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Improving Mental Illness Recovery Utilizing Exercise Through Assertive Community Treatment Teams

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Improving Mental Illness Recovery Utilizing Exercise
Through Assertive Community Treatment Teams

By

Tami Y Wesselink, L.S.W.

MSW Clinical Research Paper

Presented to the Faculty of the
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Master of Social Work

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The Clinical Research Project is a graduation requirement for MSW students at St. Catherine University/University of St. Thomas School of Social Work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a Master's thesis nor a dissertation.

ASSERTIVE COMMUNITY TREATMENT TEAMS AND EXERCISE

Abstract

Assertive Community Treatment (ACT) teams are designed to be an all-inclusive delivery of services to individuals with severe and persistent mental illness. The purpose of this study is to gain a greater understanding of the benefits of exercise in the recovery of individuals with mental illness receiving services from ACT teams. There are currently 26 ACT teams in the State of Minnesota. Through 11 face-to-face interviews and eight written responses to interview questions, five themes developed: (a) The Role and Influence of Team Leads on Exercise, (b) Why individuals on Assertive Community Treatment Teams are Exercising, (c) How Incentives and Reinforcements are Used, (d) What Types of Exercise are Used, and (e) Barriers that Negatively Impact on the Effectiveness of Exercise on Mental Health. The findings of this study suggest that ACT Team Leads believe exercise benefits mental and physical health. However, a variety of barriers contribute to low levels of formal exercise goals on ACT teams. While this study is exploratory in nature, it holds implications for social work practice, policy, and future research.

Keywords: mental illness, Assertive Community Treatment, exercise

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Assertive Community Treatment Teams and Exercise

Internationally, literature indicates that exercise is beneficial to one's physical and mental health. Researchers from Norway (Bertheussen et al., 2011), the United Kingdom (C3 Collaborating for Health, 2011), Hong Kong (Cerin, 2010), Belgium (Knapen, Vancampfort, Morien, & Marchal, 2015), Canada (Marzolini, Jensen, & Melville, 2008), Australia (Morgan, Parker, Alvarez-Jimenez, & Jorm, 2013), India (Sarojini Devi, & Usha Rani, 2013) and the Netherlands (Scheewe et al., 2013) have conducted both qualitative and quantitative studies to better understand the implications of exercise on mental health. Researchers in the United States have also used a variety of tools to assess the benefits of exercise on physical and mental health (Gorczyński & Faulkner, 2010; Kim et al., 2012; Richardson et al., 2005). The findings have shown there are few contraindications and a number of positive effects of exercise including benefits to mental health, physical health and general well-being.

Physical health problems among individuals with mental illness are significant (Clow & Edmunds, 2014). Problems are a result of a number of factors including lifestyle choices of poor diet and obesity, smoking, lack of exercise, and the side effects of medication often prescribed to help reduce mental health symptoms (Brown et al., 2015; C3 Collaborating for Health, 2011; Chacón, Mora, Gervás-Rios, & Gilaberte, 2011). There are two-way connections between physical health and mental health. Improving physical health may improve mental health, while improving mental health may also improve physical health (Bertheussen et al., 2011; C3 Collaborating for Health, 2011; Kim et al., 2012).

Few mental health professionals recommend or facilitate exercise into a recovery plan for individuals suffering from mental health symptoms. Recovery does not only mean that clients no longer have mental or physical health problems but also have a reduction in symptoms. In fact, it is an opportunity to go beyond their usual abilities, to achieve greater things (Carless & Douglas, 2008). Serious mental illness can impact every area of a person's life. Recovery is a broadly defined concept, supporting plans to improve a client's life through a variety of modalities, including exercise (Carless & Douglas, 2008). Research indicates incorporating exercise programming into mental health treatment can promote faster, more effective recovery from symptoms and increased quality of life outcomes (Callaghan, 2004). It is the responsibility of social workers and all mental health professionals to educate and incorporate the appropriate use of both pills and skills, including exercise, in treatment recommendations to maximize recovery efforts.

The focus of this researcher's qualitative research project is to identify how Assertive Community Treatment (ACT) teams are incorporating exercise into treatment planning to improve mental health recovery efforts with clients. An ACT team includes mental health professionals including a Team Lead, who is most commonly a Licensed Independent Clinical Social Worker (LICSW), a Psychiatrist or Psychiatric Nurse Practitioner, a Registered Nurse, and mental health practitioners including a Chemical Dependency Counselor and a Vocational Specialist. ACT teams provide the most intensive, holistic, community-based rehabilitative services to individuals who meet the clinical definition of severe and persistent mental illness (SPMI) in Minnesota (Minnesota Department of Human Services, 2013). ACT services are considered an

evidence-based practice (DHS, 2008). ACT is a multidisciplinary team approach providing individualized treatment and rehabilitation to people whose primary diagnoses include major depression, schizophrenia, or bi-polar disorder (DHS, 2008). These individuals require intensive services, available 24 hours per day, seven days per week, 365 days per year (DHS, 2013). ACT teams provide an array of services, but specific to this researcher are the areas of social and interpersonal relationships, illness education, illness management, and support to promote recovery from mental health symptoms (DHS, 2013).

An all-inclusive treatment, such as ACT, provides the ideal structure and teamwork to incorporate individualized exercise options into recovery plans (Manuel et al., 2013). Clow and Edmunds (2014) documented research illustrating the connection between exercise, mental health and well-being with individuals diagnosed with depression, schizophrenia and addictive behaviors. They recommended professional facilitation of exercise programs, promoting enjoyment while reducing negative symptoms. Manuel et al. (2013) identified the use of therapeutic interventions by ACT teams to encourage voluntary participation in exercise. Richardson et al. (2005) promoted integrating exercise programs into mental health services. Richardson et al. (2005) also found evidence that exercise is effective in reducing mental health symptoms, specifically depression. Simon (2014) identified that community mental health teams, like ACT teams, can support the recommendations of other mental health professionals and facilitate individualized exercise programs. Wholey et al. (2012) identified teamwork within ACT teams and the importance of providing person-centered care, including exercise, to support client recovery efforts and outcomes.

In this study, the following research question will be examined: How are ACT teams using exercise to improve the recovery progress of clients with severe and persistent mental illness? Through a variety of modalities, ACT teams are doing their part to encourage individualized options for clients to increase participation in exercise and reduce mental health symptoms. Marzolini et al. (2009) identify exercise as an underutilized practice in mental health treatment. Community-based exercise groups, facilitated by qualified staff from a multidisciplinary team like an ACT team, are effective in supporting mental health recovery efforts. By interviewing Team Leads of ACT teams, this study will explore how ACT teams are using exercise to improve the mental health recovery efforts with clients. This will contribute to the already existing literature supporting the evidence that exercise improves the mental health of individuals with mental illness.

By identifying specific research related to exercise and its positive impact on mental health recovery efforts, this researcher hopes to encourage all mental health professionals, including social workers, clinicians, medical professionals like doctors and nurses, and members of ACT teams, to increase their efforts to incorporate exercise into client recovery plans. By conducting a rigorous research study on exactly how exercise is being incorporated, why clients exercise, what barriers prevent exercising and other considerations individual to each ACT team, this research may provide support that exercise is an evidenced-based practice for mental health recovery. Ultimately, exercise can then be implemented more effectively to reduce the negative symptoms of mental health, such as depression, anxiety and psychosis, across a broader service delivery than only ACT teams.

Literature Review

Mental health symptoms often create barriers that prohibit individuals with these symptoms from greater community integration and general well-being. Bertheussen et al. (2011) most fully encompassed the definition of exercise to be a consciously planned and repetitive activity for the purpose of improving health, both physical and mental. Wolff et al. (2011) found no strong evidence to support that exercise reduces mental health symptoms related to schizophrenia, major depression and bipolar disorder. In contrast, a majority of other reviews suggest a strong relationship between exercise and improved mental health.

There is a growing volume of research throughout the world that supports the psychological and physical benefits of exercise. The details for implementing a specific exercise program producing maximum benefits to mental illnesses has not produced consistent results. The studies have been short in duration and have had limited participants. They have shown, however, that any participation in exercise is beneficial to a diverse range of both physical health and mental health problems (Clow & Edmunds, 2014; Jerome et al., 2009). In general, four themes permeated the literature: (1) how clients exercise, (2) why clients exercise, (3) barriers to incorporating exercise plans, and (4) other recommendations to be considered by ACT teams including group facilitated exercise, positive interventions, and coordinated care with other medical providers.

How Clients Exercise

Clients walked. Research has found evidence that individuals with mental illness have successfully incorporated a variety of exercises into their recovery plans. The most frequently selected type of exercise is walking (Faulkner, Cohn, & Remington, 2006;

Richardson et al., 2005; Ussher, Stanbury, Cheeseman, & Faulkner, 2007). Walking is one of the best forms of exercise because it has low impact on the joints, but is weight-bearing so it improves bone density, can reduce stress and improve sleep (Richardson et al., 2005). Walking is convenient, accessible, and safe (Richardson et al., 2005). Walking programs can be individualized to meet client need, can be completed any time of the day and are relatively inexpensive (C3 Collaborating for Health, 2011; Richardson et al., 2005).

Clients used pedometers. The use of pedometers has become an effective tool for monitoring a variety of physical activities. Used mostly for walking, pedometers can keep track of distance walked, steps taken, and calories burned. One specific study found that by using a pedometer to track physical activity, participants showed an increase of about 2,000 steps or one mile more exercise per day (Bravata et al., 2007). Secondary gains from this included physical benefits of weight loss, reduced blood pressure, and reduction in Body Mass Index (BMI). The progress of each day was recorded in a step diary. Setting individualized step goals also seemed to be very motivational for the participants. In contrast, providing counseling to the participants did not prove effective in increasing their participation or improving outcomes. The results validated the benefits of a pedometer, a relatively inexpensive tool, to increase the participants' exercise, which, in turn improved other related health areas (Bravata et al., 2007; C3 Collaborating for Health, 2011; Richardson et al., 2005).

Clients participated in a variety of exercises. There were a number of other exercises identified as beneficial options for health. These included swimming, rowing, running, bike riding, jogging, jumping rope, strength training, aerobics, weight-training,

martial arts, boxing, tennis, resistance training, muscle strengthening and toning exercises. Activities such as community gardening and dancing were also found to be beneficial (C3 Collaborating for Health, 2011). The use of a treadmill, bicycle, stepper or rowing machine was recommended in the study by Atlantis, Chow, Kirby, and Fiatarone Singh (2004). In addition, participants incorporated a weight training/resistance training protocol that included both free weights and machine weights based on participants' age and heart rate (Callaghan, 2004; Pearsall, Smith, Pelosi, & Geddes, 2014; Sarojini Devi & Usha Rani, 2013). Case studies found each of the exercises to be more effective when completed in the fresh outdoor air rather than a fitness center or other indoor exercise area (C3 Collaborating for Health, 2011). Results were even greater when done in the presence of water such as lakes and streams. The aesthetics of water has a positive effect on participants (C3 Collaborating for Health, 2011). Yoga was identified as the most effective form of exercise. Participants in yoga groups showed the greatest improvement in mental health, quality of life scores and psychological changes (Gorczyński & Faulkner, 2010; Sarojini Devi & Usha Rani, 2013). Research supports the incorporation of any exercise into treatment plans to improve both physical health and mental health.

The impact of exercise intensity and duration. The recommendations for specific exercise routines are not consistent among researchers. How long or how frequently clients should exercise to promote optimal benefits is still being assessed (Malcolm, Evans-Lacko, Little, Henderson, & Thornicroft, 2013). Defining recommended levels of intensity of exercise in research is also not consistent. Terms such as moderate, vigorous, and highly intense typically measure the intensity of exercise and vary among studies. However, a general rule is the talk test, which says if you are

exercising at a moderate intensity, you can talk but not sing. If you are doing vigorous or more intense exercise, you will not be able to say more than a few words without pausing for a breath (C3 Collaborating for Health, 2011). Atlantis et al. (2004) provides very detailed recommendations for the participants including high intensity aerobic exercise for 20 minutes, three times per week. C3 Collaborating for Health (2011) recommends moderately intense exercise for 30 minutes five days a week, such as a brisk walk that noticeably increases the heart rate. Alternatively, highly intense exercise is recommended a minimum of 20 minutes, three days a week. An example is jogging, which causes rapid breathing and a substantial increase in heart rate (C3 Collaborating for Health, 2011).

According to an article regarding exercise for people with schizophrenia, 30 minutes of daily, moderate exercise results in reduced anxiety and depression (*Moderate exercise*, 2010). Callaghan (2004) recommends a minimum of 30 minutes of intense exercise, five days a week, to recognize the benefits exercise provides to participants. Bertheussen et al. (2011) suggests that, to obtain maximum mental health benefits of exercise, duration and intensity should be of greater priority than the frequency of exercise, especially in people over 60 years of age. Kim et al. (2012) determined the optimal amount of exercise associated with improved mental health benefits to be 2.5 to 7.5 hours of physical activity per week. According to the physical activity guidelines from the Centers for Disease Control and Prevention (CDC, 2008), adults need at least 150 minutes of moderate intensity aerobic activity each week. Examples include brisk walking, water aerobics, biking, doubles tennis or pushing a lawn mower. Weight lifting two days a week that incorporates all the major muscle groups is also recommended. As an alternative, the CDC recommends 75 minutes of more intense aerobic activity each week. Examples of

this level of exercise include jogging, swimming laps, biking hills, singles tennis or basketball. Two days a week of weight lifting continues to be recommended. A combination of both moderate and more intense exercise with weight training is also acceptable (CDC, 2008).

Clients' role of self-empowerment in exercise. In contrast to Bertheussen et al. (2011), Szabo (2013) identifies that a prescriptive level of intensity of exercise is not important to mental health benefits. Instead, reporting that exercise completed at the intensity of the participants choice is most beneficial to health. Szabo (2013) questions the validity of reports about the benefits of exercise to mental health because they are too subjective to be reliable. Participants may be reporting improved mental health to satisfy the researcher and their own desires to feel better. Szabo identifies that physical benefits and this "placebo effect" may mutually contribute to the improvements noted in other research (Szabo, 2013, p. 453).

Individualized exercise planning. A consistent recommendation throughout the findings is that exercise plans are to be highly individualized and begin at the client's current abilities. The idea is to encourage small steps towards increased exercise. When each plan is tailored to the individual based on the unique goals of participants, exercise is an effective tool for individuals with mental illness (Callaghan, 2004; Fogarty & Happell, 2005; Morgan, Parker, Alvarez-Jimenez, & Jorm, 2013). Individualized exercise planning for adults with mental illness is most important. Secondly, the type of exercise and whether exercise is a group activity or an individual activity also impact on the success rate. Assessing the current level of activity and slowly increasing activity is most likely to be successful. Exercise programs need to focus on strengths and minimize

barriers to participation (Morgan et al., 2013). Any exercise is better than no exercise in improving health.

Why Clients Exercise

Physically fit people are able to engage in daily activities without feeling tired or worn out and are better able to fight off diseases, infections and degenerative and age-related health problems. Dating back to the early Olympic Games and Biblical times, exercise was incorporated into daily activities for work and for pleasure (Callaghan, 2004). This long history of exercise and its positive implications on both physical and mental health is worthy of on-going research.

Clients exercise to reduce mental health symptoms. Clients participate in exercise programs for a variety of reasons. The primary reason clients engaged in exercise was because it reduced symptoms such as depression, stress and anxiety (Atlantis et al., 2004; Clow & Edmunds, 2014). Other reasons for participation in physical activities included improved self-esteem and socialization, reducing negative symptoms associated with mental health. Exercise gave participants an opportunity to achieve something and gain self-confidence (Donhoffer & Chan, 2007; Gorczynski & Faulkner, 2010; Mason, & Holt, 2012). Morgan, Parker, Alvarez-Jimenez, & Jorm (2013) found that for individuals with serious mental illness, having other people participating with them in the exercise led to a greater chance of success. Other studies identified specific benefits to include improved mood, reduction in stress, anger, anxiety and depression and slowing cognitive decompensation, including memory and attention (C3 Collaborating for Health, 2011; Callaghan, 2004). Individuals with schizophrenia found exercise to reduce auditory hallucinations and improve sleep hygiene (Callaghan, 2004).

Exercise can be an effective tool to manage symptoms and alleviate the negative effects of mental illness, but it can also contribute positively to recovery efforts including increased meaning, purpose, and satisfaction in life (Carless & Douglas, 2008).

Clients exercise to improve physical health. Some clients exercise for physical health reasons such as physical rehabilitation. Individuals with mental illness have more physical health problems. These include cardiovascular disease, higher levels of smoking and drug use, poor eating habits and sedentary lifestyle resulting in obesity, limited access to appropriate healthcare and adverse effects of medications (Chacón et al., 2011; Jerome et al., 2009; Richardson et al., 2005). Individuals with severe mental illness also have reduced life expectancy compared to the general population (Chacón et al., 2011). A report from the United Kingdom provides evidence supporting the benefits of physical activity on health (C3 Collaborating for Health, 2011). Physical activity affects almost every part of the body, including organs, muscles, bones, blood, the immune system, and the nervous system. Physical activity can reduce physical health concerns related to high blood pressure, high cholesterol, high BMI, diabetes and heart disease (C3 Collaborating for Health, 2011). Another study identified improvement in fatigue and overall mood after only 10 minutes of exercise (Donhoffer & Chan, 2007).

The benefits of physical activity increase as the frequency and intensity of exercise increases (C3 Collaborating for Health, 2011; Donhoffer & Chan, 2007). A different study suggests that duration and intensity are more important than frequency of exercise when the goal is physical health improvement. This was especially true in younger adults. Similarly, duration and intensity of exercise was more important than frequency in adults over 60 years of age (Bertheussen et al., 2011). Notwithstanding all

the other risk factors, exercise reduces the risk of physical health problems including coronary heart disease resulting in earlier mortality rates in individuals with mental illness (Faulkner, Cohn, & Remington, 2006; Jerome et al., 2009). Exercise is beneficial to physical health recovery, especially when a specific physical health problem is identified.

Clients participate in weight loss programs. Weight gain resulting in obesity is one of the most common adverse effects related to mental illness, specifically the negative effect of many antipsychotic medications (Chacón et al., 2011; Fogarty & Happell, 2005). Regular exercise is one of the few activities proven beneficial for weight loss (Jerome et al., 2009). Weight loss programs increase effectiveness when programs follow a structured program and include an educational component (Brown et al., 2015). Weight loss programs increase effectiveness when programs also include information on nutrition and exercise, and encourage participation for at least three months. (Brown et al., 2015). For example, the Nutrition and Exercise for Wellness and Recovery (NEW-R) curriculum is a new eight week weight loss program promoting purposeful weight loss through education on nutrition and exercise (Brown, et al., 2015). This program was tested on 18 individuals currently receiving community-based mental health services. The program manual is a free download, is adaptable and is a quick learn for staff to incorporate into individualized exercise programs. Although the study was small, its results were positive for weight loss and increased knowledge about weight loss at the six-month review (Brown et al., 2015). Solutions for Wellness, another structured program sponsored by Eli Lilly and Company, focuses on exercise and diet. This study

has been tested in several countries including the U.S., Ireland, and Korea. The results show a reduction in weight and BMI of participants (Chacón et al., 2011).

One study also gives a recommendation regarding duration of exercise specific to weight control. Jerome et al. (2008) recommends 60 minutes of exercise a day for weight control, an increase from recommendations for general well-being. Exercise can be an effective weight loss tool.

Clients focus on specific exercises to reduce specific mental illnesses. A number of studies found evidence to support that specific exercise can help manage symptoms of a specific mental illness. Callaghan (2004) published research to support martial arts as the most effective exercise for depression, boxing or tennis as the most effective for anger or frustration, and team sports as the most effective in improving social skills. In addition, Callaghan (2004) found running more effective for depression than for psychosis.

Further evidence exists to support that exercise is an effective treatment for depression (Knapen et al., 2015; Rethorst, Wipfli & Landers, 2009; Richardson et al., 2005; Marzolini, Jensen, & Melville 2009). Donhoffer and Chan (2007) reinforced these findings by saying that clients with major depression showed similar improvement with aerobic exercise as those taking psychotropic medications. In contrast, research results from Pearsall et al. (2014) found that exercise did not have a significant effect on anxiety or depressive symptoms, but exercise did generate an increase in overall activity. Similarly, Morgan et al. (2013) support exercise as a treatment for depression but identified it as effective only short-term; the long-term benefits have shown no better outcome between two controlled study groups.

Fogarty and Happell (2005), Gorczynski and Faulkner (2010), and Scheewe et al. (2013) found exercise decreased symptoms of schizophrenia. Specific articles regarding exercise for people with schizophrenia supported previous findings that exercise improves the overall well-being of individuals with schizophrenia, most notably reduced anxiety and depression (Callaghan, 2004; *Moderate exercise*, 2010). Overall, clients noted improved confidence, purpose, and achievement when participating in regular exercise, resulting in an improved quality of life.

Questions regarding benefits of exercise on mental health. Cerin (2010) reviews a number of studies related to how and why physical activity impacts mental health. This article raises some very important questions related to exercise and mental health. This study asks if physical activity affects depression or if depression affects physical activity. The study asks if self-efficacy determines engagement in physical activity or if engagement in physical activity determines self-efficacy. This study recognizes that the answer may be ‘yes’ to all. What comes first? Depression may be improved by exercise (Rethorst et al., 2009), but depression also reduces physical activity. Similarly, physical activity affects physical health and vice versa (Cerin, 2010). This study encourages additional research to uncover more correlations between physical activity and its benefits on mental health, specifically, depression and exercise.

Exercise benefits for two adult males. Carless and Douglas (2008) conducted research on the role of exercise specifically with two adult males in recovery from serious mental illness. These two individuals identified interest in exercise as young men and recognized the positive psychological benefits of exercise, including improved mood and concentration. In addition, they recognized the social benefits, and the sharing of

experiences with others who enjoy the same interest in physical activities. They identified that success with exercise increased their self-worth and self-esteem. For these two men, incorporating exercise into their treatment provided encouragement and practical application to support physical and mental health needs. In contrast, the comparison between the two men highlighted the unique opportunity exercise provides to each participant. For one man, sports was central to his identity and sense of self. For the other man, sports and exercise was used as a vehicle to pursue other activities that hold greater meaning. The relationship between exercise and mental health is tailored to each individual and allows each person to experience different benefits applicable to their own recovery goals (Carless & Douglas, 2008).

Exercise can be proactive and reactive. Some studies found exercise to be a preventative activity, proactively anticipating possible health concerns. In contrast, other participants used exercise as a reaction or response to existing health concerns. Atlantis et al. (2004) found evidence to suggest that exercise was instrumental in preventing some of the negative effects of medications such as weight gain and hypertension in addition to other therapeutic value. Healthy living, incorporating nutrition, and exercise were effective in obtaining, retaining and maintaining good physical health, even in clients with severe mental illness (Chacón et al., 2011). Kim et al. (2013) report that regular physical activity appears to prevent anxiety related symptoms in mental illness. A large Dutch study, including 7,076 adults, found that physical activity reduced the risk of a mood disorder or anxiety disorder over the three-year follow up period (Morgan et al., 2013). In 2007, the American College of Sports Medicine (ACSM, 2015) launched a program called Exercise Is Medicine (EIM). The goal of EIM was to make the

scientifically proven benefits of physical activity a part of both prevention and treatment of existing conditions. EIM was proactively initiated by healthcare providers across all medical services (ACSM, 2015; Szabo, 2013). The incorporation of physical activity should be part of clinical practice for individuals with mental illness (Faulkner et al., 2006).

Barriers to Exercise

Clients with mental illness often face a number of obstacles when incorporating exercise into their recovery plan. Lifestyle factors including poor diet, physical inactivity, obesity, and smoking can increase physical problems making exercise especially difficult (Pearsall et al., 2014). Side effects of psychotropic medications including dry mouth and fatigue make it difficult to exercise. Other reasons to avoid exercise include somatic complaints, low self-esteem, and lack of energy to participate (Knapen et al., 2015). Exercise could also result in injury if proper warm up and cool down was not completed (Richardson et al., 2005). Jerome et al. (2009) raised concern that psychological symptoms including sadness, depression and impaired cognitive functioning can also impact on the success of exercise interventions and efforts. In contrast, further results by Jerome et al. (2009) found no negative correlation between depression or other mental health symptoms and participation in physical activity. The results were measured by participants from a psychiatric rehabilitation center wearing accelerometers (Jerome et al., 2009). Moore, Raisanen, Moore, Ud Din, and Murphy (2013) reported increased anxiety within the public workout areas and negative self-judgments comparing themselves to other exercisers. Marzolini et al. (2009) identified the main barriers to attending exercise sessions facilitated by ACT staff included unknown reasons, medical

issues which included five hospital stays by the same participant, agitation, not feeling well, blister on the toe, sore knee, arm and throat, family visitors and medical appointments. Interestingly, none of the barriers to attendance were related to problems associated with the exercise program (Marzolini et al., 2009). The hours of operation, location or membership fees associated with fitness centers can be barriers. In addition, organized group exercise may not work into individual schedules (Moore et al., 2013).

Other ACT Considerations

Three final themes presented themselves in the research review. The first theme relates to the benefits of group facilitated exercise and its effectiveness in recovery from mental health symptoms. The second theme raises the question of appropriate interventions as reinforcements within the ACT treatment model of service delivery. The third theme identifies the benefits of coordinating care with medical professionals to support exercise as an effective part of the mental health and physical health recovery plan.

Staff facilitated exercise. ACT teams have the unique opportunity among mental health professionals to not only encourage exercise but also to facilitate exercise programs and exercise groups as a part of their treatment. Staff facilitated groups could include supervising programs set up by facility fitness trainers. It could also include less formal groups facilitated by ACT staff, encouraging participation in a variety of activities in a variety of settings.

Aerobic exercise and resistance training. A study was conducted to investigate the benefits of a 12 week, community-based, group exercise program of both aerobic exercise and resistance training for individuals with schizophrenia/schizoaffective

disorder enrolled in an ACT team (Marzolini et al., 2009). As expected, the staff facilitated exercise program produced significant positive results in mental health and muscle strength (Marzolini et al., 2009). The comparison group of home-based exercise participants was significantly less effective (Marzolini et al., 2009). The decrease in depression was directly related to the attendance of the staff facilitated group and program participation. This study validated the benefits of staff facilitated exercise groups in mental health recovery (Marzolini et al., 2009).

Effective leadership. Mason and Holt (2012) reinforced the value of the role of an effective group leader. Effective exercise facilitators were seen as approachable, motivating, non-judgmental, supportive, encouraging, and caring resulting in increased participation and self-esteem. Support from the facilitator fostered competence and confidence and increased pleasure in the exercise activities.

Individualized exercise plans. Knapen et al. (2015) identifies three components of a well-defined exercise plan. First, an exercise program for individuals with mental illness would include an assessment to identify related co-morbid risks such as cardiovascular disease or diabetes. Staff would be sure participants are medically cleared before beginning the program. These participants would initially begin with very low intensity exercise and build upward gradually. In addition, staff would assess for possible side effects of medication to include dizziness, dry mouth, nausea, excessive sweating or no sweating and tremor. The exercise program would reflect any accommodations for these proactively (Knapen et al., 2015).

Secondly, staff would assess general physical fitness levels including the exercise tolerance of each participant. For example, people diagnosed with depression may have

increased fatigue and low motivation, which would affect their program plan. People diagnosed with anxiety should be assessed first for general health, previous experience with fitness training, energy to participate and motivation for moderate to intense exercise (Knapen et al., 2015).

Lastly, as a matter of informed consent, staff should discuss with the participant any possible barriers and benefits to participation in their planned exercise routine (Knapen et al., 2015).

Overcoming obstacles. Depressed people express barriers such as psychosomatic complaints, feelings of low self-worth and self-confidence, low energy, high fatigue, limited interest and motivation to carry through with planning, and weak physical health or general hopelessness regarding their specific situation (Knapen et al., 2015). Staff assist in brainstorming possible strategies to assist the person in overcoming perceived problems before starting their program. Identifying what physical health and mental health benefits are most motivating to their participation can be very effective in moving them in the direction of change and recovery. Staff training in motivational interviewing can be very effective with this step (Knapen et al., 2015). Staff need to be educated and organized to effectively carry out the well-defined plan.

Three phases of exercise. Knapen et al. (2015) also defined three specific phases of exercise. The initial phase included trained staff working with the person to establish an exercise program based on preferences, expectations, and the physical assessment. Staff exercised with the person to reduce barriers and increase comradery. Staff provided regular feedback regarding progress as well as education and support. Cheerleading was especially important during the initial phase to validate effort and participation. The

second phase encouraged maintaining participation in the supervised exercise program. Staff reminded participants of the gains they made towards their personal goals, recognized improved mental health and reinforced self-determination by focusing on the positive experiences of exercise itself and the role they have in being physically active. The third phase was very important and included follow-up after the supervised program. Staff facilitated discussion regarding possible new or renewed barriers, reinforced program changes, and encouraged support from other people including family, friends and other participants (Knapen et al., 2015). Relapse prevention was an important component of this phase as guilt, frustration, and self-criticism may reduce participants' ability to meet their exercise goals. Reviewing goals and setting realistic expectations, reframing negative thinking and focusing on the progress of every exercise session can be effective in motivating the participant (Knapen et al., 2015). In all phases, staff plays an important role in the success of individual exercise programs.

A study within the community. According to Atlantis et al. (2004), staff plays a significant role in the success of exercise programs. Staff provide supervision at a fitness center with specific hours Monday through Friday. Staff provide positive reinforcement to participants to maximize outcomes of participants. In addition, staff provide education on the pros and cons of incorporating exercise into their daily routines, nutrition and appropriate use of equipment. A manual was provided to each participant including relevant material to reinforce education and participation. Staff leading exercise programs provide motivational interviewing, transportation, and positive reinforcement to encourage participation in voluntary exercise to improve both mental and physical health. Exercise was facilitated and completed either as a group activity or individually. Group

leaders should be trained and knowledgeable in mental health and exercise, and exercise should be fun and engaging. A good group facilitator will encourage group participation, which has a higher degree of success because of the commitment to the group members and to the facilitator (Atlantis et al., 2004; Knapen et al., 2015). Group programming can produce a notable effect on the participants individually as well as a comradery between staff and client participants. In addition, specific exercise routines can be staff facilitated or client directed. Either way, a good group facilitator makes a positive impact on the success of exercise programs (Fogarty & Happell, 2005).

A study within a hospital. In 2010, Western Australian State Forensic Mental Health Service conducted a study on exercise as a part of recovery in an acute care, secure setting and found exercise to be beneficial. Team sport activities, such as circuit cricket, were most popular with the residents and demonstrated how clients from diverse backgrounds can engage in physical activity together (Wynaden, Barr, Omari, & Fulton, 2012). An increase in trust and respect between clients and staff resulted in reduced use of restrains or seclusion and increased cooperation in this setting. All staff members played an important role in promoting participation in the activities as a part of the client recovery efforts for both physical health and mental health. Upon discharge from the secure setting, this study concluded that the overall well-being of the clients was positively impacted by physical activity. The staff also noted the improved therapeutic environment of the hospital as a result of the physical activities. The nurses assumed the responsibility of coordinating discharge plans for each client, including networking with community organizations to encourage ongoing healthy lifestyle activities (Wynaden et al., 2012).

Positive interventions. Many programs used some type of behavior modification or program reinforcement with its participants. Atlantis et al. (2012) provided individualized counseling sessions for education on nutrition and diet. Staff sent weekly emails providing encouragement and a summary of their participation. The program provided bonus points for participation in specific activities and as an incentive, prizes were awarded at the end of each month.

Manuel et al. (2013) studied interventions used by ACT teams and the negative information written regarding ACT service delivery. Clients on ACT teams have usually failed in less-restrictive support services. Many clients have had repeated hospitalizations and may be court ordered to participate or risk having their community commitment revoked (Manuel et al., 2013). ACT staff walk a very narrow line between assertiveness and coercion. Interventions also varied greatly between individual ACT team members and between ACT teams. Negative non-therapeutic actions by ACT staff often resulted in negative reactions. Unhealthy work environments and stigmatizing beliefs related to mental illness and the clients served increased the probability that intrusive interventions were used (Manuel et al., 2013). Clients reported that staff not prepared for the challenges of ACT work responded by being controlling, authoritarian, and insensitive to the needs of individuals with mental illness (Krupa et al., 2005). Despite the intensity of this treatment environment, Manuel et al. (2013) and Krupa et al. (2005) found that clients generally felt staff to be supportive, incorporating non-threatening interventions. Less intrusive interventions including positive reinforcements and verbal redirection were most common. Other interventions with ACT program participants included medication management, monitoring and administration and services related to money management

(Manuel et al., 2013). The majority of feedback indicated that ACT teams provided quality services promoting person-centered choice (Manuel et al., 2013). Further feedback indicated that education was provided regarding options or consequences of client choice and was presented to encourage participation, but was not perceived as coercion (Krupa et al., 2005; Manuel et al., 2013). Tschopp, Berven, & Chan (2010) confirmed similar results. In fact, clients indicated an improved quality of life and a greater sense of empowerment. Specific to exercise, teams that facilitate formal exercise programs find that participants have a positive feeling about exercise and their relationship with the exercise leader (Tschopp et al., 2010). In summary, staff play a critical role in establishing a positive relationship with ACT clients, encouraging the clients to become invested in their own mental health and physical health (Krupa et al., 2005).

Coordinated care. Some research suggested that medical team recommendations for exercise are motivational to client participation in their recovery plans. C3 Collaborating for Health (2011) suggested engaging general physicians to prescribe exercise as a part of their orders for improved physical and mental health. In Sweden, it was referred to as Physical Activity on Prescription. This was an individualized fitness plan and could be as simple as a suggested exercise routine or as elaborate as participation in an organized sporting organization. In the U.K., they had a medical system that recommended such things as participation in walking groups or recreation centers. Similarly, in England, they implemented Our Natural Health Service, which encouraged outdoor activity. This program strived to increase five minute walks outside and encouraged both general physicians and nurses to establish routes or routines (C3

Collaborating for Health, 2011). Across continents, everyone involved in the treatment of an individual for mental illness was encouraged to incorporate exercise into the treatment plan.

Conclusion

Reviewing the research question, ACT teams have the structure and resources necessary to implement exercise programs to encourage mental health recovery. Evidence supports positive reinforcements for using exercise to manage both mental health as well as physical health problems (Malcolm et al., 2013). No studies discouraged exercise as a tool for symptom management. If exercise can prevent or reduce mental health symptoms in all populations, the public health impact would be enormous (Kim et al., 2012; Knapen et al., 2015). With an increased understanding of the possible benefits of exercise participation, mental health professionals should be more motivated to incorporate physical activities into client treatment planning (Mason & Holt, 2012). Through a variety of modalities, ACT teams are doing their part to encourage individualized options for clients to increase participation in exercise and reduce mental health symptoms. Marzolini et al. (2009) identified that exercise was an underutilized practice in mental health treatment. Community-based exercise groups, facilitated by qualified staff from a multidisciplinary team like an ACT team, are effective in supporting mental health recovery efforts. By interviewing Team Leads of ACT teams, this researcher hopes to understand how ACT teams are using exercise to improve the mental health recovery efforts with clients. This will contribute to the already existing literature supporting the evidence that exercise does improve the mental health of individuals with mental illness.

Conceptual Framework

Conceptual framework is the lens from which advancements in research can be studied and implemented in practice. In this section, the researcher will identify and describe the conceptual framework that directs greater understanding of the problem of mental health recovery. Systems theory is a family unit that is connected and together affects each other positively and negatively (Boss, Doherty, LaRossa, Schumm & Steinmetz, 1993). Led by the Team Lead, this research is exploring the role ACT teams have implementing exercise with clients served by the ACT team. Staff that comprise the ACT team make up a family-like unit. All staff members must support one another to be effective in their role as mental health professionals. ACT staff impact the recovery of clients with mental illness. Clients of an ACT team can be identified as another single family unit, united by their common bond as ACT participants with mental illness. These two units, the ACT team and the clients with mental illness are not seen as conflictual but compatible and supportive. Without clients who need the ACT level of service, there is no need for ACT staff and services. Similarly, without ACT teams, necessary intensive services would not be available to clients. Reciprocal relationships between the staff and the clients form another greater family unit. Feedback from Team Leads will provide the framework for thematic analysis on exercise and mental health recovery.

Theoretical Lenses

“General systems theory stresses the importance of groups and their influences over individual people” (Horvath, Kaushik Misra, Epner & Cooper, 2016, p. 1). General systems theory focuses on the interconnectedness of staff and clients. The systems perspective “sees human behavior as the outcome of reciprocal interactions of persons

operating within linked social systems” (Hutchison, 2011, p. 38). The interrelatedness between various systems impacts client efforts.

Social exchange theory is another important theory in a conceptual framework. When society gives professionals authority to provide specific services that fall within their scope of service delivery, in essence, a monopoly is given to that profession to determine the qualifications of its members. In return, the profession is charged with monitoring and policing to protect against abuses of that monopoly (Sheafor, Horejsi & Horejsi, 1994). ACT services were one of those services. Initiated as a result of deinstitutionalization, social policy was established and intensive community-based services were developed to provide the safety net of service to individuals once living at State Hospitals. ACT services are one of those very services that monopolize treatment for the most severely mentally ill adults in Minnesota (DHS, 2008).

Social exchange theory presumes that fair interactions supersede self-interest. Investing in the improvement of mental health will pay off for both the person and the community in the long run (Sheafor et al., 1994). According to Leamy, Bird, Le Boutillier, Williams and Slade (2011), there are five main themes in mental health recovery that impact social change. First is connectedness, which includes peer groups and community support groups, relationships, support from others and being part of the community. Second is hope and optimism about their future. This includes believing that recovery is possible, being motivated to change, relationships that encourage hope, positive thinking and having hopes and dreams for a positive future. The third theme is identity. This includes having clients rebuild and redefine their identity in a positive way and overcoming the stigma associated with mental illness. Fourth is gaining a greater

understanding of a personal meaning in life. This includes an understanding of their symptoms of mental illness, spirituality, social roles and goals and rebuilding a life worth living. Lastly is empowerment, including taking personal responsibility for their own recovery, recognizing self-control and focusing on strengths (Leamy et al., 2011).

Professional Lenses

I have been a member of an ACT team for about 15 years. In addition to being the Vocational Specialist, I also focus on Dialectical Behavior Therapy and exercise. All three of my ACT hats have provided a lens for me to see recovery. Specific to exercise, I have facilitated an exercise group at the local YMCA, at least once weekly for the past 13 years. Our ACT team has authorized discretionary dollars annually to provide memberships at fitness centers in the county seat of all counties we service. Through my experience, I have observed the benefits exercise has had on all types of mental illness. I have witnessed the reduction of anxiety and depression, the reduction in psychotic thoughts, and the reduction in medications related to high blood pressure, high cholesterol and A1C levels. I have observed an increase in the client sense of empowerment, self-determination, community inclusion and individual wellness which are all included in the Ten Principles of Social Work for Social Justice (St. Catherine University, 2006). The stories I have heard resonate pride, happiness and a feeling of success and accomplishment for clients having accomplished exercise goals. I have observed the impact my attitude and behaviors have had on participants in my groups. Participation increased when I also participated, showed my desire to exercise to improve my health, provided cheerleading, motivational interviewing and reinforcement for efforts. I have seen significant weight loss in clients who were overweight. Clients who

felt they were incapable of doing any exercise participated in yoga class with me, facilitated by a professional instructor. The socialization and comradery that is established within the exercise groups adds to the benefits of the participants and me as the facilitator. Although I am not a trained fitness instructor, I can provide simple, individualized goals to help each person succeed. Offering to exercise side-by-side with them has helped initiate goals and removed barriers that previously hindered them from exercise participation.

In contrast, talking with other ACT team members, it does not seem as if other ACT teams place the same emphasis on exercise in recovery. In fact, when I started formally exercising with clients 13 years ago, I was reprimanded by management for doing so because it was not viewed as therapeutic to mental health recovery. However, many times over the past five years, I have been recognized by these same managers and peers for the positive results of exercise in treatment. Clients acknowledge that if staff support was not available, they would not consistently engage in exercise on their own. In fact, when I am absent and another staff fills in, participation in group declined. Before my group exercise begins, each participant rates their mental health on a scale of one to 10. After group exercise, they again rate their mental health. With few exceptions, participants identify that their mood and overall mental health has improved. My enthusiasm for exercise is a professional bias in my research.

Personal Lenses

My personal experiences influence my approach to fitness and exercise. I have always enjoyed exercise. I was a three sport athlete in high school and also participated in collegiate athletics. Following college graduation, I continued to participate in

competitive sports and physical fitness, recognizing the negative changes to myself without this. I believe that anyone can exercise, regardless of their mental and physical limitations. I have been able to work with clients on very individualized goals and they have found success. My interview questions may be biased; assuming that each ACT team incorporates exercise into treatment may be presumptuous. However, I have not found the answer to clients that are not motivated to participate and find barriers for all ideas. Through a methodical review of research, additional recommendations for the incorporation of exercise into treatment plans of clients with mental illness may present.

Methods

Study Design

The purpose of this study was to examine the benefits of exercise on ACT teams as a part of treatment for mental health symptoms. The research was explanatory. Much research already existed to debate the benefits of exercise in mental health treatment. Given the international interest in the topic of exercise and mental health, further research remained appropriate. Specifically, this study addressed the implementation and benefits of exercise through the ACT team, a community-based treatment program. Through qualitative research, the ACT Team Leads provided their perspective using personal observation, explanation, and experience (Monette, Sullivan, Dejong, & Hilton, 2014). The purpose of qualitative research was to create a hypothesis based on data analysis, providing greater understanding in previously grounded findings. Qualitative research offered “access to a valuable type of data-namely, a deeper and richer understanding of people’s lives and behavior, including some knowledge of their subjective experiences” (Monette et al., 2014, p. 220).

The researcher used Grounded theory methods. Grounded theory included the ongoing interactions between data collection, data analysis, and theory development (Monette et al., 2014). In this process, themes emerged. Reoccurring themes provided information to explain how ACT Team Leads viewed exercise and its impacts on treatment for mental illness by initiating the process of open coding of interview transcripts. The coding process “may use sensitizing concepts drawn from the literature, extant theories, and previous research, but its primary goal is inductive” (Padgett, 2008, p. 33).

Sample and Sampling Procedure

To gain a perspective on how ACT teams were using exercise to improve mental health recovery efforts with clients, information was sought from 26 Team Leads who have experience working with one of the 26 ACT teams in Minnesota. Until recently, the job description required Team Leads to be Licensed Independent Clinical Social Workers. The State of Minnesota DHS, however, made provisions to include related experience. All Team Leads were social work professionals in the field of mental health.

Purposive sampling was used. In purposive sampling, “the investigators use their judgment and prior knowledge to choose from the sample, people who best serve the purposes of the study” (Monette et al., 2014, p. 148). In this case, this researcher was currently a mental health professional on an ACT team. Given that ACT teams provide treatment to persons with severe mental illness in community setting, ACT Team Leads provided an effective number of homogeneous participants for purposive sampling research (Monette et al., 2014).

Each Team Lead was contacted by email to ask if they would be willing to be interviewed as part of this research (Appendix A). As part of the preliminary arrangement, the respondents were provided background information summarizing the initial research project conducted this past summer and relative findings. Willing Team Leads were provided the interview questions a day prior to the interview. Respondents were given the choice to answer the questions by replying to the interview questions in writing via email or to participate in a telephone interview or to participate in a face-to-face interview. Necessary consent forms (Appendix B) were faxed to each Team Lead for signature before continuing with their participation. The list of interview questions was included in Appendix C. A mutual time was determined to conduct the interviews with Team Leads who chose this option. A deadline for written feedback was determined with Team Leads who chose this option.

With the information gathered from the Team Leads, this researcher hoped this study would encourage ACT teams to incorporate exercise into treatment planning to better improve the recovery outcomes of ACT clients. From the findings, this researcher also hoped to provide strong evidence to suggest the Minnesota DHS consider including exercise in its list of evidenced-based practices for mental health treatment.

Protection of Human Subjects

St. Catherine University has policies safeguarding and respecting the rights and welfare of human subjects in scientific research. All research followed the principles as determined by St. Catherine University and the process and procedures prescribed by the Institutional Review Board. These met the minimum criteria established by Federal law and Federal regulations.

The respondents were informed in the consent form of the researcher's plan to maintain confidentiality. The purpose of a consent form was to ensure that respondents were voluntarily participating, recognizing the possible, but minimal, risks and benefits of the study. The information gathered from the respondents remained anonymous. The researcher did not disclose information specific to a particular team, insuring the Team Lead or ACT team will not be identifiable. A coding system, using numbers, was used to de-identify specific participants to protect information. Demographic information related to the years of experience of the Team Lead was referred to in a general manner retaining confidentiality. For Team Leads participating in a face-to-face or telephone interview, permission was asked to audio record the interview for accuracy in transcription. Audio tapes were transcribed using Dragon electronic dictation software. This information was printed and stored under double lock in an office. Once there was evidence that the dictation software was effective in capturing the details of each interview, the backup tapes were immediately erased. Telephone interviews and face-to-face interviews were conducted behind closed doors to protect confidentiality of information. Electronically submitted responses were saved on the researcher's computer. Any emails exchanged for the purpose of research were also stored on the researcher's computer. Access to the information on the computer requires a username and password. All information was stored in a double-locked office. No identifiable information will be stored after May 30, 2016.

This study was conducted under the direct supervision of Dr. Catherine Marrs Fuchsel, Clinical Supervisor and Research Chair. Respondents were given contact information for the Chairperson of the Human Subjects Institutional Review Board

through St. Catherine University should respondents have any questions or concerns related to this research.

Data Collection

The respondent reviewed and signed the required consent form approved by the St. Catherine University Institutional Review Board (IRB) (Appendix B). The final version of the consent form and the list of interview questions were approved via email by Dr. Marrs Fuchsel, Research Chair, prior to conducting the interview. Telephone interviews and face-to-face interviews were recorded and transcribed. Email responses to interview questions were saved on computer. At later dates, the transcriptions and emailed responses were reviewed and coded. All interviews were conducted behind closed doors to insure confidentiality. Written data was submitted through a secure email account. All information was stored under double lock in an office.

Semi-structured interview questions allowed the researcher to explore the thoughts of Team Leads on exercise as a part of treatment for clients on their ACT team. Respondents were given the choice to answer questions through email or through a telephone or face-to-face interview. This method of data collection allowed participants to choose their most preferred method of participation and feedback, resulting in greater participation and information. Fourteen questions were developed as open-ended as possible to maintain the integrity of the research and encourage honest feedback, unhindered by the interviewer. The questions were developed as a result of information obtained from the literature addressing exercise and mental health. The questions began with basic information, allowing the respondents to explain their role on the ACT team. The remainder of questions encouraged the respondents to talk about observations

regarding the implications of exercise in mental health treatment and recovery on their ACT team. Examples of the questions include: *What types of exercise do clients participate in? How is exercise facilitated? What are the negative impacts of exercise to clients on the team?* Monette et al. (2014, p. 178) provide caution to first impressions that affect the respondents' responses to interview questions. Since neither the telephone interview nor the email responses included face-to-face contact, this consideration was minimized. If Team Leads did not identify exercise as a part of treatment within their ACT team, many of the participation questions were omitted.

This data-driven, contextualized research approach seemed to lend itself well to data collection through interviews with ACT Team Leads within the State of Minnesota. The interviewer anticipated the telephone interview to last less than one hour. Given the semi-structured interview format, the respondents offered client specific examples, keeping all client names and protected health information (PHI) confidential. No compensation was provided to the respondents for their participation. By transcribing interviews, the researcher was able to identify relevant themes and gather additional information about the effectiveness of exercise within this specific ACT program model. New interview content supported the themes identified, including how people exercise, why people exercise, barriers to exercise and other considerations for the ACT teams such as facilitated exercise programs and interventions. Research substantiated that exercise was beneficial to both mental health and physical health. Despite this, few mental health professionals incorporated exercise into individual treatment plans.

Data Analysis

Using systems theory, this study developed themes as the data was collected. As a part of the data analysis, the interview was transcribed and concepts that emerge from the transcription were coded by the interviewer. Themes developed in response to the interview information relevant to the research question (Monette et al., 2014). Within each theme, specific coding examples were provided and incorporated into the analysis. Beginning with the literature reviews and the interviews, themes served as the foundation for this research project.

Validity and Reliability of Data

Field notes were kept by the researcher to keep track of progress and note any observations along the way. A system of peer review checked the validity for content analysis and coding.

Strengths and Limitation of Study

This study was important to further the research on exercise and its implication for progress and recovery for individuals with mental illness. Exercise can be low cost, flexible and individualized to each participant. This supported a number of principles within the Social Work for Social Justice Principles including Human Dignity as exercise enhanced the life and dignity of the client. Secondly, the Community and the Common Good Principle reinforced the importance of human relationships which promoted general good health of individuals and communities, encouraged integration in community, such as exercise groups and fitness centers. Lastly, the Principle of Participation identified the value of equal opportunity participation without exclusion to resources (St. Catherine University, 2006). It was a strength that my experience as a

fitness facilitator on an ACT team provided a foundation for my research. Conversely, it was a bias that my experience had already confirmed exercise to be a very beneficial skill for clients struggling with mental illness.

Findings

This research study was designed to gain a greater understanding of the benefits of exercise in the recovery of individuals with mental illness receiving services from Assertive Community Treatment teams. The researcher contacted all 26 ACT Team Leads in the State of Minnesota to offer their perceptions of the effectiveness of exercise in managing mental health on their specific ACT team. One hundred percent of the Team Leads responded: One person completed the interview in person, ten completed interviews over the telephone, eight submitted written responses to the interview questions, four teams did not have a Team Lead available at the time of the research, two declined to participate and one person agreed to participate in writing but has not yet submitted responses. Historically the Team Lead position has been filled by an LICSW. Their willingness to participate and knowledge of the subject matter as well as their understanding of MSW graduate school program requirements was evident in this research. Their experience varied from less than a year to more than 10 years of experience working with individuals with mental illness on ACT teams.

After the research data was collected, the researcher consolidated all responses to one document and separated their responses into a category correlating to the interview questions. Once the responses had been placed on a single, spreadsheet, common words or phrases were highlighted that appeared to follow general themes throughout the research. Each of these words or phrases was placed into sub-categories for a more

detailed theme analysis based on the interview and literature review. Five themes emerged, consisting of the following: (a) The Role and Influence of Team Leads on Exercise, (b) Why individuals on Assertive Community Treatment Teams are Exercising, (c) How Incentives and Reinforcements are Used, (d) What Types of Exercise are Used, and (e) Barriers that Negatively Impact on the Effectiveness of Exercise on Mental Health. Throughout these findings, the researcher will highlight certain ideas the participants provided that support the themes. Because of the small pool of participants, no identifying information will be provided about the specific respondent. This will ensure anonymity.

The Role and Influence of Team Leads on Exercise

The first theme that emerged in this study was related to one of the first interview questions asked to Team Leads about their own participation in exercise. A great majority of participants said they exercise regularly, many indicated that they exercise weekly and four Team Leads reported exercising at least four times each week. All Team Leads found a correlation between their own exercise plan and their own improved mental health. However, when asked if their perspective on exercise influences the implementation of exercise on their ACT team, the responses varied greatly. Those believing that their personal experience has impacted their team said, “Absolutely! Experiencing positive results motivates you to encourage and support others,” and “I recognize the positive effects that exercise has as an individual, I mean mood wise, stress, those kinds of things, so I think I bring that view to the team when we’re talking about clients,” and “I embrace the benefits of exercise.” One Team Lead in strong support of exercise reported:

Show me something else with greater benefit (than exercise)... You've got to be kidding me if you don't think this is going to help someone. Talk therapy hasn't helped our people or they'd all be better by now... It's the one thing that you know will help them combat all of the other disadvantages that are going on in their life. It's exercise.

Another Team Lead said, "It (exercise) clears your mind, it's good for your spirituality, it's good for everything, it's good for everyone." In comparison, only a couple replied that their perspective did "not really" have an impact on the team. Both Team Leads indicated that client treatment goals are client driven and therefore are not impacted by personal thoughts or practice.

Team Leads were asked if exercise was incorporated into client treatment plans on their ACT team. Following the person-centered planning model, many said they highly suggested clients include some type of exercise goal in their treatment plan, but ultimately it was client choice. Comments such as, "yes, we try but it's up to them...but almost everyone does," or "yes, if the client agrees. We try to get their buy-in to some type of exercise goal," or "yes, based on client interest in what they're wanting to do," and "we have wellness goals based on client needs." Teams encouraged client participation based on client interest, cooperation, and sometimes indirectly through general wellness health goals.

Many Team Leads indicated that the 10 by 10 initiative brought exercise to the forefront, but its energy has decreased. In 2011-2012, the State of Minnesota DHS initiated a program referred to as the "10 by 10." This initiative supported increasing the life expectancy of individuals with mental illness, specifically bipolar and schizophrenia,

by 10 years in 10 years through annual physical health screenings, often leading to lifestyle changes, including an increase in exercise and focus on wellness (DHS, 2015).

One Team Lead said:

Since the 10 by 10, we try to incorporate wellness and physical health goals into their treatment. So we really like to have two goals minimum, with one being a mental health goal and we've been really trying to boost up and have one physical health goal as well.

One Team Lead felt it was difficult to prioritize exercise because of the other quality of life issues that also need to be addressed. However, unanimously ACT teams encouraged exercise in treatment planning.

Why Individuals on Assertive Community Treatment Teams are Exercising

Team Leads reported a variety of reasons why clients exercise, the second theme in the research. Some of the most popular reoccurring themes included weight loss, mental health symptom management such as reduced anxiety and depression, socialization, and community integration. The list of other benefits to exercise included general health maintenance, makes them feel better, helps with routine and structure to the day, skill building, improved mental and physical health, reduce stress, build therapeutic relationship between staff and client, distraction from traditional treatment, relaxation, "because staff make me," and to get providers "off their back," and to reduce environmental triggers such as isolation, "gets them out of the house," and reduce mental health and physical health side effects of medication and the dosages of medications themselves, have more energy, replace negative activities such as smoking, increase stamina, enjoyment, and sleep better. One Team Lead reported:

We have one example of someone that typically had a hospitalization in the spring of every year and since he has been very active in his exercise/symptom management program, he has not had to have the spring hospitalization. He has also lost a lot of weight, a secondary benefit. It has been a benefit mentally and physically.

Another Team Lead had similar support for exercise, “It’s exercise. I mean, it’s the one thing that equalizes the stuff with their meds. So to me, it’s one of the top interventions required in mental health.” Yet another Team Lead said, “We encourage people to work on both mental health and physical health together and that if you’re not, you’re probably really missing something.” Although the reasons for exercise vary greatly, many people benefit from some type of participation.

Relationships with the staff seem to be the greatest motivation for success. All Team Leads reported that side-by-side exercise was most successful. They found that walking while talking often improved the quality of the visit with the client, especially if they could walk outside and get some fresh air. They reported that clients rarely refused to exercise “with” staff, but often showed little interest or follow through to exercise independently. Not all ACT teams facilitate exercise groups. Current groups facilitated by staff included walking groups, a wellness and recovery group that included a variety of exercises, Illness Management and Recovery (IIMR) group that also included exercise, and fitness groups. One team tried using a Wii, a video game console that connects to a television (Urban Dictionary, 2008), to facilitate an exercise group but it “wasn’t very successful.” Other teams have tried groups in the past but they have stopped. This occurred both because clients are not participating and because staff has difficulty

making it a priority, given their busy work schedules. However, teams that facilitated exercise groups felt that participation was higher in number and longer in duration when staff also participated. No ACT Team Leads identified groups facilitated by clients. However, some teams included Certified Peer Specialists (DHS, 2016), who are staff members that have experienced a mental illness and provide direct services to ACT clients. As a staff member of the ACT team, they facilitated exercise groups and these were quite successful. The key to the success again appeared to be the participation of the Certified Peer Specialist. Clients were most interested in spending time with staff; they valued the relationship more than the exercise. One Team Lead said, “The most important one (idea regarding exercise) is that staff are right there, encouraging them, motivating them and working right alongside them, and having meaningful conversation with them as a distraction.” Some Team Leads were able to identify specific clients who were very self-motivated and quite stable with their mental health and who exercised independently on a consistent basis, either at the local fitness center or within their apartment complex.

In contrast, two Team Leads identified negative reasons for exercising related to clients with eating disorders:

We have a few clients that should exercise less. They’re hyper. They ruminate about their weight, if they’re not eating appropriately and they’re running about for hours. I have a couple examples of that in the past with people with eating disorders.

They are exercising for the same reasons others do, but it’s extreme, excessive and counter-therapeutic to their recovery efforts from mental health symptoms. This would be

one situation that would be counter-therapeutic to exercise as a part of recovery from mental illness.

How Incentives and Reinforcements are Used

A third theme that surfaced across the data was “incentives and reinforcements” as motivational tools. These were reported to be effective for short term progress but had less impact on long-term commitment to exercise. ACT teams provided to their clients such things as fitness memberships at the local YMCA, pedometers to measure walking progress, fitness clothing such as tennis shoes and gym clothing. One Team Lead that used these incentives said, “And then they work it off by walking with us so many minutes,” as repayment. Other incentives included fitness equipment such as weights and rubber stretch bands, t-shirts, coffee cups, scales, blood pressure cuffs, gift cards, healthy snacks, crock pots to support healthy cooking in addition to exercise, transportation to the gym, MP2 players for distraction while exercising, diet pop, and playing motivational games similar to The Biggest Loser. However, three teams indicated that they no longer provide incentives. “They just don’t work.” Instead, they preferred to use non-tangible things such as motivational interviewing and positive feedback. Another Team Lead offered more care coordination with other medical providers for their support and reinforcement. This Team Lead said, “We also help individuals out if they want to lose weight. We coordinate with the dietician or with MA programs, anything like that. We have a couple with eating disorders and we coordinate with (a local program). We set up gym memberships through insurance companies.” These teams previously offered more tangible options for incentives and reinforcements but didn’t find them effective for long-term participation in exercise.

What Types of Exercise are Used

In the following section, the researcher will examine the fourth theme, what types of exercise are being implemented to help clients manage a variety of mental health symptoms. All teams provided feedback indicating that some degree of exercise was implemented with clients. Although the list of types of exercise was long (See Appendix E for full list), walking was recognized by everyone as the most popular activity. One Team Lead said, "I am a total believer in walking." Walking was usually free, was readily available, especially in the summer, and could be done individually or as a group increasing its popularity in participation. One hundred percent of ACT teams encouraged walking. All Team Leads reported clients on their team, "Walking outdoors, indoors, around a track, in the hallways, or on a treadmill." One Team Lead told of a client "who was taken off opiates and the nurse reinforced walking to manage her pain. Another client was paranoid and got diagnosed with arthritis and reinforced exercise as an effective tool to help with arthritis." Biking was the second most recognized type of exercise. One team in particular obtained a grant to purchase bicycles, helmets and related supplies to encourage biking on the local bike paths. Initially biking groups were facilitated by staff. However, this proved to be difficult due to the variety of skill levels within the group. Staff continued to bike individually with clients, but if left to their own accord, the Team Lead reported clients rarely checked out the bikes independently and biked without staff present. A number of Team Leads identified that yoga had been tried. A few identified traditional yoga. Two teams tried chair yoga as an alternative for people who had limited physical capabilities. Of significance, no teams were currently

facilitating yoga class or reported any participants using community resources to participate in yoga.

There also appeared to be some gender differences related to exercises. One Team Lead noted, “We have way more males participating in exercise goals than our women.” Many other teams noted similarly that more men have formal exercise goals on their treatment plans. Some Team Leads felt the participation was about 50/50, or varied. However, no team confidently reported that women participated more than men. Men showed greater preference for playing basketball, either alone or with a group and strength training/weight lifting. One Team Lead indicated that gender specific groups are most successful; women exercise with women and men with men. One Team Lead said they have had a female successfully facilitating group at the local fitness center for over the past 10 years and it is a mix of both females and males.

Some people were creative in implementing different exercises. One Team made a game similar to volleyball, using a net. However, instead of using a volleyball, they used a balloon. The slower tempo and less physical demands of the balloon made it more available to people and enjoyable as well. Two other teams build on specific interests of a client. They both had clients with high school/college experience as an athlete, so they encouraged joining a swim team and cross country ski team as part of their exercise goal, also incorporating community integration and independence from staff. Regardless of the type of exercise, participation of any type seemed to be beneficial to clients and their mental health.

Barriers that Negatively Impact on the Effectiveness of Exercise on Mental Health

The fifth and final major theme identified in this study was barriers that negatively impact on the effectiveness of exercise on mental health on ACT clients. This theme examined and demonstrated that a variety of obstacles may need to be overcome to effectively implement exercise into treatment plans. This theme also revealed how physical health and mental health impact on one another. Overcoming both of these potential barriers can be very complex and challenging.

Motivation. Most Team Leads identified that exercise was often hard for everyone, whether or not you have a mental or physical disability. However, additional barriers make it especially difficult for ACT team clients. Team Leads identified reasons such as “It’s hard for clients to be motivated,” and “They lack motivation,” and “It’s hard to maintain the motivation to go to exercise,” and “Low motivation is probably the biggest one.” Sometimes this lack of motivation was a side effect of psychotropic medications necessary for mental health stability. Sometimes client motivation was complicated because of being over-weight, another side effect of many medications. “It requires them to initiate a new habit, and this takes a long time.”

Physical Health. Team Leads identified medical issues related to physical health that require a certain degree of awareness and monitoring while exercising and may put the client at risk for related health issues. Risk of injury, body aches, and breathing problems related to asthma were also noted. “One client fell off his bike. I think his ego and self-esteem were more damaged than his physical body, but he didn’t want to bike anymore after this.” Another Team Lead told of a 330 pound client that started running without proper training and medical clearance and ended up in the emergency room. This

Team Lead recognized that sometimes clients don't have insight into their own physical health symptoms and may do more damage than good.

Mental Health. Specific mental health symptoms also often interfered with client exercise. Some identified increased symptoms of anxiety in being alone, concerned about their own safety and competence exercising. Others identified anxiety related to the group, feeling less skilled and "intimidated" by those around them. One Team Lead spoke specifically about their client's desire to lose weight by swimming at the local YMCA, but was overcome with anxiety at the thought of putting on a swimming suit. Paranoia and psychotic symptoms can also increase. Another Team Lead noted a number of possible barriers:

People are shy, self-conscious of themselves, paranoid and intimidated by the surroundings of the gym. For others it's simply their inability to get out of their apartment/house. And then there are the locker rooms, which often cause great anxiety, because of their poor self-esteem, having the right clothes and having to change more than once a day increases laundry needs and as a result, more money to do laundry.

On occasion, staff also recognized that clients were avoiding their contacts because of the expectation to exercise. However, staff felt with support and education, these could be overcome.

Transportation. Transportation was also often a barrier. Teams would provide bus punches or taxi coupons to help reduce this barrier. However, often times the public transportation was not available when they want to go, like on holidays and weekends. In addition, the fitness centers or their homes were not on a public transportation route. In

rural communities, there was no public transportation. Clients who have their own vehicles often do not prioritize gas money for regular trips to the fitness center or their vehicle may not be reliable. For all these reasons, transportation was complicated and often interfered with the ability to exercise.

Staff Time. Staff time was also a barrier. Although staff on most teams tried to incorporate exercise while completing other team responsibilities, Team Leads reported that it was difficult to implement exercise goals consistently, especially if they are group activities:

We talk about how physical health affects mental health. It's always on our minds to talk about it. I guess one of the barriers would be trying to meet all the demands that ACT teams are required to meet such as helping with housing, court stuff, etc., that we just run out of time.

Another Team Lead indicated that it can be hard for staff to make it a priority. It was hard to find time that works for everyone. "Our team may offer a group, but this time won't work for everyone." And organizing group activities takes extra time and coordination, not always resulting in greater participation and outcome. Finding time to facilitate an exercise group that also works with client schedules and availability can be difficult.

Another Team Lead explained how clients struggling with homelessness might find it difficult to exercise. "If you have clients that are struggling with homelessness, unsure where they will sleep that night or severe poverty unsure where their next meal will come, or are in an abusive relationship, it's hard to prioritize exercise." These immediate concerns take a precedence for staff and exercise can resume when these crisis have

stabilized. “Their mental health would benefit from the exercise but there just isn’t time to do it all.”

The 20 Team Leads who participated in this study shared a variety of experiences both personally and within their ACT team. Their responses allowed this researcher to establish five major themes throughout the data. The five themes reviewed in this study included: (a) The Role and Influence of Team Leads on Exercise, (b) Why Individuals on Assertive Community Treatment Teams are Exercising, (c) How Incentives and Reinforcements are Used, (d) What Types of Exercise are Used, and (e) Barriers that Negatively Impact on the Effectiveness of Exercise on Mental Health. In the forthcoming section, the research will analyze how the findings relate to previous research, the strengths and limitation of this study, and will consider the implications that the current study has on social work practice, policy and future research.

Discussion

The purpose of this study was to examine the overall experience of exercise with clients in Assertive Community Treatment Teams as reported by the Team Lead. The research question addressed was: How are ACT teams using exercise to improve the recovery progress of clients with severe and persistent mental illness? The researcher was able to answer this research question by performing qualitative interviews: a) one in-person, b) ten telephone interviews and c) eight written responses to interview questions. In the forthcoming paragraphs, the findings of this study will be discussed with regard to how they compare and differ from the current review of literature. In addition, the researcher will address the strengths and limitation of this study and will discuss the implications this study has on social work practice, policy and future research. The

themes revealed in this study show many similarities and few differences compared to the existing research on the benefits of exercise on mental health. Overall, the findings of this study are consistent with the studies examined in the literature review.

Comparison to the Research

The purpose of this section was to compare the findings of this research study to the findings of previous studies by noting similarities and differences between the two. The theme, “The role and influence of Team Leads on exercise” had little comparison in the literature review as there was little research specific to ACT teams and exercise. This may be attributed to the very specific population of individuals with severe and persistent mental illness ACT teams serve. In studies throughout Minnesota and around the world, researchers were not often specific to the exact disabilities or the comprehensive array of services offered within the ACT model. In common was the overwhelmingly present theme of exercise in mental health recovery throughout the data. The review of literature strongly supported the notion that exercise can improve mental health and physical health and decrease the negative side effects often present in mental health (Bertheussen et al., 2011; Gorczyński & Faulkner, 2010; Kim et al., 2012; Knapen et al., 2015; Sarojini Devi, & Usha Rani, 2013; Scheewe et al., 2013). Similarly, Team Leads on ACT teams recognized the benefits of exercise to their clients, both physically and mentally. The findings coincided with the existing research and agree with the idea that exercise was a useful tool to help improve symptoms of mental illness.

Why Individuals with Mental Illness Exercise

There were many similarities found between the review of the research and the findings in this study with regard to why individuals with mental illness exercise.

Findings in previous studies suggest that physically fit people are able to engage in daily activities without feeling tired and are better able to fight off diseases, infections and age-related health problems (Callaghan, 2004). Literature reviews found that individuals with mental illness exercised for the same reasons physically fit people do. Specifically, they exercised to reduce high blood pressure, high cholesterol, high BMI, diabetes and heart disease (C3 Collaborating for Health, 2011). They exercised to decrease weight gain and reduce the consequences of a sedentary lifestyle (Chacón et al., 2011; Jerome et al., 2009; Richardson et al., 2005). In addition, they exercised to reduce mental health symptoms such as depression and anxiety (Atlantis et al., 2004; Clow & Edmunds, 2014). They exercised to increase self-esteem, socialization, community integration, and self-confidence (Donhoffer & Chan, 2007; Gorczynski & Faulkner, 2010; Mason, & Holt, 2012). Research validated all of these findings and more. Added to this list was adding structure to client daily routines by exercising at the same time each day, or meeting a friend once a week or attending a scheduled exercise group weekly. It was also a distraction from traditional treatment, to meet exercise treatment goals, to make the staff happy, to replace negative activities such as smoking and to sleep better. The list was almost endless as to why clients on ACT teams exercise.

Staff facilitated exercise groups. One specific theme in research identified the benefits of staff facilitated exercise groups. Staff facilitated programs produced significant positive results in mental health and physical strength. Exercises completed at home or independently were significantly less effective (Marzolini et al., 2009). Similarly, research found that ACT teams observed more success when staff facilitated the exercise. When staff participate side-by-side in the activities, clients were more

cooperative and willing to participate. And, in addition, clients engaged for longer periods of time. As found in the research, ACT staff that were seen as approachable, motivating, supportive, encouraging and caring were more effective in increasing results in group activities. Support from staff fostered competence and confidence and increased pleasure in the exercise, regardless of specific activity (Mason & Holt, 2012). The validation and connection with the staff was significant to participation and successful outcomes.

Incentives and reinforcements for participation. There was little in research that indicated the effectiveness of incentives and reinforcements with exercise. One review, Manuel et al. (2013), studied interventions used by ACT teams and the negative information written regarding ACT service delivery. ACT staff walked a very narrow line between assertiveness and coercion. Despite the intensity of this treatment environment, Manuel et al. (2013) and Krupa et al. (2005) found that clients generally felt staff to be supportive, incorporating non-threatening interventions. The findings of previous studies found less intrusive interventions including positive reinforcements and verbal redirection were most common. In the research findings, Team Leads also varied in their use of incentives and reinforcements. Although almost every team noted some type of incentive or reinforcement, the difference came in what type they used and how it was implemented. Most teams provided some actual rewards of gift cards or fitness related items such as pedometers, clothing and healthy snacks. In contrast, a few teams indicated they historically did not find this effective and chose, instead, to try to provide more verbal rewards. Similar to the study from C3 Collaborating for Health (2011), these Team Leads coordinate the services of other professionals to also reinforce exercise in their

services, such as medical staff. Research findings supported previous studies that incentives and reinforcements should not be used to “coerce” participation. Instead, all teams and the review of literature found incentives or reinforcements an appropriate tool to promote participation.

Person-centered, individualized planning. The findings of the literature review encouraged person-centered, individualized exercise planning. When plans are tailored to the individual, exercise is an effective tool for managing mental health symptoms (Callaghan, 2004; Fogarty & Happell, 2005; Morgan et al., 2013). This was repeated among the Team Leads. The DHS 10 by 10 initiative encouraged ACT Team Leads to incorporate activities that improved overall wellness and health in clients. However, the 10 by 10 initiative was not specific to exercise. Team Leads found that, although motivation was often difficult, finding the right goal was helpful in increasing program engagement. Teams encouraged client participation based on client interest, cooperation, and sometimes indirectly through general wellness health goals.

Types of Exercise

The findings of this study suggested that there are many similarities in the types of exercise clients participate in. The variety of exercises presented in both the review of literature and this study were quite comprehensive. The list included swimming, rowing, running, bike riding, jogging, jumping rope, strength training, aerobics, weight training, martial arts, boxing, tennis, resistance training (Atlantis et al., 2004; C3 Collaborating for Health, 2011; Pearsall et al., 2014; Sarojini Devi & Usha Rani, 2013). Topping this list of exercise was walking and yoga.

Walking. Studies in the literature found walking to be most beneficial (Faulkner et al., 2006; Richardson et al., 2005; Ussher et al., 2007). Walking was popular because it is relatively safe, convenient, accessible, flexible, and in-expensive (Richardson et al., 2005). Participants of this study confirmed that walking was encouraged on every ACT team, either independently or side by side with staff. Team Leads indicated that staff walk and talk during visits and this has been very beneficial to mental health as well as physical health. Many teams incorporated a variety of exercise into individual routines, but walking remained the most popular.

Yoga. Previous studies identified yoga as another very effective form of exercise. Participants in yoga groups showed the greatest improvement in mental health and wellness (Gorczyński & Faulkner, 2010; Sarojini Devi & Usha Rani, 2013). In the findings of this study, very few ACT Team Leads used yoga as a form of exercise. One team had just hired a new staff that was also a yoga expert, so they hoped to try incorporating yoga into treatment planning. Other teams tried yoga in the past but had not found it to be effective or engaging. Some teams tried chair yoga for clients with limited physical abilities. Staff reported it to be enjoyable but staff time, proper training and lack of commitment on the part of staff and client resulted in discontinuation of chair yoga. Prioritizing time to prepare and facilitate organized groups is difficult. No Team Leads identified yoga in present client treatment goals.

Barriers to Implementation

The findings of this study identified additional barriers that impacted negatively on the effectiveness of exercise, not previously recognized in the review of literature. Obstacles that were previously identified included physical health symptoms, and mental

health symptoms (Knapen et al., 2015). However, this research identified that it was even more complicated than that.

Transportation. Issues related to appropriate and reliable transportation impacted on exercise participation on ACT teams. This study found that available public transportation resources in rural Minnesota were limited or unavailable. The cost of a taxi ticket or bus punch was often difficult to prioritize at times when the budget was already tight. The cost of gas, insurance, maintenance and repairs of client vehicles made personal transportation almost impossible. And the distance to get from home to local fitness centers was often too far or too unsafe to travel by bike, walking, or other modes of independent transportation.

Staff time. Staff time was identified as another big barrier on ACT teams. With an insurmountable number of other needs identified among their clients, ACT staff had difficulty implementing exercise goals. When exercise was identified as a part of an individuals' treatment plan, staff made it a greater priority. However, when more imminent health and safety issues are present such as homelessness or mental health instability, quality of life activities such as exercise are not implemented. In addition, staff reported the organization and facilitation of groups was time-consuming and resulted in little progress or participation.

Overall, the findings of this study are parallel with the findings in previous studies related to the benefits of exercise on mental health. Several similarities existed between the findings of this study and previous studies regarding the role of the Team Lead, why clients exercised, how incentives and reinforcements are used, what types of exercise are used and barriers to effectiveness. Exercise could be an effective tool to manage

symptoms and alleviate the negative effects of mental illness, and it could also contribute positively to recovery efforts including increased meaning, purpose, and satisfaction in life (Carless & Douglas, 2008). This research supported the already existing evidence that exercise does improve the mental health of individuals with mental illness. However, gaps existed between previous studies and the findings of this study with regard to the impact of exercise with severe and persistent mental illness on people in highly structured community based programs like an ACT team.

Strengths and Limitation of the Study

This study was important to further the research on exercise and its implication for progress and recovery for individuals with mental illness. Exercise was low cost, flexible and individualized to each participant. This supported a number of principles within the Social Work for Social Justice Principles including Human Dignity as exercise enhanced the life and dignity of the client. Secondly, the Community and the Common Good Principle reinforced the importance of human relationships which promoted general good health of individuals and communities, encouraged integration in community, such as exercise groups and fitness centers. Lastly, the Principle of Participation identified the value of equal opportunity participation without exclusion to resources (St. Catherine University, 2006). It was a strength that this researcher had experience as a fitness facilitator on an ACT team which provided a foundation for this research. Conversely, it was a bias that my experience had already confirmed exercise to be a very beneficial rehabilitative tool for clients struggling with mental illness.

There were several strengths in this study. This researcher selected this topic, understanding that most of the Team Leads in Minnesota may have conducted similar

studies in their graduate programs. This researcher only needed 8 participants. However, 19 of 26 ACT Team Leads replied positively to participate in this study. Of the seven Team Leads that did not participate, four of the Team Lead positions were currently vacant or on leave and were not available to participate. The individual experiences shared in this study were consistent across the majority of participants and corresponded with the findings in the existing research. Moreover, this study explored aspects and challenges of ACT teams incorporating exercise into individual treatment planning, which is underrepresented in the review of literature. There was also a plethora of information recognizing the benefits of exercise on wellness and recovery. However, the existing research mainly focuses on the benefits of exercise to overall mental and physical health and the specific exercise types rather than the specific implementation of exercise in recovery programs, especially in the community setting.

Likewise, exercise was currently a focus of attention within the field of mental health. As a result, Team Leads reported an interest in participating because the topic was so relevant and specific. Many participants expressed a desire to find out the results of this study in an effort to make positive changes on the delivery of ACT services.

Limitations also existed in this study. The major limitation, as noted earlier, was that there was little research available specific to ACT teams and the implementation and effectiveness of exercise with clients with severe and persistent mental illness. Some of the research extracted specific diagnosis, such as schizophrenia or depression. Other studies observed exercise from an in-patient setting. Still others studies were age specific or within a controlled study, such as a medical community or college community. There were no studies that had a perfect match to the research topic.

Another limitation was the lack of measureable data related to the exercise identified on the ACT teams. The review of the research identified some specific studies effective for specific mental illnesses. However, this study did not collect data specific to the frequency, duration or intensity of the exercise goals that were implemented. No specific recommendations could be made regarding the optimal program to obtain maximum mental health benefits from exercise. However, based on experience, the review of literature and this research study, there is evidence to support that any exercise is beneficial. The frequency, duration and intensity are not as important as simply initiating some type of activity as often as possible.

Implications for Social Work Practice

The findings of this study offer several implications for social work practice and potential changes that could be implemented for individuals with severe and persistent mental illness on ACT teams and other environments. The findings of this study indicate there is an overall desire on ACT teams to implement exercise programs, based on personal and professional experiences with exercise. Many Team Leads could attest to their personal benefits of exercise to mental and physical health. In addition, many Team Leads gave testimony to the benefits of exercise to the ACT clients. However, the work of ACT teams is very demanding and it is difficult to break down the barriers for implementation.

This research study also promotes greater emphasis and support for ACT teams to incorporate exercise into their delivery of services. This emphasis would come from the State of Minnesota Department of Human Services through legislative changes, recognizing it as another type of evidenced based practice. This would provide the

necessary support for funding the exercise activity. Local administration or management could support exercise at the local levels of service by providing space for activities and/or the use of discretionary dollars to break down barriers.

Social workers across various settings including hospitals, clinics, counties and community-based agencies could support and encourage more coordination and collaboration of exercise into client recovery goals. It is the responsibility of social workers and all mental health professional to educate and incorporate the use of exercise in treatment recommendations to maximize recovery efforts. Increasing support, funding and coordination of exercise as an effective tool for managing mental health symptoms could decrease the need for additional medical care including clinic visits and hospitalizations. Prescribers should prescribe exercise just as they prescribe pills, including how often and how long clients should exercise. Tools for measurement would include mental health stability and improvements in physical health as well. Administrators could offer training in specific exercises such as yoga, or provide funding for clients to attend community-integrated yoga classes. All Social Workers can become more creative in ways to incorporate exercise into each treatment plan for their clients. Offering to walk and talk during contacts, or role modeling the use of fitness equipment at the gym all encourage greater participation. Keeping a positive attitude, using humor and keeping exercise interesting will improve participation as well.

Implications for Policy

The implications for social policy in this study occur at all political levels. At the micro level, each individual needs to be encouraged to learn about the benefits of exercise to their own personal health and be encouraged to incorporate some type of goal

in their individual treatment plan. Individuals can make the greatest impact on their own situation. ACT teams can play a significant role in providing support and encouragement for this to happen.

At the mezzo level, research holds implications to promote changes within the local community of families and agencies. Increasing the awareness about the benefits of exercise to mental health wellness and recovery would contribute to the effectiveness of programming within specific agencies. Obtaining additional support for exercise programming, supporting gym memberships, training staff on fitness rules and encouraging the use of exercise as an effective tool in treatment within agencies would also be beneficial. Policies may need to change for this to become a priority.

At a macro level, the Minnesota DHS is instrumental in spearheading an effort to promote exercise as an evidenced based practice. Similar to how DHS promotes employment and Dialectical Behavioral Therapy as evidenced based practices, greater emphasis should be given to exercise. DHS should also provide a means of communication so that mental health service providers, including ACT Team Leads, have an effective way to communicate with each other and to improve on the delivery of quality services. In addition to promoting the practice, macro level policies need to improve the funding for such services. Insurance companies need to recognize exercise as therapeutic and provide financial reimbursement accordingly. Exercise is an underutilized practice in mental health treatment and needs policy support to change this.

At all levels, a greater understanding of provisions of service would improve services. The effectiveness of exercise in obtaining, retaining and maintaining mental and physical health in clients with severe mental illness should be supported through policy at

a national, state and local level. This researcher has facilitated an exercise group for over 10 years and has seen firsthand the benefits of exercise. Weight loss, reduced lab results such as A1C, blood sugars and cholesterol have validated the benefits physically. Reduced hospitalizations, reduced crisis, and improved mental health symptoms are evidence to the mental health benefits of exercise. Offering transportation, encouraging and reinforcing verbal feedback, coaching, having fun, and role modeling have been very effective in keeping participants engaged. In conclusion, many agencies need to work together to improve the outlook for effective policy revision related to health and exercise.

Implications for Future Research

In general, more research is necessary surrounding the specifics of implementation of exercise programs in recovery. There is agreement that exercise is beneficial to mental health. However, it is still unclear if a specific recommendation for exercise can be scripted and if so, what it may look like. The frequency, duration and intensity to promote optimal benefit is still unclear. Gender differences could be included in this future research. Quantitative research may be necessary to identify if there is information to create an ideal goal.

Another area where further research is needed relates to the coordination of services among mental health professionals and the potential cost effectiveness of these services. Coordinated care could reduce the duplication of services by different agencies. Exercise could be one tool to improve coordinated mental and physical health. If improvements related to life style choices, reduced smoking, improved diet, weight loss and medications side effects were evident and credited to exercise, the public health

impact would be significant. Research identifying the qualitative benefits to clients with mental illness as well as the quantitative impact of cost/savings could be impressive.

In conclusion, the findings of this study are similar to the findings in previous studies; however, the research is still unfolding. Evidence indicates that exercise is an important tool for managing mental health. It is effective in helping to obtain, retain and maintain both physical and mental health. Mental health professionals, including but not limited to ACT Team Leads, play an important role in coordinating services. Exercise remains an underutilized practice in mental health treatment. As medications for mental health improve and pills become more effective, so should the research world continue to look for advancements in the skills area of mental health recovery, including exercise. Pills and skills must work hand in hand to obtain maximum recovery for individuals with severe mental illness. Each Team Lead or mental health professional can individually make a difference in increasing exercise. However, if we all work together, we can increase all mental illness recovery utilizing exercise.

References

- American College of Sports Medicine (2015). *Exercise is medicine: A standard in the clinical setting* [Fact Sheet]. Retrieved from http://exerciseismedicine.org/support_page.php?p=7
- Atlantis, E., Chow, C-M., Kirby, A., & Fiatarone Singh, M. (2004). An effective exercise-based intervention for improving mental health and quality of life measures: A randomized controlled trial. *Preventive Medicine, 39*, 424-434. doi:10.1016/j.ypmed.2004.02.007
- Bertheussen, G. F., Romundstad, P. R., Landmark, T., Kaasa, S., Dale, A., & Helbostad, J. L. (2011). Associations between physical activity and physical and mental health-a HUNT 3 study. *Medicine & Science in Sports & Exercise, 43*(7), 1200-1228. doi:10.1249/MSS.0b013e318206c66e
- Boss, P. G., Doherty, W. J., LaRossa, R., Schumm, W. R., & Steinmetz, S. K. (1993). *Sourcebook of family theories and methods: A contextual approach*. New York, NY: Plenum Press.
- Bravata, D. M., Smith-Spangler, C., Sundaram, V., Gienger, A. L., Lin, N., Lewis, R.,...Sirard, J. R. (2007). Using pedometers to increase physical activity and improve health: A systematic review. *Clinician's Corner, 298*(19), 2296-2304. doi:10.1001/jama.298.19.2296
- Brown, C., Read, H., Stanton, M., Zeeb, M., Jonikas, J., & Cook, J. (2015). A pilot study of the nutrition and exercise for wellness and recovery (NEW-R): A weight loss program for individuals with serious mental illnesses. *Psychiatric Rehabilitation Journal*. Retrieved from <http://dx.doi.org/10.1037/prj0000115>

- C3 Collaborating for Health. (2011). *The benefits of physical activity for health and well-being*. Retrieved from <http://www.c3health.org/wp-content/uploads/2009/09/C3-review-of-physical-activity-and-health-v-1-20110603.pdf>
- Callaghan, P. (2004). Exercise: A neglected intervention in mental health care? *Journal of Psychiatric and Mental Health Nursing*, *11*, 476-483.
- Carless, D., & Douglas, K., (2008). The role of sports and exercise in recovery from serious mental illness: Two case studies. *International Journal of Men's Health*, *7*(2), 137-156. doi:10.3149/jmh.0702.137
- Centers for Disease Control and Prevention. (2008). How much physical activity do adults need, Retrieved from www.cdc.gov/physicalactivity/basics/adults/index.htm
- Cerin, E. (2010). Ways of unraveling how and why physical activity influences mental health through statistical mediation analyses. *Mental Health and Physical Activity*, *3*, 51-60. doi: 10.1016/j.mhpa.2010.06.002
- Chacón, F., Mora, F., Gervás-Rios, A., & Gilaberte, I. (2011). Efficacy of lifestyle interventions in physical health management of patients with severe mental illness. *Annals of General Psychiatry*, *10*, 22. Retrieved from <http://www.annals-general-psychiatry.com/content/10/1/22>
- Clow, A., & Edmunds, S. (2014). *Physical activity and mental health*. Champaign, IL: Human Kinetics.
- Donhoffer, H. A., & Chan, L. (2007). Mental health benefits of exercise. *Wellness Options*, *30*, 31.

- Faulkner, G., Cohn, T., & Remington, G. (2006). Validation of a physical activity assessment tool for individuals with schizophrenia. *Schizophrenia Research* 82, 225-231. doi:10.1016/j.schres.2005.10.020
- Fogarty, M., & Happell, B. (2005). Exploring the benefits of an exercise program for people with schizophrenia: A qualitative study. *Issues in Mental Health Nursing* 26, 341-351. doi: 10.1080/01612840590915711
- Gorczyński, P., & Faulkner, G. (2010). Exercise therapy for schizophrenia. *Schizophrenia Bulletin*, 36(4), 665-666. doi:10.1093/schbul/sbq049
- Horvath, A. T., Kaushik Misra, Abpp, Epner, A. K., Cooper, G. M. (2016). General systems theory of addiction and recovery implications. Retrieved from www.mentalhelp.net
- Hutchison, E. (2011). *Dimensions of human behavior: Person and environment* (4th ed.). Los Angeles, CA: Sage.
- Jerome, G., Young, D. R., Dalcin, A., Charleston, J., Antony, C., Hayes, J., & Daumit, G. L. (2009). Physical activity levels of persons with mental illness attending psychiatric rehabilitation programs. *Schizophrenia Research* 108, 252-257. doi: 10.1016/j.schres.2008.12.006
- Kim, Y. S., Park, Y. S., Allegrante, J. P., Marks, R., Ok, H., Cho, K. O., & Garber, C. E. (2012). Relationship between physical activity and general mental health. *Preventive Medicine* 55, 458-463. <http://dx.doi.org/10.1016/j.ypmed.2012.08.021>
- Knapen, J., Vancampfort, D., Morien, Y., & Marchal, Y. (2015). Exercise therapy improved both mental and physical health in patients with major depression.

Perspectives in Rehabilitation, 37(16), 1490-1495.

doi:10.3109/09638288.2014.972579

Krupa, T., Eastabrook, S., Hern, L., Lee, D., North, R., Percy, K.,... Wing, G. (2005).

How do people who receive assertive community treatment experience this service? *Psychiatric Rehabilitation Journal*, 29(1), 18-24.

Leamy, M., Bird, V., Le Boutillier, C., Williams, J., & Slade, M. (2011). Conceptual

framework for personal recovery in mental health: systematic review and narrative synthesis. *The British Journal of Psychiatry*, 199, 445-452. doi:

10.1192/bjp.bp.110.083733

Malcolm, E., Evans-Lacko, S., Little, K., Henderson, C., & Thornicroft, G. (2013). The

impact of exercise projects to promote mental wellbeing, *Journal of Mental*

Health, 22(6), 519-527. doi:10.3109/09638237.2013.841874

Manuel, J. I., Appelbaum, P. S., Le Melle, S. M., Mancini, A. D., Huz, S., Stellato, C. B.,

& Finnerty, M. T. (2013). Use of intervention strategies by assertive community treatment teams to promote patients' engagement. *Psychiatric Services*, 64(6),

579-585. doi:10.1176/appi.ps.201200151

Mason, O. J. & Holt, R. (2012). Mental health and physical activity interventions: A

review of the qualitative literature. *Journal of Mental Health*, 21(3), 274-284.

doi:10.3109/09638237.2011.648344

Marzolini, S., Jensen, B., & Melville, P. (2008). Feasibility and effects of a group-based

resistance and aerobic exercise program for individuals with severe

schizophrenia: A multidisciplinary approach. *Mental Health and Physical*

Activity, 2, 29-36. doi:10.1016/j.mhpa.2008.11.001

Minnesota Department of Human Services. (2008). DHS issues guidance on Assertive Community Treatment (ACT) services, *Bulletin #08-53-01*. Retrieved from http://www.dhs.state.mn.us/main/groups/publications/documents/pub/dhs16_140451~2.pdf

Minnesota Department of Human Services. (2013). Assertive Community Treatment (ACT), Retrieved from http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=id_058151

Minnesota Department of Human Services. (2015). Adult Mental Health – Minnesotans taking action for healthier, longer lives (MN 10 by 10), Retrieved from http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=dhs16_147992

Minnesota Department of Human Services. (2016), Certified Peer Specialist, Retrieved from http://www.dhs.state.mn.us/main/idcplg?IdcService=GET_DYNAMIC_CONVERSION&RevisionSelectionMethod=LatestReleased&dDocName=DHS16_166833

Moderate exercise benefits people with schizophrenia. (2010, July). *Mental Health Practice* 13(10), 4. Retrieved from <http://mentalhealthpractice.renpublishing.co.uk/>

Monette, D. R., Sullivan, T. J., Dejong, C. R., & Hilton, T. P. (2014). *Applied social research: A tool for the human services* (9th ed.) Belmont, CA: Brooks/Cole.

- Moore, G. F., Raisanen, L., Moore, L., Ud Din, N., & Murphy, S. (2013). Mixed-method process evaluation of the Welsh national exercise referral scheme (NERS). *Health Education, 113*(6), 476-501. doi:10.1108/HE-08-2012-0046
- Morgan, A. J., Parker, A. G., Alvarez-Jimenez, M., & Jorm, A. F. (2013). Exercise and mental health: An exercise and sports science Australia commissioned review. *Journal of Exercise Physiology, 16*(4), 64-73. Retrieved from <http://www.asep.org>
- Padgett, D. K. (Ed.). (2008). *Qualitative methods in social work research* (2nd ed.). Thousand Oaks, CA: Sage.
- Pearsall, R., Smith, D. J., Pelosi, A., & Geddes, J. (2014). Exercise therapy in adults with serious mental illness: A systematic review and meta-analysis. *BMC Psychiatry, 14*(117), 1-17. Retrieved from <http://www.biomedcentral.com/1471-244X/14/117>
- Rethorst, C. D., Wipfli, B. M., & Landers, D. M. (2009). The antidepressive effects of exercise, a meta-analysis of randomized trials. *Sports Medicine, 39*(6), 491-511. doi:10.2165/00007256-200939060-00004
- Richardson, C. R., Faulkner, G., McDevitt, J., Skrinar, G. S., Hutchinson, D. S., & Piette, J. D. (2005). Integrating physical activity into mental health services for persons with serious mental illness. *Psychiatric Services, 56*(3), 324-329.
- Sarojini Devi, K. S. S., & Usha Rani, M. (2013). Effect of yogic exercise and physical exercise on physical health and mental health. *Journal of Evolution of Medical and Dental Sciences, 2*(18), 3031-3034. Retrieved from http://www.jemds.com/latest-articles.php?at_id=1101

- Scheewe, T., Backx, F. J. G., Takken T., Jorg, F., van Strater, A. C. P., Kroes, A..., & Cahn, W. (2013). Exercise therapy improves mental and physical health in schizophrenia: A randomized controlled trial. *Acta Psychiatrica Scandinavica*, *127*(6), 464-473. doi:10.1111/acps.12029
- Sheafor, B. W., Horejsi, C. R., & Horejsi, G. A. (1994). Techniques and guidelines for social work practice. (3rd ed.). Boston, MA: Allyn and Bacon.
- St. Catherine University/University of St. Thomas School of Social Work. (2006). Social work for social justice [Unpublished pamphlet]. St. Paul, MN: Author.
- Szabo, A. (2013). Acute psychological benefits of exercise: Reconsideration of the placebo effect. *Journal of Mental Health*, *22*(5), 449-455. doi:10.3109/09638237.2012.734657
- Tschopp, M. K., Berven, N., L., & Chan, F. (2010). Consumer perceptions of assertive community treatment interventions. *Community Mental Health Journal*, *47*, 408-414. doi:10.1007/s10597-010-9335-z
- Urban Dictionary (2006). Wii, April 27, 2006. Retrieved from <http://www.urbandictionary.com/define.php?term=wii>
- Ussher, M., Stanbury, L., Cheeseman, V., & Faulkner, G. (2007). Physical activity preferences and perceived barriers to activity among persons with severe mental illness in the United Kingdom. *Psychiatric Service* (58)3. Retrieved from <http://ps.psychiatryonline.org>

Wholey, D. R., Zhu, X., Knoke, D., Shah, P., Zellmer-Bruhm, M., Witheridge, T. F.

(2012). The teamwork in assertive community treatment (TACT) scale: Development and validation. *Psychiatric Services*, *63*(11), 1108-1117. doi: 10.1176/appi.ps.201100338

Wolff, E., Gaudlitz, K., von Lindenberger, B-L., Plag, J., Heinz, A., & Strohle, A. (2011).

Exercise and physical activity in mental disorders. *European Archives of Psychiatry & Clinical Neuroscience*, *261*(Suppl 2), S186-S191. doi:10.1007/s00406-011-0254-y

Wynaden, D., Barr, L., Omari, O., & Fulton, A. (2012). Evaluation of service users'

experiences of participating in an exercise programme at the Western Australian State Forensic Mental Health Services. *International Journal of Mental Health Nursing*, *21*, 229-235. doi:10.1111/j.1447-0349.2011.00787.x

Appendix A

Assertive Community Treatment (ACT) Teams and Exercise INFORMATION AND CONSENT FORM

Introduction:

You are invited to participate in a research study investigating the benefits of exercise to clients with mental illness. This study is being conducted by xxx xxx, a graduate student at St. Catherine University and the University of St. Thomas under the supervision of Dr. Catherine Marrs Fuchsel, PhD., LICSW, LCSW, a faculty member in the Department of Social Work. You were selected as a possible participant in this research because you are a Team Lead on an ACT team in the state of Minnesota. Please read this form and ask questions before you agree to be in the study.

Background Information:

The purpose of this study is to understand the role exercise plays in the treatment and recovery efforts of clients receiving ACT services, through the Team Lead perspective. Approximately 26 people are expected to participate in this research.

Procedures:

If you decide to participate, you will be asked to review and sign the consent form and an interview will be scheduled. You will be asked to answer questions related to your thoughts on exercise and its treatment implications for clients on the ACT team for which you are the Team Lead. Your information can be compiled three different ways: face-to-face interview, telephone interview or by completing the question in a written response. Face-to-face interviews and telephone interviews will be recorded for the purpose of accurate transcription of information. You will be asked to sign consent to audiotape the interview. Written responses can be mailed directly to me, or scanned to my computer. This process requires no preparation on your part. A list of Interview Questions will be provided to you at least 24 hours prior to our arranged contact time. This study will take approximately 45 minutes over a single session.

Risks and Benefits of being in the study:

There are no risks involved with this study. In the unlikely event of a risk, you may end the interview at any time.

The benefits to participation in this study include an increased understanding of the value exercise can play in the rehabilitation role of clients receiving ACT services, of which you are Team Lead.

Confidentiality:

Any information obtained in connection with this research study that can be identified with you will be disclosed only with your permission; your results will be kept confidential. In any written reports or publications, no one will be identified or identifiable and only group data will be presented.

I will keep the research results in a locked file cabinet in my home office and only I and my advisor will have access to the records while I work on this project. I will finish analyzing the data by May 16, 2016. I will then destroy all original reports and identifying information that can be linked back to you. Tapes and audio recordings will be transcribed and then erased or destroyed no later than May 16, 2016. Transcriptions will be password protected.

Voluntary nature of the study:

Participation in this research study is voluntary. Your decision whether or not to participate will not affect your future relations with St. Catherine University and the University of St. Thomas in any way. If you decide to participate, you are free to stop at any time without affecting these relationships.

Contacts and questions:

If you have any questions, please feel free to contact me, xxx xxx, at xxx-xxx-xxxx (cell). You may ask questions now, or if you have any additional questions later, the Faculty Advisor and Research Chair Dr. Catherine Marrs Fuchsel at (651) 690-6146 will be happy to answer them. If you have other questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you may also contact Dr. John Schmitt, Chair of the St. Catherine University Institutional Review Board, at (651) 690-7739 or jsschmitt@stkate.edu.

You may keep a copy of this form for your records.

Statement of Consent:

You are making a decision whether or not to participate. Your signature indicates that you have read the information above and your questions have been answered. Even after signing this form, please know that you may withdraw from the study at any time and no further data will be collected.

I consent to participate in the study. If I chose to be interviewed, I agree to be audiotaped.

Signature of Participant	Date
Signature of Researcher	Date

Appendix B

Phone and E-mail Script

Dear [Name],

My name is xxx xxx and I am a Master's level Social Work student under the supervision of Professor Catherine L. Marrs Fuchsel, PhD., LICSW, LCSW in the School of Social Work, St. Catherine University and University of St. Thomas in St. Paul, MN. As part of my education, I am conducting a research study to understand how Assertive Community Treatment (ACT) teams are using exercise to improve the recovery progress of clients with mental illness.

I am inviting each Team Lead from all 26 ACT teams in the State of Minnesota to participate in this research. There will be three options for you to provide information to me: a face-to-face interview, a telephone interview, or a written response to my interview questions. Interview questions will be provided to you in advance but there is no preparation for the interview. The interview will last no longer than one hour. We can meet at a time that is convenient to you. Written responses can be sent directly to me.

I will be following up with you in the next weeks. If you have any questions, please don't hesitate to contact me. Thank you in advance for your consideration.

Sincerely,

xxx xxx, LSW

xxx-xxx-xxxx

xxx.xxx@stthomas.edu

Appendix C

Interview Questions for Research Paper

I am interested in understanding:

How are ACT teams using exercise to improve the recovery progress of clients with mental illness?

Exercise is defined as planned, structured, repetitive, and purposive activity intended to improve physical and mental health.

About the Team Lead:

1. Please tell me about your role on the ACT team? How long have you been Team Lead?
2. What is your own current relationship with exercise? Do you think this influences the ACT team's perspective on exercise with clients?

About the ACT staff and clients:

3. Does your ACT team include exercise in client treatment plans?
 - a. If no, skip to 12
 - b. If yes, proceed.
4. Why do clients exercise?
 - a. Staff perspective
 - b. Client feedback to staff
5. What types of exercise do clients participate in?
6. What are the negative impacts of exercise to clients on the team?
7. What are the client and staff barriers to incorporating exercise into client treatment goals?
8. Does your ACT team have any formal or informal way to measure the effects of exercise on client's mental health? Do you have an example?
9. How is exercise facilitated?
 - a. Individually or as a group?
 - b. Client facilitated or staff facilitated?
10. What kind of interventions do staff use to encourage or reinforce client participation in exercise? i.e. rewards, medical team recommendations.
11. Do you recognize any gender-specific differences in relation to exercise?
12. Has your ACT staff made any changes within the past couple years to change the role of exercise with clients?
 - a. If yes, what kinds of changes have been made?

- b. If no, do you anticipate making any program changes to incorporate more exercise plans?

Thank you. xxx xxx, LSW

Appendix D

Coder Confidentiality Agreement

I am conducting a study about the benefits of exercise on recovery with clients on ACT teams, as identified by the ACT Team Lead.

This study is being conducted by xxx xxx under the advisement of Faculty Advisor, Dr. Catherine Marrs Fuchsel, Ph.D., LICSW, LCSW, a faculty member of St. Catherine’s University and University of St. Thomas School of Social Work.

Confidentiality:

Confidential information includes all data, materials, products, technology, audiotapes, computer programs and electronic versions of files saved to portable storage devices. All information you obtain related to this study will remain confidential. No one else may have access to the records.

Contacts and Questions

My name is xxx xxx. If you have questions, you may contact me at xxx-xxx-xxxx or my Research Chair, Dr. Catherine Marrs Fuchsel, Ph.D., telephone number 651-690-6146. You may also contact the St. Catherine’s University Institutional Review Board at 651-690-7739 with any questions or concerns.

You will be given a copy of this form to keep for your records.

Statement of Agreement of Confidentiality:

I, _____, have read the above information and agree to confidentiality as stipulated above. I further agree not to disclose, publish or otherwise reveal any of the confidential information received from the researcher or interview participants.

Signature of Transcriber

Date

Signature of Researcher

Date

Appendix E

Types of exercise on ACT teams as recognized by the Team Leads:

Mall Walking
Riding bike-stationary, 2-wheeled and 3-wheeled
Playing basketball
Bowling
Yoga-regular and modified chair yoga
Balloon game/volleyball
Weightlifting
Calisthenics
Running
Swimming
Softball
Wii2 exercise routines
Dancing
Cross country skiing
Workout videos
Physical Therapy exercises
Pilates
Football
Arm exercises
Treadmill machine
Elliptical machine
Taking the stairs
Tae Kwon Do
Badminton