The positive side of things: Examining factors that predict positive mental health in individuals with problematic substance use

by

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Abstract

Problematic substance use (PSU) is highly prevalent within Canada. Individuals who suffer from PSU face disproportionate amounts of stigmatization. An individual achieves self-directed recovery (SDR) from PSU through a process of change where individuals improve their health and wellness, live a self-directed life and strive to reach their full potential. Negative social interactions, social supports, and demographic variables such as income are suggested to predict SDR. This concept of SDR is like the concept of flourishing within positive mental health (PMH). A flourishing individual is mentally healthy, exhibiting high levels of emotional wellbeing and positive functioning. The similarities between SDR and PMH have been noted previously, however research on the relationship is lacking. The current study aims to identify how individuals with PSU differ on PMH, social supports and negative social interactions when compared with the general population, as well as analyze if income, education, sex, age, social supports, and negative social interactions predict PMH in individuals with PSU. The sample was comprised of individuals between the ages of 20 and 64 years and who reported a lifetime history of substance abuse or dependence in the CCHS-MH database (N=956). Participants differed from the general population on measures of PMH, social supports, and negative social interactions. Age, sex, income, social supports, and negative social interactions were found to predict PMH in individuals with PSU. This suggests the same factors that predict SDR in individuals with PSU also predict PMH. Implications of the study's findings as well as study limitations are discussed.

***Keywords**:* Substance use, Positive mental health, Social support, Negative social interactions

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Substance use constitutes a substantial clinical, public health, and economic concern in Canada with approximately 33% of Canadians over the age of 15 meeting criteria for a substance use disorder (SUD) at some point throughout their lifetime (Pearson et al., 2013). Problematic substance use (PSU) is defined by a maladaptive pattern of substance use, leading to significant impairment and distress (Compton et al., 1998). A 2017 survey of Canadian youth, aged 15-19 years old, found that over the past 12 months 56.8% reported consuming alcohol and 21.6% reported using drugs such as cannabis, psychostimulants, opioids, and hallucinogens (Government of Canada, 2018). Furthermore, according to two national household surveys of Canadians aged 15 years and older, approximately 15% had reported using illicit drugs between 2002 and 2004 (Veldhuizen et al., 2007). Of the respondents, 18% reported experiencing both personal and social harms due to their substance use (Veldhuizen et al., 2007). Additionally, about 9.4% of the United States population (i.e., 22.5 million individuals) in the years 1999 to 2004 experienced PSU, and during the same timeframe the mortality rate of unintentional drug overdose in the United States increased by 68% (Kulesza et al., 2013).

Above personal expenses, societal costs due to substance use issues are also high. Each year hundreds of thousands of dollars are spent in both the United States and Canada in efforts to provide treatments, reduce the influx of drugs, and deal with the consequences of SUDs (Kulesza et al., 2013; Veldhuizen et al., 2007). Additionally, it is estimated that in 2017, a combined total of 12 billion dollars was spent on illegal drug use in Canada, including direct health care, law enforcement costs, and indirect productivity losses (CSUCH, 2021). Of this, approximately 4.7 billion dollars were spent directly on law enforcement costs while only 1.2 billion dollars were

spent on direct health care costs (CSUCH, 2021). However, despite the overwhelming financial cost, few people utilize substance use treatments. Only 180,000 individuals reported attending non-hospital-based treatment programs for substance use issues in 2017 (CCSA, 2021).

There are many known barriers to accessing treatment for PSU such as geographic location, financial restraints, wait times, and stigma (Ahern et al., 2007; Ivsins et al., 2019; Kulesza et al., 2013). Most treatment options for PSU are located in urban centers, making it difficult for individuals residing in rural locations to access said treatment programs (Bolinski et al., 2019). Furthermore, some treatment facilities are privately owned, meaning individuals seeking their services must pay out of pocket. Although some programs can be covered through healthcare insurance, many individuals of low socioeconomic status do not have access to coverage (Gong et al., 2019). Furthermore, individuals who use drugs often feel alienated through self, social, and structural stigma which further prevents their ability to seek support (Ahern et al., 2007; Livingston et al., 2012). Lastly, if an individual can access treatment, the wait times are typically long with waitlists lasting years. These barriers to treatment (i.e., geographical, financial, stigmatization, and wait times) simply do not work for an individual who is actively fighting an addiction.

When considering the barriers to residential, intensive treatment for PSU, there are very few individuals that can avail of these services and fully recover from their addiction in a traditional sense. However, this puts forth the question of what recovery looks like for someone struggling with PSU.

Substance Use Recovery

A central aspect of research on PSU treatment is how “recovery” is operationalized. It is becoming increasingly prevalent in the literature that recovery from an addiction is a subjective

term (McGaffin et al., 2015). Historically, abstinence was seen as the only true form of recovery from PSU (McGaffin et al., 2015), recently, however, the concept has become more forgiving. It has recently been noted that individuals can improve in other areas of functioning (i.e., wellbeing, etc.) and achieve recovery, without abstaining from substance use (McGaffin et al., 2015). Recovery is now referred to as a state of flourishing within an individual, someone who is in control of their affairs and is not compulsively relying on the substance any longer (SAMHSA, 2011). Recovery was defined by the Substance Abuse and Mental Health Services Administration (2011) as "a process of change through which individuals improve their health and wellness, live a self-directed life and strive to reach their full potential" (SAMHSA, 2011). They identified health, home, purpose, and community as the four pillars of life that promote recovery. This more fluid idea of recovery allows for more opportunities for individuals to achieve this goal.

The concept of recovery encompassing both wellbeing and presence or absence of substance use has been used within the addictions field for some time (McGaffin et al., 2015). For example, the term "dry drunk" has been used in Alcoholics Anonymous groups to describe an individual who remains abstinent from substances however still encounters emotional and functional problems associated with their previous substance use (McGaffin et al., 2015). An increasing amount of substance use research emphasizes a need to look beyond abstinence from substances when conceptualizing recovery for an individual with PSU (McGaffin et al., 2015). With regards to PSU recovery, the United Kingdom government has shifted from a disease-based view of addiction to one of encouraging the individual to use activation and self-management to enhance their recovery (Parker et al. 2018). This shift aligns with the concept of flourishing and encourages and enhances complete mental health within individuals recovering from PSU

(Parker et al., 2018). The definition of a mentally flourishing individual, and an individual who has reached a point in recovery where they are mentally well share many of the same qualities in their mental functioning.

The concept of flourishing within this definition of recovery mentioned by The Substance Abuse and Mental Health Services Administration (2011) and McGaffin et al. (2015) is similar to positive mental health (PMH). Previous literature documents a link between individuals who achieve psychological wellbeing through substance use recovery (i.e., whether they are abstinent from substances or not) and mental flourishing as proposed by Keyes (2002; McGaffin et al., 2015). A flourishing individual can be defined as an individual living within an optimal range of human functioning, displaying growth, and resilience (Parker et al., 2018).

Krentzman (2013) performed a literature review to gain insight into the similarities and connections between addictions research and positive psychology. They suggest that we could further our understanding of recovery by applying its concepts of positive psychology. Recovery was suggested to be a process where an individual who has diminished their substance use is moving towards positive adaptations in their life. This adds to the notion that positive outcomes for the individual are more important than total abstinence from substance use. By switching our beliefs on PSU recovery from a once abstinent model belief system to a more harm reduction approach we have the potential to assist more individuals in recovery. Harm reduction within the context of substance use is defined as a program or policy which decreases adverse health, economic, and social consequences associated with an individual's drug use, while simultaneously not requiring the individual to remain abstinent from substances (Lenton & Midford, 1996). With abstinence, intensive, inpatient treatment is the best option, which creates many barriers such as geographical location, cost, etc. (Harris et al., 2006; Ivsins et al., 2019,

Kulesza et al., 2013). By identifying factors that promote PMH in those with PSU, we can use said factors to promote positive outcomes for said individuals and perform a more obtainable, harm reduction approach to recovery. However, despite this, research that examines which life factors predict PMH outcomes in those struggling with substance use is minimal.

Positive Mental Health

What is Positive Mental Health. Keyes (2002) developed the Mental Health Continuum (MHC), which is the primary measure used to test the model of complete mental health. The MHC categorizes individuals as flourishing, languishing, or moderately mentally healthy (Keyes, 2002). A flourishing individual is seen as mentally healthy, that is, someone who is exhibiting high levels of emotional wellbeing and positive functioning (Keyes, 2002). However, a languishing individual is seen as mentally unhealthy, that is, someone who is exhibiting low levels of emotional wellbeing and functioning (Keyes, 2002). PMH is a combination of an individual feeling good about, and functioning well in life (Gilmour, 2014). Those who have high levels of PMH tend to be more self-accepting, have a positive effect, and view their lives as having a purpose (Brailovskaia et al., 2020). The multidimensional model of PMH (i.e., another measure of PMH) categorizes those with PMH as “flourishing” which is defined as having high positive emotions and high positive functioning, which is similar to the Keyes (2002) Mental Health Continuum (Gilmour, 2014; Shaban et al., 2019).

There is an ever-growing movement to include PMH when considering improvements in overall health and well-being (Barry, 2009). Overall good mental health is a fundamental component to the functioning of individuals, families, and society (Barry, 2009). Furthermore, PMH is a resource for everyday high functioning, as well as improved quality of life (Barry, 2009). PMH can be enhanced by improving factors of mental health at all levels (i.e., structural,

economic, environmental, etc.), this includes such factors as distribution of wealth, education, employment, living environments, social support, inclusion, etc (Barry, 2009). Improvements in mental health factors in turn promote PMH by improving flourishing, well-being, and quality of life (Barry, 2009).

Furthermore, conversations about mortality now include discussion of PMH. Keyes and Simones (2012) explored the effects of PMH on mortality rates of a sample of persons in the United States. They found that, when controlling for others causes of death, PMH (i.e., flourishing) decreased the probability of mortality for both men and women. Additionally, over a 10-year follow-up, the likelihood of death increased by upwards of 62% for adults who were lacking in PMH. This finding emphasizes the importance of promoting PMH in all communities and persons to improve quality and duration of life.

When the mediating effect of PMH in the relationship between stressful life events and suicidal ideations was explored, results showed that PMH did significantly buffer the effects of stressful life events on suicidal ideation at both time one and time two of testing (Brailovskaia et al., 2020). Furthermore, a previous study found that positive effect fully mediates the relationship between PMH and suicidal ideation (Brailovskaia et al., 2020). This suggests that PMH can be seen as a frequent positive affect, therefore allowing individuals to expand their thought-action abilities and show resiliency in the face of adversities (Frederickson, 2001). These findings suggest that PMH can improve an individual's resiliency and combat stressful life events. These concepts may be transferable to other areas in mental health research beyond suicide ideation. With the similarities between the identified factors of PMH and recovery, PMH has the potential to improve individuals' PSU treatment outcomes in the same way that it reduces the frequency of suicide ideation.

Flourishing and Recovery of Problematic Substance Use. The defining features of PMH and the concept of recovery for individuals struggling with substance use issues align well. By identifying factors that can improve an individual's PMH and lead them to a state of flourishing, we can increase the probability of recovery. Current research has identified a strong, yet sparse concept with the connection of flourishing mental health in substance use recovery (Parker et al., 2018). More research comparing PSU and PMH needs to be done to further the knowledge in this area. Understanding this relationship and incorporating aspects of PMH into self-directed recovery may improve PSU recovery outcomes by offsetting funding constraints as well as the mental flourishing achieved by the individual may enhance their sense of self-efficacy and empowerment and ultimately end in the individual sustaining their recovery (Parker et al., 2018). Furthermore, approaches to recovery that specifically focus on promoting flourishing within individuals with PSU are welcomed by professionals in treatment programs and the development of this concept further is seen as valuable to said professionals (Parker et al., 2018).

To achieve this state of flourishing, promoting PMH, and therefore a state of recovery within individuals with PSU, it is important to determine what factors are having a negative impact on individuals. In doing so, we can better assist individuals struggling with substance use issues. For example, if we can identify factors within their lives that promote their substance use, we can work towards minimizing these factors and hopefully reaching a state of mental flourishing.

Conversely, it is important to determine what factors are promoting positive outcomes in individuals with PSU as well. By identifying what factors generate positive experiences, outcomes, and mental flourishing, we can better understand how to best support individuals struggling with substance use. By identifying both positive and negative factors, it allows for

policies and services to be put in place that will enhance positive factors, while simultaneously diminishing negative factors. This in turn will improve the overall mental well-being of individuals with PSU, promoting PMH and, most importantly, allowing for recovery.

Negative social interactions, social supports, and specific demographic characteristics such as income and education level have been previously suggested to predict an individual's likelihood to be successful in self-directed recovery (Harris et al., 2006; Livingston et al., 2012; Parker et al., 2018; Tracy et al., 2005). Therefore, when considering the connection between PMH and self-directed recovery, these same factors should also predict PMH within individuals with PSU.

Factors Impacting Self-Directed Recovery

Research suggests that the factors impacting an individual's ability to achieve self-directed recovery in individuals with PSU should be the same factors that impact PMH in individuals with PSU. The factors that have been previously suggested to impact self-directed recovery are negative social interactions, social supports, and demographic variables (i.e., education level, income, age, and sex; Harris et al., 2006; Livingston et al., 2012; Parker et al., 2018; Tracy et al., 2005).

Negative Social Interactions. Negative social interactions are defined as a range of problematic social interactions like withdrawal, avoidance, denial, and criticism, and intrusive comments or actions (Rauktis et al., 1995). Negative social interactions are therefore not the absence of positive social interaction but an individual's perception of problematic social interactions (Rauktis et al., 1995). The most common form of negative social interaction for an individual suffering from PSU is stigmatization. Stigma was introduced as a concept by Goffman (1963). Stigma has since been defined as a twofold concept that distinguishes a person as

different than others, with this difference being due to undesirable characteristics (Link et al., 1997). Once an individual is defined by stigma, they begin to experience rejection and isolation from their peers (Link et al., 1997).

Stigma surrounding individuals with substance use issues is best explained as an individual who possesses a characteristic that differs from the norm of a social unit (Stafford & Scott, 1986). Here, the characteristic that differs from the norm is illicit drug use and the social unit is a society that frowns upon illicit drug use (Ahern et al., 2007). Stigma also can have a lasting effect on an individual, even when the characteristic that acquired the stigma is gone. According to Link et al. (1997), once an individual is labeled with stigma, this persona persists even when symptoms improve (i.e., if an individual is now sober). Furthermore, the trauma of stigmatization and past rejection may impact an individual's internalized image of themselves and potentially produce negative impacts on their current and future life (Link et al., 1997).

Ahern et al. (2007) attempted to determine how individuals who use illicit drugs process stigmatized perceptions, by distinguishing stigma concerning illicit drug use to three domains: perceived devaluation, alienation, and discrimination. They recruited 1008 individuals from New York City neighbourhoods who reported using cocaine, crack, or heroin in the past two months. Perceived devaluation was prevalent in 85% of the individuals, with individuals stating most people assume someone who uses illicit drugs is unreliable and/or dangerous. Almost as common was alienation, with 74% of respondents admitting to avoiding contact with others due to the fear of judgement. Similarly, many participants reported having experienced discrimination from family (75.2%) and friends (65.8%) due to their drug use.

Although the connection between stigma and substance use-related issues has been examined, the question of how stigma surrounding substance use can be reduced has yet to be

answered (Livingston et al., 2012). This is partially due to the complexity of stigma as a concept. Stigma can be understood in terms of the ways it impacts individuals at levels of self, society, and structure (Livingston et al., 2012). Self-stigma is known as negative feelings or acts towards oneself regarding the characteristics about themselves that they deem deserving of stigmatization (Livingston et al., 2012). Social stigma refers to groups of individuals endorsing stereotypes about and acting against a certain stigmatized group of individuals (Livingston et al., 2012). Structural stigma is defined by the rule, procedures, and policies of institutions that limit and restrict the opportunities and rights of individuals in a stigmatized group (Livingston et al., 2012).

Self-Stigma. Self-stigma is the process of a stigmatized group becoming aware of the discrimination and negative views society has regarding them, and internalizing these feelings (Da Silveira et al., 2018; Melchior et al., 2019). Self-stigma has been known to lower an individual's self-esteem and self-efficacy and even negatively impact their chance of recovery (Da Silveira et al., 2018). Additionally, self-stigma has been suggested to be related to other factors that negatively impact an individual's ability to achieve recovery, such as guilt, depression, anxiety, limited social networks, social isolation, and unemployment (Da Silveira et al., 2018).

Another way self-stigma can manifest within an individual is through experienced and anticipated stigma (Earnshaw, 2020). This can happen when an individual has experienced a fair amount of stigma in their past and/or present life (Earnshaw, 2020). Many individuals who are recovering from PSU report receiving poor treatment from health care providers, poor experiences with employment, and being rejected or distrusted by family members and friends (Earnshaw, 2020). Anticipated stigma is experienced when an individual expects to be faced

with stereotypes, prejudice, and discrimination in the future (Earnshaw, 2020). Experiencing this level of concern on how they may be viewed by the public, many individuals with PSU undermine the disclosure of their symptoms and do not access the proper treatment (Earnshaw, 2020).

Individuals who experience PSU are more likely to be perceived as having control over their illness than those with other common mental health issues (Livingston et al., 2012). This leads to these individuals also being more likely to be held responsible and blamed for their condition (Livingston et al., 2012). Furthermore, this can alter the way an individual with PSU views themselves (Livingston et al., 2012). The increased levels of blame faced by individuals who experience PSU increases their likelihood to struggle with employment, housing, and social relationships (Livingston et al., 2012). This often foreshadows individuals experiencing poor mental and physical health, failing to complete substance use treatments, increased involvement in risky behaviours such as needle sharing, etc. (Livingston et al., 2012). These outcomes feed into the reason there are such high levels of stigma against substance use, and the cycle continues as before. Furthermore, self-stigma is commonly identified as a significant barrier to treatment amongst individuals suffering from PSU (Matsumoto et al., 2020).

Research has found that self-stigma is positively associated with both substance use frequency and severity (Melchior et al., 2019). One study found that self-stigma was negatively correlated with the ability to refuse a drink in individuals who experience problematic alcohol use (Schomerus et al., 2011). Another study found that many public stereotypes and stigmatizations against individuals who use drugs are perceived and internalized by these individuals as well (Yang et al., 2019). Some of the stereotypes that were endorsed by individuals who use, or have previously used drugs themselves were dangerousness, criminality,

untrustworthiness, worthlessness, hopelessness, and blameworthiness (Yang et al., 2019). Self-stigma may be explicit, where the individual is aware of their own biases towards themselves and others who use drugs, or it may be implicit where the individual is unaware that they hold a bias (Earnshaw, 2020).

A solid understanding of how stigma is internalized and perceived by individuals who use drugs allows for research to identify ways to decrease stigma internalization and therefore increase recovery outcomes (Yang et al., 2019). By having this information, treatment practices can work to address internalized stigma with individuals and work towards recovery in a more holistic way (Yang et al., 2019).

Social Stigma. Social stigma has been defined as a social process that occurs when labeling, stereotyping, separation, status loss, and discrimination exist within a power context (Earnshaw, 2020). Social stigma towards individuals who use substances is derived from a wide range of socially discredited and devalued behaviours, identities, and other characteristics. Within the context of PSU, social stigma is theorized to serve a societal function of encouraging or forcing conformity to societal norms regarding substance use (i.e., no to moderate use). This specific use of stigma occurs when society views the undesirable behaviours as seen as voluntary and therefore easily changeable. Because of this, social stigma towards substance use is grounded in misconceptions for two major reasons. Firstly, previous research has demonstrated many times over, that addiction is a disease that can be caused by many environmental, social, and genetic factors, and is not something that is easily changeable. Secondly, stigma provides a great barrier to an individual's recovery and therefore puts an individual struggling with PSU at more severe risk due to the added barrier to achieving recovery. Stigma adds to the already

existing health inequities surrounding substance use and the added shame undermines recovery (Earnshaw, 2020).

A 2018 nationally representative survey conducted in the U. S. suggests that 73% of adults are unwilling to have an individual with an opioid addiction marry into their family, and this was even higher (75%) for individuals with alcohol use disorder (Perry et al., 2020). Furthermore, up to 80% said they would not work closely with someone with opioid use disorder or alcohol use disorder, and about 45% said they would not be friends with someone with an opioid use disorder or alcohol use disorder (Perry et al., 2020). These findings illustrate how deeply rooted social stigma is towards individuals who use substances. It is important to work towards mitigating these effects to allow individuals to properly reach a state of recovery.

Structural Stigma. Structural stigma regarding substance use refers to the stigma that has been manifested at a structural level within areas such as public policy, organizations, and neighbourhoods throughout history (Earnshaw, 2020). Public policies that criminalize individuals for using substances is one example of a particularly common, yet harmful way structural stigma is present within our society. To give another deeply structural example of stigma, there is the "war on drugs". The war on drugs is rooted in the theory that drug use is voluntary and can be easily stopped if the user chose to do so, and therefore an individual's substance use can be prevented using severe punishment. In the early 2000s Canada was included in an international movement towards rational drug policy, however, in 2012 drastic policy change made Canada one of the only few countries still in support of the "war on drugs" (Hyshka et al., 2012). In 2012 the Canadian government proposed that there be mandatory minimum sentences for individuals charged with drug offences, with the minimum sentence for those selling in a location that frequented minors (e.g., school yard) be six months (Hyshka et al.,

2012). The war on drugs has shown a drastic increase in incarceration rates in the United States for individuals who use drugs (Earnshaw, 2020). Once incarcerated a very low proportion of people receive the PSU treatment that they require to achieve recovery (Earnshaw, 2020). Furthermore, drug testing is a common part of many employment opportunities that can tell an employer an individual is a drug user even if they are not currently under the influence. A positive drug test typically results in a significant barrier for hiring the individual, meaning structural stigma plays a role in keeping those who use drugs from employment (Earnshaw, 2020).

Some argue that reducing the stigma surrounding PSU will, in turn, increase the rate of substance use among adolescents (Livingston et al., 2012). This speaks to the ingrained structural stigma that surrounds substance use today. Substance use is associated with many other negative health conditions, behaviours, and social issues, such as Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS), hepatitis C, numerous mental health issues, impaired driving, homelessness, poverty, criminality, etc. (Livingston et al., 2012). Having this connection with substance use rooted deep within society allows such negative stereotypes to guide social action, public policy, and the allocation of healthcare expenditures (Livingston et al., 2012). This leads to individuals with substance use issues facing stigma in all places, even in a healthcare setting (Livingston et al., 2012).

Substance use stigma has been identified numerous times as a barrier for individuals receiving proper healthcare (Link et al., 1997). This speaks to the immense impact of structural and social stigma. Pre-conceived ideas such as individuals with PSU overuse the healthcare system resources, abuse the system through drug-seeking, fail to adhere to medical recommendations, etc., are examples of some of the stigmatizations carried out by healthcare

professionals (Livingston et al., 2012). This stigmatization and dehumanization has denied patients with PSU effective pharmacological treatments for illnesses such as chronic pain and cancer (Livingston et al., 2012). This has led to individuals concealing their substance use when seeking medical care to avoid stigma and receive unbiased care (Livingston et al., 2012). However, this is problematic because it does not allow medical professionals to receive an accurate medical history from the patient, therefore permitting PSU to negatively impact their physical health further.

Many Canadians receive mental health care from primary healthcare settings (Murney et al., 2020). Unfortunately, individuals who access mental health care from primary healthcare settings often experience various forms of stigma and discrimination. This stigmatization is at times perpetuated by health care providers. Furthermore, individuals receiving mental health care in Ontario have reported receiving stigmatized treatment from both general practitioners and psychiatrists. Some of the ways that stigma can be experienced in healthcare settings include being threatened with coercive treatment, being regarded as lacking the capacity for responsible action, being provided with insufficient information, and being patronized or humiliated by your healthcare provider (Murney et al., 2020).

Previous research has noted that cultural beliefs are often a root cause of stigmatization in healthcare settings as issues can arise when the client's knowledge or experience does not directly align with North American medical understandings. Furthermore, participants in the same study noted that they are expected to meet particular societal norms when accessing healthcare such as having a home and telephone where they can be contacted in the future and having the ability to maintain a schedule and keep appointments. However, many individuals with mental health issues such as addiction, do not meet these societal norms which further

creates a divide and inequalities between the healthcare professional and the client (Murney et al., 2020).

Research has been conducted that examines how different levels of stigma in treatment settings impact an individual's recovery, specifically supportive versus stigmatizing setting factors (Morris, & Gonnan, 2008). The research showed that responsive treatment settings and staff's ability to remain positive and motivate individuals were important in predicting positive treatment outcomes. Furthermore, it showed that sufficient time in the treatment setting was important for both physical and mental health outcomes. However, rushed environments with stigmatizing factors produced the opposite effects. This adds to the idea that supportive, judgement/stigma-free environments are important for an individual to experience positive outcomes following treatment (Morris, & Gonnan, 2008).

Even though PSU is associated with poor physical health (i.e., vulnerability to infection, collapsed veins, malnourishment, poor sleep schedule, etc.), as well as a higher incidence of psychiatric issues, it is seen by the public and in policies as a moral and criminal issue, rather than a health-related concern (Morris & Gannon, 2008; Livingston et al., 2012). In the 2010 U.S. federal spending budget, with regards to substance use, 65% of spending was allocated to prohibition and criminal sanctions whereas 35% was allocated for treatment, prevention, and research (Kulesza et al., 2013). This emphasizes the social and structural stigmas in place within society regarding PSU and strengthens the marginalization of individuals struggling with PSU (Livingston et al., 2012). Although being exposed to PSU often carries many avenues for stigmatization along with it, such as poverty, research suggests that the discrimination due to drug use has the greatest negative impact on individual's lives (Kulesza et al., 2013).

Through avenues such as healthcare, housing and employment, and the criminal justice system, the structural stigma surrounding substance use in our society is prominent. By holding such policies that continue to stigmatize and put barriers in place for individuals who struggle with substance use we are not allowing for these individuals to make proactive changes and therefore perpetuating the cycle of their addiction (Livingston et al., 2012). For example, to access inpatient addictions treatment in Newfoundland you must have a mailing address (Eastern Health, 2019). It is also common for an individual who is suffering from PSU to be living in poverty without stable housing (Tsemberis, 2010). This means that this individual cannot access substance use treatment because they do not have stable housing and they cannot access stable housing because they are suffering with PSU. It is important to identify structural stigma that places direct hardships on individuals with PSU so we can work towards diminishing such stigmas within our policies and society.

Demographic Characteristics. It has been suggested throughout the literature that demographic variables such as age, sex, income, and education level play a role in an individual experiencing PSU (Abel et al., 2018; Evans-Lacko et al., 2018; Laffaye et al., 2008; Shearer et al., 2020; Thylstrup et al., 2020). However, understanding how these factors influence positive outcomes among those struggling with substance use is equally as important. For instance, research suggests that individuals who are more likely to struggle with substance use are less likely to have completed their high school education (Shearer et al., 2020). Additionally, a study conducted by Thylstrup et al. (2020) found that of a sample of individuals in Denmark that have previously received treatment for opioid use disorder, 96% had not continued their education beyond what was mandatory. In this study, it was also found that 81% were currently not involved with any education, training, or employment opportunities.

Laffaye et al. (2008), examined how predictors of PSU treatment outcomes work together over four years to predict improvement in substance use issues. They found that individuals who reported being employed at one-year follow-up were more likely to show improvement in substance use issues at the four-year follow-up. This suggests that individuals who seek employment are less likely to relapse following treatment for PSU. Furthermore, Shearer et al. (2020) found that individuals who use methamphetamine were more likely to be of low-income status. This extends the idea that persons without stable employment or who have low-income are more likely to have trouble controlling their substance use (Thylstrup et al., 2020).

It is well known within the literature that there is a "mental health treatment gap" where there is a discrepancy between the number of individuals requiring treatment and the number of those receiving treatment (Evans-Lacko et al., 2018). This gap increases and discrepancy becomes larger for individuals who are of low socio-economic status (Evans-Lacko et al., 2018). When taking the mental health treatment gap into account Evans-Lacko et al. (2018) also found that those of the highest socioeconomic status were more likely to receive mental health treatment. This was especially true for specialized mental health treatment, such as SUD. They also found a positive association when considering education, where individuals with higher education levels were more likely to receive specialized mental health treatment than those with lower education levels (Evans-Lacko et al., 2018). Since treatment has been previously suggested as the best way to reach recovery for individuals suffering from PSU, this suggests that individuals with higher education levels are more likely to access treatment and therefore more likely to reach recovery than those with lower education levels.

Providing individuals who are struggling with PSU with the opportunity for education and employment can enhance the likelihood of their recovery. Many individuals who struggle

with PSU are not given these opportunities for multiple reasons (e.g., socio-economic status, structural stigma, criminal records, etc.). By changing the opportunities provided to these individuals we can enhance their recovery prospects.

Furthermore, Abel et al. (2018), found that individuals who had higher levels of education were more likely to report low levels of psychological distress. Since psychological distress is linked to PSU, this suggests that education levels also play a factor here (Abel et al., 2018).

Social Supports. *Supportive Recovery Environment.* Harris et al. (2006) found that having a supportive treatment environment was a significant predictor of an individual's likelihood of consecutively using continuing care following treatment. It was also found that individuals who consecutively attend continuing care treatment (e.g., alcoholics anonymous) are significantly more likely to achieve and maintaining recovery from PSU (Harris et al., 2006). Therefore, this suggests that the level of support an individual receives from their treatment environment is associated with their likelihood of achieving and maintain recovery (Harris et al., 2006). A study conducted by Kelly and Moos (2003) found similar results. They found that one-year post-treatment, individuals who had a more supportive treatment environment were more likely to continue their care through self-help groups and therefore more likely to maintain their recovery than individuals who did not have a supportive treatment environment (Kelly & Moos, 2003).

Interestingly, the concept of "peer providers" may show promising effects for individuals suffering with substance use. A peer provider is someone who provides services in a behavioural health setting (Chapman et al., 2018). These individuals have lived experience with the behavioural health issue (i.e., substance use) and have been trained to provide support for

individuals facing similar hardships as to what they previously faced (Chapman et al., 2018). It has been suggested that a peer provider program would help promote positive outcomes in individuals with PSU, and the benefits would be two-fold (Chapman et al., 2018). Firstly, this program would provide a supportive environment for an individual who may not have this without the program. Secondly, it would give peer providers employment and a sense of responsibility which can keep them from relapsing as well (Chapman et al., 2018).

Supportive Social Environment. Similar to supportive treatment settings, it is also suggested that social support is important for positive outcomes post-treatment for PSU (Tracy et al., 2005). Many studies have found that individuals were less likely to relapse following treatment when they had better social supports and a supportive family environment (Beattie & Longabaugh, 1999; Booth et al., 1992; Humphreys et al., 1996; Tracy et al., 2005).

Romantic relationship dynamic and status has been suggested as a major influence on social support for those with PSU. It has been suggested that the quality and level of happiness in a marriage is associated with abstinence and less intense relapses posttreatment (Tracy et al., 2005). One aspect impacting an individual's outcome based on their romantic relationships is expressed emotion. An individual who struggles with PSU is shown expressed emotion from their partner when their partner talks about their substance use in a critical way (Tracy et al., 2005). Furthermore, if an individual's partner also partakes in substance use it may become a shared recreational activity, and therefore becoming positively associated with relationship satisfaction (Tracy et al., 2005). This makes it more difficult for an individual to successfully complete treatment without relapse if their partner is not also attempting to cease their substance use. Additionally, if an individual who is receiving treatment for a PSU separates from their partner, it can impact their likelihood of relapse as well. When an individual separates from their

partner their amount of support will decrease. This can in turn increase the level of stress the individual is facing (both from the stress of substance use treatment, as well as the stress of a dissolved relationship; Tracy et al., 2005). This lack of support and increase in stress may cause individuals to relapse, especially when they rely on their substances as a coping mechanism (Tracy et al., 2005).

Additionally, a study by Tracy et al. (2005) found that positive relationship qualities did not impact an individual's outcomes following substance use treatments, however, negative relationship qualities significantly predicted higher instances of relapse as well as substance-use consequences following treatment. This aligns with previous findings in the literature (Hartmann et al., 1991; Havassy et al., 1991; McCrady et al., 2002).

Tracy et al. (2005) also found that individuals whose partners also displayed PSU were twice as likely to relapse when compared to those whose partners did not have PSU. They have suggested that partners who partake in substance use may motivate individuals to relapse by idealizing drug-taking behaviours and providing substance-related cues.

Additionally, a study by Bolinski et al. (2019) examined how social networks influenced substance use in rural locations. Rural locations tend to have an excess of social influence. This suggests that observing substance use by members of your social network leads to changes in substance use amongst other network members (i.e., if most members use a specific substance, the rest of the social network are more likely to follow suit; Bolinski et al., 2019). Due to social ties in rural locations typically being large and dense, the diffusion of illicit substances can happen more quickly in this setting than it would in an urban one (Bolinski et al., 2019). These findings suggest that social networks can be influential and unsupportive just as they can be

supportive. It is important to identify and address the social network and support system surrounding an individual who is struggling with substance use for them to achieve recovery.

Regardless of whether the social environment in question is a romantic relationship, a community, a family, or a health care setting, the level of support an individual suffering from PSU receives is important. By understanding the dynamics within the supportive environment individuals struggling with PSU have, we can better cater our approach when moving forward in the recovery process.

The Current Study

Although research in addiction and substance use, as well as research in positive psychology, share many main concepts and have become quite prominent in the literature, the concepts have had very little intermixing (Krentzman., 2013). Positive psychology interventions are known as a form of therapy, intervention, or activity that focuses on enhancing positive feelings, behaviours, and cognitions rather than "fixing" negative or maladaptive thoughts and behaviour patterns or pathology (Krentzman., 2013). This is like the SAMHSA definition of recovery for PSU, with a focus on the positive rather than the negative (SAMHAS, 2011). The field of positive psychology pursues positive emotion, character strength, and positive institutions. Each of these domains has significant relevance to PSU treatment and recovery (Krentzman, 2013). The concept of positive psychology has been looked a previously in the literature through ways to improve treatment programs and lead to more positive treatment outcomes (Harris et al., 2012). However, there is still a gap in the literature with regards to life factors that predict PMH within those who struggle from PSU.

Previous research has demonstrated a link between self-directed recovery from PSU and the concept of flourishing within PMH (Parker et al., 2018). However, the dynamics of this

relationship are yet to be explored. If self-directed recovery and PMH share such similarities, the same factors that predict self-directed recovery within individuals with PSU should also predict PMH.

The purpose of the current study is to identify factors that predict PMH in individuals with PSU. The connection acknowledged in the literature between the similarities of PMH and PSU as well as the importance of positive affect in those with PSU is prominent. By identifying factors that predict PMH in those with PSU, we can focus recovery and continued care on these factors. By doing this, we can construct recovery plans rooted in harm reduction principles. This can allow individuals who cannot access intensive treatment for their PSU a way to flourish. Such information may help those that work with individuals with PSU to develop ways to treat PSU or, at least, to mitigate its impact on the overall well-being of these individuals. We hypothesize that individuals with PSU differ from the general population on levels of PMH, social supports, and negative social interactions with individuals with PSU showing lower levels of PMH and social supports and higher levels of negative social interactions. We also hypothesize that high social provisions, higher levels of education and income, and low levels of negative social interactions will predict higher PMH in individuals with PSU.

Method

Participants

Data for the current study were obtained through the Statistics Canada Canadian Community Health Survey of Mental Health. This survey used a cross-sectional approach to understand the influences, factors, and processes contributing to mental health across the Nation (CCHS-MH; Statistics Canada, 2013). The CCHS-MH focuses on health, social, and economic determinants to allow for a multidisciplinary approach to individual information across Canada

(Statistics Canada, 2013). The CCHS-MH encompasses ten provinces and collected data from individuals who were between the ages of 15 and 80 years old and living in private dwellings throughout 115 different health regions in Canada. The combined household and person response rate was 68.9%, with 29,088 households agreeing to participate (79.8%) and 25,113 individuals (one per household) agreeing to participate (86.3%), with the final sample including 25,113 Canadians (Statistics Canada, 2013).

Excluded from the sample were individuals living in territories, living on reserves or other Aboriginal settlements, or full-time members of the Canadian Forces and those who are institutionalized. However, as estimated by Statistics Canada, the total number of individuals excluded by these criteria is less than 3% of the total Canadian population (Statistics Canada, 2013). Therefore, the sample used in the CCHS-MH is still considered to be nationally representative.

The method employed by the CCHS-MH to select the sample of respondents was a three-stage design was used. First, geographical areas referred to as “clusters” were selected. Second, households were selected within each of these selected clusters. Last, of the selected households, one individual was randomly selected as the respondent (Statistics Canada, 2013).

For the current study, age was recorded categorically in the database in five-year increments from age 20 through age 64. Inclusion in this study was based on age and response to variables of interest. Those under the age of 20 years old were not included in the current study due to the focus of the study being on the adult population. The age breakdown of the data did not allow for the inclusion of 19- and 18-year-olds without including those ages 15 to 17 years old as well. Therefore, we could not include any respondents under the age of 20. Moreover, the present study is focused on the experience of individuals with PSU. The substance use section

included in the current study did not include alcohol or cannabis use. These two substances were not included in the present analyses because they are legal substances in Canada. As the current study is focused on the experience of adults with PSU, those who are considered as 'seniors' (65 years of age and older) were excluded from the current study (Statistics Canada, 2020). It is established within the literature that memory tends to decline with age, therefore as the current study recalls recollection of past events, the decision was made to exclude seniors from the data analysis (American Psychological Association, 2006).

Lastly, the study's final sample size of individuals who reported a history of abuse or dependence on substance use was 956. The rate of prevalence of a lifetime history of substance abuse or dependence was 5.6%.

Data Collection Method

Data collection for the CCHS-MH took place from January 2012 to December 2012. The data was obtained from individuals aged 15-80 living in private dwellings throughout the ten Canadian provinces, during this sample period, 25,113 valid interviews were conducted. A detailed explanation of sampling techniques and data collection is available from Statistics Canada (2013), however, this is summarized below.

The CCHS-MH used the area frame designed for the Canadian Labour Force Survey (LFS) as a sampling frame, which is a multistage stratified cluster design. Firstly, homogeneous strata are formed, from which independent samples of clusters are drawn from each stratum. Secondly, dwelling lists are prepared for each cluster, and households (i.e., dwellings) are selected from these lists. Lastly, a random individual is chosen, with the assistance of selection probabilities based on household composition and age, within each chosen dwelling. Prior to data collection, the 43,030 selected households were sent introductory letters and brochures

explaining the purpose of the study, the importance of survey participation, as well as examples describing the planned utilization of the CCHS-MH data. It was explained to participants that their contribution to the survey would be impactful and important, however, their participation was entirely voluntary.

Use of CAPI by trained interviewers. The data were directly collected from survey respondents by trained individuals from Statistics Canada's collections planning and management division. A small portion of interviews were conducted via telephone (13%), however, the majority were in person (87%). All interviews were completed using a form of computer-assisted interview known as the computer assisted personal interviewing method (CAPI). This system allows for the customization of interviews for each respondent based on their individual characteristics and results throughout the survey. This ensures a concise and clean interview and data collection as the interviewers will not ask questions that do not apply tp the respondent.

Minimizing non-responding. The CAPI interviewers were instructed to make personal contact with the randomly selected survey respondent from each dwelling initially and every reasonable effort was made to obtain interviews. Initially, respondents were contacted by phone to arrange a time to conduct the in-person interview, or they were offered the opportunity to complete the interview over the phone if available immediately. Interviews by proxy were not permitted for the CCHS-MH.

In a further attempt to minimize non-responding, a letter further explaining the importance of the dwelling's participation in the CCHS-MH was sent to respondents who refused to complete the survey initially. Following this letter was a second contact with a

statistics Canada representative, either in person or by phone, to further emphasize the importance of survey participation.

Weighing. Each respondent of the CCHS-MH was assigned a survey weight value. This value corresponds with the number of people in the entire population that the respondent is intended to represent. Weighting is conducted so that the estimates made based on the sample data can be representative of the entire population, rather than just the sample itself.

Instrument Description

Statistics Canada designed the CCHS-MH in consultation with the Mental Health Commission of Canada, academic experts in mental health, and representatives from various government agencies. Health, health care services, lifestyle and social conditions, mental health and wellbeing, and preventions and detections of disease are all subjects that are covered in the survey. The survey is composed of 30 modules, including an in-depth module assessing for symptoms of a given psychiatric disorder. The decision to include this module was guided by recommendations from the CCHS-MH expert committee. Modules to be incorporated into the CCHS-MH were selected based upon numerous factors, such as relevance to current programs/policy, currently available estimates of prevalence, comparability with previous CCHS-MH cycles, and perceived impact on health care costs (CCHS-MH; Statistics Canada, 2013).

Measures

Socio-demographic variables. The socio-demographic variables included in the analysis included age, marital status, level of education, and personal income. The variables are all categorical in nature.

Age. Age was assessed by asking the respondents for their birth date. Following this, the interviewer confirmed their age with the respondent. If an error in the age calculation was made, the interviewer sought clarification from the respondent. Age was recorded in the database categorically in five-year increments; 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64 (CCHS-MH; Statistics Canada, 2013).

Education. Respondent's level of education was assessed by asking about the highest level of formal education the respondent had attained. Respondents were asked to choose a response that best fits with their current level of formal education from the following options: 'Less Than Secondary School Graduation', 'Secondary School Graduation', 'Some Post-Secondary', 'Post-Secondary Graduation' (CCHS-MH; Statistics Canada, 2013).

Marital status. Marital status was measured by asking respondents for information regarding their marital status. Respondents were asked to select a response that best matched their current marital status from the following options: 'Married', 'Common-Law', 'Widowed', 'Divorced or Separated', or 'Single' (CCHS-MH; Statistics Canada, 2013).

Income. Income was measured by asking respondents for information regarding their personal income, as well as the household's income as a whole. Respondents were asked what the main source of income was for themselves and for the household from the following options: "wages/salaries or self-employment", "employment insurance or workers compensation or social assistance", "benefits from Canada or Quebec pension plan or job-related retirement pensions, superannuation and annuities or RRSP/RRIF of old age security and guaranteed income supplement", or "other". Respondents were also asked to state their personal and household annual income from all sources from the following options" "less than $10,000", "$10,00 -

$19,999", "$20,000 - $29,999", "$30,000 - $39,999" "$40,000 - $49,999", and "$50,000 or more" (CCHS-MH; Statistics Canada, 2013).

Sex. Sex was determined by asking participants to state whether they were Male or Female (CCHS-MH; Statistics Canada. 2013).

Substance Use dependence; lifetime. The CCHS-MH modules on substance use questions are based on the World Mental Health version of the Composite International Diagnostic Interview (WMH-CIDI). The WMH-CIDI was created by the World Health Organization in 1998 as an expansion of its predecessor, the WHO-CIDI (Kessler & Ustun, 2004), developed in 1990 (WHO WMH-CIDI, 1990) and was intended to be used by trained lay-interviewers for epidemiological, clinical and research purposes. The WMH-CIDI uses definitions and criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) and the International Classification of Diseases and Related Health Problems (ICD-10) and is, therefore, a comprehensive and fully standardized instrument for the assessment of mental disorders and conditions (Kessler & Ustun, 2004). The WMH-CIDI is similar to the WHO-CIDI which evaluates symptom severity, probes for psycho-social impairments, contains symptom-related questions, and measures other episode-related questions (Wittchen, 1994). As suggested in the literature, the WHO-CIDI is a reliable and valid measure (WHO-CIDI, 1990; Wittchen, 1994; Kessler, Andrews, Mroczek, Ustun, Wittchen, 1998), so is the WMH-CIDI, the expanded and updated version of the WHO-CIDI (Haro et al., 2006; Kessler & Usten, 2004).

Within each module, respondents who declined to respond to a given question were coded as 'RF' and those who responded with 'unsure' or 'did not know' were coded as 'DK'. Both 'RF' and 'DK' responses were not included in the analysis. The assessment of Substance use variables is briefly summarized below with examples.

Substance use, abuse, and dependence. The substance use, abuse, and dependence (SUD) variable was assessed by measuring symptoms of SUD outlined in the WMH-CIDI. Within this module, participants were asked about their non-medical use of a variety of illicit and prescribed substances. The administration of the SUD module was not preceded by screener questions; however, respondents were reminded prior to answering any questions that all their responses would remain confidential. The interviewer, for each substance, would provide examples of the substance in question then ask 'Have you ever used or tried [the substance] non-medically?'. The responses were coded as 'Yes, just once', 'Yes, more than once', or 'No', and only the respondents who indicated having used the substance more than once were asked further questions regarding that substance. The respondents of the substance use section were asked about their usage included sedatives (e.g., valium, diazepam, Rohypnol), stimulants (e.g., methamphetamine, Ritalin, Adderall), analgesics (e.g., morphine, Percodan, codeine), marijuana or hashish, cocaine (in any form including crack, powder, coca leaves, paste, free base), 'club drugs' (e.g., ecstasy, MDMA, ketamine), hallucinogens (e.g., PCP, LSD, mescaline, angel dust, peyote, mushrooms), heroin or opium, inhalants or solvents (e.g., paint, nitrous oxide, glue, gasoline), and any other substances not covered by these categories. Lifetime use was evaluated and criteria for a SUD (i.e., outlined in the DSM-IV) was systematically covered. Furthermore, questions assessing substance dependence were also administered for each substance. For example, respondents were asked 'Was your use ever so regular that you felt that you could not stop using [substance]?', and the responses were coded as 'Yes' or 'No'. On average, the administration of the SUD module requires seven minutes to complete (WHO WMH CIDI, 2018).

Positive Mental Health. PMH is assessed using the Mental Health Continuum – Short Form (MHC-SF) instrument (Keyes, 2009). The MHC-SF contains 14 items that classify the respondent as having either flourishing, languishing, or moderate mental health. Furthermore, the first 3 items (items 1-3) measure emotional well-being, and the last 11 items (items 4-14) measure positive functioning. There are two ways to summarize the responses for this module. One way is to give the respondents a total cumulative score for all 14 items ranging from 0-70, where higher scores indicate higher levels of PMH. The more common method, and the one used for this study, is to use a categorical dependent variable that classifies the respondents as having either flourishing, languishing, or moderate mental health. Four temporary variables are needed to classify a respondent's high emotional well-being, low emotional well-being, high functioning, and low functioning. These four temporary variables are treated as preliminary steps towards the final categorical variable used for the analysis. To be classified as having flourishing mental health, respondents must experience "high levels" or at least 1 of the 3 measures of emotional well being (i.e., the first 3 items), and at least 6 of the 11 measures of positive functioning (i.e., items 4 – 14). High levels are defined as experiencing an item "every day" or "almost every day" during the past 30 days. For a respondent to be classified as having languishing mental health, respondents must have "low levels" on at least one of the items measuring emotional well-being, and on at least six of the 11 measures of positive functioning. Low levels are defined as experiencing items "never" or "once or twice" during the past 30 days. Respondents who complete the module, yet do not meet the criteria for either languishing or flourishing mental health are classified as having moderate mental health.

Social Provisions. Social provisions were assessed using the Social Provisions Scale which included 24 items. This scale was created by Cutrona and Russell (1987) and the French

version was validated by Caron (1996). The social provisions scale is meant to assess the six provisions of social relationships, as defined by Weiss (1973, 1974). The version included within this module was developed by Caron. This version is a shorter version of the original social provision scale, and only includes 10 items and the five main social provisions. Although this version is shortened, it still holds the same psychometric properties as the original scale. This module includes derived variables to measure an overall score of social provisions, as well as five sub-scales for the five different social provisions included in this module. The five sub-scales are: Attachments, Guidance, Social Integration, Reliable Alliance, and Reassurance of Worth. The items related to the Opportunity for Nurturance social provision (i.e., providing assistance to others) were not included in this module for the following three reasons: This dimension measures the support offered by the respondent rather than the support received, In several previous studies this dimension was least related to mental health, To reduce the administration time of the module.

Negative social interactions. The module on negative social interactions was developed based on the work of Krause (2007). Four questions were developed based on these previous works to determine the frequency of negative social interactions respondents are exposed to. Respondents are asked to choose a response for each of the fours questions which range from '1 – Never' to '4 – Very often'. The values are recoded from 1 to 4 to 0 to 3 for analysis purposes. The responses to the four questions are then summed to give a negative social interactions scores ranging from 0 to 12.

Data Analyses

The data were first analyzed using descriptive statistics to characterize the sample in terms of demographic variables (i.e., province of residence, age, sex, annual income, marital status, and education level).

Following this, the mean scores of the sample with a lifetime history of substance abuse or dependence was compared with the population on mean using one sample t-tests. These means were compared for scores of PMH, social supports and the five subscales of social supports (i.e., attachment, guidance, reliable alliance, social integration, and reassurance of worth), and negative social interactions.

Lastly, a hierarchical regression was used to analyze factors that predict PMH in the sample of individuals with a lifetime history of substance abuse or dependence. The variables included as predictor variables in the hierarchical regression are income, education, age, sex, social support in the form of attachment, guidance, reliable alliance, social integration, and reassurance of worth, and negative social interactions. All statistical analyses described were completed using SPSS Statistical Software, Version 27.

Results

Demographics

Participants were only included in the analysis if they were between the ages of 20 and 64 years of age and indicated a lifetime history of substance abuse or dependence. Out of the entire sample of individuals aged 20-64 years in the database, 956 met the criteria for lifetime substance abuse or dependence. This represents a substance abuse and dependence prevalence rate of 5.6%. Of these individuals, 29 resided in Newfoundland and Labrador (3%), 33 in Prince Edward Island (3.5%), 68 in Nova Scotia (7.1%), 59 in New Brunswick (6.2%), 171 in Quebec (17.9%), 165 in Ontario (17.3), 62 in Manitoba (6.5%), 71 in Saskatchewan (7.4%), 135 in

Alberta (14.1%), and 163 in British Columbia (17.1%). Most participants were between the ages of 20 and 44 years of age (59.9%) and were also male (58.8%). A large proportion of respondents reported being single (43.6%) at the time of the survey, as well as a large portion reported having an annual income of under thirty thousand dollars per year (49.5%). Lastly, 527 participants reported graduating from post-secondary education (55.1%). These findings are summarized in Table 1.

One Sample t-Tests

Multiple one sample t-tests were conducted to compare the sample means to the Canadian population. It was found that individuals who had a dependence or abused drugs throughout their lifetime experience lower rates of PMH (M = 46.63, SD = 13.401) than the population norm for Canada (M = 53.48, SD = 11.329), $t(881) = -15.189$, $p < .001$, $d = 13.401$. This is summarized in Table 2.

It was found that individuals who had a dependence or abused drugs throughout their lifetime scored significantly lower on the social provisions scale (M = 34.96, SD = 5.144) than the population norm for Canada (M = 36.01, SD = 4.430), $t(929) = -6.242$, $p < .001$, $d = 5.144$. Individuals who had a dependence or abused drugs throughout their lifetime also scored significantly lower on the social provisions subscale for attachment (M = 7.07, SD = 1.169) than the population norm for Canada (M = 7.25, SD = 1.014), $t(945) = -4.632$, $p < .001$, $d = 1.169$. Individuals who had a dependence or abused drugs throughout their lifetime also scored significantly lower on the social provisions subscale for guidance (M = 7.10, SD = 1.215) than the population norm for Canada (M = 7.32, SD = 1.022), $t(950) = -5.588$, $p < .001$, $d = 1.215$. Individuals who had a dependence or abused drugs throughout their lifetime also scored significantly lower on the social provisions subscale for reliable reliance (M = 7.21, SD = 1.085)

than the population norm for Canada (M = 7.37, SD = .938), t(950) = -4.571, p < .001, d = 1.085. Individuals who had a dependence or abused drugs throughout their lifetime also scored significantly lower on the social provisions subscale for social integration (M = 6.67, SD = 1.283) than the population norm for Canada (M = 6.99, SD = 1.111), t(944) = -7.644, p < .001, d = 1.283. Individuals who had a dependence or abused drugs throughout their lifetime also scored significantly lower on the social provisions subscale for reassurance of worth (M = 6.83, SD = 1.203) than the population norm for Canada (M = 7.02, SD = 1.030), t(934) = -4.804, p < .001, d = 1.203. These findings are summarized in Table 3.

It was found that individuals who had a dependence or abused drugs throughout their lifetime scored significantly higher on the negative social interactions scale (M = 4.26, SD = 2.774) than the population norm for Canada (M = 2.93, SD = 2.316), t(948) = 14.713, p < .001, d = 2.774. Summarized in Table 4.

Hierarchical Regression

A hierarchical regression was performed to investigate the variables that predict PMH within individuals with a lifetime history of substance abuse or dependence. In the first step of the hierarchical regression, four demographic variables were entered: age, sex, income, and education level. This model was statistically significant (F(4, 835) = 11.535, p < .001) and explained 5.3% of the variance in PMH. In step two, the five subscales of the social provisions scale (social integration, reliable alliances, reassurance of worth, guidance, and attachment), were entered. The total variance explained by the model as a whole in step two was 32.5%, (F(9, 835) = 44.165, p < .001). The introduction of these five subscales explained an additional 27.2% of the variance in PMH, after controlling for age, sex, income, and education level (R^2 *Change* = .272, F(9, 835) = 66.625; p < .001). All subscales were significant predictors of PMH except for

guidance. In step three negative social interactions was entered. The total variance explained by the model as a whole in step three was 35.1%, ($F(10, 835) = 44.691$, $p < .001$. The introduction of negative social interactions explained an additional 2.6% of the variance in PMH, after controlling for age, sex, income, education level, and social supports (R^2 *Change* = .026, $F(10, 835) = 33.697$; $p < .001$). Negative social interactions was a significant predictor of PMH. These findings are summarized in Table 5.

Discussion

The primary purpose of the current study was to examine factors that predict PMH in individuals with PSU. This relationship is important to understand as it has previously been suggested throughout the literature that factors that predict recovery in individuals with PSU should also predict PMH (Parker et al., 2018). Although this relationship is discussed often throughout previous research, there is a lack of research on this direct relationship.

The current study used data from the Statistics Canada Canadian Community Health Survey of Mental Health (CCHS-MH), a nationally representative survey of Canadians in 2012 (Statistics Canada, 2013). Respondents were included in the current study if they were between 20 and 64 years of age, and reported having a dependence on, or abusing substances other than alcohol and cannabis throughout their lifetime. Nine hundred and fifty-six participants met the criteria for a lifetime history of substance abuse or dependence resulting in a prevalence rate of 5.6%. Results indicated that individuals who struggle with PSU differ significantly in terms of their levels of PMH, social supports, and negative social interactions than the general population. Furthermore, the results indicate that income level, social support, and negative social interactions predict PMH in individuals with PSU. A detailed discussion of these findings is presented below.

Individuals with PSU differ from General Population

It was found that the sample of individuals with PSU was significantly different than the general population on all eight variables. The sample had significantly lower levels of PMH, social support (attachment, guidance, reliable alliance, social integration, and reassurance of worth) and had significantly higher levels of negative social interactions compared to the general population. These findings were expected and align well with previous research. An association between low levels of mental wellbeing and PMH and the risk of PSU has been noted in previous studies (Visser & Routledge, 2007). This may be explained by the notion that individuals who experience low levels of mental wellbeing have been suggested to use substances as a way to cope (Visser & Routledge, 2007). Furthermore, a study of war veterans founds that those who had higher psychological capital (i.e., psychological wellbeing, happiness, and perceived employability) prior to deployment were less likely to struggle with PSU after their return (Krasikova et al., 2015). These findings align with the findings of the current study and suggest that individuals with lower levels of PMH are more susceptible to struggle with PSU.

Additionally, it is suggested that individuals with PSU reported experiencing disproportional amounts of stigmatization from society, their peers, and professionals in recovery settings as well as have felt enormous amounts of peer pressure regarding their substance use (Livingston et al., 2012). These social factors that have been previously connected with PSU suggest individuals will struggle with social interactions and receiving support more than the general population (Livingston et al, 2012). It has been previously suggested that individuals with lower levels of social supports are less able to reach and maintain abstinence from substance use and are more likely to partake in risky behaviours (i.e., substance use). This aligns

with the findings of the current study of individuals with PSU who scored lower on all forms of social support when compared with the general population (Peterson et al., 2010; Stevens et al., 2015).

Moreover, it is noted previously that individuals suffering from PSU face disproportional amounts of stigmatization when compared to the general population (Livingston et al., 2012). This level of stigmatization is suggested to impede individuals from seeking treatment due to individuals using substances to cope with the stigmatization, internalization of the stigma, and fear of further stigmatization at treatment facilities and health care locations (Livingston et al., 2012). This aligns with the findings of the current study where individuals suffering from PSU experienced more negative social interactions than the general population.

Due to the high levels of stigmatization and lack of support reported previously from individuals with PSU it was predicted that individuals struggling with PSU would differ from the general population on PMH, levels of social supports, and negative social interactions. The current study found this to be true.

Factors that Predict Positive Mental Health in Individuals with PSU

It was found that income level, social support in the form of attachment, reliable alliance, social integration, and reassurance of worth, and negative social interactions were all significant predictors of PMH in individuals with PSU. These findings were expected as it has been suggested previously that PMH and self-directed recovery are similar concepts and the same factors should yield both in individuals with PSU (Parker et al., 2018). Income levels, social support, and negative social interactions were all previously suggested to be predictors of self-directed recovery within individuals with PSU (Harris et al., 2006; Livingston et al., 2012; Parker et al., 2018; Tracy et al., 2005). Therefore, it was expected that these same factors (i.e.,

age, sex, income, social supports, and negative social interactions) would predict PMH in individuals with PSU.

The relationship between factors predicting PMH in individuals with PSU is lacking from the literature. However, previous studies have found that individuals with high levels of social supports are less likely to experience negative impacts on their mental wellbeing when victimized by in-person and cyberbullying (Lin et al., 2020; Worsley et al., 2019). This suggests that social support may predict better outcomes on PMH when faced with stigmatization and hardship and therefore minimizing an individual's need for seeking a way to cope. This aligns with the findings of the current study as social support predicted PMH in individuals with PSU.

Additionally, previous research has found a link between negative social interactions psychological distress (Lincoln, 2008). This aligns with the findings of the current study and suggests that individuals who experience fewer negative social interactions will have higher levels of PMH. Moreover, age and income level are also suggested in previous studies to predict PMH, again aligning with the findings of the current study (Gimour, 2014).

Due to individuals with PSU reporting lower levels of supports, it was hypothesized they would also show lower levels of PMH, which was found to be true. This finding was expected as previous research has suggested that more modern concepts of PSU recovery look at an individual's well-being and mental functioning, which is suggested to be a similar concept to PMH (Parker et al., 2018). It was also suggested that factors associated with social supports and low levels of negative social interactions are linked to individuals with PSU achieving this type of mentally flourishing recovery (Harris et al., 2006; Livingston et al., 2012; Parker et al., 2018; Tracy et al., 2005). This suggests that individuals with lower levels of social support and higher instances of negative social interactions will also experience lower levels of PMH.

Interestingly however, education and social supports in the form of guidance were not found to be significant predictors of PMH in individuals with PSU. Although education is noted within the literature as a predictor for self-directed recovery, it has been suggested that education level alone is not a strong predictor of PMH (Evans-Lacko et al., 2018; Keyes & Simoes, 2012; Lluch-Canut et al., 2013). Keyes and Simoes (2012) did find that education was a significant predictor of PMH, however, this was accompanied by positive educational experiences and academic achievement. Furthermore, they found that low literacy levels were associated with low PMH outcomes. Additionally, another study found that education was not a significant predictor of PMH but rather there was a trend towards PMH when examining individual's scores on problem-solving and autonomy (Llutch-Canut et al., 2013). Because the CCHS data did not determine whether participant's educational experience was positive nor their literacy or problem-solving abilities, this may explain why education was not found to be a predictor of PMH in the current study. Furthermore, to our knowledge, this relationship has not been explored using the breakdown of social supports used in the current study. Therefore, the finding of guidance not being a significant predictor of PMH in individuals with PSU is novel and should be explored further.

Implications

As stated previously in the literature, recovery from PSU is moving away from an abstinence model of recovery and towards a fluid form of recovery rooted in positive functioning and mental flourishing (McGaffin et al., 2015; SAMHSA, 2011). By focusing more closely on factors (i.e., more social supports, less negative social interactions, income levels) that improve the wellbeing of individuals with PSU, it has the potential to allow individuals a better quality of life without the burden of waiting for inpatient care. Furthermore, this may eliminate experiences

such as “dry drunk”, where an individual has achieved abstinence from substances however still faces the negative experiences coupled with their PSU (McGaffin et al., 2015). An individual described as a “dry drunk” is said to suffer from similar symptoms as major depression such as feeling deeply depressed, feeling very tired, poor concentration, hopelessness, and thoughts of suicide (Gogek, 1994). Individuals are suggested to continue to feel these negative experiences when abstaining from substances because traditional recovery methods do not work to improve an individual’s mental functioning and wellbeing. Many individuals struggle with PSU because they are using substances as a coping mechanism for experiences such as poverty, trauma, and other mental illness. By removing an individual’s coping mechanism and therefore their ability to cope, however not improving their mental functioning or wellbeing in any way, can negatively impact an individual and cause them to continue to face the negative experiences they faced during their active substance use (Gerrard et al., 2012; Reisner et al., 2015; Wagner et al., 1999). However, if individuals with PSU can work to improve their social supports and remove themselves from negative social interactions (i.e., factors that predict recovery and PMH), they have the chance to improve their wellbeing and achieve a state of flourishing. Above what the individual can work to improve, societal and structural changes can be made to decrease the likelihood that more individuals rely on substances to cope with other mental health issues, trauma, or other forms of well-being. More informed education regarding mental health issues, educating individuals on what being mentally healthy means, and what a negative coping mechanism is and what it is looks like may show some improvements. If individuals are informed and better educated on how to recognize poor mental health and negative oping mechanisms, it may be easier for individuals to seek assistance for their struggles.

Furthermore, broadening recovery and no longer relying on an abstinence model, can potentially improve the recovery experience and success for many individuals. It is suggested previously in the literature that individuals who achieve high emotional wellbeing and positive functioning are more likely to recover from PSU and remain in recovery for longer (Harris et al., 2006; Livingston et al., 2012; Parker et al., 2018; Tracy et al., 2005). As mentioned previously, abstinence from substances does not always work in terms of improving an individual's wellbeing (McGaffin et al., 2015). Therefore, by focusing on factors (i.e., social supports and negative social interactions) that improve an individual's wellbeing and positive functioning, rather than simply abstaining from substances, individuals struggling with PSU may have a better chance of improving their quality of life and maintaining recovery.

The findings of the current study are promising and encouraging for both PMH and PSU research. Barriers to PSU treatment (i.e., financial and geographical barriers, wait times, etc.) are plentiful (Harris et al., 2006; Ivsins et al., 2009; Kulesza et al., 2013). Many individuals would like to achieve a state of recovery from their PSU however do not have this opportunity. Currently, the best-known treatment for individuals with PSU is inpatient treatment (Harris et al., 2006; Ivsins et al., 2009; Kulesza et al., 2013). However, this treatment is not accessible to most individuals. Many inpatient treatment programs are privatized and therefore it is not financially possible for a large portion of the population to access them (Harris et al., 2006; Ivsins et al., 2009; Kulesza et al., 2013). Furthermore, inpatient centers are typically found in urban centers (Bolinski et al., 2019; Rosenblatt et al., 2014). This makes it difficult for individuals living in rural regions to access such treatments. Lastly, many inpatient treatment centers have long wait times, sometimes upwards of two years (Harris et al., 2006; Ivsins et al., 2009; Kulesza et al., 2013). Unfortunately, addiction is an intense illness and some individuals do not have two years

to wait to recover (Belzak & Halverson, 2018). Many individuals need a harm reduction approach to their illness that will allow them to safely survive while waiting for a chance at recovery. By highlighting ways individuals struggling with PSU can improve their well-being and functioning without receiving inpatient care or abstaining from all substances, we can improve the quality of life of individuals with PSU. Identifying ways that an individual can alter their surroundings (e.g., spend more time with supportive individuals and set boundaries with non-supportive individuals) in a way that improves their PMH can equip them with the tools they need for success.

When considering a harm reduction approach to PSU, the findings of this study are very informative. Individuals do not always have the option of inpatient treatment for their PSU. By highlighting ways individuals can improve their wellbeing and functioning without intensive intervention, it is possible for individuals to still reach self-directed recovery. Addiction is an intense illness that has taken the lives of many Canadians due to overdoses and other health implications (Belzak & Halverson, 2018). A harm reduction approach to PSU aims to increase individual's safety first, and attempt to control their illness second (Lenton & Single, 1998). By increasing the knowledge of self-directed recovery and factors that improve an individual's wellbeing and functioning (i.e., increased social supports and decreased negative social interactions), it is possible to increase an individual's chances at reaching and maintaining recovery. This means improving the likelihood that individuals survive and live with a higher quality of life than before.

Additionally, the current study found that individuals with a lifetime history of substance abuse or dependence reported significantly low levels of social support, however also that social support is the best predictor of PMH in individuals reporting a lifetime history of substance

abuse or dependence. This finding suggests that social support may be a desirable factor to focus on in future supports with individuals suffering from PSU. If social supports can be improved, then individuals may have a better chance at reaching a flourishing level of PMH. One way that individuals suffering from PSU can improve their social supports and social networks is through affiliation with a self-help group such as Narcotics Anonymous (NA; Stevens et al., 2015; Toumbourou et al., 2002). By participating in NA individuals surround themselves with others who have experienced the same or similar hardships and experiences as they have and are interested and determined in reaching recovery. They will be paired with a sponsor, someone who is further along in their journey of recovery who can provide direct social support through guidance and providing direction (Stevens et al., 2015; Toumbourou et al., 2002).

Above this, policy and societal changes must be made to encourage such positive outcomes in PSU recovery. The “war on drugs” is further promoting criminal action against individuals who use substances, rather than rehabilitation (Hyshka et al., 2012). Furthermore, individual’s income levels are associated with PSU (i.e., individuals with PSU often have lower income levels; Shearer et al., 2020; Thylstrup et al., 2020; Tsemberis, 2010). However, due to the societal stigmatization of substance use, it is difficult for individuals with PSU to hold employment and therefore stable housing as well. Because of the “war on drugs”, it is easy for individuals to face criminal charges due to their substance use, this comes with a criminal record of drug related charges (Hyshka et al., 2012). This is a continuously negative feedback loop as it is difficult to attain long term employment and housing with a criminal record. Not having access to stable housing can impact an individual mental wellbeing, and therefore increase their need for coping mechanisms (Tsemberis, 2010). It is imperative that change starts from the source

with better mental health education, easier access to stable housing, and the decriminalization of substances to improve individuals' chances at reaching positive recovery.

Moving forward, an individual's PMH should be considered when seeking recovery from PSU. By understanding how personal experiences, psychological factors, and demographic variables impact an individual's substance use (e.g., social support, income level, negative social interactions) more individuals may be able to achieve self-directed recovery.

Limitations and Future Directions

Firstly, the data used in this study did not include individuals below the age of 20 and above the age of 65 years old, those who are institutionalized, those who are full-time members of the Canadian armed forces, those residing in a Territory or an indigenous reserve, or those who do not have secure housing. It is suggested previously that many of these individuals (i.e., the homeless population, individuals living on indigenous reserves, etc) have high numbers of PSU (North et al., 2010; Nutton & Fast, 2015). Because of this, it would be beneficial to include these individuals in the current study. Future research would benefit from including more vulnerable populations within their research to gain a better understanding of how this finding looks on a more vulnerable sample. Secondly, the nature of the study resulted in the exclusive use of self-report measures. Individuals answered a survey created by Statistics Canada and there is therefore no way to determine if the level of substance use individuals truly had was portrayed through the data. Although the survey questions used validated measures and questions derived from previous research, there is no guarantee the answers were accurate. Respondents tend to exaggerate responses on self-report measures. Future research would benefit by using implicit or physical measures, rather than self-report measures. This will potentially improve the reliability of the results and minimize any personal biases the respondents have. Lastly, the current study

was cross-sectional in nature. Therefore, we cannot infer causation from the current results but only that there is an association between the variables. Future research would benefit from looking at this through longitudinal research to determine the direction of the relationships at play here.

Conclusions

The current study examined if individuals with PSU differ from the general population in terms of demographics, PMH, social supports, and negative social interactions. It also looked at demographics, social supports, and negative social interactions as predictors of PMH in individuals with PSU. The results suggest that individuals with PSU experience lower PMH and social supports and higher levels of negative social interactions than the general public. Additionally, it is also suggested that income, social supports in the form of attachment, reliable alliance, reassurance of worth, and social integration, and negative social interactions predict PMH in individuals with PSU. These findings align with current research suggesting that social supports and negative social interactions predict self-directed recovery in individuals with PSU.

Moving forward, steps can be taken to improve the quality of life of individuals with PSU by increasing their social supports and decreasing their negative social interactions. It is suggested that taking these steps to change the social dynamics individuals with PSU are facing, may increase their level of PMH and therefore improve their ability to achieve self-directed recovery. By increasing the understanding of this relationship, between social dynamics and PMH within individuals with PSU, more individuals can take these steps to improve their wellbeing and functioning. As suggested previously in the literature, traditional forms of treatment such as inpatient recovery centers and continuing care self-help groups are not the most feasible option anymore. Inpatient centers are not an option to many individuals due to

many barriers and continuing care options are suggested to be significantly more effective if the individuals have already attended an inpatient treatment center (Gong et al., 2019; Harris et al., 2006; Ivsins et al., 2019; Kulesza et al., 2013). Therefore, it is necessary to increase knowledge in other areas that can improve the wellbeing and quality of life of individuals with PSU. The current research strengthens the understanding of the role of PMH in self-directed recovery and social supports and negative social interactions play an important role in this relationship.

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Table 1. *Descriptive Statistics of Participants with a Lifetime History of Substance Abuse or Dependence Demographic Variables*

		Frequency	Percent	Cumulative Percent
Province of Residence				
	Newfoundland and Labrador	29	3.0	3.0
	Prince Edward Island	33	3.5	6.5
	Nova Scotia	68	7.1	13.6
	New Brunswick	59	6.2	19.8
	Quebec	171	17.9	37.7
	Ontario	165	17.3	54.9
	Manitoba	62	6.5	61.4
	Saskatchewan	71	7.4	68,8
	Alberta	135	14.1	82.9
	British Columbia	163	17.1	100.0
	Total	956	100.0	100.0
Respondent Age				
	20 – 24 years	132	13.8	13.8
	25 – 29 years	121	12.7	36.5
	30 – 34 years	126	13.2	39.6
	35 – 39 years	96	10.0	49.7
	40 – 44 years	98	10.3	59.9
	45 – 49 years	108	11.3	71.2
	50 – 54 years	116	12.1	83.4
	55 – 59 years	95	9.9	93.3
	60 – 64 years	64	6.7	100.0
	Total	956	100.0	100.0
Respondent Sex				
	Male	562	58.8	58.8
	Female	394	41.2	100.0
	Total	956	100.0	100.0
Respondent Marital Status				
	Married	216	22.7	22.7
	Common-Law	159	16.7	39.4
	Widowed	17	1.8	41.2
	Divorced or Separated	145	15.2	56.4
	Single	415	43.6	100.0
	Total	952	100.0	100.0
Total Personal Income from All Sources				
	Less than $10,000	33	3.6	3.6
	$10,000 - $19,999	223	24.4	28.0

	$20,000 - $29,999	197	21.4	49.5
	$30,000 - $39,999	126	13.8	63.3
	$40,000 - #49,999	96	10.5	73.8
	$50,000 or more	240	26.2	100.0
	Total	915	100.0	100.0
Highest Level of Education Attained by Respondent				
	Less than Secondary	160	16.8	16.8
	Secondary School Graduation	163	17.1	34.0
	Some Post-Secondary	101	10.6	44.6
	Post-Secondary Graduation	527	55.4	100.0
	Total	951	100.0	100.0

Table 2. *Summary of one sample t-test analyses comparing positive mental health in individuals with problematic substance use to positive mental health in the Canadian population.*

	Test value = 53.48						
					95% Confidence Interval		
	t	df	*p*	Mean Difference	Lower	Upper	Cohen's d
Positive Mental Health	-15.189	881	< .001	-6.854	-7.74	-5.97	13.401

Table 3. *Summary of one sample t-test analyses comparing social support in individuals with problematic substance use to social support in the Canadian population.*

						95% Confidence Interval		
	Test Value	*t*	df	*p*	Mean Difference	Lower	Upper	Cohen's d
Social Support Total	36.01	-6.242	929	< .001	-1.053	-1.38	-.72	5.144
Social Support in the form of Attachment	7.25	-4.632	945	< .001	-.176	-.25	-.10	1.169
Social Support in the form of Guidance	7.32	-5.588	950	< .001	-.220	-.30	-.14	1.215
Social Support in the form of Reliable Alliance	7.37	-4.571	950	< .001	1.161	-.23	-.09	1.085
Social Support in the form of Social Integration	6.99	-7.644	944	< .001	-.319	-.40	-.24	1.283
Social Support in the form of Reassurance of Worth	7.02	-4.804	934	< .001	-.189	-.27	-.11	1.203

Table 4. *Summary of one sample t-test analyses comparing negative social interactions in individuals with problematic substance use to negative social interactions in the Canadian population.*

	Test Value = 2.93						
					95% Confidence Intervals		
	t	df	*p*	Mean Difference	Lower	Upper	Cohen's d
Negative Social Interactions	14.713	948	< .001	1.325	1.15	1.50	2.774

Table 5. *Summary of hierarchical regression analysis for variables predicting positive mental health in individuals with problematic substance use*

	R	R^2	R^2 Change	F Change	B	SE	β
Step 1	.229	.053	.053	11.535**			
Age					-.310	.182	-1.699
Sex					-.277	.971	-.286
Education					.733	.401	1.830
Income					1.636	.307	5.331**
Step 2	.570	.325	.272	66.625**			
Attachments					1.337	.665	2.009*
Guidance					.158	.633	.249
Social Integration					2.758	.474	5.818**
Reliable Alliance					-1.332	.614	-.110*
Reassurance of Worth					3.226	.502	6.431**
Step 3	.593	.351	.026	33.697**			
Negative Social Interactions					-.845	.146	-5.805**

Note: * indicates results are significant at alpha level .05, ** indicates results are significant at alpha level .001