas. Overall cannabis appears to have a subjectively positive impact on the medical symptoms of therapeutic patients. The use of cannabis in a therapeutic capacity has a steep learning curve, as there is a lot of information one must acquire to effectively treat their condition and symptoms with cannabis. This information is generally not coming from medical practitioners, but rather through other sources such as dispensaries/compassion clubs, personal research, and friends and peers.

7.1. Sources of Cannabis for Therapeutic Purposes

In the present study 12 participants (55%) are male and 10 participants (45%) are female. The mean age of participants is 43.9. All participants at the time of the interview were using cannabis for therapeutic purposes to treat their symptom or multiple symptoms of an underlying medical condition. Most participants (n=15) resided in the

Vancouver area (i.e. Metro Vancouver, Lower Mainland, Burnaby) at the time of interview, 4 participants resided in Alberta, 2 in Ontario, and 1 participant resided in Victoria. Participants typically obtained their cannabis through a medical cannabis dispensary and or compassion club. It was not uncommon for a participant to hold membership in multiple dispensaries and or in conjunction with a MMAR license. This finding appears to be consistent with the literature. For example Walsh et al. (2013) found that most participants indicated that they obtain their product from multiple sources. Other sources participants obtain or have obtained their medical cannabis from include grow their own, friends, and purchased off the street. The following excerpts illustrate the various sources participants obtain their cannabis from.

The people from the dispensary initiating my involvement with MMAR. And there's two ways to get into the dispensary, bring in your pink slip from MMAR or bring in your doctor's paper work. Well they said you might as well get your card and then your pot is going to be cheaper, you'll have a selection, it's safe. (participant 8)

I don't apply for the federal because I can't afford to... just the dispensary... I only need one place to go. (participant 11)

I purchase seeds from the Government to start... Well my memberships have run out now, but it's been two. Only reason is that I'm able to grow at home so I don't have to purchase anymore, I'm able to grow my own. (participant 14)

Seven participants (32%) were Federally licensed through the MMAR program and one participant had previously held a Federal exemption. The attitudes regarding the former Federal program were mixed. Those who were authorized to grow found it to be therapeutic, and cost effective as evident from participant one and fourteen's statement.

For the most part I grow my bud so you know it is considerably cheaper to be doing that and more efficacious to be using a whole plant medicine... As far as the therapeutic effect I find that growing my own is very therapeutic... I know for me and for a lot of other people it really is therapeutic to you know garden and have your hands on living plants and to be growing them and producing your own medicine. It's a reason to get up when you don't feel like it. (participant 1)

As far as satisfied by the fact that it is something that helps me so they've allowed me to grow it at home, grow it at home without having to go out and buy it and find it on the street or spend more money in a compassion club where it costs \$10/gram you know. So by saving me the grief of having to do that it's made it a lot better. It's legal so we don't have to worry about it... (participant 14)

However, other statements indicated that the former Federal system was bureaucratically cumbersome and that the quality of the dried marijuana product was mediocre to poor. There also appeared to be issues in difficulty and reliability when appointing a designated grower. The following statements highlight some of these issues.

I have not been renewed this year, because frankly I don't think its fair that they make you jump through hoops year, after year, after year when your conditions are all the same and now the doctors in Calgary won't even do things for renewal. So I can't renew anyway. I had a designated grower and then that blew up 'cause they disappear, some are really reliable some are not (participant 7)

Yes I've found somebody who found somebody. Three months we looked and nobody. Anybody we talked to about quantity below 20, it takes them 5 years to make that money back to where they actually feel they've made a good investment and they made some profit off it on their own side and there is profit, there's no doubt, but if they, if they're going to grow 5, 5 grams a day that's 25 plants, not 100 plants 25 plants, It takes a long time....My impression the first time (trying the MMAR dried marijuana) was this guy's been saving this pot because this is the same as that first marijuana shake that I got from Mexico. This is horrible crud, see it's the way they process the stuff too. It's not like they just go through the proper...hang them and trim and do everything. They slaughter the stuff and drain, pour it, spray, just go crazy on it and just destroy it, just absolutely destroy it. (participant 8)

I tried to have family grow it for me, but they didn't follow through with it so that's what made me go to the dispensary more. (participant 9)

I ordered the Federal Government weed once and it was like so ridiculous, it was such garbage. (participant 18)

Um well I only got one order from them. The whole Federal program is all a joke. As far as the medicine goes I don't imagine they could have provided any worse medicine if they tried. It's unbelievable to me that they could you know provide such terrible medicine....Just didn't really work. It didn't work like take the edge off barely on anything. It really didn't work, it really isn't very good. It's 12.5% when most of the stuff that um you know people are using medically is 20 or better and a like I said it just isn't very good. Indica is better for pain so why are they providing sativa? (participant 20)

The issues presented above regarding the former MMAR program might have encouraged MMAR approved medical cannabis patients (MMPs) to seek out alternative sources, which was the case for participants 7,9,18, and 20 respectively. As mentioned in chapter five the MMAR program has undergone considerable changes to its authorizing process, setting out a more streamlined procedure. In conjunction with the aforementioned changes, there have also been considerable amendments to product

availability, as the new MMPR does not place restrictions on strain cultivation (“FAQ: Medical Use of Marijuana- HC,” 2014). Participant 9 specifically did not purchase the dried marijuana product from the Government due to the strain availability and participant 20 indicates that the former sativa only product is a poor analgesic compared to the indica strain. Perhaps under the new regulation authorized persons may have their medication needs met by a single source. With that said, under the new program authorized producers are not permitted to sell cannabis resins, oils, extractions, and edibles, they are only authorized to sell dried marijuana (“FAQ: Medical Use of Marijuana- HC,” 2014). As participants have often used a variety of products and methods of administration to treat their medical symptoms, the MMPR will place considerable restrictions on the patients medical regimen, which may continue to encourage patients to obtain their necessary products through alternative sources, including dispensaries and compassion clubs, both of which offer alternatives to dried cannabis.

7.2. Medical Conditions and Symptoms

Participants were asked a series of questions regarding their medical symptoms for which they are treating with cannabis. They were also asked if these symptoms were the result of a larger medical condition. Table 1.0 outlines the primary medical symptom(s) participants experience as a result of their particular medical condition(s) and or as a result of treating their medical condition(s) (i.e. side effects, adverse events). There is a wide degree of variation among participants regarding their medical condition(s), however, certain patterns do emerge. Some of these commonalities include cancer, diseases or conditions that target multiple systems, mood disorders, anxiety conditions, and back and spinal cord injuries. It should be mentioned that the underlying causes of these conditions vary greatly (i.e. injury, disease, congenital conditions, type of cancer, and life stressors), but the symptoms expressed by the participants, as a result of their condition or through the treatment of their condition, have considerable overlap.

Since cannabis is typically characterized in the literature as a symptomatic treatment, the focus will be on the various symptoms participants express as a result of

their condition(s). Cannabis, and cannabinoid based medicines appear to be effective to moderately effective in reducing pain, nausea and vomiting, stimulating appetite, and mildly reducing symptoms of spasticity (Abrams, Jay, et al., 2007; Chan et al., 1987; Ellis et al., 2009; Foltin et al., 1986; Foltin et al., 1988; Haney et al., 2007; Jain et al., 1981; Maurer et al., 1990; Narang et al., 2008; Noyes et al., 1975; Söderpalm et al., 2001; Svendsen et al., 2004; Ungerleider et al., 1988; Ware et al., 2010; J. P. Zajicek et al., 2005; J. Zajicek et al., 2003).

Table 1.0 Symptoms of Medical Cannabis Patients

Participant	Sex	Age	Primary Symptom(s)
1	F	54	Pain, Sleep, Appetite/Weight, Cognitive
2	M	32	Pain, Sleep, Indirect Mood
3	M	59	Pain, Muscle/Joint Problems
4	F	79	Pain
5	M	50	Pain, Sleep, Muscle Problems, Indirect Mood, Cognitive
6	M	25	Pain, Nausea, Anxiety
7	M	60	Pain, Muscle Problems
8	M	64	Pain, Muscle Problems, Indirect Mood
9	M	26	Cognitive
10	F	40	Pain
11	F	58	Pain, Sleep, Appetite, Indirect Mood, Cognitive
12	F	36	Pain, Indirect Mood
13	F	58	Skin Cancer
14	M	54	Pain, Sleep, Muscle Problems
15	F	22	Pain, Nausea
16	F	29	Pain, Sleep, Muscle Problems
17	M	44	Sleep, Depression/Anxiety
18	M	30	Pain, Indirect Mood, Appetite, Cognitive
19	M	42	Anxiety, Cognitive
20	F	48	Pain
21	F	31	Pain, Anxiety/Depression
22	M	25	Depression/PTSD, Cognitive

The symptoms expressed in this study generally fall into one of six categories: pain, muscle spasms, nausea/appetite, anxiety and depression, cognitive impairment, and sleep related problems. Seventeen participants (77%) indicate that they experience

multiple symptoms (i.e. two or more). The following excerpts illustrate the general symptoms participants often experience as a result of their condition or as adverse side effects of their treatment.

Bad back pain and I use it a lot for nausea. I pretty well have bad chemical concoction in my stomach from pills I have to take the night before and in the morning, it basically helps quite a bit with nausea and digestive issues, its helping with stress and anxiety disorders...As for cannabis helping me it helps my mental conditions quite a bit, I can move around and actually try and work off some of my weight now that I'm on it. (participant 6)

Well I have multiple diagnoses, they range from degenerative rotator cuff disease in both shoulders, arthritis in hands and knees, chronic pain, bulging discs at C6 and C7, long family history of chronic arthritis. So I mostly use it for pain. (participant 7)

I have micro vascular changes in my brain. I'll start with the brain and then go down because it's affected my whole system. I also have chronic ischemia which you know dead gray matter. I have mini seizures called jamais vu, the opposite of d'jais vu and what happens when I have those, they just happen and they only last a few seconds, but I'll be doing something and all of a sudden I stop dead, I don't know where I am I recognize nothing, I know nothing I just can't move. That happens, they're not painful or anything, I don't feel any pain, but it just is rather disconcerting . Haven't had any of those since last September. They just come when they come, there's no rhyme or reason to them. So that's what I got in my brain. In 2006 when I was diagnosed, my mouth and my GI system was full of ulcers. They're not normal ulcers they perforate much easier than a regular ulcer. I have, you get, literally some people get hundreds of them in their mouth. You can't eat, it is excruciating painful. I had those ulcers. all in my mouth down my throat , through my esophagus and in my stomach. I couldn't eat I went down to 83 pounds and I ended up in psychiatric respite care for 9 days. I didn't know what was happening. (participant 11)

As a result of taking Cipro the ongoing problems so far are four ruptured disks in my back and one in my neck, two ruptured Achilles tendons, multiple nerve damage. All of the nerves in my left arm are all messed up, and peripheral neuropathy in all of my limbs. Then trigeminal neuralgia on top of that which is a specified neuropathy for this (points to head) nerve in your head. And it's constant pain, it's a matter of managing pain... it's a matter of getting pain to a manageable level. There's no such thing as being pain free for me it just doesn't happen. (participant 12)

For me the antidepressant would give me a lot of nausea, you'd have to take it you know for three weeks and then it kicks in, but it never really relieves. Sure it alleviated some of my depression, but never really...(participant 17)

Physically headaches very similar to migraine type headaches , there like very bad pressure and like light noise sensitivity, motion sensitivity, like sneezing or moving myself.... (participant 18)

Not only do the above statements illustrate the commonly reported symptoms, but also the concurrence of symptoms. Walsh et al. (2013) found that over half of their respondents used cannabis to treat all three symptoms of pain, anxiety, and sleep. Within the six categories presented there are variations in what participants experience, location of affliction, and perceptions of the symptoms. For example pain may be experienced as chronic or acute (Loeser & Melzack, 1999; Woolf, 1995). It may be localized to a specific region or felt throughout the body. Even individuals both suffering from a similar pain condition may vary in how they perceive it (Kuhn, Cooke, & Collins, 1990). A more detailed account of each symptom is presented below.

7.2.1. Pain

In the present study 17 participants (77%) experience pain related symptoms and are using cannabis in an analgesic capacity. The types of pain participants experience include migraines/headaches, postoperative pain, chronic pain, acute pain, neuropathic pain, and arthritic pain.

Chronic pain is like the worst thing, it's like a ghost of a pain. It's there and it's always changing, but it's one of those things the doctor's like it's just in your head, don't worry about it, just take this Tylenol you'll be fine, but you know it's not going anywhere it just gets worse...It changes, soft tissue injuries in the back from a car accident like that will one day be lower and then compensate and then be higher, it's always changing. (participant 2)

I was doing some arthritis a little bit, you know that was hurting me. (participant 4).

Sometimes it's acute, but I would say more often it's just constant/moderate (pain). When it does go acute fortunately it's only for like a day...it's just better for my body (i.e. cannabis) and I honestly know that cannabis is very much a muscle relaxant for me and it literally is like imagine all your muscles are like a fist and within minutes it starts letting them go (i.e. minutes of using cannabis) and that's part of the mitochondrial thing they call it...ragged red muscles. (participant 7)

I have rheumatoid pain in all joints...I've constantly got lumbar pain, constant, that just doesn't go away...I get a lot of pain in my hands, my hands are very arthritic. I have arthritis all through my body...I get migraines headaches as well. I get odd types of migraines, sometimes I'll just get it on one side of my head, sometimes I'll get them behind my eyes. (participant 11)

It's chronic but it has acute and recessive phases and I've been in the acute phase for about 8 months now. Like if I'm sitting here and start clutching my face and screaming, I'm not having a stroke, my trigeminal nerve has gone crazy. It's a number of things. It's

different for everyone, but with me I constantly have a fluttering sound in my ear (left). That starts to increase in pace and then my ear starts to burn and then the burning spreads... Always my ear is fluttering as it starts to get worse it moves to burning and then pain and those things spread across here (points to face) and then I go completely blind in my left eye and I can't tolerate light at all in my right eye. I'll be in a dark room and I'll still be covering my head. My husband and I have this joke about my light permeable skull because even with my hands over my face light is still too painful for me. And those steps can happen over a span of hours or over a span of seconds. I can go from fluttering to completely blind in one second... it's a matter of managing pain, it's a matter of getting pain to a manageable level...It's always about pulling it back. There are times when pain can make you go clinically insane, and so it's always about pulling it back from a point to where it's starting to affect me emotionally. (participant 12)

My only issue is I'm suffering this pain that came with the side effects of having the surgery... A lot of my pain is related to inflammation in my body. When I wake up in the morning I'm generally pretty pain free unless I've slept strangely in the night and as the day progresses I'm in more and more pain. The more I do the more I move the more I'm out of bed, the more pain I'm in. (participant 21)

7.2.2. Sleep

Seven participants (32%) indicate that they use cannabis as a sleep aid. This symptom is unique in that it is not necessarily the sedative effects of cannabis that bring about sleep, but rather through alleviating other symptoms that interfere with sleep, that enables individuals to fall asleep. For example, difficulty sleeping might arise due to pain or muscle spasms in the night, alleviating the pain and muscle spasms with cannabis has the additional benefit of bringing about sleep. The following statements illustrate the benefits of cannabis in assisting with sleep.

...I prefer to use the marijuana as a sleep aid... it helps me to fall asleep because I get migraine headaches as well...Again because it helps me to go to sleep I'm able to get away from it and usually when I wake up it's either settled or it's gone. (participant 11)

Lots of muscle spasms and weakness and a difficulty sleeping sometimes. The marijuana helps me get back to sleep.... (participant 14)

It did aid in the sleeping factor for me, I can't sleep because I can't lay down fully like a normal person would go to bed. Like, I can't be in that position or any position in the laydown world. So it was aiding in helping me get at least a couple of hours straight while laying down. (participant 16)

If I wake up at night and can't sleep...I have sleeping problems and you know, I know I can use cannabis and it will help me sleep without you know leaving me all screwed up the next morning like any of the sleeping pills do. (participant 1)

I'll wait to more evening, evening thing, with the indica, to rest, pain, help me get to sleep. I take a lot of sleeping pills. I don't take as many (with cannabis) because the pills that they give you it's ridiculous the side effects you know. That's why I don't want to take any higher doses, because of the side effects I don't want to experience any worsening side effects because the more you take more the side effects are going to affect you. (participant 5)

As far as sleep, I'm combining marijuana with a conventional medication of benzodiazepine and I find that actually both of them together really effective. (participant 17)

7.2.3. Muscle Conditions

Six participants (27%) disclosed that they suffer from some type of muscle problem. This includes muscle spasms, muscle twitches, spasticity, shrinking of the muscles, and muscle contractions (involuntary).

Painful muscle spasms and painful to move in certain directions. I get muscle spasms and pain associated with that when they won't relax.... pot seems to relax the muscles. (participant 3)

I get false signals everywhere, twitches and stuff like that... (participant 5)

I feel like my muscles are shrinking, they contract and I have to stretch them out every day. So I'm fidgety, It's creating Parkinson like symptoms in me, but it's not Parkinson's I've been assured, it's some sort of a cousin related to it. (participant 7)

I have muscle cramps all the time, restless leg syndrome that's in both sides... (participant 8)

Lots of muscle spasms and weakness...spasms where my legs will move involuntary, they'll just move...in the winter time when it's really rainy and stuff, my body will tend to be more spastic as far as muscle spasms and stuff go. (participant 14)

I walk with a cane and I just take a lot of breaks, but at night time, that's when I have spasms. (participant 16)

7.2.4. Nausea/Appetite/Weight Gain

Five participants (23%) experience nausea, appetite and weight related problems and find cannabis is effective in alleviating these symptoms. In some cases these symptoms are the result of their medical condition or due to the prescribed medication they take to treat their condition.

I've got no appetite and I find it hard to keep down a lot of food, I can't maintain my weight. I'm always struggling to put weight on. You know eat ice cream and high calorie things to try and get the weight on and cannabis does stimulate the appetite. (participant 1)

I use it a lot for nausea I pretty well have a bad chemical concoction in my stomach from pills I have to take the night before and in the morning, it basically helps quite a bit with nausea and digestive issues...It helps with the medications, it would set my stomach kind of in the correct order and just help me get food into myself in the morning... once there's food that chemical concoction can kind of break down and go into my system a bit more and that helps quite a bit. (participant 6)

After I smoke joints all I want to do after is eat. I'll go in the kitchen I'll make sandwiches I'll have soup, I'll cook spaghetti or something, all you want.. seems to affect me that way all I want to do is eat.(participant 11)

...very very bad nausea...I went through all the antacids you can imagine, I went through a bunch of different pills to help with digestion. Ended up nothing could take care of the nausea. I could have Gravol, but the Gravol made me sick and eventually my doctor just kinda put me on codeine and didn't know what else to do. (participant 15).

7.2.5. Anxiety and Depression & Mood

Five participants (23%) indicated they experience forms of anxiety and depression, and find cannabis alleviates some of the resultant symptoms of both the condition and or side effects of the medication. The use of cannabis in the treatment of anxiety is mixed. Anecdotally, some argue that it is an effective anxiolytic drug (i.e. reduces anxiety) while others find it induces anxiety related symptoms (“Medical Marijuana and the Mind”, 2010). Mathew and colleagues (1993) conducted a double blind placebo controlled study examining the effects of depersonalization after smoking high and low dose marijuana cigarettes. They found that marijuana did increase anxiety in participants (Mathew, Wilson, Humphreys, Lowe, & Weithe, 1993). Pillard, McNair and Fisher (1974) examined whether marijuana enhances experimentally induced anxiety. They found no statistically significant differences between the marijuana group and the placebo group in anxiety response to the two stressor conditions (Pillard, McNair, & Fisher, 1974). Interestingly both cannabidiol, a naturally occurring compound in cannabis and Nabilone a synthetic cannabinoid have shown promising anxiolytic properties (Bergamaschi et al., 2011; Bhattacharyya et al., 2010; Fabre & McLendon, 1981; Zuardi, Crippa, Hallak, Moreira, & Guimaraes, 2006). The following excerpts demonstrate the anxiolytic benefits.

I get overwhelmed and just down, stressed out quite easily... I can just cope with it until I can get back and have a little vapor... I don't know how it does it or whatever, but it just seems to take away certain I don't know whatever is sitting on my shoulders usually...I've had depression pretty much all my life and it's still the pills only do so much... I got severe almost manic depression, stress disorder and anxiety disorders... (participant 6)

I'm currently using medicinal marijuana to elevate three conditions depression, anxiety and a difficulty sleeping. (participant 17)

Reduces anxiety and paranoia...I don't get, I won't say I don't get mad. I'm not mad most of the time, which is the way I am without it. It really reduces violent tendencies. (participant 19)

When it comes to depression and PTSD it allows me to think about the events that have happened and to process them in my mind without getting a rush of anxiety or depression, sadness or confusion. It's like ok I don't understand why he did it, but I'm able to think about the process of what happened what it's like now. It just allows me to think clearly without feeling anxiety or fear surrounding them. (participant 22)

Participant 21 also has a history of anxiety and depression, however, the therapeutic benefits of marijuana in her case are mixed and her depression at times can be exacerbated by the cannabis strains she uses. This is usually dependent on the given season, as she characterizes the manifestation of her symptoms as akin to a form of seasonal affective disorder.

I'm someone who probably would be easily diagnosed with seasonal affective disorder. I get really depressed in the winter and I get really happy in the summer and so through the winter with indica strains; indica strains are generally better for pain like they help pain much better than sativa generally because they dull pain. Whereas sativa has more potential to bring pain awareness... Indica strains can be very heavy. It's that kind of like heavy stone where you're not feeling much and you're kind of slow and you just want to sit on a couch for a long time. So indica is much better at dealing with pain, but it also brings me to a lower place. So I really struggled this winter because I couldn't handle the strains that were best for my pain because they were making me depressed, like making me really depressed and then I would try to smoke like find strains that would work in terms of like taking sativa just to bring my mood up to bring me out of that depression, but then it was causing too much pain awareness. I would become very aware of my body in a way that was really uncomfortable and painful.

Participant 21 explains the difficulty she has had in trying to find the right strain balance particularly during the winter months. Through trial and error she has had some success in finding strain combinations that can effectively manage her pain, while minimizing her depression. However, in her situation indica strains while an effective analgesic, can aggravate her depression, particularly during the winter months.

Six participants (27%) express an indirect benefit of cannabis in alleviating or helping their mood. The depression, anxiety, and general mood related issues often stems from the fact of having an illness along with all the complications the illness causes.

I've been through an anger management program, I learned a lot about myself in the last couple of years, dealing with pain and just realizing where I'm coming from, why I'm acting like I could have acted, but it comes from pain. After the accident after the sheer frustration of everything it was just so much pain. I just feel like a weights been lifted off without having a rotten stomach, without having a serious chemical addiction or without what ever, I'm alive and I'm happy. (participant 2)

The marijuana also helps with that, with my attitude you know, I say it calms me down. (participant 5)

Yah, it's just simply, it affects my head psychologically I can tell myself well you feel better now, whether there's pain there or not doesn't matter, you feel better now because you're relaxing and I'm in control of everything and this feels better... If I just rely on taking pills I ended up sometimes just getting angry. I punch walls and trees and shit like that, sometimes, not for a while, not for a few years, but I was really angry about some things there like why me. It took me six weeks to get over that and I broke 2 knuckles. (participant 8)

The euphoria distracts you and it changes your mood. It puts you in a better mood. (participant 11)

There's a huge component of clinical depression that goes along with having a chronic pain syndrome so I like that little bit of whoo-hoo... (participant 12)

Some people with concussions can be like emotionally aroused. Which is one of the things I never really thought about till just now, but that's probably one of the things that marijuana helps with. For me it keeps me on an even keel I don't go into those dark spots that some people maybe have reported because you get frustrated... You remember what it's like to function without brain damage, but its just like frustrating so it can manifest in weird ways. Weed probably helps me to like just chill out and take a step back and be a little bit more cautious as well. (participant 18)

7.2.6. Cognitive/ Motor Functioning

Seven participants (32%) indicated that cannabis alleviates some of the cognitive impairments they experience, this was often referred to colloquially as brain fog, or scatter brained. The cognitive benefits vary, but generally include improved concentration, organization, and memory. The following participant excerpts illustrate these self-described cognitive benefits.

Certain strains work really good you know for clearing my brain and making me able to concentrate and focus better. (participant 1)

If I get all sorts of things going on at once in your head, what do you call that... and you get all confused (scatterbrained) yah yah, it settles that to where I can actually think about what I'm doing. (participant 5)

Well there's still seizure activity in my brain... I have not had a test to say that I have seizure activity in my brain...I want to have my indica where it's more of a calming and you know it's overall calming my brain not overly stimulating it. (participant 9)

Occasionally I suffer a little bit of marijuana lack of memory, but recognize the difference, when I haven't smoked any I have a worse memory believe it or no. It seems to I don't know if it repairs or bridges or what, it seems to help my ability to function more because when I'm going through a flare I cannot function. (participant 11)

Without it umm.. I'd get scattered brained especially... I'd end up from project to project to project without it. I used to manage night clubs. The last guy that I worked for, he could pick it out because there'd be days that I was so behind on stuff that I didn't get time to stop and have dose before I'd go to work. (participant 19)

For ADHD it allows me to focus and concentrate on something, making sure it's done properly. (participant 22)

Participant 18 suffers from cognitive impairments due to several concussions he obtained over the course of his life, resulting in difficulty reading, slow cognitive skills, and collecting his thoughts and verbalizing them. He indicates that cannabis is effective in treating these symptoms. However, he does recognize that cannabis has its limitations, for example he finds it difficult to focus on a computer screen regardless of how much cannabis he consumes. The following excerpt illustrates his experience.

I have really bad recurrent post concussion syndrome, which is a whole bundle of cognitive and physical symptoms and difficulties... Trouble reading, trouble speaking. Trouble like...you'll notice with my voice I have trouble like finding the words and like speaking them, that's called aphasia... So mental processes are really foggy and bogged down. It feels like you had two pints of beer on an empty stomach, that's how it feels... I also have like slow cognitive function...Marijuana is the only thing that like immediately and directly treats all of the like, pretty much all of the symptoms. Within reasons, like its still like hard to look at a computer screen no matter how much weed I smoke, and all these things exacerbate my symptoms. (participant 18)

7.3. Treatment Regime

The following section will address the participants' medicating routine at the time of their interview. Specifically, this section will discuss the cannabis strains, quantity, and the methods of administration participants employ in the administration of their cannabis based medicines. Although an individual's treatment process is specific to the ailments they suffer from, commonalities among participants did emerge.

7.3.1. Strains

Participants were asked a series of questions regarding their cannabis medication and medicating behaviour in general. Fourteen participants (64%) disclosed the strains of cannabis they use in the treatment of their medical symptoms. The popular strains include *c. sativa*, and *c. indica*. There is debate over whether the genus cannabis is monotypic or polytypic in nature. It appears that botanists who have not generally studied the taxonomy of the genus cannabis argue for the monotypic position, and the literature has generally accepted this in the absence of taxonomic scrutiny (Emboden, 1974). Schultes, Kline, Plowman, & Lockwood (1974) put forward compelling arguments in support of the polytypic position that the genus cannabis is subdivided into *C. sativa*, *c. indica*, and *c. ruderalis*. More contemporary research also offers support for the polytypic argument for the subdivision of cannabis (Hillig, 2005). Regardless of taxonomy, the general cannabis community at large appears to adopt the polytypic vernacular (Rahn, 2014.). The strains used largely depend on the participants medical symptoms. Below represents the described effects of the two strains *c. indica* and *c. sativa* to get a better understanding of what each strain is used for.

Sativa is more cerebral. (participant 2)

The indicas are good for pain but they can make you sleepy... but the sativas can intensify pain...Like I said if you take a strong pure sativa initially you can get a bit anxious a bit edgy because your senses are all accentuated for a little bit so if you're not sue too it can cause anxiety. (participant 3)

The sativa is a functioning high. I guess I don't know what else to call it, the indica is more to relax, calm down and for the pain aspect... (participant 5)

...indica, which has a far more body effect and sativa is more cerebral I guess you'd say. (participant 7)

You can get it, it comes indica or sativa. Sativa is more for through the day, like you can do things it doesn't blahh you out and make you sleepy. Whereas indica is known for that quality. (participant 11)

There's different types the sativa or the indica. That the sativa is more for the head, emotional state and the indica is more for the body state. You're a depressed person they might want to use a sativa which gives you euphoria which can take depression away. (participant 14).

I know like sativa has like uplifting qualities. (participant 17)

sativa, something really cranial really, cerebral, really creative. I don't really worry about the uplifting effects of sativas...Indica is better if you got like stomach problems or if you got like arthritis, or bodily pain. Mine is mental, it's pretty much a cognitive, it's from the cognitive end of things. (participant 18)

Indica strains are generally better for pain like they help pain much better than sativa generally because they dull pain. Whereas sativa has more potential to bring pain awareness. (participant 21)

In the present study the typical strains reported include indica, sativa, and various combinations of the two either as hybrid blends or separate strains. Out of the participants who disclosed the strain they use, 5 participants (36%) indicated that they use hybrid blends such as a 50/50 varieties. This means that the product is approximately 50% indica and 50% sativa. The blend may also be skewed towards a particular strain such as a sativa dominant or indica dominant variety.

Indica predominantly, if I find I'm using too much I might go for a 70/30 blend (70% indica/ 30% sativa). (participant 2)

I like to have some indica I like 50/50 blend (participant 3)

I prefer a 60/40, 60% Sativa (40% indica) so I'm not just set on the couch where I can actually still do things, and it kind of gets me up to be able to do things and the indica part of it helps with my pain to be able to do it. So you can have really high sativa or a real high indica or a blend somewhere in between. (participant 5)

I would stick to hybrids, sativa, indica...I'm leery about strong indicas with my depressions, sativa has qualities that can alleviate the mental... (participant 17).

Six participants (43%) indicate using both indica and sativa strains separately (i.e. not as a hybrid). The quantities of each strain vary depending on need. The following excerpts illustrate the effects of each strain and how they are used.

Indica to calm me down and relax a little bit and then I smoke sativas and indicas as I need them and in amounts as I need them during the day... still have a head problem going on here, in order to perk up I need a really good sativa to get my head up and get going. (participant 8)

Participant 9 primarily uses indica strains and the sativa strain is not exclusively part of his treatment regime post surgery, however, he might on occasion use a bit of sativa therefore he was included in the sativa/indica category.

I smoke not as much anymore, but I still smoke I take my nightly dose I don't take a sativa because I'm not overly, my brain is not overly active as much as it was. Before surgery I would smoke a few joints a day and just lay low and so it helped in just kind of keeping me steady. Now I still smoke every night before bed or a few hours before and then I go to sleep, have a great sleep and get up and go through it the next day...Now a days I just get up, take my normal medication and don't have any pot and then go through my day, come home have some food, maybe have a little bit of a sativa joint and then I'm still good and with it. Then usually about 9 o'clock I'll have taken my other medication and have some indica and then just have my wind down and just go to bed. (participant 9)

I generally buy half indica half sativa that way I have the sativa through the day if I feel I need it and the indica for sleepless nights. (participant 11)

I know one is the salvia, in the salvia family (sativa?)... Sativa that's right. Sativa family and one that start's with an I (indica?), yes. So one strand from that, one strand from the other I don't know there names within that strand... (participant 16)

I find it more effective for my pain (indica). During the day if I have things to do I might prefer...I do prefer that I don't use a heavier I use something lighter, I do prefer to use sativa during the day if possible. (participant 20)

If I have a brownie I'll slice a very thin piece of that brownie and just have that or I'd just have two brownies (slices) one indica one sativa and have a little bit of both. (participant 21)

Three participants (21%) tend to favor the indica strain and use indica varieties predominantly in their treatment regiment. The following excerpts illustrates some of the accounts of the indica dominant participants.

Indica predominately...(participant 2)

I only, I never smoke sativa, I shouldn't say never, but that would be my absolute last resort I would only smoke indica, which has a far more body effect and sativa is more cerebral I guess you'd say. (participant 7)

I have found that the most effective strains for me are the Indica especially the fruit and citrus type strains. Where the Sativas they don't make me angry and I'm basically calm, but I get too complacent and I don't have a lot of ambition and I get teary. The indicas tend to keep me more level. I'm not angry I'm not sad I'm not overly thrilled. (participant 19)

Participant 18 primarily treats his symptoms with sativa. He was the only participant to report a sativa dominant treatment regimen. He does indicate that on rare occasions he enjoys using indica in more of a recreational capacity.

...It's always sativa basically with me because it clears the cognitive fog and the pressure off of like my brain... I don't really have a lot of bodily pain, but sometimes at night I'll have like, I'll order from the dispensary a little indica for myself, just to smoke a little weed with my wife and watch a movie or something like that, because then you just want to like sink into the couch. It's pretty much like 98% sativa. (participant 18)

Participant 10 was still trying to figure out her strain regimen at the time of her interview. Although she indicates that she uses indica products it might be too premature to determine her treatment routine at this time

It's still very new for me I'm still charting everything out. With the first products of theirs that I tried was the Master Kush (indica) capsules so the standardized dosage in a capsule form...That one totally relaxed, the effects were immediate...(participant 10)

Based on the participant accounts above, it appears the indica strains are purported to have analgesic benefits and can cause sedation, which may be why many indicated using them in the evening or before bed. Other words used to describe this strain include calming, and body effect. Alternatively, sativa strains tend to have a cerebral or cranial effect and have been described as uplifting and euphoric, however, they may also bring about pain awareness. As previously mentioned, strains are usually geared towards a particular symptom balanced by the preferences of the individual. Among the participants who use both sativa and indica strains separately, it appears that they do so to target different symptoms, usually pain and sleep. Participants 9, 11, and 20 indicated that they use the indica strain towards the evening to generally help with sleep while they use the sativa strains more during the day to avoid the sedative effects

of indica. In the hybrid or blend group it appears that the common goal is to find balance. Participants 2,5,17,and 21 illustrate this balancing act.

7.3.2. Methods of Administration

The path the drug takes to enter the body is referred to as the route of administration (Julien et al., 2008). In the present study the common routes participants use include inhalation, oral administration, and absorption through the oral mucosal cavity. The following section will address the different ways in which participants administer their cannabis based medicines in the treatment of their medical symptoms.

Participants were asked questions pertaining to the methods of administration they use in the treatment of their medical symptoms. All responses were analyzed for commonalities and then categorized into four methods: inhalation, oral administration; edibles and plant based non prescription pills and capsules, oral mucosal absorption, and topical administration. Mucosal absorption, and topical administration generally include tinctures and topical creams respectively. Although participants reported using multiple methods of administration it was not uncommon for them to favor one method over another. Below represents the various administration practices, highlighting the multi-method approach.

Between smoking and vaporizing and eating it, I can pretty much maintain a level where I function pretty good. (participant 1)

Vaporizing is primary, eat at times, small amount of smoking, vaporizing is very effective almost harmless... (participant 3)

I had the under the tongue spray once. Usually I just vaporize... if it's the spray its great for if I have joint pain or my back is getting tense again, It will pretty well make everything feel like its getting self lubricated every time and if it's not that it's the vaporizer... (participant 6)

I generally will vape in the morning, I actually vape when I'm on my bike...I've used edibles before taking plane rides, but that's pretty much all. I like to use what's called cannabis infused cream I like to rub it on my hands and my shoulders and I also sometimes get the stuff you spray it on your cheek or on your tongue (tinctures).... (participant 7)

My ongoing usage is tinctures, which I make for myself because there's not any available for sale that's strong enough for me...I do, I have a vaporizer a volcano vaporizer, which is the best thing in the whole world. (participant 12)

I use it topically that's why I need the hash oil for. The really really thick dense stuff to put on topically and then I also eat it. (participant 13)

Well I usually smoke it in like a joint. I have vaporizer it isn't very good...I eat it as well and a now I've been taking cannabis oil under my tongue. (participant 20)

I take it like cookies, smoking it or vaporizing it or whatever and it's much easier to control and now that I've experimented enough with strains and different products I know what works for me and I know how to manage my pain really well...Sometimes I will smoke marijuana now, like I'll actually smoke it. I bought myself a pipe, so that I can really control my usage. (participant 21)

Inhalation is the most common method of administration reported, at 91% (n=20). This includes both vaporizing and traditional smoking. The second common method of administration are edibles at 55% (n=12), followed by oral mucosal absorption at 31.8% (n=7) usually in the form of tinctures, capsules/pills at 18.2% (n=4), and topical application at 13.6% (n=3). In comparison Ware et al. (2002) found that joints were the most common mode of administration among medical pain users at 81% with pipe at 34%, and water pipe at 16%. Only 9% of respondents indicated using edibles. The figures are based on a sample size of 32 respondents (Ware et al., 2002).

In the present study vaporizers appear to be the preferred option even among participants who do not generally use them in their treatment program. The latter group is comprised of individuals who use smoked marijuana as they cannot afford to purchase a vaporizer for full time use, but who express a desire to do so. The potential health benefits of using vaporizers over smoked marijuana is often cited as the main reason to use the vaporization method. As discussed in chapter three research shows that vaporizers are a potentially healthier option as they do not produce increased carbon monoxide after inhalation of THC and they significantly reduce the number of Polycyclic Aromatic Hydrocarbons (PAHs) in the vapor (Abrams, et al., 2007; Gieringer et al., 2004). Earleywine and Barnwell (2007) also found that respiratory complications may decrease with vaporization and that respiratory problems such as phlegm, cough, and chest tightness might be less severe among individuals who vaporize. Aside from their

relative safety, they may also be a viable delivery system for the treatment of neuropathic pain (Wilsey et al., 2013).

Probably vaporizer (most common way to administer). I really like it. It's easier on my throat and my lungs, I did like smoking joints and I also smoked cigarettes and it just got so I was choking every time I smoked and with the vaporizer it doesn't happen and it makes the bud go further because you can put a smaller amount in it and you get the full effect, your not losing it, you know? It's not burning off into the air like for the end of a joint. (participant 1)

No I'd like to get a vaporizer, it's very expensive I like to save up for one, a proper one, not this little dollar store ones... not the Volcano just a nice little black box one. I think for the health reasons it's the biggest thing and their private, to be able to go out in public and not be like duck around the corner and going out and you know, you can kinda be a little more discrete with it. (participant 2)

Hardly ever smoke anymore, own two vaporizers, plug in one that sits at home Micro-G like a little micro cigarette, more discrete, doesn't bother anybody. (participant 3)

I smoke out of a pipe sometimes, you know a vaporizer takes a little bit to set up... You don't get all the nicotine and the bad stuff, the temperatures set to vaporize the THC or the medicine so you don't get all the bad things like you do through a pipe and everything. It's cleaner, it's healthier, it's better on your lungs... You can't always tote one around with you though. I do have a smaller portable one, but sometimes it's not always easy to take it places, just take some rolling papers. (participant 5)

That's why I tend to vaporize and not smoke it's a lot easier on you than smoking and I don't smoke tobacco which might be a great advantage too. (participant 7)

I tried vaporizing, but I got just a small butane vaporizer I don't like it, it hurts my throat, I don't like to be inhaling something that runs on butane...right now I smoke because I can't afford the vaporizer. At some point I will get it... it doesn't cause damage like smoking does and I have bronchial troubles too and when I toke it doesn't really bother my chest much, but it's harder on my chest I can feel than the vaporizer. (participant 11)

I know there's vaporizing, I would prefer to vaporize. I've tried it once and I know there's an electronic version, but I don't have the funds to you know experiment, I would like to. (participant 17)

My lung has recovered almost 100%, but it's taken a while and I certainly... like I don't smoke cigarettes either so um I didn't want to be smoking pot all the time so I got a vaporizer. (participant 21)

I'm trying a move towards a vaporizer because its just healthier on the lungs... I'm just flat out broker than broke right now so a vaporizer is a just a bit out of the question. (participant 22)

Edibles are the second most reported method of administration in this study. Edibles refer to cannabis based food products or cannabis products that are ingested, not including cannabis extract capsules/pills (i.e. oral administration). It should be noted that the frequency of use was often low. Generally, participants indicated that they occasionally use edible products, but it was typically not the primary method of administration for daily use for most participants.

The edible products participants use include brownies, cookies, caramels, honey, and tea. As indicated in chapter three oral absorption is slow, erratic and subject to effect delays of 30-60 minutes (Hollister et al., 1981). There is also a large margin of individual variability in absorption due to metabolism in the liver and GI tract (Gorelick & Heishman, 2006; Julien et al., 2008). This can produce varying effects in individuals. Comparing the effects of orally administered cannabis and or THC in varying dosages across several studies, it is apparent that there is a wide degree of variability both between and within subjects. For example Lucas and Laszlo (1980) found that 15 mg/m² of THC produced pronounced psychotropic effects, but when THC was decreased by 5 mg/m² the psychotropic effects were minimal. Beal et al. (1995) found that 2.5 mg of dronabinol administered twice a day had mild to moderate psychotropic effects. It is important to note that these differences may also be due to variations in product. There are also differences within subjects, for example the presence or absence of food in the stomach can influence absorption (Stevens and Ghazi, 2000).

In the present study, some of the participants who used edible products highlight the difficulty with oral absorption and the risk associated with over imbibing. Another complication of cannabis absorption with edibles and other forms of orally administered cannabis in general, stems from the lipid soluble nature of cannabis (Ashton, 2001). Despite the complexity of oral absorption, the effects are often characterized as continuous and long lasting (Grotenhermen, 2001). The following excerpts exemplify some of the experiences of participants using the edible method of administration, and of particular interest are the cautionary statements regarding overindulging and the effects it causes, but also of interest are the descriptions of the benefits, of oral administration and its gradual effect.

Yes, yes I like the brownies and what not, but the more I read about them a little more... without proper standards someone gets sick... Not in the quantities of the narcotic that doesn't really affect you... they advise you to take a quarter take a few bites first see how you feel... If you're a piggy (makes gorging sounds)... ok that's what you wanted right so basically you just ate twice the amount you actually needed you could have saved your money and had another dose another day. With the edibles and the stuff there's no standard for like disease, like what do you call that food safe, the industry's not regulated when it comes to that food, so it kind of scares me. Once in a while I'll do it, but you're taking a risk. (participant 2)

Like the cookies before flying is very gradual and again it can sneak up on you if you over eat cookies but it's not an immediate thing. (participant 7)

The edibles are awesome but it comes down to people knowing when to take them and what to expect from it because a lot of the times if you go and eat a full cookie from the dispensary if you don't eat or smoke tons then it will hit you pretty good and you'll be parked on your but, which you know some people need it, but at the same time if you use it edibly and you really want to have the overall effects of it medically, having it edibly is the best because it's just like taking your pills as opposed to having them ingested at a clinic or what ever you know. It's not right into your blood like it is through your lungs and smoking, it's just gradually absorbed into your body and you feel that overall calming and doing it that way it really made it more obvious that it's a medication or you know it has this natural effect on my body and it doesn't give me some headache or some side effect anything. I feel the overall calm of it. (participant 9)

Now one of the things I like to do in my life right now I need to be a really highly functional person, I'm so sensitive to stuff so one of the ways I'm able to ingest it is to make tea and I love the tea, the tea's great. (participant 10)

Oh I've put it in food, it's good to eat. It's a different high, when you put it in food it's affect you feel it stronger. It's like it relaxes every cell in your body. It makes you feel absolutely wonderful. I've put it in cookies I've eaten it in brownies. But that's about it. But I rarely cook it because it costs a lot of money and to put an ounce of it into a cookie and eating it all in one day is really kind of a waste. That's a treat. That's something that's a treat. When I get a little extra money I'll do something like that, but not generally. (participant 11)

Participant two, above, addresses the consequences of over indulging, but he also raises a growing concern with the lack of industry regulation regarding edible products. Currently, dispensaries and compassion clubs in Canada are not recognized as legitimate institutions and therefore not authorized by law to sell cannabis. However, they are still expected to adhere to zoning, land use bylaws, building code and fire code regulations (Lee, 2014). With regards to food products, health inspectors are only involved when food is prepared on the premises (Lee, 2014). This lack of regulation can have serious health and safety consequences. For example during a 4/20 pro-marijuana

rally in in Vancouver, several consumers fell ill after taking edible products purchased from a vendor at the rally (Burton, 2014). Although the expressed symptoms were characteristics of THC (dizziness, vomiting, heart palpitations, and extreme grogginess) police suggest that they were not indicative of THC poisoning, suggesting that the product may have been laced with another substance (Burton, 2014). The concern expressed by participant two was largely in regards to food-born illnesses, due to improper preparation and sanitation conditions. This has become a growing concern for the state of Colorado, which in 2012 legalized the sale of marijuana and marijuana related products, including edibles (Wyatt, 2014). However, the state is taking action by implementing mandatory food and facility inspection standards that will check for such food contaminants as E. coli and salmonella and ensure proper facility standards (Wyatt, 2014). Cannabis facilities in Colorado are also now required to submit their products to state certified independent labs for testing to ensure proper potency (Kovaleski, 2014). According to the Colorado Department of Public Health and Environment Executive Director Dr. Larry Wolk these cannabis facilities will:

“have to prove to us, they have the appropriate credentials, they have to have the appropriate operating procedures, and they have to have safety, quality in place so that there's consistency time and time again with regard to testing these products.” (Kovaleski, 2014).

In general it appears that participants prefer to utilize other methods of administration than just traditional smoked cannabis. According to Lucas (2012) 90% of participants would like to have access to raw cannabis as well as alternative methods of administration such as edibles, tinctures and hash, compared to only 9.8% who prefer a cannabis smoking only option. However, given that the new Federal regulations do not permit licensed producers to manufacture products other than dried marijuana, it seems that dispensaries will be able to fill the void in the market for the time being (“FAQ: Medical Use of Marihuana - Health Canada,” 2014)

7.3.3. Quantity

Seventeen participants (77%) disclosed the approximate amounts of cannabis medicine they use to treat their symptoms. It is rather difficult to provide any clear picture of the average amount of cannabis as it fluctuates considerably with the method of

administration and the products used. The difficulty in providing a clear illustration of the quantity of cannabis is further complicated by the variations in reporting. For example, some participants provide daily amounts in grams, while others provide how many joints smoked in a day, how much of a cookie they eat at a time, or how many drops of tincture they use per treatment. The amounts of cannabis participants use are reported below; it is important to point out that the figures are generally given as estimates or approximations rather than set amounts.

I can smoke marijuana one joint or two at the max a gram a day if I really need it...I actually tend to go into the dispensary every two days and I might buy a gram and if I can hold out a gram of pot for 10 dollars it might last me three days. I try to make it last as much as I can. The secret is to find the little smallest amount that can actually do that effect (participant 2)

If I was smoking I wouldn't be smoking more than 1/4 to 1/3rd of a half gram joint smoking, if I'm eating it I would probably use about a gram and a half, half a cookie or something like that. (participant 3)

I started slowing down a little bit more, but not necessarily how often it's just the quantity throughout the day...It's a steady, but it's quite low, because daily limits is usually five grams they said, but I'm more around two, two and a half. (participant 6)

My whole day might consist of a gram usage maybe a gram and a half sometimes (participant 7)

Right now I'm set for 5 grams a day and I can smoke 3 or 4 a day and it starts getting hard... (participant 8)

I would say I buy maybe 2 ounces a month, it's all broken up it's not all at once. I'll go and buy \$200 worth or \$100 dollars worth, but over a course of a month. I think I smoke about probably on a bad day I'll smoke 5 to 6 joints a day. (participant 11)

Maybe a couple of grams, probably at the most because I don't smoke joints so with the vaporizer you need a lot less. (participant 14)

So I bought at the dispensary 2 grams, 1 gram of each umm strand and then I guess I honestly smoke just like a pinch and I put it in a pipe... (participant 16)

Oh I don't know I smoke like maybe a gram a day or something. I was saying to my doctor I was like um ah what's it called, like a gram a day that would be like 30 grams a month... (participant 18)

Tincture is typically out of the house... my doses would be either oil or kif vaporized, occasionally in a pipe doesn't make a difference either one, but usually vaporized. For instance one gram of oil and two grams of Kif will last two weeks. (participant 19)

Well it depends on my money... If I had medicine I'd be using 3-5 grams a day. My prescription is for 3 grams a day. You would never use like three grams of cannabis oil a day because you'd be in like a coma. It depends on what, right? If it was strictly dried I would say 5 grams a day would be my optimal. (participant 20)

I medicate probably 3 to 4 times a day sometimes as much as 5 not often and I usually smoke about a half joint so maybe a half gram at a time... Anywhere from a gram and a half to two grams a day. (participant 22)

The amount of cannabis used depends on a number of factors including method of administration, need, and tolerance levels. Thirteen participants (76%) provided information regarding their daily cannabis usage that can be represented in grams per day. Table 2.0 displays the approximate amount of cannabis consumed on a daily bases in grams/day for the 13 participants. Based on reported quantities the average amount of cannabis consumed is 1.81 grams/day.

Table 2.0 Daily Quantity of Cannabis Consumed in Grams

Participant	Estimated Amount (g)	Mean Estimated Amount**
2	0.33-1.0	0.665
6	2.0-2.5	2.25
7	1.0-1.5	1.25
8	3.0-4.0	3.5
9	1.0-2.0	1.5
11*	1.9	1.9
14	2.0	2.0
15	3.0	3.0
17	0.5	0.5
18	1.0	1.0
20	3.0-5.0	4.0
21	0.13-0.17	0.15
22	1.5-2.0	1.75
Mean daily cannabis consumed=		1.81

*Participant eleven's estimated amount is calculated by converting her monthly estimated quantity in ounces to grams divided by 30 days.

** The mean estimated amount is calculated by averaging the lower and upper bound figure for those participants who provided a range for their daily quantity of cannabis consumption.

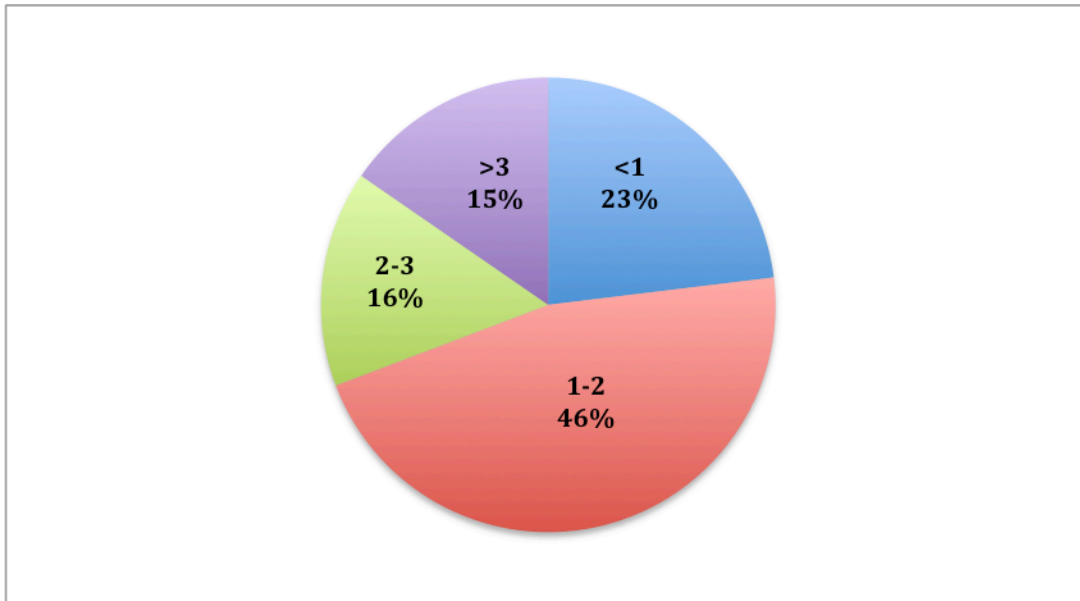


Figure 1.0 Daily Quantity of Cannabis Consumed in Grams

Of the 13 respondents, 3 report less than 1 gram a day, 6 indicate they use between 1-2 grams/day, 2 use approximate 2-3 grams/day, and 2 participants report quantities over 3 grams/day. Figure 1.0 illustrates the breakdown of daily cannabis consumption in grams/day. It should be mentioned that these figures correspond to dried cannabis product that is either smoked or vaporized and because participants may use other methods of administration such as edibles, capsules, and tinctures these quantities may not be indicative of the total daily amount consumed. In a nation wide survey of the medical use of cannabis in the United Kingdom Ware, Adams and Guy (2005) found that out of 916 respondents, 18 used 10 or more grams/day, 60 used 5-9 grams/day, 107 used 3-4 grams/day, 249 used 1-2 grams/day. Of the remaining 482 respondents, 133 reported using several grams/week, 107 reported several grams/month, and 222 respondents indicated occasional use when needed (Ware et al., 2005).

The WHO has estimated that the average cannabis joint contains approximately 0.5 to 1.0 gram of plant material with THC levels ranging from 5 mg to 150 mg ("Cannabis : a health perspective and research agenda," 1997). However, as there is a loss of THC content from the plant due to combustion and side stream smoke, the actual amount of THC transmitted in the smoke is approximately 20% to 70% ("Cannabis : a

health perspective and research agenda," 1997). Furthermore, the amount of THC from the cannabis joint that actually enters the bloodstream ranges from 5% to 24% ("Cannabis : a health perspective and research agenda," 1997). One's experience with cannabis also influences THC absorption, with heavy users showing higher THC plasma levels than less experienced individuals (Lindgren et al., 1981). All of these variables contribute to the difficulty in developing standardized dosing guidelines with respect to the inhalation method of administration. Determining quantity becomes even more challenging when medicating with edibles, tinctures and forms of oral administration. Oral absorption in comparison to other modes of administration is characterized as slow and erratic (Ohlsson et al., 1980). With orally administered cannabis some participants indicated that they were not too sure about its composition regarding quantity of cannabis, and percentages of cannabinoids such as CBD and THC.

I dose it about the way someone on long term opiate pain killer would. I use it approximately every 4 hours. I use about 20 drops every 4 hours and that's my baseline just to keep me going through the day and keep me mobile and able to interact with the kids and stuff...I don't have any idea (quantity of cannabinoids), I can tell you I use a number of different parts of the plant. (participant 12)

You know what, with the snake oil I have no idea how much weeds in there, I really don't...I don't know what the concentrations are in [the] snake oil... (participant 13)

it is really hard to tell because I don't know how much grams there are in a lot of my capsules and in my honey and all that stuff...if it was a day where I'm only smoking it, lets say throughout probably 3 grams. (participant 15)

I don't know, I'm not able to translate what's in the oil to grams... I really couldn't say. (participant 20)

I have half a caramel and that manages my pain and my mood perfectly for the entire day... If I have a brownie I'll slice a very thin piece of that brownie and just have that or I'd just have two brownies (slices) one indica, one sativa and have a little bit of both...It would be a very low amount, it would be like an 8th to a 6th of a gram a day. That's the closest I can give you, but I think that would be pretty accurate. Like if I'm smoking that's how much that would be. If I was using my pipe and with smoking, it would be a 6th to an 8th of a gram and if I'm taking the caramel that's about the same dosage. (participant 21)

The above statements illustrate some of the ambiguity with regards to edibles, capsules, and tinctures. Although some dispensaries and products may provide more detail regarding the quantities of active ingredients than others, most do provide dosage

guidelines as evident from both participant statements and dispensary/compassion club menus.

They've also ordered one of those machines... the machines that test the weed for cannabinoids, so they ordered that, they're seriously, seriously into figuring out what's going on. So I don't even bother with anybody else anymore. (participant 13)

They have a big blackboard where they break down the percentage of the cannabinoids. They seem to be knowledgeable and they're very friendly and so I've been going there mainly. (participant 17)

No unfortunately it doesn't umm they have the dosage that they say for a low dose take one teaspoon for a big dose take one tablespoon, but I don't know how much is in there. (participant 15)

One method that appears to be effective for smoking, vaporizing, and oromucosal administration is a self titration model of dosing (Abrams, et al., 2007; Heishman, Stitzer, & Yingling, 1989; Hering, Hooker, & Jones, 1986; Rog et al., 2005; Wade, Makela, Robson, House, & Bateman, 2004; Wade, Robson, House, Makela, & Aram, 2003). This method enables the individual to self-regulate their dose thereby reducing the potential adverse events, while effectively managing their symptoms (Wade et al., 2004, 2003). This method also helps account for the differences between individual users (Rog et al., 2005). However, this method may be more suited to experienced users, particularly when it comes to the inhalation method (e.g. smoking and vaporizing) of administration (Abrams, et al., 2007; Heishman et al., 1989).

7.4. Discussion

This chapter examined the patterns associated with the use of medical marijuana. More abstractly it identified areas of information therapeutic cannabis patients must acquire to be able to effectively treat their medical symptoms. The themes uncovered in this chapter provide insight into the complexities of using cannabis in a therapeutic capacity, and serve as a foundation to better understand the learning process associated with these variables, a learning process that will be addressed in the following chapter.

In this study cannabis is commonly used in an analgesic capacity to reduce pain symptoms of an underlying condition. However, it is also common for participants to use cannabis to treat more than one symptom and they often expressed that they suffer from multiple symptoms. This is consistent with the literature. Reinerman, Nunberg, Lanthier, and Heddleston (2011) found that patients often reported more than one therapeutic benefit to using cannabis and Walsh and colleagues (2013) had similar findings, as discussed in the *Medical Symptoms and Condition* section.

In spite of taxonomic debate, participants commonly adopt the polytypic vernacular when discussing strain variety, and attribute specific benefits to each strain type. Indica strains were commonly used in an analgesic capacity and were described as having sedative like qualities. Sativa strains were articulated as uplifting and cranial. Interestingly, Corral (2001) conducted an observational study examining the differential effects of medical marijuana based on strain and route of administration and found that c. indica was more effective than c. sativa in improving energy and appetite. In an information package for medical practitioners regarding the use of marijuana for therapeutic purposes produced by Health Canada it states that:

“There is presently insufficient scientific and clinical evidence to lend support to the anecdotal claims that one strain of cannabis may be more beneficial than another one for a particular medical condition” (“Information for Health Care Professionals,” 2013, p. 13).

Despite these discrepancies, participants, dispensaries, compassion clubs, and cannabis producers support the idea of the strain/symptom relationship and use polytypic terminology when referring to their products.

In this study inhalation was the most popular method of administration, with many participants using vaporizers in the administration of their cannabis medicines. Vaporizers were popular even among participants who use traditional smoked marijuana, often citing the health benefits as a reason to switch. However, usually due to financial constraints many were not able to afford a vaporizer or one of quality. Research has illustrated the health benefits of using vaporizers in lieu of traditional smoked cannabis (Abrams, et al., 2007; Earleywine & Barnwell, 2007; Gieringer et al., 2004; Hazekamp, Ruhaak, Zuurman, van Gerven, & Verpoorte, 2006). Wilsey and colleagues (2013) have found that vaporizers are also effective in the treatment of neuropathic pain. Given the overwhelming popularity of the inhalation route of administration, it would be beneficial to encourage the use of vaporizers among medicinal cannabis patients.

A final key finding from this chapter concerns quantity of cannabis used. Most participants use cannabis on a daily basis to treat their medical symptoms. The amount of cannabis used is difficult to ascertain and of those who reported the amount in grams/day often suggested that this is what would be used if they were strictly smoking. There is also some ambiguity in the quantity and cannabinoid content of products such as edibles, tinctures, and other alternatives to dried cannabis. As previously mentioned Health Canada has prepared a comprehensive document for physicians to enlighten them on the medical use of cannabis. The document does provide an extensive overview of dosing guidelines amalgamated from several studies; this may enable physicians to provide more concrete assistance to their patients when prescribing medical marijuana (“Information for Health Care Professionals,” 2013).

Chapter 8. Becoming a Medicinal Cannabis Patient

As Becker illustrates there is a subset of skills an individual must acquire in order to become a recreational marijuana user. In Becker's analysis, this learning generally occurs within a social milieu (Becker, 1953). For Becker, in order to become a recreational cannabis user an individual must acquire the proper smoking techniques to produce the psychotropic effects, recognize that the psychotropic effects are a direct result of the drug, and learn to interpret the effects as favorable (Becker, 1953). For medical patients the desired outcome is not to get "high", but rather to treat the symptom(s) of an underlying medical condition.

When it comes to traditional medications and pharmaceuticals, patients are afforded the opportunity to speak to their physician or healthcare provider to better understand their medication. They are also able to speak to pharmacists who are knowledgeable about the medications they supply or at minimum have access to information they can disseminate directly to the client. Individuals can also obtain information pertaining to a particular medication online through reputable sources. For example, Health Canada has a drug product database (DPD) which provides drug related information on all pharmaceuticals and biological drugs for human use, veterinary drugs, and disinfectant products approved for use in Canada ("Drugs and Health Products", 2013). This database is accessible to both professionals and lay people through their website. When it comes to the use of marijuana for therapeutic purposes patients often do not have access to the same resources or the same quality of resources that are available to individuals who use traditional medications.

8.1. From Recreational Use to Medicinal Use

All participants (n=22) indicated that they had some experience with cannabis use prior to the onset of their condition. The age at which they started using cannabis,

frequency, and duration of recreational use vary among participants. For terminological purposes only, I adopt some of the vocabulary from the criminal career paradigm and from life course and developmental theories of crime and deviance literature to help describe the patterns of recreational cannabis use on through to medicinal use. Specifically the terms *onset* (late vs. early), *duration* (length of time of recreational use), *frequency* (how often one engaged in recreational cannabis use during their recreational phase), *desistance* (cessation of recreational phase), and *life-course persistent* will be used (Blumstein, Cohen, & Farrington, 1988; Farrington, 1992; Moffitt, 1993). It is important to note that these terms are being used for their temporal significance, to denote the stages of cannabis use throughout one's life rather than in the explicit context of the criminal career paradigm.

8.1.1. Age of Onset

Table 3.0 provides a breakdown of the age of onset for each participant. typically the age of onset for recreational cannabis use was between 12 to 17 years, with a mean age of 16.93 ± 5.19 years. This is consistent with the literature on adolescent/teenage drug use (Kandel & Logan, 1984; Vega et al., 2002). However, some participants indicated a later age of onset in adulthood, in their early twenties to late thirties. According to the criminal career literature, the age of onset of delinquent or criminal activity may influence the duration of one's criminal career, specifically early onset is correlated to a longer duration of criminal and or delinquent activity (Farrington, 1986; Farrington, 1992). In this study the age of onset sheds light on the individual's first point of entry into cannabis use. Table 3.0 provides a breakdown of the age of onset by category. The most frequently reported age range for initial use was the teenage years at 41% followed by early adolescence at 36%, early adulthood at 9% and adulthood at 14%. The following excerpts illustrate the various ages participants started to use cannabis in a recreational capacity.

Oh probably when I was about 13, 14, just growing up you know in school. (participant 5)

I started recreationally you know as a kid, curious...I didn't try it until I was 17. (participant 6)

The first time I smoked I guess I was 13 and you know I played around like kids do with alcohol and this and that in high school. (participant 9)

So I started when I was in grade 9 and I was drinking then too. (participant 10)

I was 17 when I started smoking marijuana and then I started because everyone else was doing it. (participant 11)

Yah like when I was in high school basically, and I did it... but it never worked for me, I just got so paranoid. (participant 13)

Probably first tried it when I was about 16 and um then on and off would use it. (participant 14)

I was 18 the first time I tried it and it was just kinda with a very close friend of mine. (participant 15)

Actually it's funny I didn't a, smoke my first joint until I was 22... (participant 18)

I was probably about 25, yah, yah I was about 25, because I left ... I've been living in Edmonton for a while and I was working in the private sector. (participant 19)

Table 3.0 Age of Onset for Recreational Cannabis Use

	Participant	Age of Onset
<i>Early Adolescence (12-14)</i>		
1	2**	12.5
2	5**	13.5
3	9	13
4	17	14
5	20	13
6	22	13
7	1*	14.5
8	10*	14.5
<i>Teenager (15-17)</i>		
9	3	15
10	6	17
11	8	16.5
12	11	17
13	12	16
14	13	15.5
15	14	16
16	16	16
17	21*	15.5
<i>Young Adulthood (18-21)</i>		

18	7*	20	
19	15	18	
<i>Adulthood (22 and above)</i>			
20	4**	36	
21	18**	21	
22	19	25	
Mean	16.93	Standard Deviation	± 5.19

*A median age value is used for participants who provided their approximate level of education in lieu of a specific age. The median value is calculated based on their reported level of education.

**A mean age was used for those who provided a range of ages. Age categories were developed in consultation with the Center for Disease Control and Prevention (CDC), and healthychildren.org.

8.1.2. Frequency

The frequency of recreational cannabis use over the course of a participant's life is difficult to quantify. Often participants described their usage patterns at a given point in time and or in particular situations. However, some participants did provide a more detailed overview of their usage patterns over the course of their recreational phase. In the criminal career paradigm frequency refers to an individual's average annual rate of offending (Blumstein, Cohen & Farrington, 1988). The frequency of offenses an individual engages in changes over the duration of an individual's life. The age/crime curve describes a pattern of criminal behaviour that increases from adolescence, peaks during the teenage years followed by decline around the early twenties (Farrington, 1986; Farrington & Loeber, 2014). Some of the patterns that emerged from those who provided a more comprehensive overview of their recreational cannabis experience reflect more sporadic or infrequent use that generally had a social component (i.e. if the social opportunity presented itself). Other individuals describe an increase in frequency going from occasional use to more frequent use. Participant accounts are presented below which describe the frequency in which they engaged in recreational cannabis use.

Like many people my age, I'm 57 I started using it for fun.. I used it as a social drug many years, but not very heavily... social over my college years, early 30s occasionally smoked on the weekends. (participant 3)

At first friends and my cousin, first it was my cousin then it would be with friends every now and then...Before when I was a recreational it was fairly frequent after I get off work or whatever I'd be like yeah I'm going to have a little bit of a fun time before I go to bed... Then I realized how much it would take away, back then I had quite a bit of depression then I do now, I just noticed that going away... (participant 6)

Probably first tried it when I was about 16 and um then on and off would use it. (participant 14)

I would have it really rare, on occasion I think I had it twice and then I stopped for a year and didn't touch it again and then again when I was 19 for summer I was maybe smoking once a week kinda recreationally as well. I was just doing it for fun, it wasn't for any purpose. It was never I'd never go out and seek it out. (participant 15)

I think like I was smoking weed for like a year and a half or something like you know every third day, every five days... and I was like picking up to like once a day. Then a year and a half go by and I was picking up to like once a day. (participant 18)

I tried it every couple of months, I smoked it every couple of months as a teenager up until about 17 to 19 and then it got fairly more serious or progressive. (participant 22)

I'm a theater person so obviously cannabis is not new to me. But I did not indulge when I was working because I was pretty insane about when I'm working... like less than 10 occasions... Like I started doing theater when I was 16 so less than 10 occasions over twenty something years. I mean very rarely. (participant 12)

So before this situation, I had ever only smoked weed 5 times in my life and the first two did nothing and I've must have been like, I don't know 16 or something... No I wouldn't say that I was a recreational smoker by any means. Between 16 and 22, maybe tried it like 4 times. (participant 16)

8.1.3. Period of Transition (Duration and Desistance)

Eighteen participants (82%) provided information regarding their transition from recreational use to medicinal use. Of those who disclosed information pertaining to their transition, 9 participants (50%) express a seamless transition without any period of desistance, 7 participants (39%) indicate a period of desistance between recreational use and medicinal use, and 2 participant (11%) expressed that they had a period of cessation after the onset of their symptoms or after acknowledging a medicinal benefit.

According to Moffitt (1993) life-course persistent persons exhibit delinquent and antisocial behaviour in early childhood before the onset of adolescence and continue said behaviour on into adulthood. In this study, life-course persistent persons refers to participants whose transition from recreational cannabis use to medicinal use is marked by little to no period of desistance. This will help distinguish this group from participants who have a clear period of desistance between the phases. The following excerpts illustrate the seamless transition.

In about 1989 I screwed up my back and ended up with slipped disks I realized that every time I smoked a joint I felt better... (participant 1)

All I really noticed it was helping better than the other drugs. That would be probably 15 years ago, so it became more...I've been using it more medically because it's effective. (participant 3)

It started many years ago when I first started to smoke marijuana in my late teens it was for the fun of and over the years I continued and good thing I did because recently in 2006 I was diagnosed with a very rare auto immune disease called Behcet's Disease... Perhaps it's a good thing that I've smoked all these years because I had this disease. I was born with it. It triggered in my teens. (participant 11)

I guess it was in 1998 when I first knowingly started using it medicinally. That was for colitis, I had a very bad episode of colitis, I was in the hospital and nothing else helped and that helped right away it was just remarkable... (participant 20)

Participants 18 and 19 have no defined period of desistance between the phases, however, their trajectories are characterized by a later age of onset in adulthood and relatively short period of recreational use before transitioning into medicinal use. Participant six also indicates that he quickly migrated towards medicinal use as well, however, his age of onset was in his teenage years. These participants indicate that they quickly realized the medicinal benefits and sought confirmation from their healthcare provider and or were already diagnosed with their condition at the time. Their accounts are presented below.

I started recreationally you know as a kid, curious. Then I began to notice what it could do to my symptoms. I started kind of using it more and it slowly, actually quickly migrated to medicinal purposes, not just to smoke spliffs and have a good Friday or whatever... I was about 19. (participant 6)

Actually it's funny I didn't, smoke my first joint until I was 22 and by that time...That was like post concussion syndrome, the chronic every day kinda symptoms, but really setting in like consistently. (participant 18)

After about a week or so of a smoking joints basically after work and occasionally I realized maybe there's something. So I mentioned it to my psychiatrist. (participant 19)

Participants who have no period of desistance often indicated that they realized the benefits of marijuana even if they were not using it in a strictly medicinal capacity at that time. They often express that they just felt better, or that it relaxed or calmed them. For some individuals the transition from recreational use to medical use was more organic for others the medical benefits were realized after a particular event such as the onset of an illness or injury and due to their experience with cannabis had an idea that it could be medically beneficial.

Some participants did articulate a period of desistance between their recreational/social use phase prior to the onset of their medicinal use phase. This period of desistance ranged from a about a year to several years.

I had a gap of many many years...(participant 7)

In terms of smoking marijuana, I smoked marijuana before I got sick a couple of years before and because of my asthma it wasn't something I liked very much and stopped... it was the year before my medical conditions started. (participant 15)

... At one point I stopped all use of a marijuana for 5 years... I think I was on the Celexa and when I started smoking marijuana again I noticed a big difference in my life. During the 5 years I was off the marijuana sure there was less, there was no side effects ... I noticed I wasn't happy. (participant 17).

stopped using all drugs when I was 19, 20. I hadn't ever used marijuana for a full decade because I turned 31 last summer, so it'd been like over a full decade of me ever being stoned or being on drugs at all. (participant 21)

I hadn't actually smoked for four years before I started using again medicinally last year. (2012). (participant 22)

Unlike participants who described a seamless transition, individuals who had a period of cessation resumed cannabis use at the suggestion of a friend, medical professional, the media, hearsay, or through their own volition. Some of their experiences are expressed below.

I take methadone and Vicodin and I don't want to take any higher dose of methadone so I resorted to the medical marijuana... Well I heard it on TV there's been a lot more talk about making it legal and everything like that, so I said well try it and it worked. Just from

TV and and just the public you know it's getting more publicized, more talked about and everything like that and it worked. (participant 5)

I got more involved with the idea, my mother passed away 5 years ago of cancer and I became a source for her (cannabis) and the place when she was in hospice hardly used any morphine or anything like that and so I 'm a believer in it when I saw what it done for her and um a also negatively inclined towards the pharmaceutical industry.(participant 7)

Well I didn't think about cannabis 'cause at first I thought perhaps this would go away or perhaps we'd find a medication that would help me. Ideal would be a medication that really targets the source and find out what's wrong with me and then go from there. So the cannabis was really in the last year or so... from the past, from experimenting on it and from research I knew that cannabis is really good for relaxation and for pain and nausea. So that was kinda what got me interested in it. With people around me telling me yah I think it would work for you so I did. I went out of my way and I got some and I tried it and it did work. It was kind of testing the water making sure, finding out how much I can take. (participant 15)

I wanted a second opinion and the opinion was in cases like these it's really difficult for the body to heal itself from a bulging disk and likely surgery is the only answer so in the mean time we set up a pain reducing plan. In which case I'm taking lots of vitamins, vitamin B, magnesium, magnesium cream. I'm doing baths with Epsom salts and then after the bath I do an ice pack and then I was prescribed, not prescribed, but suggested to me to use marijuana as a pain reliever... coming from my background I'm not a pot smoker. I just don't like it, but, anyways my roommate smokes pot and he was like, maybe you should try it. So I looked up some studies on how pot reduces nerve pain and I thought I'm just going to give it a try... (participant 16)

It was my social worker at the cancer agency who was helping me deal with 'cause I still didn't have a family doctor at this point. She got me a family doctor, but was also sort of helping me with paperwork for the ministry for my disability claims and she was the one who had said to me have you thought about applying for medical marijuana... I'm sure you can appreciate even if you never had to take medication, but if you have to, if you have really negative side effects from every medication you take, there comes a point at which you're just like unwilling to do that to yourself. That was kind of like my breaking point where I was like "I don't want to try this thing (Fentanyl Patch) like I don't want you to force me to take this thing that feels like you're going to poison my body and maybe cause like horrible side effects. (Participant 21)

I had an interest in it again for a while and I gave some thought to smoking it again. I wondered what it could actually do for people medicinally aside from recreationally... when I looked at it and I saw that this plant actually saved lives and it could be potentially life saving for me so why not give it a try. (participant 22)

Interestingly, participant eight and ten indicate that they had periods where they were not using cannabis, but already came to the realization of the therapeutic value. Participant 10 explained that she was about 15 or 16 when she was told that cannabis

helps with migraines however, she indicates that she had a period of cessation for approximately 15 years that started in her mid twenties. She began to reconsider using cannabis as a therapeutic treatment approximately three months before her interview. It should also be clarified that while being knowledgeable about the medical benefits of cannabis in her teenage years, she also engaged in recreational use as well. In participant eight's case, he explains that there were significant periods in his life that he just did not have any access to cannabis. Although he was actively trying to seek out cannabis, supply was scarce during certain periods of his life which made his use more fragmented.

Pretty much right away I knew that it was something that was going to benefit me...I spent long periods of time without having any access at all, just none... I can think of over 20 years in significant periods when nothing around at all...(participant 8)

I haven't smoked pot like in a really long time like probably 15 years now.... I would say when I was about 25/26 I got married and my husband was huge marijuana.. actually ok my husband was an occasional marijuana user who turned into a huge marijuana user and we had problems in our marriage and no longer married...and a his usage of it and social circle around it and how it actually came between us... I couldn't even look at it, I couldn't smell it I couldn't touch it... (participant 10)

8.1.4. Life Trajectories

The accounts presented above describing the age of onset, duration of recreational use, and the transition period into medical cannabis when combined, create a picture of the process of becoming a medical cannabis patient. By examining these elements we start to see the various pathways individuals take to become self identified medical cannabis patients. The following section will describe these pathways.

As previously mentioned, recreational cannabis use began in early adolescence, teenage years, young adulthood, and adulthood. These categories can be collapsed into two groups, *early adolescence/teenager (12-17 years of age)* and *young adult/adulthood (18 years of age and up)*. These two categories will be referred to as *early* and *late onset*. The age ranges these two designations represent are consistent with the literature that addresses age of onset of cannabis use (Bohnert et al., 2012; Chen et al., 2009; Lynskey et al., 2006). Furthermore, examining the duration patterns of recreational cannabis use three pathways emerge and include, individuals who had a period of

desistance before resuming cannabis use in a medicinal capacity, individuals who had no period of desistance between their phases, and lastly individuals who had a period of desistance or fragmented medical use post realization of the medical utility of cannabis. These duration patterns also influence the way in which an individual transitions from recreational use to medical use. As previously mentioned, those who reported a seamless transition (i.e. life-course persistent) indicated that they realized the medical utility of cannabis even if they were still using cannabis in a recreational capacity; their transition was more organic. Life-course persistent individuals may have also come to the realization of the medical benefits after a particular life event such as an illness or injury and then discovered that the cannabis they were using had medicinal value. Those who had a period of desistance deliberately resumed use for medicinal purposes. Figure 2.0 provides a flowchart illustrating the various pathways into medicinal cannabis use. The four main pathways into medical use are as follows:

1. Early onset, period of cessation, deliberately resume cannabis, medical use
2. Early onset, seamless transition, discover medical utility, medical use
3. Late onset, period of cessation, deliberately resume cannabis, medical use
4. Late onset, seamless transition, discover medical utility, medical use

Included in Figure 2.0 are also the two participants who had a period of desistance or fragmented use post medical acknowledgment. In their cases they both had an early onset of recreational use and seamlessly transitioned into medical use. Participant eight, however, had more fragmented medical use largely due to limited supply, his medical use did not necessarily cease altogether, but there were periods as previously explained, where he just could not access cannabis. Participant 10 ceased use for approximately 15 years, and then resumed use. Their trajectory is represented as pathway five in figure 2.0.

use cannabis in a medicinal capacity. However, both groups in Dahl and Frank's (2011) study were experienced recreational users who shifted towards medical use.

8.2. Learning

The remainder of this chapter will focus on the learning process. The learning process is subdivided into four categories, previous social/recreational learning, social medicinal learning, independent medicinal learning, and physician directed learning. It is through these sources that participants acquire and develop the necessary knowledge to treat their symptoms.

8.2.1. Recreational Learning

Recreational learning refers to the acquisition of cannabis related information during the social or recreational phase. This includes the skills needed to effectively use cannabis, such as recognizing the effects of cannabis, perceiving them as favorable, and associating them with the drug, all of which are identified in Becker's (1953) analysis of recreational cannabis users. In this study cannabis was commonly used among a small group of friends, a single close friend/relative, and or in a general social capacity. In fact 18 participants (81%) mentioned using cannabis in a recreational capacity with at minimum one other individual at some point during their recreational phase. Often at the beginning of their recreational phase or initial point of entry.

...later on the guys who owned that bag's kids were like 16, 16 year old girls with a little entourage, with little guys following them around. I remember just trying it with them one night by a campfire. (participant 2)

Yah go to a party in a social environment when I was back in my teens it was very common place. (participant 3)

Yah like when I was in high school basically, and I did it... but it never worked for me, I just got so paranoid...so the only time I could do it was... if I was with a really close friend or by myself (participant 13)

I was 18 the first time I tried it and it was just kinda with a very close friend of mine and he had smoked for a very long time recreationally and then I tried that.(participant 15)

My two best friends that I've like known since grade five, they would smoke weed together. They would just like hang out together. And maybe I'd come out after and we'd just play basketball, or whatever. But it was just like why don't you come smoke weed with us.... I was like I'll give it a shot, it wasn't even peer pressure, because like they're my two best friends. It was clearly a recreational thing with them. (participant 18)

I remember a good friend of mine sitting beside me, a joint was being passed around and he handed it to me, I just brushed it off as it's not my thing and he was a good friend of mine and he looked me square in the eyes and he said listen, if there's anyone in this fucking room who needs this its you so just take it...I was probably about 25, yah, yah I was about 25. (participant 19)

I come from this town and everybody smoked it basically, pretty well or so it seemed like it. Everybody did a lot more as well at least experimented with it when they were younger. Everyone drank and most everyone smoked. I had older sisters so I hung out with people who were older than me. There was a lot of people at that age who started to casually smoke pot. (participant 20)

The learning process could be characterized as more passive in nature. The specific information acquired during the recreational phase was not easily articulated and participants often indicated that they learned just through using with their friends and or in various social settings. However, some participants did provide a bit more insight into their personal learning experience.

The person that it came from had older siblings that all used it and they had in the past used with the siblings and so were used to it. I think I was probably the only novice in the group...Kind of explained it and everyone laughs when you kind of take too much and cough, you know. (participant 1)

Participant two had the benefit of a knowledgeable stepfather who was accepting of his stepson's cannabis use. Although he did not necessarily provide much instruction on how to use cannabis, he did provide a safe environment for him to use and enlightened him about his own experience and the potential risks involved. Below represents his experience.

Yah, but then after once my father, step father, once he found it he would do it with me or let me have some in the house rather than me going out to the streets to get it. Was a lot happier...I'm younger they just wanted it to be a safer environment ... So they (parents) kind of helped us out by letting us know that drugs are not necessarily the way to go .We're not telling you because you've seen us, you know what's going on. Here's the situation... they had talked about his own experiences in the 60s and stuff. (participant 2)

Participant 10 was exposed to a plethora of cannabis related information. Her social group was very informed about the properties, uses and paraphernalia associated with cannabis and she actively acquired this information through her social group. Her experience is expressed below.

I was learning from people in my sister's social group who had fully adopted me in ... like the kid mascot so it was any party I went to it was most delightful feeling it makes me want to cry. People were so um loving and took care of me... in a way that my parents never could... I got to learn about the different strains you know the different hair on the pot.. try to make butter... different procedures for smoking hash... how to make filters...In the bigger community not just the smaller knit community, but in the bigger community there was always such a respect for it, it was making sure that your hands are clean, making sure that your pipes are clean... (participant 10)

When my sister got home I started toking with her because I trusted her. I knew she wasn't going to lead me anywhere that was going to get me into trouble and because my sister was 6 years older my peers that I started with and everyone were older than me. I sort of had their wisdom. (participant 11)

They first told me I was useless. It took me like 5, 6 times and even then I didn't really know what I was doing. Like it took me a while. My sister's a smoker too, like cigarettes and a weed smoker , but I just didn't know how to inhale. I didn't understand that you take that second draw in to bring it down to your lungs. So it would be all up in my upper respiratory tract, and I would just hack. I would be able to try like two shlooks and I would be just like done, my throat would be on fire. My friends, tried showing me, they had to show me like five different times before I figured it out. I was a slow learner in that regard. (participant 18)

Having previous recreational experience with cannabis at minimum provided some understanding of the smoking techniques and general effects of the drug. It provided early exposure to it, which may have made it easier to use cannabis in a therapeutic capacity later on. Interestingly in several of the excerpts presented above older siblings, family members and or friends helped facilitate the learning process by either directly disseminating the information to the more novice individual or just by engaging with them in cannabis use.

8.2.2. Medicinal Learning

Medicinal learning refers to the acquisition of information and skills needed to effectively use cannabis to treat the underlying medical symptoms of a particular condition(s). The remainder of this thesis will examine the different sources of information from which participants acquired their medical information. This includes information obtained through social interactions, healthcare providers, and content they sought out personally through independent research and or gained through experimentation. The specific content of the information sought is represented in the individual experiences of each participant and includes information pertaining to strains, dosages, methods of administration, quantity, risk, effectiveness, and a plethora of other concerns.

8.2.3. Social Medical Learning

Social Medical Learning refers to the knowledge and skills acquired through interacting and engaging with individuals about medical marijuana. This includes knowledgeable friends, peers, and colleagues who use (or have used) marijuana for medical and or recreational purposes, and who have provided guidance to participants regarding the use of marijuana for medicinal purposes. This also includes dispensaries and compassion club establishments from where participants obtain their cannabis and or cannabis paraphernalia. Participants were asked questions regarding the information, guidance, and instruction they receive from the aforementioned parties.

The majority of participants expressed the view that they have received guidance and or instruction from friends, family, peers, dispensaries, compassion clubs, and or other cannabis related establishments. The sources of social medical learning as well as the content of the information received are expressed below.

... we have good conversations, you know just discussing different strains um growing different methods you know things like that... we find different information that you know we share information. I find it to be a pretty helpful to have other people who are using medicinally around. (participant 1)

First time I found out anything about a vaporizer I was at somebody's house and they're medical permit too and they were smoking out of a vaporizer and they kind of explained to me... it's only the medicine you're getting, your not getting all the bad things like that

like smoking tobacco or smoking it like the rest of the material like in a joint or something like that. It's more strictly used for the medicine...

We got talking a lot there and he says you don't look like you're in good shape and I said I'm not ...Same for him and he said well what do you do for all your pain and I said take pills and he says well that's it and I said well no I smoke all the pot I can get my hands on... We got talking and he said well look, Health Canada you know about it, well I know about it and all I know is that they mine it underground this really garbage pot and it's just a waste of time...Two of them come over a few times with the paperwork for the application and explained it all to me. (participant 8)

Definitely, dealing with them (dispensary) was really where I started to learn about the indica and sativa difference because I had read on medical forms that this is the only kind of pot that we have it's a sativa, I'm talking about from the government. So I said ok and I looked at the menu at the dispensary and started to understand it more and then the people there you can ask them what it's like, what kind of effect it has on you and all that. (participant 9)

I learned about the vaporizer through the dispensary. Somebody told me, asked me if I ever used a vaporizer. We didn't get into it, I just said no and then when I went to the dispensary next time I checked into it and I ended up buying the little one which was the small one. (participant 11)

That juicing seminar really changed my life because like when I was down there I was talking to this lady who had the thing on her face and the skin graft and stuff, and I met a lot of really nice people, but there's a fella who worked there and all of a sudden I see this jar sliding down the table coming towards me and he said try this... he told me what he put in it and he said try that on your skin, let me know how that goes. We exchanged phone numbers and I called him and told him how it went, and he said I think we need to try this and that. So he and I worked out a thing, a treatment plan for me, but with the incredible part of it, he won't take any money from me, he just, he said, I'm so lucky, I know how to grow it, I have a place to grow it, I've got my license. I've got so much take it and so he just gives it to me now... (participant 13)

When I did join a compassion club they explain that...There's different types, the sativa or the indica. That the sativa is more for the head, emotional state and the indica is more for the body state. You're a depressed person they might want to use a sativa which gives you euphoria which can take depression away. (participant 14)

I have other friends who both are being treated for fibromyalgia so they both have medical marijuana. I also have other friends who are older who have been on medical marijuana for almost 20 years and they are with the federal and everything. So I've got peers that I got to talk to and see what their experiences were...My partner knows more than I do so he's really the one who does everything for me, basically I kinda just ask him as I go. (participant 15)

My roommate smokes pot and he was like, maybe you should try it...he looked it up and found a study done by McGill talking about nerve pain and marijuana use and how it reduces the pain. (participant 16)

Much of the subject matter discussed through social engagement is related to treatment, particularly regarding strain variety. Namely what strains to use to treat specific symptoms as well as information on the vaporization method of administration. Treatment appears to be somewhat patient driven and there is a reciprocal nature to this exchange of information. Participants are not necessarily just recipients of the information, but also exchange their knowledge and expertise with others.

It's the dialogue among the patients that is... what strains work for what and it's patients communicating that are putting together the lists of what strains work for what symptoms and what doesn't work. That's where that information is coming from, it's not coming from the dispensaries and it should be... (participant 1)

The people at the dispensary. It has to be a joint effort, it has to be shared...I'll go in there and tell them if any one asks you for ultimate pain relief and sleep and appetite...(participant 2)

Everybody I found is quite truthful, if you talk to other patients you know. If you talk to patients a lot of them have similar things and they say, try this. There's nothing written down specifically, see it's word of mouth with other patients and the dispensary what their views are and things like that. (participant 5)

I've sort of become the person that people come to with questions. Like when my brother got his card, he wanted to know what strains were going to work best for him and what he should stay away from and that sort of thing....And if I have any serious questions the dispensary always has good research, they have that big binder and they always have somewhere to point me if Google can't help me. (participant 12)

In terms of like umm what strain is good for this, I was going through them and I would be like I had like a million and a half concussions, and foggy thinking I need something for mental clarity and mood enhancement because I was like after saying I had concussions to these people so many times, there like try this, try this, try this...I'd rather hear it from a dude across the counter, or a lady across the counter who has smoked the weed themselves, because it varies so much between strain and grower that it's a kinda one of those things at least for me I like the first hand experience. That's why even if it became legal I'd hope there'd still be medical dispensaries. (participant 18)

As most participants obtain their cannabis through dispensaries/compassion clubs, they have the advantage of engaging with knowledgeable individuals and many participants have taken advantage of the information and guidance available at these establishments. However, not all social medical information comes from dispensaries/compassion clubs; some participants had the added benefit of friends, acquaintances, and peers to discuss their situation with and obtain information from. Hathaway and Rossiter (2007) examined the utility of compassion clubs in the lives of

therapeutic cannabis patients. Participants often reported the benefits of safe access to cannabis and high quality of information received at the compassion clubs (Hathaway & Rossiter, 2007). Similar findings were evident in the current study. Presented below are excerpts of participant accounts regarding safety and quality of information.

Well basically it's not from the street anymore, it doesn't have anywhere near the contamination it does on the street. I can use it for my symptoms a lot better than off the street. It's just safer. (participant 6)

I need to know what I'm buying is safe and has been looked... they look at everything through a microscope they can see if there's mold they can see if there's mites, they can see if there's chemicals attached, they can see it all. I need some level of quality control that I can't get sniffing a baggy on a street corner. (participant 12)

The shit from the dispensaries are so clean. You can get organic ones, you can taste the difference. Feeling the high is so like so clean, lucid. That's why they're important, because if I didn't have that... That's the other thing nobody grows sativas on the street. (Participant 18).

It's been a life saver for me honestly because if I didn't have access to medical marijuana the way I do now like having it priced affordably , having a safe place to obtain it, knowing what strain I'm getting all of that it would be really challenging for me. I have friends who smoke pot, but I don't know any high level drug dealers so I certainly wouldn't have access to anything I have now and I feel really strongly about how beneficial it can be yah it's been a bit of a life saver for me. (participant 21).

Participants are generally satisfied with the information and services they receive at dispensaries and compassion clubs. It is important to keep in mind that these facilities are not legally sanctioned institutions and there is some degree of variability among establishments regarding the services, product and overall quality of information they provide to their clients. There does seem to be the budding of some mechanisms of regulation, specifically with the establishment of the *Canadian Association of Medical Cannabis Dispensaries* (CAMCD). This Canadian not-for profit organization aims to provide a certification program for current Canadian dispensaries and compassion clubs as well as groups and individuals seeking to open their own establishment (“Dispensary Certification-CAMCD”, n.d.). The aims and objectives of the certification program are to “ensure consistency, accountability, transparency, and superior quality of patient care across the country” (“Dispensary Certification-CAMCD,” n.d.). They anticipate that this program will give both patients, healthcare professionals, and stakeholders peace of mind (“Dispensary Certification-CAMCD ,” n.d.). According to their website eight

dispensaries are currently taking part in their certification program (“Spring 2014 CAMCD Newsletter,” 2014). This does appear to be a positive step in the right direction, though Health Canada has not permitted dispensaries and compassion clubs to have authorization to sell and distribute marijuana, nor have they permitted authorized producers to sell through these establishments. As it stands, pending the outcome of *Allard et al. v. R.*, which is likely only to be heard in early 2015, licensed producers “must ship dried marijuana directly to the client or to their physician, if requested in accordance with the new *Marihuana for Medical Purposes Regulations*” (“FAQ: Medical Use of Marihuana - Health Canada,” 2014). The exception during this interim period, given the court’s injunction, is that individuals with production licenses under the former MMAR program have the right to continue growing their cannabis, at least until the constitutional challenge is deliberated on (“Medical Use of Marijuana - Drugs and Health Products - Health Canada,” 2014).

8.2.4. Patient Interactions with Health-Care Providers

Patient interactions with health-care providers refer to the nature and quality of the relationship between participants and their healthcare provider(s) in disseminating medicinal cannabis related information, dialogue, and support. Initially the relationship of interest was between the participant and their physician, however, some participants indicated that they sought out alternative health-care providers, sometimes after receiving a rejection from their primary family doctor. Therefore this theme is expanded to include medical practitioners and all licensed specializations, including naturopaths, and practitioners of traditional Chinese medicine. These medical occupations are included as they comply with VCD policy and former Urban Earth Med policy (“Practitioner’s Package-VCD,” n.d., “Membership Application Form- UEM,” n.d.). The healthcare provider’s occupational title is indicated in the specific experiences reported by each participant. The first half of this section will discuss the nature of the information participants have received from these individuals; the second section will address the relationship between the patient and their healthcare provider(s) regarding their medical use of cannabis. It is important to mention that some participants sought treatment from multiple healthcare providers or changed providers over the course of

their treatment and therefore hold different experiences, depending on who they dealt with. These experiences range from positive to poor.

8.2.5. Healthcare Provider Directed Learning

Nine participants (41%) indicated that they received cannabis related information from a health care provider. The information medical patients received includes acknowledgement of the benefits of medical marijuana, including second hand anecdotal accounts from other patients who have had success with medical marijuana, expressions of concern regarding methods of administration, and other statements of concern and/or medicating related matters. Below are some of the excerpts from participants indicating the nature of the information received.

Well yup we actually discussed it (risks and medical cannabis use) he's an addiction specialist, trained and certified and everything and yes we did discuss it... fairly knowledgeable about cannabinoids and what not so we had a pretty good discussion and there wasn't really a whole lot of education necessary because I kind of knew most of what he knew and you know I think he felt comfortable that he wasn't prescribing something I had no idea about and leaving me you know in my own hands. He knew that I had enough knowledge that I was going to use it and it wouldn't be a problem. He explained that it's not an approved substance and all that stuff yup. (participant 1)

Oh yah I did back 05/06 (discuss medical marijuana with his doctor) and um...at that time I had... he said if it helps, then you know he made a note...He seemed to be up on a bit of the research...when he found out I was eating it and using a vaporizer he was more supportive of it... (participant 3)

I always go back to see her to have more valium. She said you know if you take too much of that you're going to get addicted, but I can give you a suggestion, if you can find some marijuana from somebody you should start smoking that would help you better than that. (participant 4)

A little bit from my doctor he gave some good advice and kind of explained how some stuff worked...(participant 6)

Yah, he helped me go off a couple of prescriptions because it helped quite a bit more, he knows, he's aware of its benefits...A little bit (of information) from my doctor, he gave some good advice and kind of explained how some stuff worked. (participant 6)

My doctor is fully on board with it, very well educated about it...He told me that he has a number of patients that use medicinal cannabis with very good results. He said mostly, most of his patients that utilize it are immune-compromised individuals. (participant 11)

My new doctor I talked to her about trying out marijuana because I had been treating myself prior to deal with the nausea and the pain, but it made me really stressed out to use behind the back. So I talked to my new doctor and we discussed that ingesting it especially would be the best way to try and relax my stomach muscles and also deal with the pain and nausea every day. So that's how I started to really get into eating it. (participant 15)

...She validated that it's common with people with chronic pain especially with my conditions to resort to that, but that just validated the whole thing for me. (participant 16)

When I was 23 I ask my doctor have you heard of marijuana helping with these brain injuries. He was like yah and it works. I've been noticing like I don't have to take muscle relaxants or pills and stuff, but I never really made the connection that it could possibly be a treatment option until my doctor said that anecdotally, just between you and me, a lot of my patients use this for like various neuropathic pain, and he's like it's anecdotal because there's no research, so I can't, we can't make a medical recommendation because there's no basis, but if it helps keep doing that. (participant 18)

The information provided by healthcare providers was limited. Participants 7 and 15 received more specific information on methods of administration with respect to vaporizing and ingesting cannabis and participants 11, 16, and 18 had healthcare providers who relayed more anecdotal accounts of their other patients' use of medical marijuana. No participants reported receiving information regarding dosing, quantity and other medicating-related matters.

8.2.6. Healthcare Provider Support & Encouragement

Individuals seeking to access cannabis through the Federal system requires the assistance of a medical practitioner; under the former MMAR program, applicants had to complete a detailed medical package that required authorization from their medical practitioner (“Applying for the First Time under the Marihuana Medical Access Regulations [MMAR],” 2014). Dispensaries and compassion clubs in Vancouver usually require prospective members to complete a membership package, which requires the assistance of the applicant's healthcare practitioner. In some cases proof of diagnoses may be sufficient to authorize access without the need for a recommendation by ones healthcare practitioner (“New Member Application Package-VCD”, n.d.).

To access cannabis either through the Federal system, a dispensary, and or compassion club patients generally need to disclose their cannabis use to their

healthcare provider. In this study participants were asked questions pertaining to their interactions with their healthcare provider regarding their use of cannabis and the nature in which they obtained their membership(s). Sixteen participants (73%) disclosed that their healthcare provider(s) expressed support, condoned, and or sanctioned their use of medical marijuana. Sanctioning the use of medical marijuana refers to formally signing documentation. Participants also expressed receiving support from their physician even if they did not formally sign their documentation. These interactions typically include general statements of support, or a non confrontational response towards their patient's disclosure of medical marijuana use.

Second time I saw this guy I brought out my paperwork and asked if he would sign it and he said yes. Second time I saw him and he agreed with everything I had to say. That made much more sense than prescribing me opiates. (participant 1)

Yes he, filled out all my paperwork (physician) for VDS. He's still really skeptical on Health Canada's bull crap, he doesn't like the system; only one strain and so on. So I have to suffer through using it illegally...He's supportive, he's just really hesitant on health Canada so that's why I don't have a MMAR license.... (participant 6)

When my doctor saw I was having so much trouble with the pharmaceuticals that's when I asked him how he felt about medical marijuana. He signed the papers immediately, he had no qualms whatsoever. I just asked. I had the forms and before I even finished my sentence he held out his hand and said send them on today no problem, there's no doubt it works and he signed the documents. I took them down to the dispensary, got my membership card. (participant 11)

My physician was hysterical, she's a lovely woman and a great doctor and she's amazing. This is what she said to me, If you tell me then I have to write it in your chart. If there are ever any questions about your kids and your medical records and that's in there, that could be a problem. So I don't think you should tell me if you're going to do that. And now she says things to me like, do whatever is necessary to avoid the pain, treat the pain before you bother trying anything else, you have a lot of things at your disposal. She's always giving sort of implied consent and she did fill out my paperwork to get my membership. (participant 12)

...My GP said try it and see how it works and then when I applied for my medical card with the government I had to get the okay from my neurologist from UBC who diagnosed me with MS and she asked me what I use for my pain and spasticity and I told her I use the Baclofen she proscribed and the marijuana and then she said she would fill out my forms. When I was first diagnosed with the MS I asked her to get me a card to let me sign up and she said no we don't do that at this point... All of the neurologists had declined on that and then I think she just wanted to get to know me at first. Once she got to know me during a visit she asked me what I was using and I said that and she said ok I'll do your card now. I'll fill out the forms. (participant 14).

My family doctor is the one who suggested it. He suggested it at a time where I have been using cannabis like effectively for like a year, without realizing it was helping my symptoms, but he was the one who's like, have you thought about using cannabis a lot of my patients with neurological injuries umm they find it helps. (participant 18)

She was supportive, 100% supportive, but she didn't give me a prescription for it. She just said if that's what's working for you then I would say continue doing that. That's what sort of irked me to go even more to the naturopath because I wanted a second opinion on that and on you know everything else. I was ok with that decision because it was supported by both doctors. (participant 16)

My family doctor who is really nice, but has said that she's glad I have access to the cancer agency, to the pain specialist there because she wouldn't sign off on that paperwork, because she knows of other doctors who like, I don't know lose their reputation for being friendly about that and I understand it's a controversial thing... (participant 21)

The excerpts presented so far illustrate the varying degrees of health care provider support regarding their patient's use of medical marijuana; however, not all healthcare providers were supportive of their patient's use of cannabis. Ten participants (45%) describe a negative experience with a health care provider. This lack of support varied, but typically consisted of a refusal to sign documentation and/or discuss the use of marijuana as a viable treatment option when their patients broached the subject with them. In some cases participants were met with trepidation, hostility, sarcasm, and or indifference. However, some participants did obtain formal approval from their medical practitioner in these instances.

Participant one and twenty had similar experiences. They both describe situations where their physicians did not take their request seriously. Their doctors did not object to more informal cannabis use, but when it came to more formal means of approval they did not want anything to do with it.

I did have the same doctor, family doctor for almost 30 years and I started asking him for MMAR papers, to sign my MMAR papers when the program was first introduced 10 years ago and he laughed at me. He had signed a written prescription for a compassion club, he knew I was using cannabis medicinally and he had no problem with signing the compassion club papers, but he would not sign Health Canada's papers. I worked at the compassion club for about seven years and every time I saw this doctor he would joke about, "oh how are things at the pot factory" and you know "you growing any pot", and you know just every pot-head joke under the sun and every time I saw him I would bring out the papers and ask him to sign them and he would refuse and it went on for many many years and finally three years ago I got sick of being laughed at for my health

*problems and I told him to take a hike and I went out and found a new doctor...
(participant 1)*

He didn't seem to care that I used it as long as I didn't think it was a medicine and he wasn't going to support the use of it, other than you know he didn't think it was such a bad thing if I was to use it recreationally, but he didn't really recommend it as medicine. There wasn't a lot of doctors around so it was kind of common knowledge that you would have a real hard time finding another one, so I never left him. After that I just continued to use it as my primary source of medicine and did that and went on with my life. I wanted support for it again...I guess it was In 2010 I had my last argument with my doctor about the use of medical marijuana, actually just before I asked him to de-roster me. He offered to send me to a rehab facility for my marijuana addiction. While he was trying to stuff harmful NSAIDS down my throat. He would support those, but he wouldn't support my medical marijuana use, so I finally asked to be de-rostered and started looking for a doctor who'd support it. (participant 20)

I pulled out the paperwork and sat down and said ok, I just told you marijuana helps me a lot. In my mind it does, I know it does. Taking it away is like taking Aspirin off the market, it's just ridiculous. What do you think about that? "Well you know that's not bad and they should just damn well do this and open it up and all that... blah blah" (physician). Then I said ok look, you'll see on here, on this page the patient said so, told me, just tick that..."Why" (physician) Here's the voucher that says I'll never sue you and all the paperwork and that... "Oh no I'm not touching any of that" (physician)...half an hour, we got knocked on the door three times by a receptionist like clear out... He was just bursting and mad... And I told him look, I've said your association, your professional association has the paperwork right here that says that it's ok and everything's all done, there's nothing to worry about, it will never come back to you, nobody will ever know your name...Yup he did (sign the papers). He broke his pen, bam right on the desk. "I don't like doing this" (physician) got out, stormed out and left his paperwork and everything right there.... A year later I moved into the city and I took the necessary paperwork and mailed it to his office, enclosed the form, fee, 40 bucks or something, please sign it's just a renewal. He did and I haven't seen him since then because I've got a new doctor in town here... and he's very receptive. (participant 8)

Participants 10, 13, and 15 also had similar experiences with their healthcare providers. In their cases, they felt that their physician was not listening to their situation and felt like they were being pressured to take the conventional treatment. For participants 10 and 15 the treatment was pills and for participant 13 the proposed treatment was surgery.

She said bring your forms we can talk about it... she would fill out the forms, but she won't recommend it, she doesn't recommend it as a treatment.. So then fast forward mid July about a month ago I went to see her to get her to fill out the forms.... I had an appointment with my doctor, took in the forms. She tried to give me samples for migraine headaches...We've got a good relationship, she's very much on the straight and narrow. She did fill out the forms for me, she would not recommend it as a treatment...She was cooperative but I still left there with a handful of pills. (participant 10)

No, in fact she said she wouldn't...She said you don't have nausea, you don't have pain... She said they're never going to approve this, If I take your money I just feel bad about it. Because she said um like, I think mostly doctors sign those consent forms so people who are really really sick ...As far as doctors are concerned, there was nobody, even the dermatologist when I went back and said ok I can't do any of that, but here is what I am going to do. He was sitting there kind of glazed over listening to me and he said ok, but you have to promise if this doesn't magically work for you, which bugged me you're going to go for that surgery and I said okay. But I didn't like being painted into that corner and then he took his little folder and flipped it over his little manila folder and he said, "what did you say you were using again", so after all that he didn't know what he was talking about because it wasn't surgery. so he wrote in pencil, you know what ever cannabis or hash, I don't know what he wrote there. Clearly it didn't warrant being in the folder.... [I was given] some papers where all I needed to do was provide my clinical diagnoses, and then I could shop there, but as far as Health Canada is concerned I don't have any privileges from them at all. So that's what I'm after. (participant 13)

Yes I did (disclose to her first doctor about the use of cannabis), they shot it down automatically and that's when they prescribed the codeine and I felt like they weren't taking me seriously especially because of my age... my stomach issues started when I was 20, so often times doctors are really leery about people coming in and asking about it. Like to me this was not a first thing I said I wanted to do. Personally if I could just go and not take any pills and anything that would be fantastic. I saw probably six doctors before I ended up with the doctor I have right now and the last one I brought it up and then I was prescribed codeine and that's kinda what happened. (participant 15)

The family physician I'm seeing now I did express my desire to get the MMAR, the Federal license he said well I don't do that, he flatly refused, but he's made no comment of my use of medical marijuana....they had no comments. They just don't say anything, they don't respond to you, it's like it means nothing to them. (participant 17)

...They were both against it. Like I say I tried to get one of the doctors to sign forms, he would say I don't recommend cannabis for his patient, but the (other) doctor wouldn't even touch the forms... (participant 22)

The process of finding a physician to authorize a patient's use of medical marijuana is not an easy task. Healthcare providers may be sympathetic to their patients' situations, but reluctant to sign documentation authorizing them access or they may be more hostile towards the request. Some participants indicated that they had to seek out multiple healthcare providers (i.e. two or more) before they found one who would listen to their situation and authorize their application (either for the MMAR program or a dispensary).

Over the years when I had tried from the first family doctor different specialists he had sent me to -- every one that I saw I had asked and nobody would go there . Most of them just didn't even want to talk about it you know as soon as you say the word

cannabis; it's like your drug seeking and that's what they write on the chart, drug seeking behaviour and they don't want anything to do with you. (participant 1)

I saw probably six doctors before I ended up with the doctor I have right now and the last one I brought it up and then I was prescribed codeine and that's kinda what happened. (participant 15)

Just the naturopath signed it off... I did go to my family doctor to get the MRI results, so this was before I saw the naturopath. This was when I was smoking regular weed from my roommate. I told my doctor and I told her that it seems to be the only thing that worked and she said, I'm not surprised and if that's what's working for you then continue doing it. (participant 16)

Similar findings were reported in a study by Belle-Isle and colleagues (2014), examining the barriers to access for Canadians who use cannabis for medical purposes. They found that approximately one third of participants had sought out a new physician regarding their use of marijuana for therapeutic purposes, most had to change physicians multiple times i.e. more than once (Belle-Isle et al., 2014). Of those respondents who disclosed their medical marijuana use to their attending physician, more than a quarter of them reported that their physician supported their access to medicinal marijuana, but would not sign their application for Federal authorization (Belle-Isle et al., 2014).

Patients do face adversity when trying to obtain approval from their healthcare provider to use cannabis. Generally, healthcare practitioners are dissuaded to authorize cannabis from their respective medical affiliations and possess limited knowledge about the drug. They are therefore unable to provide any meaningful guidance to their patients. In this study even physicians who were supportive and signed papers provided little information about cannabis. There is also the added burden on the patient of trying to find a healthcare provider to authorize their access. Participants in this study at times had to seek out multiple healthcare providers before they found one who would authorize their dispensary/compassion club membership. Several physicians were willing to offer encouragement for use off the record, but, were reluctant and sometimes refused to sign their membership applications.

8.2.7. Independent Learning

Participants frequently engaged in their own self directed learning to acquire the necessary information to medicate with medicinal marijuana. This self directed learning includes independent research using a wide variety of sources (i.e. internet, books, and magazines), but also encompasses information acquired through trial and error and or experimentation with strains, products, dosages, and methods of administration, in order to alleviate their medical symptoms. All 22 participants (100%) engage in some form of self directed learning. The following section will discuss the information acquired through independent research to understand the various sources that serve to inform participants' medicating habits.

Usually I can read and do my own research on what strains and I match that up with my symptoms. (participant 6)

I read , I read, I go online. When the dispensary has new articles like new papers up and articles on marijuana things they found and breakthroughs I take those copies. I read everything I can read about it. I study it I read it , I do it, you know I... I want to know when I put something in my body I want to know what it's doing to my body...Basically what I've read over the years reading about it. Online articles, book articles, magazine articles. Any kind of leaflet or flyer I see that's got new information on marijuana. (participant 11)

I'm an educated person. I can suss out some free kind of message board posting an opinion versus some kind of peer reviewed or good statistical analysis that can give me accurate information....Google, everybody loves the Google. I went with Google and then I used the education I have about proper research, my minor's in biology one of my bachelors has a minor in biology. I used the information I understand about scientific research to look at the methods that were being used to posit whatever theory people wanted to put forth. If those methods seemed sound and then especially if it was peer reviewed. Peer review is like the gold standard for me. If you've been able to peer review this and find the same thing, I'm pretty much going to believe it. I tried to avoid any kind of websites that were trying to sell me anything and I tried to avoid any of the hard markers for quackery like language like: the government is out to get you and any sort of conspiracy theory stuff, I didn't count as reliable the information from any of those websites. In fact I primarily use Google Scholar and if you look there are lots of studies, you just have to look for them. (participant 12)

...I found a video on the internet, this guy in California his name is Dave Triplet he had skin cancer and he did an unbelievable job making a video showing from beginning to end how he cured it with hash oil and then using examples of people like a oh people that we know and respect like David Suzuki and Lloyd Robertson and people from various hospitals in Canada, it totally like soon as I saw Dave's video it totally cemented everything that I thought and felt. (participant 13)

When I decided to do research just looking up how people with stomach issues dealt with the marijuana. Going through forums seeing people's experiences and stuff. Then the pain got so bad that it was worth me researching, and that's when I did the research online and I did that for two days, I did a bunch of research at home and that's when I decided to give it a go. (participant 16)

I looked on the internet and I researched properties of sativa and indica and that's what got me intrigued. Before I smoked medical marijuana I had, you know, I started sharing about it and reading about it and then I became really intrigued about the claims and all the you know the different symptoms it was claiming right... I knew it had worked for me for depression but... It was intriguing. (participant 17)

I think it like started with me just buying like a High Times or something like that. One of those magazines. That's how it starts because then you can actually see the pictures and the names and stuff. I also looked into a podcast, this one like weed podcast... they talked about vaporizers a lot that's how I heard about vaporizers. (participant 18)

I also started doing my own research in regards to the psychopharmacological effects, because there wasn't a lot of information out there. There was still starting to be some information on pain relief and appetite and the basic kind of stuff. It was being considered for chronic pain users and that was it. So I had to do a lot of my own research and spend a lot of time whether it was books, online...the main (source of information) over the years thinking about it would be Cannabis Culture. I had... I still do, probably have the most complete collection in Western Canada. I have number 1 right through to the final issue multiple copies and I read them all... (participant 19)

I started actually stumbling across stuff on YouTube. I went from there on to PubMed and looking more at the published stuff and other research articles that aren't up on PubMed, you know what's actually going on and also alternative treatments as well, but primarily cancer. There was a lot of good information, unfortunately it was redundant, but a lot of good information actually on YouTube, if you can find it. I was surprised at the number of published studies that there are on PubMed, but the problem of bringing them up is that that they come up under all sorts of different terms, but there are now an awful lot of published studies. So hopefully one day its going to be a recognized medicine and we can start to cure our cancers instead of being left to die by our governments. (participant 20)

Research. I research, research, research, I try and get as much info as I can about a particular strain of medication. If I'm thinking about a new way of doing something I'll research until I find what works for that method, materials needed, that sort of thing, blueprints...I just try and find sources on Google that are credible I guess if you can... (participant 22)

Overwhelmingly, the internet is a popular resource participants use to acquire cannabis related information. Some of the internet sources participants indicated using include forums, posted videos, YouTube, podcasts, and general internet articles obtained through search engines like Google. Print materials used included books,

pamphlets and articles made available through the dispensary, and magazines. The two cannabis magazines referred to by name by participants were *High Times* and *Cannabis Culture*. As their titles suggest, these magazines offer cannabis related information on a wide range of topics. Although *Cannabis Culture* is no longer available in print publication, it does offer online content, as does *High Times Magazine* (Emery, 2009; “High Times,” n.d.). The information acquired through these sources includes information pertaining to strain varieties, treatment procedures, products, methods of administration, symptoms, and growing practices.

The above accounts relate to the use of secondary sources to acquire the necessary information one needs to effectively treat their symptoms. The above methods of learning represent one facet of the self directed learning process. The acquisition of information through experimentation or trial and error refers to the knowledge and experience acquired through engaging in a given behaviour. As participants medicate with cannabis, they learn through experience which in turn informs their treatment practices and knowledge about their medicine.

Yah, so this one might come in, it's the one that you want, it's the only one you want because it works so damn good at what it's suppose to do and you can't get it, so what do you got to do? You got to try a different one, when you get home it doesn't work, it works. (participant 2)

You have to know how to use it. When I see young people you know it's terrible, they don't know how to use it. Like me I'm going to smoke one puff and I'm going to wait 3-4 hours I'm going to smoke another one I'm going to wait maybe 5,6,7 hours ...Well you learn that by yourself because nobody can teach me, I can teach, but nobody can teach me because I've used it for so many years and I know what's right, what's wrong. (participant 4)

I bought a cheap knockoff on eBay I've tried it half a dozen times. I'm still learning how to get a dosage out of it, because each different variety is different. How moist your pot is or how dry it is. The incineration level is what you want, you want separation not incineration. So I've used it a few times it. (participant 8)

Mind you I am still new to it. One day I tried one drop (of snake oil) and was like oh this is kind of nothing and then the next time I tried their recommended dosage of half of the vial and that was just like wow amazing. (participant 10)

I went out of my way and I got some and I tried it and it did work. It was kind of testing the water making sure, finding out how much I can take without having too much and then it was just working from there... In terms of finding what's right for me It's trial and error basically. (participant 15)

At first I did it like 4 nights straight and I found it was helpful and then the 5th night I found it made it worse. I don't know if I smoked too much or not enough or how that whole dynamic works. So when I went to the naturopath and I spoke to the people who worked at the dispensary, they gave me two different strands that help with different; sleep, pain, whatever it is. So this week I've been experimenting with that. (participant 16)

When I first went to the dispensary I didn't know what to expect and it's taken months of experimentation and to kind of see what works... (participant 17)

Ultimately it comes down to like umm, just like what kinds of weed work for me, what strains particularly. I know its like in the sativa category but like there's variation between, because I got like um it's called Super Silver Haze from like the dispensary and it was like, it sketched me out it was way too fast, my heart started beating like really fast. Ultimately you can come up with suggestions, but it comes down to like your own subjective experience like the medicine and how it interacts with your body. (participant 18)

Basically trial and error with the tinctures... I haven't been able to figure out the caplets yet, but between the oil and vaporizing and smoking are the primary ones so its pretty easy to figure out just by feel... (participant 19)

At the beginning it was me just sort of trying a lot of different things. Like buying a gram at a time of different strains. It was just sort of trial and error right...I really had to go through trial and error processes just to understand the dosages for me... (participant 21)

In regards to what the current products are on the menu I've used them (the dispensary) for that and they do seem to have a general good grasp of what works for people with certain conditions and they make recommendations from there, and then from there it's all trial and error just to see what really works. (participant 22)

Finding the right medication to use frequently comes about through trying different strain varieties and products. Although friends, acquaintances, and dispensary employees might make suggestions, most often it comes down to the participant's experience. Quantity is another variable participants often have to figure out through experimentation. As previously discussed in the quantity section, the optimal dosage of cannabis is difficult to ascertain and can be further complicated by the method of administration used and individual characteristics, as well as a multitude of other factors.

In the wake of the new Federal reforms to the medical cannabis program, Health Canada has prepared a comprehensive guide for healthcare practitioners about medical marijuana that provides both theoretical information regarding the plant and its properties as well as content regarding the administration of the drug ("Information for

Health Care Professionals,” 2013). Health Canada maintains the document should not be mistaken as a drug product monograph, as cannabis is not an approved treatment and in no way does Health Canada endorse the use of cannabis for therapeutic purposes (“Information for Health Care Professionals,” 2013). The document does, however, provide an amalgamation of contemporary research regarding cannabis, including guidelines for cannabis dosages, and for the popular methods of cannabis administration, based on past research.

8.3. Discussion, Conclusions and Limitations

This study serves to better understand the process involved in becoming a medicinal cannabis patient. It loosely draws upon the work of Howard Becker in his analysis of the process involved in becoming a recreational cannabis user. For Becker (1953), cannabis using behaviour is acquired through social experiences; the individual goes through a series of experiences that either dissuade or encourage cannabis use. In this chapter the objective is to uncover the sequence involved in becoming a medicinal cannabis patient and to understand the sources of information that enable a person to effectively use cannabis to treat their underlying symptoms. In Becker's study the learning takes place within a social milieu (1953). In the present study participants do acquire information through social avenues, namely from past recreational experience, and through interactions with medicinal peers; however, they overwhelmingly seek out information, either by engaging in independent research or through trial and error or experimentation.

It is important to point out that the social climate in which cannabis was used back in 1953, has changed. In the later half of the 20th and early 21st century we have seen a growing trend towards the acceptance of cannabis possession. In Canada, this is evident from the attempts of cannabis decriminalization proposed by bills C-38, C-10, and C-17 respectively (Bill C-38, 2003; Bill C-10, 2004; Bill C-17, 2004). In the United States; Alaska, Oregon, Washington, Colorado, and the District of Columbia have all legalized cannabis for non medical purposes (Steinmetz, 2015; Ferner, 2015). Cannabis use in contemporary society is generally no longer reserved to deviant sub-groups of the population, it has become more dispersed and normalized in society (Hathaway, Comeau & Erickson, 2011; Lau et al., 2015). There is also a trend of greater tolerance and accommodation towards recreational cannabis use in society than there was during Becker's time (Parker, Williams & Aldridge, 2002). However, this is not to say that the stigma around cannabis use has completely evaporated (Hathaway et al., 2011).

Interestingly, Hallstone (2002) conducted a qualitative study updating Becker's analysis of recreational cannabis use to the 21st century. Hallstone argues that the social process theory in which Becker presents remains accurate; however, there are marked

differences in the way individuals transition through the three stages today (2002). For example, in his study many participants had exposure to cannabis before they themselves physically tried it, therefore the “observation process” was not as direct (Hallstone, 2002). Secondly, most of the respondents reported getting high the first time they tried cannabis; this difference is probably best explained by changes in drug potency (Hallstone, 2002). The media have reported that cannabis potency, or more specifically THC levels, have increased significantly in the last 20 to 30 years (“Marijuana Far More Potent Than it Use to be”, 2015;). Some of the reports suggest that THC content today on average is approximately 20 percent, with some strains reaching as high as 30 percent, in contrast to THC content in the 1980s of about four percent (“Marijuana Far More Potent Than it Use to be”, 2015). More conservative accounts suggest the average potency of cannabis in 2012 was approximately 12.3 percent, compared to 3.4 percent in 1993 (Brangham, 2014). Other studies on potency reflects a more modest increase, but a general increase nonetheless (McLaren, Swift, Dillon & Allsop, 2008; Mehmedic et al., 2010; Potter et al., 2008). Hirsch, Conforti, and Graney (1990) also suggest that the use of equipment may increase the likelihood of achieving an effect, which was not present during Becker’s analysis. Also, due to societal shifts in tolerance towards cannabis use, first experiences may occur in less hidden or covert environments, which may contribute to the general ease of the novice user, thereby reducing their anxiety (Hirsch, Conforti, & Graney, 1990). It is important to address these differences to better understand the context in which cannabis is used today.

Boyd, Athey and Cohen (2014) examined the characteristics of medical cannabis users in both Canada and the United Kingdom. In their study they found that respondents were predominately male (80%) and in their early thirties. According to the *European Monitoring Centre for Drugs and Drug Addiction* 78 percent of daily recreational cannabis users are male and 22 per cent are female (“Characteristics of Frequent and High Risk Cannabis Users”, 2013). Of an estimated 3 million daily cannabis users in Europe approximately 70 percent are between the ages of 15 and 34 (“Characteristics of Frequent and High Risk Cannabis Users”, 2013). Table 4.0 presents the characteristics of self-described medical cannabis users from the study by Boyd et al. (2014).

Table 4.0 Characteristics of Self-Described Medical Cannabis Users

	Canada	United Kingdom	t-test
Age	34.7	30.2	3.4***
Age when learned about therapeutic effect of cannabis	24.7	21.9	2.2*
Income in Canadian dollars	\$27,130	\$26,226	0.2
Years as a recreational cannabis user	15.4	12.3	2.3*
Years as a medical cannabis user	8.4	7.8	0.5

* $p < .05$; *** $p < .001$

Their sample is predominately male, and the average age for both Canadian and U.K. respondents appears to be higher than the ages reported by the *European Monitoring Centre*. In the present study 12 participants (55%) are male and 10 participants (45%) are female. The mean age of participants is 43.9 percent. The sample of therapeutic cannabis patients in the present study appears to differ from those in the study by Boyd and colleagues (2014) in both age and sex composition. One might argue that the characteristics of the UK and Canadian medical cannabis users are more in keeping with the characteristics of recreational cannabis users. It is a popular belief that medical cannabis patients are recreational users in disguise. This rhetoric is often voiced by opponents of the use of medical marijuana and unfortunately, all therapeutic patients tend to get lumped into this stereotype. The question of why these two groups differ is a starting point for further research. The sample from this study is drawn from the population of individuals who obtain their medicine from dispensaries, compassion clubs, and or through the Federal program. They had to go through an application process to obtain membership and or Federal access, which requires the assistance of a healthcare provider. In the study by Boyd et al. (2014) the two requirements for eligibility were that that they be current cannabis users and their motivation for using was self-defined as medicinal.

Chapter eight provides an account of the different paths (i.e. trajectories) individuals may take to become self identified medical cannabis patients. The different pathways may influence the learning process that occurs later on during medical use. Specifically, the knowledge and skills acquired during the recreational phase are often transferred over. Research does show that medical cannabis patients report having at

least some previous exposure to cannabis in a non therapeutic capacity (Boyd et al., 2014, Ogborne, Smart, & Adlaf, 2000; Dahl & Frank, 2011). All participants (n=22) in the present study used cannabis prior to the onset of their condition in a non medicinal capacity to varying degrees; therefore, cannabis was not completely novel to them when they started to use medicinally. The extent of information received during the recreational phase varies across participants. It was typically described as more passive in nature. How much influence recreational/social use has on later medical use is difficult to determine. This thesis identifies themes concerning the transition from recreational use to medicinal use, but further research is needed to understand the impact early recreational use has on knowledge levels and whether a seamless transition and/or a transition marked by desistance influences this learning process. What is apparent from this study, however, is that regardless of one's recreational experience the learning process does not stop once someone has transitioned into medical use. All participants sought out information either through medical professionals, social avenues, independent research and or experimentation, and any combination thereof. Being able to effectively medicate with cannabis is a complex undertaking and recreational experience alone does not provide an individual with sufficient information to treat their medical symptoms.

Interestingly, one pathway that warrants further investigation concerns cessation or fragmented use post transition into medical. Much of the literature on medicinal cannabis use focuses on the medical symptoms, reasons for use, and or medicating behaviour. Once an individual transitions into medical use, we assume that use will remain constant, but like any medication, cannabis use patterns may change over the course of an individual's life for a multitude of reasons such as changes in preference, access and availability, medical symptoms, and need. Future research should explore the use of medicinal cannabis and the changes in medicating practices over time.

The process of becoming a medicinal cannabis patient does seem to share certain attributes with Becker's analysis of recreational cannabis users. Therapeutic patients may for example, derive pleasure from the use of cannabis as evident in the statements illustrating the indirect benefit of cannabis on mood and the euphoria one may derive from its use. Becker indicates that in order for recreational use to continue,

the individual must learn to associate the psychotropic effects as pleasurable (Becker, 1953). Although some participants reported a component of pleasure from cannabis use, it is most evident that they derive a significant therapeutic benefit from its as well. Overwhelmingly, participants in this study indicated that cannabis significantly helps their symptoms and enables them to maintain some semblance of normalcy despite their medical afflictions. Their use often stems from the complications and difficulties they have had with traditional pharmaceuticals and or treatments. If cannabis provides symptom relief as reported by the individual then the euphoria and/or pleasure some may derive from its use does not discredit nor diminish the use of cannabis for therapeutic purposes.

Although this thesis draws upon criminological and deviant models to address non deviant/criminal behaviour, medical cannabis use can be explained by drawing upon the alternative therapies and treatment literature. Astin (1998) conducted a study examining why people choose alternative therapies. According to Astin, most participants were using alternative therapies not out of dissatisfaction with standard treatment practices, but rather that alternative therapies were more inline with their values, beliefs, and philosophies regarding health and life (1998). Interestingly, in the present study participants often reported dissatisfaction of conventional treatments as a reason for or preference towards cannabis use. Verhoef and colleagues (2005) conducted a systemic review of the literature regarding complementary and alternative medicines (CAM) they found that the most common reason cited was perceived therapeutic benefit at 38.4% out of 52 studies. There is a plethora of pharmaceuticals both prescription and non-prescription based, designed to treat the same medical symptoms. For analgesia alone one only needs to browse the shelf of any drug store to see the multitude of options to treat pain related symptoms. Ultimately, it comes down to individual preferences and characteristics that determine which treatment option one will choose. If the patient perceives a positive change in the ailment being treated and it improves their quality of life, with minimal side effects, then is it not sufficient to say that the medication is a viable treatment option? For the participants in this study it would appear that cannabis fits this description.

This study also sheds light on the limited role health care practitioners play in providing information to their patients regarding medical marijuana. Even if physicians are supportive of their patients medical use either through formal or informal means, the information participants indicated receiving from them was limited. The Canadian *Medical Association* (CMA) since the conception of the former MMAR program, has been vocal in their scepticism regarding the medical utility of cannabis, largely citing lack of scientific evidence and health risks as their sources of concern ("CMA Policy Medical Marijuana", 2011). In 2003 delegates at general council passed two motions. The first motion stated their strong objections to the use of medicinal marijuana in the face of limited scientific evidence and the second strongly urged physicians not to endorse the program by authorizing patients under the MMAR ("CMA Policy Medical Marijuana", 2011). Under the new MMPR, the CMA's greatest concerns are the burden the new regulations place on physicians in authorizing patient access to marijuana in the absence of conclusive scientific data and the withdrawal of Health Canada in the authorization process ("CMA Response : Health Canada's Medical Marijuana Regulatory Proposal", 2013). Furthermore, reluctance on the part of the physician to authorize patients under the new MMPR might be exacerbated by a proposed amendment to the *Narcotic Control Regulations* (NCR) and the MMPR. The amendment would require authorized cannabis producers, who receive a request from a healthcare licensing authority to provide semi-annual reports to said authority regarding licensed healthcare practitioners (that are under the jurisdiction of that licensing authority) who authorize their patient's access to cannabis from a licensed producer ("Canada Gazette – Regulations Amending the NCR and MMPR," 2014). The NCR would be amended to allow Health Canada to release practitioner related information obtained under the former MMAR to both provincial and territorial licensing bodies ("Canada Gazette – Regulations Amending the NCR and MMPR," 2014). According to Health Canada this falls in line with most monitoring practices of provincial and territorial licensing authorities, particularly when it comes to controlled substances ("Canada Gazette – Regulations Amending the NCR and MMPR," 2014). However, given the hostile attitudes towards cannabis from the medical community, particularly from governing bodies, this may make physicians even more reluctant to sign documentation. This amendment only applies to the MMPR program and does not include the reporting of physicians who sign dispensary/compassion club membership applications.

The current stigma around medical marijuana and the lack of encouragement of its use by the medical community is troubling. The medical community often argue that the claims are anecdotal in nature. However the tools and methods of conducting empirical research regarding the effectiveness of cannabinoid medicine are worth a closer look. Some measures are more objective and quantifiable than others. For example, weight gain and appetite stimulation are quantifiable. Patients taking part in these studies are weighed at baseline administered active treatment (placebo or cannabinoid drug) and then weighed after a period of elapsed time (Haney et al., 2005). Caloric intake can also be objectively measured if the patient keeps track of the food items they are consuming. Some studies commit patients to a laboratory setting and closely monitor their caloric intake (Foltin et al., 1986). All of these measures are objective and are not based on the physician's clinical judgment or patient's subjective response.

Other ailments rely more on patient self-report data or clinical judgment. Pain, spasticity, and mood are generally assessed through subjective responses. Pain is primarily assessed by questionnaires such as a visual analog scale (VAS) for pain or numerical rating scale (NRS) of the pain experienced (Noyes, Brunk, Baram & Canter, 1975). The patient usually rates their level of pain pre-treatment and then again posts treatment to note changes (Noyes, et al, 1975). The attending nurse or physician or a trained observer may also engage with the patients and note their perceptions of the patient's progress (Noyes, et al, 1975). Spasticity and mobility rely heavily on clinical assessment. There is a multitude of assessment tools that usually require the patient to complete some sort of task and the clinician then evaluates the individual's performance on said task (Zajicek et al., 2003). These studies are usually designed as blind, double blind and placebo controlled studies; therefore they are structured to ensure quality of data; however, in the end the patient and or trained observer is still providing their personal account.

If health care practitioners refuse to sign documentation, patients will generally have to seek out other healthcare practitioners until they find one who will support their cause. This is both time consuming and burdensome for the patient, but also a waste of valuable medical resources. In the present study some participants who had negative

interactions with their health care providers as well as those who received informal support had to seek out other healthcare providers to obtain authorization for a dispensary/compassion club, and or for Federal authorization, sometimes having to seek out multiple healthcare providers before they found one who was willing to authorize their documents. Belle-Isle et al. (2014) had similar findings in their study examining the barriers to access for Canadians who use cannabis for medical purposes.

As it stands, pending the court decision, the only legal avenue to obtain medical marijuana is through the MMPR. Semi-authorized facilities such as dispensaries and compassion clubs, are not legitimate establishments. Participants generally expressed positive experiences in using dispensaries and compassion clubs to obtain their product, often referring to the high quality of cannabis they received at these establishments. Under the MMPR, cannabis producers are only permitted to sell dried marijuana, however, patients currently use a wide variety of products including tinctures, oils, edibles, and capsules, none of which are available through authorized producers under the MMPR (“FAQ: Medical Use of Marijuana - Health Canada,” 2014). To fully grasp the role and benefit dispensaries and compassion clubs play in providing information and guidance to medicinal marijuana patients, future research should include a larger sample of dispensaries and compassion clubs from which to draw participants. Advertisements for this study were conducted through two dispensaries in Vancouver, and although participants did not have to be a member at either dispensary, the selection was generally limited to a few dispensaries in the Vancouver area.

The interview style was in depth, open ended question format, with the objective to obtain rich contextual accounts of the participants experiences. Although specific questions were asked, participants were afforded a significant degree of flexibility in the sequence and content of information provided. A limitation of this study is that it is affected by missing data for some of the thematic analyses. In the future a questionnaire might be useful to accompany the qualitative interviews to ensure more uniformity in responses. The majority of participants in this study obtain their cannabis through a dispensary/ compassion club, although some were Federally licensed under the MMAR at the time of their interview. This study only considers one stream of medical cannabis patients. Future research would benefit from a sample more inclusive of both MMPR

authorized individuals and self-proclaimed cannabis patients who do not obtain through a dispensary or an authorized producer, in order to better understand their transition into medicinal use and how they acquire the necessary information to use cannabis in a therapeutic capacity. Future research should also include a sample of participants from other provinces as most of the participants in this study lived in close proximity to Vancouver, a city generally accepting of both the therapeutic use and non therapeutic use of cannabis.

Moving forward, if cannabis is to gain legitimacy as a therapeutic treatment there are key changes that need to be made. Firstly, we need to avoid treating individuals who use cannabis in a therapeutic capacity as a homogenous group and recognize that there will always be individuals that abuse the system; the same point holds true for many individuals who use traditional medications (Hernandez & Nelson, 2010; “Estimated World Requirements-Statistics from 2011”, 2012). Secondly, given that healthcare practitioners are the gate keepers to medicinal cannabis in Canada, they could benefit from more support and encouragement from their respective medical associations. They should be able to prescribe medical marijuana free of judgment and scrutiny, as this system will not be effective if we penalize the people who are entrusted to permit access to it. Furthermore, it does not bolster patient disclosure if they fear they will not be taken seriously by their healthcare practitioner. Lastly the medical community is correct in identifying a need for more research, particularly examining the utility of smoked or vaporized cannabis as these are the most popular methods of administration. There is also a need for more comparative studies. Although there is value comparing a treatment against a placebo (i.e. no treatment) it is beneficial to determine how effective cannabis is, in contrast to other medications currently being used to treat the same ailment.

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