Exploring the physical activity and exercise participation of adults with mental health problems

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December 2019

A thesis submitted to McGill University in partial fulfillment of the requirements for the degree of Master of Arts in Kinesiology and Physical Education

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Abstract

Individuals with mental health problems (MHP) have, historically, experienced challenges with participating in physical activity and exercise (PAE). While programs have been created to promote PAE participation for individuals with MHP, it remains unclear how they may participate in PAE within the community. Hence, the purpose of this study was to explore perceptions of PAE participation in the community for adults with comorbid MHP. The overarching research question was: How do individuals with MHP participate in community PAE? Semi-structured interviews were conducted with six adults with comorbid MHP for this single instrumental case study. Each person was participating in an adapted physical activity (APA) program within a larger institutional treatment program during the time of the study. The interviews were audio recorded and transcribed verbatim for a thematic analysis. "Mental health problems", "Physical activity and exercise", and "The community" were the three themes that emerged. This study revealed various perceptions the participants had about living with MHP, PAE participation, and the types of programs available in the community for them. For example, the participants spoke about the differences felt between their past and current life experiences with MHP, their strong feelings associated with PAE, multiple opportunities for PAE in the community and the methods used to locate community-based PAE. An original finding of this research is that the participants described playful, non-competitive physical activity to be most beneficial to encourage them to participate in PAE. Thus, they enjoyed the non-competitive nature of the PAE approach utilized by the APA program staff. Recommendations for future research are provided in the discussion.

Résumé

Par le passé, les personnes ayant des problèmes de santé mentale (PSM) ont éprouvé des difficultés à pratiquer de l'activité physique et de l'exercice (APE). Bien que des programmes aient été créés pour promouvoir la participation des personnes atteintes de PSM à l'APE, on ne sait toujours pas comment elles peuvent intégrer l'APE au sein de la communauté. Par conséquent, le but de cette étude était d'explorer les perceptions des adultes atteints de PSM comorbide vis-à-vis leur participation à de l'APE au sein de leur communauté. La question primordiale de la recherche était : Comment les personnes atteintes de PSM participent-elles à de l'APE dans la communauté? Des entrevues semi-structurées ont été menées auprès de six adultes atteints de PSM comorbide pour produire cette étude. Chaque personne participait à un programme d'activité physique adaptée (APA) dans le cadre d'un programme de traitement institutionnel dépassant la durée de l'étude. Les entrevues ont été enregistrées et transcrites pour compléter l'analyse thématique. "Les problèmes de santé mentale", "l'activité physique et l'exercice physique" et "la communauté" sont les trois principaux thèmes de l'étude. Cette étude a révélé la grande hétérogénéité des perceptions vécues par les participants lorsque questionnés au sujet de leur vie menée avec des PSM et de leur participation à de l'APE ou à d'autres programmes du même type disponibles dans leur communauté. Par exemple, les participants ont parlé des différences ressenties entre leurs expériences de vie passées et actuelles en matière de PSM, de leurs émotions associées à l'APE, des multiples possibilités d'APE dans leur communauté et des méthodes utilisées pour localiser l'APE dans leur communauté. Un résultat original de cette recherche est que les participants ont décrit l'APE comme étant ludique et non compétitif. Les participants se sentaient encouragés à participer à l'APE. Des recommandations pour les recherches futures sont fournies dans la discussion.

Acknowledgements

First and foremost, I would like to thank my parents, sister, and boyfriend, to whom I dedicate this thesis. They played an immense role in helping me pursue this degree. They were always there to listen when I needed them the most and encouraged me to persevere and complete my graduate studies. They taught me to be strong, never give up, and stay positive no matter what challenges I faced. I look up to every one of them. They have shaped me into a better and more confident woman. I will be forever grateful to them because they have contributed to my success.

Other people helped me throughout my graduate studies. The completion of this thesis would not have been possible without them. For these reasons, I would like to express my many thanks to several people.

First, I would like to thank my supervisor, Dr. William Harvey for being a critical friend. Throughout my thesis, you provided my research with valuable feedback and supported my ideas. Additionally, my writing has improved because of your guidance and input. Thank you to my committee members, Dr. Shane Sweet and Dr. Jordan Koch, your help and support throughout this process have been deeply appreciated.

A special thanks to Vanessa Ferreira and Erin Berry for your constant support, understanding, and advice. Your input helped me complete my graduate studies and I will never forget all the times you picked me up and encouraged me to move forwards.

I would like to thank the center coordinator for her implication in my thesis. You were generous with your time and very helpful during recruitment. Additionally, I would like to thank all six people who participated in this study. They are wonderful individuals who opened their hearts to me. I wish them all the best!

Contribution of Authors

I am the first author of this study. My supervisor, Dr. William Harvey, provided feedback and guidance throughout the entirety of this research project.

Candidate: Laura Camplani

Contributions: I took part in the realization of this study, I wrote the ethics application in English and French, searched for and composed the review of literature, recruited and interviewed the participants, performed the data analysis, and wrote every chapter of this thesis. This process was completed with the help of the co-author and modifications to the document were made in response to his comments.

Co-author: William Harvey

Contributions: Conceptualization of the study, reviewed and edited the ethics application in English and French and each chapter of this thesis. Additionally he provided input throughout the data collection, analysis, and editing processes of this study.

Chapter One
Introduction

Physical activity and exercise (PAE) offers many benefits to overall health such as an increase in aerobic capacity, an improvement in gross motor functioning, greater balance, muscle strengthening and an improved quality of life (Stancliffe & Anderson, 2017). Adults with mental health problems (MHP), more precisely depression or anxiety, tend to be sedentary and may have lower physical fitness levels than people in the general population (Martinsen, 1990). Hence, adults with MHP may be at higher risk of developing chronic illnesses such as diabetes and cardiometabolic diseases (Richardson et al., 2005; Stanley & Laugharne, 2014). Seime and Vickers (2006) argued that PAE, practiced by itself or in adjunct with other treatments such as psychotherapy and pharmacotherapy (Ströhle, 2009), may be effective in the treatment of MHP. Individual health status may also improve and the risk of premature mortality may be significantly reduced by regularly participating in PAE (Blair & Brodney, 1999; Haskell et al., 2007). Further, PAE for people with clinical depression may enhance self-esteem which, in turn, can promote a sense of achievement, self-efficacy and self-determination during the recovery process (Daley, 2008). There is growing evidence that PAE has positive effects on MHP (Ströhle, 2009). For example, PAE may improve an individual’s quality of life and physical well-being (Richardson et al., 2005). However, existing challenges, such as motivation, stigmatization and accessibility to PAE interventions may exist and increase the reluctance for adults with MHP to adopt and maintain a physically active lifestyle (Seime & Vickers, 2006).

Mental Health

The World Health Organization (World Health Organization, [WHO], 2014) defined mental health as the ability of individuals to be fully functioning and able to attain their full potential. For example, handling daily stresses, producing efficient work and contributing to the community (WHO, 2014). Fuller-Thomson, Agbeyaka, LaFond, and Bern-Klug (2016) suggested three elements necessary to achieve complete mental health. First, individuals with complete mental health must have had no mental or substance use disorders in the last year. Mental or substance use disorders include depressive disorders, anxiety disorders, bipolar disorders, drug or alcohol abuse and suicidal ideation (Fuller-Thomson, Agbeyaka, LaFond, & Bern-Klug, 2016). Second, they must have a reoccurring sense of life satisfaction. Lastly, they must have meaningful relationships with others (Fuller-Thomson et al., 2016). WHO (2018) mentioned that mental health implies much more than merely the absence of MHP. It is a state of total physical, mental and social well-being (WHO, 2018). This point supports that the achievement of complete mental health is possible for everyone, even for individuals with a history of mental or substance use disorders (Fuller-Thomson et al., 2016).

The prevalence of mental or substance use disorders tend to be high as one in 10 Canadians met the criteria for at least one mental or substance use disorder (Pearson, Janz, & Ali, 2013). Mental disorders are defined as abnormal behavioral patterns that affect an individual’s thoughts, emotions and relationships (WHO, 2017). The most common types of MHP that will be discussed in this introduction are depression and anxiety. Depression, the most common mood disorder, had the highest percentage of Canadians meeting its criteria at 4.7% (Pearson et al., 2013). Individuals with depression tend to be pessimistic, have low self-worth, low self-confidence, and difficulty with problem solving and decision-making (Donaldson & Lam, 2004; Lewinsohn, 1992). Currently, diagnosis remains challenging as types and symptoms of depression vary greatly from one individual to another. However, conventional treatments, such as psychotherapy and pharmacotherapy, are the most favorable treatments available to help stabilize depression (Ströhle, 2009).

Generalized Anxiety Disorder (GAD) is another mood disorder that affects a total of 2.6% of Canadians (Pearson et al., 2013). GAD is a state of altered attentional control that causes a general worsening of attentional functioning (Eysenck, Derakshan, Santos, & Calvo, 2007). Individuals with GAD tend to have difficulty initiating a clear behavioral path to remove or modify an existing threat to his/her goals (Power & Dalgleish, 2015). Individuals with GAD also tend to orientate their attention purposefully towards negative information (Mogg & Bradley, 2006). Consequently, decision-making may be flawed because individuals with GAD focus on threatening information (Fox, Russo, & Georgiou, 2005). The primary conventional treatment for GAD is pharmacotherapy. However, cognitive –behavioral therapy (CBT) is the most useful psychotherapeutic technique in treating GAD (Pary, Matuschka, Lewis, Caso, & Lippmann, 2003). Although mood disorders are typically distinct, individuals may share more than one condition at a time (Valderas, Starfield, Sibbald, Salisbury, & Roland, 2009).

Comorbidity between mental illness, chronic illness and/or physical disabilities has currently become the norm rather than the exception (Valderas et al., 2009). It is defined as an individual having more than one disorder at a time (Valderas et al., 2009). Most individuals with depression may also share other forms of MHP such as schizophrenia, anxiety and paranoia (Daley, 2008). Comorbidity may cause poor outcomes. For example, it may increase the risk of relapse, chronicity, lasting symptoms, suicide and psychosocial impairments (Melartin et al., 2002). The prevalence of comorbid mental and physical diseases has increased exponentially over the last two decades and may continue to increase in the near future (Sartorious, 2013). Today, a total of 62.4% of individuals have comorbid MHP, more precisely depression and GAD

(Pary et al., 2003). There is a need to address the management of individuals with comorbid disorders as the outcomes for mortality, quality of life, daily functioning and health care may vary greatly (Valderas et al., 2009). For example, PAE may be a plausible choice in helping to manage comorbid diseases because it can positively affect an individual's mental and physical well-being (Richardson et al., 2005).

Physical Activity and Exercise

Global recommendations on PAE have been suggested to maximize health benefits for all age groups (Global Recommendations on Physical Activity for Health, 2010). PAE is defined as any body movement that expends energy (WHO, 2018). For healthy adults, 18 to 64 years, roughly 150 minutes of moderate-intensity aerobic PAE or 75 minutes of vigorous-intensity of PAE are recommended weekly. Typical PAE for healthy adults includes leisure time, transportation, occupations, household chores, games, sports or planned exercise (WHO, 2010).

Unfortunately, individuals with MHP may be physically sedentary and tend to have lower physical fitness levels than the general population (Martinsen, 1990). Seime and Vickers (2006) suggested that convincing individuals with MHP to participate in PAE programs may be challenging due to barriers associated to PAE. For example, low motivation, stigmatisation and poor accessibility are important challenges to be aware of (Barnes, 1999; Daley, 2008; Graham et al., 2017). It is not uncommon to hear physically healthy and emotionally stable individuals express their challenges with PAE. In fact, approximately one-half of people who begin a PAE program continue beyond six months (Dishman, 1982). PAE barriers are not necessarily associated to lack of knowledge from the MHP population but rather to low motivation, stigmatization and poor accessibility (Barnes, 1999; Daley, 2008; Graham et al., 2017). This point suggests that individuals with MHP may need additional support to initiate a PAE program (Seime & Vickers, 2006). The mere thought of these possible challenges may be sufficient to cause individuals with MHP to quit in their initial attempt to increase their levels of physical fitness (Seime & Vickers, 2006). The identification and understanding of these barriers may assist individuals with MHP to overcome their fears and uncertainties towards PAE (Seime & Vickers, 2006).

Lack, or absence, of motivation is one of the strongest challenges when implementing a PAE program. Challenges may occur when attempting to incorporate PAE in the routine of individuals with MHP. First, individuals with MHP must be motivated to successfully participate in PAE. However, many individuals with MHP lack the energy to complete daily tasks and this may be an issue when starting a PAE program (Daley, 2008). Second, medical doctors may lack the knowledge to advise about current PAE recommendations. This point suggests that medical doctors may exclude the promotion of PAE as a possible treatment option for individuals with MHP (Daley, 2008). Third, lack of motivation for individuals with MHP may be caused by little monitoring and support from medical doctors which, in turn, may increase dropout rates from PAE programs (Daley, 2008). Lack of motivation may not be the only barrier to affect individuals with MHP. Fear of being judged by oneself or by others may contribute to the lack of PAE participation for individuals with MHP.

Stigma continues to be a barrier for individuals with MHP. Barnes (1999) argued that individuals with MHP may avoid taking part in PAE interventions due to fear of being judged and mistreated by others. Different forms of stigma exist and affect individuals with MHP in different ways. For instance, structural stigma may limit access to stigmatized groups due to organizational policies. Social stigma is defined as a lack of understanding of stigmatized groups from dominant social groups. Self-stigma includes all other stigmas and it is internalized as a person's own self-image (Graham et al., 2017).

Poor accessibility to PAE can be a challenge for individuals with MHP willing to initiate to being physically active. Graham et al. (2017) suggested three themes associated to this challenge: (1) geographic inaccessibility, (2) cost, and (3) rigid program scheduling. Individuals with MHP may not have the capacity to travel long distances for their PAE program. If the PAE program is not considered accessible, engagement may not occur. Further, having to go to an unfamiliar environment may be overwhelming for individuals with MHP. As for cost, individuals with MHP may not be able to afford the PAE program. If unable to maintain their new healthy lifestyle due to cost, there may be little point to initiate change (Graham et al., 2017). Lastly, PAE programs may not be suited for the schedules of individuals with MHP. Many people will have other commitments that must be respected, such as medical appointments. If unable to schedule around prior commitments, some of these people with MHP may choose to stop going all together because the situation has become too difficult.

Three solutions have been proposed to overcome the preceding challenges. First, individualized PAE programs may encourage individuals with MHP to participate in PAE because unique needs have been considered (Richardson et al., 2005). For example, the use of information about the person's demographics and health background may help in creating an individualized PAE program (Seime & Vickers 2006). Second, structured PAE programs may be a solution for individuals with MHP needing more guidance to initiate being physically active. Structured PAE may be planned such as group walks or PAE classes (Richardson et al., 2005). Finally, lifestyle interventions may be better suited for individuals with MHP who want the freedom to schedule their own PAE throughout the day (Richardson et al., 2005). For example, an objective could be for individuals with MHP to accumulate moderate-intensity PAE throughout the day such as brisk walking (Richardson et al., 2005). These facilitators may increase the likelihood of individuals with MHP to adhere to PAE and, hopefully, enjoy its benefits for a long time. Further, by promoting the use of these facilitators, individuals with MHP may feel a sense a belonging, encouraging the likelihood of adhering to PAE. When initiating change to overcome PAE barriers, building strong relationships with themselves, peers and the community is also an important asset because it may create a sense of belonging, which may increase the likelihood of individuals with MHP to continue participating in PAE programs (Graham et al., 2017).

Community PAE interventions for individuals with MHP tend to be offered in adjunct with conventional treatments such as psychotherapy or pharmacotherapy (Ströhle, 2009). Such PAE interventions will most likely complement the treatment already in place by incorporating problem-solving skills, activity scheduling and coping strategies (Daley, 2008; Donaldson & Lam, 2004; Unützer et al., 2002). Services offered in the community are designed to decrease the high prevalence of mortality in individuals with MHP such as cardiometabolic disturbances (Graham et al., 2017). Further, community PAE programs promote a prosperous environment for social networking for individuals with MHP. The creation of a safe environment for PAE participation and socializing opportunities are important assets when individuals with MHP are re-integrated in the community (Graham et al., 2017).

A variety of programs, interventions and approaches have been created to promote participation, engagement and adherence to PAE in the community. For example, the recovery approach aims to “provide opportunities to help people with mental illness in recovery plans and enable better understanding of constructs related to self-determination and decision-making in the community” (Harvey, Delamere, Prupas, & Wilkinson, 2010, p. 36). It promotes better quality of life by providing tools to individuals with MHP to learn and develop self-efficacy skills (Gudjonsson, Savona, Green, & Terry, 2011). This approach focuses on creating a purposeful life around MHP. The recovery approach has three principles, which are hope, opportunity, and control. These principles are used to improve individuals with MHP’s sense of empowerment (Gudjonsson et al., 2011). The aim of this approach is to increase motivation and social interactions and reduce agitated behaviours and hospital visits (Gudjonsson et al., 2011).

In summary, PAE, alone or in adjunct with conventional treatment, may improve physical and mental well-being for individuals with MHP (Ströhle, 2009). The promotion of an individualized program for individuals with MHP may be a dominant factor in overcoming barriers (Seime & Vickers, 2006; Richardson et al., 2005). Low motivation, lack of accessibility and stigmatisation are some of the current barriers towards PAE engagement. There is a need to continue searching for solutions to help individuals with MHP cope with their symptoms, increase their quality of life, participate in PAE and continue their progress in the community. We hope to find new ways to promote PAE for individuals with MHP and their needs, such as PAE preferences, types of support and barriers to different activity (Ussher, Stanbury, Cheeseman, & Faulkner, 2007).

Central Research Questions

The purpose of this study was to explore PAE participation in the community for adults with comorbid MHP. Hence, the overarching research question for this study was: How do individuals with MHP participate in community PAE? The central research questions are: (1) How do people with MHP find PAE in the community? (2) Why do they decide to be physically active? (3) What types of PAE programs exist in the community? (4) How do they participate in PAE?

Significance

The exploration of community-based PAE opportunities is important because it is unclear as to how people with MHP plan to be physically active in the community. Little is also known about relationships between the recovery approach and PAE. For example, the primary concept of the recovery approach is for individuals with MHP to reclaim their “right to a safe, dignified, and personally meaningful and gratifying life in the community while continuing to have a mental illness” (Davidson & Roe, 2007, p. 464). It remains unclear how these rights and PAE participation function in the community for people with MHP. Thus, this study attempted to explore the perception of individuals with MHP in relation to the recovery approach and community-based PAE. This study was also expected to expand upon past research and identify the gaps in community PAE that, in turn, may create links to promote better understanding of the current issues and encourage more PAE participation. Further, it addressed other pertinent issues within community-based PAE. For example, individuals with MHP faced three major challenges when participating in community-based PAE programs: low motivation, stigmatisation and poor accessibility (Daley, 2008; Graham et al., 2017). More so, facilitators such as using an individualized approach, providing opportunities for social interactions and additional support may be factors in PAE adherence for individuals with MHP (Seime & Vickers, 2006; Richardson et al., 2005; Graham et al., 2017). Although facilitators have been identified, it remains unclear if they are generalizable or strict to one type of population. In other words, we are unsure if these facilitators are relatable to our PAE community. The purpose of this study was to explore PAE participation in the community for adults with comorbid MHP.

Limitations and Delimitations

There were at least two limitations to this study. First, selection bias may have occurred because the researcher was recruiting participants from a single source, the APA program within the larger institutional treatment program. For example, it is possible that participants were already ‘pro-exercise’ and service engaged so they may have provided different answers other than individuals with MHP who were not exercising at all. A second limitation was the age range for the study. The age range was 35 to 52 years, with a limited number of male and female participants. Only three women and three men participated in this study. Thus, the small representation of gender was a major limitation of the study. It could have been strengthened by recruiting a larger sample of men and women. Lastly, the back translation process could also be a limitation in this study as a professional translator is usually recommended to do this type of work (Tyupa, 2011). However, a bilingual speaking Kinesiology professional was asked to complete the back translation process with the PI because he was familiar with the colloquial and professional language of PAE. For example, he understood the linguistic meaning and specific expressions related to PAE (Tyupa, 2011).

Two strengths were apparent while constructing this research. First, this study is possibly the first of its kind because it explored the relationships between the recovery approach and PAE in the community for individuals with MHP. This study provided us with new knowledge on the recovery approach used within this APA program and this institutional treatment program, the PAE preferences of individuals with MHP and what may motivate them to adhere to PAE, the potential gaps preventing community-based PAE participation and adherence for this population, and the playful component to group PAE that may ameliorate the community-based PAE experience for individuals with MHP. These points may help clarify what the PAE experiences of individuals with MHP may be like while coping with their mental health symptoms in a community-based PAE context. It should also provide opportunities for future research in the area of community-based PAE for people with MHP. For example, more studies could explore the impact of APA programs within institutional treatments programs, the relationship between positive outcomes of PAE, motivation, PAE adherence rates, the influence self-stigma and social stigma may have on physical inactivity in community PAE programs for this population, the inclusion of the recovery approach in this community's PAE programs, and the perceptions of playful group PAE as a facilitator to PAE adherence. Second, this research study encouraged individuals with MHP to voice their opinions about community-based PAE which, in turn, demonstrated that we valued each participant's input and were open to listen to and document each person's unique PAE stories. This approach allowed the PI to interview individuals with MHP who were part of a larger institutional treatment program. It helped to uncover how people with MHP felt about participating in community PAE and contributed to the literature by demonstrating different perceptions that individuals with MHP had about community PAE participation.

Operational Definitions

1. Recovery Approach: This approach encourages and supports a person with MHP during the recovery process. It focuses on how to live with the symptoms of MHP rather than eliminating them. There is more importance given to the journey than a set outcome and it provides opportunities to develop hope, self-worth, positive relationships, social interactions, empowerment and coping skills (Gudjonsson et al.,, 2011).

2. Community: It is defined as a place-oriented process of interrelated actions through which members of a local population express a sense of shared identity while participating in the common concerns of daily living (Theodori, 2006). For his study, the community includes hospitals as vital parts of the community (e.g. the mental health university institute).

3. Physical activity: PAE is defined as any body movement that expends energy (WHO, 2018). PAE for healthy adults includes leisure time, transportation, occupations, household chores, games, sports, planned exercise (WHO, 2010) or PAE programs.
4. Exercise: Exercise is defined as a subcategory of physical activity. It may be planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective (WHO, 2018).

Chapter Two
Review of the Literature

The purpose of this study was to explore PAE participation in the community for adults with comorbid mental health problems (MHP).

An Overview of Mental Health

Mental health, also referred to as a state of total well-being, is defined by the World Health Organization (WHO, 2014) as having fully functioning individuals who can attain their full potential, handle daily stresses of life, produce meaningful and efficient work as well as voluntarily contribute to their community. Health is defined as an individual's complete physical, mental and social well-being (WHO, 2014). Three criteria must be met to achieve complete mental health. First, there must be absence of mental illness in the last year. This criterion implies the absence of mental or substance use disorders, such as depressive disorders, anxiety disorders, bipolar disorders, suicidal ideation, or drug or alcohol abuse. Next, there must be a reoccurring sense of satisfaction in life and daily happiness in the former month. Examples of daily happiness could be of walking your dog or drinking a warm cup of coffee in the morning. Lastly, a person's relationships must be meaningful to support social and psychological well-being (Fuller-Thomson et al., 2016). Thus, the WHO (2018) stated that complete mental health implies much more than merely the absence of mental illness, more precisely mental disorders or disabilities. For example, Fuller-Thomson et al. (2016) suggested that individuals with a history of mental or substance use disorders may attain complete mental health. In fact, they found that two out of five Canadian participants with depression achieved complete mental health.

The Mental Health Continuum – Short Form (MHC-SF) was created to evaluate emotional well-being as well as psychological and social functioning (Gilmour, 2014). Gilmour

(2014) described mental health as a combination of feeling good about and functioning well in life. The classification of respondents' mental health can be described by three categories: (1) flourishing, (2) languishing and (3) moderate. Flourishing individuals are filled with high positive emotional, psychological and social functioning (Keyes, 2002). Keyes (2002) suggested, individuals with complete mental health have high levels of well-being and are subsequently flourishing in life. Languishing individuals have low positive emotions and low positive functioning. This point suggests that languishing is associated to feelings of emptiness and a life of quiet despair (Keyes, 2002). Languishing individuals were six times more at risk of a major depressive episode than flourishing individuals. Individuals, who experience moderate mental health, are neither flourishing nor languishing (Gilmour, 2014).

The Canadian Community Health Survey – Mental Health (CCHS- MH) confirmed that 2.8 million Canadians, 15 years and older, reported having symptoms associated to one or more mental or substance use disorders such as major depressive episode, bipolar disorder, generalized anxiety disorder (GAD) and substance abuse with alcohol and cannabis (Pearson et al., 2013). The WHO (2017) described mental disorders as behavioral patterns that encompass different problems, signs and symptoms. More precisely, mental disorders may affect individuals' thoughts, emotions, behaviors and relationships in a negative way. Statistics Canada (2013) defined mental disorders as conditions that imply high distress or disability, behavioral or psychological dysfunction, or risk of a harmful or poor outcome. Pearson, Janz and Ali (2013) suggested the impact of mental disorders may be observed on multiple facets of an individual's day-to-day life. For example, economic status may decrease due to absenteeism, unemployment may increase due to loss of productivity and medical expenses may increase due to multiple treatments.

Depression and Anxiety

Worldwide, depression is the second leading cause of disability (Ferrari et al., 2013). A total of 3.2 million Canadian adults, equaling 11.3 % of the population, reported symptoms of depression. General signs and symptoms for depressive episodes are altered mood, lack of interest, decreased enjoyment, minimal energy and isolation (WHO, 2017). Depression encompasses characteristics of pessimism, low self-worth, low self-confidence and the inability for problem solving and decision-making (Donaldson & Lam, 2004; Lewinsohn, 1992). Individuals, who consult a professional for depressive episodes, are evaluated and may be diagnosed as having mild, moderate or severe signs and symptoms. Psychotherapy and pharmacotherapy are still the most favorable treatments for depression chosen by medical professionals (Ströhle, 2009). Advances in research on depression have greatly improved researchers' understanding of the neurobiology of depression and increased interest to find more effective treatments (Holtzheimer & Nemeroff, 2006).

Anxiety is a state in which an individual is unable to initiate a clear behavioral path to remove or modify an existing threat to his/her goals (Power & Dalgleish, 2015). Generalized anxiety disorder (GAD) was measured by the Canadian national population health survey in 2012. Results show that 2.6 percent of the Canadian population met the criteria for GAD (Pearson et al., 2013). Currently, only mild and severe levels of anxiety have been identified. Mild levels of anxiety are thought to be normal and can be a positive motivator to adapt to daily stressors (Pary et al., 2003). Severe levels of anxiety may cause high distress and may affect normal daily functioning in a negative way (Pary et al., 2003). Ortega, Ramirez, Colmenero, and Garcia-Viedma (2017) argued that risk avoidance is linked to anxiety and, thus, alters the process of decision making. Anxiety is a state of altered attentional control which causes a general worsening of attentional functioning (Eysenck et al., 2007). It may impact individuals' attention in several ways. For example, Bernstein and Eveland (1982) suggested state anxiety reflects how an individual currently feels and trait anxiety reflects on how an individual typically feels. In other words, state anxiety is felt on a short-term basis while trait anxiety is felt on a long-term basis. Ortega et al. (2017) differentiated state anxiety as mainly alerting and orienting attentional networks (e.g. external stimulation) while trait anxiety affects the control network (e.g. internal control). Individuals with GAD tend to orientate their attention purposely towards negative aspects of information (Mogg & Bradley, 2006). This point suggests that the process of decision-making may be flawed because individuals are unable to let go of threatening information (Fox et al., 2005). Although we have seen growth in research on positive effects of PAE on depression, anxiety disorders have been less frequently studied (Ströhle, 2009).

Comorbidity

Comorbidity is defined as "the presence of more than one distinct condition in an individual" (Valderas et al., 2009, p. 358). Coexisting diseases have become the norm rather than the exception (Valderas et al., 2009). The prevalence of comorbid mental and physical diseases has increased exponentially over the last two decades and will continue to increase in the near future (Sartorious, 2013). Hence, most individuals diagnosed with depression share other mental illnesses (Daley, 2008), chronic illnesses or physical disabilities. Schizophrenia, anxiety and paranoia are all mental illnesses that may be found in association with depression (Daley, 2008). Valderas et al., (2009) associated comorbidity with "worse health outcomes, more complex clinical management, and increased health care costs" (p. 357). Comorbidity is considered as one of the major factors associated with increasing the risk of relapse or recurrence, chronicity, lasting symptoms, suicide and psychosocial impairments (Melartin et al., 2002). Also, comorbidity is tightly linked to poor outcome of Major Depressive Disorder (MDD) (Melartin et al., 2002).

The continuous growth of comorbidity over time has been linked to four crucial elements (Sartorious, 2013). First, the use of medicine has the ability to prolong life without curing the disease but by stabilizing it. This outcome of medicine usage may increase the risk of developing other illnesses. Second, demographically, our population is aging and living longer which, in turn, increases the chances of developing late-onset diseases. Next, the current unhealthy lifestyle epidemic increases the occurrence of multiple diseases to appear at the same time. Diseases such as cardiovascular disease and diabetes tend to develop and appear simultaneously. Finally, environmental concerns, such as increased pollutants, may cause the immunological system to weaken and become more susceptible to illnesses. Comorbidity may impact multiple health outcomes such as mortality, quality of life, daily functioning and health care (Valderas et al., 2009).

Physical Activity and exercise guidelines and associated health benefits

Physical activity and exercise (PAE) is a viable health behavior that may improve health status for all people (Jerome et al., 2009). PAE is defined as any body movement that expends energy (Global Recommendations on Physical Activity for Health, 2010). Guidelines for PAE are discussed by the Global Recommendations on Physical Activity for Health (2010) to maximize health benefits for all age groups. These global guidelines are relevant for (1) cardiorespiratory health (e.g. coronary heart diseases, cardiovascular diseases, stroke and hypertension), (2) metabolic health (e.g. diabetes and obesity), (3) musculoskeletal health (e.g. bone health and osteoporosis), (4) cancer (e.g. breast and colon cancer), (5) functional health and prevention of falls and (6) depression.

The following recommendations focus on the concepts of frequency (e.g. how often), duration (e.g. how long), intensity (e.g. how hard), type (e.g. what type) and volume (e.g. how much overall). These concepts are considered for health enhancement and prevention purposes. Healthy adults, 18 to 64 years, are recommended to complete roughly 150 minutes of moderate-intensity aerobic PAE or 75 minutes of vigorous- intensity PAE each week (Global Recommendations on Physical Activity for Health, 2010). Muscle strengthening activities, involving major muscle groups, should be incorporated to achieve ideal health on two or more weekdays. The minimal time frame to achieve health benefits is 10 minutes of aerobic activity per day. In the context of daily, family, and community activities, typical PAE for healthy adults includes leisure time, transportation (e.g. walking or cycling), occupational (e.g. work), household chores, games, sports or planned exercise (WHO, 2010). Since people with MHP do not seem to engage in PAE daily, the above recommendations may not be met by individuals with MHP even with the knowledge and evidence of its benefits (Ströhle, 2009).

Depression has been linked with low levels of PAE in adolescents and adults when compared to the general population (Ströhle, 2009). For example, Martinsen (1990) expressed that the clinically depressed tend to be physically sedentary and their physical fitness levels are lower than expected when compared to the general population. Adolescents, who reported high depressive symptoms, were also at risk of becoming young adults who participate less in moderate PAE and team sports than adolescents with low to no depressive symptoms (Sabiston et al., 2013). The absence of PAE may have an impact on mental health. For example, it has been hypothesized that lack or absence of PAE may be associated with the development of mental disorders (Ströhle, 2009). If adults with MHP rarely or do not participate in PAE, there may be a higher tendency to develop chronic illnesses such as coronary heart disease, diabetes, certain cancers, obesity and hypertension (Richardson et al., 2005; Ströhle, 2009) due to their sedentary lifestyle (Stanley & Laugharne, 2014). However, there is growing belief that PAE may provide positive effects for individuals with MHP (Ströhle, 2009).

PAE may improve general well-being which may have a positive occurrence on mood, depression and anxiety (Ströhle, 2009). Because of the high number of Canadians that are affected by MHP, prevention programs have expanded to engage all people in PAE and not simply individuals at risk or in remission (WHO, 2017). For example, extensive evidence shows that PAE offers many health benefits to individuals with MHP (Chen & Millar, 1999). In fact, PAE benefits include multiple facets of overall health such as a general increase in aerobic capacity, gross motor functioning, balance, muscle strengthening and quality of life (Stancliffe & Anderson, 2017). Chen and Millar (1999) found that individuals who engaged in moderate activities, such as walking on a regular basis (Richardson et al., 2005), demonstrated more ease in the prevention and management of their depressive symptoms. This point suggests that PAE may have an influence on depression. In addition, improving physical well-being may help increase psychological well-being (Ströhle, 2009). This point supports that PAE, practiced alone or in combination with other treatments, may be effective in alleviating depressive symptoms (Seime & Vickers, 2006).

Rationale for PAE participation and the recovery model

There is growing evidence that PAE has positive effects on MHP when prescribed on its own or as an adjunct to established treatments, such as psychotherapy or pharmacotherapy (Ströhle, 2009). The use of PAE to better physical health and relieve psychiatric and social disability may have the potential to improve the quality of life of individuals with major depression (Richardson et al., 2005). Examination of the PAE-depression relationship has provided insight on the multidimensional benefits of PAE on the body (Craft & Perna, 2004). It comes as no surprise that PAE has an impact on physical health and can provide a wide array of health benefits (Daley, 2008). For example, participating in PAE may benefit in weight management, reducing fatigue and reducing cardiovascular risk (Daley, 2008). It may also improve health status and reduce the risk of premature mortality (Blair & Brodney, 1999; Haskell et al., 2007). These points suggest that the inclusion of PAE in the treatment plan of the clinically depressed may enhance their physical and mental health (Daley, 2008). Further, PAE, like psychotherapy, was found to help behavioral activation in the brain (Brosse, Sheets, Lett, & Blumenthal, 2002). PAE may be a positive alternative to conventional treatments for individuals with MHP.

The most prescribed conventional treatments by medical doctors for MHP are psychotherapy and prescribed antidepressant medication (Daley, 2008). The early success of psychotropic medication in decreasing MHP symptoms “led to optimism among mental health professionals that people with these conditions will recover from their mental illness and lead normal lives” (Jacob, 2015, p. 117). However, in the late 20th century, change in medical practices and societal views became apparent as individuals with MHP began voicing their opinions for new perspectives and approaches to their illness. The recovery model became the radical change that many people desired because it looked at the person and not just their symptoms (Jacob, 2015). It has emerged as a new dimension to care that allows individuals with MHP to take control of their life with MHP and give it meaning (Jacob, 2015). The primary focus of the recovery approach is for people with MHP to build resilience. It emphasizes that individuals with MHP may regain a meaningful life even with persistent symptoms. This form of recovery involves a journey to re-establishing a meaningful life in the community while coping with debilitating symptoms (Davidson & Roe, 2007). In summary, PAE and the recovery model may be a positive alternative to conventional treatments for individuals with MHP.

Challenges with PAE Interventions

Individuals with MHP may face challenges associated with PAE. The main challenges to be explored include motivation, stigma and accessibility. These challenges may express themselves due to the symptoms associated with MHP. For example, Seime and Vickers (2006) found that individuals with MHP were reluctant to participate in PAE even with the knowledge that they were an effective way in alleviating most, if not all, of their depressive symptoms because they lacked energy and feared failing. This point suggests that individuals with MHP are inactive and, thus, miss out on social interactions (Seime & Vickers, 2006). Individuals with MHP may focus on the challenges surrounding PAE, which may cause their reluctance to start being physically active. Due to these factors, adopting and maintaining being physically active may be difficult for individuals with MHP.

Motivation is required to implement PAE in our daily routines. However, it may be strongly lacking for individuals with MHP (Daley, 2008) For example, many lack the energy to complete daily tasks (Daley, 2008), such as making the bed and doing the dishes. This amotivation increases dropout rates from PAE interventions and alternatively decreases the possibility of achieving therapeutic benefits (Daley, 2008). However, PAE have different levels of intensity which may improve adherence to PAE interventions prescribed by medical doctors (Daley, 2008). Moderate levels of PAE, such as walking, tend to be preferred by individuals with MHP in comparison to vigorous levels of PAE like aerobic classes (Richardson et al., 2005). For example, Richardson et al. (2005) found that dropout rates were higher for those people attempting vigorous levels of PAE even if the improvements in cardiorespiratory fitness and weight loss were seen more rapidly than moderate levels of PAE. This point suggests that participants found vigorous levels of PAE to be too demanding and preferred ending their participation altogether. It remains challenging for medical doctors to prescribe the most suitable level of PAE for individuals with MHP (Daley, 2008).

Stigma is a significant challenge to healthy living and PAE participation (Graham, Griffiths, Tillotson, & Rollings, 2013). It affects multiple facets of a person’s lifestyle choices and habits. Three types stigma are most apparent in individuals with MHP. They are structural, social and self-stigma. First, structural stigma is associated to the policies of social institutions that limit access to stigmatized groups of people, such as individuals with MHP (Graham et al., 2017). It is also known as the discrimination of stigmatized groups by an institution, like a newspaper talking about individuals with MHP (Corrigan et al., 2005). Second, social stigma is expressed by dominant groups’ lack of understanding towards stigmatized groups (Graham et al., 2017). Stereotypes are usually what dominant groups learn about stigmatized groups like individuals with MHP (Corrigan & Watson, 2002). They represent a collective agreement on what the general population believes to be true about individuals with MHP (Corrigan & Watson, 2002). However, only people who are prejudiced will endorse these negative stereotypes. For example, believing that all persons with MHP are violent (Corrigan & Watson, 2002). Third, self-stigma includes all preceding stigmas that are negatively internalized and perceived as a person’s own self-image (Graham et al., 2017). Self-discrimination may cause individuals with MHP to stop seeking help and interacting socially with others (Corrigan & Watson, 2002). For example, the fear of being rejected by others may lead individuals with MHP to avoid pursuing life opportunities (Corrigan & Watson, 2002). Due to these stigmas, only 23 percent of individuals with MHP, more precisely major depressive disorder, seek treatment

(Dunn, Trivedi, Kampert, Clark, & Chambliss, 2005). Since individuals with MHP fear being stigmatized for seeking treatment, it may be suggested that individuals with MHP may avoid being physically active altogether due to the risk of being socially stigmatized. However, accessibility challenges may also discourage individuals with MHP to participate in PAE.

Accessibility to PAE is important for individuals with MHP because many will lose interest if it is not accessible. Three major accessibility challenges were found by Graham et al. (2017): geographically inaccessible, unaffordability and rigid schedules. Physical proximity in the community is ideal for individuals with MHP but not a requirement. This point suggests that individuals with MHP may not be able to participate in PAE near their homes. Further, if individuals with MHP must travel in an unfamiliar environment, they might not feel safe and ultimately avoid participating in regular PAE (Graham et al., 2017). Next, costs associated to PAE participation may be unrealistic for individuals with MHP. Graham et al. (2017) found that if PAE interventions were not funded or offered for free to individuals with MHP, many were unable to sustain the extra costs. This point suggests that some individuals with MHP might avoid participating in PAE altogether due to financial insecurities. Lastly, rigid PAE scheduling may be a major concern for individuals with MHP. For example, not providing the opportunity to schedule PAE around other commitments may discourage individuals with MHP to participate in PAE.

Facilitators to PAE Interventions

PAE interventions try to promote the likelihood of individuals with MHP to adhere to PAE and enjoy its benefits for a long time. PAE facilitators have been identified to improve the current lack of PAE participation from individuals with MHP. The most successful facilitators are individualization, structure, flexibility, accessibility and goal targeting (Graham et al., 2017; Richardson et al., 2005; Seime & Vickers, 2006)

An individualized approach may be recommended for individuals with MHP to overcome challenges associated with PAE. For example, accounting for a person's "age, gender, socioeconomic status, cultural background, health status, barriers to activity, and fitness level" (Richardson et al., 2005, p. 327). It may encourage participation and decrease dropout rates because individuals with MHP may feel that the PAE plan was created for them and with their needs in mind. A PAE intervention plan was designed to increase adherence by using an individualized approach for the clinically depressed and showed promising results (Seime & Vickers, 2006). In a small pilot study, clinically depressed participants were enrolled in a worksite fitness center and provided with an individualized fitness assessment. Fifty percent of the participants received brief PAE counseling while the other 50 percent of participants did not. Discussions were focused on relapse prevention, goal setting, planned activity, identifying negative thinking, promoting positive thinking, and the use of PAE for psychological well-being during the brief counselling sessions (Seime & Vickers, 2006). The results show that participants appreciated the assistance in being connected to the fitness center and it was a critical element to the initiation of their PAE program. With this new knowledge that individuals with MHP preferred an individualized PAE plan, Richardson et al. (2005) identified two concepts: structured and lifestyle PAE interventions.

Structured PAE plans, also known as supervised or facility-based PAE programs, offer planned PAE interventions for individuals with MHP. For example, scheduled group walks or regular group PAE classes are considered as structured PAE programs (Richardson et al., 2005). Medical doctors try to ensure safe and appropriate levels of physical activity in a controlled setting by using a structured approach (Richardson et al., 2005). It allows for a better monitoring system as participants are supervised closely. Next, lifestyle interventions focus on accumulating moderate-intensity PAE throughout the day, such as brisk walking (Richardson et al., 2005). It allows for a more lenient approach to PAE as individuals with MHP have the freedom to schedule PAE throughout the day. This type of intervention may be appealing for individuals with severe MHP because of its “flexibility, lower cost and easy integration into daily schedules” (Richardson et al., 2005, p. 326). Richardson et al. (2005) found that both structured PAE plans and lifestyle PAE interventions may be advantageous solutions for people with serious MHP.

However, to overcome more specific PAE challenges, Graham et al. (2017) found important reasons as to why individuals with MHP participated in PAE. The first reason why individuals with MHP participated in PAE was to achieve physical and psychological benefits (Graham et al., 2017). Next, accessible and known locations were preferred by individuals with MHP because they were familiar with the area and felt no judgement from their peers (Graham et al., 2017). For example, if participants felt safe, they were more likely to continue being physically active. Also, flexible scheduling was appreciated by individuals with MHP because it gave them the option of creating their own weekly schedule and it provided them with a sense of empowerment (Graham et al., 2017). Lastly, individuals with MHP participated in PAE to better themselves and to increase their feeling of belonging in the community by building stronger relationships with themselves and peers (Graham et al., 2017). Now that we know specific reasons as to why some individuals with MHP participated in PAE, targeting goals may be useful to stay on track of individual progress.

Initial goals should encourage having a successful experience to PAE for individuals with MHP (Seime & Vickers, 2006). Targeting initial goals to be lower in frequency and intensity than what should be prescribed to the general population may promote PAE adherence for individuals with MHP (Seime & Vickers, 2006). We suggest that if individuals with MHP feel successful and well-supported in their initially-set PAE goals, they may continue to participate regularly in PAE. These facilitators should be strongly considered when establishing a new PAE intervention plan for individuals with MHP. However, even if all facilitators are included, PAE interventions for individuals with MHP will most likely be an adjunct to treatment strategies already in place for MHP and complement problem solving skills, activity scheduling and coping strategies (Daley, 2008; Donaldson & Lam, 2004; Unützer et al., 2002).

Approaches to PAE in the Community

The literature exposes a variety of mental health services available to tend to the needs of individuals with MHP. These services have been crafted with the intention to minimize the high mortality rates by decreasing health disturbances in individuals with MHP. These disturbances include obesity, diabetes, cardiovascular disease and hypertension (Graham et al., 2017; Ströhle, 2009). In addition, another important objective of mental health services is to provide a social network for individuals with MHP. For example, the recovery model is a mental health service that promotes networking among individuals with MHP (Harvey et al., 2010). This type of mental health service may be most optimal for individuals with MHP seeking understanding of their illness.

Davidson and Roe (2007) defined the recovery model as an “amelioration of symptoms and other deficits associated with the disorder to a sufficient degree that they no longer interfere with daily functioning, allowing the person to resume personal, social, and vocational activities within what is considered a normal range” (p. 461). This model promotes understanding and trust for individuals who have overcome their MHP and who wish to share their journey to others affected by MHP. Social networking may encourage individuals with MHP to seek a better understanding of their illness. For example, meeting individuals who have learned to cope with their MHP may provide insight on mental health facilitators. In doing so, this process may help “patients assume an active role in managing illnesses by imparting knowledge, teaching communication skills, and providing social support” (Steigman et al., 2014, p. 193). An important attribution to mental health services is providing social support to individuals with MHP. It promotes self-efficacy, feelings of achievement, distraction from current concerns and improves self-concept (Ströhle, 2009). With the most successful facilitators in mind, we will now discuss differences and similarities in PAE programs, interventions and approaches that were recently created for individuals with MHP.

Peer-Led Physical Activity Programs

Peer-led interventions have become a popular solution when promoting health behavior change and improving the recovery of physical and mental health in adults with MHP (Graham et al., 2017). Typically, these interventions are led by individuals with MHP who have found balance and coping strategies to alleviate their symptoms. In essence, they become important role models who share past experiences of physical and mental health concerns to others presently in need and offer solutions to general challenges. This process provides people in need with trust and a good rapport with their program leader. This intervention strategy was proposed in an attempt to reduce current difficulties in maintaining and engaging participants in PAE intervention programs. Graham et al. (2017) discussed the feasibility and suitability of peer-led programs and concluded that such programs were promising and showed “benefits to engagement, social inclusion, and participant wellbeing” (p. 845). McKibbin, Kitchen, Wykes, and Lee (2014) also suggested that peer partnerships increased the likelihood of participants engaging in healthy behaviors, such as walking and going to the community recreation center.

Illness Self-Management (ISM) Programs

Illness Self-Management Programs (ISM) were initially used for participants with chronic illnesses (Steigman et al., 2014). Mental health researchers believed that ISM could also be an effective treatment for individuals with MHP. In recent years, ISM has been documented for individuals with chronic psychiatric disorders such as schizophrenia, depression and bipolar disorders (Steigman et al., 2014). Results showed a positive correlation between ISM programs and the rehabilitation of individuals with chronic psychiatric disorders. ISM programs resulted in positive outcomes such as personal empowerment, improved quality of life, hopefulness and the ability to advocate for oneself (Steigman et al., 2014).

Studies of ISM interventions on medical conditions have found that the participant’s level of depressive symptom was the most common moderator on a variety of program outcomes (Steigman et al., 2014). Individuals with higher levels of depression, participating in ISM programs, have demonstrated greater benefits than those with lower levels of depression (Harrison et al., 2012). This point suggests that individuals with high levels of depression achieved greater health outcomes while being in groups during ISM programs than non-depressed or less depressed individuals (Harrison et al., 2012). Therapeutic benefits of group ISM for individuals with high levels of depression included better self-esteem and a decrease in social isolation (Harrison et al., 2012). Due to the promising results of ISM programs, subtypes, like the Building Recovery of Individual Dreams and Goals through Education and Support (BRIDGES) program, have emerged.

The BRIDGES program was designed with the help of mental health service users and encompasses each dimension of the construct of empowerment. First, participants are encouraged to increase their self-esteem to promote responsibility and self-management of their mental illness. Next, participants should reconnect with their internal power to promote making good choices and avoid less desirable choices. Lastly, the BRIDGES program encourages participants to become active advocates for social change and engage in community activism. Harrison et al. (2012) found that the program offered effective coping strategies that increased self-esteem, overall morale and empowerment. The BRIDGES program provided positive insight on individuals with high levels of anxiety. It would seem that participants felt a "greater sense of control over their lives", thus "increasing their ability to cope with ambiguity and uncertainty" (Harrison et al., 2012, p. 198).

Illness Management and Recovery Programs

Most of the intervention programs, created for individuals with MHP, do not cure the individual from their mental illness but rather provides them with the tools and the knowledge to live in a more harmonious manner with their symptoms. The Illness Management and Recovery program concept is meant to promote treatments that enable recovery "from" mental illness (Davidson & Roe, 2007). The aim of this program is to provide participants with new meaning and purpose in their life, beyond the effects of mental illness (Salyers et al., 2009). Recovery "from" mental illness is a form of managing one's illness in an effort to rebuild an initial sense of belonging in society for individuals with mental illness. The intention of this approach is to teach individuals with MHP how to set and achieve personal recovery goals and become autonomous in managing their illness (Salyers et al., 2009).

Wellness Recovery Action Planning (WRAP)

The Wellness Recovery Action Planning (WRAP) program encompasses an educational approach to healthier living and a psychological approach by using peer support that is similar to ISM interventions and Peer-Led programs. WRAP is highly used for individuals with comorbid MHP and other disabilities. The aim of WRAP is to provide participants with the resources to identify personal wellness objectives and learn how to use them in their daily life (Cook et al., 2012). Plans include the use of medication as prescribed, PAE and good nutritional habits. Participants also have the opportunity to learn how to overcome certain triggers associated with symptoms, observe early warning signs and deal with crisis periods. WRAP has rapidly become a popular addition to treatment plans in the U.S., Canada, England, Scotland, Ireland, Japan, Hong Kong, New Zealand and Australia (Cook et al., 2012). Results for the peer-delivered WRAP intervention were superior to usual treatment interventions. Participants felt a reduction in symptoms of depression and anxiety and an increase in their personal perceptions of their recovery process from mental illness. These perceptions were translated into positive attitudes that enhanced confidence and goal pursuits (Cook et al., 2012). As symptoms continued to decrease following the group participation, WRAP has proven to be a viable long-term solution for individuals with MHP who continue identifying wellness objectives. This point suggests that participants continued creating weekly WRAPS which allowed them to maintain their healthier lifestyle.

The Recovery Approach

Contrary to the Illness Management and Recovery program, this approach does not focus on eliminating mental illness but rather focuses on constructing a meaningful life around MHP.

Davidson and Roe (2007) defined this concept as recovery "in" mental illness. This type of recovery affects approximately 35-75 % of individuals with MHP. Davidson and Roe (2007) suggested that recovery in mental illness encourages individuals with MHP to live their lives with dignity and autonomy and to pursue personal aspirations while coping with the on-going presence of their symptoms. In essence, recovery in mental illness promotes learning how to cope with the symptoms associated to MHP while being treated in the community (Harvey et al., 2010). The aim of this approach is for individuals with MHPs to learn and develop self-efficacy skills that will promote better quality of life (Gudjonsson et al., 2011). Gudjonsson, Savona, Green, and Terry (2011) identified three recovery principles which are hope, opportunity, and control. These principles are associated with the process of improving the sense of empowerment of individuals with MHP. In doing so, these principles should promote "motivation and engagement in therapy, improve social inclusion, reduce disruptive/violent behaviour in hospital settings, reduce length of stay in hospital" (Gudjonsson et al., 2011, p. 899). The Recovery Journey Questionnaire (RJQ) was created by Green, Batson, and Gudjonsson (2011) and was used as a measure of the recovery approach principles. The results for the RJQ were promising as they were positively correlated with treatment motivation and engagement. Further, Gudjonsson et al. (2011) found that adding recovery journey principles to the program was more effective than simply improving quality of life. The recovery approach has a lot of potential to improve outcome but its effectiveness will greatly depend on the integrity of the programs offered. For example, outlining the treatment options available, assessing the different processes involved in creating and delivering the treatment programs, assigning the framework of program delivery to a professional, and assembling a group of competent and trained staff (Gudjonsson & Young, 2007) are all crucial to the integrity of the program.

Interventions using Self-Determination Theory (SDT)

The use of SDT in interventions may be beneficial to the success of initiating and maintaining lifestyle changes. The theory shows autonomy, competence and relatedness as themes that can maximize participants' intervention experience. Interventions that support autonomy and competence will most likely promote adherence and positive health outcomes. Further, adding relatedness supports adopting new behaviors because a relationship has formed and participants feel connected to change. When discussing autonomy, Ryan, Patrick, Deci, and Williams (2008) argued that participants would lack success in maintaining new behaviors outside of the program if they did not learn to value them and promote their importance. It is necessary to understand participants' personal barriers to change because, once accepted, these barriers may transfer into behavior change. As for competence, it is regarded as a person's experience of confidence to change. Practitioners share inputs and feedback to their participants which provides them with the tools for change to achieve confidence (Ryan, Patrick, Deci, & Williams, 2008). Lastly, relatedness is associated to the relationship between practitioner and participant. Compliance to change behavior seems easier once this relationship is acquired. These themes may help maintain new behaviors over time for individuals with MHP.

Gaps in Community Programs, Interventions and Approaches

Participant adherence relies on the effectiveness of positive outcomes of community programs, interventions and approaches. Unfortunately, adherence to PAE over time has proven to be a difficult task (Ryan et al., 2008). While behavior change in itself is challenging but possible if participants are encouraged and supervised, maintaining this new lifestyle following a program is very challenging (Ryan et al., 2008). This challenge is due to programs being primarily focused on the initiation of change rather than the maintenance of change (Rothman, 2001). Rothman (2001) argued that current models on health behavior change focused on initiating change because it was believed that its maintenance would automatically occur. It has been assumed that behavior change and behavior maintenance apply the same mechanisms in gaining short or long term behavior change (Rothman, 2001). However, these mechanisms are yet to be defined and many people will fall back into old neglectful habits and behaviors. These challenges may be still unclear but it has become apparent that promoting and encouraging lifestyle changes provides participants with the tools to overcome neglectful and harmful habits.

Currently, what seems to be the determinant for long term adherence is providing participants with experiences that will promote internalizing values and skills for change and exposing participants to self-determination (Ryan et al., 2008). The idea that community programs, interventions and approaches are trying to convey is that of “dual tasks of initiating and maintaining change” (Ryan et al., 2008, p. 2). This point suggests that interventions that promote initial change in behavior will contribute to subsequent efforts to maintain the initial change acquired (Rothman, 2001). The issue remains that “the process by which people transition from one phase [initiation] to the next [maintenance] is not well defined or understood” (Rothman, 2001, p. 68). However, Kwasnicka, Dombrowski, White, and Sniehotta (2016) found five theoretical themes associated to maintaining behavior change. These themes are maintenance motives, self-regulation, resources, habits and contextual influences. The identification of these themes may encourage behavior sustainability over time. Further, repeating new behaviors while respecting all five themes may increase the probability of it being maintained (Kwasnicka, Dombrowski, White, & Sniehotta, 2016). More research is needed to assess and confirm the likelihood of actual maintained change for individuals with MHP.

However, human behavior will continue to play a critical role in health outcomes and efficiency of most treatments (Ryan et al., 2008).

Conclusion

PAE has become a positive outlet for individuals with MHP wanting to improve their physical and mental well-being. Completed alone or in adjunct with other primary treatment plans, medical doctors see the usefulness of PAE programs (Daley, 2008). Research supports that PAE benefits affect multiple facets of overall health such as an increase in aerobic capacity, improvement in gross motor functioning, amelioration in balance, improvement in muscle strengthening and in quality of life (Stancliffe & Anderson, 2017). This point suggests that individuals with MHP participating in PAE may improve their physical well-being but also their psychological well-being (Ströhle, 2009). However, individuals with MHP may need additional support to adhere to PAE participation.

The creation of individualized programs has been identified by Seime and Vickers (2006) as a dominant factor to overcoming PAE challenges. Accounting for a person's "age, gender, socioeconomic status, cultural background, health status, barriers to activity, and fitness level" (Richardson et al., 2005, p. 327) will provide for a more successful setting than following a one size fits all approach. Challenges primarily consist of participants' low motivation, feelings of stigmatization and little to no accessibility. As previously mentioned, individuals with depression tend to have low motivation, low energy and low achievement standards. For PAE interventions to be successful, energy, commitment and motivation must come from within the participants.

Peer support has been linked with an increase in adherence to PAE. For example, peer support provides the participants with a feeling of belonging and increases their motivation to continue in their PAE program (Graham et al., 2017). They are considered as important role models who share past experiences of physical and mental health concerns and offer solutions to individuals currently in need. McKibbin et al. (2014) argued that peer partnerships increased the likelihood of participants engaging in healthy behaviors, such as walking and going to the community recreation center. Other intervention programs were identified in this literature review, such as Peer-Led Physical Activity programs, ISM programs, Illness Management and Recovery program, WRAP, Recovery Approach and Interventions using SDT. These services have been crafted with the intention to minimize the mortality rates by decreasing cardiometabolic disturbances in individuals with mental illness (Graham et al., 2017). Further, mental health services provide a social network for individuals with MHP that promotes understanding and trust. These programs offer an opportunity for individuals who have overcome their illness to share their journey to others who wish to learn and understand better their illness.

A significant concern brought to our attention by Ryan et al. (2008) is of “poor adherence to prescribed changes or recommended behaviors over time” (p.2) for individuals with MHP. More precisely, the focus is primarily on initiating change rather than maintaining it. This suggests that adherence over time may be difficult (Ryan et al., 2008) because participants have insufficient tools to maintain their healthier lifestyle habits on their own. William, Deci and Ryan (1998) found that to better maintain behavior change, participants must experience autonomy, competence and relatedness to internalize health-related behaviors.

However, more research should be performed about the short-term and long-term PAE participation for people with MHP. It is important to continue searching for solutions to help individuals with MHP cope with their symptoms, increase their quality of life, participate in PAE programs and continue progressing in the community while overcoming challenges. There is a necessity to explore this domain due to the high prevalence of mental illness amongst adults and high mortality rates caused by cardiometabolic diseases that are comorbid with mental illness. By exploring the perceptions of individuals with MHP in PAE participation, we hope to increase our understanding of how to assist individuals with MHP to become physically active and healthy. The current study will also shed light on their knowledge about PAE in the community. Perhaps, together, we will find new ways to promote and maintain PAE for individuals with MHP (Ussher et al., 2007).

Chapter Three
Method

The purpose of this study was to explore PAE participation in the community for adults with comorbid MHP. This section presents information about the worldview, research design, participants, data gathering procedures, thematic analysis and trustworthiness procedures that guided the current study.

Worldview

Qualitative research is an umbrella term that encompasses many research methodologies (Sparkes & Smith, 2013). The key qualitative research methodologies are ethnography, phenomenology, grounded theory, life history and narrative, critical ideology research and case study (Sparkes & Smith, 2013). The role of the qualitative researcher is to be an active participant while acknowledging that there are multiple realities in action. The goal of inquiry is to build an understanding of phenomena, such as human behavior, culture or social organization (Sparks & Smith, 2013). The process of inquiry is to describe the interpretations of others on a given phenomenon (Creswell, 2007). Once the researcher decides to follow a qualitative research path, a worldview is chosen to further shape the research. A worldview is meant to narrow the stances taken by the researcher and it shapes the questions examined (Creswell, 2007).

A social constructivist worldview design was deemed most optimal for this study because it was concentrated on the perception of adults with comorbid MHP and their PAE participation experiences. Creswell (2007) explained social constructivism as a way to explore individuals' understanding of the world they live and work in. Constructivists create subjective meaning through interactions with others, historical norms and cultural norms that show the complexity of social constructivism (Creswell, 2007). Thus, the researcher develops a theory of meaning rather than having a theory prior to starting (Creswell, 2007). In doing so, constructivist researchers study through interactions with study participants and focus on individuals' lives and unique contexts (Creswell, 2007). In fact, the goal is to "rely as much as possible on the participants' views of the situation" (Creswell, 2007, p. 20).

Research Design

A qualitative case study research design was used for this study to explore the issues through one case within a real life context (Creswell, 2007; Yin & Campbell, 2018). Yin and Campbell (2018) suggested that "Case study research consists of an all-encompassing mode of inquiry, with its own logic of design, data collection techniques, and specific approaches to data analysis" (p.16). This approach enables an in-depth investigation of a contemporary phenomenon within a real-world context (Yin & Campbell, 2018). In doing so, the case study can describe, interpret, and evaluate a phenomenon or build theory (Merriam, 1998). For example, the issues surrounding PAE participation in the community for adults with comorbid MHP were explored for the purposes of the current study.

Case studies are differentiated by their size and may include more than one case (Creswell, 2007; Merriam 1998). For example, the case may involve one individual, multiple individuals, a group or a whole program (Creswell, 2007). A single instrumental case study approach will be used for this study because it could provide insight into a particular situation (Granby, 2010). For example, in this study, the particular situation was the exploration of community PAE for people with MHP. This point supports that the focus was on an issue to which one bounded case demonstrated the phenomenon of interest (Creswell, 2007). In this case, the phenomenon surrounded how adults with comorbid MHP chose to participate in PAE in the community. Hence, the examination of this case provided insight on the current issues (Stake, 2003).

Participants

The identification of the boundaries around a sample helps to define who or what the study is about. A research ethics certificate was received from the appropriate Research Ethics Board (REB) prior to recruiting participants. Purposeful sampling was incorporated to help with the selection of information-rich cases to clarify the questions under study (Patton, 1990). A purposeful sample of six participants, three men and three women was obtained. They were between 35 and 52 years, with comorbid MHP (See Table 1). They spoke French and/or English. All participants were selected with the help of a staff member from a center within the larger institutional treatment program. This program is an outpatient clinic for people with varying mood disorders. It offers short to medium length outpatient services that are designed to help prevent relapse and promote rehabilitation in the community. For example, cognitive therapy, psychoeducation, PAE, and social activities are some of the services offered in this program to people with MHP.

Table 1 Participant Information

Participant	Age	Gender
1	36	F
2	37	M
3	38	F
4	52	M
5	51	M
6	35	F

The potential participants received a personal invitation from the coordinator, on behalf of the primary investigator (PI) that invited each person to consider participating in the study after ethics approval was obtained. Each verbal or email invitation included an introduction to the study's purpose, a brief description of the inclusion criteria, and contact information (i.e., university email address and research lab phone number). Individuals who were interested had the opportunity to contact the graduate student directly by person, through email or by laboratory phone. She then scheduled a meeting time for each potential participant where she would fully explain the study and each participant's rights in depth. Data gathering only took place once the participant had signed the consent form (See Appendix A, Annexe B).

Data gathering procedures

The gathering of data in case study design involves the use of multiple sources of information such as questionnaires, interviews and field notes (Creswell, 2007). Demographic questionnaires, semi-structured interviews, audio recordings of the interviews and field notes were used for this study. First, a demographic questionnaire was used to gather personal background information for each study participant. Information was mainly focused on the individual's age, gender, level of education, current PAE participation status and if he or she was currently engaged in hospital- and/or community-based PAE (See Appendix C, Annexe D).

Next, each participant underwent one in-depth semi-structured interview. Jamshed (2014) suggested that interviewing participants "is the most common format of data collection in qualitative research" (p.87). Semi-structured interviews may provide greater control to the participants and allow them to speak their minds (Sparkes & Smith, 2013). This point suggests that the PI gained deeper knowledge and understanding about the research phenomenon by providing more control to the participants (Sparkes & Smith, 2013). Thus, study participants were asked predetermined open-ended questions to collect in-depth data (Jamshed, 2014) and were not asked restrictive closed questions (Creswell, 2007). This research method gathered insight on what the researcher was unable to observe directly, such as the actual perceptions and experiences of the participants (Patton, 2015). Hence, the researcher was able to gather important information on the topic of interest while providing participants with the chance to express their own thoughts and feelings (Sparkes & Smith, 2013).

The graduate student used a pre-planned interview guide to direct the conversation (Sparkes & Smith, 2013). The interview guide was developed by the PI and her supervisor who had experience in qualitative research (See Appendix E, Annexe F). Pilot testing the interview guide occurred prior to starting data gathering. The PI practiced her interview guide, flow, and timing with one graduate student. This practice helped the PI to make necessary modifications to the questions in the interview guide. Further, the pilot interview ensured that she respected the length of time expected per interview (e.g. 45-60 minutes). Following pilot testing, the interview guide was ready for use in the study.

Field notes were taken by the graduate student during each interview. Phillippi and Lauderdale (2017) suggested field notes as a “means of documenting needed contextual information” (p. 381). They are meant to help understand participant meaning. In qualitative research, field notes are indispensable because they construct rich descriptions for analysis (Philippi & Lauderdale, 2017). Notes included personal thoughts and ideas regarding the research interviews, non-verbal signs presented by the participants and interesting observations made by the interviewer during the interviews. Jottings during the interviews must be converted into formal field notes on a daily basis (Yin & Campbell, 2018). The use of field notes helped inform some of the analysis throughout the research process.

The graduate student tried to establish a good rapport with participants prior to starting the interview process. Individuals, who wished to participate in the study, read and signed a consent form in the presence of the graduate student only after she had explained and described the research study and the participant's rights in detail. After signing the consent form, participants immediately filled-out a five-minute demographic questionnaire that she collected and kept for analysis purposes. Interviews were conducted right after the demographic questionnaire was completed.

Interviews were held at the RC. They were scheduled on a regular basis and were held and recorded in a soundproof conference room at the RC. Participants were familiar with the environment, which we believed to alleviate any stress or concerns that each person may have had. The interview process lasted approximately 4.25 hours, with a range of 25-55 minutes per interview and an average interview time of 42 minutes. Participants were asked to answer open-ended questions orienting the interview more as a discussion with the PI. Participants were, at all times, allowed to end their participation in the study at any time and for any reason. Each participant was thanked by the graduate student upon completion of the interview and he or she received a small gift card for their participation in the study (e.g. 20 dollar Tim Hortons gift card).

Thematic analysis

Audio-recording took place during each semi-structured interview. The gathered data were then transcribed verbatim for the thematic analysis (ThA) to be conducted. All transcriptions and other gathered data were securely stored in a locked filing cabinet in Dr. Harvey's research laboratory and on a password-protected computer to protect the confidentiality of each study participant. Participants were assigned a pseudonym immediately to protect their identity during transcription and the entire research process.

ThA is a significant qualitative research tool that may identify, analyze, organize, describe and report themes found within data (Clarke & Braun, 2013; Nowell, Norris, White, & Moules, 2017). This method may be easily understood and quickly put into application due to its few restrictions. It is a useful method for analyzing the perspectives of different research participants because it may show similarities and differences, and may generate insights (Nowell et al., 2017). Further, ThA is a highly flexible and useful research tool that may provide rich and detailed data (Clarke & Braun, 2013). ThA may offer a more accessible form of analysis, increasing its popularity for researchers who are starting their career (Clarke & Braun, 2013). As qualitative research gains value and recognition, it is important to disclose and create more sophisticated tools to facilitate conducting trustworthy qualitative research (Nowell et al., 2017). For these reasons, ThA has been divided into six phases that were followed for the data analysis in this study.

Clarke and Braun (2013) identified six phases to conduct ThA. Phase one consisted of immersion, which is a way to familiarize the researcher with the interview data. The researcher read the data in an active way to allow for better comprehension of the breadth and depth of its content (Clarke & Braun, 2013). Although time consuming, these authors strongly suggest to read each transcript thoroughly and avoid skipping this initial phase as it will serve as a base for the rest of the analysis. This process was key when interpreting the data because it promoted familiarization with the data for the researcher (Clarke & Braun, 2013).

Phase two involved the generation of initial codes from the interview data. Tuckett (2005) argued that initial codes help to organize the data in meaningful broader groups. The determination of these initial codes led to the third phase which was to identify themes. Various initial codes were sorted into potential candidate themes that, in turn, were reviewed until a common thread emerged through the data (Sparkes & Smith, 2013). Phase four was a continual revision of the candidate themes. This phase removed any non-pertinent themes (Sparkes & Smith, 2013). Clarke and Braun (2013) argued that the data within themes should cohere together but there should be clear and identifiable distinctions between themes. The thematic map was deemed satisfactory so that phase five began with the definition and naming of the themes. They represented the final refinements to the thematic map. In doing so, themes were clearly defined by what they were and what they were not (Clarke & Braun, 2013). For example, in the final analysis, distinctive names were attributed to each theme (Clarke & Braun, 2013). The names must be clear, concise and give an immediate sense of what the theme is about (Sparkes & Smith, 2013). The sixth and final phase involved writing the report which should convince the readers of its merit and validity (Clarke & Braun, 2013). It must be a clear interpretation of the data gathered and analysed (Sparkes & Smith, 2013). Since most of the data gathered were in French, back translation was used to translate the French text into English text for the purposes of this thesis. More specifically, only quotes that appear in the results section of the thesis were translated in this manner. Back translation is a popular method for assessing the quality of translated text (Tyupa, 2011). To ensure the quality of the translation, back translation is often used to establish an equivalence between the original text and translated text (Tyupa, 2011). While a professional translator is usually recommended to complete the back translation process (Tyupa, 2011), we utilized the services of a French speaking Kinesiology professional who was familiar with the colloquial and professional language of PAE. This professional helped the researcher with the back translation process because he understood the linguistic meaning and specific expressions found in the text (Tyupa, 2011).

Trustworthiness

Zitomer and Goodwin (2014) identified six criteria for adapted physical activity (APA) qualitative research designs. Coherence, reflexivity, credibility, resonance, ethics and significant contribution are the names of these criteria and there are associated strategies to encourage trustworthiness (Zitomer & Goodwin, 2014). Trustworthiness was encouraged in this study through the use of coherence, reflexivity, credibility, resonance and ethics. These five criteria and related strategies are discussed below.

The first criterion is coherence and it involves a research study that follows a distinctive path from its introduction to its conclusion. Coherence may be described as achieving its stated purpose, accomplishing the claims associated with the research, cohesion between the methods and theoretical approach, and links between literature review, methods and findings. The study followed a consistent path from its introduction to its conclusions to achieve coherence (Zitomer & Goodwin, 2014). Coherence was respected because the study was using a social constructivist worldview and associated case study research design which explored individual's understanding of the world they live and work in. Further, data were gathered using multiple sources of information such as questionnaires, interviews, audio recordings and field notes. Thus, the choice of this worldview and research design encouraged the study to be consistent and coherent.

The second criterion is called reflexivity and it involves the "means by which the researcher realizes his/her integral part in the investigated phenomena" (Zitomer & Goodwin, 2014, p. 201). The objective is to involve researcher self-awareness and a critical examination of the research. Researchers must be conscious that their own experiences may influence their interpretation and, to avoid bias, they acknowledge their position in the research to make an appropriate interpretation of the results and findings (Creswell, 2007).

Strategies to achieve reflexivity may be to reflect on possible personal biases and note them in a personal journal (Zitomer & Goodwin, 2014). For example, reflexivity involves understanding my role in this study. I am the graduate student for this Masters study because I have personal ties with the topic of interest and have acquired theoretical and practical knowledge on PAE and APA. When reflecting upon this study, my family's MHP history may have played an integral role in my interest to know more about MHP, more precisely, depression and anxiety. I witnessed how depression affected the emotional and physical well-being of a family member and I recognized the difficulty that each person may face to achieve small tasks. In addition to my personal interest, I completed my undergraduate degree in Physical and Health Education (PHE), which has taught me the value and importance of PAE as an integral part of daily living.

I took a course in APA during my second year of my undergraduate degree and my academic path became clearer. The opportunity to work with students with disabilities (SwD) provided me with the theoretical and practical knowledge to achieve individualized PAE programs. My participation continued in APA through an advanced topics course and I was a teaching assistant (TA) in APA. Throughout this experience, I gained a considerable amount of knowledge on APA and working with SwD made me more compassionate. I also completed a special topics course with my thesis supervisor during an eight-week period where I went to the RC within the hospital center every Saturday morning to help engage young pre-adolescents with

Attention Deficit Hyperactivity Disorder (ADHD) in PAE. This experience helped to expand my social network at the RC, familiarise myself with the environment, and it opened my eyes to research. Working closely with my thesis supervisor increased my interest to work with individuals affected by MHP. Furthermore, I worked as a Zootherapist for Zootherapie Québec. My assigned milieus included specialized schools, residences, centres d'hébergement de soins de longue durée (CHSLD) and psychiatric hospitals. My clientele was very diverse and I had to modify many of my activities to suit the needs of my clients. Further, age, psychological and physical conditions, and motivations of individuals needed to be considered for my activities to be successful. The experience was challenging but very humbling. I have been clearly interested to learn more about MHP and hopefully find plausible solutions to increase PAE participation.

Credibility is the third criterion and it represents the experiences shared by the participants (Zitomer & Goodwin, 2014). Strategies for credibility may include triangulation, member checking, prolonged engagement and rich descriptions. Cohen and Crabtree (2008) describe credibility as the degree to which a phenomenon accurately represents the experiences shared by participants and observed by the researcher. Triangulation may be most impactful when encouraging trustworthiness for this study. It suggests using multiple sources of evidence, which is recommended when following a case study research design. In fact, a major strength of case study research design is using multiple sources of evidence (Yin & Campbell, 2018). This study used multiple sources of evidence, such as questionnaires and interviews with audio recordings. Further, triangulation fulfills the basic motive for doing a case study, which is "to do an in-depth study of a phenomenon in its real-world context" (Yin & Campbell, 2018, p. 127). In doing so, credibility was an important asset to encourage trustworthiness.

The fourth criterion is called resonance and it is the impact the research has on its readers (Zitomer & Goodwin, 2014). The most used strategy for resonance is rich description that should draw the reader’s attention (Finlay, 2006). Resonance is the ability to expand the reader’s appreciation and understanding of the phenomenon presented (Zitomer & Goodwin, 2014). Finlay (2006) suggested using rich description to draw the reader's attention to achieve resonance. Rich description may be supported by the use of data triangulation. We suggest that rich descriptions emerged and will impact the readers by using multiple sources of evidence (e.g., questionnaires, interviews, and audio recordings).

The fifth criterion is ethics and it is the integration of values and moral principles in the actions taken throughout the research (Brynjulf, Kirsti, & Torjus, 2009). For example, informed consent, maintaining respect throughout the research process and collaborating with participants are all ideal strategies for ethics (Zitomer & Goodwin, 2014). They are standards for ethics in qualitative research so that participants being researched are represented fairly (Fossey, Harvey, McDermott, & Davidson, 2002). For example, informed consent is an essential part of research involving human participants. The use of informed consent protects the human rights of participants as they are informed of the study prior to its initiation (Byrne, 2001). The meaning of respecting participants throughout the research is to continuously keep them informed about processes and procedures throughout the study (Walsh & Downe, 2006). Researchers who collaborate with their participants may provide them the opportunity to share their views which may create valuable relationships (Zitomer & Goodwin, 2014). For our study, we collaborated with our participants by informing them about all the steps included in the study and their implications prior to signing the consent form. For example, the study’s confidentiality section was explained in detail to our participants. We took the necessary time to explain all the steps we would take to make sure each participant’s identity is kept safe. For example, we emphasized that they each had a pseudonym and all information would be kept in a locked cabinet in Dr. Harvey’s hospital-based laboratory. These precautionary steps were necessary to protect participants’ identity.

The final criterion is significant contribution that provides clear scientific context and purpose that grounds new research within previous research (Elliott, Fischer, & Rennie, 1999; Parker, 2004). It is essential in providing deeper understanding, clarifications and new insights on various phenomena. We believe that this study was a substantial contribution in this research area. Individuals with MHP were able to express their thoughts and voice their opinions about community PAE. Also, to our knowledge, this study is possibly the first of its kind in relation to understanding the relationship between the recovery approach and PAE. It is still unclear as to how people with MHP plan to be physically active in the community. Hence, this study attempted to explore the perception of individuals with MHP in relation to the recovery approach and community-based PAE. The exploration of a recovery approach to PAE in the community is important because it is an interesting alternative to meeting the PAE needs of individuals with MHP. This study generated greater opportunities for future research in this area.

Chapter Four
Results

The purpose of this qualitative research study was to explore perceptions of PAE participation in the community for adults with comorbid MHP. The interview process lasted approximately 4.25 hours. A total of 93 pages resulted from the verbatim transcription process. The interview data were analyzed through the use of thematic analysis by the PI (Terry, Hayfield, Clarke, & Braun, 2017). Three themes were identified from the thematic analysis: (a) *Mental health problems*, *(B) Physical activity and exercise*, *and (c) The community*. Each theme and associated subthemes are described below, with pseudonyms used in place of the participants' names and the names of people or locations mentioned during the semi-structured interviews.

Theme 1: Mental Health Problems

The first theme was defined as "Mental Health Problems" since participants shared their past and current experiences with MHP. This theme is composed of six sub-themes: "*Life before MHP*", "*Comorbid MHP*", "*Medical treatment*", "*Side effects from medications*", "*Finances*" and "*Body image*".

The first sub-theme, *Life before MHP*, was identified because participants expressed not always having MHP. The participants described their life before MHP and shared insight on activities they enjoyed doing, how they spent their time and reflected on their time spent now and time spent then. Participants shared different activities that they enjoyed doing prior to their MHP.

> Go to the restaurant. Going to parties with friends. Invite people over. Cooking! (P2)
>
> Last year, I did a lot of outings. I saw many shows. (P3)

> I built a gym in my house. I have a Boflex. I have a stationary bike. I have weights. I have a bench. I'm fully equipped. The floor is made of rubber. I set up a room in my duplex for that. (P4)
>
> Because I have a spinning bike at home and until last year, I used to do it twice a day. (P5)
>
> It used to be me. When I fell into my depression last year, I gave up! I was the one who shoveled the snow in the winter and I was the one who cut the grass in the summer. (P5)

Some participants described how they spent their time on a typical week-day prior to their MHP.

> I was completing an online university program and working part-time. It didn't bother me so much because I worked in food production. So I was 40 hours a week or 32 hours, depending on the number of courses, standing and very rarely sitting. Unless I closed the store or worked in the offices. (P3)
>
> Before, I was working full time and had big jobs with big salaries. I had a schedule of 40, 50 or 60 hours per week of work. (P4)
>
> I worked in a convenience store. I was in charge of receiving goods and purchasing goods for the store. (P5)

Participants reflected upon how they spent their time then compared to how they spent their time now.

> It's not me! I used to work before. I was busy. I was focused. I had something to do. (P3)
>
> What I could do at home is work out my muscles and do cardio. I have a stationary bike. I can do 20 to 30 minutes of cardio on this. I have a boflex. So I can do resistance training and I have a bench with weights that go up to 30, 35 and 40 pounds. I can work out my pectorals, deltoids, biceps, laterals and dorsal muscles. I use resistance bars and always finish with my abs. (P4)
>
> If I look back in time, maternity has meant that my priorities were no longer focused on physical activity. We spend energy differently with children but it doesn't have the same benefit. (P6)

The second sub-theme, *Comorbid MHP*, explored how participants spoke about living with comorbid MHP. They shared insight on diagnosed MHP, how it affected them and realities of living with comorbid MHP. Participants discussed their diagnosed MHP. More precisely, they described the different illnesses that they were currently living with.

> There was a huge problem! And so, I had to get my general practitioner to refer me to the clinic because I'd gotten a diagnosis from my psychiatrist for an eating disorder. For bulimia. (P1)

> Because right now I think I reached rock bottom. My mental health problems simply come from problems that occurred in the past but they were triggered by a concussion. I had to see a physiotherapist who specializes in concussions. (P3)

> Drug addiction, in my case. Alcoholism and then briefly other drugs. It quickly became a kind of slippery slope. (P4)

Some participants described how their comorbid MHP affected them on a regular basis.

> So, because it's a vicious cycle with the eating, I'm trying to exercise to lose weight. But also trying not to have cravings. When I binge eat, I find I want to be more physically active after. Because I want to get rid of the calories. (P1)

> But it lasted several years and it was stretched in length when it was supposed to last only a year or two. It turned into four years and now that it's been over for the last two years, I'm stuck with broken pots. It was just a constant discomfort of living. Permanent and non-stop. (P4)

> There are so many factors. It was really the lack of energy, the feeling of not being able to do anything and not being able to focus on a task. It's really a big lack of motivation. When you cry for a whole day, you won't think about doing anything else. (P6)

A few participants shared insight on some of the realities when living with comorbid MHP.

> There are a lot of other things at my disposal too but right now I'm at a point where things are not going well and I have to do something. Because all my projects are falling apart this year and it shouldn't continue like this. (P3)

> If I take the worst moments during my depression or before being hospitalized, for example, I had not eaten for two months. I had completely stopped eating. Simply because I was unable to make food for myself. I didn't have the motivation to do it. I was eating barely anything. I would swallow a few things and drink an astronomical amount of white wine. That's about what fed me. Because it was a very powerful anesthetic that lasts and must be constantly maintained.
> (P4)

> It's really a personal distortion. Oh yes! I know my patterns. Because rarely when you go somewhere to play sports do you find someone that will judge you. But if you choose an

> environment that you know there are certain types of people who have the "outfit" and the neat appearance and all that, you feel that there is a homogeneous group of people. And you, you see yourself coming in with your own luggage and your own faults that you perceive. They may not be visible but it makes the experience much more vulnerable. (P6)

The third sub-theme, *Medical treatment*, explored the medical treatment participants received from medical professionals. Participants discussed reaching out to a medical professional, thoughts on their medical treatment and their experience participating in the larger institutional treatment program for a period of eight weeks. Some participants explained reaching out to their medical professional for help.

> I declared to my psychiatrist that I needed help and I was hospitalized for 30 days. (P4)

> I was referred by the CLSC through my doctor. So the CLSC referred me and I met with the teams here to be evaluated. So unlike others who are hospitalized, I am at home but I needed a helping hand to get through this depression that is persistent and to have a better follow-up with the psychiatry team to adjust the medication if necessary. Also, to give me a structure and motivate me to return to an active life. (P6)

Participants shared their thoughts on the medical treatment they were receiving.

> Well, it is my goal to let the painkillers go. I will probably need antidepressants for the rest of my life because this is my third depression. (P5)

> My doctor strongly encourages me every year to be more physically active or to do a little more because my muscle mass is not big. (P3)

One participant shared negative thoughts on the medical treatment he received.

> Because I feel like I've been stuffed with pills. Without any other support, help, or other. Things to manage anxiety and depression. So having activities like that, physical activities or other, it would have probably decreased my medication by half. That's for sure! (P2)

Some participants knew exactly what the larger institutional treatment program offered during the eight weeks and shared their thoughts about it.

> I do group therapy in the morning. It is not necessarily every day but every week. The program includes group therapy, psychoeducation and physical activity. It's Wednesday

> today so it's physical activity this morning and psychoeducation after. We had a nutritionist today to explain some things about nutrition. (P4)
>
> It is a theoretical course on the different aspects of mental health. Also, we learn different aspects, methods and techniques. (P4)
>
> It's actually five days for four weeks. Only half days. And, in total, it's eight weeks. So, after that, it falls to three days a week. (P6)

However, one participant mentioned not knowing what the program entailed and what he was supposed to achieve during the eight weeks.

> I didn't really get a program. I just got a schedule. So, I don't know what exactly the program is. What is the ultimate goal? I have no idea!
> (P2)

The fourth sub-theme, *Side effects from medications*, explored how participants reacted to the medications they were currently taking. They described reasons for taking multiple medications and how their body reacted to them. Participants explained why they had to take multiple medications for their MHP.

> Just to adjust some kind of medication but it didn't change a lot! Actually, the only thing they wanted to adjust were my sleeping pills. Things to help me sleep because I was also unable to sleep. Unable to eat and hygiene went out the window and cleaning. The housework in the house, even the things I have time for, I couldn't do it. (P4)
>
> If I don't sleep, I can't function. So I don't want to spend what I have left on physical activity. (P6)
>
> Because my depression is so bad, not being able to get up and get into the shower. Not being able to put on a bra. So, going to a gym without a bra is an issue. So, not having the energy to put on bra but going to the gym without a bra is a problem. (P1)

Some participants shared how their body reacted to taking multiple medications.

> There were issues of having a lot of somnolence around medication. I was feeling very drowsy in the morning. (P1)
>
> The pills that relax me too much and make me tired. I noticed that since they increased my pills, I try to go to bed as early as possible but, in the morning, I get up tired. I wake up at a quarter to 7:00 for my pills and I'm tired. Like now, I'm still tired! At noon I'm

> going to take a nap before I go home. I try not to do it in the afternoon. I try to stay outside, get some air and walk a little to the convenience store and back. (P5)

The fifth sub-theme, *Finances*, explored participants financial situation since being diagnosed with MHP. They discussed lack of financial support considering their MHP.

> There’s no clear indication that there is a therapeutic program here. Welfare won’t necessarily support transport or fund us on public transit. (P1)
>
> I have no financial resources after this, except maybe in my RRSPs, which I would have liked to avoid as much as possible. I'll see if I can apply for social assistance. I'll try to do that. It costs nothing to try. I don't think I'm going to get it because I have a back-up in my RRSPs. I'm going to try because I've never really seen this program before. I will take the time with the person and I will let her explain clearly how it works. If I am entitled to it, how much I am entitled to have and what are my restrictions right now. If it doesn't work, I may be under financial stress, but it won't do me any good if I stress. Because the more time goes on, the more inevitable it is and I know it. I will be in a precarious financial situation and I may not have a choice but to look at what my RRSP investments. (P3)
>
> I look at the path I have taken with my insurer, Manulife, where there is a lot of psychological follow-up. Because I've had a lot of trouble with the insurance company. When you have a problem like this, it's particularly difficult to defend yourself. (P6)

The sixth sub-theme, *Body image*, explored how participants viewed themselves physically. They discussed weight gain and personal feelings associated with their body image. Most participants shared having gained weight since being diagnosed with MHP.

> I would like to have a little more muscle mass because I have gained weight, even if it doesn't seem like much. I've gained weight and it's all squishy. I tell myself that as long as I gain weight, even if it's a healthy weight. (P2)
>
> And I'm still a little overweight. I am considered obese level one. I have lost a lot of weight recently, but unfortunately not in the right way because I was in the hospital. (P3)
>
> In my case I gained weight and I see it. It's been like this for several years. It's not recent. (P4)

Some participants shared their personal feelings about their current body image.

> It's also embarrassment because I'm larger. There's a weight issue because everyone's less large than me. But, putting on a bathing suit and body image, it's like an additional stress. (P1)

> I think I'm still in my healthy weight range but it's just the feeling when I walk and feel my stomach move. It's flabby! (P2)

Theme 2: Physical Activity and Exercise

The second theme was defined as “Physical Activity and Exercise” since participants shared insight on their thoughts, feelings and perceptions of PAE. This theme is composed of four sub-themes which are: “*Motivation to be physically active*”, “*Reasons for not being physically active*”, “*Preferred physical activity*” and “*Perception of fitness centers*”.

The first sub-theme, *Motivation to be physically active,* explored what motivated participants to be physically active in their community. They shared insight on reasons to be physically active, thoughts and feelings associated with PAE, and health benefits following PAE. Participants discussed reasons to be physically active.

> Currently my favorite thing to do is walking. It's easiest. It's free. It's cheap. It's accessible. I can do it whenever I want. I don’t have to necessarily wait for anyone. I don’t have to commit to a time. I don't have to attend a group. (P1)
>
> I have to have a destination or something to do in order for it to motivate me to leave my home. It can be to go for a walk or to go by bike or bus, it doesn't matter. I have to go do something somewhere. I have to have an activity waiting for me at the destination. (P4)
>
> For the money, that's for sure! It lowered my rent. I liked it. I cut the grass and I was soaked. My forehead was all wet. I was drinking a lot of water. I was much smaller too. (P5)

Some participants shared their thoughts and feelings associated with PAE.

> Well, it gives me energy afterwards. I have energy to get more stuff done. (P1)
>
> I have a little more motivation to do other things. That's it, a little less depressed because that is my illness. (P2)
>
> By doing it more and more, increasing my cardio and increasing my muscle mass, waking up will be easier, and my desire to sleep will gradually decrease. My desire to take naps constantly will also decrease. (P3)

> When you get depressed, your self-esteem is really low. Being able to do games or things like that helps to rebuild my self-esteem. It helps to rebuild the "can do" attitude you've lost over the years because your activity level has dropped or something like that. (P4)

A few participants shared the same primary reason to be physically active which was that they felt more in harmony with their physical body following PAE.

> An impression of an energy in the body that circulates better. A healthier flow of energy. The brain has shifted its focus a little. It took a break. It helped to release something nice and it lifted the little black cloud that we sometimes have over our heads. It makes you forget for a little while about the worries and it allowed itself to have fun in the present moment. (P6)

> The first benefit is that you feel good immediately after physical activity. You immediately feel more comfortable. We breathe better and everything is better. The system is more in harmony. (P4)

Participants discussed the overall health benefits that they felt following PAE.

> It helps. It helps to avoid being sedentary too young and doing nothing. My impression is that it has long term health benefits. (P2)

> Very important for fitness and health. That's about it. Mentally and physically. Both kinds. Especially in my situation, physically and mentally. (P5)

> And if I sleep better, I have more energy. If I have more energy, I want to spend it. (P6)

A participant explained the importance of PAE for individuals over 50 years.

> At 52 years old, you start losing a lot of your metabolism. So, the metabolism, we see it and we really feel it from our body decreasing in functionality. So we can't feed ourselves the same way. We can't do that. And exercising becomes essential. It is no longer an option. It's an age that can betray you if you're not careful. In the sense that you are too young to stop working and stop living, but you are starting to get old enough to feel the effects of your metabolism aging in a direct and physical way. (P4)

The second sub-theme, *Reasons for not being physically active*, described why participants avoided PAE altogether. They described poor accessibility, weather and individual reasons for avoiding PAE. Participants discussed poor accessibility to be physically active. More precisely, cost, inaccessible distance and rigid scheduling that made them not want to be physically active.

> Maybe the distance. To travel by bus. And the fees for a bus pass as well. (P1)
>
> That's because I don't have insurance right now. I'm on employment insurance and it ends next week. (P3)
>
> It's for money reasons, actually. I haven't worked for several years. I find it relatively difficult to find resources. (P4)
>
> Yes, with young children I saw it as a mountain. Going out at a given time, with the children's unexpected events, it really became a mountain that was anxiety-provoking. There was not much fun in preparing to go and do it. (P6)

A few participants mentioned weather as being a major factor for not being physically active.

> Of course it is not recommended if the weather is extremely hot or extremely cold. (P3)
>
> Winter is much less motivating. In addition, they (children) are two and five years old. So, the older they get, the more interesting it gets because they will be able to get dressed a little faster. But we'll mostly be in the backyard. I will go with them and sit down and make a fort. We'll go sliding occasionally but it's really less motivating in the winter. I'm not someone who particularly likes winter sports. We don't ski or anything like that. (P6)
>
> Winter is harder because that’s when the depression is really bad. So, I haven't done much walking in winter. (P1)

Participants shared insight on individual reasons for avoiding PAE.

> I like to run, but I'm a smoker. There are contradictions. I avoid running if I smoked too much the day before. (P2)
>
> When I had a stressful day, the first thing I did was buy 2-3 beers and relax from my day. After that, I would have dinner and watch TV. Then I would go to bed. That's about it.(P4)
>
> I feel good but my legs hurt because I have an artificial leg. Not an artificial leg but hip. And the other hip is also worn out because of my weight. That's why I don't walk too fast. (P5)

The third sub-theme, *Preferred physical activity*, explored what PAE participants enjoyed doing. They shared insight on currently preferred PAE, preferred PAE prior to MHP, and resuming preferred PAE. First, participants discussed different PAE that they currently preferred doing.

> The only real example that I have is my power walking. (P1)
>
> Right now, I'm doing some minor renovations. I did some landscaping. After physical activity, I can push myself more to do my renovations. (P2)
>
> Well, I'd tend to say biking because I have the motivation to do it right now. I even went to see how we could better equip ourselves so that it would be better adapted to the family and that it would be an activity that we could do more. To leave the car also. That's a big motivation for me. (P6)

Some participants shared their preferred PAE prior to their MHP. More specifically, they spoke about their active lifestyles before their MHP diagnosis.

> I live across the street from work. Anyway, I was walking to work. I work with children. I ran a lot. I do crazy things. I was quite athletic. (P2)
>
> When I went to work, I had to walk to the bus and the train stations. I walked the equivalent of 30 minutes per day. (P3)
>
> I started doing yoga at home. For example: Yoga with Adriene on Youtube. She has a big online platform that is well known. I follow her simply because she has a variety of videos that I can choose from which can answer to an immediate problem. (P6)

Participants discussed what type of PAE they would like to resume when they feel better and have better control over their MHP.

> I'm going to start going on my treadmill again. To walk a little bit. To lose weight while watching television. (P5)
>
> I recognized my personal abilities in the pool. I am able to do that more. I am able to go and get some relaxation from the pool. (P6)
>
> Ultimately, it's to be able to regain a structure of life that is more orderly. To be able to find these moments to integrate more physical activity. (P6)

The fourth sub-theme, P*erception of fitness centers*, explored how participants perceived fitness centers. They discussed their perceptions about fitness centers, the expenses associated to fitness centers, and reasons for wanting a subscription at a fitness center. Participants shared their personal thoughts about fitness centers.

> And the reason you asked me earlier why I didn't want to go to a gym is because people usually "mind their own business" at the gym. You come in and everyone is doing their own thing and no one has a conversation with other people. It's kind of my training. I'm in my bubble. I'm concentrating. I'm doing my exercise. I try to target my muscle as much as possible. It's not something that's particularly good for me right now. (P4)
>
> I don't think I'll subscribe myself to a fitness center. I've already done it and I didn't really like working on the machines. I didn't attend their group classes at that time either. Also, there is no fitness center near my house. I think it would be silly to take the car to go workout. It would really have to be a class that is really interesting or peaks my curiosity. (P6)

Some participants discussed their perception of the expenses associated with a fitness center.

> I have a hard time working around gyms. It's expensive to sign up for a gym and that's a big issue. I had a membership for a year at Energy Cardio. It was over 100$. No personal trainer. I did yoga at the gym. It was just free classes. (P1)
>
> I could go to a gym and pay a private trainer. But if I get a trainer in a gym, it's going to cost me $2,000. And I don't have $2,000. (P4)
>
> At the fitness centre with a private trainer. I used to go three times a week. It was one hour per class and it would cost me $60 a week. It was effective. We were boxing. We did a lot of cardio for weight loss. We were doing a little weight training to try to get some mass on my body. That's pretty much what I was doing. (P5)

Participants discussed some reasons for getting a subscription at a fitness center.

> I'm going to go back to work one day. Of course, at that moment, I may not have the choice to go to a fitness centre because their hours are more flexible. (P3)
>
> Because I wanted to box and be motivated. I knew we had results with him. He was motivating me! I would get there and while he was finishing with his client, I would ride a bike. Then we would start boxing and he would make me go in circles. After that I used rubber bands wrapped around a pole. I used to do a lot of movement with the rubber bands. After that we would do some weights before finishing. (P5)

Theme 3: The community

The third theme was defined as “The Community” because it included opportunities for PAE in the community and the methods that participants used to facilitate the search for community-based PAE. The sub-themes of this theme were: “*Physical activity in the community*”, “*Institution program*” and “Ho*w to find PAE in the community*”.

The first sub-theme, P*hysical activity in the community,* explored the current PAE that the participants spoke about in the community. They explained there were multiple opportunities to be physically active in their community because of close proximity for PAE, variety of PAE, or availability of PAE. Most participants mentioned having PAE in close proximity to their homes.

> There are some outdoor activities. There's an Econofitness that just opened not very far away. And around the corner, there's a mega gym, the Pro gym. (P2)
>
> I live across the street from a park. There are tennis courts there. (P5)
>
> I live across the street from a park. There are tennis courts. There was a cardio class that was very close to my house and they offered the opportunity to bring your child to be supervised while we were doing the activity. (P6)

Participants considered that they had a variety of options to be physically active in the community. They discussed possible PAE that they could do in the near future.

> I have a running track in front of my house that I can use to go for a walk. Also, there is a bike path that is two blocks away that I can use to go cycling. (P3)
>
> There is an outdoor public swimming pool open for the summer. (P5)
>
> I am considering looking for a free public pools in my borough. (P6)

Some participants discussed the availability of PAE in their respective community that fit with their current life status.

> But that's the situation I'm in right now. What I would call the kick in the butt to be able to start doing a little more physical activity at home, in my community, or near the borough. We have cultural centres, community centres with indoor swimming pools and fitness centres. (P3)
>
> I am naturally with the children and we play a lot more outside. We go to the park. (P6)

However, one participant discussed the lack of PAE availability for adults over 35 years.

> As for sport teams, it is easily found for people under 35 years. But, as soon as you're over 35 years, it's more rare. For example, the senior team in my borough are people between 30 and 35 years of age. (P4)

The second sub-theme, *Institution program,* explored how participants positively and negatively perceived their current experience following an eight week institutional adapted physical activity (APA) program. They discussed what types of PAE they did, how the program made them feel, and what they expected to benefit from the program.

Participants shared insight on the types of PAE they had participated in during the institutional APA program.

> Generally, Wednesdays are an hour of physical activity. It's usually warm-ups at the beginning. We do something like badminton. Now we're doing soccer baseball. After that we stretch to finish. (P4)
>
> We swim. We do activities like basketball, bowling, or finding pieces in the water and bring them back. Stuff like that. (P2)
>
> Fridays are pool games. We stay in the shallow end and do relay games, or things like that. We have floating objects that we have to take to one end of the pool. Basically any excuse to get us moving in the water. (P4)
>
> We played ball outside, soccer baseball. Outside, it was fun! I didn't get in the field to run a lot. I was the pitcher. The only thing I had to do was to enter the area that would stop the game when I had the ball. I just had to run a little bit. It was enough and I was hot! (P5)

Some participants used the same word, ludique, which means playful and fun activities to explain the type of PAE in the program.

> Wednesday's session was interesting because it was very entertaining and it allowed us to socialize with each other. It was more a game like when we were kids. (P6)
>
> I think it's fun. At the same time, it's more physical activity than I normally do. (P4)

Most participants shared how the program made them feel. Some participants shared how the program made them feel about themselves and their MHP.

> It makes me feel better because I know these symptoms. I live with them. Okay, we may not all have the same symptoms but we have similar symptoms. (P3)

> Well, I feel judged, yes. I know I am sick but I am part of a group of people who are all sick in their own way. Which means it reduces the impact of my problem. Everyone is here for their mental health. It lowers the bar by a lot. (P4)

> But when we live it in a group, we see that there are others like us. The advantage is that we're able to laugh together, do some small talk before the activity and have the opportunity to learn something from a colleague or a teacher. So there are those positive aspects that we do not suspect, or at least, that we do not necessarily think about when we are not doing well. (P6)

Some participants shared how the program made them feel about being physically active in a group context.

> And there's also the fact that it's not competitive, like badminton, we didn't count the points. We didn't have a competition. It was really just the pleasure of playing. It helped me a lot. (P2)

> I'm not on a professional soccer team. I play soccer with people who don't usually play soccer. I'm not saying I play soccer, but it's an example to illustrate that it's not the same mentality, the same competitiveness, or the same competition. No one competes with each other. (P4)

Participants talked about what they expected to benefit from the program. More specifically, they explained how they expected PAE to impact their lives after the program.

> I would like to recreate the physical activity environment that is present here in order to recreate it at home. (P3)

> Whereas if you do group activities, it involves participation and that's how you make friends. (P4)

> Well, on the one hand, I knew I wanted to come here by bike. So it was my trigger for my change of routine. I decided to take the opportunity to change. So that was the trigger. (P6)

The third sub-theme, *How to find PAE in the community*, explored ways how participants could find PAE in the community. Participants shared insight on methods to find PAE, city employees who were perceived as organizing PAE in their community, and using social media as a new way to find PAE. Different methods to find PAE in the community were mentioned by some of the participants.

> There are ads, posters and stuff like that. (P2)
>
> I started my search while using my cell phone. I sent an email and was provided with information about the prices. I was also told that if I had any further questions, to call the center. (P3)
>
> There is a community centre just behind City Hall in my borough where we can go. The centre makes a list or booklet of all the cultural activities found in my borough. It repeats itself from one session to the next but they have a whole range of things to do. I have the whole pamphlet! (P4)

A few participants suggested that city employees were mandated for organizing PAE in their respective community.

> I would really go back to my borough because I have already been in a gym and I know that in this borough, if we have any questions, we can go see someone. There's always someone ready at the pool. There is someone who is always ready in the exercise room who can show you how to use the machines and who can perhaps give you "pointers" to help you. (P3)
>
> These are the activities that are in my borough. These are activities that are organized by the city in the borough. So it's offered close by. In summer, it's easier to go to things like that. (P4)

One participant explained using social media to find PAE. Social media, such as Facebook, was a new and easier way for a participant to find PAE adapted to her and her family's needs.

> But also by following a Facebook group of moms that is quite well known now. I think they have several thousand people in their group. So, by doing the research a little bit with what people were saying, if it was good or bad. I did it like that. (P6)
>
> I was also looking to find and do hiking trails of small distances and not too complicated. I think they would really appreciate it and it's the kind of fun activity that can be done as a family. I downloaded an App to find trails, All trails. (P6)

Chapter Five
Discussion, Summary and Conclusion

The purpose of this study was to explore perceptions of PAE participation in the community for adults with comorbid MHP. Individuals with comorbid MHP (a) expressed differences felt between their past and current life experiences with MHP, (b) had strong feelings associated with PAE, and (c) reported opportunities for PAE in the community and ways to locate community-based PAE. In this chapter, we will discuss the study findings and implications, limitations and delimitations, summary, and conclusions.

Study Findings and Implications

The first theme was labeled Mental Health Problems because participants shared the differences felt between their past and current life experiences with MHP. The participants compared how they spent their time then (i.e., without MHP) to how they spent their time now (i.e., with MHP). All participants shared having an active and fulfilling life prior to their MHP and a sedentary and lonely life with their MHP.

The current study findings indicated that all participants' life experiences may have been negatively impacted by their MHP. For example, they made the comparison between their life events prior to MHP and afterwards with MHP. The participants shared positive life experiences prior to MHP such as being a part-time student, employed full-time, seeing friends, and being physically active on a regular basis. However, their life experiences were negatively impacted with MHP. The participants described loss of motivation, side effects of prescribed medications, precarious financial state, and body image as negative impacts. For example, they first spoke about a loss of motivation to complete daily tasks, isolation, inactivity, and low self-esteem. Other research also suggests that individuals with MHP may experience negative impacts of their illness such as poor self-esteem, feelings of shame, social isolation, poverty, and unemployment

(Oexle et al., 2017; Oliveira, Carvalho, & Esteves, 2016; Vecchio, Fricks, & Johnson, 2001). The participants also reported having a hard time adjusting to their newly prescribed medications because of their side effects. They discussed drowsiness and tiredness as the main side effects felt during the adjustment period (i.e., the time period from when they started taking medication to the start of feeling better). One participant did not approve of the quantity of different prescribed medications he was receiving. He believed that PAE should be included in the medical treatment plan with prescribed medications. He personally felt that increasing PAE may have decreased his medication intake, and, thus, alleviated some of the side effects. This point suggests that alleviating some of the side effects may decrease the adjustment period for individuals with MHP. Seime and Vickers (2006) also found that including PAE, alone or in combination with medications to the medical treatment plan for individuals with MHP, may be an effective way to decrease MHP symptoms and side effects from medications. This area is important to continue to research because the addition of PAE, in combination with medications, may relate to the adjustment period for individuals with MHP. Doctors and APA programs may be able to work more efficiently if the relationships between PAE, prescribed medications, and the adjustment period are better understood for individuals with MHP.

Further, most participants were in a precarious financial state. The participants suggested that there was a lack of support from insurance companies. One participant explained her personal understanding of her insurance coverage plan. She suggested that her insurance coverage plan would not cover the APA program within the institutional treatment program as it may not have been considered as a therapeutic program. Other studies also reported financial instability as a reality for individuals with MHP (Department of Health/Personal Social Services Research Unit, 2011; Elbogen, Tiegreen, Vaughan, & Bradford, 2011; Sharac, McCrone, Clement, & Thornicroft, 2010; Topor & Ljungqvist, 2017). Elbogen, Tiegreen, Vaughan, and Bradford (2011) argued that financial stability for individuals with psychiatric disabilities was a common unmet need. With a limited source of income, the risk of treatment non-adherence may be high because participants may not be able to afford the extra fees (Elbogen et al., 2011). Some participants were hopeful that, with additional support from their insurer, they would be able to remain financially stable and continue getting medical help. Topor and Ljungqvist (2017) also suggested that individuals with MHP should be provided with more financial stability to improve their overall living conditions. Perhaps the current study participants would be able to attend the institutional treatment program without causing financial strain for other basic needs (i.e., clothing, food and shelter) if they had more income (e.g., Elbogen et al., 2011). Future research should investigate various sources of income (e.g., private insurance companies, government funding, etc.) that may be made available for individuals with MHP for PAE purposes. It would be interesting to see if the additional funds would be used to increase PAE attendance in APA programs and, in turn, have positive health, psychological and social effects on people with MHP.

Finally, body image was discussed by participants as a negative impact. The current study found that participants gained weight since their MHP diagnosis. Many studies also found that MHP increased the risk of weight gain because of decreased motivation to sustain an active lifestyle, the effects of psychoactive medications, poor diet, and a precarious financial state (Bartels et al., 2015; Daumit et al., 2013; Gracious et al., 2010; Van et al., 2010). Bartels et al. (2015) argued that the rates of obesity in individuals with MHP were doubled, compared to the general population, which may contribute to an increased risk of cardiovascular disease and lower life expectancy. Daumit et al. (2013) suggested the inclusion of lifestyle interventions to promote better diet and increase PAE for individuals with MHP due to their higher risk of obesity and obesity-related conditions.

This study's participants strongly believed in maintaining a healthy and active lifestyle since their MHP diagnosis. They were appreciative of the larger institutional treatment program because it included group therapy with special topic classes (e.g., nutrition), psychoeducation, and PAE within an APA program. This type of institutional treatment program used a recovery approach which provided the participants with tools to learn how to cope with their MHP in the community (Daley, 2008). The finding suggests that this institutional treatment program, which used a recovery approach combined with PAE, was well defined for the specific needs of individuals with MHP and their recovery process within the community. While many studies reported that treatment programs using a recovery approach were available for individuals with MHP seeking understanding of their illness (e.g., Cook et al., 2012; Davidson & Roe, 2007; Graham et al., 2017; Gudjonsson et al. 2011; Harrison et al., 2011; McKibbin, Kitchen, Wykes, and Lee , 2014; Ryan et al., 2008; Steigman et al., 2014), not many programs integrated PAE as part of the recovery process (e.g., Graham et al., 2017). Future research should explore if other treatment programs using the recovery approach combined with PAE exist in the local community. Other studies could be performed to see what the effects of this combination may bring to people with MHP (i.e., recovery approach and PAE). Improving our knowledge in this area may help to improve the overall treatment experiences for individuals with MHP.

The second theme was Physical Activity and Exercise because the participants had strong feelings about PAE that played a key role in their ability to choose PAE that best suited their needs in the community. The participants discussed different ways to motivate themselves to be physically active in their community. For example, they suggested including PAE while completing weekly chores (e.g., doing groceries) and/or choosing PAE that was easy and cheap to do (e.g., walking and biking) as ways to increase their motivation to participate in PAE. In addition to these different ways of motivating individuals with MHP to participate in PAE, the study's participants also suggested that PAE made them feel positive overall. For example, the participants reported feeling energized, less depressed, more at ease, and sleeping better as positive outcomes of PAE. These positive outcomes towards PAE can also be found in other studies (e.g., Harvey, Hotopf, Øverland, & Mykletun, 2010; Rosenbaum, Tiedemann, Sherrington, Curtis, & Ward, 2014). Hence, it is possible that these positive outcomes of PAE may be additional ways to motivate individuals with MHP to be physically active. Further, the current study findings indicated that motivation associated with PAE may encourage PAE adherence for the participants because it enabled them to integrate PAE in their weekly routine. Vancampfort, Stubbs, Venigalla, and Probst (2015) also found that maintaining frequent and personalized PAE for people with MHP may encourage PAE adherence. Similar research should explore the role motivation may play in PAE adherence since little is known on the perceptions that individuals with MHP have on these types of motivation and PAE adherence.

The participants also discussed reasons to avoid being physically active altogether. These reasons may be considered as potential gaps in community PAE. All six participants suggested issues with high cost rates, inaccessible distances, weather, rigid scheduling, and "gym" cultures surrounding fitness centers as reasons to avoid PAE. These different reasons may interfere and affect a participant's choice to be physically active. For example, some participants did not have the budget to pay for public transportation and/or fitness centers memberships, to travel long distances to do PAE, to include PAE during harsh weather conditions, or to organize themselves and others to participate in scheduled PAE. Graham et al. (2017) also found that individuals with

MHP may avoid PAE if it was too expensive, far, or restrictive in its scheduling. Further, only two participants reported their own individual reasons that affected their choice to do PAE. For example, one participant was a smoker who chose not to jog if he had smoked too much. Another participant had a hip surgery and was still feeling post-surgery pain, causing him to avoid any strenuous PAE. Ryan et al. (2008) suggested that maintaining an active and healthy lifestyle was difficult for individuals with MHP since they were initially involved in a structured APA program and had to continue PAE in the community on their own. Thus, it remains unclear how individuals with MHP make this transition successfully (Rothman, 2001). This area is important to continue to research because these potential community PAE gaps may provide better understanding of the current issues found in PAE avoidance and encourage more PAE participation.

The third theme was labeled The Community. The participants reported opportunities for PAE in the community and they suggested ways to locate community-based PAE. The current study findings suggest that PAE proximity and availability may be required to sufficiently encourage individuals with MHP to be physically active. This study's participants shared multiple opportunities for PAE in close proximity to their homes such as parks, tennis courts, group outdoor activities, and fitness centers. Graham et al. (2017) suggested that PAE found in proximity to the homes of individuals with MHP increased the likelihood to continue being physically active because they felt safe.

Additionally, the current study participants discussed PAE availability that suited their current life status. For example, one participant with two young children reported having a park available nearby that encouraged her to do more PAE with her sons. This study's participants firmly believed in close proximity and availability of community-based PAE. However, one participant also indicated a lack of PAE availability for older age groups in his community. He reported that only a few activities were available for people over 35 years. This same individual had mentioned feeling judged by others during his interview. Perhaps the issue was not only about PAE availability for people over 35 years but rather the fear of being judged by others.

Oliveira, Carvalho, and Esteves (2016) suggested that individuals with MHP may internalize stigma due to social stigma about MHP. Hence, individuals with MHP may accept and apply mental illness stereotypes to oneself (Oliveira et al. 2016). This point suggests that individuals with MHP may not feel accepted in society due to MHP stereotypes, and, thus, avoid social interactions. Perhaps my study's participant could have joined a younger age group to participate in PAE but may have felt he had less value than others due to his internalized stigma (e.g., Oliveira et al., 2016). Future research should investigate the relationship between self-stigma, social stigmas, and community PAE since these factors may influence the PAE participation for individuals with MHP. Improving the community's knowledge on possible stigmas about MHP could, in turn, better the community's understanding of stigmas on MHP, avoidance of social interactions for this population, and potential connections to physical inactivity. In doing so, this additional knowledge may promote more inclusion of the recovery approach within the community's PAE programs.

Further, the study participants suggested ways to locate PAE in the community. They discussed common and new ways to locate PAE in their respective communities. Most of the participants used a variety of common ways to locate PAE in their respective community such as ads, posters, sending emails, asking city employees for assistance, and receiving pamphlets from community centers. One participant also used a new way to locate PAE in her community which was social media. As a young mother, she wanted to find PAE that encouraged families to participate together. She used Facebook and Apps as her main search engines to find family-oriented PAE in her community. Kernot, Olds, Lewis, and Maher (2013) found that new mothers increased their Facebook use during their transition to parenthood. They also suggested that using social media may be relevant as a method to promote positive healthy living for new mothers. The current study findings revealed four common methods to locate PAE (i.e., reading adds, sending emails, reading pamphlets, and asking city employees) and one new way to locate PAE (i.e., social media) used by the participants in their respective community.

Next, this study's participants participated in a larger institutional treatment program, which included an APA program. The APA program offered different types of PAE, such as basketball, badminton, soccer-baseball, and relay games in the pool. In addition to these activities, participants spoke about stretching exercises done prior and after the main activity. The participants suggested that the APA program encouraged good PAE practices to avoid injuries during the activities. Page (2012) also suggested that doing stretching exercises was part of a well-rounded exercise program. More importantly, the current study participants described the PAE component of this institutional treatment program as a playful experience with opportunities for social interactions amongst individuals with MHP. Hence, participants shared feeling positive about their participation in this APA program because they enjoyed the emphasis put on group PAE participation rather than achieving PAE goals such as losing weight. For example, they indicated that during the group PAE activities, they did not feel alone, were not in competition with others, and had opportunities for meaningful social interactions with others who shared similar symptoms. Thus, the participants seemed to fully enjoy themselves and focused on having fun as a group during the PAE activities. This new finding to the literature suggests that individuals with MHP preferred participating in playful group PAE since it may have encouraged social interactions, reduced social isolation, and increased overall enjoyment. These reasons associated with having fun during group PAE may, in turn, encourage PAE adherence and promote healthier bodies and minds for this population because the overall experience was positive for them. Hence, it would be important for future research to further explore the perceptions of individuals with MHP about playful, non-competitive, and socially engaging group PAE programs. Perhaps these reasons may be sufficient to encourage PAE adherence for this population more so than other facilitators such as individualized PAE, structured PAE, flexible scheduling, PAE accessibility and goal targeting (Graham et al., 2017; Richardson et al., 2005; Seime & Vickers, 2006).

Limitations and Delimitations

There were at least three limitations to this study. First, selection bias may have occurred because the researcher was recruiting participants from a single source, the APA program within the larger institutional treatment program. For example, it is possible that participants were already ‘pro-exercise’ and service engaged so they may have provided different answers other than individuals with MHP who were not exercising at all. A second limitation was the age range for our study. The age range was 35 to 52 years, with a limited number of male and female participants. Only three women and three men participated in this study. Thus, the small representation of gender was a major limitation of the study. It could have been strengthened by recruiting a larger sample of men and women. For example, recruiting a larger sample of men and women would have further added depth to the results. Lastly, the back translation process could also be a limitation for this study as a professional translator is usually recommended to do this type of work (Tyupa, 2011). However, a bilingual speaking Kinesiology professional was asked to complete the back translation process with the PI because he was familiar with the colloquial and professional language of PAE. For example, he understood the linguistic meaning and specific expressions related to PAE (Tyupa, 2011).

Two strengths were apparent while constructing this research. First, this study is possibly the first of its kind because it explored the relationships between the recovery approach and PAE in the community for individuals with MHP. This study provided us with new knowledge on the recovery approach used within this APA program and this institutional treatment program, the PAE preferences of individuals with MHP and what may motivate them to adhere to PAE, the potential gaps preventing community-based PAE participation and adherence for this population, and the playful component to group PAE that may ameliorate the community-based PAE experience for individuals with MHP. These points may help clarify what the PAE experiences of individuals with MHP may be like while coping with their mental health symptoms in a community-based PAE context. It should also provide opportunities for future research in the area of community-based PAE for people with MHP. For example, more studies can be done on exploring the impact of APA programs within institutional treatments programs, the relationship between positive outcomes of PAE, motivation, PAE adherence rates, the influence self-stigma and social stigma may have on physical inactivity in community PAE programs for this population, the inclusion of the recovery approach in this community's PAE programs, and the perceptions of playful group PAE as a facilitator to PAE adherence. Second, this research study encouraged individuals with MHP to voice their opinions about community-based PAE which, in turn, demonstrated that we valued each participant's input and were open to listen to and document each person's unique PAE stories. This approach allowed the PI to interview individuals with MHP who were part of a larger institutional treatment program. It helped to uncover how people with MHP felt about participating in community PAE and contributed to the literature by demonstrating different perceptions that individuals with MHP had about community PAE participation.

Summary

The findings answer the central research questions in the following ways. The first research question was: how do people with MHP find PAE in the community? The methods used by the participants to find PAE in the community were by seeing ads and posters, sending out emails to their community centers, obtaining the annual activities pamphlet at their community centers, asking city employees about the different activities available, and using social media such as Facebook. The participants in the study seemingly did not have issues locating PAE in their respective community because these different methods were accessible to them. Thus, all participants took initiative to find PAE in their community. They used methods that were familiar to them and it made the search for PAE easier. Also, participants took into consideration their current life status and found PAE that best suited their needs.

The next research question was: why do they decide to be physically active? The reasons revealed by participants to be physically active were that PAE was mainly accessible, cheap and/or free, allowed participants freedom of choice, and included health benefits. Participants wanted to be physically active because they felt it had increased their motivation, increased their life satisfaction, decreased less desirable health symptoms (e.g., tiredness), and increased their self-esteem. Also, health benefits associated to PAE were discussed by participants such as decreased sedentarism and positive outcomes for their physical and mental health.

The third research question was: what types of PAE programs exist in the community? The types of PAE programs found in the community and discussed by participants were fitness centers, outdoor group activities, and the APA program within the larger institutional treatment program. Most participants shared having access to a fitness center but did not consider it as an option because of the cost and the type of social environment found in fitness centers. For example, some of the participants found fitness centers to be too expensive while others found it difficult to socialize due to the “gym” cultures surrounding them. Also, the study was held during the summer, influencing all participants to participate in outdoor activities. For example, the APA program did their activities mainly outdoors due to the nice weather.

The final research question was: how do they participate in PAE? In this study, the main types of PAE participation included power walking, biking to work, home workouts, active jobs, group PAE, and family PAE. Some of the participants preferred including PAE during their weekly chores while others enjoyed doing PAE during their free time. In this study, there was a clear division between participating in group activities and doing PAE alone. Due to their MHP, some participants shared wanting to be alone while being physically active and others searched for PAE that included more social interactions.

Further, all the participants preferred participating in playful group PAE in the APA program. They shared feeling positive about their participation because it increased their social interactions, reduced their social isolation, and increased their overall enjoyment. These reasons associated with having fun during group PAE may, in turn, encourage PAE adherence and promote healthier bodies and minds for this population because the overall experience was positive for them.

Conclusions

This study explored the perceptions of PAE participation in the community for adults with comorbid MHP. It may be the first study of its kind because it explored the relationships between the recovery approach and PAE in the community for individuals with MHP. Some of the findings are novel and they will contribute to the understanding of the perceptions individuals with MHP may have of PAE in the community. Other findings in this study strengthened the current literature on individuals with MHP and their PAE participation in the community. A thematic analysis provided a clear interpretation of the data gathered, demonstrating individuals with MHP's current perceptions of PAE in the community. This study revealed various perceptions the participants had about living with MHP, PAE participation, and the types of programs available in the community for them. The participants shared that participating in the APA program within the institutional treatment program may help with PAE adherence because they feel more at ease with their illness and it may make this transition easier. It would be interesting to explore if people with MHP who participate in an APA program within an institutional treatment program adhere more easily to community PAE. It may also be important to observe the perceptions of individuals with MHP that do not follow an institutional treatment program and compare them to those who follow an institutional treatment program. The experiences of the six participants from this study demonstrated common perceptions about community PAE. The study findings provide a good rationale for continuing to explore individuals with MHP and PAE participation in the community. This study will contribute to the literature surrounding individuals with MHP and their PAE participation in the community. It is hoped that by involving more PAE programs with the recovery approach increases PAE participation in the community for individuals with MHP and promotes a healthy and active lifestyle for all!

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Appendices

Appendix A

Participant Consent Form

INFORMATION AND CONSENT FORM

Title of the research project :	Exploring the physical activity and exercise participation of adults with mental health problems
Researcher in charge of the research project :	William J. Harvey, Ph.D. Associate Professor Dept of Kinesiology and Physical Education McGill University Research Associate Director, CHAMPS physical activity lab Clinical Researcher, Centre Roberts Douglas Mental Health University Institute
Co-researcher(s) :	Laura Camplani, B.Ed. M.A. Candidate, Adapted Physical Activity Department of Kinesiology and Physical Education, McGill University
Name of the sponsor or granting agency:	This project is being funded privately by Dr. William Harvey
Protocol's number :	*19/06*

1. Introduction

We invite you to participate in a research project. However, before agreeing to participate in this project and signing this information and consent form, please take the time to read, understand and carefully consider the following information.

This form may contain words you do not understand. We invite you to ask any questions that you may deem useful to the researcher in charge of this project or to a member of its research staff and to ask them to explain any word or information that is not clear.

2. Nature and objectives of the research project

Research shows that physical activity and exercise (PAE) offers many benefits to overall human health (Stancliffe & Anderson, 2017). The Canadian Psychological Association (CPA) discussed the importance of PAE on mental health (MH) by suggesting that PAE may help to prevent depression and/or anxiety, reduce daily stress, and increase self-worth (Canadian Psychological Association [CPA], 2016). Also, participation in regular PAE may decrease the risk of the development of diseases like diabetes (Haskell et al., 2007; Richardson et al., 2005). Thus, participation in PAE may be very important to live a better and overall healthier life.

We are interested in studying PAE participation for adults who have experienced mental health problems (MHP) because these adults are at risk for being inactive and unhealthy (Martinsen, 1990). We believe that this study will be the first of its kind to ask people with MHP to describe their PAE experiences in the community. The goal of this study is to explore how individuals with MHP participate in community PAE. Our aim is to understand the perceptions of adults with MHP about taking part in PAE in the community. Thus, the information collected from our study participants may offer new ways to encourage for individuals with MHP to take part in community PAE. The study could also provide opportunities for future research in this area.

Example:
For the realization of this research project, we plan to recruit six to 10 participants. We hope to recruit three to five male and three to five female adults, between 18-64 years, with MHP.

3. Conduct of the research project.

3.1 Location of the research project, duration and number of visits

This research project will take place at [blinded in the thesis for confidentiality purposes] and your participation in this project will last approximately 60 to 90 minutes.

3.2 Nature of your participation

Once you have read the form and have had all of your questions answered, I will ask you to sign this consent form if you choose to participate in the study. There are two main activities for you to take part in if you choose to join the study. First, you will be asked to fill-out a demographic questionnaire that should take 10 minutes to complete. You will be asked to answer general questions about your personal background such as your age, gender, level of education, and current involvement in PAE and exercise.

Next, once you have completed the demographic questionnaire, you will participate in one semi-structured interview with me. The interview is expected to run for approximately 45 to 60 minutes where I will ask you open-ended questions. For example, your answers will probably not be yes-or-no answers but rather an everyday discussion about your experiences in PAE. The questions that you will answer will strictly revolve around your community PAE experiences. You are not obliged to answer any or all of the questions.

You will also be audio-recorded throughout the interview. This means that your voice will be recorded by the researcher. The reason behind using audio-recordings is to help the researcher during data analysis. All recordings will be typed word for word by the researcher for analysis purposes. After the analysis has been completed, we may re-contact you for a second interview to follow up on your answers.

It is important to note that this research study does not require for you to stop treatments, care or medication. For example, if you take any medications, they will not be altered during this research study.

4. **Disadvantages associated with the research project**

We do not foresee any disadvantages with participating in the project. Perhaps some minor personal discomfort may be caused if you express a lack of PAE or frustrations related to PAE.

5**. Risks associated with the research project**

The research team believes that participating in this research project carries little risk to you. In the unlikely case that you experience some form of discomfort, you will be referred to your treating psychiatrist and treatment team.

6**. Benefits associated with the research project**

You may be getting a personal benefit from your participation in this research project, but we cannot assure you of that. **Furthermore,** we hope the results obtained will contribute to the advancement of scientific knowledge in this area of research.

7. Voluntary participation and possibility of withdrawal

Your participation in this research project is voluntary. You are therefore free to refuse to participate. You can also withdraw from this project at any time, without having to give reasons, by informing the research team.

Your decision not to participate in or withdraw from this research project will not affect the quality of care and services to which you are entitled or your relationship with the teams providing them.

The researcher in charge of the research project, the Research Ethics Board of the [blinded in thesis for confidentiality purposes] may terminate your participation, without your consent. This can happen if new discoveries or information indicate that your participation in the project is no longer in your interest, if you do not follow the instructions of the research project, or if there are administrative reasons for abandoning the project.

If you withdraw from the project or are withdrawn from the project, the information and materials already collected under this project will nevertheless be retained, analyzed or used to ensure the integrity of the project.

Any new knowledge gained during the course of the project that could have an impact on your decision to continue to participate in this project will be communicated to you quickly.

8. Confidentiality

During your participation in this research project, the researcher in charge of this project as well as the members of its research staff will gather, in a research file, the information concerning you and necessary to meet the scientific objectives of this research project.

This information may include information such as your name, sex and occupation.

All information collected will remain confidential to the extent permitted by law. In order to preserve your identity and the confidentiality of this information, you will only be identified by a code number. The key of the code linking your name to your research file will be retained by the researcher responsible for this research project.

The information collected as research data will be used by the researcher responsible for the project to meet the scientific objectives of the project described in the information and consent form.

These research data will be kept for at least 7 years after the end of the study by the researcher responsible for this research project. Research data may be published or scientifically discussed, but it will not be possible to identify yourself.

For purposes of surveillance, control, protection, security, your search folder will be accessible by a person mandated by regulatory agencies, by the institution or by the Ethics Committee of the [blinded in thesis for confidentiality purposes]. These individuals and organizations adhere to a privacy policy.

You have the right to consult your research file to verify the information collected and to have it corrected if necessary. In addition, access to certain information before the end of the study could imply that you are removed from the project in order to preserve its integrity.

10. Financing of the research project

The researcher responsible for this project has made a personal donation to fund this research project.

11. Compensation

Compensation in the form of an amount proportional to research participation

You will receive 25 dollars Tim Hortons' gift card for costs and inconveniences incurred during this research study. If you withdraw from the study, or are withdrawn before it is completed, you will receive compensation proportional to the number of visits you have completed.

12. In case of prejudice

If you suffer any prejudice as a result of your participation in the research project, you will receive all the care and services required by your state of health.

By agreeing to participate in this research project, you do not waive any of your rights and you do not release the researcher in charge of the research project, and the establishment of their civil and professional liability.

13. Identification of contacts

If you have questions or experience problems in connection with the research project or if you want to remove, you can contact the researcher in charge of the research project or a member of the research staff at the following numbers: 514-398-4184, ext. 0488#; 514-761-6131, ext. 2125

14. Complaints

For questions about your rights as a participant in this research project or if you have any complaints or comments, you can contact the [blinded in thesis for confidentiality purposes].

15. Conflicts of interest

Principal Investigator declares the following personal interest:
The research findings may be published in specialized medical magazines and research journals or shared with other individuals during scientific meetings; however, it would not be possible to identify you due to the coding system that will be used.

16. Monitoring of the ethical aspects of the research project

The Research Ethics Board of the [blinded in thesis for confidentiality purposes] approved the research project and assures monitoring.

Declaration of Consent

Project title of research :	Exploring the physical activity and exercise participation of adults with mental health problems

Participant's consent.

I have read the information and consent form. I was told about the research project and this information and consent form. My questions were answered and I was given the time to make a decision. Upon reflection, I agree to participate in this research project under the conditions set out therein.

Specific optional consents

Audio/video recording

Do you accept to be videotaped or audiotaped during interviews?

☐ **Yes** ☐ **No**

Future research projects (secondary use)

I agree that my research data be used by the researcher in charge of the research project to carry out other research projects both in the field of mental health, or whether in the field of health promotion, care and of interventions.

☐ **Yes** ☐ **No**

Contact for participation in further studies

I agree that the researcher in charge of this research project or a member of its research staff contact me to propose other research projects.

☐ **Yes** ☐ **No**

Name and signature of participant Date

Signature of the person who obtained the consent if different from the researcher in charge of the research project.

I explained to the participant the research project and this information and consent form and I answered the questions he asked me.

Name and signature of the person who obtains the consent Date

Signature and commitment of the researcher responsible for this research project.

I certify that this information and consent form has been explained to the participant and that his questions have been answered.

I agree, with the research team, to respect what has been agreed to the information and consent form and to provide a signed and dated copy to the participant.

Name and signature of the researcher responsible for this research project Date

Annexe B

Formulaire de consentement du participant

Formulaire d’information et de consentement

Titre du projet de recherche :	Explorer la participation à l'activité physique et l’exercice (APE) d'adultes ayant des problèmes de santé mentale
Chercheur responsable du projet de recherche :	William J. Harvey, Ph.D. professeur agrégé Département de kinésiologie et d'éducation physique université McGill Associé de recherche Directeur du laboratoire d'activité physique CHAMPS Chercheur clinique, Centre Roberts Institut universitaire en santé mentale Douglas
Co-chercheur(s) :	Laura Camplani, B.Ed. Candidat à la maîtrise, Activité physique adaptée Département de kinésiologie et d'éducation physique, Université McGill
Organisme subventionnaire ou promoteur :	le projet est subventionné par Dr. Harvey
Numéro du protocole :	*19/06*

1. Introduction

Nous vous invitons à participer à un projet de recherche. Cependant, avant d'accepter de participer à ce projet et de signer ce formulaire d'information et de consentement, veuillez prendre le temps de lire, de comprendre et de considérer attentivement les renseignements qui suivent.

Ce formulaire peut contenir des mots que vous ne comprenez pas. Nous vous invitons à poser toutes les questions que vous jugerez utiles au chercheur responsable de ce projet ou à un membre de son personnel de recherche et à leur demander de vous expliquer tout mot ou renseignement qui n'est pas clair.

2. Nature et objectifs du projet de recherche

Les recherches montrent que l'APE offre de nombreux avantages pour la santé globale (Stancliffe & Anderson, 2017). La Société canadienne de psychologie (CPA) a discuté de l'importance de l'APE en santé mentale en identifiant les résultats positifs communs de l'AP régulière, notamment la prévention de la dépression et / ou de l'anxiété, la réduction du stress quotidien et l'augmentation de l'estime de soi. (Association canadienne de psychologie [CPA], 2016). De plus, la participation à une APE régulière peut réduire considérablement le risque de développer des maladies chroniques telles que le diabète (Haskell et al., 2007; Richardson et al., 2005). Il est de plus en plus évident que la participation à l'APE peut être un atout important afin de mener une vie meilleure et plus saine.

Avec la notion de ces résultats de recherche, nous sommes intéressés par l'étude de la participation à de l'APE pour les adultes qui ont déjà vécu la PSM. À notre connaissance, cette étude est peut-être la première du genre et elle pourrait offrir des possibilités de recherche future dans ce domaine. Le but de cette étude est d'explorer comment les personnes atteintes de PSM participent à l'APE au sein de la communauté. Notre objectif est de comprendre les perceptions des adultes atteints de PSM au sujet de la réalisation d'une APE dans la communauté. Ainsi, les informations collectées auprès des participants à notre étude peuvent offrir de nouveaux moyens de promouvoir l'APE communautaire pour les personnes atteintes de PSM.

Exemple :

Pour la réalisation de ce projet de recherche, nous comptons recruter un maximum de six à dix participants. Nous espérons recruter trois à cinq hommes et trois à cinq femmes adultes, âgés de 18 à 64 ans, avec PSM.

3. Déroulement du projet de recherche

3.1 Lieu de réalisation du projet de recherche, durée et nombre de visites

Ce projet de recherche se déroulera au Centre situé au [aveuglé dans cette thèse pour des raisons de confidentialité] et votre participation à ce projet durera environ 60 à 90 minutes.

3.2 Nature de votre participation

Une fois que vous avez lu le formulaire et que toutes vos questions ont été répondues, je vous demanderai de signer ce formulaire de consentement si vous choisissez de participer à l'étude. Vous participerez à deux procédures d'étude si vous choisissez de participer. Tout d'abord, il vous sera demandé de remplir un questionnaire démographique, puis de participer à un entretien semi-structuré. Le questionnaire démographique devrait durer dix minutes et vous devrez répondre à des questions générales sur vos antécédents personnels, telles que votre âge, votre sexe, votre niveau d'éducation et votre implication actuelle dans l'AP.

Une fois que vous avez rempli le questionnaire démographique, vous participerez à un entretien semi-structuré avec moi. L'entrevue devrait durer environ 45 à 60 minutes, au cours desquelles je vous poserai des questions ouvertes. En ce sens, vos réponses ne seront probablement pas des réponses positives ou négatives, mais seraient orientées vers une discussion quotidienne sur vos expériences en matière d'AP. Les questions auxquelles vous répondrez seront strictement axées sur vos expériences en AP au sein de votre communauté. Vous n'êtes en aucun cas obligé de répondre à toutes les questions.

Tout au long de l'entretien, vous serez enregistré. Cela signifie que votre voix sera enregistrée par le chercheur. L'utilisation d'enregistrements audio a pour but d'aider le chercheur lors de l'analyse des données. Tous les enregistrements seront dactylographiés mot par mot par le chercheur aux fins d'analyse. Une fois l'analyse terminée, nous pourrons vous recontacter pour un deuxième entretien afin d'assurer le suivi de vos réponses.

Il est important de noter que cette étude de recherche ne vous oblige pas à arrêter les traitements, les soins ou les médicaments. Par exemple, si vous prenez des médicaments, ils ne seront pas modifiés au cours de cette étude.

4. Inconvénients associés au projet de recherche

Exprimer un manque d'AP ou des frustrations liées à l'APE peut entraîner un léger inconfort personnel.

5. Risques associés au projet de recherche

L’équipe de recherche est d’avis que la participation à ce projet de recherche comporte peu de risque pour vous. Cependant, nous ne pensons pas que ce type de risque se produira. Dans le cas peu probable où vous ressentez une certaine gêne, vous serez dirigé vers votre psychiatre traitant et votre équipe de traitement.

6. Avantages associés au projet de recherche

Vous bénéficierez peut-être de votre participation à ce projet de recherche, mais nous ne pouvons vous en assurer. Nous espérons que les résultats obtenus contribueront à l'avancement des connaissances scientifiques dans ce domaine de recherche.

7. Participation volontaire et possibilité de retrait

Votre participation à ce projet de recherche est volontaire. Vous êtes donc libre de refuser d’y participer. Vous pouvez également vous retirer de ce projet à n’importe quel moment, sans avoir à donner de raisons, en informant l'équipe de recherche.

Votre décision de ne pas participer à ce projet de recherche ou de vous en retirer n’aura aucune conséquence sur la qualité des soins et des services auxquels vous avez droit ou sur votre relation avec les équipes qui les dispensent.

Le chercheur responsable de ce projet de recherche, le Comité d'éthique de la recherche de [aveuglé dans cette thèse pour des raisons de confidentialité] peuvent mettre fin à votre participation, sans votre consentement. Cela peut se produire si de nouvelles découvertes ou informations indiquent que votre participation au projet n’est plus dans votre intérêt, si vous ne respectez pas les consignes du projet de recherche ou encore s’il existe des raisons administratives d’abandonner le projet.

Si vous vous retirez du projet ou êtes retiré du projet, l’information et le matériel déjà recueillis dans le cadre de ce projet seront néanmoins conservés, analysés ou utilisés pour assurer l’intégrité du projet.

Toute nouvelle connaissance acquise durant le déroulement du projet qui pourrait avoir un impact sur votre décision de continuer à participer à ce projet vous sera communiquée rapidement.

8. Confidentialité

Durant votre participation à ce projet de recherche, le chercheur responsable de ce projet ainsi que les membres de son personnel de recherche recueilleront, dans un dossier de recherche, les renseignements vous concernant et nécessaires pour répondre aux objectifs scientifiques de ce projet de recherche.

Ces renseignements peuvent comprendre les informations tels que votre nom, votre sexe et votre profession.

Tous les renseignements recueillis demeureront confidentiels dans les limites prévues par la loi. Afin de préserver votre identité et la confidentialité de ces renseignements, vous ne serez identifié que par un numéro de code. La clé du code reliant votre nom à votre dossier de recherche sera conservée par le chercheur responsable de ce projet de recherche.

Les renseignements recueillis, à titre de données de recherche, seront utilisés par le chercheur responsable de ce projet dans le but de répondre aux objectifs scientifiques du projet décrits dans le formulaire d'information et de consentement.

Ces données de recherche seront conservées pendant au moins 7 ans après la fin du projet par le chercheur responsable de ce projet de recherche. Les données de recherche pourront être publiées ou faire l'objet de discussions scientifiques, mais il ne sera pas possible de vous identifier.

À des fins de surveillance, de contrôle, de protection, de sécurité, votre dossier de recherche pourra être consulté par une personne mandatée par des organismes réglementaires, par l'établissement ou par le Comité d'éthique de [aveuglé dans cette thèse pour des raisons de confidentialité]. Ces personnes et ces organismes adhèrent à une politique de confidentialité.

Vous avez le droit de consulter votre dossier de recherche pour vérifier les renseignements recueillis et les faire rectifier au besoin. Par ailleurs, l'accès à certaines informations avant la fin de l'étude pourrait impliquer que vous soyez retiré du projet afin d'en préserver l'intégrité.

11. Compensation

Compensation sous forme d'un montant proportionnel à la participation

En guise de compensation pour les frais encourus en raison de votre participation au projet de recherche, vous recevrez une carte-cadeau Tim Hortons de 25 dollars. Si vous vous retirez du projet (ou s'il est mis fin à votre participation) avant qu'il ne soit complété, la compensation sera proportionnelle à la durée de votre participation.

12. En cas de préjudice

Si vous deviez subir quelque préjudice que ce soit dû à votre participation au projet de recherche, vous recevrez tous les soins et services requis par votre état de santé.

En acceptant de participer à ce projet de recherche, vous ne renoncez à aucun de vos droits et vous ne libérez pas le chercheur responsable de ce projet de recherche et l'établissement de leur responsabilité civile et professionnelle.

13. Identification des personnes-ressources

Si vous avez des questions ou éprouvez des problèmes en lien avec le projet de recherche ou si vous souhaitez vous en retirer, vous pouvez communiquer avec le chercheur responsable de ce projet de recherche ou avec un membre du personnel de recherche, au numéro suivant : 514-398-4184, poste 0488; 514 761-6131, poste 2125

14. Plaintes

Pour toute question concernant vos droits en tant que participant à ce projet de recherche ou si vous avez des plaintes ou des commentaires à formuler, vous pouvez communiquer avec [aveuglé dans cette thèse pour des raisons de confidentialité].

15. Conflits d’intérêt

Le chercheur principal déclare n’avoir aucun intérêt personnel qui pourrait entrer en conflit avec son rôle de chercheur.

16. Surveillance des aspects éthiques du projet de recherche

Le Comité d’éthique de la recherche de [aveuglé dans cette thèse pour des raisons de confidentialité] a approuvé ce projet de recherche et en assure le suivi.

.

Déclaration de consentement

Titre du projet de recherche :	Explorer la participation à l'activité physique et exercice (APE) d'adultes ayant des problèmes de santé mentale

Consentement du participant

J'ai pris connaissance du formulaire d'information et de consentement. On m'a expliqué le projet de recherche et le présent formulaire d'information et de consentement. On a répondu à mes questions et on m'a laissé le temps voulu pour prendre une décision. Après réflexion, je consens à participer à ce projet de recherche aux conditions qui y sont énoncées.

Consentements spécifiques facultatifs

Enregistrement audio/vidéo

Acceptez-vous d'être filmé ou enregistré pendant les entrevues?

☐ **Yes** ☐ **No**

Projets de recherche futurs (utilisation secondaire)

Acceptez-vous que vos données de recherche soient utilisées par le chercheur responsable de ce projet de recherche pour réaliser d'autres projets de recherche soit dans le domaine de la santé mentale ou soit dans le domaine de la promotion de la santé, des soins et des interventions?

☐ **Yes** ☐ **No**

Contact pour participation à des études futures

Acceptez-vous que le chercheur responsable de ce projet de recherche ou un membre de son personnel de recherche reprenne contact avec vous pour vous proposer de participer à d'autres projets de recherche? Bien sûr, lors de cet appel, vous serez libre d'accepter ou de refuser de participer aux projets de recherche proposés.

☐ **Yes** ☐ **No**

Nom et signature du participant Date

Signature de la personne qui a obtenu le consentement si différent du chercheur responsable du projet de recherche

J’ai expliqué au participant le projet de recherche et le présent formulaire d’information et de consentement et j’ai répondu aux questions qu’il m’a posées.

Nom et signature de la personne qui obtient le consentement Date

Signature et engagement du chercheur responsable de ce projet de recherche

Je certifie qu’on a expliqué au participant le présent formulaire d’information et de consentement, que l’on a répondu aux questions qu'il avait.

Je m’engage, avec l’équipe de recherche, à respecter ce qui a été convenu au formulaire d’information et de consentement et à en remettre une copie signée et datée au participant.

Nom et signature du chercheur responsable de ce projet de recherche Date

Appendix C

Demographic Questionnaire

Name:______________________________

Age:______________________________

Gender:______________________________

Occupation: __________________________

Please identify your current mental health status:

A. Depression
B. Anxiety
C. Other
    a. Specify:______________________________

Please list all physical activities that you do in the community:

____
____
____

Please list all physical activities that you do/did at the center:

____
____
____

How physically active do you consider yourself:

A. Not at all active
B. Somewhat active
C. Active
D. Very active

Annexe D

Questionnaire Démographique

Nom:______________________________

Âge:______________________________

Sexe:______________________________

Occupation: __________________________

S'il vous plaît, énoncer votre état de santé mentale:

A. Depression
B. Anxieté
C. Autres
    a. Spécifier:______________________________

S'il vous plaît, énumérer toutes les activités physique auxquelles vous participez, en ce moment, dans votre communauté:

____
____
____

S'il vous plaît, énumérer toutes les activités physique que vous faites/faisiez au Centre:

____
____
____

Quel est votre niveau d'activité physique:

A. Aucunement actif
B. Parfois actif
C. Actif
D. Très actif

Appendix E

Interview guide

1. Tell me about your views on PAE?
    a. What do you like about PAE?
    b. How do you feel after being PAE?
2. Why do you choose to be physically active?
    a. What got you started?
    b. What keeps you going?
3. Please tell me about your experience participating in PA and exercise.
    a. Where do you do PA and exercise?
    b. What types of PAE do you participate in? Why?
    c. What types of exercise do you participate in? Why?
    d. What types of PA and exercise do you do at home?
    e. What types of PA and exercise do you do at community centers?
4. How do you get involved in PAE and exercise in the community?
    a. What are the types of PAE and exercise available in the community?
5. What stops you from being physically active?
    a. From exercising?
6. Do you have any questions or comments for me?
7. Is there anything else you would like to add?

Annexe F

Guide D'entrevue

1. Expliquez-moi votre opinion sur l'AP?
    a. Qu'aimez-vous de l'AP?
    b. Quel est votre sentiment suite à un entraînement?
2. Pourquoi choisissez-vous d'être physiquement actif?
    a. Qu'est-ce qui vous a motivé à débuter l'AP?
    b. Qu'est-ce qui vous motive à continuer d'être physiquement actif?
3. Quelle expérience retirez-vous lorsque vous êtes physiquement actif?
    a. Où faites-vous de l'exercice?
    b. Quel est votre choix d'AP? Pourquoi?
    c. Quels exercices faites-vous? Pourquoi?
    d. Quels exercices et/ou AP faites-vous à la maison?
    e. Quels exercices et/ou AP faites-vous dans votre communauté?
4. Comment vous vous engagez dans l'AP et l'exercice dans votre communauté? trouvez-vous de l'AP dans la communauté?
    a. Quels sont les types d'AP et d'exercices disponibles pour vous dans votre communauté?
5. Qu'est-ce qui vous arrête d'être physiquement actif?
6. Avez-vous des questions ou commentaires pour moi?
7. Y-a-t-il autres choses que vous aimeriez ajouter?