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Addressing exercise in therapy: Therapists' personal exercise habits, attitudes, knowledge, and perceived barriers to addressing exercise with clients.

by

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Abstract

This study was designed to investigate the factors that contribute to addressing exercise in psychotherapy. Self-identified psychotherapists (*n*=94) completed surveys relating to: the frequency and type of conversations they have with clients regarding exercise; the frequency and length of time in which they personally engage in exercise; attitudes towards the use of exercise in treating and preventing psychological disorders; perceived knowledge on the effects of exercise on psychological disorders; and potential barriers to addressing exercise in therapy. Addressing exercise with clients was shown to be common among participants. Furthermore, attitudes were favourable, few barriers to addressing exercise in therapy were identified, and perceived knowledge on how exercise affects psychological disorders was correlated with addressing exercise in therapy. The findings are indicative of the importance of training psychotherapists on the psychological effects of exercise, and contribute to the limited information we have on psychotherapists' conversations on exercise in therapy.

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Table of Contents

List of Tables

Chapter 1: Introduction

There is consistent, overwhelming support for the positive relationship between participation in exercise and reduced symptoms of mental health disorders (Biddle, 1995; Daley, 2002; Ströhle et al., 2007; Tkachuk & Martin, 1999). Exercise decreases symptoms of depression, anxiety and stress, while increasing feelings of wellbeing (Martinsen, 2005; Netz, Wu, Becker, & Tenenbaum, 2005; Wipfli, Rethorst, & Landers, 2008). Numerous meta-analyses and reviews have documented the benefits of exercise with both clinical (Lawlor & Hopker, 2011; Mead et al., 2010; Phillips, Kiernan, & King, 2003) and non-clinical (Conn, 2010; Wipfli et al.) populations. Researchers have also noted that exercise, unlike other forms of treatment, has few negative side-effects, and in fact can have many additional positive benefits for individuals such as improved physical fitness, improved self-esteem, and increased social and community involvement (Biddle; Fox, 1999).

However, despite the resounding evidence in favour of exercise as a means to treat mental health disorders, the topic of exercise is rarely broached in psychotherapy (Burks & Keeley, 1989; Faulkner & Biddle, 2001; McEntee & Halgin, 1996), with as few as 10% of mental health professionals recommending it (Walsh, 2011).

Although we know that therapists underuse exercise as a means of treatment, the reasons why are not fully understood. One factor that may influence whether therapists talk about exercise with clients is the degree to which they are personally physically active. McEntee and Halgin (1996) found that therapists

who are more engaged in physical activity are more likely to recommend exercise as a means of treatment. This effect has also been found in other healthcare related professions. For instance, Abramson, Stein, Schaufele, Frates, and Rogan (2000) found that physicians who exercise are more likely to talk to their patients about exercise than physicians who do not exercise. In addition, attitudes towards exercise may also influence whether therapists address exercise with clients. It has been noted, for example, that some therapists lack beliefs about the efficacy of exercise (Burks & Keeley, 1989), and therefore do not address it within their practice. Meanwhile, others have found that even those who do have a favourable attitude towards exercise may not recommend it, due to other factors such as believing that it is outside the realm of psychotherapy (Faulkner & Biddle, 2001). Several barriers to addressing exercise in therapy have also been proposed. For instance, some researchers have found that therapists do not talk about exercise with clients because they lack knowledge on the influence of exercise on psychological disorders (e.g., Burks & Keeley; Dixon et al., 2003; Phongsavan, Merom, Bauman, & Wagner, 2007). Meanwhile, others have found that limited time, beliefs about psychology pertaining more to the mind than the body, and beliefs in clients' non-compliance are barriers that inhibit psychotherapists from broaching the topic of exercise in therapy (Faulkner & Biddle; McEntee & Halgin).

The current study therefore aims to explore the relationship between therapists' personal exercise habits, attitudes, knowledge, and perceived barriers to addressing exercise with clients. First, a review of the research examining the

relationship between exercise and psychological disorders will be provided, followed by a review of findings on addressing exercise in therapy, and the factors that influence psychotherapists to address exercise. Then, the steps taken to investigate how the personal exercise habits of therapists, attitudes towards exercise, perceived knowledge on the effects of exercise, and barriers to addressing exercise in therapy relate to talking about exercise in therapy will be outlined. Finally, the results will be described, analyzed, and discussed. Implications for counselling and possible directions for future research are also provided.

Chapter 2: Literature Review

Although the evidence that physical activity contributes to physical health is widely accepted, there is also substantial evidence that physical activity can treat mental illness and promote mental health (e.g., Biddle, 1995; Daley, 2002; Fox, 1999; Goodwin, 2003; Phillips, Kiernan, & King, 2003; Taylor & Faulkner, 2008). Physical activity has been shown to have positive effects on mental disorders such as depression (e.g., Babyak et al., 2000), anxiety (e.g., Wipfli, 2008), accompanying somatic comorbidities (e.g., Richardson et al., 2005), and general wellbeing (e.g., Hassmén, Koivula, & Uutela, 2000). There is also tentative evidence that exercise may help alleviate symptoms of schizophrenia such as auditory hallucinations and poor sleep patterns (e.g., Faulkner & Sparkes, 1999). Research indicating the use of physical activity to alleviate symptoms of depression has been especially promising (Fox; Goodwin; Stathopoulou et al., 2006).

The Mental Health Problem

Worldwide, the prevalence of mental disorders is growing, leading to increased healthcare costs, medication use, and loss of productivity (World Health Organization, 2005). Twenty percent of Canadians will personally experience a mental illness during their lifetime (Public Health Agency of Canada, 2002), and as many Canadians suffer from major depression as from other leading chronic conditions, including heart disease, diabetes, or a thyroid condition (Statistics Canada, 2002). The World Health Organization predicts that in less than 20 years, depression will be the second-leading cause of disability in the world (Statistics

Canada). Health Canada also estimated that in 1998, mental disorders were the third highest sources of direct healthcare costs, at $4.7 billion (Statistics Canada).

Physical activity is an intervention that has been found to offer a comparatively affordable (Tkachuk & Martin, 1999) and effective preventative and treatment option for numerous mental disorders. Exercise has also been reported to be positively viewed by psychiatric patients who participated in exercise therapy (Pelham & Campagna, 1991) and it has very few side-effects as compared with many psychiatric medications (Martinsen, 2005). Furthermore, physical activity may be practiced in an ongoing manner, as opposed to other therapeutic interventions such as psychotherapy, where interventions are relatively expensive (Taylor & Faulkner, 2008).

Healthcare professionals have the opportunity to counsel physical activity to their clients, both in the treatment of physical as well as mental disorders. Psychologists are no exception. As recognized by the American Psychological Association (APA) in the following statement, psychologists are expected to recognize the importance of both body and mind when treating clients:

> No other discipline is better suited and equipped than psychology to discover, delineate, and demonstrate the organismic nature of humans and to encourage an ever-broadening realization that humanity's total functional health is threatened whenever either side of the inter-active mind-body equation is neglected. Any program for healthcare and illness management can achieve comprehensiveness and integration only as there is respect for

> the functional unity of the individuals (APA Task Force on Health Research 1976, p. 271).

Definition of Exercise

Exercise, often synonymous with *physical activity*, is defined in the Encyclopedia Britannica Online (2011) as the "training of the body to improve health and fitness." The World Health Organization (WHO, 2011) defines physical activity as "any bodily movement produced by skeletal muscles that requires energy expenditure." The WHO further elaborates, "physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally." For the purposes of this study, the terms exercise and physical activity will be used interchangeably.

Although traditionally the mental health benefits of exercise were measured primarily through studies investigating aerobic activity (Tkachuk & Martin, 1999), current research has also demonstrated the benefits of anaerobic activity, such as weight lifting (see Phillips et al., 2003, for a review). In fact, it appears that a number of physical activities can be psychologically beneficial, including yoga, running, swimming, weight lifting, and cycling. Notably, time spent engaging in physical activity is important for one to receive its health benefits. The World Health Organization (2010) recommends that adults aged 18–64 years should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity. They further specify that aerobic activity should be

performed in bouts of at least 10 minutes duration and that muscle-strengthening activities should be done involving major muscle groups on two or more days a week.

Exercise and its Protective Properties

There is a strong case for exercise in reducing, and preventing symptoms of psychological disorders. A number of studies have demonstrated that individuals who exercise more at baseline have fewer symptoms of mental health problems later in life than less physically active individuals (Goodwin, 2003; Hassmén et al., 2000). Physical activity has also been shown to have protective properties in mentally ill populations by improving quality of life through both physical and mental wellbeing (Carless & Faulkner, 2003). Physical activity may also provide therapeutic effects for psychological disorders, especially depression (Blumenthal et al., 2007).

Depression.

Exercise as an effective means of treating depression has been well documented in the literature (e.g., Fox, 1999; Martinsen, 2005; Mead, Morley, Greig, McMurdo, & Lawlor, 2009). In fact, it has been shown that the anti-depressant effect of exercise can be as powerful as other psychotherapeutic interventions such as cognitive behavioural therapy and antidepressant medication (Blumenthal et al., 1999; Moore & Blumenthal, 1998). Indeed, in a review of studies examining exercise therapy with clinical populations, Tkachuk and Martin (1999) found that no controlled study has ever found exercise to be an ineffective primary or adjunctive treatment for mild to moderate depression, and that it

compares favourably to individual psychotherapy, group psychotherapy, and cognitive therapy.

Several large-scale studies have supported favourable findings for the relationship between exercise and depression, and have been conducted both with cross-sectional as well as longitudinal designs. For instance, in a 16-week randomized controlled study, Blumenthal et al. (1999) compared exercise to antidepressant medication in subjects 60 years of age and older who had major depression. They found that although those who received the antidepressant medication Sertraline improved faster, at 12 weeks, both groups were improved with no significant differences between them. Furthermore, in a follow-up study conducted by Babyak and colleagues (2000), it was shown that exercise may be better than antidepressants for providing continued relief of depression over time; the patients from Blumenthal et al.'s study were re-examined after 10 months and those in the exercise group had significantly lower relapse rates than patients in the medication group. In fact, self-reported participation in exercise during the follow-up period was inversely related to the incidence of depression at 10 months; each 50-minute increment in exercise per week was associated with a 50% decrease in the odds of being classified as depressed. Although the causal direction of exercise and depression cannot be determined, the results suggest a potential reciprocal relationship between exercise and depression; feeling less depressed may make it more likely that a person continues to exercise and continuing to exercise may decrease a person's depressive symptoms.

The effect of exercise on depression has also been found in large-scale cross-sectional studies. For instance, Hassmén et al. (2000), with a random sample of 1547 males, and 1856 females, found a significant inverse association between depressive symptoms and levels of self-reported exercise frequency ranging from daily, to a few times per year. They found that those who exercised at least twice per week reported significantly less depression compared to those who exercised either less frequently or not at all.

The relationship between exercise and depression has also been demonstrated across time. In a longitudinal study conducted by Paffenbarger, Lee, and Leung (1994), lower depression rates were found among physically active and sports-playing individuals in a cohort of 21, 596 Harvard alumni men. Participants were recruited in 1962 or 1966 and followed-up 23 to 27 years later. Depression was measured through self-report and physician diagnosis, and physical activity was assessed by a physical activity index, determined by assigning kilocalorie values to self-reported physical activity or sports play. The authors found that, impressively, physical activity in 1962 or 1966 predicted depressive symptoms decades later.

Although most studies have employed aerobic exercise as treatment, non-aerobic activities (such as weight training) have equally been found to produce positive effects on the alleviation of depression (Byrne & Byrne, 1993). Doyne et al. (1987) compared the effectiveness of aerobic and nonaerobic exercise in the treatment of clinical depression in women. In their study, 40 women, screened on the Research Diagnostic Criteria for major or minor depressive disorder were

randomly assigned to an 8-week running, weight-lifting, or wait-list control condition. Participants were then reassessed at mid- and post-treatment, and at 1-, 7-, and 12-month follow-up. Both exercise conditions significantly reduced depression compared with wait-list controls, and both exercise conditions produced similar results. Therefore, it was concluded that the benefit of exercise is not contingent on achieving an aerobic effect.

Meta-analytical reviews have also been helpful in determining the overall positive effects of exercise on depression. For instance, Craft and Landers (1998) investigated the effects of exercise on clinical depression. Results from 30 studies showed an overall mean effect of -0.72, indicating that individuals who exercised were less depressed than their non-exercising peers. Furthermore, individuals who were initially more depressed benefited the most from exercise.

Recently, similar results were reported by Rethorst, Wipfli, and Landers (2009), who conducted a meta-analysis examining the anti-depressive effects of exercise. In their review, they examined the effect of exercise on depression in 58 randomized trials that met strict criteria for inclusion. An overall effect of -0.80 was found, indicating that participants in the exercise treatment groups had significantly lower depression scores than those receiving control treatments. While some meta-analyses have been criticized for not using randomized control trials, or for poor methodological integrity, this study demonstrated strong support for the effects of exercise on depression.

Mutrie (2000) made several conclusions about the use of exercise as a treatment for depression. First, physical activity is associated with a decreased

risk of developing clinical depression. Second, there is evidence for a causal link between exercise and decreased depression. Third, experimental studies have shown that both aerobic and resistance exercise are effective in treating depression. Finally, the effect of exercise on depression is of the same magnitude as psychotherapeutic interventions.

Although it is uncertain whether the anti-depressant effect of exercise is due to the exercise specifically, or other factors such as the effect of being treated or gaining a sense of mastery that often accompanies exercise, it is clear that exercise has a positive effect on depression.

Anxiety.

Although it has been studied less than depression, investigators have reported a positive effect between physical activity and decreased anxiety and psychological stress (Martinsen, 2008; McEntee & Halgin, 1999; Ströhle, 2008; Wipfli et al., 2008). Fox (1999) noted that studies examining the effects of exercise on anxiety have used three approaches. First, the effect of a single bout of exercise on state anxiety has been examined. This research has demonstrated moderate effects for reductions in anxiety post-treatment. Second, the effects of exercise programs, usually several weeks long, have been examined in relation to both state and trait anxiety. Again, exercise has been shown to provide moderate reductions in trait and state anxiety. Finally, the effect of single exercise sessions have been examined in relation to psychosocial and psycho-physiological reactivity to a subsequent psychological stressor, such as exposure to a feared

stimulus. This research has been inconclusive, with only half the studies showing a benefit from exercise.

More recently, Wipfli and colleagues (2008) conducted a meta-analysis of large-sample, randomized, controlled trials on the effects of exercise on anxiety. A clear effect for exercise alleviating anxiety was found. Forty-nine studies, involving a total of 3,566 individuals, were analyzed and an effect size of -0.48 was found for exercise compared with controls. As none of the included studies combined exercise with other forms of treatment, the findings were indicative that exercise alone could be effective at reducing anxiety. Additionally, the comparison of exercise to other forms of treatment revealed that exercise was as effective as psychotherapy and nearly as effective as pharmacotherapy.

Research has also demonstrated that exercise can be equally as effective as other psychological treatments. For instance, in a study examining the effects of cognitive group therapy, aerobic exercise, or their combination on anxiety reduction, McEntee and Halgin (1999) found all interventions to be equally effective in reducing anxiety, as compared to no intervention. In their study, conducted with 70 randomly selected participants recruited from the University of Massachusetts who had mild to moderate levels of anxiety, there was a significant treatment effect for all experimental interventions when compared to no treatment. Furthermore, there was no significant difference between the combination of exercise and cognitive therapy and the two individual interventions as measured by the anxiety measures. This finding supports the

notion that exercise may be comparable to the benefits of more traditional therapy and counselling methods, for mild to moderate forms of anxiety.

Additional evidence supports the benefits of exercise for the treatment of anxiety sensitivity, or the tendency to respond fearfully to anxiety-related bodily sensations (Smits et al., 2008). Research has implicated anxiety sensitivity as a risk factor for panic disorder as well as a maintaining factor for panic disorder (McNally, 2002). In preliminary studies, however, exercise programs have been shown to decrease anxiety sensitivity (Smits et al., 2008). Stathopoulou and colleagues (2006) suggested that exercise interventions could be viewed as an interoceptive (internal sensation) exposure procedure, as they provide repeated confrontation with feared bodily sensations (e.g., racing heart, rapid breathing) without anticipated negative consequences. Broocks and colleagues (1998) suggested that exercise might be of additional benefit for individuals who have previously abstained from exercise as part of the phobic avoidance behaviour or fear of the bodily sensations that accompany exercise. Once the initial fears are overcome, exercise, then, may provide a "sense of mastery" for clients in addition to a more optimistic view of their physical fitness.

Beyond more severe forms of anxiety, exercise has also been shown to be effective for treating stress. Long and Stavel (1995) conducted a meta-analysis on 40 studies in order to examine exercise as a method of stress-management. They found that exercise training improved anxiety levels an average of .36 standard deviations over alternative or control conditions. Furthermore, adults who were

more likely to have stressful lifestyles benefited more from the exercise training than their less-stressed counterparts.

Severe mental illness.

In addition to reducing symptoms of depression, anxiety, and stress, it has been demonstrated that exercise can be beneficial for clinical populations with severe mental illness, such as those with schizophrenia (Chamove, 1986; Pelham & Campagna, 1991) and bipolar disorder (Murray et al., 2010). Although medication and other forms of psychological treatment are accepted as the primary forms of intervention for these disorders, exercise can play an important role in helping to maintain the overall health of the person. In a review of exercise interventions for people with schizophrenia, Faulkner and Biddle (1999) concluded that exercise could alleviate secondary symptoms of schizophrenia such as depression, low self-esteem, and social withdrawal. For some, exercise was even helpful in alleviating positive symptoms such as auditory hallucinations.

Individuals with schizophrenia typically die younger, largely from environmental aetiology, such as obesity-related diseases (Aquila, 2002). For that reason, helping individuals with serious mental illness become more physically active can decrease their health risks. Furthermore, the general physical health of people with severe mental illness is often overlooked (Osborn, 2010). For instance, in a qualitative study of 16 individuals with severe and enduring mental illness, Soundy, Faulkner, and Taylor (2007) found that there was little physical activity support for these individuals. The authors reported that only three individuals within their study could recall ever receiving advice about physical

activity. At the same time, the individuals within their study were receptive to physical activity promotion. Soundy and colleagues concluded that there is a need for more reinforcement from mental health professionals to encourage patients with severe and enduring mental illness to become physically active.

One criticism of the investigations on the relationship between exercise and severe mental health disorders is on the methodological rigor of the research, where small group studies and anecdotal evidence are often cited. As Faulkner and Biddle (1999) noted, however, it is self-defeating not to consider the existing research and use it to highlight future directions.

One of the few studies investigating the effects of exercise on schizophrenia was an ethnographic study conducted by Faulkner and Sparkes (1999) with three participants. They examined the effects of a 10-week adjunctive exercise program of twice-weekly sessions for people with schizophrenia. Although their sample was obviously small, the exercise program reduced participants' perceptions of auditory hallucinations, raised their self-esteem, and improved sleep patterns. Further, once the exercise program stopped, many of the positive gains ceased and behaviours and sleep patterns deteriorated to pre-treatment levels.

Exercise, along with other lifestyle factors has also been shown to help manage the symptoms of bipolar disorder. In their qualitative study, Murray and colleagues (2010) interviewed high-functioning individuals with bipolar disorder, in order to determine what factors were most important in helping them maintain and regain wellness. Exercise, among other lifestyle factors such as getting

enough sleep, and eating well, was an important factor in maintaining wellness. Participants noted the importance of working to identify the exercise that suits the individual; some observed that they had tried various forms until finding a strategy that worked. The authors proposed that exercise might be especially important for individuals with bipolar disorder in helping to regulate circadian rhythms. Although the biological causes of bipolar disorder are not fully understood, there is consensus that instability in circadian rhythms is a significant factor in the development and course of the condition (Murray et al.).

In addition to the benefits that exercise can have on the mind, exercise may also be helpful in reducing the unwanted side effects of many psychopharmacological medications used to treat major mental illnesses. Current antipsychotic drugs that are typically prescribed for schizophrenia and bipolar disorder have been shown to induce weight gain, leading to an increased tendency towards type-2 diabetes, and an increase in morbidity and mortality (Martinsen, 2005). Exercise, then, may provide an additional benefit of managing the unwanted side effect of weight gain and improving self-image and self-esteem.

Although the effects of exercise on more severe psychological disorders such as schizophrenia and bipolar disorder have not been well established, the evidence thus far indicates that it can be of benefit. Even if exercise is not effective in reducing primary symptomology of certain disorders, it clearly has positive benefits in terms of improving overall physical health and general wellbeing, and should be considered as an adjunct to other forms of treatment.

Preventing mental health problems and promoting wellbeing.

Researchers have suggested that physical activity may help prevent the occurrence of mental disorders by reducing the risk of becoming depressed or experiencing anxiety in normal populations (Fox, 1999; Goodwin, 2003). In 1987, the US National Institute of Mental Health Consensus workshop statements regarding the contribution of exercise to mental health were published (Morgan & Goldston, 1987). Since that time, several studies have been conducted to examine the relationship between exercise and mental health. In 2003, a large analysis was conducted using the data from the National Comorbidity Survey (n = 8098) in the United States. It was found that regular physical activity was associated with significantly decreased prevalence of major depression and anxiety disorders, even after adjusting for differences in sociodemographic characteristics, physical disorders, and comorbid mental disorders (Goodwin). This finding is consistent with other evidence demonstrating that individuals who exercise experience greater psychological wellbeing. For example, Hassmén and colleagues (2000) examined the results of the Finnish cardiovascular risk factor survey, completed by 3403 participants. The results of the survey revealed that individuals who exercised at least two to three times per week experienced significantly less depression, anger, cynical distrust, and stress than those who exercised less frequently or not at all. In addition, frequent exercisers reported a stronger sense of coherence, and stronger feelings of social integration than their less active counterparts. Thus, exercise appears to have a protective factor in addition to being a method of treatment.

Ströhle and colleagues (2007) also conducted a large-scale (n = 2548) cross-sectional and prospective-longitudinal study examining the effects of physical activity on mental health. Individuals in the study were between 14 and 24 years old at the onset. The researchers examined the association between regular physical activity with 12-month and lifetime mental disorders, according to DSM-IV criteria, as well as whether regular physical activity at baseline was later associated with decreased risks of mental disorders in adolescence and young adulthood. It was found that physical activity was associated with lower rates of mental disorder, especially the frequency of comorbid disorders. Those individuals with regular, daily or more frequent participation in sports were found to have added protection. Significant associations between exercise and a variety of anxiety disorders, somatoform disorders, dysthymia and substance dependence were found. The authors suggested that the effects of physical activity might stimulate a complex internal system involving developmental, neurobiological, and psychological factors, and thus result in higher resilience to mental disorders.

The beneficial effects of exercise have also been documented for psychological wellbeing in advanced age (Netz, Wu, Becker, & Tenenbaum, 2005; Windle, Hughes, Linck, Russell, & Woods, 2010). In a meta-analysis of intervention studies, Netz and colleagues found that physical activity was linked to wellbeing in older adults without clinical disorders. The authors examined data from 36 studies and found a causal effect for physical activity on psychological wellbeing enhancement, with the effect of self-efficacy showing the strongest correlation. They suggested that physical activity might improve mastery

experience for older adults whose physical self-efficacy may be deteriorating along with their functional abilities.

Benefits of exercise as treatment.

Exercise utilizes the largest untapped health resource available – the patient – by emphasizing the role that individuals can play in their own health (Greist et al., 1978). Exercise, used alone or adjunctively, is accessible and affordable, and can be introduced quickly in therapy (Walsh, 2011). Many individuals also appreciate taking part in their own rehabilitation process (Martinsen, 2005) and physical activity can offer secondary benefits to patients such as improvements in physical health, self-esteem, and quality of life (Deslandes et al., 2009).

Furthermore, there is an association between depression and cardiovascular morbidity; although patients are more at risk for depression after myocardial infarction, depression itself increases the risk of infarction (Ford et al., 1998). Additionally, physical illness is likely to exacerbate psychiatric symptoms, such as anxiety and depression, in patients with mental health problems. Therefore, the assessment and management of physical health in psychiatric populations is critical (Osborn, 2001).

The use of exercise may also provide a treatment for mental health problems with fewer stigmas than taking medication or receiving psychotherapy. The prevalence of mental illness in young individuals is the highest of any age group, with the onset of depression, anxiety and substance use peaking between 18 and 24 years (Parker et al., 2011). At the same time, it has been shown that

young people are often reluctant to seek help for mental health problems (Rickwood, Dean, Wilson, & Ciarrochi, 2005). It has also been suggested that young people appear to be more interested in treatment that offers an opportunity to be listened to and to learn a new skill, rather than develop a deeper understanding of the psychological processes that contribute to their behaviour (Fagan, 2006). Therefore, youth-friendly services such as those involving physical activity, delivered in low-stigma settings are valuable in treating mental illness at their onset, and at mild-to-moderate levels. Furthermore, effective treatments that target early phases of disorders have the potential to reduce the risk of persistence and recurrence (Wells et al., 2005).

Addressing Exercise in Client Care

In recently published studies, it has been shown that healthcare professionals, such as physicians and nurses, believe that health promotion is important and related to their work (Douglas, Torrance, van Teijlingen, Meloni, & Kerr, 2006; Ploeg van der et al., 2007). For instance, in their study of primary care staff's views and experiences related to routinely advising patients about physical activity, Douglas and colleagues found that the majority of respondents (general practitioners, health visitors, and practice nurses) indicated that they would discuss physical activity with their patients, even if the topic were not raised during the consultation. Furthermore, 90% of respondents indicated that they believed physical activity promotion in primary care was important. In addition, the researchers reported that almost all general practitioners and practice nurses counselled physical activity for common medical conditions such as being

overweight, having diabetes, or hypertension. This finding was also supported by Lawlor, Keen, and Neal (1999) who found that, at least for general practitioners, physical activity is often suggested when linked to a particular physical complaint, for example when a patient is overweight or at risk for heart disease.

Addressing Exercise in Psychotherapy

Although promoting exercise is seen as vital in medical professions, in order to decrease ill health caused by physical problems such obesity and diabetes, the same importance has not been demonstrated by professionals when treating psychological conditions. Despite evidence indicating the many positive benefits that physical activity can have on certain mental disorders, many psychotherapists are not addressing physical activity with their clients, or are doing so inconsistently (Burks & Keeley, 1989; Daley, 2002; Faulkner & Biddle, 2001). For instance, in an early study examining the practices of psychotherapists, Royak-Schaler and Feldman (1984) found that only 47% of participants agreed that it is important for psychotherapists to assess a clients' physical health and only half of therapists considered working with physical health issues, and health education, to be an appropriate task for psychotherapy. Barrow, English, and Pinkerton (1987) also examined the degree to which practicing psychologists would recommend exercise to their patients. Although the majority of participants indicated that they would recommend exercise to their patients, over half of those psychologists surveyed would only do so "occasionally."

Even with current research demonstrating the direct impact that physical activity can have on various psychological disorders, Daley (2002) noted that a

recent overview of depression and its treatment in the United Kingdom made no mention of the value of exercise. Similarly, Walsh (2011) reported a systematic bias towards pharmacological and psychotherapeutic interventions in the treatment of psychological disorders. Moreover, a recent study conducted by Phongsavan and colleagues (2007) demonstrated that exercise recommendations by psychotherapists have remained largely unchanged since the earlier studies conducted by Royak-Schaler and Feldman (1984), and Barrow and colleagues (1987); less than half of psychotherapists in their sample (n = 51) had recommended physical activity to clients.

Factors Affecting Addressing Exercise in Therapy

Although conversations about exercise in therapy are infrequent and inconsistent, limited research has explored why therapists neglect to talk about exercise with clients (Faulkner & Biddle, 2001). While some researchers have suggested that factors such as personal exercise practices, attitudes, and barriers such as limited knowledge may influence addressing exercise in therapy, (Faulkner & Biddle; McEntee & Halgin, 1996; Royak-Schaler & Feldman, 1984), these factors are not well established.

Personal exercise habits.

In reviewing the literature on exercise in therapy, it has been consistently found that personal exercise habits affect therapists' beliefs about the benefits of exercise, and their willingness to address exercise with clients (McEntee & Halgin, 1996; Royak-Schaler & Feldman, 1984).

For example, in an early study, Royak-Schaler and Feldman (1984) examined the health behaviours practiced by psychotherapists and the extent to which they focus on these behaviours with clients during therapy. Specifically, they investigated dietary habits, physical exercise, relaxation practices, sleeping, alcohol consumption, and smoking. From 1000 randomly selected names provided by the American Psychological Association, 200 questionnaires were mailed to members of Division 29 (psychotherapy), and 86 questionnaires were returned. Congruent with their hypotheses, they found that psychotherapists who practiced more health-promoting behaviours tended to recommend the practice of these behaviours to their clients more often than those practicing fewer. In addition, psychotherapists who considered health education appropriate for psychotherapy were more likely to recommend the practice of health-promoting behaviours to their clients than those who did not. Finally, psychotherapists' health-promoting behaviours and valuing of health education in psychotherapy explained 39% of the variation in their recommendations to clients. In sum, psychotherapists who were more physically active were more likely to evaluate clients' health practices and make recommendations about health-promoting behaviours.

Barrow and colleagues (1987) also examined the degree to which practicing psychologists are involved in exercise programs, the patterns of exercise favoured, and how exercise affects various dimensions of psychotherapy practice. In their survey of 196 psychologists, it was found that psychologists who exercised believed that exercise had been of benefit to them and that exercise

could favourably influence psychologists' work behaviours. Furthermore, psychologists who had been exercising for more years attributed greater effect to exercise than those who had been exercising for fewer years. In general, respondents noted that exercise helped to regulate their mood and increase mental and physical stamina and energy. The psychologists who exercised also indicated that exercise could enhance psychological functioning. Notably, almost all psychologists who exercised said that they would recommend exercise to their patients and other therapists.

More recently, one of the largest and most influential studies on the topic of exercise in therapy was conducted by McEntee and Halgin (1996), who mailed questionnaires to psychotherapists selected from the National Register of Health Providers in Psychology. Their questionnaire was designed to assess attitudes about addressing exercise in psychotherapy, and focused, in part, on the personal exercise practices of therapists in relation to their exercise discussions in therapy. One hundred and ten psychotherapists (44%) returned the survey, and it was found that exercising therapists were more likely to raise the issue of exercise and discuss the topic with clients. In addition, the amount that a therapist exercised was related to how likely it was for that therapist to discuss exercise.

The findings reported by Barrow and colleagues (1987), McEntee and Halgin (1996), and Royak-Schaler and Feldman (1984), are congruent with findings on other healthcare professionals; there is a positive relationship between healthcare professionals' personal physical activity levels and the degree to which they talk about physical activity with patients (Abramson et al., 2000; McDowell,

McKenna, & Naylor, 1997; Ribera, McKenna, & Riddoch, 2005). For instance, McDowell and colleagues examined factors that may influence practice nurses (PNs) to promote physical activity. Questionnaires were sent to all PNs in Avon, United Kingdom, and 196 returned questionnaires were analyzed. It was found that physically active PNs promoted physical activity more than those who were not physically active. In particular, active PNs perceived system barriers as having less limiting effects on their physical activity promotion. Furthermore, active PNs gave more advice to patients who asked for information on physical activity than inactive PNs. In fact, almost all patients were asked most frequently about their activity habits by active PNs, revealing that personal practices and beliefs surrounding physical activity play an important role in patient treatment.

Similar results were found in a study where attitudes and practices of physicians and nurses regarding physical activity promotion in the Catalan primary healthcare system were examined. In their mixed-methods study, Ribera and colleagues (2005) found that although a high percentage of staff reported that promoting physical activity was important, "personally active" staff promoted physical activity more frequently, and perceived it to be more important than sedentary staff.

Yet again, in a large-sample survey of primary care physicians in the United States, Abramson and colleagues (2000) found that physicians who exercised were more likely to counsel their patients to exercise. In their study, the researchers surveyed a random sample of 1200 primary care physicians (internal medicine, family practice, geriatrics, and pediatricians) from the American

Medical Association. They asked respondents about their levels of aerobic activity as well as their strength training activity. For both types of activities, it was found that those who personally engaged in exercise were more likely to recommend it to patients. They found that the major barriers to counselling about aerobic exercise and strength training were inadequate time, inadequate knowledge or experience, and patient disinterest or noncompliance. The authors suggested that as physicians gain more insight into their own health and health habits, advice to patients might become more realistic and effective.

In sum, research thus far has demonstrated a strong correlation between personal exercise habits and addressing exercise with clients, both for therapists and other professionals working in client care.

Attitudes.

Research suggests that most clinicians do not evaluate a change in practice solely on the basis of scientific literature. Rather, an individual's attitudes and beliefs are critical to understanding how an evidence-based adjunctive therapy, such as exercise, is to become more popular (Faulkner & Biddle, 2001). However, there is confounding information on the beliefs and attitudes that psychotherapists hold towards addressing exercise with clients during therapy. While a few studies have attempted to shed light on this topic, there is little conclusive information outlining the relationship between the attitudes of therapists and the extent to which they talk about exercise in therapy.

In an early study by Burks and Keeley (1989), surveys were sent to members of Division 29 (psychotherapy) of the APA concerning their assessment

and recommendation practices relating to nutrition and exercise with patients. Of the 232 psychotherapists (46.4%) who completed to the survey, respondents indicated that their frequency of recommending diet and exercise as part of treatment ranked low, and that they discussed diet and exercise with less frequency than other lifestyle factors such as alcohol consumption, drug use, and sleeping habits. Therapists' perceptions of the efficacy of diet and exercise therapies were also assessed, and it was found that although efficacy judgments varied as a function of psychological disorder, many therapists lacked beliefs about efficacy.

Conversely, in their study on psychotherapists in Sydney, Australia, Phongsavan and colleagues (2007) found that most psychotherapists held favourable attitudes towards physical activity. However, despite these positive attitudes, only 40% had recommended physical activity to their patients. From their survey (n = 51) investigating the dominant perceptions and current practices relating to physical activity counselling, they noted that 14% of respondents believed that their patients would not benefit from physical activity advice, and 12% believed that their patients were more likely to follow conventional treatment strategies. Thus, it was concluded that holding a positive attitude about exercise does not translate to recommending exercise.

Indeed, attitude does not always influence behaviour. In a three-year study, Ploeg van der and colleagues (2007) investigated changes in Australian general practitioners' knowledge, confidence, perceived role, and frequency of talking to patients about physical activity. After three years of campaigns and

interventions to increase awareness of physical activity in general practice, it was noted that knowledge about the health benefits of physical activity and beliefs about the importance of addressing this topic in primary care had improved. However, there were no changes in the frequency of promoting physical activity with patients.

Still, other studies have demonstrated that attitude towards physical activity does seem to affect professional behaviour (Douglas et al., 2006; Laws et al., 2008). For instance, Laws and colleagues explored the beliefs and attitudes of primary healthcare clinicians regarding incorporating lifestyle risk factor management into routine care. They also examined whether these beliefs varied according to self-reported levels of risk factor management. Using a mixed methods design, they first surveyed 59 clinicians and then interviewed 22 clinicians from the survey sample. It was revealed that role congruence, perceived client acceptability, beliefs about capabilities, perceived effectiveness, and clinicians' own lifestyles were key themes related to risk factor management practices. Clinicians' perceptions of how well risk factor management fit with their role was an important theme. High implementers (who frequently addressed lifestyle factors with clients) reported risk factors as being directly relevant to their clients and felt there was adequate opportunity to address these as part of routine care. By contrast, low implementers did not see that they had a role in addressing risk factors with clients, or felt other health professionals might better address these issues. Perception of client acceptability was also important; while high implementers felt that they were able to make conversations about lifestyle

factors part of their appointment, low implementers expressed concerns about client acceptance including being seen as judgmental, receiving negative reactions from clients, and damaging the clinician-client relationship. Clinicians' own lifestyles were also identified as barriers for low implementers. However, for high implementers, personal factors were a non-issue in discussing lifestyle factors with clients. Thus, there appeared to be an interaction between clinicians' beliefs and attitudes towards lifestyle risk factor management and their practice; high implementers had a positive attitude where they perceived few barriers, whereas low implementers perceived factors that inhibited them from addressing exercise with clients.

Hence, while the results of some studies appear to support the idea that attitude is related to addressing exercise with clients, other studies have failed to demonstrate that connection.

Knowledge and other perceived barriers.

Many of the studies exploring conversations about exercise with clients in therapy have attempted to identify barriers to doing so in order to explain the discrepancy between research and practice. Although the reasons why therapists underutilize exercise as a potential treatment for clients in therapy are yet to be fully understood, therapist knowledge of the psychological effects of exercise is emerging as an important factor. In fact, knowledge appears in the literature as a factor affecting addressing exercise in many healthcare professions.

For instance, Douglas and colleagues (2006) conducted a study examining the knowledge, attitudes, and experiences of primary care staff in Scotland on

advising patients about physical activity. They surveyed 757 general practitioners on their knowledge of current physical activity recommendations, practices related to routine physical activity advising, and associated attitudes. Respondents routinely discussed and advised patients about physical activity, but knowledge of current physical activity recommendations was low. The authors concluded that if healthcare staff are to be fully motivated and effective in encouraging and supporting their patients to become more active, efforts are needed to improve knowledge of current physical activity recommendations and to consider the need for the development of tools to support individual assessment and advice-giving to patients.

Similarly, Dixon and colleagues (2003) suggested that a barrier to the application of exercise interventions is the lack of counsellor training in the area of exercise and mental health. They cited, for example, a lack of emphasis for counsellors in the specific domain of exercise physiology. Walsh (2011) also suggested that economic and institutional pressures are pushing therapists toward briefer, more stylized interventions. As a result, clients may not receive attention in the areas of complex psychodynamic and social factors, such as exercise.

In addition to knowledge, other barriers have also been found to inhibit therapists from addressing exercise with clients. For instance, McEntee and Halgin (1996) examined the reasons why therapists do or do not address exercise with clients. Common reasons for addressing exercise included perceived symptomatic benefits, providing a client with a sense of mastery, body benefits, enhancing the therapeutic relationship, and providing social benefits. The reasons

for not addressing exercise included that it was inappropriate, too directional, too demanding on the client, risked fostering a sense of failure, could fuel client resistance, or could be perceived as insensitive to the client. Some therapists expressed that exercise does not fall into the domain of psychotherapy and should instead be left to physicians and recreational therapists.

In a qualitative study, Faulkner and Biddle (2001) examined the perceptions of doctoral training program directors in clinical psychology on the use of exercise as an adjunct to therapy. They found that while most participants held favourable attitudes towards exercise, it was rarely recommended as an adjunctive treatment for mental health problems. Participants cited several reasons for not recommending exercise to clients, including: the idea that recommending exercise as treatment is too simplistic; the notion that psychotherapists deal with the mind, not body; a lack of awareness surrounding the literature and the benefits of exercise; personal bias about the benefits of exercise as an adjunct treatment; and the historical emphasis of "thinking" over "doing" in psychotherapy. One director commented that the central remit of clinical psychology is to treat mental illness, not promote mental health. For more than one director, evidence-based practice was not the sole reason for treatment choice. One director commented:

> The biggest factor out there is probably personal bias… the degree of personalized faith about whether a particular kind of therapy is a good thing to do. I think that's probably the strongest factor out there in deciding how most clinicians actually go about their work.

Phongsavan and colleagues (2007) highlighted three main findings from their study on the attitudes of psychotherapists on using exercise in therapy:

> First, therapists are generally aware of the importance of physical activity for mental health, but not as a priority as an adjunctive therapy… Second, more information about the therapeutic effects of physical activity on a range of mental health disorders, not just depression, is required. Third, clinical time constraints, the severity of mental illness, and perceptions that patients prefer conventional rather than alternative or lifestyle recommendations might be some of the reasons that therapists refrain from providing advice on physical activity to patients.

Pollack (2001) proposed several reasons as to why he believes the majority of psychotherapists are not employing exercise as part of their treatments:

> First, exercise promotion and maintenance, as a clinical skill, typically are not included as a part of most therapists' training. Second, there is no widely held belief among mental-health professionals that increasing and maintaining exercise plays a critical and causal role in depression reduction. Third, an activist approach to exercise may be experienced by the majority of therapists as theoretically and methodologically inconsistent with their treatment approaches. Fourth, getting patients to make health-related lifestyle changes is extraordinarily difficult and requires a sophisticated understanding of the biopsychosocial domains as

they pertain to personal change, as well as a significant amount of time and effort of the therapist.

The literature thus far has pointed to knowledge being a significant factor in influencing whether therapists address exercise in therapy. Clearly, knowledge of exercise will affect the way in which professionals are able to speak about it; if therapists lack training or information on the effects of exercise, it is not surprising that they do not talk about it readily with clients. Additionally, other factors, such as time, beliefs about exercise belonging in psychotherapy, and ideas about fostering a client's sense of failure are worth further examination. Although a variety of reasons have been suggested, the extent to which these barriers inhibit therapists from addressing exercise has yet to be explored in depth.

Rationale

It has been demonstrated that exercise is beneficial in improving and preventing various mental health disorders (Biddle, 1995; Daley, 2002; Ströhle et al., 2007; Tkachuk & Martin, 1999). However, psychotherapists do not consistently talk about or recommend exercise to their clients (Burks & Keeley, 1989; Daley, 2002; Faulkner & Biddle, 2001; McEntee & Halgin, 1996). Some of the proposed reasons that influence whether therapists address exercise in therapy include personal exercise habits, attitudes towards its effectiveness, knowledge on the subject, and perceived barriers such as a belief in client non-compliance. These influences have also been found to affect exercise recommendations by other health professionals (e.g., Abramson et al., 2000; Laws et al., 2008; McDowell et al., 1997).

The aim of the current study, therefore, was to examine the relationships between addressing exercise in therapy and (a) personal exercise habits; (b) attitudes towards exercise; (c) knowledge of the benefits of exercise for mental health; and (d) potential barriers to addressing exercise with clients. By understanding the characteristics of psychotherapists as well as perceived barriers that influence whether exercise is talked about in therapy, we may then attend to how to increase therapists' willingness to address exercise with clients.

A secondary aim of the study is to examine current rates of exercise conversations in therapy. Although interest in the topic of exercise and mental health continues to grow, the most cited rates of addressing exercise in therapy are dated 15 years or more. Notably, however, exercise research has grown. Biddle's (1997) analysis of research trends in two international sport and exercise psychology journals during the 1990s showed that the topic of exercise and mental health increased in frequency by 400% from the late 1980s to the early 1990s. Societal and media efforts have also gained a renewed focus on exercise. For instance, the Public Health Agency of Canada has supported the Canadian Society for Exercise Physiology (CSEP) in reviewing the scientific evidence on physical activity and developing new physical activity guidelines for Canadians. Furthermore, in 2007, the Public Health Agency of Canada provided funding to CSEP to produce a series of scientific papers examining advances in exercise science (Public Health Agency of Canada, 2011). Therefore, it is also of value to investigate current conversations related to exercise in order to determine if beliefs or practices have changed in recent years.

Hypotheses

Stemming from the rationale, the following hypotheses were made:

1. Engaging in regular exercise will be positively correlated with addressing exercise in therapy.

2. Favourable attitudes towards the use of exercise in the treatment of mental disorders will be positively correlated with addressing exercise in therapy.

3. Extent of perceived knowledge of the effects of exercise on psychological disorders will be positively correlated with addressing exercise in therapy.

4. Identified barriers to addressing exercise will be negatively correlated with addressing exercise in therapy.

Chapter 3: Method

Participants

All participants in the study were self-identified psychotherapists, and were recruited to complete surveys by one of two means. First, attendees of the Psychologist's Association of Alberta annual conference (2010) were recruited. Second, psychotherapists employed by local Edmonton agencies and organizations, were recruited through direct requests by the researcher as well as word-of-mouth requests. The first method of recruitment yielded 48 completed surveys, and 46 completed surveys were returned via the second method. In total, 94 surveys were included in the study.

The sample of psychotherapists in the study consisted of 70 females and 24 males, with ages ranging from 24 to 73 years (M = 44, SD = 12.5). The higher ratio of female to male participants is typical in the profession of psychotherapy. Time currently devoted to the practice of psychotherapy ranged from 0 to 100 percent (M = 58.7, SD = 43.2), with years of therapy experience ranging from 0.5 to 42 (M = 11.5, SD = 10.1). The response of *zero* time currently devoted to psychotherapy came from three participants who were trained psychotherapists but who were not currently engaged in providing therapy to clients, such as retirees and professors.

Participants were asked to specify to what degree they identified with various therapeutic orientations (with 0 = *not at all*, and 4 = *very much*), in order to determine the generalizability of the sample to other psychotherapists. Mean therapeutic identifications were determined, with humanistic being the most

highly identified orientation ($M = 2.93$, $SD = 1.19$), followed by cognitive/behavioural ($M = 2.84$, $SD = 1.15$), narrative/solution focused ($M = 2.59$, $SD = 1.08$), family/systemic ($M = 2.44$, $SD = 1.26$), and finally psychodynamic/analytic ($M = 1.40$, $SD = 1.22$).

One-way Analysis of Variance (ANOVA) was performed in order to determine if significant differences existed between participants recruited from the conference and those recruited from counselling agencies, as well as to determine if significant differences existed between male and female participants. There were no significant differences found between groups.

Instrumentation

A survey (Appendix A) was designed to assess psychotherapists' knowledge and attitudes towards exercise as a treatment for mental health disorders, as well as their personal exercise practices, and conversations around exercise in therapy. The survey consisted of three sections: *section one* contained questions about demographic information; *section two* assessed the personal exercise routines of the participants; and *section three* assessed exercise conversations, as well as attitudes, perceived knowledge, and barriers to addressing exercise in therapy. The survey was brief to encourage completion and a high response rate.

Section 1 – Demographic information.

Five questions dealt with the demographics of gender, age, percent of time devoted to psychotherapy, years of experience, and theoretical orientation.

Demographic information was collected in order to identify the characteristics of the participants in the study.

Section 2 – Personal exercise habits.

Three questions related to personal exercise habits. The questions were adapted from previous studies that have examined the exercise habits of other health professionals (psychiatrists and physicians) and subsequent correlations with providing exercise counselling to their patients (Abramson et al., 2000; Olofsgard, 2009).

The first two questions were used to assess how much moderate to vigorous physical activity respondents engaged per week. The third question related to how many years the participants had been engaged in regular physical activity.

Section 3 – Use of physical activity as treatment for clients.

Five questions related to practices concerning talking about exercise with clients. Participants used a 5-point Likert scale to describe their practices around asking, discussing, recommending, and following-up on physical activity with clients, where 0 = *never*, and 4 = *always*. One question asked participants to identify to what degree they discussed exercise in relation to various psychological disorders. The psychological disorders selected for the survey (mild to moderate depression, severe depression, anxiety, stress, schizophrenia, bipolar disorder, and somatic disorders) were based on previous findings that exercise helps to relieve, prevent, or treat those particular disorders (Babyak et al., 2000;

Faulkner & Sparkes, 1999; Goodwin, 2003; Richardson et al., 2005; Taylor & Faulkner, 2008; Wipfli, 2008).

Questions seven and eight were used to assess attitudes towards using physical activity to either prevent or treat psychological disorders. Again, participants rated their attitudes on a 5-point Likert scale where 0 = *highly negative* and 4 = *highly positive*. Attitudes were assessed to see if they corresponded to addressing exercise in therapy. Previous studies have also examined health professionals' attitudes towards promoting physical activity for mental health, such as in Douglas and colleagues (2006) and Laws and colleagues (2008).

Question nine addressed perceived knowledge about the therapeutic effects of physical activity on psychological disorders. Participants rated their perceived knowledge on a 5-point Likert scale where 0 = *poor/ no knowledge* and 4 = *excellent*. This question was based on previous studies that have suggested that a lack of therapist knowledge may contribute to not addressing physical activity with clients (Faulkner & Biddle, 2001; Phongsavan et al., 2007).

Finally, potential barriers to addressing exercise were investigated. Participants rated statements concerning exercise beliefs, as well as potential barriers to addressing exercise with clients on a 5-point Likert scale, where 0 = *strongly disagree*, and 4 = *strongly agree*. Examples of the items provided included "I do not consider it scientifically proven that physical activity is beneficial for the disorders I treat," and "Due to limited time, counselling physical activity has a low priority." Items were adapted from previous studies where

barriers to addressing exercise with clients were examined (Faulkner & Biddle; 2001; McEntee & Halgin, 1996; Olofsgard, 2009). Barriers were listed as a mix of both positively worded and negatively worded statements in order to maintain the attention of the participants and eliminate response carelessness.

Procedure

Data were collected by two means. First, surveys were distributed at the Psychologists' Association of Alberta Annual Conference in Edmonton, Alberta, that took place on October 28th and 29th, 2010. A table was set up in the exhibition hall, where conference attendees visited during coffee and lunch breaks. Attendees walking by were informed of the study either by the sign on the table, or by the researcher, and were asked to participate by completing a questionnaire. Conference restrictions prohibited the survey from being included in the conference package, or from asking attendees to complete the survey at certain times, such as during registration. Therefore, not every conference attendee had the opportunity to complete the survey. However, all but one individual who was asked to complete the survey complied. All questionnaires were kept anonymous and confidential with no identifying information required for completion. A participant letter (Appendix B) was used to inform potential participants about the study and contact information (Appendix C) was provided if participants had further questions or concerns.

Second, surveys were distributed to psychotherapists in the Edmonton area through word of mouth recruitment. Specifically, various counselling agencies were contacted and asked if they would be willing to complete the surveys. If they

agreed, hard copies of the surveys were dropped off and then picked up at a later date. Typically, one contact at the agency would then pass along the surveys to his or her colleagues. It was difficult to ascertain a response rate, as the number of individuals who were asked, but chose not to complete the survey was unknown. Psychotherapists working at the University of Alberta Hospital, Millard Health, the Family Centre, the Glenrose Hospital, the Sexual Assault Centre of Edmonton, Human Solutions, Kell's Counselling, and the University of Alberta Education Clinic completed surveys. Again, the participant letter and contact information were provided to potential participants.

Ethical Issues

Ethics were approved through the University of Alberta's Human Ethics Research Online program. Voluntary, informed participation was guaranteed and data confidentiality was ensured. There were no physical, mental, social, or legal risks to the participants and no conflict of interests for the researcher.

Statistical Analysis

Data were analyzed using PASW (Predictive Analytics SoftWare) Statistical Procedures 18. All comparisons were planned to answer the research questions. Frequencies and descriptives were first calculated in order to get a sense of current levels of exercise conversations in psychotherapy. Correlations were then examined in order to answer the research questions.

First, in order to examine whether personal exercise practices and likelihood of addressing exercise were related, correlations between time spent engaging in physical activity and exercise conversations in therapy were calculated.

Second, in order to examine whether attitude was related to addressing exercise, correlations between therapists' attitudes towards exercise and exercise conversations in therapy were examined.

Third, in order to examine whether knowledge on the effects of exercise was related to addressing exercise, correlations between therapists' knowledge on exercise and exercise conversations in therapy were investigated.

Finally, in order to determine if identification of perceived barriers were related to addressing exercise, correlations between barriers to addressing exercise and exercise conversations in therapy were calculated. The more conservative Spearman's rho was used to calculate all correlations. For analysis, a cut-off of $p<0.05$ was chosen for the level of significance, to balance the effects of Type 1 and Type II errors.

Chapter 4: Results

Missing data were dealt with in two ways. With regard to theoretical orientations, if any of the orientations had been identified, missing fields were assumed to have been left blank due to not practicing from that orientation, so data of "Not at all" were imputed. In the remaining analyses, no assumptions about missing values could be made, and therefore listwise deletion of missing values was used.

Prior to examining the data in relation to the hypotheses, the means, standard deviations, and distributions of each variable were calculated in order to determine if data were valid, and to compare current results to previous research findings.

Addressing Exercise in Therapy

First, in order to determine to what extent psychotherapists address exercise in therapy, the means and standard deviations of participants' responses on questions regarding exercise conversations were examined. The questions determining exercise conversations in therapy included: (a) asking about client level of physical activity, (b) discussions around physical activity, (c) recommendations around physical activity, and (d) follow-up on physical activity recommendations. The results are shown in Table 1. Due to the fact that some responses were left blank on the questionnaires, the number of participants who responded to each item are also listed.

In examining Table 1, it is apparent that the majority of psychotherapists indicated that they are likely to address exercise with clients, at least to some

degree. Approximately 75% of respondents indicated that they are likely to ask clients about exercise (ratings of 3 or 4 on a scale of 0 to 4). Furthermore, 81% of respondents indicated they are likely to discuss the importance of exercise, approximately 67% indicated they are likely to discuss the benefits of exercise, as well as provide advice about exercise, and almost 64% indicated they are likely to follow-up on exercise recommendations.

Table 1

Number of participants who responded, means, and standard deviations for the frequency with which exercise is addressed in therapy (0 = never, 4 = always)

Exercise Conversations	*n*	*M*	*SD*
Ask about exercise	93	2.91	.84
Discuss Importance of Exercise	93	2.84	.81
Discuss Benefits of Exercise	93	2.81	.90
Provide advice about exercise	93	2.59	.88
Follow-up on recommendations for exercise	92	2.77	1.09

Overall, the data representing exercise conversations were negatively skewed, showing a high likelihood of addressing exercise in therapy. This finding is contrary to the expected outcome, as previous research has indicated that therapists do not readily address exercise with clients (Burks & Keeley, 1989; Faulkner & Biddle, 2001; McEntee & Halgin, 1996).

In order to assess for which psychological disorders therapists are most often addressing exercise in therapy, participants were asked how often they recommend physical activity for mild to moderate depression, severe depression, anxiety, stress, schizophrenia, bipolar disorder, and somatic disorders. The means and standard deviations were calculated for the variables determining exercise conversations, and are shown in Table 2. Due to the fact that some responses were left blank on the questionnaires, the numbers of participants who responded to each item are also listed.

Table 2

Number of participants who responded, means, and standard deviations for the frequency with which psychotherapists recommend exercise to clients for the purpose of treating various disorders (0 = never, 4 = always)

Psychological Disorder	*n*	*M*	*SD*
Mild to moderate depression	93	3.43	.81
Severe depression	89	3.19	.98
Anxiety	92	3.10	.93
Stress	93	3.36	.79
Schizophrenia	59	1.41	1.27
Bipolar disorder	74	2.08	1.26
Somatic disorders	81	2.70	1.18

Table 2 shows that therapists are most likely to address exercise with clients who present with depression (mild to moderate, or severe), as well as stress. These findings are congruent with the overall literature on exercise and psychological disorders, which has most strongly been devoted to demonstrating a strong effect for exercise on depression (Fox, 1999; Martinsen, 2005; Mead et al., 2009). Therapists reported that they are least likely to address exercise with clients who have schizophrenia. However, this result should be interpreted with caution, as 35 respondents did not rate schizophrenia at all in their completion of the survey. It is speculated that these therapists may not work with that particular population, and therefore did not respond. Nonetheless, low rates of addressing the more severe mental illnesses such as schizophrenia and bipolar disorder fit with expectations, based on the fact that evidence thus far for the use of exercise in treating these disorders is quite limited.

Personal Exercise Practices

With the aim of determining if participants in the current study are similar to the general population with regard to time spent exercising, means, standard deviations, and ranges of values were calculated. Number of days per week participants spent engaging in 10 minutes or more of moderate to vigorous physical activity, average number of minutes spent engaging in physical activity on those days, and number of years participants had been averaging 3 hours per week or more of moderate to vigorous physical activity, were used to determine exercise practices. In order to obtain how many total minutes per week participants typically exercised, number of days spent exercising per week was

multiplied with time spent exercising each session. The results are shown in Table 3.

As shown in Table 3, the average amount of time spent exercising per week is approximately 181 minutes, or, just over 3 hours. Participants, on average, reported exercising 3.7 days per week, for around 45 minutes per session. Number of years spent exercising was asked in order to determine if differences existed between long-time exercisers and those newer to exercise. As depicted in Table 3, the average length of time that therapists in the study had been exercising was approximately 13 years.

Table 3

Number of participants, range, mean, and standard deviation of personal exercise practices

Exercise	*n*	*Range*	*M*	*SD*
Days/ Week	94	0-7	3.70	1.67
Total Time/ Session (Minutes)	93	0-120	45.23	23.41
Total Time Spent Exercising (Minutes/ week)	93	0 – 682.5	181.13	133.14
Number of Years Spent Exercising	88	0 - 50	13.44	13.94

Compared to the general population, the amount of weekly exercise indicated by participants is high. Nationally, only 15% of Canadian adults have been shown to spend a minimum of 2.5 hours per week on exercise (Statistics Canada, 2011). In contrast, the average amount indicated by participants in the

current study was over 3 hours. Hence, the self-reported amount of exercise in which participants engage may be questionable. Indeed, misreporting has been shown to be a common problem in studies assessing physical activity (Rzewnicki et al., 2003). Adams and colleagues (2005) note that misreporting physical activity levels and unhealthy food choices may arise from wanting to give socially desirable answers.

Attitudes and Knowledge

In order to determine if attitudes towards using physical activity in therapy and knowledge on the effects of exercise on psychological conditions are comparable to previous research findings, means and standard deviations were calculated. The results are shown in Table 4.

Table 4

Number of participants, means, and standard deviations of attitudes towards, and knowledge on, using exercise as a means to treat psychological disorders (0 = highly negative/poor, 4 = highly positive/excellent)

Attitude/ Knowledge	*n*	*M*	*SD*
Attitude towards exercise as prevention	94	3.44	.76
Attitude towards exercise as treatment	94	3.46	.65
Perceived knowledge of the effects of exercise	94	2.8	.77

As Table 4 shows, most participants appear to have a favourable attitude towards exercise. On of a scale from 0 to 4, participants rated their attitudes towards using exercise as a preventative treatment highly. Attitude towards using exercise as a means to treat psychological disorders was also rated highly. Favourable attitudes towards the use of addressing exercise in therapy are consistent with the literature (Faulkner & Biddle, 2001; Phongsavan et al., 2007). Previous researchers have found that despite a lack of implementation, therapists tend to hold positive attitudes towards exercise as treatment.

Perceived knowledge about using exercise, as a treatment for psychological disorders, was also rated highly, although lower than reported attitudes. This finding differs from previous research findings that have demonstrated that knowledge tends to be an inhibiting factor for addressing exercise in therapy (Dixon et al., 2003; Douglas et al., 2006; Pollack, 2001).

Barriers to Addressing Exercise

In order to examine the reasons why therapists may not address exercise with clients, respondents rated statements about exercise on a 5-point Likert scale, with 0 = *strongly disagree,* and 4 = *strongly agree*. These statements related to potential barriers to discussing exercise in practice. The means and standard deviations were calculated, and are shown in Table 5. Due to the fact that some responses were left blank on the questionnaires, the numbers of participants responding to each item are also listed.

Table 5

Number of participants who responded, means, and standard deviations for barriers to addressing exercise in therapy (0 = strongly disagree, 4 = strongly agree)

Statement About Exercise (Abbreviated)	*n*	*M*	*SD*
Insufficient knowledge	94	1.46	1.10
Not proven to be beneficial	93	.60	.95
Physical activity leads to increased energy	94	3.54	.71
Clients would rather discuss their troubles than discuss exercise	94	2.18	1.03
Physical activity can decrease depression	92	3.57	.68
Lack trust in clients' compliance	92	1.50	.85
Physical activity contributes to wellbeing	94	3.68	.51
Could foster client failures	94	1.18	.99
Helps to improve mood	93	3.53	.72
Don't know where to refer clients for exercise advice	93	1.39	1.23
Limited time	94	1.40	1.05
Physical activity helps reduce tension	94	3.75	.44
Worried about offending clients	94	.89	1.03
Physical activity can provide a sense of mastery	94	3.23	.74

Table 5 shows that all positively worded statements about exercise were rated favourably, while all negatively worded statements were rated less favourably. These findings demonstrate that respondents identified few barriers to addressing exercise with clients, and are inconsistent with previous research, which has outlined specific barriers that inhibit addressing exercise in therapy.

Nonetheless, certain barriers were identified to greater degrees than others. For example, participants identified that "Clients expect to talk about their troubles, rather than receive counselling on physical activity" and that they have "Insufficient knowledge about the effects of physical activity" as barriers to addressing exercise with clients. Interestingly, these barriers were identified despite the fact that respondents rated beliefs about the effectiveness of exercise extremely highly, as demonstrated, for instance, by almost perfect agreement with the statement, "Physical activity can help to reduce tension." These contrasting responses are indicative that although participants believe in the effectiveness of exercise to treat certain conditions, there remain potential concerns to addressing exercise in therapy.

Hypothesis 1: Relationship Between Personal Exercise Habits and Addressing Exercise

In order to test the hypothesis that engaging in regular exercise will be positively correlated with addressing exercise in therapy, Spearman's rho correlations were computed between each of the questions determining exercise conversations and personal exercise habits.

Correlations between exercise conversations and days spent per week

engaging in physical activity, as well as number of minutes spent per exercise session were first compared to results comparing exercise conversations and combined total exercise time per week (days spent per week exercising multiplied by time spent exercising each session). As results showed no significant differences between the two factors individually, as compared to combined, a decision was made to use only the combined factor (time spent exercising per week) for ease of interpretation. The results are provided in Table 6.

Table 6

Spearman's Rho Correlations and Coefficients of Determination (R^2) between Addressing Exercise and Personal Exercise Practices

Measure		Ask about Exercise	Discuss Importance of Exercise	Discuss Benefits of Exercise	Provide Advice About Exercise	Follow-up on Exercise Recomm.
Time Spent Exercising/ Week	*R*	.294**	.095	.112	.145	.018
	R^2	0.09	0.00	0.01	0.02	0.00
Number of Years Spent Exercising 3+ Hours/Week	*R*	.326**	.227*	.274*	.294*	.126
	R^2	0.11	0.05	0.08	0.09	0.02

Note. n=94
*p<0.05. **p<0.01.

In partial support of the hypothesis, number of years spent exercising was correlated with addressing exercise in therapy, while time per week spent

exercising, was generally not correlated with addressing exercise in therapy. Table 6 shows that weekly time spent exercising was only mildly associated with asking about exercise, but was not correlated with any other means of addressing exercise in therapy. However, there was a relationship between how long therapists have been exercising and addressing exercise in therapy. Small correlations were found between years spent exercising and asking about exercise, discussing the importance and benefits of exercise, and providing advice about exercise. No significant correlations were found between exercise practices and following-up on recommendations about exercise. Overall, it appears that the length of time a therapist has been exercising is related to addressing exercise with clients.

Hypothesis 2: Attitudes Towards Exercise and Addressing Exercise

In order to test the hypothesis that favourable attitudes towards the use of exercise will be positively correlated with addressing exercise in therapy, Spearman's rho correlations were computed. The results are provided in Table 7.

In partial support of the hypothesis, attitudes towards treating psychological disorders with exercise were correlated with exercise conversations in therapy, while attitudes towards using exercise as a preventative measure were not correlated with exercise conversations in therapy. Table 7 shows that attitudes towards using exercise to prevent psychological disorders were mildly associated with discussing the benefits of exercise, but were not correlated with any other means of addressing exercise in therapy.

Table 7

Spearman's Rho Correlations and Coefficients of Determination (R^2) between Addressing Exercise and Attitudes Towards Using Exercise in Therapy

Measure		Ask about Exercise	Discuss Importance of Exercise	Discuss Benefits of Exercise	Provide Advice About Exercise	Follow-up on Exercise Recomm.
Attitude Towards Exercise Preventing Psych. Disorders	*R*	-.032	.159	.211*	.190	-.004
	R^2	0.00	0.03	0.04	0.04	0.00
Attitude Towards Exercise Treating Psych. Disorders	*R*	.122	.206*	.277**	.361**	.258*
	R^2	0.01	0.04	0.08	0.13	0.07

Note. n=94
*p<0.05. **p<0.01.

The relationship between attitudes towards using exercise to treat psychological disorders was found to be stronger. Small correlations were found between attitudes towards using exercise to treat psychological disorders and discussing the importance and the benefits of exercise, providing advice about exercise, and following up on exercise recommendations.

Hypothesis 3: Knowledge of Exercise as Psychological Treatment and Addressing Exercise

In order to test the hypothesis that having knowledge of the effects of exercise on psychological disorders will be positively correlated with addressing

exercise in therapy, Spearman's Rho correlations were computed. The results are provided in Table 8.

The hypothesis that perceived knowledge of the effects of exercise on psychological disorders would be correlated with addressing exercise in therapy, was supported through mild to moderate correlations (Table 8). Specifically, perceived knowledge was correlated with asking about exercise, discussing the importance of exercise, discussing the benefits of exercise, providing advice about exercise, and following up on exercise recommendations.

Table 8

Spearman's Rho Correlations and Coefficients of Determination (R^2) between Addressing Exercise and Knowledge of Exercise as Treatment

Measure		Ask about Exercise	Discuss Importance of Exercise	Discuss Benefits of Exercise	Provide Advice About Exercise	Follow-up on Exercise Recomm.
Perceived Knowledge About Effects of Exercise on Psych. Disorders	*R*	.296**	.372**	.449**	.510**	.319**
	R^2	0.09	0.14	0.20	0.26	0.10

Note. n=94
*p<0.05. **p<0.01.

Hypothesis 4: Identified Barriers to Addressing Exercise will be Negatively Correlated with Addressing Exercise in Therapy

In order to test the hypothesis that identified barriers to addressing exercise will be negatively correlated with addressing exercise in therapy, one variable for

addressing exercise was made by adding together the responses to the five questions concerning exercise conversations in therapy (asking about exercise, discussing the importance of exercise, discussing the benefits of exercise, providing exercise recommendations, and following-up on exercise recommendations), and then Spearman's Rho correlations were computed.

The hypothesis that barriers to addressing exercise would be negatively correlated with addressing exercise in therapy was not supported. The only item that was shown to have a small negative correlation with addressing exercise in therapy was having insufficient knowledge about the effects of exercise. The overall lack of relationships demonstrated between barriers to addressing exercise and addressing exercise in therapy appears to be due to clustering of responses, where positive statements were rated highly favourably, and negative statements were rated highly unfavourably. Consequently, there was little variability in responses. Due to the lack of relationship between variables, a decision was made to not conduct additional analyses.

Chapter 5: Discussion

The objectives of this study were to examine the relationships between addressing exercise in therapy and psychotherapists' personal exercise habits, attitudes towards exercise, knowledge about exercise as a form of treatment for psychological disorders, and barriers to addressing exercise with clients. Four hypotheses concerning therapists' use of exercise conversations in therapy were proposed. First, therapists who personally engage in more exercise will be more likely to address exercise with clients. Second, therapists who have more positive attitudes towards using exercise to treat or prevent psychological disorders will be more likely to address exercise in therapy. Third, therapists who feel more knowledgeable about the benefits of exercise will be more likely to address exercise with clients. Finally, identified barriers to addressing exercise will be negatively correlated with addressing exercise in therapy.

The majority of therapists indicated that they do address exercise with clients, at least to some degree, for certain disorders. In addition, the predicted outcomes were demonstrated through small correlations for number of years therapists reported having exercised, attitudes towards exercise in the treatment of psychological disorders, and knowledge of the effects of exercise on psychological disorders. Contrary to predicted outcomes however, time per week spent exercising, attitudes towards exercise in preventing psychological disorders, and potential barriers to addressing exercise were not correlated with addressing exercise in therapy.

Addressing Exercise in Psychotherapy

Despite previous literature describing therapists' lack of conversations around exercise with clients (Burks & Keeley, 1989; Faulkner & Biddle, 2001; McEntee & Halgin, 1996), therapists in the present study indicated that they frequently talk about exercise with clients, especially for psychological disorders such as depression. Conversely, this finding is congruent with more recent studies on other healthcare professionals, such as physicians, who have been found to report that they often broach the subject exercise with patients (e.g., Douglas et al., 2006; Ribera et al., 2006).

Therapists also reported that they have favourable attitudes and a high level of knowledge about using exercise as a form of treatment for psychological disorders. These results match previous studies that have found that therapists tend to rate their attitudes as favourable towards exercise (e.g., Faulkner & Biddle, 2001; Phongsavan et al., 2007), but contrast studies that have identified knowledge as a central reason for not conversing about exercise with clients. For instance, in Abramson and colleagues' (2000) study investigating the counselling practices of primary care physicians, it was found that a significant number of respondents indicated inadequate knowledge of, or experience in, exercise. Burks and Keeley (1989) also found that therapists reported lacking knowledge about exercise and that many believed exercise should be required as a component of graduate school curriculum.

Although previous researchers have identified specific barriers that inhibit psychotherapists or other healthcare professionals from addressing exercise with

clients such as a lack of time, limited knowledge, or perceived acceptability as a form of treatment (Faulkner & Biddle, 2001; Laws et al., 2008; Phongsavan et al., 2007), responses from psychotherapists in the current study revealed that they perceive few barriers to addressing exercise in therapy, and that their overall opinion of exercise is highly favourable.

These findings also differ from McEntee and Halgin's (1996) study where numerous barriers, such as client resistance, or feeling that discussing exercise may be inappropriate for therapy, were reported. However, comparing the method of the current study with the method of McEntee and Halgin may serve to explain some of the variation in findings. Whereas the questionnaire in the current study listed barriers that respondents were asked to rate, McEntee and Halgin's survey had respondents personally generate barriers to addressing exercise. As a consequence, barriers listed by respondents may have appeared as prominent factors, although the degree to which these barriers actually influenced practice was unknown.

Personal Exercise Routines and Addressing Exercise

The predicted outcome that therapists who are personally more physically active would address exercise with greater frequency in therapy was partially supported. Time per week spent engaging in physical activity was not correlated with addressing exercise in therapy, except for asking about exercise. However, reported number of years as a regular exerciser was associated with addressing exercise. This finding is similar to findings from Barrow and colleagues' (1987) study on psychologists' physical fitness. They found that psychologists who had

been exercising for a long time attributed more effect to exercise than did those who were newer to an exercise program. Thus, it may be that individuals who are long-time exercisers are greater advocates of exercise as they have integrated exercise into their lifestyle and have had greater opportunities to become knowledgeable about exercise, and experience its benefits. This finding also highlights the importance of promoting healthy lifestyle practices in therapists; if practitioners are engaged in physical activity and have personally experienced the benefits that accompany exercise, they may be able share information about exercise with clients, and potentially help lead to changes in behaviours.

Nonetheless, it was interesting to note the low correlations between weekly time spent exercising and addressing exercise in therapy, as this finding contrasts previous research that has found these factors to be positively correlated (McEntee & Halgin, 1996; Royak-Schaler & Feldman, 1984). As noted previously however, respondents may have over-estimated their levels of physical activity, and therefore have confounded the relationship between time spent exercising and conversations about exercise in therapy. One reason that respondents may have over-estimated the time they spend exercising includes a social desirability bias. Another possibility is that by reflecting on personal exercise practices, respondents may have put greater weight on times that they have exercised, rather than times they have not; instances where individuals exercised at regular frequencies may have been recalled more easily than instances where exercise was neglected or infrequent. Future researchers may want to address how it is that personal exercise habits are measured and the best

way to quantify *high* versus *low* exercisers. Having therapists keep a weekly journal over a period of time, for instance, may lead to more accurate estimates of physical activity.

Attitudes and Addressing Exercise

Small correlations were found between attitude towards using exercise to treat psychological disorders and addressing exercise in therapy. However, attitude towards using exercise to prevent psychological disorders was not generally correlated with addressing exercise, except for discussing the benefits of exercise, which was found to have a small correlation. The difference found between attitude towards using exercise to treat psychological disorders versus prevent psychological disorders may be due to the fact that most psychotherapists deal with clients who are currently experiencing mental health problems, and have less experience dealing with healthy populations in the area of preventative treatment. As a result, the lack of variability in responses towards using exercise as a preventative treatment may have muted any possible relationship with addressing exercise in therapy.

Although the results of the current study differ from some research that has demonstrated that attitude about exercise can be uncorrelated with addressing exercise in therapy (Faulkner & Biddle, 2001; Phongsavan et al., 2007), they are comparable to findings on other healthcare professionals, where positive attitudes towards exercise have been correlated with recommending, or prescribing it (Laws et al., 2008). Overall, because so little research has been conducted on the relationship between attitude towards exercise and addressing exercise in therapy,

it is difficult to compare the current findings to general trends. Another possibility for the inconsistencies between studies is that attitudes may be influenced by mediating factors, such as knowledge, or may not hold a great deal of importance in relation to addressing exercise compared to other factors. However, it appears that at least for the participants in the current study, holding a more favourable attitude towards using exercise as a form of treatment for psychological disorders is related to addressing it with clients in therapy.

Perceived Knowledge and Addressing Exercise

Self-reported knowledge about the effects of exercise on psychological disorders was found to have medium correlations with addressing exercise, and was correlated with all aspects of exercise conversation measured (asking, discussing, recommending, and following-up on recommendations). Specifically, knowledge of exercise was most strongly correlated with discussing the benefits of exercise and providing advice about exercise. These findings are in fact quite intuitive; while most people know that exercise is good for you and may ask about exercise, those who perceive to have more knowledge on exercise perceive that they are able to discuss the benefits and provide direct advice about exercise programs.

The relationship between knowledge of the effects of exercise on psychological disorders and addressing exercise found in the current study is congruent with the literature. Previous researchers have identified that knowledge is a central component for addressing exercise with clients (Abramson et al., 2000; Burks & Keeley, 1989; Douglas et al., 2006; Phongsavan et al., 2007).

This finding also supports previous suggestions that there is a need for greater education for therapists in this area (Faulkner & Biddle, 2001; Phongsavan et al., 2007; Pollack, 2001). It can be expected that if psychotherapists are unaware or unfamiliar with the effects of exercise on mental health, they will be less likely to broach this topic with clients or provide recommendations.

Barriers Influencing Addressing Exercise

Aside from having insufficient knowledge, there were no relationships found between potential barriers to addressing exercise, and addressing exercise in therapy. This finding was unexpected, as previous research has proposed numerous reasons as to why therapists do not address exercise with clients. For instance, lack of time, perceived inappropriateness, client resistance, client sense of failure, and lacking belief about efficacy have all been cited as barriers to talking about exercise in therapy (Burks & Keeley, 1989; McEntee & Halgin, 1996).

Despite the fact that relationships between potential barriers and addressing exercise in therapy were not demonstrated in the current study, there are nonetheless potential factors that may inhibit addressing exercise with clients. Future studies that do not utilize self-report methods may best serve to clarify the impact of perceived barriers to addressing exercise with clients and the extent to which these obstacles influence therapists.

Implications for Psychotherapy

The current study serves to demonstrate that practices concerning addressing exercise in therapy may be changing. Although previous studies have

noted a lack of conversations around exercise by psychotherapists, participants in the current study report talking about it regularly. Despite these promising results, conversations about exercise may still be fairly shallow; more therapists asked about exercise than provided recommendations on, or followed-up on exercise recommendations. Self-reports also demonstrated that there is a favourable attitude towards addressing exercise with clients, and many therapists reported being knowledgeable about the effects that exercise can have on psychological disorders.

Of the factors examined, perceived knowledge appears to an important factor correlated with addressing exercise in therapy. This finding implicates the importance of knowledge dissemination to psychotherapists; if therapists are aware of the benefits of exercise for treating psychological disorders, they should be more likely to address it with clients. Due to the increased social and media focus on exercise, most individuals now know that exercise is positive and helpful, yet the reasons and mechanisms as to why may not be fully understood.

Aside from the results obtained in the current study, however, previous research indicates that psychotherapists are not addressing exercise with frequency, despite often holding favourable attitudes towards exercise. The implications of this discrepancy are important; there appears to be a disconnection between what we know to be an effective treatment for many disorders, and the use of this treatment in practice. Although therapists appear to be aware that exercise, for instance, can help to elevate mood, it is not common to consistently incorporate exercise recommendations in therapy. Therefore, we may question

whether training institutions are adequately preparing therapists to deal with physical activity, and whether research concerning the benefits of exercise is reaching practitioners in the field. The current study highlights that a perceived lack of knowledge can be an inhibiting factor to addressing exercise, and perhaps this is where greater emphasis is needed. As exercise can indeed help to alleviate symptoms of depression, improve mood, alleviate anxiety, in addition to having a plethora of physical benefits, it is an important treatment that requires greater attention in the field of psychotherapy. Interestingly, the gap between research and practice is not isolated to the topic of exercise and psychotherapy. Despite the substantial resources devoted to health research, the transfer of research findings into practice is often slow or deficient (Wandersman et al., 2008). However, there is currently a growing interest in developing strategies to increase knowledge dissemination among psychologists. In fact, a Task Force on Evidence-based Practice was initiated by the American Psychological Association (2006), highlighting the importance of integrating research practices with clinical expertise in order to best serve clients. Thus, implications for knowledge translation are important not only for the topic of exercise in therapy, but also for all research done in the field of psychology.

Still, in encouraging therapists to talk about exercise in therapy, the idea is not to replace all other treatments or therapeutic interventions with exercise. Instead, it is hoped that exercise be considered as part of treatment of the whole individual, with consideration of how mind and body are not separate entities, but connected and linked to the wellbeing of each other. If a client shows symptoms

of depression, and is largely inactive, exercise may be a simple and effective way to help alleviate depressive symptoms and begin a process of change. While guidelines on implementing an exercise routine are beyond the scope of this paper, greater information on how to address exercise with clients can be obtained in guidelines provided by Meyer and Broocks (2000) and Stathopoulou and colleagues (2006). Alternatively, conversations about exercise with clients may simply include recommendations to seek guidance from other professionals such as qualified personal trainers or sports-medicine professionals, who are able to provide expert advice or opinions on commencing exercise programs.

Although altering health behaviours can be difficult, the frequent reinforcement by mental health professionals, who are aware of the needs of those dealing with mental health disorders, will help in the adoption of regular physical activity (Richardson et al., 2005).

Limitations

One concern with the current study is that it used self-report measures, whereby participants were asked to recall their personal exercise practices, and exercise conversations with clients. As individuals often have a difficult time recalling past behaviours with accuracy, the responses obtained may not be entirely reflective of true behaviours. Sallis (2009) notes that although self-report questionnaires are the most frequently used type of measure to assess physical activity, they are frequently viewed with suspicion. Self-report data are memories of the behaviour of interest that have decayed, been filtered through perceptions and biases, and tainted by competing memories (Sallis).

Another potential limitation of using self-report measures is the possibility of a social desirability bias, whereby respondents may have wanted to appear in support of exercise. There is a likelihood that participants may have over-reported their exercise conversations, attitudes towards exercise, personal exercise practices, and knowledge, while under-reporting any barriers to addressing exercise. Indeed, social desirability, the tendency to portray one's self in keeping with perceived cultural norms, has been found to influence self-report of both diet and exercise (Adams et al., 2005). McEntee and Halgin (1996) also noted a possible self-report bias in their study; they found that 75.5% of respondents to their questionnaire reported engaging in regular aerobic exercise, which is higher then national averages and previously reported amounts from other studies.

With the prevalence of scientific influences (such as research on the benefits of exercise), societal influences (such as social marketing and government campaigns) and media influences (such as television programs promoting weight loss, books about exercise, and health-focused magazines), it may be that exercise has become so widely accepted as a positive influence that few individuals are willing to report to its neglect or admit to unfavourable attitudes towards its use. Interestingly, to date, most studies investigating the use of exercise in therapy have done so through self-report questionnaires. Alternative forms of measurement, such as controlled outcome studies, that reduce any forms of response bias, may produce different results.

Finally, another limitation of the current study is that exercise, as a topic of treatment, was not compared to other forms of treatment, such as mindfulness (to name one example). Therefore, although exercise was reported to be talked about with frequency in therapy, it is difficult to know how it compares to other forms of treatment. If psychotherapists had been asked how often they talk about exercise in therapy, compared to other topics or interventions, rates of addressing exercise may have been rated significantly lower.

Future Research Directions

Further examination into how exercise is addressed in therapy could clarify to what extent therapists are actually talking about exercise with clients, and what factors prompt or inhibit these conversations. Current information on this topic is sparse and the more comprehensive studies in this area, such as the one conducted by McEntee and Halgin (1996), are dated. The current study found that information obtained from retrospective self-report questionnaires might be questionable due to a social desirability bias around exercise, as well as individuals' difficulty in accurately recalling past behaviours. Therefore, varied approaches to examining how exercise is addressed in therapy are needed to obtain information on current practices, attitudes, and knowledge. These approaches may include examining case notes or talking with clients about their experiences.

As demonstrated through numerous studies examining the effects of exercise on psychological disorders, it is clear that exercise can be an important component to mental health. However, how exercise can be incorporated into

conversations within therapy, and how therapists can effectively transmit information about exercise to clients is yet to be determined. Daley (2002) noted that an important step forward would be the inclusion of information about the relationship between exercise and mental health in training programs for clinical and counselling psychologists, who are fundamental to the therapeutic process.

Another important avenue to explore would be client outcomes and responses to exercise interventions in psychotherapy. Although data strongly support the effects of exercise on psychological disorders, the most important part of therapy is client outcomes and whether clients feel they have improved. Exploring how exercise is introduced in therapy, and how clients respond to these conversations, then, is an integral part of improving the therapeutic process and making psychotherapists as effective as possible.

Conclusion

The relationships among psychotherapists' personal exercise practices, attitudes towards exercise, perceived knowledge about its effects on psychological disorders, potential barriers, and addressing exercise in therapy were examined. Predicted outcomes were partially supported; years spent exercising, attitudes towards using exercise to treat psychological disorders, and perceived knowledge were positively correlated with addressing exercise in therapy. However, time spent exercising per week, attitude towards using exercise to prevent psychological disorders, and potential barriers to addressing exercise in therapy were not correlated with addressing exercise with clients. In addition, there appeared to be an overall halo effect surrounding the topic of exercise; therapists'

attitudes and beliefs surrounding exercise appeared to be overly positive, and personal exercise practices appear to have been overestimated.

A central finding of this study surrounds the importance of perceived knowledge translation to psychotherapists. Perceived knowledge of the effects of exercise on psychological disorders was shown to have medium correlations with addressing exercise in therapy, and was the only factor that appeared as a barrier to addressing exercise with clients. Congruent with previous research, this finding highlights the importance of training student therapists on the topic of exercise, and on improving the dissemination of knowledge from research to practice.

As exercise has been demonstrated to help treat and alleviate symptoms of numerous psychological disorders such as depression (e.g., Martinsen, 2005), anxiety (e.g., Wipfli et al., 2008), promote wellbeing (e.g., Netz et al., 2005), and has few to no negative side-effects (Martinsen), it is a valuable tool to share with clients.

The current study served to demonstrate that attitudes and beliefs about exercise and its effects on mental health may be changing, and becoming increasingly favourable; the use of exercise in therapy appeared to be well supported by therapist-respondents. However, the use of retrospective self-report should be used with caution in the future. Researchers may be better served by collecting data through other means, such as by examining client files, or controlled outcome studies.

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Appendix A

Physical Activity and Psychotherapy Survey

This survey is designed to assess your beliefs and practices surrounding physical activity and mental health disorders. All responses will be kept anonymous and confidential. By completing this survey you are agreeing that it may be used for the purposes of this research study. You may choose to withdraw from the study, at any point, by not submitting the survey.

Demographic Information:
Gender: F ☐ M ☐ Age: _____

What percent of your time is devoted to practicing psychotherapy? ____ How many years have you been in practice? ____

Please rate the degree to which you identify with the following therapeutic orientations (0= not at all; 4 = very much):

Humanistic	0----------1----------2----------3----------4
Cognitive/ Behavioural	0----------1----------2----------3----------4
Psychodynamic/ Analytic	0----------1----------2----------3----------4
Systemic/ Family	0----------1----------2----------3----------4
Narrative/ Solution Focused	0----------1----------2----------3----------4

The following section is in regards to your personal exercise routine.

1. How many days per week do you engage in 10 minutes or more of moderate to vigorous physical activity? (Moderate to vigorous activities include those that require hard physical effort and make you breathe harder than normal.) ____

2. On average, how much time do you spend doing physical activity on those days (in minutes)? ____

3. For how many years have you been averaging 3 hours per week or more of moderate to vigorous physical activity? ____

The following section contains questions regarding the discussion of physical activity with clients.

1. How often do you ask about your clients' level of physical activity?
   Never 0----------1----------2----------3----------4 With Every Client

2. How often do you discuss physical activity with your clients? 'Discuss' refers to talking about the importance of physical activity and the client's own exercise habits.
   Never 0----------1----------2----------3----------4 With Every Client

3. How often do you discuss the benefits of exercise with clients?
   Never 0----------1----------2----------3----------4 With Every Client

4. How often do you provide advice about or recommend physical activity for your clients?
   Never 0----------1----------2----------3----------4 With Every Client

5. How often do you recommend physical activity to your clients, for the purpose of treating the following disorders/ conditions? (*with 0 = never, and 4 = always)*

Mild to moderate depression:	Never	0----------1----------2----------3----------4	Always
Severe depression:		0----------1----------2----------3----------4	
Anxiety:		0----------1----------2----------3----------4	
Stress:		0----------1----------2----------3----------4	
Schizophrenia:		0----------1----------2----------3----------4	
Bipolar disorder:		0----------1----------2----------3----------4	
Somatic disorders:		0----------1----------2----------3----------4	

6. If you do discuss physical activity with clients, how often do you follow-up on recommendations to exercise?

   Never 0----------1----------2----------3----------4 With Every Client

7. What is your attitude toward using physical activity in the **prevention** of mental disorders?

   Highly negative 0----------1----------2----------3----------4 Highly positive

8. What is your attitude toward using physical activity in **treatment** of psychological disorders/ conditions?

   Highly negative 0----------1----------2----------3----------4 Highly positive

9. How would you rate your **knowledge** about the effects (therapeutic/ preventive) of physical activity on mental disorders/ conditions?

   Poor/ no knowledge 0----------1----------2----------3----------4 Excellent

In order to help me understand the relationship between your personal exercise routine and your discussion of physical activity with clients, please indicate your agreement with the following statements (with 0 = strongly disagree and 4 = strongly agree):

	Strongly disagree	Strongly agree
10. I have insufficient knowledge about the effects of physical activity	0-------1-------2-------3-------4	
11. I do not consider it scientifically proven that physical activity is beneficial for the disorders I treat:	0-------1-------2-------3-------4	
12. I believe that physical activity leads to increased energy	0-------1-------2-------3-------4	
13. I believe my clients' expect to talk about their troubles, rather than receive counselling on physical activity	0-------1-------2-------3-------4	
14. I believe that physical activity can decrease the symptoms of depression	0-------1-------2-------3-------4	
15. I have a lack of trust in my clients' compliance	0-------1-------2-------3-------4	
16. Physical activity contributes to a positive sense of wellbeing	0-------1-------2-------3-------4	
17. Suggestions to exercise could foster client sense of failure	0-------1-------2-------3-------4	
18. I know that physical activity helps improve mood	0-------1-------2-------3-------4	
19. I don't know to whom I may refer a client that needs to be more physically active	0-------1-------2-------3-------4	
20. Due to limited time, counselling physical activity has a low priority	0-------1-------2-------3-------4	
21. Physical activity can help to reduce tension	0-------1-------2-------3-------4	
22. I am worried of offending clients by suggesting physical activity	0-------1-------2-------3-------4	
23. Physical activity can provide a sense of mastery for clients	0-------1-------2-------3-------4	

Thank you *for completing the survey! If you have any further comments feel free to write them in the space below.*

Contact:
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Appendix B

PARTICIPANT LETTER

Exercise and mental health: Psychotherapists' beliefs, attitudes, and practices.

Study about the relationship between psychotherapists' attitudes, beliefs, and personal exercise habits, and their discussion of physical activity in therapy.

Principal Investigator: Marjorie Hitschfeld, B.A.

Purpose of the research: Fulfillment of thesis requirements for a M.Ed. in Counselling Psychology at the University of Alberta, Edmonton, Alberta.

Completion time: 5 minutes

If you are a psychotherapist...

You are invited to participate in an anonymous study to examine relationships between therapists' beliefs, attitudes and personal practices surrounding exercise and their likelihood of discussing physical activity in therapy.

If you decide you would like to participate, please complete the questionnaire.

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB at (780) 492-3751.

Thank you for your time and consideration. Without your cooperation this research would not be possible.

Sincerely,

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Appendix C

Contact Information

Thank you for taking the time to participate in this research project. If you would like to receive a copy of the research findings, you are welcome to contact the Department of Educational Psychology at the University of Alberta. If you have any questions or concerns regarding your rights as a participant or any other aspect of the study, please contact me, or my supervisor, at the contact information below.

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