More than Just Meds: Does Adjunct Adventure/Recreation Based Group Therapy Improve Physical and Psychological Health in Clients with First Episode Psychosis?

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A thesis submitted for the degree of Masters of Social and Community Work of the University of Otago, Dunedin New Zealand
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Abstract

Both nationally and internationally research has shown that weight gain is a major factor in deteriorating physical health. For people with mental health disorders this problem is compounded by the use of anti-psychotic medications. That is, while anti-psychotic medications play a significant role in the treatment of psychosis they can also cause significant weight gain for the individuals using them. This means that strategies that assist in maintaining a healthy body weight need to be considered alongside other treatments for people with psychotic disorders (Alvarez-Jimanez, Martínez-García, Parez-Iglesias, Ramarez, Vázquez-Barquero & Crespo-Facorro 2009).

Early Intervention Services (EIS) are a specific model introduced to treat young people with psychosis early in the critical period of psychotic illness. Early Intervention is an international model with similarities in treatment throughout the world. Treatments generally include intensive psycho/social treatment from multi discipline teams and the use of psychotropic medications. As Addington et al (2005) argue this model has proven to be effective in treating psychosis.

Totara House, an EIS based in Christchurch New Zealand, uses the Early Intervention in Psychosis Model (Turner 2002). As part of treatment Totara House also offers a recreation group. This Group is based on concepts contained in Adventure Therapy where, by using the outdoor environment, activities with perceived risks can be undertaken. Through these activities clients can generalise learning to a real life situations.

One of the few studies to evaluate the effectiveness of Adventure Therapy (Voruganti et al, 2006) found it to be an effective intervention for people in early intervention for Psychosis. The study reported here attempts to add to that body of research by evaluating the benefits of the Totara House recreation group for a sample of young people taking anti-psychotic medication. The underlying premise is that participation in the recreation group will assist members to maintain a
healthy body weight by increasing their physical activity, which in turn will improve their overall physical health.

Using several measures, this study compared the scores of 78 clients who attended the Totara House recreation group with 206 clients who do not attend the group. This included using physical measures such as Body Mass Index, Fasting Glucose (Glucose), Total Cholesterol, High Density Lipoprotein (HDL) cholesterol, Low Density Lipoprotein (LDL) and Triglycerides. The Psychological measures used were Health of the Nation Outcome Scale (HONOS), Positive and Negative Syndrome Scale (PANSS), Quality of life, Substance Use, Self-report insight scale (Insight) and Compliance.

The results showed that High Density Lipoprotein was close to significance with this result being strongest in the last year of treatment. It also found that the majority of clients attended the recreation group early in their two years of treatment and that more left the recreation group for positive reasons rather than negative ones. It was also found that the recreation group attracted a sub group of clients, clients attending the group were more likely to be Maori and male and have higher Health of the Nation Outcome Scale scores.

The data was further analysed by splitting the sample into clients who attended the recreation group for less than five sessions (n=37) with those who attended five or more sessions (n=41). While being Maori then became non-significant, being male continued to predict attendance. Quality of life and Health of the Nation scores were significant predictors of attendance.

Overall, it was found that in this study although the recreation group, as an adjunct intervention, did not appear to be as effective as it had been in the Voruganti et al (2006) study, for a subgroup of Totara House clients it had definite benefits. This was particularly apparent for Maori and other clients who are severely affected by
psychotic disorders. In this way this study has made a contribution to the knowledge base in regard to positive models for working with clients in early intervention psychosis. Such a model is also very much in keeping with social work practice in mental health services.
Preface

Psychosis is a significant mental illness and Early Intervention Treatment has been proven to successfully improve this debilitating illness (Addington et al 2005). Results of the use of Adventure therapy in the treatment of psychosis and the associated physical health issues has also shown to be effective (Voruganti et al 2006).

I was employed as a Mental Health Social Worker at Totara House at the time of completing this study. My role at Totara House was as a Case Manager and this role lasted for five years. Along with others, I also led the Totara House recreation group which occurs weekly. Totara House had been running such a group since its inception. My interest in the recreation group was twofold. One, that outdoor activity has always been a significant part of my life and I had worked as an outdoor instructor in the past and two, I believed that Adventure Therapy offers clients a different and very significant form of treatment.

Furthermore, it was noted by staff previously involved in the recreation group that is appeared to be attended by a subgroup of clients with more severe issues and that as an intervention it offered a different and significant form of treatment. Often staff involved in providing the group would discuss the client and the positive changes the group appeared to have made for them. This study was designed to explore whether these anecdotal thoughts could be substantiated through a formal evaluation process. I was pleased to be able to undertake this task for my thesis and in some small way be able give something back to the clients I worked with.
Acknowledgement

I would like to thank my wife who has supported me throughout my time undertaking study for my Masters in Social Work, by proofing and helping me edit my work.

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Chapter 1

Introduction

Generally physical health in New Zealand is on the decline while levels of obesity are increasing significantly. This in turn has led to increases in heart disease, diabetes, strokes, high blood pressure and some cancers (Ministry of Social Development, 2008). According to studies undertaken by the Ministry of Health over half of the New Zealand population is overweight with 21 Per cent being obese (Ministry of Health, 2004). This increased weight gain of the nation has been associated with increased calorie intake and less physical activity (Strassnig, Miewald, Keshavan, & Ganguli, 2007).

Most people are aware that increased physical activity alongside a balanced diet can greatly assist address issues related to inappropriate weight gain. Furthermore, such activity appears to have a significant positive effect on both psychological and physical health as well achieving any weight loss (Couillard, et al., 2001; Thompson, et al., 1997). This study attempts to look at one possible model of increasing physical activity among young people with psychotic disorders attending early intervention services. In order to do so the study uses indicators of metabolic syndrome as a way of measuring overall physical health. Metabolic syndrome has been selected as a measure as it is a commonly used predictor of future heart disease (Elmslie, et al., 2009; Gentles, et al., 2007 & Usher, Foster, & Park, 2006). Metabolic syndrome is defined as having at least three of the metabolic risks factors. These include being overweight or obese, having a large waist circumference, high triglyceride levels, low High Density Lipoprotein, a raised blood pressure and a high fasting glucose level (Elmslie, et al., 2009; Gentles, et al., 2007; Usher, et al., 2006). Metabolic syndrome is on the rise in New Zealand, particularly among Maori and pacific peoples (Gentles, et al, 2007).

It is also well known that people with mental health issues have poorer physical health than the general population (Brown, Birstwistle, Roe, & Thompson, 1999; Connolly & Kelly, 2005). For example, people with schizophrenia tend to have poor physical health and as a
consequence tend to die at an earlier age than the general population (Alvarez-Jimenez, et al., 2009; Birstwistle, Roe, & Thompson, 1999; Brown, 1997; Connolly & Kelly, 2005; Mitchell, 2009 & Usher, et al., 2006). A significant factor in their death is being overweight, which has occurred as a consequence of the use of atypical anti-psychotic medication (Amiel, Mangurian, Ganguli, & Newcomer, 2008; Connolly & Kelly, 2005; Green, et al., 2000; Saddichha, et al., 2008; Strassnig, et al., 2007; Zipursky, et al., 2005).

While this study relates to all people with mental health issues its main focus is people attending Early Intervention in Psychosis Services. These services are based on defined principles for providing effective treatment for people experiencing their first episode of psychosis. Many people diagnosed with psychosis are later diagnosed with schizophrenia, thus EIS’s rely on early detection, intensive case management and appropriate treatment (Addington, et al.; Early Psychosis Prevention and Intervention Centre, 2001; Ministry of Health, 1997). This study evaluates the recreation group programme offered through Totara House, which is part of the Canterbury District Health Board’s Mental Health Division. Totara House provides treatment to young people aged between 18-30 years who are experiencing their first episode of psychosis and are living in the Canterbury area of the South Island in New Zealand (Totara House, 2000; Turner, 2002).

The sample consists of a group of clients attending the Totara House program. They all have mental health issues and are, or have been psychotic at some stage of their illness (Brown, Birstwistle, Roe, & Thompson, 1999; Connolly & Kelly, 2005). In addition to their current problems a large number have, or will develop schizophrenia. Consistent with treatment protocols, the participants in this study will have been prescribed atypical anti-psychotic medication thus, they are likely to have gained a considerable amount of weight (Brown, Birstwistle, Roe, & Thompson, 1999; Connolly & Kelly, 2005) and are, therefore, at high risk of having poor physical health (Brown, Birstwistle, Roe, & Thompson, 1999; Connolly & Kelly, 2005). Furthermore, little is known about effective treatments for this population as it is only recently that research into exploring interventions for improving physical health among mental health clients has been undertaken (Kalarchian, et al., 2005). These studies found that the most effective form of treatment for poor physical health is increasing physical
activity (Carless & Sparkes, 2008; Faulkner & Biddle, 1999; Faulkner & Sparkes, 1999 & Jones, 2008).

The Study

Adventure Therapy is one treatment approach that can be used to increase the level of physical activity among people with mental health issues disorder. Adventure Therapy takes place in outdoor environments and activities can include walking, orienteering and cycling, climbing, kayaking, canoeing, and sailing (Frances, 2006). Adventure Therapy differs from normal leisure activities in that it attempts to make meaning and transfer lessons learned from leisure activities into real life. The activities used in Adventure Therapy usually employ a real or perceived, danger (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd, et al., 2000). Adventure Therapy is an outdoor leisure programme that can be used to encourage active participation in recreation while having fun and increasing personal fitness (Lloyd, et al., 2000).

Throughout the literature the importance of physical activity is highlighted (Parlato, et al, 1999) with many studies (Frances, 2006; Gass, 1993; Lloyd, et al., 2000) finding that increased physical activity brings about improvements in physical health measures as well as showing evidence of psychological benefits. For example, while physical activity assisted with stabilizing blood pressure, pulse, vigour and increased energy levels there has been a corresponding increase in psychological wellbeing (Crisp, 1996, 1998; Russell, 2001). Recreation based interventions appear to have lower group attrition rates than other groups and are increasingly being well received by clients with mental health problems (Frances, 2006; Wilding, 2000; Gass, 1993). They are also seen as an acceptable method of treatment by people with schizophrenia who are traditionally a difficult population to engage (Alvarez-Jimenez, et al., 2008).

Voruganti et al (2006) examined the effectiveness of a program using wilderness/Adventure Therapy in Canada. All the participants were diagnosed with schizophrenia. The activities employed in this program usually lasted all day, sometimes included overnight camps and usually involved attendance at eight sessions each week. Activities in the summer included
camping, canoeing, kayaking, rock climbing, and picnics. Activities in the winter included skating, snow shoeing, snowboarding, ice fishing, indoor rock climbing and bowling (Voruganti, et al., 2006).

On completion of the above program little change was noted in symptoms scores. However, of more importance was that over an eight month period the participants who had engaged in the program had a statistically significant weight loss of 5.45 kilograms (12lb) whereas the control group had gained 4.09 kilograms (9lb). Improvements were also noted in global assessment of functioning and self-esteem. Clients also found satisfaction in accomplishment, the thrill of adventure and challenge, and the development of relationships (Voruganti, et al., 2006).

There are similar programs closer to New Zealand. For example the YOU Outdoor recreation program based in Australia. This program includes surfing, beach volleyball and bush walking. The goals include developing friendships, fitness and encouraging participation in new leisure activities, it also attempts to make greater use of local recreation resources (Lloyd, et al., 2000).

Totara House offers a recreation group for clients who wish to attend. The group offers group physical activity and socializing. It is an open group that has as its main focus physical activity in the outdoors. Although known as the ‘recreation group’ it utilizes the concepts contained in Adventure Therapy.

What makes this study different from other studies is that it was undertaken in New Zealand and, therefore, includes people of Maori ethnicity. This is an important factor as Maori are the indigenous people of New Zealand and may respond differently to Adventure Therapy than other New Zealanders. One aim of this study is to determine these differences.
New Zealand also has a high rate of recreational drug use (Boden, Fergusson, & John Horwood, 2006) and Tobacco smoking (Connolly & Kelly, 2005) thus the study also explores how these factors may impact on the physical health of its participants.

There are two broad approaches to research. One is quantitative where generally larger samples are used and differences are expressed in mathematical values that are then compared by statistically analysing the data (Alston & Bowles, 2002; D'Cruz & Jones, 2007). The other is qualitative. This method usually involves smaller populations and detailed ways of collecting data, for example undertaking individual interviews or focus groups (Alston & Bowles, 2002; D'Cruz & Jones, 2007). This study has a quasi-experimental design in that it uses quantitative data collected routinely as part of clinical research at Totara House.

There are three main study Questions:

1. Does adjunct adventure based group therapy attract a sub group of clients in an early intervention in psychosis service?
2. Is adventure based group therapy an effective adjunct therapy in early intervention in psychosis service for physical measures?
3. Is adventure group therapy an effective adjunct therapy in early intervention in psychosis service for psycho-social measures?

**Structure of the Thesis**

This chapter has introduced the study. Chapter two looks at the literature in regard to physical health both in New Zealand and internationally. Chapter three takes this further by reviewing literature on the physical health of people with mental health disorders. Chapter four describes treatment models for people with mental health with a specific focus on Adventure Therapy and Early intervention in psychosis treatments. Chapter five considers Totara House and other early intervention in psychosis services. Chapter six describes the method used in this study and chapter seven presents the findings. Chapter eight discusses the findings and chapter nine concludes the study and makes recommendations for future research.
Summary
From the studies reviewed so far it seems New Zealand has seen a decrease in good physical health among the general population while obesity levels have risen to the extent that some people are now at risk for metabolic syndrome—a group of risk factors that raises the risk for heart disease and other physical health problems (Gentles, et al., 2007). The first line of treatment for metabolic syndrome is making healthy lifestyle changes, for example by increasing physical activity and maintaining a healthy diet. This in turn can achieve weight loss and improved physical and psychological health (Couillard, et al., 2001; Thompson, et al 1997).

However, for mental health clients with psychotic disorders maintaining a healthy body weight can be challenging. Maintaining a healthy body weight is compounded by the use of prescribed atypical anti-psychotic medication. Adventure Therapy is proposed as one model that has been successful for engaging and working with mental health clients, particularly young adults. Adventure Therapy is different in that the activities are undertaken with the aim of transferring learning achieved during leisure activities into real life situations (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd, et al., 2000). This study attempts to see if some of the findings from the above mentioned studies can be replicated for the participants attending the Totara house program.
Chapter Two

The Physical Health of the General Population

This chapter investigates the physical health and weight of nations. It begins by looking at the dramatic weight increase that has occurred both internationally and in New Zealand populations. The overall aim of the program being evaluated, in terms of changes on specific measures, was to increase physical activity in order to bring about better health outcomes. In this study involvement in physical activity is a very significant factor thus, determining how effective physical activity is in reducing weight and improving overall health is important. Also explored are the general benefits that physical activity has on an individual’s overall mental health and wellbeing. The focus then moves on to consider metabolic syndrome as one method of defining physical health. This necessitates a discussion on the effect that weight loss has on metabolic syndrome. Finally, the side effects of smoking and other drug use taking may have on an individual’s physical health is also examined.

Physical Health of the General Population

Over recent years New Zealanders have significantly increased their body weight (Ministry of Social Development, 2008). Now over half of the New Zealand population is overweight with 21% meeting criteria for obesity (Ministry of Health, 2004). New Zealand is not alone with this issue as there is also evidence to show that internationally people are getting fatter to the extent that rates of obesity have increased considerably throughout the rest of the world (Ministry of Social Development, 2008).

Weight gain contributes to increases in heart disease, diabetes, stroke, high blood pressure and some cancers (Ministry of Social Development, 2008). Even being modestly over-weight can increase the risk of heart disease while being obese dramatically increases this risk (Jung, 1997). It has been argued that obesity is such a significant issue that it should be considered a disease in its own right and be treated as aggressively as other serious diseases (Jung, 1997). Obesity is certainly a disease that it is killing large numbers of people (Alvarez-Jimenez, Hetrick, Gonzalez-Blanch, Gleeson, 2008 & McGorry, 2008).
Being overweight in adolescence and as a young adult does not just manifest itself in physical ways but it is also associated with negative social and economic consequences. The negative social/psychological effects could be more significant than the physical consequences. Obese males and females are less likely to be married, have fewer years of education, lower household incomes and higher rates of household poverty. The negative outcomes may also be associated with the effects of discrimination against people who are overweight. Being overweight is also associated with lower self esteem. (Gortmaker, Must, Perrin, Sobol, & Dietz, 1993). This study explores one intervention model which has the potential to support young people to lose weight and improve their overall health status.

Ready access to high energy and fatty foods is a significant factor in increasing weight. Reduction in physical activity is also a significant factor (Ministry of Social Development, 2008). It is the connection between weight gain and reducing physical activity that is significant here (Strassnig, Miewald, Keshavan, & Ganguli, 2007) and one that highlights the need for programs that attempt to increase physical activity (Alvarez-Jimenez, et al., 2006; Alvarez-Jimenez, et al., 2008; Amiel, et al., 2008; Faulkner, et al., 2007).

The Effects of Physical Activity on Health

Given that many people now lead sedentary lifestyles physical activity is seen as a significant factor in improving people’s health overall (Strassnig, Miewald, Keshavan, & Ganguli, 2007). The Ministry of Health in New Zealand has introduced an extensive program called Push Play as a preventative health initiative to encourage people to exercise for at least half an hour per day, for five days of the week. However, a survey found that only half of New Zealanders report maintaining the recommended level of exercise (Ministry of Health, 2004). This means other methods (such as the program discussed in this research) are required to encourage people to do more exercise.

Physical Activity and its Effects on Mental Wellbeing

Physical activity not only benefits physical health it also improves mental health (Fox, 1999; Penedo & Dahn, 2005). Increasing physical activity has shown it can improve mood states, a person’s quality of life and functional capacity (Penedo & Dahn, 2005). Physical activity has also been shown to positively reduce levels of anxiety, lift depression, mood, and increase self- esteem and cognitive ability (Callaghan, 2004). The effects of exercise have even been
shown to improve blood flow in the hippocampus in human brain. The Hippocampus is associated with memory thus improved blood flow to the hippocampus can result in improved memory (Pajonk, et al., 2010).

Physical activity does not need to be arduous to have an effect. As little as ten minutes a day of physical activity has been found to improve mood, (Frances, 2006 & Hansen, Stevens, & Coast, 2001) vigour and lessen fatigue. The same study found that 20 minutes of exercise offered more improvement whereas 30 minutes, while providing physical benefit, had no additional psychological benefit. The result was that 30 minutes of physical activity per day at moderate intensity was recommended for best improvement in both physical and psychological wellbeing (Hansen, Stevens, & Coast, 2001).

**Metabolic Syndrome**

This section examines metabolic syndrome and physical activity in the general population. Firstly, metabolic syndrome is defined and the factors associated with metabolic syndrome are identified. Obesity, diabetes, and cholesterol are explored as indicators. Finally, smoking is examined which, although, not an indicator of metabolic syndrome, is a significant health hazard and increases metabolic risk. Lastly, the benefits that weight loss can have on metabolic syndrome are reviewed and discussed.

The consequences of having significant weight-gain in the general populations has been highlighted, then how that weight gain contributes to significant ill health and death has also been discussed. One possible method of identifying people at risk of physical ill health is metabolic syndrome (Elmslie, et al., 2009; Gentles, et al., 2007). Metabolic Syndrome is a standardised way to measure physical health. Not only is it used in this research but is used both nationally (Elmslie, et al., 2009 & First Episode Research New Zealand, 2011) and internationally (Gentles, et al., 2007). In this study metabolic syndrome markers are used to define physical health and explore change.

**Definition of Metabolic Syndrome**

Metabolic syndrome is commonly used as a predictor of future heart disease (Elmslie, et al., 2009; Gentles, et al., 2007 & Foster, & Park, 2006). Metabolic Syndrome is defined as having at least three of the metabolic risks factors which include being overweight, being obese, having a large waist circumference, high triglyceride levels, low High Density
Lipoprotein, a raised blood pressure alongside a high fasting glucose level (Elmslie, et al., 2009; Gentles, et al., 2007; Usher, et al., 2006).

The level of metabolic syndrome is increasing in New Zealand and is seen as a significant health issue (Ministry of Health, 2004). Of grave concern is the high rate of metabolic syndrome among Maori (33%) and Pacific People (39%) compared to the 16% among all other cultural groups in New Zealand. The high rate of metabolic syndrome in Maori and Pacific Islanders is also associated with weight gain. Where body weight is being controlled in these populations, the rates for metabolic syndrome appear to be more similar to the general population (Gentles, et al., 2007).

**Obesity**

Obesity is closely related to metabolic syndrome (Elmslie, et al., 2009; Usher, et al., 2006). One method used to measure weight is Body Mass Index (BMI). This is measured as weight divided by square of height (kg/m2). Over-weight is defined as a Body Mass Index greater than or equal to 25 and obesity is defined as a Body Mass index greater than or equal to 30kgm2 (Connolly & Kelly, 2005).

A person’s Body Mass Index (BMI) increases with age (Ministry Of Health, 2008). Weight gain, especially around the waist is a significant health concern related to metabolic syndrome (Elmslie, et al., 2009; Usher, et al., 2006). Excess abdominal fat is associated with hypertension (Connolly & Kelly, 2005). A waist measuring over 102 cm for men or 82cm for women is considered to indicate increased risk of co morbid diseases (Connolly & Kelly, 2005).

In terms of physical health, carrying abdominal fat is the most dangerous for a person’s health. Abdominal fat increases with age in both Maori and European populations (Rush, et al., 2004). The measurements for waist may not be valid across cultures. For example larger cut offs of waist circumference could be necessary for Pacific Island and Maori populations due to differences in body make up. Furthermore, increased waist circumference may not present the same risk at standard levels for these populations (Rush, et al., 2004).
A weight loss of 5% in an individual at risk of metabolic syndrome can result in clinically significant reductions in morbidity and risk of early death. Weight loss as low as 2.5 Per cent can improve morbidity and risk of early death (Alvarez-Jimenez, Hetrick, Gonzalez-Blanch Gleeson, 2008 & McGorry, 2008).

**Diabetes**

Diabetes is a growing problem in the New Zealand general population (Connolly & Kelly, 2005) and having excess abdominal fat is also associated with glucose intolerance (Connolly & Kelly, 2005). Metabolic Syndrome is seen as a significant predictor of type 2 diabetes. A core feature of metabolic syndrome is insulin resistance (Connolly & Kelly, 2005; Elmslie, et al., 2009).

Insulin resistance is associated with type 2 Diabetes (Elmslie, et al., 2009; Usher, et al., 2006). Insulin resistance is defined as a fasting glucose greater than or equal to 5.5mmol/L (a conversion from 100mg/dL was used (Hoffman, Nolan, Wilson, Oats, & Simmons, 1998; Usher, et al., 2006). Meeting the criteria for metabolic syndrome increases your chances of becoming diabetic six fold (Gentles, et al, 2007) with 75% of type 2 diabetes patients being overweight (Jung, 1997). As noted above a significant risk factor for diabetes is a lack of exercise (Connolly & Kelly, 2005).

**Cholesterol**

Cholesterol measurement examines the amount of fats in the blood. These fats can lead to vein blockages and heart disease (Usher, et al., 2006). A total cholesterol score of less than 4.0mmol/L is recommended (New Zealand Guidelines Group, 2009).

High Density Lipoprotein cholesterol is a measure of good fats in the blood that reduce cardiovascular risk (New Zealand Guidelines Group, 2009; Usher, et al., 2006). A High Density Lipoprotein score which is equal to or less than 1.0mmol/L is seen as a warning sign of heart disease (New Zealand Guidelines Group, 2009).

Conversely Low Density Lipoprotein (LDL) is a measure of bad fats in the blood that increase cardiovascular risk (New Zealand Guidelines Group, 2009; Usher, et al., 2006). A Low Density Lipoprotein score of greater than 2.0mmol/L is seen as a risk factor as well. Triglycerides are another measure used to predict risk of heart disease (New Zealand
Guidelines Group, 2009; Usher, et al., 2006) and having a triglyceride score greater than or equal to 1.7mmol/L is seen as predictor of heart disease (New Zealand Guidelines Group, 2009).

**The Effect of Physical Activity on Metabolic Syndrome**

As Connolly & Kelly (2005) note, exercise improves a number of factors related to metabolic syndrome including lipid profiles, glucose tolerance, obesity, diabetes and hypertension. Physical activity has also been shown to reduce death rates, caused by cardiovascular disease. The New Zealand cardiovascular guidelines recommend that people who have metabolic syndrome exercise at least 30 minutes a day (New Zealand Guidelines Group, 2009).

Even without weight loss, exercise has demonstrated to improve Cholesterol including High Density Lipoprotein and Low Density Lipoprotein, although this effect is small (Couillard, et al., 2001; Thompson, et al., 1997).

**The Effect of Weight loss on Metabolic Syndrome**

Reducing weight both reduces the risk of metabolic syndrome in regards to weight, and the risk associated with the other risk factors (Connolly & Kelly, 2005; Jung, 1997; Na, Watts, Barrett, Rye, & Chan, 2007; Strassnig, et al., 2007). A 10kg weight loss can result in significantly improved health benefits (Jung, 1997). A weight loss of 9kg in overweight women results in a 25% drop in mortality (Jung, 1997). If already exhibiting symptoms of metabolic syndrome any reduction in weight equates to a 25% reduction in mortality (Jung, 1997).

**Tobacco Smoking and Health**

Smoking is a major risk factor for cardiovascular disease (New Zealand Guidelines Group, 2009) a significant preventable cause of death (Connolly & Kelly, 2005). Smoking 20 cigarettes a day more than doubles the chance of heart disease when compared to non-smokers (Jung, 1997). People who smoke also appear to be at an increased risk of developing metabolic syndrome (Oh, et al., 2005).
Recreational Drug Use

Drug use in New Zealand is high. In a Christchurch study Boden, Fergusson, and Horwood, (2006) found that 76.7% of participants had used cannabis and 43.5% had used other illicit drugs on at least one occasion by the age of 25 years. Furthermore, 12.5% of the participants met DSM-IV criteria for cannabis dependence and 3.6% met criteria for other dependence on other illicit drugs by age 25 years.

Also related to the use of illicit substances are legal recreational drugs known as “Herbal Highs” or “Party Pills”. Some are based on BZP (1-benzylpiperazine) and TFMPP (m-trifluorophenylmethylphenyl piperazine). Use of these drugs in New Zealand is common, 20% of all 13-45 year olds reported they had used legal highs and 40% of males aged between 18-24 years reported having used these substances in the last year. Furthermore, 9% of those using these substances reported experiencing psychosis after use (Wilkins, Girling, & Sweetsur, 2007). Also common in New Zealand are legal highs containing synthetic cannabis (JWH-018) which, when used appear to have a similar effect as cannabis (Every-Palmer, 2011).

Summary

This chapter began by exploring the increase in weight of New Zealanders in general. Weight gain is related to increased calorie intake and less physical activity. The physical, psychological and social complications associated with weight gain were reviewed. It continued by exploring the psychological and physical benefits of exercise. Metabolic syndrome was defined and the effects that weight loss and physical activity can have on metabolic syndrome were discussed. Finally, smoking and drug use and the health consequences of using such substances were also reviewed.
Chapter Three

The Physical Health of People with Mental Health issues

This chapter examines the physical health of people with mental health issues. Initially mental health and the rates of metabolic syndrome are explored. This is followed by a discussion about the physical health of people with mental health issues. Reasons as to why people with mental health problems may weigh more than the general population is also made explicit. Additionally, smoking rates and drug use in mental health patients is also explored. Finally, the high death rate of mental health patients and in particular, those with schizophrenia, is examined.

Physical Health of People with Mental Health Disorders
People diagnosed with mental health issues have been shown to have poorer health and a significantly shorter life expectancy than the general population (Brown, Birstwistle, Roe, & Thompson, 1999; Connolly & Kelly, 2005). It appears there are multiple causes for the shorter life expectancy such as pre-existing genetic differences; sedentary lifestyles; economic and social disadvantages, weight gain, other health issues (S. Brown, et al., 1999; Connolly & Kelly, 2005), alcohol and drug use (Jones 2008) and in particular tobacco smoking (Connolly & Kelly, 2005).

A number of factors are responsible for people with mental health illness gaining weight. This includes mental illness factors such as negative symptoms, inpatient treatment and medication. Lack of self-monitoring of eating, decreased physical activity, depression, genetic factors and having unhealthy diet due to low socioeconomic status (Lee, Choi, & Kwon, 2008).

Metabolic Syndrome in People with Mental Health Disorders
As noted in the last chapter diabetes and glucose intolerance are major factors in metabolic syndrome (Elmslie, et al., 2009). People with mental illness have an increased risk of diabetes and glucose intolerance (Connolly & Kelly, 2005; Saddichha, Manjunatha, Ameen, &
Akhtar, 2008). Pacific and Maori people with Mental Health issues have even higher risk of metabolic syndrome (New Zealand Mental Health Metabolic Working Group, 2009).

People with bipolar disorder have higher levels of metabolic syndrome, weigh more and their mortality is higher. Unlike most other studies a New Zealand study demonstrated that a high rate of metabolic syndrome was not caused by medication and drug induced weight gain but appeared to relate to genetic factors associated with bipolar (Elmslie, et al., 2009).

**Schizophrenia and Metabolic syndrome**

As noted previously, individuals with schizophrenia have higher rates of metabolic syndrome than the general population (Connolly & Kelly, 2005; Saddichha, et al., 2008; Usher, et al., 2006). A review of the literature found that people with schizophrenia have rates 1.5-2 times the rates of metabolic syndrome when compared with the general population. This could be related to genetics, the illness, treatment, weight, poor diet, and drug use. Research suggests that metabolic syndrome can occur prior to commencing drug treatment and may also be genetic in nature (Usher, et al., 2006). The participants in this study all suffer from psychosis which is often associated with schizophrenia and Bi-polar disorders.

**The Weight of People with Mental Health Disorders**

As noted above people with mental health problems weigh more than the general population and people with schizophrenia are shown to weigh more than those with other mental illnesses (Brown, et al, 1999; Green, Patel, Goisman, Allison, & Blackburn, 2000; New Zealand Mental Health Metabolic Working Group, 2009; Weissman, Moot, & Essock, 2006; Zipursky, et al., 2005). It has also been reported that 40-60% of people with schizophrenia are obese (Lee, et al., 2008) and weigh 2 to 3 times more than that of the general population (Lee, et al., 2008). In regards to other mental health issues those who suffer from psychosis appear to be particularly at risk of weight gain and associated health problems (Jones, 2008; Voruganti, et al., 2006). Of those with psychotic disorders other than schizophrenia 33% are obese (Connolly & Kelly, 2005). This study focuses on a program which aims to use exercise to reduce weight among people with psychosis who, as a population are at high risk of being overweight.

*Atypical anti-psychotics and weight gain*
The advent of medications that can treat psychosis has been significant in the treatment of mental health disorders. Until such medication became readily available psychosis was largely untreatable with the result that it became a life long illness often resulting in people having to spend the majority of their lives living in mental health institutions. The first generation anti-psychotic medications became available in the 1950’s and were a revelation in the treatment of psychosis. These medications also caused debilitating movement issues known as extra pyramidal side effects (Usher, et al., 2006).

Anti-psychotic Atypical (or second generation) medications became available in the 1990s with the release of Clozapine (Shen, 1999). Atypical medications produced less extra pyramidal side effects and were reported as being better for treating cognitive impairment and negative symptoms. However research has also suggested that the treatment’s outcome is similar (Usher, et al., 2006). The use of these medications has increased dramatically with sales now being higher than any other type of psychotropic medication (Mitchell, 2009).

The major side effects of atypical medications are weight gain and obesity (Amiel, Mangurian, Ganguli, & Newcomer, 2008; Connolly & Kelly, 2005; Green, et al., 2000; Saddichha, et al., 2008; Strassnig, et al., 2007; Zipursky, et al., 2005). Studies report that up to 80% of individuals treated with antipsychotic medication suffer from drug induced weight gain (Alvarez-Jimenez, et al., 2008; Zipursky, et al., 2005). This accounts for the differing prevalence rates of metabolic syndrome found in the general population compared to individuals with schizophrenia as the weight gain is caused by the use of atypical anti-psychotic medications (Connolly & Kelly, 2005; Usher, et al., 2006). People most likely to gain significant amounts of weight are those with lower Body Mass Indexes at baseline, female and young people (Verma, Liew, Subramaniam, & Lye Yin, 2009).

This is of major importance for this study as atypical medications are regularly used as first-line management of schizophrenia for young people. Early Intervention Service patients treated with atypical anti-psychotics do gain weight (Alvarez-Jimenez, et al., 2009; Verma, et al., 2009) and that weight gain occurs early on in treatment (Saddichha, et al., 2008). In Early Intervention Service it has been reported that 91% of patients gained 7% weight or more after commencing a course of atypical medications compared to control groups (Strassnig, et al., 2007).
Research on 56 EIS patients in Singapore found that after six months of treatment using atypical medication, patients had gained on average 6.2kg and 65% had clinically significant weight gain (Verma, et al., 2009). Of the 400 Early Intervention Service patients involved in the CAFÉ study 31% were found to be overweight and 18% were obese (Patel, et al., 2009). After two years of early intervention atypical medication treatment the average weight gain is 10.2kg (Zipursky, et al., 2005). Thus, weight gain is a significant issue for people in early intervention in psychosis services (Verma, et al., 2009).

Weight gain from anti-psychotic medication is also related to major health complications and mortality (Saddichha, et al., 2008). However, as Mitchell (2009) points out, although still unclear and continually debated in literature, mortality caused by antipsychotic medication treatments (health complications) may still be less than the sudden deaths that would be caused by untreated psychosis. All the clients in this study are early in intervention for psychosis and so are very much at risk of gaining weight, having ill physical health and ultimately an early death.

Young people and Weight Gain from Anti-Psychotic Medications
Several researchers have reported that young people are more susceptible to drug induced weight gain from anti-psychotics (Alvarez-Jimenez, et al., 2008; Strassnig, et al., 2007; Zipursky, et al., 2005). It has also been reported that younger patients with more negative symptoms gained more weight (Strassnig, et al., 2007). All these studies point out that weight gain needs to be responded to in Early Intervention Service for any treatment to be effective. (Alvarez-Jimenez, et al., 2008).

Psycho-Social Effects of weight gain on People with Mental Health Disorders
Not only is weight gain associated with physical health problems it also has other influences on treatment including stigma and discrimination which young people are more sensitive to (Alvarez-Jimenez, et al., 2008). Weight gain is also associated with poorer outcome in treatment, adherence to medications, poorer quality of life (Alvarez-Jimenez, et al., 2009), increasing discrimination and stigma (Alvarez-Jimenez, et al., 2008).

People with schizophrenia do less exercise when compared to economically similar deprived cohorts. Factors that affect exercise levels in those with schizophrenia have not been
researched but are believed to include sedative effects of medication, lack of opportunity and general lack of motivation (Connolly & Kelly, 2005).

The effects of Atypical Medications on Cholesterol
Not only does gaining weight affect cholesterol but it appears that antipsychotics also increase cholesterol (Connolly & Kelly, 2005; Usher, et al., 2006). Cholesterol is a major predictive risk factor in heart disease (New Zealand Mental Health Metabolic Working Group, 2009).

The effects of Atypical Medication on Glucose/Diabetes
There is some evidence suggesting that just having schizophrenia alone increases the risk of diabetes. Patients appear to have high levels of glucose intolerance prior to anti-psychotics and with the introduction of atypical medications; large numbers develop glucose intolerance in as short a period as six weeks (Saddichha, et al., 2008).

It appears that taking atypical medications places people at significant risk of diabetes (Ruud, et al., 2008; Strassnig, et al., 2007; Usher, et al., 2006), although this has been refuted (Saddichha, et al., 2008). The biggest risk factor of developing diabetes in schizophrenia is being overweight (Connolly & Kelly, 2005). Some research has demonstrated that weight gain is not a predictor for diabetes in EIS service clients and a stronger predictor is related to the use of atypical medications (Zipursky, et al., 2005). Lack of exercise also appears to be a significant risk factor (Connolly & Kelly, 2005).

Anti-depressants are a common adjunct medication in Early intervention Services (Keks, et al., 1999). It also appears that the use of anti-depressants in Early Intervention Service patients can cause glucose intolerance (Saddichha, et al., 2008). Thus, people with psychosis, such as participants in this study, are also at high risk of developing diabetes (Saddichha, et al., 2008).

Physical fitness in People with Schizophrenia
People with schizophrenia are not as fit as the general population. There are a number of reasons for this including life styles that are sedentary and unhealthy including less exercise due to flawed self-perception such as stopping due to perceived discomfort and pain. Other
factors are increased smoking, physical health factors and obesity as discussed earlier (Vancampfort, et al.). It is certainly harder for those with schizophrenia to exercise (Connolly & Kelly, 2005).

This study explores one model to get those with schizophrenia (and other types of psychosis) engaging in physical activity in an attempt to improve physical fitness and ultimately their health.

**Tobacco Smoking in Schizophrenia**
People with mental health have twice the rate of smoking when compared to the general population and those with schizophrenia appear to have even higher rates. It has been reported that rates of smoking in schizophrenia are as high as 75-92%. Research has found a correlation between heavy smoking and a more severe illness. In other words there is connection the more unwell and individual then generally the higher the rates of smoking possibly as a way to deal with symptoms (self-medicating). People with schizophrenia who smoke require more anti-psychotic medication than non-smokers (Campion, Checinski, & Nurse, 2008).

It has been reported that those with mental health issues have similar rates of wishing to stop smoking to the general population (Campion, et al., 2008). Rates of success of giving up smoking are poor in the general population but even poorer in those with schizophrenia (Connolly & Kelly, 2005). The health risk of smoking for the population in this study is high further increasing their risk of ill health.

**Drug Use in Schizophrenia**
Substance misuse is high in clients of Early Intervention in Psychosis services with 66.9% of all clients who attend Totara House having, or having had a substance or alcohol disorder (Turner, Smith-Hamel, & Mulder, 2006 & Turner, Smith-Hamel, & Mulder, 2009). The effects of substances on clients are significant. As an example 69% of those using synthetic cannabis and legal highs in one study had relapse of psychosis after use (Every-Palmer, 2011). The likelihood of participants in this study using drugs is high, further increasing their risk of poor mental and physical health.
The Increased Death Rate in those with Schizophrenia
People with mental health disorders have a shorter life expectancy than the general population (Connolly & Kelly, 2005) and those with schizophrenia have the shortest life expectancy (Alvarez-Jimanez, et al., 2009; Brown, 1997; Connolly & Kelly, 2005; Mitchell, 2009 & Usher, et al., 2006). Despite modern treatments for schizophrenia it is still one of the most incapacitating and costly of all mental disorders (Melle, et al., 2008).

A review of a number of studies showed that those with schizophrenia have 2.6 times the rate of mortality (Mitchell, 2009) and they live for 9-12 years less than the general population (Usher, et al 2006). Furthermore, 70% of this reduced life expectancy is related to diseases such as cardiovascular disease, respiratory diseases and diabetes. It is also related to life style choices such as poor diet, low rates of physical activity and increased rates of smoking. 28% of this mortality is related to suicide (Connolly & Kelly, 2005). Most of the excess mortality associated with schizophrenia is preventable.

Although there are numerous studies giving evidence of the poor health of those with schizophrenia, its treatment has largely been neglected in both research and clinical practice (Connolly & Kelly, 2005). The participants in this study are likely to die earlier than the general population and therefore, determining treatments that can address physical and mental health issues are important.

Summary
This chapter has explored physical health among people with mental health issues. It concluded that people with mental health issues weigh more than the general population, have poorer physical health and die earlier, all of which is largely preventable. The next chapter explores models of treatment for mental and physical problems associated with psychosis with a focus on physical activity and Adventure Therapy.
Chapter Four

Treatment in Mental Health

This chapter begins by exploring treatment options for metabolic syndrome and weight gain in people with Mental illness. It then examines weight and metabolic syndrome treatments which include behaviour, diet and physical activity. Next, the efficacy of these options is considered. It also examines client psychological/mental health, effects of weight loss and amount of physical activity. Maori culture and Maori models of treatment are then explored. Early Intervention in psychosis treatments are then examined as is rehabilitation in general in both traditional mental health services as well as dedicated Early Intervention Services. The particular focus of this chapter is the types of rehabilitation associated with outdoor recreation and Adventure Therapy, especially that which is used with mental health patients and, in particular, within Early Intervention in Psychosis Services.

Treatment of Physical Issues for People with Mental Health Disorders

Treatment of Metabolic Syndrome in Mental Health
As noted in the preceding chapters a significant factor in improving the health of people with mental health issues in New Zealand is finding ways to address the problems associated with metabolic syndrome (New Zealand Mental Health Metabolic Working Group, 2009). This syndrome is a major cause of death in people with schizophrenia and bipolar disorders in New Zealand (Elmslie, et al., 2009).

Targeted treatments are needed to prevent and/or counteract the effects that metabolic syndrome has in people with mental health disorders (Usher, et al., 2006). To be effective, treatment of metabolic syndrome needs to include monitoring, early detections and effective interventions (Usher, et al., 2006), to target weight loss (Blouin, et al., 2009) and ways to increase physical activity (Cohn & Sernyak, 2006).

Treatment of Weight Gain in Mental Health Disorders
It was reported in 2005 that little was known about weight-gain in people with a severe persistent mental illness (Kalarchian, et al., 2005). After 2005 research into weight gain
increased and began to add much knowledge to the area. Unfortunately, it appears that much of this research was methodologically unsound and only related to inpatient settings. That is, while the focus of the research was on describing weight gain, it did not explore effective treatments [leading to changes in prognosis] (Loh, Meyer, & Leckband, 2006).

Research has shown drug induced weight-gain treatments to have been effective in some research and ineffective in other research (Amiel, et al., 2008). Behavioural treatments appear to be particularly effective. A meta-analysis of 10 trials using non-pharmacological management of antipsychotic weight-gain concluded that behavioural interventions are the most effective and should be the priority in treatment (Alvarez-Jimenez, et al., 2008; Blouin, et al., 2009; Faulkner, et al., 2007; Lee, et al., 2008). The program examined in this study is behavioural in nature.

Early prevention of weight gain early is a more effective treatment, costs less and offers the most benefit to the clients (Alvarez-Jimenez, et al., 2008). Research has also shown that interventions that can minimize weight gain are also useful (Usher, et al., 2006). It has also been reported that to be an effective weight loss intervention needs to target young people (Alvarez-Jimenez, et al., 2008). This research attempts to provide one possible intervention to reduce weight-gain and applies it to young people.

Rates of disengagement and non-adherence in general mental health treatment have been estimated to be 20-50% and possibly even higher in those with psychosis (Nose, Barbiu, Gray, & Tansella, 2003; Turner, Smith-Hamel, & Mulder, 2007). Attrition rates of people in weight loss programs with mental health issues varied between zero and 50%. It is likely that the zero Per cent attrition rates relate to people in inpatient programs and that high attrition rates (up to 50%) would be expected in weight loss programs in the community (Alvarez-Jimenez, et al., 2008). The participants in this study are community based so high attrition rates would be expected. It has been suggested that adventure and recreation programs may have good results and less attrition rates than other weight management models especially with Early Intervention Service patients (Alvarez-Jimenez, et al., 2008). This study attempts to demonstrate this.

Increasing levels of physical activity are an effective way of controlling weight in people with mental health issues (Alvarez-Jimenez, et al., 2006; Alvarez-Jimenez, et al., 2008;
Amiel, et al., 2008; Faulkner, et al., 2007). Using an adventure and recreation based model the program being evaluated in this study attempts to increase physical activity.

Types of Treatment for Weight-gain In Mental Health Disorders

Diet
 Significant short term weight loss can occur with specific diet programs (Lee, et al., 2008). It has also been reported that diet programs work best when combined with behavioural interventions and physical activity in a drug naive group (Alvarez-Jimanez, et al., 2009; Alvarez-Jimenez, et al., 2006).

Effectiveness of Attempts to Reduce Drug Induced Weight gain
 Centorrino, et al (2006) argued that attempts to limit atypical weight gain are largely unsuccessful. Short duration programs have however found to be successful. A 12 week program including dietician and a behavioural program for obese clients with schizophrenia, demonstrated that participants lost 2kg (Kalarchian, et al., 2005). A 24 week program of exercise, diet and counselling showed a weight loss of 6kg, and the cholesterol and triglyceride levels had reduced slightly although this change was not significant (Centorrino, et al., 2006). One study of an 8 week behavioural weight loss program with Early Intervention Service participants showed their weight gain was 4.1kg less than the weight gained by the control group in the study (Alvarez-Jimenez, et al., 2006). Centorrino, et al (2006) criticised these programs arguing that the results are temporary and once the programs are discontinued the weight gain will resume its trajectory.

Psychological benefits of weight loss in Mental Health Disorders
 Drug induced weight gain impacts negatively on quality of life, overall health and leads to social stigma and discrimination (Alvarez-Jimenez, et al., 2008). However it is not always clear that weight loss improves quality of life. For example while one study demonstrated improved quality of life (Alvarez-Jimenez, et al., 2008) another study found no change at all (Alvarez-Jimenez, et al 2009). Weight gain through medication use has also been shown to impact negatively on medication compliance (Alvarez-Jimenez, et al., 2008; Connolly &
Kelly, 2005) and it has been found that obese patients are thirteen times more likely to ask for a discontinuation of medication (Connolly & Kelly, 2005).

The Effects Physical Activity has on Mental Health Disorders

A number of studies have examined the effectiveness of physical activity in assisting recovery from mental illness (Carless & Sparkes, 2008; Faulkner & Biddle, 1999; Faulkner & Sparkes, 1999 & Jones, 2008). Studies have shown that exercise can be a positive adjunct therapy for mild to moderate depression as well as alcohol and substance abuse (Taylor, Sallis, & Needle, 1985).

Jones (2008) reported that physical activity is accepted well as therapy by mental health consumers. Tkachuk and Martin (1999) reviewed a number of studies related to physical activity and reported that while growing, there was only a small base of evidence that physical activity was useful as adjunct therapy for mental illness. These authors found that while there was considerable evidence that regular exercise was viable and cost effective, it was an underutilised treatment in mental health settings. They went on to say that physical exercise was effective in clients with psychosis, schizophrenia and in particular the negative symptoms often associated with schizophrenia.

A number of authors also report that physical health is a high priority and of concern to people with schizophrenia (Archie, Wilson, Osborne, Hobbs, & McNiven, 2003; Connolly & Kelly 2005). Weissman et al (2006) when interviewing people with schizophrenia found that the high level of concern they had about their physical health motivated them to want to lose weight. Their concern was so great that some clients rated weight control as a bigger concern than symptom control. Participants were interested in interventions that targeted unwanted weight gain, including nutrition and exercise programs (Weissman, et al., 2006).

Carless and Sparkes (2008) during an interview of three young men with a serious mental illness confirmed the importance of physical activity and concluded that for them exercise was important both physically and psychologically (Carless & Sparkes, 2008).
People with schizophrenia show improved quality of life with exercise (Callaghan, 2004), it reduced their experience of auditory hallucinations, raised their self-esteem, improved their sleep patterns and their general behaviour (Faulkner & Sparkes 1999).

Furthermore people with schizophrenia have also been shown to have decreased blood flow in the Hippocampus area of the brain, an important factor as this can be associated with memory loss. Physical activity in people with schizophrenia has also been shown to improve blood flow (Pajonk, et al., 2010). Exercise for people who have schizophrenia also improves metabolic syndrome (Cohn & Sernyak, 2006).

**Maori Culture**

New Zealand has an indigenous population known as Maori. Prior to European Colonisation in the late 1800’s Maori tended to live in extended family groups (Whanau) and tribes (Iwi) and lived off the land. Traditionally Maori lived collectively valuing family connections highly. Maori had close connections to the land and have traditional ways of thinking about themselves not only as part of the land but the land was thought to be ancestors. The oral tradition of religious and cultural stories narrated these connections which involved collection of food from both the land (Kai) and the sea (Kai Moana) and agriculture. All parts of New Zealand were inhabited or inhabited, visited by Maori. They walked long distances over large mountains covered in ice and snow and used canoes of varying sizes (Wakaa) as transport and for fishing. The land and water of New Zealand were not only significant to Maori for resources, as Maori placed significance traditionally on the healing ability of the land and in particular the water (Ka'ai, 2004; Mead, 2004).

Colonisation was not kind to Maori and they lost much of this traditional life style and subsequently died from diseases introduced by Europeans. This legacy continues with high levels of unemployment, rates of crime and imprisonment. They also have low education levels, poor health and early morbidity (Walker, 1989).

Maori have poor general and mental health when compared to other cultural groups in New Zealand. They are also less likely to seek out treatment and are difficult to engage in mental health treatment. Young Maori people are even less likely to access treatment for mental health issues (Wells, et al., 2006). Thus, to engage Maori in Early Intervention Services is
difficult and EIS have been advised to develop services that meet their needs more readily (Ministry of Health, 1997). It is recommended that services delivered to Maori clients use the Whare Tapa Wha model which identifies the four dimensions to health-Taha Waiua (spiritual), Taha Hinengaro (mental and emotional), Taha Tinana (physical) and Taha Whanau (family) (Ministry of Health, 1997).

In 2010 the Maori population in New Zealand was 16% (Statistics, 2011b). In Christchurch the Maori population is 14.6% which is lower than the national average (Statistics, 2011c). The overall unemployment rate in New Zealand is 6.7%. However, when considered separately it was found that the 16.1% unemployment rate for Maori was almost three times that of the general population (Canterbury was excluded as no collection was undertaken due to the earthquakes). In 2011 this trend continued with a significant increase in Maori unemployment rates in New Zealand (Statistics, 2011a).

Maori are a significant group that require physical and mental health treatment. This study explores their outcome in the Totara House Recreation Group program.

**Psychosis**

Psychosis refers to a group of disorders where changes in peoples’ thinking occur. This includes misinterpretation and misapprehension of reality, disturbances in perception, belief and interpretation of environment and disorganised speech patterns (Lloyd, Bassett, & Samra, 2000). Psychosis is usually related to mental disorders and usually associated with schizophrenia or Bipolar disorder (Turner, Boden, Smith-Hamel, & Mulder, 2009).

While research on psychosis has focused on the psychotic symptoms it has been reported that significant and possibly more significant deterioration occurs in the area of social dysfunction. Studies have also demonstrated that social isolation, underemployment and living with parents were significant factors for people with psychosis. Social functioning is increasingly gaining attention as a measure of outcome (Lenior, Dingemans, Linszen, & De, 2001). Several studies have demonstrated that people with psychosis have fewer social supports and fewer friends than the general population matched pairs (Macdonald & Hayes, 2000).
A major issue for people with psychosis is treating the negative symptoms which are difficult, if not impossible, to treat at times. Other than reducing the duration of untreated Psychosis, treatments that have focused on negative symptoms appear to be largely ineffective (Melle, et al., 2008). Studies have also noted that negative symptoms are often difficult to identify and can be confused with other issues such as side effects from medication (Kelley, van Kammen, & Allen, 1999). Studies have also reported that negative symptoms are not helped by interventions including atypical antipsychotics medication (Kelley, et al., 1999).

However some studies have noted contrary evidence that using atypical antipsychotic in favour of typical antipsychotics medications results in better treatment of negative symptoms (Glick, Murray, Vasudevan, Marder, & Hu, 2001; Shen, 1999).

**Rehabilitation**

*Rehabilitation and Employment*

Employment is the primary source of identity, role development and source of finance for the majority of working age people. Employment is significant in the development of self-efficacy and self-esteem. The benefits of work include structuring time, routine, social contact, collective effort, purpose, personal achievement and regular activity (Lloyd & Waghorn, 2007). Involvement in employment can improve satisfaction, identity and improve sense of meaning (Frances, 2006).

Unemployment has a number of negative effects including demoralisation, marginalisation (Frances, 2006) and can lead to mental health issues (Frances, 2006; Lloyd & Waghorn, 2007).

People with mental health issues are less likely to be working than people without mental illness (Bassett; Lloyd & Bassett 2001 & Lloyd & Waghorn, 2007). People with mental health issues are also disadvantaged when it comes to participation in employment because of low expectations from health professionals, stigma (both external and internal), financial issues and discrimination (Lloyd & Waghorn, 2007).
Psychosis affects employment status in a number of ways, including cognitive impairment, positive and negative symptoms. Physical factors include side effects of anti-psychotics and mood stabilisers as well as sleep issues. Psychological effects include reduction in self efficacy, loss of sense of self, reduced concentration, reductions in confidence and impairments in social skills. Additionally, high levels of anxiety around returning to work stop people having had psychosis from re-engaging in employment (Lloyd & Waghorn, 2007).

Not only do people with psychosis have low levels of employment, they also have low levels of engagement in recreation activities that could provide similar positive outcomes as employment (Frances, 2006). People with mental health issues have been shown to be less likely to be engaged in daily leisure (Brown 1998). Research has also demonstrated that satisfaction with leisure activities is a significant predictor of psychological wellbeing (Brown, Frankel, & Fennell, 1991). Outdoor recreation is one model that may be able to provide positive outcomes by engaging people with mental health issues in recreation (Frances, 2006) and is the model explored in this study.

The effects of Mental Illness on Quality of life
Symptoms resulting from mental health can have a negative impact on functioning and quality of life. People with mental illness can lack daily structure, self-esteem and confidence. They have limited social opportunities and limited finances (Frances, 2006). It has been reported that a significant factor in preventing or delaying recovery from mental illness is loneliness and reduction in social connections (Seagroves & Mirecki, 1983). The model explored in this study considers treatment that could increase social contact.

The effects of Schizophrenia on Exercise
People with mental health issues also do less exercise and are generally less active than those without mental illness (Brown, 1998). Health professionals accept that exercise is an important contributor to weight control but exercise has been ignored as treatment in schizophrenia research (Archie, et al., 2003).

A lack of motivation is often associated as a symptom of schizophrenia. 60% of clients with schizophrenia reported a lack of motivation as a reason for not exercising (Archie, et al., 2003). It was recommended that future research should examine possible ways to motivate
people with schizophrenia to exercise and suggested running groups, personal trainers or buddy systems (Archie, et al., 2003).

**Early Intervention Services**

Early Intervention Services aim to treat psychosis early (Addington, et al; Bassett, 1999; Melle, et al., 2008; Parlato, Lloyd & Bassett 1999 & Ministry of Health 1997). Treating psychosis early has proven clinical merits (Addington, et al; Melle, et al., 2008 & Ministry of Health, 1997) as significant irreversible deterioration can occur early in psychosis if left untreated (Lloyd, et al., 2000). Psychosis treatment has a ‘critical period’ which is the time when treatment is most likely to be effective. If psychosis goes untreated past the ‘critical period’ poorer recovery is expected (Addington, et al; Milner, Rowlands, Gardner & Ashby & Ministry of Health, 1997).

Without Early Intervention Services the likelihood of relapse, suicide and hospitalisation is very high (Parlato, et al., 1999; Turner, et al., 2009). Purely from a financial perspective Early Intervention services is cost effective. Although it costs more than regular treatment it has the ability to reduce long-term costs. The effect treatment has on families of people with Psychosis is also noted as important (Parlato, et al., 1999 & Ministry of Health, 1997).

Recovery is seen as a significant factor in Early Intervention services. Treatment models attempt to regain as much functioning as possible (Ministry of Health, 1997; McGorry, 1992 & Parlato, et al., 1999). In patients with psychosis rates of disengagement have been shown to be as high as 70-80% (Nose, Barbui, Gray, & Tansella, 2003 & Turner, Smith-Hamel, & Mulder, 2007). Service statistics collected regularly at Totara House showed that clients of EIS disengaged at a rate of 24.6% within the first 12 months of treatment (Turner, et al., 2007). The aim of data collection was to predict disengagement indicators, a task that proved to be difficult. Factors that could indicate disengagement include illicit drug use, duration and severity of illness, lack of insight, positive symptoms, younger age, male gender, history of substance abuse, unemployment, and low social functioning (Turner, et al., 2007).

Mental health clients are also likely to have poor adherence to prescribed psychotic medications (Nose, et al., 2003; Zygmunt, Olfson, Boyer, & Mechanic, 2002). The rates of
medication non-adherence for patients with schizophrenia have been shown to be as high as 50% (Zygmun, et al., 2002).

Impaired insight into psychosis is seen clinically as a significant predictor of engagement and compliance (Baier, et al., 1998; Birchwood, et al., 2007; Keshavan, Rabinowitz, DeSmedt, Harvey, & Schooler, 2004). Unfortunately insight is a difficult concept to define. Some research relates insight only to psychotic illness while others include insight in other forms (Baier, Murray, & McSweeney, 1998; Birchwood, et al., 2007). Having less insight has been attributed with poorer compliance in treatment (Baier, et al., 1998). Research around insight has been conflicting, less insight has been associated with poorer functioning, prolonged illness, depression and increased symptoms and other research has refuted these claims (Keshavan, et al., 2004).

Research into social supports in Early Intervention Services indicates that social support is an indicator of better outcomes in Early Intervention Service clients (Erickson, Beiser, & Iacono, 1998).

The Milner, et al (2001) study into Early Intervention Service’s participants found that only half had a structured daytime activity such as work or study. Other research into employment of clients at entry to Early Intervention services indicated that psychosis leads to decline in employment participation. Interestingly severity of psychosis is not a good predictor of employment with the best predictor being past job performance (Beiser, et al., 1994). This study explores one model of treatment that aims to increase insight, engagement, socialisation and engagement in employment or recreation in people with psychosis.

*Rehabilitation in Early Intervention Services*

The interruptions caused by psychosis can affect communication, social functioning, self-esteem and those with psychosis can find it difficult to plan and set goals (Brown, 1997 & Lloyd, et al., 2000). It can also affect confidence (Lloyd, et al., 2000). Psychosis can also lead to loss of social connections (Lloyd, et al., 2000) and stigma can play a major factor (Lloyd, et al., 2000; Parlato, et al., 1999).

Early Intervention in Psychosis rehabilitation needs to focus clearly on vocational goals (Addington, et al.; Lloyd & Waghorn, 2007 & Ministry of health 1997). It has also been suggested that Early Intervention in Psychosis rehabilitation should have a focus on developing social networks and skills, routines, a sense of purpose, foster independence and develop hope for the future (Lloyd, et al., 2000; Parlato, et al., 1999). Early Intervention in Psychosis rehabilitation should provide young people with feedback from physical, cultural and social environments (Lloyd, et al., 2000). Getting Early Intervention in Psychosis clients out of their homes and involved in something can also be significant and a valid goal of rehabilitation (Parlato, et al., 1999).

Early intervention should aim to encourage healthy lifestyles and clients should be encouraged to exercise to aide recovery, promote self-esteem and improve health (Ministry of Health, 1997). This study explores one model that Early Intervention Services can use to support young people in meeting their lifestyle goals.

**Outdoor recreation**

*Outdoor recreation defined*

Outdoor recreation is defined as activities that take place in the outdoor environment including walking, orienteering and cycling, climbing, kayaking, canoeing, and sailing (Frances, 2006).

Adventure Therapy includes leisure activities such as the examples above (Crisp, 1996). Adventure Therapy differs from leisure in that Adventure Therapy attempts to make meaning and transfer lessons learned from leisure activities into real life psychologically. The activities used in Adventure Therapy usually employ a real or perceived danger (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd, et al., 2000).
Adventure Therapy can be defined as a leisure outdoor program that can be used to encourage active participation in recreation, including fun and fitness (Lloyd, et al., 2000) but most definitions would say this is ignoring the psychological treatment aspect (Crisp, 1996).

Adventure Therapy differs from Wilderness Therapy because it usually does not include isolated environment, overnight stays or community living and the activity is short term lasting no more than a day (Crisp, 1996; Gass, 1993; Gillis & Thomsen, 1996; Russell, 2001).

In this study, although the Totara House program evaluated is described as outdoor recreation group it also has components of Adventure Therapy. Outdoor recreation is often the term used when research is exploring the physical benefits that the exercise can have on health outcomes (Frances 2006) and Adventure Therapy is the term used when psychological benefits are the focus of the research (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd, et al., 2000).

This study attempts to demonstrate both possible physical and psychological benefits and both terms are used and appear to fit with the aims of this research.

Benefits of outdoor recreation

While in the past Adventure Therapy had been heavily criticized for a lack of research there is now a growing body of research emerging. However, while this might be so the more recent studies on Adventure Therapy are lacking in that most are qualitative and describing rather than proving, and demonstrating an effect. Additionally very few involved appropriate control groups (Gass, 1993).

Outdoor recreation is believed to have both physical and psychological benefits (Frances, 2006; Gass, 1993; Lloyd, et al., 2000). Outdoor recreation improvements are demonstrated in physical measures including blood pressure, pulse, vigour, energy and physical wellbeing (Frances 2006). It has been noted that Adventure Therapy can be used to increase physical activity and thus improve physical health (Crisp, 1996, 1998; Russell, 2001).

Adventure Therapy has been reported to improve wellbeing, (Frances, 2006; Gass, 1993; Lloyd, et al., 2000) self-esteem (Frances, 2006; Lloyd, et al., 2000) and motivation (Frances,
Adventure Therapy is believed to be a suitable adjunct therapy in alcohol and drug treatment as it can assist with reducing dependence (Hughes, 1993).

Research has also shown the efficacy of adventure programs involving adolescents (Gass, 1993; Gillis & Thomsen, 1996). The associated risk element has been reported to allow adolescent participants to experience safe positive risk taking behaviours rather than the more common negative risk taking behaviours associated with young people (for example drug use) (Frances, 2006; Wilding, 2000).

**Adventure Therapy and Mental Health**

Recreation based models of care are well received by clients with mental health issues (Frances, 2006; Wilding, 2000) and are being offered increasingly with this client group (Gass, 1993). A body of research highlights the importance of physical activity in recovery (Parlato, et al., 1999) and Adventure Therapy can improve physical activity levels and thus aid recovery (Frances, 2006).

Adventure Therapy is noted to improve motivation, mood (Frances, 2006) and self-concept (Gillis & Thomsen, 1996) of people with mental health issues. Adventure activities can benefit those with mental health disorders as it can be a distraction from the mental health issues and thereby lead to more coping and acceptance of both self and of the illness (Frances, 2006).

People with Mental Health issues can have very poor quality of life and this can be improved using Recreation Therapy (Frances, 2006). Often outdoor activities are taken for granted by general population but for people with Mental Health issues they have limited access and increasing access to outdoor activities can be novel and significant (Wilding, 2000).

Having a mental health issue is very isolating and Adventure Therapy allows opportunities to socialise, make connections through shared experiences thus reducing isolation (Wilding, 2000).

Younger people with Mental Health issues appear to benefit most from Adventure Therapy (Gillis & Thomsen, 1996). Adolescence (13-18 years) has been described as a phase of rapid
physical, cognitive and psychosexual development and is also the peak for mental health problems to develop (Crisp, 1998). Adventure Therapy intervention are seen as most important in Adolescence and can help resume normal development (Crisp, 1998).

Recreation and Early Intervention in Psychosis Services
Group therapy is highlighted as significant to the implantation of early intervention in psychosis (Addington, et al.; Ministry of Health, 1997). Outdoor recreation was noted as one of the important but not essential elements of Early Intervention in Psychosis treatment (Marshall, Lockwood, Lewis, & Fiander, 2004). The inclusion of outdoor therapy programs is important to the overall management and intervention of psychosis for young people. It can help them achieve life goals and can influence the natural course of psychosis (Lloyd, et al., 2000; Parlato, et al., 1999). Adventure Therapy programs have been noted to have good results and less attrition rates as it is well liked by clients with schizophrenia (Alvarez-Jimenez, et al., 2008). It probably has less attrition than other methods of therapy in Early Intervention Services (Alvarez-Jimenez, et al., 2008; Lloyd, et al., 2000; Voruganti, et al., 2006). It has also been noted that this method may engage difficult to engage clients (Parlato, et al., 1999).

One such program working with Early Intervention Service clients is the YOU outdoor recreation program based in Australia. It includes surfing, beach volleyball and bush walking. The goals of this program include developing friendships, fitness, participation in new leisure activities and the use of local recreation resources (Lloyd, et al., 2000).

The You program philosophy is that “life is given meaning by what you do” and “wellbeing is enhanced by purposeful activity or occupations” (Parlato, et al., 1999 p115) The You program is known for achievement in meeting client needs, encouraging participation, allowing clients to socialise and encouraging participants to do physical activity. The You program reports that 18 out of 21 participants had left the program for positive reasons (Parlato, et al., 1999 pg 116).

Voruganti et al (2006) published research examining the effectiveness of wilderness/Adventure Therapy program in Canada. In this program activities usually lasted all day but also included a three day camp. The program frequency was eight sessions per
week. Activities in summer included camping, canoeing, kayaking, rock climbing, and picnics. Activities in winter were skating, snow shoeing, snowboarding, ice fishing, indoor rock climbing and bowling (Voruganti, et al., 2006). This is very different from the program at Totara House as it is based in New Zealand, includes Maori participants and runs only once per week.

The participants in the Voruganti et al (2006) study were diagnosed with schizophrenia. Participants lost on average 5.45 kilograms (12Ib) of weight over eight months as compared to the control group who gained 4.09 kilograms (9Ib) in the same time period thus weight loss in this study was significant. Improvements were also noted in global assessment of functioning and self-esteem. Clients reported finding satisfaction in accomplishment, enjoyed the thrill of adventure and the challenges and reported that the development of relationships was important. Little change was noted in mental illness symptom’s scores (Voruganti, et al., 2006).

**Summary**

This chapter has explored treatments for people with mental health. At the start treatments for metabolic syndrome and weight-gain were explored. It also investigated the psychological and mental health benefits of weight loss and physical activity. Early Intervention in Psychosis was then defined and treatment outcomes were explored. Finally, the chapter presented a review of studies about rehabilitation therapy. In doing so particular attention was given to Recreational and Adventure Therapy and its use in Early Intervention in Psychosis services. One such program is the recreation group offered at Totara house. Determining how effective that group is in reducing weight gain and increasing physical activity among young people with psychotic disorders is a major aim of this study.

The next chapter details the research methodology used to answer the questions that have been has raised so far into the physical health and mental wellbeing of people with psychotic disorder and the participants who attended the Totara House recreation group Program.
Chapter 5

Totara House: An Early Intervention in Psychosis Service

This chapter begins by exploring mental health services prior to the development of Early Intervention in Psychosis Services (EIS). It then discusses the development of Early Intervention in Psychosis Services both worldwide and, specifically, in New Zealand. In doing so it defines Early Intervention in Psychosis Services at Totara House, and explains how the recreation group is run at Totara House in detail.

History prior to Totara House

Prior to the 1950s, people with mental illness lived in large institutions removed from society. Once people were in these institutions they may not return to society or resume normal lives. Members of the lay public were separated from people with mental illness and generally were very fearful of those who were mentally unwell. In New Zealand, these institutions were large hospitals run by the Government. As such they were run on a medical model and staff generally included nurses and doctors as well as non-clinical support staff (Brookes & Thomson, 2001).

As early as the 1950’s medications became available for the treatment of psychotic disorders. As different medications were discovered offering better and more varied options for treating psychosis, mental illness became less debilitating (Brookes & Thomson, 2001; Usher et al., 2006). That is, as medical treatments became more effective the illness became less life-long. This in turn led to an emphasis for treatment change with recreation and reintegration into the community becoming important factors. As this change occurred differing professions also became involved such as occupational therapists and social workers as well as Doctors and Nurses now provide treatment (Brookes & Thomson, 2001).

Changes in mental health continued throughout the 1970s and 1980s, and hospital-based treatment was replaced by deinstitutionalisation, or, in other words, people with mental health
issues began living in the community. The perspective changed from housing people in hospitals that they should be part of the wider community. This change occurred due to the improvements in treatment; psychiatric wards being opened in general hospitals and changes in society’s attitudes and views toward people with mental illness. A lot of the changes occurring in the 1980s were also related to changes in health and welfare systems with deinstitutionalisation being seen as a way of cutting spending to ballooning health costs (Haines & Abbott, 1985).

**International Development of Early Intervention in Psychosis Services**

Early Intervention has now become a standardised process with a set of theories for providing services to people with first episode of psychosis (Addington et al 2005). The harm that psychosis can cause has been well documented. This is especially so if left untreated. Thus, EIS attempts to allow clients early access to intensive treatment. Such treatment is often time limited and provides care in three phases. The first phase is prodromal, where the key goal is to identify people with psychosis. The second phase is the acute phase, where care should involve optimizing medication and intensive support (seeing clients each day if possible). Finally the intervention focuses on recovery, where the client is supported to stay well and re-engage with their life, through vocation, community and family (Ministry of Health, 1997).

Early Intervention services have a number of universal goals:

a. Identifying those who have psychosis or are going to develop it so treatment can be delivered.

b. Making services accessible and responsive, ensuring wait times are kept short and services are tailored to young people.

c. Ensuring assessment is part of the early phases to identify clients and guide them through the best treatment.

d. Setting and reviewing goals in treatment and reviewed; ensuring treatment is purposeful (as it is usually time limited).

e. Recognising clients’ rights as important. Clients drive the treatment.

f. Assigning a medical doctor and case manager to clients. The medical doctor prescribes medication and reviews the client regularly. Case managers see the patient often and guide treatment.
g. Regularly assessing risk. Those with psychosis are at a high risk of suicide and, although not often violent, violence can be unpredictable and extreme when it occurs.

h. Medication is given quickly in the acute phase and optimized by the treating team.

i. Individual psychological interventions are provided by the case manager or other professionals involved in their care. The case manager coordinates care.

j. Carers and family are actively encouraged to be involved in care.

k. Early Intervention emphasises psycho-education.

l. Group programs and vocational assistance are provided.

m. As Early Intervention Programs are time limited discharge is planned, coordinated and clearly communicated between clients and support people.

n. Treatment is provided in the least restrictive environment possible.

o. Clinical contacts are recorded. (Addington et al; Early Psychosis Prevention and Intervention Centre, 2001; Ministry of Health, 1997)

**Early Intervention Services in New Zealand**

Early Intervention in psychosis was recommended by the Mason Report in 1988 and funding was made available. Services were established quickly in New Zealand. In or around 1998 12 services were established and by 2000 18 were up and running (Turner, 2002).

Early Intervention Services in New Zealand began by looking at comparable services in Australia, a similar country to New Zealand and one in close proximity. Early Intervention Services were set up using the EPPIC model from Melbourne Australia (Turner, 2002).

In 1997 the Mental Health Commission had discussions with the Early Intervention Services in New Zealand and Guidelines were established about what was believed to be best practice for EIS. It was noted that for people with first episode psychosis the primary goal was to lead a normal life and that individualised comprehensive programs were needed to address this objective. To this end services should actively promote awareness about psychosis and encourage people to seek treatment as early as possible to prevent the development of a chronic illness. In larger centres EIS programs may operate in separate teams while in smaller areas EIS may occur as part of other teams.
The concept of recovery is fundamental to Early Intervention Services (recovery being able to live a positive life in the presence or the absence of mental illness). It stresses the importance of working with clients in partnership and with wider supports (family and community). Treatments should be in the least restrictive environment possible — in other words, rather than hospitalization/institutionalisation patients should be treated in the community, preferably in their own homes. Early Intervention service clinical staff have low case-loads allowing them to respond early to clients; offer intensive treatment in the acute phase; and, if necessary, clients can be seen daily. The rationale of Early Intervention in Psychosis is that intensive input improves fuller recovery with early and effective treatment.

Services for Maori were highlighted as important from the outset, stressing a need for reaching Maori clients who can at times be difficult to engage in mental health services. It is recommended that where possible Kaupapa Maori (Maori specialist services) should be provided, but where this is not possible, services for Maori should be provided within mainstream services, with all services being culturally safe and responsive to Maori, based on the Treaty of Waitangi, and developed with Maori consultation (Ministry of Health, 1997).

This study, and other research carried out at Totara House, is aligned to the First Episode Research New Zealand (FERNZ) Outcome Project using standardised measures. The First Episode Research New Zealand (FERNZ) is a national initiative aimed at developing a consistent set of measures throughout New Zealand to be used in first episode psychosis research (First Episode Research New Zealand, 2011). A large percentage of Early Intervention in Psychosis services belong to First Episode Research New Zealand (FERNZ). The 13 Services involved in the First Episode Research New Zealand (FERNZ) include Totara House; Canterbury DHB Aspiring House; Otago DHB; Wellington Early Intervention Service EPI Centre; Waitemata DHB Mid Central EIP Service; Mid Central DHB Nelson EIS; Nelson-Marlborough DHB Hauora; Waikato EPI Team; Counties Manukau DHB Cornwall House; Auckland DHB Kari Centre; Auckland DHB St Lukes FEP; Auckland DHB Taylor Centre; Auckland DHB and Manaaki EIP Service and Auckland DHB (First Episode Research New Zealand, 2011).
Beginnings of Totara House

Prior to the establishment of Early Intervention Services, it had been noted that Youth needed different treatment to adult mental health patients. The Canterbury District Health Board on the Hillmorton site had established Youth Rehabilitation Units, which were once wards in the larger mental health hospital. These were known as Rehabilitation Units A and B, and were separate units that provided hospital-based care. Rehabilitation B was set up for youth, and was not psychosis-specific. Rehabilitation A and B also provided care to those who were discharged to resume life in the community. Rehabilitation B was eventually disbanded and changed to Totara House; at this stage, those requiring hospitalization were accommodated in a mainstream hospital.

Totara House

Totara House is an Early Intervention in Psychosis service, and is government funded via the Canterbury District Health Board. Totara House provides services to young people 18-30 years of age living in the Christchurch area of the South Island of New Zealand who experience their first episode of psychosis (Totara House, 2000; Turner, 2002).

Early Intervention in Psychosis is a proactive and intensive form of treatment. Clients usually see a psychiatrist regularly (at least monthly, although meetings can be weekly, or as often as two per week in the acute phase). This psychiatrist reviews their mental state and prescribes medication if required. A case manager and mental health professional (at present, a Social Worker or Nurse) are also assigned to provide intensive outreach follow-up. Case managers’ workload is maintained at no more than 15 clients (for a 40 hour a week employee) to allow the contact to be intensive, allowing case managers to see people daily if required (Turner, 2002).

Psychosis is usually related to mental disorders, and often associated with schizophrenia or bipolar disorder. Clients with solely drug-induced psychosis are usually not accepted to Totara House, but 66.9% of all clients who attend Totara house have, or have had, a

Previous research carried out at Totara House examined the outcomes of 236 patients and found improvements in various measures. Statistically significant changes were found in quality of life; positive and negative symptoms scale; substance abuse; Health of the Nation Outcome Scales; and Global Assessment of Functioning scores (Turner et al., 2009).

Definition of the Totara House Recreation Group

Totara House offers a recreation group for clients who wish to attend. The group offers group physical activity and socializing, generally in the outdoors, and runs one day a week for approximately three hours. Once every three months, the duration is increased to six hours to allow for a longer activity. A range of activities are utilized involving physical activity, including walking, mountain biking, fishing, swimming, rock climbing, canoeing, ball sports, and caving. Activities generally occur outdoors but on days of inclement weather the activities can occur indoors (examples include indoor rock climbing or indoor ball sports).

Clients are often transported to the venue by their case managers prior to the commencement of the activity; over time, however, they are encouraged to attend independently by driving, using a bus, cycling or walking to the venue themselves. Equipment is provided by Totara House, but clients are expected to bring suitable clothing for activities. There is no cost to attend.

After consultation with clients, the activities are selected by staff and a brochure of the activities is produced in advance. Clients are involved in running the group (duration and location used) but the staff have the responsibility for safety, including a safety briefing prior to the activity.

All clients are offered the recreation group as part of their treatment at Totara House. On rare occasions some clients are not offered the recreation group due to concerns about aspects of their behaviour — such as drug dealing or ongoing violence — which could affect others
attending. The recreation group is open to all clients early in their treatment at Totara House, some while still in hospital. Clients are invited to attend the group when they are on escorted leave from hospital, and when the Multi-disciplinary team of Totara House perceive there are no safety concerns arising for the group.

The group is voluntary and clients can choose whether they come or not to any group session. The open nature of the group means that attendance can range from clients who come every week to clients who come on occasion during their two years at Totara House. Anecdotal evidence would suggest clients do usually attend regularly.

Case Managers generally approach clients they think should attend the group. The usual process is that clients new to the group are introduced to one of the facilitators of the group. When attending Totara House, the case manager and facilitator discuss the group and its benefits with the client and answer any questions they may have. Clients are often concerned about their ability to participate and are reassured that the group is neither hard nor competitive. Clients are often highly anxious about coming along initially due to the group/social nature. Once again, clients are reassured: it is explained that it is not a talking group and that it is accepted that some clients will not talk at the group. Case managers are often proactive in terms of clients attending their initial session, often picking up clients from their home, this has been found to greatly increase attendance. It is thought that the initial fear of attending the group holds clients back and high levels of support are required to get participation.

Throughout their time with the group, clients are supported by a case manager and their involvement becomes part of the client’s Totara House goals. All staff at Totara house take turns in facilitating the group, therefore, at times, clients attend the group with their own case manager as group facilitator. Often clients lose motivation for the group periodically and need support to continue to attend. However, if clients are very clear they no longer wish to attend they can leave.

The group is informal in the way it is run: clients travel in a van with staff to the location and are issued with equipment and given safety and activity information. The activity then begins. Often clients request breaks for tobacco smoking or to catch their breath, and discussion frequently occurs at these times. The discussion is commonly just general chat about the
activity or life in general. The staff would approach these conversations differently to their general work: rather than guiding conversations therapeutically these conversations are client-guided. Often clients use this time to talk with each other and staff about their lives — past and present — and their mental health, although this is not an expectation. The group is informal and often the talk is good-natured and involves humour. Discussions are far ranging but typically include topics about psychosis and other mental health issues; medications and side effects; vocation and employment; fitness and exercise; physical health; drug taking and stopping drug use. Often clients talk about the trauma of psychosis and hospitalisation.

As the recreation group is an open group varying levels of client experience exist in regards to both treatment at Totara House and participation in the recreation group. Generally the more experienced participants at Totara House become more involved in the group. Often the varying experience can be beneficial, for example when a client completes his two years at Totara and talks with clients who are still in the acute phase of psychosis, this enables the newer client to see that recovery is possible.

Although therapeutic in nature, no formal process of therapeutic pre-brief or debrief about the activities is used. This is often the case in other Adventure Therapy programs as pre- or debrief exercises have been trialled previously but the feedback from clients is that they want the group to be informal so they can just enjoy the activity. Clients are often motivated to attend the group at the beginning because they want to engage in certain activities they perceive as fun, such as downhill mountain biking. They often comment after coming for some time that it is not only the activity they enjoy but also the social aspect.

Clients attend the group for as long as they want, often the reason for withdrawing from the group is because the client has been employed or they attending a training opportunity.

**Summary**

In conclusion, this chapter has described mental health services prior to the development of Early Intervention in Psychosis Services. Early Intervention in Psychosis Service development internationally has also been discussed, and in particular its development in New Zealand. The chapter also defined the Early Intervention in Psychosis Service provided
by Totara House and included a detailed account on the recreation group at Totara House on which this study is based.
Chapter Six

Theories

This chapter explores the therapeutic approaches used in this research and in the practice setting. Initially Social Work Theory is examined. Other therapeutic approaches are then explored and include Early Intervention in Psychosis, recovery, psycho-social, cultural, physical and medical, psycho-dynamic, cognitive, problem-solving, solution-focused, motivational interviewing, strengths-based, behavioural, ecological rehabilitation, vocational, and interrelated therapies.

Social Work Theory

Social work is a professional and academic discipline, related to social justice and human rights. The underpinning premise of social work is to help society and individuals. Social workers often work with individuals using different techniques, some which are described as counselling or psychological methods. Often social workers work with larger systems such as families, communities, and societies. Research is often a component of social work as not only is practice influenced by research but often social workers themselves perform research (Payne, 1990). Eligible social workers in New Zealand can register with the Social Workers Registration Board and/or belong to the Aotearoa New Zealand Social Workers Association. Both these organisations offer Codes of Practice or minimum standards for social workers practice (Aotearoa New Zealand Social Work Association, 2008; Social Work Registration Board, 2008).

This study is carried out by a Registered Social Worker who is also a member of the Aotearoa New Zealand Association of Social Work. It relates to social work in that many of the theories underpinning the study are social work specific or are often used by social workers. Theories used in social work can vary from social work specific theory to non-specific general theories used by social workers (Payne, 1990). Theories related to this particular study are now considered.
Early Intervention in Psychosis

The underpinning theories used in Early Intervention Services are an integration of biological, social, and psychological approaches. Early Intervention treatment has a number of broad concepts underpinning its theories. These are early treatment (as the name suggests), which means clients are able to access treatment as soon as possible; intensive treatment, or clients having access to lots of support, such as when required being seen every day; and family-based treatment, which is clearly also important. Early Intervention often uses psycho-social and recovery theories (Addington et al; Lloyd et al., 2000; Ministry of Health, 1997). All the clients in this study have received Early Intervention in Psychosis treatment, so the treatments discussed here are congruent with those that they have received.

Recovery Approach

The recovery approach started in the United States as a reaction to deficit approaches such as the medical models that saw mental illness as a permanent impairment. Consumers and health professionals, including social workers, suggested that mental health should not be thought of as a deficit approach, but from a more positive recovery approach. It stressed that those with mental illness could recover or get better. Recovery has an emphasis on people’s ability to recover from an illness, or, in other words, to improve. In this way illness, rather than being seen as not enduring, is seen in terms of people becoming able to cope with it and live an ordinary life. Recovery emphasises people being able to participate in all facets of their life — as at least as much as they did prior to mental illness (Carpenter, 2002).

The use of recovery as an approach is seen as a significant factor in Early Intervention Services where all treatment attempts to regain as much functioning for the client as possible (McGorry, 1992; Ministry of Health, 1997; Parlato et al., 1999). This is a common method used at Totara House where people with psychosis often achieve recovery, or at the very least improve their ability to live a normal life despite their psychosis (Turner, Boden, Smith-Hamel & Mulder, 2009). In regards to the recreation group, recovery is helped by allowing clients to attempt difficult tasks in a safe environment in order to build confidence and increase a client’s view of their ability. This group also hopes to transition clients into other meaningful activities such as work, thus integrating clients back into the wider community.
Psycho-Social Approach

A psycho-social approach is often used in Social Work. Psycho-social approaches emphasize that personality is intrinsically social. In early development, this relates to the child’s development as connected to the primary care-giver. In later life, this theory relates to people in their relationship contexts (Woods & Robinson, 1996).

A psycho-social approach assumes that individual issues are caused by some deficit in social systems. While the problem is in the system it can lead to individual problems such as stress. A good example may be that people living in a deprived setting are more likely to have a range of issues, including mental health and stress. Research certainly appears to back up this premise (Payne, 1990). The way that an individual interacts with a social system is important, and in psycho-social theory balance is seen as essential in both individuals and the systems. An inherent problem is that psycho-social theories are seen as external rather than internal as in other theories, such as cognitive-behavioural therapy. This means that in psycho-social theory the focus of treatment is on improving relationships and wider social issues. It could be argued that in cases of social deprivation, practical supports and/or changes to the social system could provide more effective treatment than offering counselling (Payne, 1990).

Psychosis causes delays in an individual’s development, including their development in regards to psycho-social maturity (Wykes & van der Gaag, 2001). Personality is important in psycho-social theory as the individuals personality is how they relate to the wider system (Payne, 1990). In regards to treatment EIS rely heavily on psycho-social theory (Edwards, McGorry & Pennell, 2000). In relation to the recreation group, attempts are made to organise safe situations in which clients can practice relationship techniques.

Bi-Cultural Models

Maori have suffered from colonisation of New Zealand from Europeans: for instance, Maori have worse social, economic, and health outcomes than New Zealanders of European descent. Non-cultural and multi-cultural theories have been criticized in New Zealand as not allowing Maori their true status as Tangata Whenua, or people of the land. This criticism has led to bi-cultural models in which Maori and their interaction with others is stressed. One such bi-cultural model is the Whare Tapa Wha model, which sees four components as significant: Taha Waiua (the spiritual), Taha Hinengaro (the mental and emotional), Taha Tinana (the physical), and finally Taha Whanau (family
and wider community — Iwi, Hapu, tribe). This theory stresses that these four components all need to be considered in mental health treatments. The analogy in this model defines these four components as the walls of a Whare or house: without all these four walls being strong, the roof will not stay up. This analogy clarifies that people require all four components to be whole and healthy (Rochford, 2004).

Early Intervention stresses the need to work in appropriate ways with clients from different cultures. In New Zealand Maori are seen in Early Intervention in Psychosis Services (Ministry of Health, 1997). As such they are over-represented in psychosis and are a difficult group to engage in services. Totara House has specific cultural services for Maori providing cultural support to the main service using the Whare Tapa Wha model (M. Turner, Smith-Hamel & Mulder, 2006).

**Physical and Medical Models**

From a social work perspective, the medical biological model is often seen as a negative model and as such is frequently resisted or challenged within Social Work practice. It is often criticised as having a narrow biological focus on the individual, which means it can miss important information, for example the social reality of the individual. It is also criticised for its overuse of medication treatments (Kane, 1982). Mental health in general, and in psychosis in particular, have historically been heavily influenced by the medical model. Early Intervention in Psychosis treatments have made significant steps away from a medical model and now include psychological and social approaches (Alanen, Lehtinen & Aaltonen, 2000).

Interestingly, at the same time as the move away from the medical model occurred, some parts of the same model have become increasingly important for Early Intervention in Psychosis treatment. This includes the importance of using anti-psychotic medication as part of treatment (Alvarez-Jimanez et al., 2009; Mitchell, 2009; Verma et al., 2009). Another important component, due to weight gain in particular, is ensuring that, physical health is monitored and treatment provided if necessary (Amiel, Mangurian, Ganguli & Newcomer, 2008; Connolly & Kelly, 2005; Green et al., 2000; Saddichha, et al., 2008; Strassnig, et al., 2007; Zipursky, et al., 2005). This is also the case with treatment for metabolic syndrome caused by anti-psychotics (Connolly & Kelly, 2005; Saddichha, et al., 2008; Usher, et al., 2006).
Psychological Therapies

Psychological therapies usually relate to work with individuals in a counselling context. These theories rely on talking with the client to enact change. Social work has become increasingly concerned with Psychological therapies to the extent that other aspects of social work are now being considered less. It has been argued that this has devalued social work, making it similar, or the same, as other professions that use similar techniques, which in turn lead to less effective social work treatment. What had made social work different in the past, some will argue, was its ability to work with individuals and groups in different ways (Specht, 1990).

Often in these approaches the therapist is considered the expert who guides the clients in treatment and interprets the client’s narratives so the client can understand them. Later theorists challenged the therapist as being the expert (Payne, 1990).

Early intervention services rely on a number of psychological therapies when working with clients (Ministry of Health, 1997). These specific theories are discussed in the following section.

Cognitive Therapies
Cognitive therapy’s underlying theory is that behaviour is controlled by thinking. So, by changing thinking, people can make changes in their behaviour. In cognitive therapy, irrational thinking is identified and the client is assisted to change these irrational thinking components. In relation to psychosis, treatment with cognitive therapy can include attempting to get clients to see psychotic thinking, such as paranoia, as irrational. Cognitive Therapy would also explore what led to psychosis (stressors) and learning to avoid these, together with examining and building the ability to cope with anxiety and psychosis (Kingdon, Turkington & John, 1994). Psychosis causes delays in an individual’s development — including their cognitive development — and treatment can explore improving such cognitive development (Wykes & van der Gaag, 2001). Often Cognitive Therapy is carried out in Early Intervention by case managers in their day-to-day dealings with clients. It is also carried out more formally in adjunct counselling (Early Psychosis Prevention and Intervention Centre, 2001). Cognitive behavioural therapy is used in both these ways at Totara House.

Problem-Solving Solution-Focused Therapies
Problem-solving solution-based focused therapies relate to biological theory, but, like cognitive therapy, are a psychological therapy. As such it believes that people are constantly evolving and in
therapy clients are assisted to solve problems. Learning and adapting is important in this theory. This theory is often used for brief intervention as treatment is often kept short, with clients being seen as able to carry on learning and adapting without ongoing counselling. This theory stresses that problems are focused in the natural environment, so in therapy, practicing the skills learnt is emphasised (D’Zurilla & Nezu).

The treatment in Early Intervention in Psychosis at Totara House is for two years, which — although not brief — has a finite date: this finishing date allows clinicians and clients to focus on developing skills that clients can use after discharge. This relates well to Totara House’s treatment ideology. In particular, the recreation group allows clients to experience situations in which they can evolve and face the problems they may be encountering.

**Motivation Interviewing**

Motivation interviewing is based on preparing people for change. It is often used to change people’s behaviour, such as in drug use. This theory is highly practical, giving a clear framework and even examples of what to say in certain situations. It holds that people make change over time and aims to develop intrinsic motivation in individuals. This theory is semi-directive; as such it differs from some other theories, as it actively attempts to get clients to change their mind (Miller, 1983).

Motivational interviewing is often used in Early Intervention Services and in particular at Totara House to assist clients to make decisions, particularly around alcohol and drug use. Totara House has specific alcohol and drug counsellors who use this model regularly. It is also used in the recreation group, where motivation techniques may be used to encourage a client apprehensive to try an activity such as abseiling.

**Strengths Perspective Based Approach**

The strength approach places emphasis on an individual’s capacity and talents, and is a reaction to other theories which emphasis the problem — it is often argued in strengths theory that in other theories clients can literally become the problem. Often other theories can be negative, blaming clients rather than empowering them. Strengths theory focuses on the client’s ability to cope — their resilience — rather than on the problem. It attempts to empower the client to find solutions. In
situations of risk, for example, clients are encouraged to find and expand on protective factors. Strengths perspective has been criticised in regards to risk as it has been argued that by focusing on strengths and protective factors, risk can be minimized or ignored, thus putting clients in danger (Saleebey, 1996).

The Totara House Early Intervention Services are strengths-based in practice, often encouraging clients to focus on the positive in life and building resilience to psychosis. The strengths model applies to the recreation group in that it gives clients an opportunity to rediscover old strengths and find untapped resources while being challenged.

**Behavioural Therapy**

Behavioural therapy had its origins in biological perspectives. Humans were seen as similar to other animals, and it was theorised that because animals and humans learnt in similar ways, experiments on animals could be generalised to humans. B.F. Skinner did a number of these experiments proving this basic link in animals and humans. Learning was thought to occur through positive consequences, which then led to this behaviour occurring more often, while negative consequences led to a certain behaviour decreasing. In this theory, pathology such as mental health is seen as occurring when humans become unclear about the correct response to a given situation, which can lead to unhelpful/dangerous behaviour. Here, therapy relates to retraining people (Hilgard, 1953).

Behavioural interventions may involve exposing clients to situations so they may gain control over these situations and their fears. Cognitive theories, discussed earlier, are often associated with behavioural therapy in Cognitive Behavioural Therapy. Here, the cognitive component is used to help clients to change their thinking, while the behavioural component is used so that clients can make and practice change (Kingdon et al., 1994). In relation to the recreation group, this may include providing the situation for clients to practice behavioural techniques in a safe environment: for example, a client with social anxiety may be taught Cognitive techniques to deal with anxiety, and then attend the recreation group to practice these techniques.
Ecological Systems Theory
Ecological theory has its beginnings as a social work theory. Ecological theory is based on biological theory: it holds that all organisms are systems composed of subsystems, and all these are part of a super-system. In this theory individuals and issues are considered from a wider context rather than an individual one. Ecological theory is useful to social work as it also aims to identify people and the wider context of their lives; the individual is explored using the systems they are involved in such as the family, the community, their society. This places more emphasis on changing environments than on psychological approaches. It avoids the cause and effect explanations used in other theories — such as behavioural theories — seeing these explanations as too simplistic and unhelpful (Payne, 1990).

Ecological theory fits with the Totara House programme and the recreation group specifically in that rather than focusing on the individual, attempts are made to work with the wider systems that the client is involved in, including family, work, working with peers, and organising groups. The recreation group is an example: one of the key reasons for attending the recreation group is that here the client comes together with peers, creating a sub-group within Totara House. This allows clients to interact as they attend the group and socialise together.

Rehabilitation and Vocational Approaches
Rehabilitation is seen as significant in the treatment of psychosis in Early Intervention in Psychosis Services (Addington et al., 2005; Lloyd, Bassett & Samra, 2000; Ministry of Health, 1997; Parlato, Lloyd & Bassett, 1999). Rehabilitation and vocational approaches are often associated with Occupational Therapy (Lloyd et al., 2000). Rehabilitation in psychosis attempts to improve a client’s engagement in society and the individual’s abilities (Lloyd et al., 2000; Parlato et al., 1999). Assisting clients to get into — or return to — a vocation is seen as a significant part of rehabilitation (Lloyd et al., 2000; Parlato et al., 1999).

Through case-management, Totara House clients are encouraged to engage in rehabilitation and vocation. The recreation group is often used as building block towards employment or other meaningful activity. One example is that when initially attending, clients are picked up by staff, but later are encouraged to make their own way to the group. This process is used to allow clients to learn the skill of independent travel, which they can hopefully apply in other parts of their life. At the group itself, clients are encouraged to plan what they would like to do with their time, and often leave to pursue other activities.
Adventure Therapy

The theory behind Adventure Therapy has its beginnings with Kurt Kahn, the originator of ‘Outward Bound’ programmes in the 1930s. Kahn was particularly interested in education, and motivated by what he saw as a decline in young people’s fitness, initiative, imagination, craftsmanship skills, self-discipline, and compassion. It was Kahn’s belief that education using an armed forces model and involving outdoor activity was beneficial to the development of young people, in particular in terms of improving the qualities he saw as lacking. The term “Outward Bound” was a nautical term used for a ship leaving the safety of its own harbour, an analogy for young people challenging themselves outside their normal safe environments (Miner & Boldt, 1981).

Adventure Therapy relates to outdoor recreation which occurs in an outdoor environment and includes activities such as walking, orienteering, cycling, climbing, kayaking, canoeing, and sailing (Frances, 2006). The activities used in Adventure Therapy are — clearly — physical in nature, and usually employ a real or perceived danger (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd et al., 2000).

Adventure Therapy differs from Outdoor Education in that it attempts to use the activity therapeutically: both the clients and the activity are managed to allow the participant to make meaning out of their experiences (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd et al., 2000). One example could be that an anxious client with low self-worth would be encouraged to take (safe and controlled) risks. By using this method in Adventure Therapy it is hoped that lessons learned in the activity will be transferred to the participant’s real life (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd et al., 2000). In the example above, therefore, the anxious, low self-worth clients will then apply risk-taking in their real life, thus improving their success and self-worth.

The theories that underpin Outdoor Education and Adventure Therapy are related to Adult Education models — namely, experiential learning. It is thought that learning occurs most effectively while people are experiencing, that is, doing an actual task. In this theory clients may be given few instructions but learn “by doing”. Making mistakes is seen as important, as these lead to greater understanding (Crisp, 1996; Frances, 2006; Gass, 1993; Gillis & Thomsen, 1996; Lloyd et al., 2000). Adventure Therapy usually employs a real or perceived danger. The danger component is thought to increase the intensity of the activity and this level of fear/tension therefore improves learning (Crisp,
The Totara House recreation group uses outdoor education and a component of Adventure Theory. Although no formal debrief process is used in the Totara House recreation group, it is hoped that lessons learned there will be transferred to client’s life.

**Eclectic Therapies**

A number of therapies used in social work have been discussed already. For example EIS and more specifically, Totara House and its recreation group. The use of more than one approach and combining of theories is often described as an Eclectic Theory (Payne, 1990). Eclectic Theory would best describe the techniques used in Totara House and the recreation group, where the clinician often selects a technique to suit the situation. Specifically, this research is also eclectic, as can be seen from the underlying theories and the measures used, which range from physical measures to a variety of psychological and social measures.

**Summary**

This chapter has explored social work approaches and the therapies employed in practice. In doing so the approaches and therapies specific to this study, were examined as were the ones related to Early Intervention in Psychosis, to both Totara House and to the recreation group. Also explored were psycho-social, cultural, physical and medical approaches and psychological therapies and how they all relate to social work and Early Intervention treatment. The psychological therapies identified included cognitive, problem-solving, solution-focused, motivational interviewing, strengths-based, and behavioural approaches. The chapter then considered approaches for rehabilitation and vocational treatment, which involves engaging people in meaningful activities. The main approaches underpinning Adventure Therapy were then discussed. Finally, it argued that Totara House’s Early Intervention in Psychosis service employs a combination of therapies, thus, together can be described as an Interrelated or Eclectic approach to working with people in early psychosis.
Chapter Seven

Methodology

This chapter identifies the two main methodological approaches to research. In doing so, it highlights the advantages and limitations of each as well as the ethical issues relating to these methods. The methods used in Adventure Therapy research are identified as the method used in this study. The reasons for choosing this particular method are also explained. A discussion on the main ethical issues that can occur in research are then discussed as is discussed is the study design, aims, how the sample and control group were selected, the measures used, and finally, how the data will be analysed.

Research Models

There are two broad approaches to research. The first is quantitative, in which generally larger samples are used and differences expressed in mathematical values that are then compared using quantifications and statistical analysis of the data (Alston & Bowles, 2002; D'Cruz & Jones, 2007). This method originates from a scientific paradigm. Quantitative research assumes that social facts have an objective reality and can be measured. Methods used to collect data can include interviews, surveys, questionnaires, or even online surveys. Collection of data in this way allows for a large sample size, thus making data collection less time-consuming than in other methods. For example, conducting an online or postal survey may mean that researchers do not have to see the participants.

Quantitative research has been criticised for the premise that all research can be measured in terms of numbers. It has been argued that reducing information into units that can be measured may result in loss in the quality of the data when attempting to measure an individual’s perspective. The merits of quantitative research are that they do allow for conclusions to be drawn about populations. The most reliable method of quantitative research is a double-blind placebo study. In these studies populations are randomly given or withheld treatment. One ethical issue that arises in this type of research is that a part of the population is, therefore, not offered a treatment which could have been beneficial to them. Also, an
element of deception can be involved in that participants are not sure they are receiving treatment at all (D'Cruz & Jones, 2007).

However, one advantage in this approach is that the method of data collection and analysis is largely standardized: that is, the research can be replicated (Alston & Bowles, 2002).

The other main, and widely used, research method is qualitative. This method usually involves smaller populations and more detailed ways of collecting data, such as individual interviews or focus groups (Alston & Bowles, 2002; D'Cruz & Jones, 2007). Qualitative research is not mathematical, although it can use mathematical ways of examining the data (e.g. “20 participants reported that...”) (Alston & Bowles, 2002). The advantages of using qualitative methods include its ability to examine a subject in depth. It can also identify an individual or individuals’ experiences. In qualitative research the population size ensures the information collected is rich (D'Cruz & Jones, 2007).

There are several ways in which to collect information using qualitative methods. Furthermore, the data can be adjusted as the research develops, thus allowing the researcher a great deal of flexibility. This allows the research to evolve as it proceeds, as collection and analysis can occur at the same time — that is, the initial findings can have an effect on what and how the future data is collected (Alston & Bowles, 2002).

Qualitative methods may include interviewing participants, transcribing and recording interviews, and then through thematic coding across participant interviews explore the emerging trends and themes (D'Cruz & Jones, 2007). Interpreting meanings from research involves using logic (Alston & Bowles, 2002). Rather than applying findings to an entire population the conclusions usually relate only to the people researched (due to the small sample). Data collection can also be an ethical issue in qualitative research and it has been argued that the method is selective in its outlook. Often this factor is acknowledged in the beginning of the research or allowed for in the method of selecting the data used (D'Cruz & Jones, 2007).

Qualitative research can be adapted as it progresses, allowing for flexibility. Whereas in contrast to this quantitative research relies on data collection being followed by analysis. This means if no results are found then this is all that can be reported. However, as Alston &
Bowles (2002 p15) note the flexibility accorded to qualitative research can also be a disadvantage as it has the potential to lead to biases by searching for the desired result.

When both these methods have been combined — for example, using both interview type methods and surveys — this is referred to as mixed method research. Like the qualitative research mixed methods rather than having a series of specific steps (as in quantitative research) it has no standard formula. This can allow the research to be influenced by the participants and researcher as it develops (Tashakkori & Teddlie, 2003).

In this method, focus groups can be used to develop the research questions. Participants could, for instance, be asked to form groups to guide the research, interpret the results, and relate their own personal experiences. Participants may be involved in the focus groups in which they have assisted develop the research questions and then questionnaires may be used to collect data from larger populations. Participants answering the questionnaires may be asked to rate answers on scales. The scales can then be analyzed using quantitative methods and statistics. Mixed methods can also include interviews and thematic coding as in qualitative research.

The advantage of using a mixed method research design includes the flexibility of being able to choose the methods and involve the participants. Thus, it is driven research which uses more than one way for collecting data (for example, interviews, focus groups and quantitative scales). Disadvantages include such methods not being standardised which can make replicating the research difficult (Tashakkori & Teddlie, 2003).

As can be seen in Chapter Two and Chapter Three both quantitative and qualitative methods have been used in Adventure Therapy research. One of the two main studies related to Adventure Therapy specifically, was quantitative in nature (Voruganti et al., 2006), while the YOU program in Australia employed a qualitative design (Parlato, Lloyd & Bassett, 1999).

**Ethics**

Ethics in research are a relatively recent concept. Following World War Two, where horrendous experiments were carried out, ethics in research became more topical. Countries throughout the world have examples of the atrocities carried out in the name of research
In the 1960s and up until the 1970s experimental studies on women with cervical cancer were undertaken in Auckland Hospitals. These studies have become known as the “Unfortunate Experiment”. In these studies, treatment was either withheld or inferior treatment was received. Furthermore the women had not consented to be involved in research. This led to increased health issues and premature death for some of the women concerned. Concerns were raised during this period but a thorough investigation — known as the Cartwright inquiry — did not occur until much later (Coney, 1988). The ramifications of this inquiry were significant and led to changes in how ethical research approached and carried out in New Zealand (Tolich, 2001).

The issue of ethics is now commonly considered in research throughout the world as well as in New Zealand (Barker & Baldwin, 1991; Ruane, 2004; Rogers & Niven, 2003; Tolich, 2001). Nearly all professional groups in New Zealand have ethical standards (Tolich, 2001). Social work, of course, is no exception and research has a specific section in the Social Workers Code of Conduct (Social Work Registration Board, 2008) and in the Aotearoa New Zealand Association of Social Workers Code of Ethics (2008).

General ethical principles for research include: research should not cause harm; research participation should be voluntary and involve informed consent; clients should be given full information; participants can expect privacy of information; and participants’ identity should be concealed. Researchers are also expected to avoid conflicts of interest and follow best practice in research (for example, ensure the information provided is accurate (Ruane, 2004).

Ethical consideration also involves addressing issues from a cultural perspective: in New Zealand this requires considering Tangata Te Whenua, the Indigenous people of New Zealand — Maori (Tolich, 2001).

In regards to this study, ethical approval was received from Upper South A Regional Ethics Committee. All clients gave informed consent to be involved in this research and their privacy has been ensured. No conflicts of interest were noted in this research nor with the researcher. The design of the research meant that information on Maori was included thus cultural aspects needed to be considered. Therefore as well as gaining approval from the Upper South A Regional Ethics Committee, consultation and approval was also sought from
Te Komiti (the Canterbury District Health Board Maori Research Committee) and from the University of Otago’s Ngai Tahu Research Committee in regard to the ethics of the cultural issues involved in working with Maori.

**Study Design**

The design of this study is quantitative, and quasi-experimental in that it uses quantitative data collected as part of ongoing service research at Totara House. That is to say, the data was not collected specifically for this study. Using this method meant there was no need to interview the client participants as the data was already being collected. Interviewing clients for research can be time consuming for the researcher and stressful for the clients, therefore, avoiding the need to do so was seen as an advantage.

A quantitative method also allowed for the identification of treatment predictors that lead to statistically significant changes in client functioning. It was hoped this method would also support or refute that Adventure Therapy was effective. To date other methods have not have been able to demonstrate this clearly.

Using a quantitative method also allowed for the results to be compared to findings found in similar studies. The instruments used in this research are the same measures used in other Totara House research. They include the Global Assessment of Functioning (GAF), Health of the Nation Outcome Scale (HONOS), Positive and Negative Syndrome Scale (PANSS), Quality of Life Scale, Self report insight scale (Turner, 2002; Turner, Smith-Hamel, & Mulder, 2006, 2007; Turner, Boden, Smith-Hamel, & Mulder, 2009). It also means that as data collection is continuous, future research can also use the same instruments.

As part of the FERNZ project these same measures are used both in New Zealand and in worldwide research. Attempts have, therefore, been made to provide a consistent set of measures throughout for research investigating first episodes psychosis (First Episode Research New Zealand, 2011). Using these standardised instruments means that future research can more easily replicate the research findings.
Aims of the Study

There are three main hypotheses:

1. Does adjunct adventure based group therapy attract a sub-group of clients in an Early Intervention in Psychosis Service?

2. Is adventure based group therapy an effective adjunct therapy in Early Intervention in Psychosis Service for improving physical measures?

3. Is adventure group therapy an effective adjunct therapy in Early Intervention in Psychosis Service for improving psycho-social wellbeing?

Sample

The total sample consisted of 284 clients with psychosis, who attended Totara House from 1st of April 2004 to 1st of January 2010.

From the initial 284 participants, 78 attended the recreation group.

Control Group

The control group consisted of the other 206 participants in the study who, although they received treatment at Totara House never attend the recreation group as part of that treatment.

Instruments Used

The instruments used in this research are the same as the measures noted above that were developed for First Episode Research New Zealand (FERNZ) Outcome Project. Not only are these measures used nationally throughout New Zealand in first episode psychosis research, they are also used throughout the world (First Episode Research New Zealand, 2011). These measures were selected to provide consistency in measures across studies.
Physical measures

**Body Mass Index**
Body mass index was calculated using the formula BMI = (Weight in Kilograms / [Height in Meters x Height in Meters]).

**Fasting Glucose (Glucose)**
Insulin levels were measured by a fasting blood test. All Glucose measurements are recorded in millimoles per litre (mmol/L).

**Cholesterol in Metabolic Syndrome**
Four measures of cholesterol levels were used for the purposes of measuring cholesterol in this study. Millimoles per litre (mmol/L) was used for measurements. Overall total cholesterol was measured. The lower the total cholesterol the better the result. High Density Lipoprotein (HDL) cholesterol was measured and the higher the number the better the cholesterol. Low Density Lipoprotein (LDL) was also measured: here, the lower the figure the better the cholesterol. Triglycerides were also measured: again, the lower the figure the better the cholesterol is thought to be.

Psychological measures

**Diagnosis**
American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorder (DSM) diagnoses were used for original diagnosis (American Psychiatric Association, 2000).

**Global Assessment of Functioning (GAF)**
The Global Assessment of Functioning originated as part of the American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorder (DSM-IV, 1994). The Global Assessment of Functioning is Axis five on the multi-axel diagnosis. Although not a diagnosis, it is used to quantify a person’s overall level of functioning, rating from 0 to 100. A higher score corresponds to higher functioning (Piersma & Boes, 1997). Global Assessment of Functioning has been reported to be a valid and reliable measure for
psychological, social, and mental health, and for occupational functioning (Bodlund, Kullgren, Ekselius, Lindström & Knorring, 2007; Jones, Thornicroft, Coffey & Dunn, 1995).

Health of the Nation Outcome Scale (HONOS)
The Health of the Nation Outcome Scale has 12 items, measured from 0-4. The higher the score, the more significant a problem is seen to be. The Health of the Nation Outcome Scale is often used nationally in mental health to measure change. It is simple to use and covers both clinical and social measures. It demonstrates change (or lack of it) well. Research has shown the Health of the Nation Outcome Scale to be reliable and valid across all items in a number of trials (Trauer et al., 1999; Wing et al., 1998).

Positive and Negative Syndrome Scale (PANSS)
In this research, symptoms of psychosis have been assessed by using the Positive and Negative Syndrome Scale. This 30 item scale measures symptoms of psychosis. Higher scores indicates a more severe illness. This scale has been shown to be a valid and reliable measure (Kay, Fiszbein & Opler, 1987).

Quality of Life
The Quality of Life Scale is a 21-item scale designed to measure the deficit syndrome of schizophrenia. It has a 7-point Likert scale, with higher ratings indicating higher levels of functioning. QLS can be further broken into 4 sub-scales: Activity, Interpersonal Relationships and social Networks, Intrapsychic and Instrumental role functioning (Heinrichs, 1984).

Substance Use
Original data for substance use was collected using DSM IV criteria (American Psychiatric Association, 2000). For the purposes of this study, substance use was defined as those who use recreational drugs or those noted to have abused alcohol. Alcohol abuse, rather than alcohol use, was used to eliminate those who may be drinking responsibly.

Positive Activity after Recreation group
Positive reasons for leaving the recreation group included beginning employment, course or work experience; meeting goals as set down with Case Manager; or discharge after
completing two years at Totara House. Negative reasons for discharge from recreation group included reduction in motivation: increased symptoms: drug use/drug dealing at the group: or being discharged from Totara House (prior to two years).

**Meaningful activity**
For the purposes of this research, study, employment, or child-care were included as meaningful activities. No clarification of the time spent in the activity was made for the purposes of this study.

**Self report insight scale (Insight)**
Insight was assessed using the Schedule for the Assessment of Insight. The schedule comprises nine questions to assess: i) awareness of illness; ii) the capacity to reliably judge psychotic experiences as abnormal; and iii) treatment compliance; with higher scores indicating greater insight (David, 1990).

**Compliance**
Compliance relates to the participants’ ability to take medication. Compliance was measured on a scale of from 1 to 4. Four representing better compliance.

**Procedure**
This study uses the data collected by Totara House as part of agency protocol. The scores of participants who attended the recreation group (n=78) were compared to the control group (n=206). The data was further analysed by separating those who attended the recreation group (n=78) into those who attended five or more sessions of the recreation group (n=41), in comparison to those who attended less than five sessions (N=37) and those who did not attend the recreation group at all (n=206).

**Procedure**
The measures were collected by Case Managers and psychiatrists involved in the clients’ care. An interview was carried out by Case Managers at 6 months, 12 months, 18 months, and at discharge. The psychiatrists recorded information at 6 months, 18 months, and discharge.
Data Cleaning

The data was checked for anomalies and missing data and, where possible, the data was adjusted using the original research filled out by clinicians or the clients’ files to update the data.

Five clients on the data base were excluded as four had not been diagnosed with psychosis but other disorders (personality disorder, Post-Traumatic Stress Disorder, and depression [without psychosis]). One client who had received significant past treatment for psychosis at another service was excluded from this study as he did not meet the criteria of early intervention.

In the original data set a large number of different diagnoses were used. For the purposes of this study schizophrenia and schizophreniform Disorder were both classified as schizophrenia. All other diagnoses where recorded as Non-Schizophrenic including Schizoaffective Disorder-bipolar type; Schizoaffective Disorder-depressive type; Brief Psychotic Disorder; Delusional Disorder (include shared psychotic disorder); Psychotic Disorder due to a general medical condition (GMC); Substance-induced Psychotic Disorder; Psychotic Disorder not otherwise specified (NOS); and No Primary Psychotic Disorder. Also included were the mood disorders Bipolar I Disorder; Bipolar II Disorder; Cyclothymia; Bipolar Disorder NOS; Mood Disorder due to GMC; Substance-induced mood disorder; Mood Disorder NOS; Major Depressive Disorder; Dysthymic Disorder; and Depressive Disorder NOS were used; this was recoded to a dichotic schizophrenia and non-schizophrenia.

It was deemed for the purposes of this study that, although diagnosis was interesting, the level of detail in the data was not required and so was simplified in this way. In the original data each person’s ethnicity was recorded: in this study it was recoded to Maori and Non-Maori with Maori being the largest ethnic group after New Zealand European. The data for other ethnicities may have been interesting, but the numbers were too small (e.g., Pacific Peoples = 1, Asian =2) to get meaningful results from the data.

The original data recorded employment status, e.g. full-time employment, part-time employment, student, unemployment, homemaker, and unemployed. The original data also
included benefit data distinguishing between no benefit, unemployment, sickness, student allowance, or loan, Domestic Purposes Benefit and Invalids’ Benefit.

Meaningful activity for the purposes of this study was defined as anyone involved in full-time employment, part-time employment, a student, or a homemaker. When no data was available, benefit status was used to fill in missing data and it was also used to double check the employment status data. Unemployment benefit, sickness benefit, or an Invalid’s Benefit were used to define non-meaningful activity. Student allowance, student loan, and Domestic Purposes Benefit was coded as meaningful activity. Domestic Purposes Benefit applies to those who are involved in fulltime or nearly fulltime child-care.

The original data recorded recreation drug use for Cannabis, Opioids, Sedatives, Stimulants, Hallucinogens, Inhalants, and Other, and then rated these as use, abuse, or dependence. For alcohol use, abuse or dependence was used in the original data. For the purposes of this study the data was changed to a dichotic scale. All recreation substances were recorded and alcohol abuse and dependence was also added. Use of alcohol was not recorded, due to its common use in New Zealand society and to reflect the study’s aim to show significant drug and alcohol use as opposed to infrequent responsible use.

It could be argued that cannabis use could also be excluded on these grounds, but it is included in this study due to it being an illegal drug in New Zealand at this time; its effect on the brain; and especially on the wellbeing of those vulnerable to psychosis and its effects on physical health even in small amounts. Legal highs such as Benzylpiperazine (BZP) and synthetic cannabis were also included, again because of its effects on the brain and especially on the wellbeing of those vulnerable to psychosis and its physical health effects even in small amounts.

Data for waist circumferences had not been collected in a reliable way, which meant 70% of the data was unable to be used and it was removed.

**Data Analysis**

The retrospective data used in this study was manipulated, first into the relevant participants and a control group, and later two control groups. The data was then analysed using Statistical Package for the Social Sciences program version 18 (SPSS).
For the recreation group/control group data cross tabulations and Chi Squares were computed for Maori, gender, schizophrenia, meaningful activity, substance use, nicotine use, insight, compliance, and engagement. T tests were used to analyse age, the Positive and Negative Symptom Scale Total, Positive and Negative Symptom Scale Positive, Positive and Negative Symptom Scale Negative, Global Assessment of Functioning, Quality of Life Total, Health of Nation Outcome Scale, Body Mass Index, High Density Lipoproteins, Low Density Lipoproteins, Total Cholesterol, and Triglycerides. Homogeneity of variance was carried out for these test and no results were significant.

For the two control group results, cross tabulations and Chi Squares were used for Maori, gender, schizophrenia, meaningful activity, substance use, and nicotine use. One way ANOVA tests were used to analyse age, the Positive and Negative Symptom Scale Total, Positive and Negative Symptom Scale Positive, Positive and Negative Symptom Scale Negative, and GAF, Quality of Life total, HONOS, BMI, HDL, LDL, Total Cholesterol and triglycerides. Kruskal and Wallis tests were used for insight, compliance, and engagement.

Homogeneity of variance was carried out in this analysis but no significance associations were noted for any tests (Kinnear & Gray, 1999). A power analysis was carried out on the data and it was shown that a treatment effect could have been shown.

Effect size was also used in this analysis. Effect size has statistical advantages including being easy to calculate, and the fact that it is not affected by sample size. Disadvantages include the fact that it can struggle when the deviation is very small or not normally distributed. Effect size implies a causality that is not implied in statistical significance, while this can be an advantage it also needs to be justified. Effect size is a simple calculation (Coe, 2002; Nakagawa & Cuthill, 2007), here most of the effects sizes were calculated using SPSS. Where this was not available, it was calculated manually by the researcher.

The data was then entered into Stata Statistics Analysis 10, and finally Generalised Estimated Equations (GEE) were completed. The GEE approach is a variation on a repeated measures ANOVA, resulting in an estimate of the effect of the predictors on each outcome over time. This estimate typically has greater precision than estimates derived from fitting separate models for each observation period. As data was missing at various time points in this study,
this model was used because it is robust to missing data as cases are not deleted list-wise. GEE was also used as it enables change over time to be examined and confounding variables allowed for. Global Assessment for Functioning (GAF) was used as a possible controlling and confounding factor in the GEE, but could not be used as an outcome measure as it did not have four time points but rather three (because it had been collected less often), making it impossible to use.

Summary
This chapter began by discussing research methods, exploring qualitative, quantitative, and mixed methods. Ethical issues were explored in general and how these were addressed in this study was discussed. Also explored was the design of the study and the hypotheses formulated. This was followed by a description of the sample and controls involved in the study and the instruments used. The chapter was concluded with a discussion of the procedures, data collection, cleaning, and analysis.
Chapter 8

Results
This chapter presents the study findings. Initially the demographics of the recreation group are explored. Then group attendance is considered followed by reasons for leaving the group. Lastly, the findings showing both physical and psychological predictors demographic predictors for attending the group are presented. The findings are further separated into examining who attended the recreation group for more than five sessions, who attended for less than five sessions and the number of attendances. Next, the reasons for leaving are shown. Lastly, the findings for demographic predictors of attending are presented, including both physical and psychological predictors. Finally the physical and psychological differences that may have occurred between participants who attended the recreation group in comparison to the participants who did not are explored.

Characteristics of those who Participated and did not Participate in the Recreation group As shown in table 1 (below), of the 284 clients in this study 78 (27.5%) attended the recreation group while receiving treatment at Totara House.

| Table1: Attendance at Recreation Group of Participants in Study (N=284) |
|---------------------------------------------------------------|-----------------|----------------|
| Frequency | Per cent |
| No attendance at Recreation group | 206 | 72.5% |
| Attendance at recreation group | 78 | 27.5% |
| Total | 284 | 100% |

Table 2 shows the mean number of days from referral to Totara House and attendance of the recreation group was 103. The mean number of session attended was 9.49. The most sessions attended by any one Totara House client was 53.

The mean number of days from starting the recreation group till finishing was 165.79 days (approximately five and a half months).
Table 2: Recreation Group Attendance Information (n=78)

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sessions attended</td>
<td>1.00</td>
<td>53.00</td>
<td>9.49</td>
<td>10.85</td>
</tr>
<tr>
<td>Number of days at recreation group</td>
<td>1.00</td>
<td>819.00</td>
<td>165.79</td>
<td>201.83</td>
</tr>
<tr>
<td>Days from referral to starting recreation group</td>
<td>4.00</td>
<td>780.00</td>
<td>103.04</td>
<td>135.50</td>
</tr>
</tbody>
</table>

As shown in table 3, of the participants who attended the recreation group 40 (51%) left for positive reasons (e.g. began work or a course) and 38 (49%) left for negative reasons (e.g. lost motivation).

Table 3: Reason for Leaving Recreation group (n=78)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Reason</td>
<td>40</td>
<td>51%</td>
</tr>
<tr>
<td>Negative Reason</td>
<td>38</td>
<td>49%</td>
</tr>
</tbody>
</table>

Table 4 demonstrates that more Maori attended the recreation group (23.1%) when compared to Maori who did not attend the recreation group (13.1%). This difference was statistically significant (p<0.05) and there may have been a small effect size (d=0.30).

A significant difference (p<0.05) with a small effect size (d=0.43) was also found between the females who attended the recreation group (19.2%) when compared to females who did not attend the recreation group (31.6%). The mean age of attendees to the recreation group was 22.59 years which was similar to the 23.15 years mean age of the non-attenders No statistical significance was found between the two groups (p=0.534), and no effect size was noted (d =-0.15).
Of the participants who attended the recreation group, 61.5% had schizophrenia in comparison to no attenders (63.6%). No statistical significance was found between the two groups (p=0.426), and a medium effect size was noted (d =0.75).

Of those who attended the recreation group, 43.2% were engaged in meaningful activities prior to starting at Totara House in comparison with 49.2% who did not attend the recreation group. No statistical significance was found (p=0.232); a small effect size was noted (d =0.38).

Table 4 below shows that 75.6% of the participants who attended the recreation group had used recreational drugs on referral in comparison to 72.5% of those who did not attend the recreation group. While no statistical associations (p=0.359) were found between the two groups a medium effect size was noted (d =0.60).

**Table 4: Demographic Predictors of Attendance at Recreation Group (N=284)**

<table>
<thead>
<tr>
<th></th>
<th>Attended Recreation group N=78</th>
<th>Never attended Recreation N=206</th>
<th>P Value</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maori</td>
<td>Per cent of Maori</td>
<td>23.1%</td>
<td>13.1%</td>
<td>0.033*</td>
</tr>
<tr>
<td>Gender</td>
<td>Per cent Of females</td>
<td>19.2%</td>
<td>31.6%</td>
<td>0.026*</td>
</tr>
<tr>
<td>Age</td>
<td>Mean age</td>
<td>22.59</td>
<td>23.15</td>
<td>0.534</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>Per cent with schizophrenia</td>
<td>61.5%</td>
<td>63.6%</td>
<td>0.426</td>
</tr>
<tr>
<td>Meaningful activity</td>
<td>Per cent in a meaningful activity</td>
<td>43.2%</td>
<td>49.2%</td>
<td>0.232</td>
</tr>
<tr>
<td>Substance use</td>
<td>Per cent using substances</td>
<td>75.6%</td>
<td>72.5%</td>
<td>0.359</td>
</tr>
</tbody>
</table>

* P<0.05
As can be seen in table 5 (below), the participants who attended the recreation group had worse scores for Positive and Negative Syndrome Scale Total, Positive and Negative Syndrome Scale Positive, Positive and Negative Syndrome Scale Negative, Global Assessment of Functioning, Quality of Life, and Health of Nation Outcome Scales than those who never attended the group. None of the scores for Positive and Negative Syndrome Scale Total, Positive and Negative Syndrome Scale Positive, Positive and Negative Syndrome Scale Negative, and Global Assessment of Functioning scores were significant. However, while the HONOS score was not statically significant (p=0.063), it\'s a medium effect size noted ($d = 0.47$). Although Quality of Life and HONOS was not significant, a small effect size for Quality of Life and medium effect for Health of Nation Outcome Scales was also noted. While the recreation group participants had better medication compliance, insight, and engagement when compared with participants who had not attended the recreation group, no statistically significant association was found between the groups, nor was there any effect size. It needs to be noted that effect size for insight was not rounded to two decimal places as this would have been deceptive, as it would have rounded it up to a small effect size, rather than no effect size as is noted in the results.
| Table 5: Psychological Predictors of Attendance at Recreation Group (N=284) |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Positive and Negative Syndrome Scale Baseline Total | Attended Recreation Group N=78 | Attended Recreation Group Standard Deviation | Never attended Recreation Group N=206 | Never attended Recreation Group Standard Deviation | P Value | Effect Size |
| Mean | 58.28 | 22.15 | 55.09 | 19.80 | 0.749 | 0.16 |
| Positive and Negative Syndrome Scale Positive Baseline | Mean | 15.04 | 6.45 | 14.42 | 5.68 | 0.541 | 0.11 |
| Positive and Negative Syndrome Scale Negative Baseline | Mean | 13.80 | 7.18 | 12.94 | 6.88 | 0.642 | 0.13 |
| Global Assessment Of Functioning | Mean | 53.66 | 13.93 | 55.58 | 14.38 | 0.691 | 0.13 |
| Quality of life | Mean | 59.97 | 24.00 | 67.54 | 26.58 | 0.210 | 0.28<sup>d</sup> |
| Health Of Nation Outcome Scale | Mean | 11.54 | 6.97 | 8.69 | 6.06 | 0.063 | 0.47<sup>d</sup> |
| Insight | Mean | 9.59 | 3.80 | 8.83 | 3.89 | 0.110 | 0.195 |
| Compliance | Mean | 3.44 | 1.26 | 3.24 | 1.40 | 0.643 | 0.15 |
| Engagement | Mean | 3.10 | 0.97 | 2.95 | 1.02 | 0.634 | 0.15 |

As shown in table 6, at baseline the participants who attended the recreation group had a lower Body Mass Index (23.90) compared to those who did not attend the recreation group (24.69). While this figure was statistically significant at (p<0.01) no effect size was noted and all other physical predictors were non-significant.
### Table 6: Physical Predictors of Attendance at Recreation Group Table (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Attended Recreation Group N=78</th>
<th>Attended Recreation Group Standard Deviation</th>
<th>Never attended Recreation N=206</th>
<th>Never Attended Recreation Group Standard Deviation</th>
<th>P Value</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Mass Index</td>
<td>Mean 23.90</td>
<td>3.08</td>
<td>Mean 24.69</td>
<td>Mean 5.51</td>
<td>.003*</td>
<td>-0.03</td>
</tr>
<tr>
<td>High-Density Lipoproteins</td>
<td>Mean 1.32</td>
<td>0.32</td>
<td>Mean 1.33</td>
<td>Mean 0.44</td>
<td>.341</td>
<td>-0.02</td>
</tr>
<tr>
<td>Low-density lipoproteins</td>
<td>Mean 2.60</td>
<td>0.85</td>
<td>Mean 2.73</td>
<td>Mean 0.85</td>
<td>.881</td>
<td>-0.15</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>Mean 4.33</td>
<td>0.98</td>
<td>Mean 4.51</td>
<td>Mean 1.05</td>
<td>.886</td>
<td>-0.04</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>Mean 1.24</td>
<td>0.85</td>
<td>Mean 1.31</td>
<td>Mean 0.75</td>
<td>.675</td>
<td>-0.09</td>
</tr>
<tr>
<td>Glucose</td>
<td>Mean 4.76</td>
<td>0.63</td>
<td>Mean 4.66</td>
<td>Mean 0.54</td>
<td>.765</td>
<td>0.18</td>
</tr>
</tbody>
</table>

* P<0.05
**Results by Attendance at Recreation Group**

As shown in table 7, of the 78 participants who attended the recreation group 52.6% attended more than five sessions of the recreation group.

**Table 7: Attendance of Recreation Group by Participants in Study (n=78)**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Per cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than five sessions of recreation group</td>
<td>37</td>
</tr>
<tr>
<td>Five or more sessions of recreation group</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>78</td>
</tr>
</tbody>
</table>

Table 8 demonstrates that the number of Maori who attended the recreation group for five or more session (24.3%) was similar to those who attended for less than five (22.0%). This was not significant, nor was there an effect size. Fewer females attended the group for five or more sessions (12.2%) when compared to those who attended less than five sessions (22.0%) and with those who never attended the recreations group (13.1%). This was statistically significant (p<0.05). All other demographic measures were non-significant with no effect size.
Table 8: Demographic Predictors of Attendance at Recreation Group Table (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Attended Recreation Group More Than Five N=41</th>
<th>Attended Recreation Group Less Than Five N=37</th>
<th>Never Attended Recreation N=206</th>
<th>P Value Recreation Group More Than Five Versus Recreation Group less than five</th>
<th>Effect size Recreation Group More Than Five Versus Recreation Group less than five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maori</td>
<td>Maori Per cent</td>
<td>24.3%</td>
<td>22.0%</td>
<td>13.1%</td>
<td>0.116</td>
</tr>
<tr>
<td>Gender</td>
<td>Per cent of females</td>
<td>12.2%</td>
<td>27%</td>
<td>31.6%</td>
<td>0.042*</td>
</tr>
<tr>
<td>Age</td>
<td>Mean age</td>
<td>22.6</td>
<td>22.58</td>
<td>23.15</td>
<td>0.534</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>Per cent schizophrenia</td>
<td>58.5%</td>
<td>64.9%</td>
<td>63.6%</td>
<td>0.804</td>
</tr>
<tr>
<td>Meaningful activity</td>
<td>Per cent</td>
<td>37.5%</td>
<td>50.0%</td>
<td>49.2%</td>
<td>0.385</td>
</tr>
<tr>
<td>Substance use</td>
<td>Drug use Per cent</td>
<td>70.7%</td>
<td>81.1%</td>
<td>72.5%</td>
<td>0.511</td>
</tr>
</tbody>
</table>

* P<0.05
As can be seen in table 9, while the Positive and Negative Syndrome Scale Baseline, Positive and Negative Syndrome Scale Positive, and Positive and Negative Syndrome Scale Negative scores were all higher for those who had attended the recreation group more than five sessions, no statistically significant association was found nor were any significant associations found between Global Assessment of Functioning scores. Those who attended the recreation group for more than five sessions had lower Quality of Life scales scores. This was statistically significant at (P<0.001), but no effect size was noted. Those who attended the recreation group for more than five sessions had higher Health of Nation Outcome Scales scores when compared to the two control groups. This was statistically significant at (p<0.001) and had a large effect size at (d=0.85) No statistical significance difference were noted in insight, engagement, or compliance, although compliance did have a medium effect size.
Table: 9 Psychological Predictors of Attendance at Recreation group Table (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Attended Recreation Group More than five N=41</th>
<th>Attended Recreation Group More than five Standard Deviation</th>
<th>Attended Recreation Group less than five N=37</th>
<th>Attended Recreation Group less than five Standard Deviation</th>
<th>Never attended Recreation Group N=206</th>
<th>Never attended Recreation Group Standard Deviation</th>
<th>P value Or Anova Rec/&gt;5 Rec</th>
<th>Effect size Rec &gt;5 Rec</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANNAS Baseline Total</td>
<td>Mean score</td>
<td>61.84</td>
<td>22.87</td>
<td>54.51</td>
<td>21.04</td>
<td>55.08</td>
<td>19.80</td>
<td>0.172</td>
</tr>
<tr>
<td>PANNAS Baseline Positive</td>
<td>Mean score</td>
<td>15.78</td>
<td>7.06</td>
<td>14.28</td>
<td>5.74</td>
<td>14.42</td>
<td>5.68</td>
<td>0.415</td>
</tr>
<tr>
<td>Baseline PANNAS Negative</td>
<td>Mean score</td>
<td>14.81</td>
<td>7.38</td>
<td>12.74</td>
<td>6.90</td>
<td>12.93</td>
<td>6.88</td>
<td>0.305</td>
</tr>
<tr>
<td>GAF Baseline</td>
<td>Mean score</td>
<td>52.43</td>
<td>13.42</td>
<td>54.92</td>
<td>14.52</td>
<td>55.58</td>
<td>14.38</td>
<td>0.474</td>
</tr>
<tr>
<td>Quality of life</td>
<td>Mean score</td>
<td>49.76</td>
<td>25.75</td>
<td>64.80</td>
<td>19.40</td>
<td>67.54</td>
<td>26.58</td>
<td><strong>0.001</strong></td>
</tr>
<tr>
<td>HONOS</td>
<td>Mean score</td>
<td>13.39</td>
<td>8.02</td>
<td>9.26</td>
<td>4.87</td>
<td>8.69</td>
<td>6.06</td>
<td><strong>0.000</strong></td>
</tr>
<tr>
<td>Insight</td>
<td>Mean score</td>
<td>9.65</td>
<td>3.83</td>
<td>9.53</td>
<td>3.84</td>
<td>8.83</td>
<td>3.89</td>
<td>0.178</td>
</tr>
<tr>
<td>Compliance</td>
<td>Mean score</td>
<td>3.69</td>
<td>1.28</td>
<td>3.17</td>
<td>1.20</td>
<td>3.24</td>
<td>1.40</td>
<td>0.661</td>
</tr>
<tr>
<td>Engagement</td>
<td>Mean score</td>
<td>3.29</td>
<td>0.90</td>
<td>3.17</td>
<td>1.01</td>
<td>3.24</td>
<td>1.02</td>
<td>0.152</td>
</tr>
</tbody>
</table>

** P<0.001
As shown in table 10, no statistical significance was noted in physical measures. A medium effect ($d=0.68$) was noted for Body Mass Index and a small effect size. The effect appears to relate to those who attended the recreation group having lower BMI (23.03) as compared to those who did not attend (24.85); this was not significant but showed a medium effect ($d=0.68$). Glucose results for those attending less than five sessions (4.69) and the control group (4.66) were similar and appeared slightly different to the group of those who attended more than five sessions (4.83). This was not statistically significant but showed a possible effect size ($d=0.27$).
### 10: Physical Predictors of Attendance at Recreation group Table (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Attended Recreation group More than five N=41</th>
<th>Attended Recreation group More than Standard Deviation</th>
<th>Attended Recreation group less than five N=37</th>
<th>Attended Recreation group less than five Standard Deviation</th>
<th>Never attended Recreation N=206</th>
<th>Never attended Recreation Standard Deviation</th>
<th>P value</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Mass Index</td>
<td>Mean score 24.85</td>
<td>3.26</td>
<td>23.03</td>
<td>2.68</td>
<td>24.69</td>
<td>5.51</td>
<td>0.290</td>
<td><strong>0.68</strong></td>
</tr>
<tr>
<td>HDL Cholesterol</td>
<td>Mean score 1.32</td>
<td>0.30</td>
<td>1.31</td>
<td>0.35</td>
<td>1.33</td>
<td>0.44</td>
<td>0.969</td>
<td>0.02</td>
</tr>
<tr>
<td>LDL Cholesterol</td>
<td>Mean score 2.58</td>
<td>0.69</td>
<td>2.62</td>
<td>0.97</td>
<td>2.73</td>
<td>0.85</td>
<td>0.572</td>
<td>-0.01</td>
</tr>
<tr>
<td>Cholesterol Total</td>
<td>Mean score 4.41</td>
<td>0.72</td>
<td>4.2615</td>
<td>1.17</td>
<td>4.51</td>
<td>1.05</td>
<td>0.411</td>
<td>0.12</td>
</tr>
</tbody>
</table>
Table 11 uses Generalised Estimated Equations to ascertain any statistically significant differences in psychological measures by comparing the recreation and control groups over time. None of the values came close to reaching significance.

Table 11: Generalized Estimated Equations for Psychological Measures Comparing Recreation Group with Control Group (N=284)

<table>
<thead>
<tr>
<th>Psychological Measure</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of life Total</td>
<td>-3.928</td>
<td>2.532</td>
<td>0.121</td>
</tr>
<tr>
<td>Quality of life Activity</td>
<td>-0.481</td>
<td>0.297</td>
<td>0.106</td>
</tr>
<tr>
<td>Interpersonal Relationships and Social Network</td>
<td>-1.733</td>
<td>1.079</td>
<td>0.108</td>
</tr>
<tr>
<td>Intrapsychic Foundations and Common Objects and Activities</td>
<td>-1.373</td>
<td>0.971</td>
<td>0.157</td>
</tr>
<tr>
<td>Instrumental Role Functioning</td>
<td>-0.412</td>
<td>0.551</td>
<td>0.455</td>
</tr>
<tr>
<td>Health Of Nation Outcome Scale</td>
<td>0.237</td>
<td>0.628</td>
<td>0.706</td>
</tr>
<tr>
<td>Compliance</td>
<td>0.012</td>
<td>0.138</td>
<td>0.928</td>
</tr>
<tr>
<td>Engagement</td>
<td>0.041</td>
<td>0.124</td>
<td>0.744</td>
</tr>
</tbody>
</table>

As can be seen in table 12, no statistical significance difference were noted in physical measures comparing the recreation group and the control group. None of the measures were statistically significant except High Density Lipoproteins, which trended towards statistical significance (p=.063).
Table 12: Generalised Estimated Equations for Physical Measures Comparing Recreation Group with Control Group (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Mass Index</td>
<td>-1.261</td>
<td>0.958</td>
<td>0.188</td>
</tr>
<tr>
<td>High Density Lipoproteins</td>
<td>0.109</td>
<td>0.059</td>
<td>0.063</td>
</tr>
<tr>
<td>Low Density Lipoproteins</td>
<td>0.142</td>
<td>0.109</td>
<td>0.192</td>
</tr>
<tr>
<td>Cholesterol Total</td>
<td>0.181</td>
<td>0.154</td>
<td>0.241</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>0.133</td>
<td>0.140</td>
<td>0.340</td>
</tr>
<tr>
<td>Glucose</td>
<td>-0.011</td>
<td>0.109</td>
<td>0.920</td>
</tr>
</tbody>
</table>

Table 13 demonstrates that the time between base line and 12 months measures appeared to have little effect on the difference in High Density Lipoproteins (p=0.317). The 12 month to discharge period appeared to be responsible for the trending towards significance (p=0.096).

Table 13: High Density Lipoproteins Comparing Recreation Group with Control Group over Time (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base line-12 months</td>
<td>-0.496</td>
<td>0.050</td>
<td>0.317</td>
</tr>
<tr>
<td>12 months-Discharge</td>
<td>-0.094</td>
<td>0.057</td>
<td>0.096</td>
</tr>
</tbody>
</table>

As can be seen in table 14, no results for confounding High Density Lipoproteins variables were significant. Gender trended towards significance at (p=0.040).
Table 14: Possible Confounding Variables for High Density Lipoproteins Comparing Recreation Group with Control Group over Time (N=284)

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>P Value</th>
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</thead>
<tbody>
<tr>
<td>Gender</td>
<td>-0.126</td>
<td>0.061</td>
<td>0.040</td>
</tr>
<tr>
<td>Maori</td>
<td>0.073</td>
<td>0.071</td>
<td>0.303</td>
</tr>
<tr>
<td>Global Assessment Of Functioning</td>
<td>-0.001</td>
<td>0.002</td>
<td>0.411</td>
</tr>
<tr>
<td>Health of Nation Outcome Scale</td>
<td>-0.007</td>
<td>0.005</td>
<td>0.134</td>
</tr>
<tr>
<td>Positive and Negative Syndrome Scale Total</td>
<td>-0.002</td>
<td>0.001</td>
<td>0.225</td>
</tr>
<tr>
<td>Quality of life Total</td>
<td>-0.000</td>
<td>0.001</td>
<td>0.634</td>
</tr>
</tbody>
</table>

Summary
This chapter presents the findings of the data analysis. Overall it was found showed that 27.5% of clients in the study attended the recreation group with on average attendance being 9.49 sessions. As shown, there were significant differences between the recreation group and the control group demographics prior to starting the recreation group: with the most significant results being the high rate of Maori and male attendees. Higher Health of the Nation scores also predicted attendance. When the group was further divided into clients who attended five or more and clients who attended five or less sessions of the recreation group, being Maori was no longer significant, however, being male continued to predict attendance. Quality of Life and Health of the Nation scores were significant. While Generalised Estimated Equations were used to demonstrate if the recreation group had effect on specific physical and psychological measures none of the measures involved were able to demonstrate this. High Density Lipoprotein was close to reaching significance, with this result being strongest in the last year of treatment. These findings are further discussed in the next two chapters.
Chapter 9

Discussion

This chapter discusses the findings presented in the previous chapter. It begins by considering the demographic data, and then continues by discussing the two groups (attended/did not attend recreations group) and the three group results (attended five sessions or less than five sessions of the recreations group). Finally, the recreation group effectiveness is discussed.

Characteristics of Those who Participated in Recreation Group - Attendance at the Recreation Group

Of the total number of clients in this study, 27.5% attended the recreation group as part of their treatment. While the Totara House recreation group is an adjunct voluntary treatment option for clients who choose to attend on the whole it appears to have good attendance. As already discussed, young people in general are difficult to motivate, and those with psychosis are particularly difficult due to a number of issues including negative symptoms. One explanation as to why attendance at the recreation group appears to be popular is perhaps that young people value this approach to treatment.

The mean group attendance was 9.49 sessions with one client attending as many as 53 sessions. Group attendance appeared to be regular, which indicates that clients do value recreation groups. Regular attendance could be related to all or any of the following factors: clients being picked up for it; clients being introduced to staff involved prior to the group (thus reducing anxiety) and the group being once per week (thus leaving time for clients to do other things they are interested in). Another possible reason for high attendance rates could be the informal nature of the group which is different from other aspects of Totara House treatment, insight into psychosis is not required and although the group is for those with psychosis, psychosis it is not a big part of the recreation group. In fact psychosis is not mentioned unless it is brought up by the clients themselves in conversation. This may attract clients who have less insightful into their illness. As discussed earlier clients with psychosis have deficits in social and cognitive functioning and the recreation group does not require complex cognition or socialising in the way that a talking peer group may require thus making it a good option for those who may prefer this.
Clinically, regular attendance at the recreation group can be very useful as services that offer intensive Case Management (such as Totara House) can have difficulties sustaining regular contact with some clients. Case managers may want to see clients more regularly to monitor their mental health status and to offer support more often than the clients may be willing to be seen, even when this is offered in a place of convenience to the clients, for example in their home. The recreation group can be useful in this respect as the client is still seen weekly by clinical staff thus allowing for general oversight of the client’s functioning.

One reason that seeing clients regularly can be difficult to sustain is because of the clinical questions being asked — such questions would usually include enquiries about a client’s mental wellbeing, for example determining the presence of psychosis, together with questions about risk to self and/or others. Some clients may see these questions as negative, inferring that clinicians are assuming that these things will occur. At times clients have little insight into their illness, possibly even believing psychotic experiences can have explanations unrelated to illness, and can find these questions difficult or upsetting. This is what makes the recreation group unique as there is no expectation that clients need to talk thus, while the clinicians don’t ask clinical questions in the group the information can be gathered through observation of the client in the group. This is very different from other parts of Totara House Treatment where talking is essential in all settings. Clients with active psychosis find talking and conversation difficult and they have problems organizing their thoughts. This is further complicated in that they may also have difficulty identifying the person from their psychosis, for example they may be experiencing hallucinations.

The recreation group is also unique and different from the standard clinical settings where meetings may occur. For example in the office or hospital settings which always involves clinicians and support people. The recreation group is a unique observational setting in that it is outdoors; it involves peers, following instructions while undertaking practical tasks and it is informal in nature which allows clients time to relax. Of importance is that it requires a much longer time than a clinical interview generally is, this allow for more an in-depth observation of the client’s functioning. This can potentially led to different findings: a client
who is withdrawn and difficult to assess, for instance, may be less withdrawn in this context. It may allow them to talk more freely. As the group lasts for three hours, it can offer information about a clients’ mental status; for example, a client may appear to function well early in the group, but as they tire their mental state may deteriorate, thus offering a good indication of their actual state of wellbeing. Likewise, someone who is believed to be unwell while in hospital may appear better than was thought at the group, and this can be valuable information in terms of making clinical judgments about planning for discharge.

Another reason the recreation group can be useful is that it offers good use of staff resources. Time wise it is very efficient seeing a group of clients together as it reduces the amount of time required to be spent individually with each client. At Totara House a full time clinician would carry a caseload of fifteen clients. While this may be considered low in terms of other parts of mental health services seeing a client in an Early Intervention Service for three hours each week would be very difficult time-wise.

The Group situation allows staff to notice if a client who has been attending the recreation group routinely has a period of non-attendance. This change in attendance can indicate deterioration in mental health status or some other stressor which in turn would initiate staff follow up for the client, and the offer more timely support.

As noted in chapter four, drop-out rates for Early Intervention clients are high and while past research into drop-out rates at Totara House has shown to be lower than those seen in other studies, it is still higher than desirable. The drop-out rate at the recreation group appears to be low, which is an added advantage of this model of intervention. Unfortunately to the way the data was collected for this study it was not possible to explore if the retention rate at Totara House was influenced by the recreation group. However it might be that attendance at the recreation group resulted in keeping client engaged in the service longer. It may also be possible to use groups such as the recreation group to assist retention in the future and further research into this issue would useful.
Clients were more likely to attend the recreation group early in their two years of treatment: 24.4% had started by 1 month (30 days); 70.5% had started by 3 months (93 days); and within the first 6 months (196 days) 85.9% had begun attending. Given that clients appear to attend the recreation group early in their treatment, clinical practice could be shaped to reflect this trend, for instance by Totara House offering the recreation group to clients as early as practical in treatment. In this study some of the clients, if mentally well enough, had been offered the option of attending the recreation group while still an inpatient in an acute inpatient unit, this practice should be encouraged.

On average, most clients stayed at the recreation group for just under 6 months (165.79 days). These results tend to indicate that recreation groups at Totara House — and in general — may be best offered for six months, and if recreation groups are a limited resource (more clients wanting to attend than places), attendance could be restricted to 6 months attendance.

More clients (51%) left the recreation group for positive reasons than for negative reasons (49%). Positive reasons for leaving the recreation group included attending work; completing 2 years of early intervention treatment and discharge; meeting goals; and starting study. One possible explanation for the slightly higher rates of positive outcomes is that clients become motivated, improve their confidence after a psychotic episode by attending the recreation group, and then, as a result, return to roles in the community. This explanation would demonstrate that attendance at the recreation group is a useful stepping stone in recovery that leads back to post-illness activity. While not able to be substantiated in this study the recreation group may also prove a safe testing ground for clients whose confidence has been damaged by their illness to test out their post-illness ability and to begin to build confidence to resume their lives. Furthermore, it would seem to assist continuation of the positive activity achieved following attendance at the recreation group, clients could be transitioned to courses or work around the six months period. Again, further research is needed to confirm this finding.

More Maori attended the recreation group than would be expected. Reasons for this could be that the higher unemployment rates for Maori mean that for some they are less involved in
meaningful day time activities and are, therefore, more available to attend. Culturally, this model of care may appeal to Maori as it may be that the collective aspect of working with the group attracts Maori which is more in keeping with their cultural emphasis on collectivism. Furthermore, aspects of some of the activities could parallel traditional activities that Maori value highly yet with current lifestyle patterns have little exposure to (due to urban living, poverty, or lack of transport). Examples would include activities such as canoeing, fishing and collection of sea food (Kai Moana), and walking. Being in the natural environment of New Zealand may also be attractive to Maori who place special significance on the land and sea, not only for its resources, but as part of a connection to tradition, religion, and their ancestors. Maori culture also places emphasis on the healing properties of natural places, in particular water.

The use of the Whare Tapa Wha model is stressed as being the most useful in model for working with Maori. It is the intent of the recreation group to meet the four dimensions to health stated in this model. The first of these dimensions is Taha Waiua (the spiritual), which corresponds to the recreation groups allowing Maori to be in spiritually significant places. Similarly, Taha Hinengaro (mental and emotional health) is recognised in that the recreation group allows Maori recovery from psychosis. Taha Tinana (the physical) relates to the fact that Maori who attend the recreation group are able to exercise which improves their physical health. Finally Taha Whanau (family) relates to the fact that, although family as such are not involved, the group aspect closely mimics collective whanau approaches.

These results seem very significant as research has identified Maori as difficult group to engage in mental health treatment — perhaps further analysis of outdoor based group activity for Maori with mental health issues, particularly with psychosis may prove useful. If this link could be substantiated it could be very useful, as services who work with Maori attempt to develop ways to engage a group who traditionally do not attend services; have proven difficult to maintain in terms of engagement; and yet are in great need of supports.

The recreation group was also more popular with males than females. Reasons for this could include some females feeling uncomfortable about getting changed and wearing sports
clothes in front of groups of males. Other reasons could relate to women feeling they may be less fit and thus less likely to be able to participate; the activities themselves being stereotypical male activities; females feeling uncomfortable exercising in front of males (in particular swimming); or females feeling uncomfortable in a male-dominated group. Consideration of these factors in further research or the use of separate female targeted groups may be warranted.

Those who attended the recreation group were of a similar age to those who did not attend. Age did not appear to be a predictor of attendance at the recreation group.

Similar amounts of schizophrenia in both the control and recreation groups were noted. No statistical significance was seen, but a medium effect was noted. Perhaps the difference in effect size and p value noted relates to a statistical anomaly, or possibly effect size is picking a slight effect that the p value has noted as a more blunt measure.

Another explanation may be that as schizophrenia is more severe than some other mental illnesses, and people with schizophrenia are thus generally more debilitated, they may have attended the recreation group in the absence of having any other another daytime activity. This was unclear, however, and again further research into this factor would be useful. Those with schizophrenia constitute a significant group with poor prognosis; low levels of attendance and motivation; and poor health outcomes. If it was proven that recreation groups attract those with schizophrenia, this treatment could be very helpful with this population of clients.

While not statistically significant (a small effect was noted) it seems participants coming to the recreation group were less likely to have been involved in any physical activity prior to group attendance It could also be argued that clients who were engaged in a meaningful activity self-selected out of the group as they are busy during the week when is the group was being run so were not able to attend. If this theory is correct, it would be significant as it would show that recreation groups can attract those not engaged in other meaningful activity and who are, therefore, more likely to be in need of support.
While not statistically significant clients in the recreation group did have slightly higher drug use than those who did not attend. Drug use can have effects on day-to-day functioning, potentially affecting a person’s ability to engage in alternative activities. The high drug use could relate to the fact they are engaged in less in meaningful activity and so can spend more time using drugs. This is an interesting finding as the recreation group may be useful in giving heavy drug users an alternative to drug use by filling in their time during the day.

Both clients who attended the recreation group and clients in the control group had similar scores for Positive and Negative Syndrome Scale total, Positive and Negative Syndrome Scale Positive, and Positive and Negative Syndrome Scale Negative symptoms. Furthermore, Global Assessment of Functioning measures did not appear to predict attendance at the recreation group. Those who attended the recreation group were, however, worse on all these measures, although again this effect was too small to be significant. These scales were administered prior to, or very soon after, attendance at the recreation group and therefore do not represent a recreation group effect as they are possible self-selecting traits. At baseline, clients who attended the recreation group appeared to be slightly worse off on all measures than those who do not attend.

The Quality of Life Scale may have predicted attendance at the recreation group given that those who attended the group had poorer Quality of Life scores, while this was not significant, a small effect size was noted. Participants who attended the recreation group appeared to have high (worse) scores on the Health of the Nation Outcome Scale: this was significant and showed a medium effect.

Both the Health of the Nation Outcome Scale and the Quality of Life Scale measure a wide range of factors. The Quality of Life Scale predicts general functioning, while the Health of the Nation Outcome Scale is even more general in what it measures. Those attending the recreation group appeared to have poorer mental health on all these scales, but this was only significant on the more general scales of Quality of Life Scale and Health of the Nation Outcome Scale. The difference in Health of the Nation Outcome Scale and Quality of Life
Scale may relate to these measures being focused on functioning more than on symptoms, as measures of symptoms did not show any effect.

When you consider the worse Quality of Life Scale scores, the Health of the Nation Outcome Scale scores and the fact that (although not statically significant) the worse Positive and Negative Syndrome Scale total, Positive and Negative Syndrome Scale Positive, and Positive and Negative Syndrome Scale Negative symptoms; furthermore, Global Assessment of Functioning scores it seems likely that clients who come to the recreation group are more unwell and have less quality of life in general than the control group. This is an interesting finding as those with worse scores on these measures are more likely to require support with functioning than recreation groups may be able to provide.

Clients with worse psychological scores may experience a higher impact on their overall functioning from their illness (i.e., be more unwell), and this may mean they are less likely to be involved in other daytime activities and thus more likely to attend the recreation group — this means they may be effectively self-select into the group. If proven in future research, this information would be useful as it could show that recreation groups attract a more impacted sub-group of Early Intervention in Psychosis clients who are also likely to be in more need of supports.

Although Insight, Compliance, and Engagement scores appear higher for those in the recreation group; this finding was not significant nor did it show an effect. Interestingly it would seem likely that with low psychological predictors, these measures would also be low. Perhaps these are slight predictors of attendance. It could be hypnotized that insight into one’s illness may make a participant more aware of the need for treatment, thus increasing engagement. Compliance with medication could also relate to compliance in other parts of treatment, e.g. attending groups. Perhaps because clients have insight into their illness they are more likely to believe they need treatment, and therefore agree to attend groups. As was noted, this was not statistically significant and requires further targeted research.
Body Mass Index appeared to be a predictor of attendance at the recreation group. Prior to results being produced it was predicted that clients with a higher Body Mass Index would be more likely to engage in exercise to reduce weight. It was thought that, due to weight gain caused by the medication and sedentary life styles associated with psychosis, those putting on weight would be more motivated and thus more likely to attend the recreation group in an attempt to lose this weight. Curiously, those with a lower Body Mass Index appeared more likely to attend the recreation group. These results may be understated given the earlier finding that significantly high levels of Maori and males are in the group, as both these populations generally have a higher Body Mass Index and their over-representation in the recreation group may have increased this effect. Perhaps those who have lower Body Mass Index in the past have engaged in exercise and so are more likely to attend exercise-based groups in the future. Similarly, it is possible that those with a higher Body Mass Index are reluctant to attend groups because of stigma — they may feel self-conscious both about their weight and their ability to keep up with the group in regards to fitness. As has been shown in other studies clients with higher a Body Mass Index could have less confidence and so do not attend believing they will not be successful.

Blood results for High Density Lipoprotein, Low Density Lipoprotein, Total cholesterol, and triglycerides were better for those who attended the recreation group; this was a slight difference with no significance or effect size noted. Glucose was the opposite, with those in the recreation group having slightly worse glucose results. Glucose results were not significant nor showed an effect. One potential reason for better blood results could relate to research findings that Body Mass Index has significant effect on blood results. This could mean that Body Mass Index is a confounding variable, or it could be that another variable is affecting both blood results and Body Mass Index. Another explanation for the better blood results could be — as discussed earlier — is that those with who were involved in exercise prior to the group self-select no attendance.
**Results: Three Groups**

As shown in the results section, the participants were further analyzed by splitting those who attended less than five sessions of the recreation group from those who attended more than five sessions. This split resulted in approximately half of the participants in each group.

These two groups were further examined by comparing them to the original control group. It was hoped that significant differences could be found, thus further differentiating those who attend recreation group from those who pull out before completing of the program.

Being Maori was not a predictor of attendance — in other words, Maori who attend the recreation group are just as likely as other clients to remain in the group. This is an interesting finding as not only are Maori attracted to the recreation group but they appear more likely to stay. It has already been noted that Maori are usually both difficult group to engage in treatment, as well as being difficult to keep engaged. This result may add further weight to the case that Maori value recreation-based groups — as discussed above, reasons for this may include high unemployment rates and the fact that Maori are less involved in meaningful day time activities, meaning they are more available to attend. As noted earlier culturally this model of care may appeal to Maori because of the collective aspect of working with the group which is keeping with their traditional cultural emphasis on collectivism. Aspects of the activities could parallel traditional activities that Maori value highly and with current lifestyle have little exposure to (due to urban living, poverty or lack of transport) such as canoeing, fishing and collection of sea food (Kai Moana) and walking.

Being in the natural environment of New Zealand may also be attractive to Maori as place is specifically significant on the land and sea, not only for its resources, but as part of a connection to tradition, religion and ancestors. Maori culture also places emphasis on the healing properties of natural place in particular water. This result seems significant as research has identified Maori as difficult group to remain engaged in mental health treatment and perhaps further analysis of outdoor based group activity for those Maori with mental health in particular psychosis may prove useful.
Of the demographic predictors, gender was the only significant predictor, and showed an effect. As has already been discussed, fewer females attended the recreation group. The splitting of the group showed that out of the fewer females, women were likely to attend fewer sessions, or, in other words, pull out of the group. The combination of lower attendance rates and females being more likely to leave early may demonstrate that the group probably does not meet goals for women as well as for men.

Reasons for this have already been discussed and would also seem likely reasons why women may leave early: these reasons include females feeling uncomfortable getting changed; swimming and wearing revealing sports clothes in front of groups of males; females feeling they may be less fit and less likely to be able to participate; the activities having a stereotypical male bias; females feeling uncomfortable exercising in front of males; or females feeling uncomfortable in a male-dominated group. Consideration of these ideas in relation to further research, or use of separate female-targeted groups may be warranted to increase female attendance and ongoing participation. It would be interesting to explore if female attendance improved if they were offered a separate group (proving the gender issues hypothesis) or if attendance remained poor in a female only group.

In comparing those who attended five recreation group sessions with those who attended less than five sessions demonstrates that, other than gender, demographics were poor predictors of duration of attendance. This appears to lend weight to a hypothesis that out of the predictors used, few seemed to be predictors of ongoing/stopping the group. The close results also appear to lend weight to the concept of the recreation group sample being similar to the control group.

Schizophrenia and substance use were neither significantly different nor showed effect size. It was, however, interesting to note that those who attended the recreation group for five or more sessions appeared have less schizophrenia or drug use and were more closely related to the control group than the group of those who attended less than five sessions. This is a similar result as that shown by the two group results. This result seems promising in that
those with substance use and schizophrenia seem capable to continue to attend this group despite these difficulties.

Engaged in a meaningful activity at base-line also is an interesting finding in that clients who stayed in the recreation group (more than five sessions) appeared to be less likely to have been engaged in a meaningful activity at base-line. It should be noted this was not significant nor did it show an effect. Perhaps, in a similar manner to the two group results discussed earlier, those engaged in a meaningful activity self-select out of the group — in other words, they are busy in the week when the group is being run, so do not attend. Those who attend the group and resume/begin a meaningful activity typically pull out of the group — that is, they begin a job/course or other meaningful activity and withdraw.

Quality of Life and Health of the Nation Outcome Scales were both significant. The Health of the Nation Outcome Scale had a large effect noted although no effect was noted for Quality of Life Scale. Those who stayed in the recreation group for more than five sessions had poorer Quality of Life and Health of the Nation Outcome Scale scores. Again, in a similar manner to the meaningful activity results discussed above, this may predict those who are unable to move onto other activities due to poor quality of life (having poorer social supports) and poorer functioning. This may be further demonstrated by the three Positive and Negative Syndrome Scale scores, as those who did five or more sessions had higher scores — or, in other words, were more unwell with psychosis. These results were not significant, but all showed a small effect. The poorer quality of life already demonstrated may have also been demonstrated with the lower Global Assessment of Functioning scores shown in those who continued in the recreation group for more than five sessions. No significance or effect was noted, however.

Insight, Compliance, and Engagement were noted to have been slight improved for the recreation group. This effect appears to have related to those who attended the recreation group for five or more sessions rather than those who attended for fewer than five sessions. As was suggested earlier, perhaps this relates to insight into one’s illness, which this may make participants more aware of the need for treatment, thus increasing attendance at groups.
Compliance with medication could also relate to compliance in other parts of treatment, e.g. attending groups.

For all physical predictors the three groups appeared very similar. As was shown earlier, Body Mass Index appeared to act as a predictor of those who attended the recreation group in that recreation group participants appeared to have a lower Body Mass Index. In the three group results it appears that this effect may relate to those who attend recreation group less than five sessions having a lower Body Mass Index. Glucose also showed a small effect, with clients who go on to attend the recreation group having slightly worse glucose levels— which could also be explained by increasing weight. Perhaps weight gain motivates clients to attend and remain engaged in the recreation group as a way to lose weight.

Results: Effect of the Recreation Group
None of the Generalized Estimating Equations for psychological measures in this study were significant. In other words, attending the recreation group appeared to have little effect on the psychological measures. Unlike other studies study showed no changes in psychological measures (Voruganti et al., 2006). However, it should be noted that the measures used did vary between this study and other studies —it is possible that this study did not include the correct measures. One example was that Voruganti et al. (2006) showed significant change in Global Assessment in Functioning. Unfortunately, Global Assessment in Functioning was not able to be used as a measure in this particular study as the time points did not match the time variables (Global Assessment in Functioning was collected three times, whereas all other measures were collected four times).

None of the Generalized Estimating Equations for physical measures in this study were significant. In other words, attending the recreation group appeared to have little effect on physical measures. Past research, however, has demonstrated a significant change in weight, with clients losing up to 5.45 kilograms (12lb) while the control group gained 4.09 kilograms (9lb) (Voruganti et al., 2006). This result was not replicated in this research. In this research, Body Mass Index was used rather than weight, although this should have had little effect given that the only variable that is likely to change in Body Mass Index is weight (height
being largely stable in 18-30 year olds). Perhaps the way the groups were different accounted for this difference.

Another possible explanation is that the duration of the exercise/activities studied by Voruganti et al. (2006) lasted all day, and the participants also went on 3-day over-night camps, whereas in this study the duration of the group was 3 hours and with a 6 hour session every three months. Perhaps the increased duration could allow for statistical significant difference, although research into non-mental health populations shows that physical benefits can occur with even small amounts of exercise (such as half an hour). This study relates to regular small amounts of exercise, therefore, perhaps the frequency of the exercise offered at the recreation group is too infrequent to demonstrate change. Future research could clarify what types of activity, intensities, durations, and/or frequency of activity can assist weight loss in Early Intervention in Psychosis recreation group participants.

Considerable research has recently focused on atypical anti-psychotic weight-gain; however research on what constitutes effective methods — other than changing medications — is sparse. Perhaps drug-induced weight-gain is difficult to control, which could explain these results. The weight gain is certainly seen in research as significant and occurs rapidly prior to plateauing. Perhaps this is a difficult process to stop/reduce, and further research into this area would be of great benefit. If it was proven that drug-induced weight-gain is not possible to stop, this would increase awareness and make changing anti-psychotics a more frequent strategy.

High Density Lipoprotein trended towards significance, with the recreation group participants having slightly higher or improved High Density Lipoprotein. It appears that the slight improvement in High Density Lipoprotein occurs in the period from 12 months to two years. It should be noted that, as has been already discussed, participants at this stage had usually finished attending the recreation group. Other research has demonstrated that endurance exercise can increase High Density Lipoprotein without weight loss, but in this study this effect while noted was small. It could be argued that the recreation group may have motivated clients to continue to exercise after they had left the group, there is however no way of
knowing this from the present data. It is unlikely though as one would not only expect the
same results from the other physical measures but also that this effect would have started in
the earlier period (baseline to twelve months). Also, some change in the psychological
factors such as quality of life would be expected to have differed because of increased
exercise. Most likely, High Density Lipoprotein has not been affected by the recreation group
in this study. The results for High Density Lipoprotein were further explored looking for
confounding variables. These results demonstrated that males were more susceptible to this
effect. This is an interesting finding and may also warrant more investigation.
Chapter 10

Conclusions

This study has established that for Totara House clients, attendance at adjunct adventure-based group therapy is common and that those who do attend appear do so regularly. While clients attending the group appeared to differ in some demographic predictors in this study, it would seem no improvements were achieved in physical or psychological scores and measures.

Key findings from the study:
- 27.5% of all participants self-selected to attend the adjunct adventure based group therapy.
- Mean attendance was 9.49 sessions and attendance appeared to be regular.
- Clients were most likely to attend adjunct adventure-based group therapy early in their two years of treatment. Within the first 6 months (196 days) of treatment, 85.9% had started the group.
- Clients attend the adjunct adventure-based group therapy for an average of six months.
- More clients left the adjunct adventure-based group therapy for positive rather than negative reasons.
- Adjunct adventure-based group therapy does appear to attract a sub-group of clients in an early intervention in psychosis service.
- Clients are more likely to be male than female, and males are more likely to stay in the adjunct adventure-based group therapy.
- Females are more likely to withdraw from the group.
- Maori are more likely to attend and less likely to withdraw from the adjunct adventure-based group therapy.
• Worse Quality of Life and Health of the Nation Outcome Scale predict attendance at adjunct adventure-based group therapy.

• Worse Quality of life and Health of the Nation Outcome Scale scores predicted ongoing attendance at the adjunct adventure-based group therapy.

• A lower BMI appeared to predict attendance at adjunct adventure-based group therapy.

• Physical measures did not improve because of attendance at the adjunct adventure-based group therapy.

• No psychological measures improved because of attendance of adjunct adventure-based group therapy.

Limitations of study
A number of limitations could be identified in this study. Firstly, that participants in this research were not randomly assigned to the recreation group. This can mean that rather than the results demonstrating the change that occurs/does not occur in the recreation group, results could reflect self-selection and confounding variables. The comparisons of pre-group data and the dividing of the recreation group into two further sub-groups (those who attended recreation group for more than five sessions and those who attended for fewer than five sessions) could allow for this slightly, but will never fully remove the difficulties self-selection can have on results.

The second, the results could have been difficult to identify when comparing the recreation group with the control group. Both groups were involved in intensive early intervention treatment and past research had identified that participants in Totara House improve significantly on many of the measures used in this study. In other words, change could have occurred but have been obscured by both the group and the control improving significantly.
Thirdly, the treatment program offered at Totara House is tailored to the individual, therefore although people may not be attending the recreation group, they may be attending other groups at Totara House (peer support group/art therapy group) or being supported through case management to attend alternative, often wide-ranging activities including employment, job-seeking services, groups in the community (including recreation groups), engaging back into their former life, or having one-to-one support from a support worker.

These activities could have similar effects to those of the recreation group. For instance, exercise level may not have been targeted but may have been increased inadvertently. As an example, attending employment may involve exercise not only in travel (walking, biking) but the work itself could be strenuous, such as manual labour. All these could confound the results sort from the recreation group treatment. Data related to this study about engagement in positive activities was sparse, and while this research identified whether or not participants were engaged in positive activity, it could not quantify this further. The duration, frequency, and the type of activity would have been useful for this study.

The data used in this study had been collected for other purposes rather than just for evaluating effectiveness of the recreation group. This means that other measures that may have been useful for this kind of study were not collected, this served to limit the data available for analysis.

In respect to physical measures, waist circumference would have been very useful; however this was a new measure in the Totara House data set and had not been collected reliably enough to be used in this study. Blood pressure has been noted as the best predictor of health related to metabolic syndrome; it is also a good predictor of fitness and would have been useful in this study. Totara House, however, has not used blood pressure due to the difficulty of measuring each participant and the cost of the equipment to do so. A measure of fitness such as a treadmill test or pulse after exercise may also have been useful to detect physical changes.
Psychological measures which could have been useful and which have been used in other research include a measure of self-esteem, a measure of motivation, and measures that examine feelings such as the thrill of adventure, challenge, and accomplishment. Again these measures had not been used for the Totara House data set.

GAF, which had shown results in past studies, could have been a useful measure but could not be used in this instance because the time points differed due to the way data was collected, thus could not be used in the Generalized Estimated Equations as an outcome variable.

As has been clarified, standardizing the intensity, duration, and frequency of the exercise may have been useful. Perhaps routine pulse-taking during activity may have been helpful, but this could also have had a negative impact on other parts of the group such as flow and team building.

If a qualitative method (or perhaps mixed method) had been used interesting information may have been gleaned from clients about what their perspective is of the recreation group; what limits attendance; and why they leave the group, this would have provided a client perspective for the study.

As the findings do demonstrate, a large numbers of clients at Totara House did attend the recreation group and must have reasons for doing so. Interesting questions to ask clients could also include their reasons for attending; what the group offers them in particular; what activities they enjoyed and why; what goals they have for the group; in what ways it has helped them; and why would they left the group.
Maori clients were over-represented in this data set, thus specific questions to them (as well as the above questions) could include if attendance is related to their cultural beliefs/perspective; how much do they know about their culture?; what activities they enjoyed; and how these related to them culturally.

It could be very beneficial in future research to present the finding from this research and encourage clients to discuss their reactions to it, an activity often used in mixed method research.

**Recommendations**

- To date limited quantitative research has been carried out into adventure-based group therapy: more research into this area to develop a research base would be useful.
- Qualitative research using an experimental design is uncommon in adventure-based group therapy and in future research would be useful.
- This study did not find a significant difference for participants in attending an adventure-based group therapy, whereas Voruganti et al. (2006) did find notable significance. Further research may be able to further explore on these other studies and in order to better understand the reasons for these significant differences.
- One possible reason for the above difference could be the frequency of the exercise. In Voruganti et al. (2006) study participants exercised eight times per week, whereas in this study participants exercised once per week. Research exploring how frequent exercise needs to be to be effective for Early Intervention in Psychosis clients would be useful.
- Further quantitative study into the use of adventure-based group therapy in Early Intervention in Psychosis, possibly using an experimental design which assigns clients to groups, would be useful.
- Research into reasons for clients attending Totara House adventure-based group therapy, possibly using qualitative client interviews or mixed method study design.
- Further research into whether the finding of significant numbers of Maori being attracted to adventure-based group therapies can be replicated, and the reasons for this.
● Consider changes to the Totara House adventure-based group therapy to attract and retain female participants, or consider an alternative group more suited to female participants.

● As has already been discussed in this research, waist circumference was not able to be used due to the small number recordings as this was a new measure recently introduced. Further research would find this an interesting measure to use as it is being more reliably collected at Totara House.

● Useful physical measures that could be added to the data collected by Totara House in regards to the recreation group could include blood pressure and a measure of fitness such as a treadmill test or pulse after exercise (note that waist circumference has already been added). It should be noted that adding these measures would have to be considered in the context of the extra time required of participants and clinicians in collecting it.

● Useful psycho-social measures that could be added to the data collected by Totara House in regards to the recreation group could include measures of self-confidence, exercise levels, and amount of time and type of activity. It should be noted that adding these measures would have to be considered in the context of the extra time required of participants and clinicians in collecting it.

● More robust research in the effectiveness of reducing medication induced weight-gain and metabolic syndrome.

**Conclusion**

The adventure-based group therapy at Totara House appears to attract a good number of clients who also appear to stay engaged in the group. The adventure-based therapy group at Totara House can be characterised as having more Maori, less women, clients with lower Body Mass Index (BMI), and clients with worse Health of the Nation Outcome Scales and schizophrenic clients.
Adventure-based group therapy did not appear to be an effective adjunct therapy in an Early Intervention in Psychosis Service for physical measures. Similarly, adventure-based group therapy did not appear to be an effective adjunct therapy in Early Intervention in Psychosis Services for psychological measures in this study. These results differed from past research, which had, in contrast, demonstrated good effectiveness of adjunct Adventure Therapy. Further research into frequency of adventure-based group therapy would be useful.

Despite the above findings there are some very positive aspects that have come out of this study. That is, despite not being able to clearly demonstrate statistically significant improvements achieved in physical or psychological scores and measures for all attendees of the Totara House recreation group a subgroup of clients was over-represented. This was particularly apparent for Maori and other clients who are severely affected by psychotic disorders. These groups are often hard to treat often because of difficulty with attendance and their over-representation suggests that Adventure therapy has definite benefits for them.

The Totara House recreation group is a unique and different intervention from anything else offered in traditional clinical settings. It has the advantage of offering an observational setting for staff while being informal enough to allow clients time to relax. A key factor is that staff can undertake assess a client’s overall functioning over a period of several hours without encroaching on their personal space. This in turn can provide good information in terms of making clinical judgments in regard to discharge planning.

In this way this study has made a contribution to the knowledge base in regard to positive models for working with clients in early psychosis. Such a model is also very much in keeping with social work practice in mental health services.
References


Ruud, W., Marc, D., Martien, W., Dominique, V., Linda, H., André, S., et al. (2008). Major changes in glucose metabolism, including new-onset diabetes, within 3 months after initiation of or switch to atypical antipsychotic medication in patients with schizophrenia and schizoaffective disorder. 113.


Appendix One

Letter Of approval from the Ngai Tahu Research Consultation Committee
Ngai Tahu Research Consultation Committee
Te Komiti Rakaihau ki Kai Tahu

30/03/2010 - 35
Wednesday, 31 March 2010

Dr Briggs
Social Work and Community Development
Dunedin

Tēnā koe Dr Briggs

Title: More than just meds: does adjunctive adventure/recreation based group therapy promote recovery and improve physical health in clients with first episode psychosis?

The Ngāi Tahu Research Consultation Committee (The Committee) met on Tuesday, 30 March 2010 to discuss your research proposition.

By way of introduction, this response from the Committee is provided as part of the Memorandum of Understanding between Te Rūnanga o Ngāi Tahu and the University. In the statement of principles of the memorandum, it states “Ngāi Tahu acknowledges that the consultation process outlined in this policy provides no power of veto by Ngāi Tahu to research undertaken at the University of Otago”. As such, this response is not “approval” or “mandate” for the research, rather it is a mandated response from a Ngāi Tahu appointed committee. This process is part of a number of requirements for researchers to undertake and does not cover other issues relating to ethics, including methodology; they are separate requirements with other committees, for example the Human Ethics Committee, etc.

Within the context of the Policy for Research Consultation with Māori, Consultation is defined according to the definition of Justice McGechan:

"Consultation does not mean negotiation or agreement. It means: setting out a proposal not fully decided upon; adequately informing a party about relevant information upon which the proposal is based; listening to what the others have to say with an open mind (in that there is room to be persuaded against the proposal); undertaking that task in a genuine and not cosmetic manner. Reaching a decision that may or may not alter the original proposal."

The Committee considers the research to be of importance to Māori health.

As this study involves human participants, the Committee strongly encourage that ethnicity data be collected as part of the research project. That is the questions on self-identified ethnicity and descent, these questions are contained in the 2006 census.

The Committee notes the researchers have identified that, “Māori populations have been identified already as being at risk of obesity, heart disease and have a higher risk of diabetes than the European populations. All of which can lead to decreased life expectancy”, and so the Committee suggests dissemination of the research findings to Māori health organisations regarding this study.

The Ngāi Tahu Research Consultation Committee, 30 March 2010
Te Rūnanga o Ngāi Tahu
Kai Haringa, Rebecca te Whetia

Tēnā koe Dr Briggs

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We wish you every success in your research. The Committee requests a copy of the research findings.

The Committee notes that this proposal is already partially completed. In respect of consultation and collaboration it would be anticipated that the engagement process would have been undertaken prior to data gathering.

The Committee notes that this proposal is already funded and has already been sent to the Human Ethics Committee. In respect of consultation and collaboration it would be anticipated that the engagement process would have been undertaken at the earliest possible stage, prior to funding and ethics applications.

This letter of suggestion, recommendation and advice is current for an 18 month period from Tuesday, 30 March 2010 to 30 September 2011.

The recommendations and suggestions above are provided on your proposal submitted through the consultation website process. These recommendations and suggestions do not necessarily relate to ethical issues with the research, including methodology. Other committees may also provide feedback in these areas.

Nāhaku noa, nā

Mark Brunton (for NTRCC)
Kaitakawaenga Rangahau Māori
Facilitator Research Māori
Research Division
Te Whare Wānanga o Ōtao
Ph: +64 3 479 8738
email: mark.brunton@otago.ac.nz
Web: www.otago.ac.nz
### Appendix Two

**Example of Case Management Research questions**

**CASE MANAGER ASSESSMENT - TWELVE MONTH INTERVIEW**

![Place patient label here](image)

**Client ID Number:**
**Client Name:**
**Interviewer:**
**Date of this Interview:**
**Date client with Totara House for 12 months:**

*Add 12 months to "admitted" date from patient label*

<table>
<thead>
<tr>
<th>b) Reason for departure from Totara House:</th>
<th>still discharged</th>
<th>discharged + readmitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Still involved with service</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>moved outside Totara catchment</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>wishes no further involvement with Totara</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Suicide</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Death related to current psychotic state</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Death unrelated to psychosis</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Full recovery leading to discharge</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Referred to more appropriate service</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>(for example sector base, YSS etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In prison, inappropriate behaviour</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>(e.g. drug taking on premises, assault on staff)</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Discharged-no evidence of psychosis</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Other, specify:</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>discharged to G.P.</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>discharged to Sector Base</td>
<td></td>
<td></td>
</tr>
<tr>
<td>discharged to other service</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1c. If discharged and readmitted, state the number of days discharged in last 6 months: ______

<table>
<thead>
<tr>
<th>2 Involvement in Totara groups:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Focus Group available</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>ii) Focus Group appropriate</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>If not appropriate, why? [leave blank if appropriate]</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>person on drugs</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>person in denial</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>person working/studying</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>non-engagement with service</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>unwilling to foster sick role in client</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>other, specify</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>too unwell/anxious to attend</td>
<td>7</td>
<td>7</td>
</tr>
</tbody>
</table>

**Attendance/Compliance**

<table>
<thead>
<tr>
<th>Attendance/Compliance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No attendance/compliance</td>
<td>0</td>
</tr>
<tr>
<td>Sporadic or irregular attendance/compliance (frequently absent)</td>
<td>1</td>
</tr>
<tr>
<td>Reasonable attendance/compliance</td>
<td>2</td>
</tr>
<tr>
<td>Full and regular attendance/compliance as required</td>
<td>3</td>
</tr>
<tr>
<td>Not involved in/previously completed Focus Group (N/A)</td>
<td>9</td>
</tr>
</tbody>
</table>
9. **General Engagement with Totara Programme**
   
   *Rate the client's overall engagement with Totara staff/programmes during the last 6 months: engagement is defined as "willingness to participate in programme as appropriate"*
   
   | No engagement with Totara | 0 |
   | Minimal engagement with Totara | 1 |
   | Some engagement with Totara | 2 |
   | Moderate engagement with Totara | 3 |
   | Excellent engagement with Totara | 4 |
   | Not Applicable (discharged) | 9 |

10. **Ask Client:** "Is the treatment you are currently receiving here right for you?"

    | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
    |---|---|---|---|---|---|---|---|---|---|----|
    | not right at all | completely right |

   *Note: for a negative response, you may want to find out why.*

11. **Weight**
    
    ___ ___ (kg's)

12. How many days of the last six months have you been under the Mental Health Act?
    
    Number of Days: ______

13. Are you currently taking any psychiatric medications?
    
    Yes No
    
    list_____________________________________

14. **Substance Abuse Treatment Scale**
    
    (Note: score '0' if no substances misuse)
    
    | 1=Pre-engagement | 2=Engagement | 3=Early Persuasion | 4=Late Persuasion |
    | 5=Early Active Treatment | 6=Late Active Treatment | 7=Relapse Prevention (>6 months) | 8=in remission or recovery (>1 year) |

---

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4. **Use of Respite since 6 month evaluation**

*Note: If the client is still in Respite at time of this review, do not include episode in this assessment (it will be recorded at 18 month follow-up). Remember to include any respite that was still occurring when 6 month evaluation was completed.*

<table>
<thead>
<tr>
<th></th>
<th>First stay</th>
<th>Second stay</th>
<th>Third stay</th>
<th>Fourth stay</th>
<th>Fifth stay</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Respite</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Length of stay (days)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reason for respite</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key**

<table>
<thead>
<tr>
<th>Type of Respite</th>
<th>Reason for admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>0= None</td>
<td>0= Not applicable</td>
</tr>
<tr>
<td>1=planned</td>
<td>1= deterioration of psychotic illness</td>
</tr>
<tr>
<td>2=crisis</td>
<td>2= Other major psychiatric illness but non-psychotic e.g. major depression</td>
</tr>
<tr>
<td></td>
<td>3= Carer relief respite</td>
</tr>
<tr>
<td></td>
<td>4= Carer safety</td>
</tr>
<tr>
<td></td>
<td>5= Safety for client</td>
</tr>
<tr>
<td></td>
<td>6= &quot;time-out&quot; for client</td>
</tr>
<tr>
<td></td>
<td>7= No other accommodation available</td>
</tr>
<tr>
<td></td>
<td>8= Other; specify_____</td>
</tr>
</tbody>
</table>

5. **Self-harm**

Report here if the client had the intention to commit self-harm, regardless of your judgement as to the intended seriousness of the action. Record the approximate number of occurrences of each type of behaviour in the last 6 months:

<table>
<thead>
<tr>
<th>Type of self-harm</th>
<th>attempted suicide</th>
<th>self battery</th>
<th>self laceration</th>
<th>self poisoning</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency of occurrence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If other; specify:____________________________________

<table>
<thead>
<tr>
<th>Frequency of occurrence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>never</td>
</tr>
<tr>
<td>1</td>
<td>hardly ever</td>
</tr>
<tr>
<td>2</td>
<td>occasionally</td>
</tr>
<tr>
<td>3</td>
<td>frequently</td>
</tr>
<tr>
<td>4</td>
<td>regularly</td>
</tr>
<tr>
<td>9</td>
<td>unknown</td>
</tr>
</tbody>
</table>
16) Quality of Life Scale

**Interpersonal Relationships and Social Network**

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Household member</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2) Friends</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3) Acquaintances</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4) Social activity</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5) Social network</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6) Social initiatives</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7) Social relations</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8) Socio sexual relations</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Instrumental Role Functioning**

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>9) Extent</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10) Adequacy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11) Under employment</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12) Satisfaction</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Intrapsychic Foundations and Common Objects and Activities**

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>13) Sense of purpose</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14) Motivation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15) Curiosity</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16) Anhedonia</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17) Time Utilisation</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18) Objects</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19) Activities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20) Empathy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21) Interaction</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Factor Scores:**
- Interpersonal relations (1-8)
- Instrumental role (9-11)
- Intrapsychic foundations (13-17, 20, 21)
- Common objects & activities (18, 19)

**Total Score:** (Items 1-11 and 13-21)
Living Situation (circle)
1 Living with parents/Whānau
2 Flatting with others
3 Boarding
4 Living with partner and/or children

Level of Education (Circle the highest)
0 No Qualification
1 5th-9th Form (Year 11, 12, 13) / NCEA
2 Vocational qualification (Polytech/Diploma etc.)
   Started _____________ Completed _____________
3 University Degree
   Started _____________ Completed _____________

Tick if currently studying elsewhere ______________

Physiological Measures
- Height at 6 months (cm)
- Weight at 6 months (kg)
- Waist Circumference (cm)

Fasting Lipids/Glucose
- HDL
- LDL
- Triglycerides
- Total
- Proactin

Date recorded ________________

Global Assessment of Functioning Scale

Instructions on Scoring
Consider psychological, social, and occupational functioning on a hypothetical continuum of mental health-illness. Do not include impairment in functioning due to physical (or environmental) limitations. Code (Note: Use international codes when appropriate e.g. 45, 68, 72).

91-100 Superior functioning in a wide range of activities, life's problems never seem to get out of hand, is sought out by others because of his or her many positive qualities. No symptoms.

81-90 Absent or minimal symptoms (e.g. mild anxiety before an exam), good functioning in all areas, interested and involved in a wide range of activities, socially effective, generally satisfied with life, no more than everyday problems or concerns (e.g. an occasional argument with family members).

71-80 If symptoms are present, they are transient and expected reactions to psychosocial stresses (e.g. difficulty concentrating after family argument), no more than slight impairment in social, occupational, or school functioning (temporarily falling behind in schoolwork).

61-70 Some mild symptoms (e.g. depressed mood and mild insomnia) or some difficulty in social, occupational, or school functioning (e.g. occasional truancy, or theft within the household), but generally functioning pretty well, has some meaningful interpersonal relationships.

51-60 Moderate symptoms (e.g. flat affect and circumstantial speech, occasional panic attacks) OR moderate difficulty in social, occupational, or school functioning (e.g. few friends, conflicts with peers or co-workers).

41-50 Serious symptoms (e.g. suicidal ideation, severe obsessional rituals, frequent shoplifting) OR any serious impairment in social, occupational, or school functioning (e.g. no friends, unable to keep a job).

31-40 Some impairment in reality testing or communication (e.g. speech is at times illogical, obscure, or irrelevant) OR major impairment in several areas, such as work or school, family relations, judgment, thinking, or mood (e.g. depressed man avoids friends, neglects family, and is unable to work; child frequently beats up younger children, is defiant at home, and is failing at school).

21-30 Behaviour is considerably influenced by delusions or hallucinations OR serious impairment in communication or judgment (e.g. sometimes incoherent, acts grossly inappropriately, suicidal preoccupation)

11-20 OR inability to function in almost all areas (e.g. stays in bed all day, no job, home, or friends).

1-10 Some danger of hurting self or others (e.g. suicide attempts without clear expectation of death; frequently violent, manic excitement) OR occasionally fails to maintain minimal personal hygiene (e.g. unshaven face) OR gross impairment in communication (e.g. largely incoherent or mute).

0 Inadequate Information.

SCORE 126
15) HoNOS Chart
Enter the severity rating for each item in the corresponding item box to the right of the item.
Rate a 9 if Not Known or Not Applicable.

<table>
<thead>
<tr>
<th>Item</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Overactive, aggressive, disruptive</td>
<td>0</td>
</tr>
<tr>
<td>2) Non-accidental self-injury</td>
<td>0</td>
</tr>
<tr>
<td>3) Problem Drinking or drug taking</td>
<td>0</td>
</tr>
<tr>
<td>4) Cognitive problems</td>
<td>0</td>
</tr>
<tr>
<td>5) Physical illness or disability problems</td>
<td>0</td>
</tr>
<tr>
<td>6) Problems with hallucinations and delusions</td>
<td>0</td>
</tr>
<tr>
<td>7) Problems with depressed mood</td>
<td>0</td>
</tr>
<tr>
<td>8) Other mental and behavioral problems</td>
<td>0</td>
</tr>
<tr>
<td>Specify</td>
<td></td>
</tr>
<tr>
<td>9) Problems with relationships</td>
<td>0</td>
</tr>
<tr>
<td>10) Problems with activities of daily living</td>
<td>0</td>
</tr>
<tr>
<td>11) Problems with living conditions</td>
<td>0</td>
</tr>
<tr>
<td>12) Problems with occupation and activities</td>
<td>0</td>
</tr>
</tbody>
</table>

Total

127
6. **Aggressive/threatening behaviour**

*Record up to five separate incidents of aggressive/threatening behaviour in the last six months.*

<table>
<thead>
<tr>
<th>Type of behaviour</th>
<th>Frequency of occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = services</td>
<td>2 = police</td>
</tr>
<tr>
<td>3 = family</td>
<td>4 = strangers</td>
</tr>
<tr>
<td>5 = work</td>
<td>6 = other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of behaviour</th>
<th>Frequency of occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Towards psychiatric service providers</td>
<td>0 = never</td>
</tr>
<tr>
<td>2  Towards police</td>
<td>1 = hardly ever</td>
</tr>
<tr>
<td>3  Towards family/friends</td>
<td>2 = occasionally</td>
</tr>
<tr>
<td>4  Towards strangers</td>
<td>3 = frequently</td>
</tr>
<tr>
<td>5  Towards work colleagues</td>
<td>4 = regularly</td>
</tr>
<tr>
<td>6  Others</td>
<td>9 = unknown</td>
</tr>
</tbody>
</table>

specify:

7. **Forensic**

**Type of offence:**

1. Crimes against persons (e.g., assault, menacing, coercion)
2. Crimes against property (e.g., robbery, arson, forgery)
3. Sexual offences (e.g., rape, sexual abuse, sexual harassment)
4. Drug offences e.g., dealing (not just using)
5. Driving violations
6. Victimless crimes (e.g., public nuisance, public intoxication)
7. Soliciting
8. Other; specify:

<table>
<thead>
<tr>
<th>Type of offence</th>
<th>Frequency of occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of occurrence</th>
<th>Consequence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 = never</td>
<td>0 = Not applicable</td>
</tr>
<tr>
<td>1 = hardly ever</td>
<td>1 = Jail term</td>
</tr>
<tr>
<td>2 = occasionally</td>
<td>2 = Fine/probation/suspended sentence etc.</td>
</tr>
<tr>
<td>3 = frequently</td>
<td>3 = Caution</td>
</tr>
<tr>
<td>4 = regularly</td>
<td>4 = Illegal behaviour, but no contact with criminal justice system</td>
</tr>
<tr>
<td>9 = unknown</td>
<td>5 = Awaiting outcome Note: outcome to be entered at one year assessment</td>
</tr>
</tbody>
</table>

8. **Compliance with medication during last 6 months**

- No medication currently 9
- No compliance with medication 0
- Minimal compliance with medication 1
- Some compliance with medication occasional refusal/"forgetting" 2
- Moderate compliance with medication 3
- Excellent compliance with medication 4
h) Have family members attended the introductory family group?

i) introductory family group available?  
Yes 1  No 0

ii) introductory family group appropriate?  
1  0

If not appropriate, why? [leave blank if appropriate]

family out of town 1
non-disclosure issues 2
language/cultural issues 3
no contact with family 4
other, specify: ____________________ 5

Attendance/Compliance

No attendance/compliance 0
Sporadic or irregular attendance/compliance (frequently absent) 1
Reasonable attendance/compliance 2
Full and regular attendance/compliance as required 3

3. Hospitalisation/Rehospitalisation since 6 month evaluation

Note: If the client is still hospitalised at time of this review, do not include episode in this assessment (it will be recorded at 18 month follow-up). Remember to include any admission that was still occurring when 6 month evaluation was completed.

<table>
<thead>
<tr>
<th>Type of hospital</th>
<th>First admission</th>
<th>Second Admission</th>
<th>Third Admission</th>
<th>Fourth admission</th>
<th>Fifth admission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of stay (days)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reason for admission</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Was MHA used? Y/N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key

Type of Hospital
0= None
1= Psychiatric Hospital
2= Public Hospital: non-psychiatric ward

Reason for admission
0= Not applicable
1= Relapse of psychotic illness
2= Other major psychiatric illness but non-psychotic e.g. major depression
3= Medical-psychois related
4= Medical-not psychosis related
5= Other
Example of Psychiatrist Assessment Research questions

PSYCHIATRIST ASSESSMENT- TWELVE MONTH INTERVIEW

Place patient label here

Client Hospital Number: ____________________________
Client ID Number: ____________________________
Client Name: ____________________________
Interviewer: ____________________________
Date of this Interview: __________/________/____

1. Extrapyramidal Symptoms:
   Client is currently prescribed medications: yes no
   1 2
   if 'no' go to question 2

   Is there evidence of Extrapyramidal Symptoms: yes no
   If yes, specify: ____________________________ mild moderate severe
   list current medications :

   ____________________________
   ____________________________
   ____________________________

   130
2. **Axis I**
   a) Axis I diagnosis?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

b) **Primary Psychotic Disorder**
- Schizophrenia *(specify subtype if identifiable)*
  1
- Schizopreniform Disorder
  2
- Schizoaffective Disorder- bipolar type
  3
- Schizoaffective Disorder- depressive type
  4
- Brief Psychotic Disorder
  5
- Delusional Disorder *(include shared psychotic disorder)*
  6
- Psychotic Disorder due to a general medical condition (GMC)
  7
- Substance-induced Psychotic Disorder
  8
- Psychotic Disorder NOS
  9
- No Primary Psychotic Disorder
  0

3. **Mood Disorders**

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Not present</th>
<th>Current</th>
<th>Ever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bipolar I Disorder</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Bipolar II Disorder</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Cyclothymia</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Bipolar Disorder NOS</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mood Disorder due to GMC</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Substance-induced mood disorder</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Mood Disorder NOS</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Major Depressive Disorder</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dysthymic Disorder</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Depressive Disorder NOS</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

4a. Severity- current episode

<table>
<thead>
<tr>
<th>Severity</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td>0</td>
</tr>
<tr>
<td>Unspecified</td>
<td>1</td>
</tr>
<tr>
<td>Mild</td>
<td>2</td>
</tr>
<tr>
<td>Moderate</td>
<td>3</td>
</tr>
<tr>
<td>Severe without psychotic features</td>
<td>4</td>
</tr>
<tr>
<td>Severe with mood congruent psychotic features</td>
<td>5</td>
</tr>
<tr>
<td>Severe with mood incongruent psychotic features</td>
<td>6</td>
</tr>
<tr>
<td>currently well</td>
<td>7</td>
</tr>
</tbody>
</table>

4b. If mood disorder is bipolar; state if severity of current episode [from 4a above] is manic or depressive in nature.

<table>
<thead>
<tr>
<th>Manic</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive</td>
<td>2</td>
</tr>
<tr>
<td>not applicable [no bipolar mood disorder]</td>
<td>0</td>
</tr>
<tr>
<td>not applicable [currently well]</td>
<td>0</td>
</tr>
</tbody>
</table>
5. **Psychoactive Substance Use Disorders** (circle appropriate number for each substance)

<table>
<thead>
<tr>
<th>Substance</th>
<th>not used</th>
<th>1 mon</th>
<th>1 mont</th>
<th>1 mont</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Cannabis</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Opioids</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sedatives</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Stimulants</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Hallucinogens</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Inhalants</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Nicotine</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other (see below)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Polydrug (3+)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

if Other; specify: ____________________________

9. **Axis V**

   **Current** Global Assessment of Functioning (GAF) Score:
10. **Symptom Assessment: PANSS**

*Instructions:* Refer to rating criteria for item definitions and descriptions of anchoring points. Enter your rating from 1 to 7 for each item of the subscales listed below.

<table>
<thead>
<tr>
<th>Severity Rating Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 = absent</td>
</tr>
<tr>
<td>2 = minimal</td>
</tr>
<tr>
<td>3 = mild</td>
</tr>
<tr>
<td>4 = moderate</td>
</tr>
<tr>
<td>5 = moderately severe</td>
</tr>
<tr>
<td>6 = severe</td>
</tr>
<tr>
<td>7 = extreme</td>
</tr>
</tbody>
</table>

**POSITIVE SUBSCALE**
- P1 Delusions
- P2 Conceptual Disorganisation
- P3 Hallucinatory Behaviour
- P4 Excitement
- P5 Grandiosity
- P6 Suspiciousness/persecution
- P7 Hostility

**NEGATIVE SUBSCALE**
- N1 Blunted affect
- N2 Emotional withdrawal
- N3 Poor rapport
- N4 Passive/apathetic social withdrawal
- N5 Difficulty in abstract thinking
- N6 Lack of spontaneity and flow of conversation
- N7 Stereotyped thinking

**GENERAL PSYCHOPATHOLOGY SUBSCALE**
- G1 Somatic concern
- G2 Anxiety
- G3 Guilt feeling
- G4 Tension
- G5 Mannerism and posturing
- G6 Depression
- G7 Motor retardation
- G8 Uncooperativeness
- G9 Unusual thought content
- G10 Disorientation
- G11 Poor attention
- G12 Lack of judgement and insight
- G13 Disturbance of volition
- G14 Poor impulse control
- G15 Preoccupation
- G16 Active social aviodance

PANSS Positive
PANSS Negative
PANSS General
PANSS Total
11. **Insight**

1a. Does patient accept (includes passive acceptance) treatment (medication and/or admission and/or other physical and psychological therapies)?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(may rarely question need for treatment)</td>
<td>Often</td>
</tr>
<tr>
<td>1</td>
<td>(may occasionally question need for treatment)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td>(ask why____________________________________________)</td>
<td>Never</td>
</tr>
</tbody>
</table>

*If patient answers "never" for 1a, go to question 12-2a*

1b. Does patient ask for treatment unprompted?

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(excludes inappropriate requests for medication etc.)</td>
<td>Often</td>
</tr>
<tr>
<td>1</td>
<td>(rate here if forgetfulness/disorganisation leads to occasional requests only)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td>(accepts treatment after prompting)</td>
<td>Never</td>
</tr>
</tbody>
</table>

**2a. Ask patient:** "Do you think you have an illness?" or "Do you think there is something wrong with you?" *(mental, physical, unspecified?)*

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(thought present most of the day, most days)</td>
<td>Often</td>
</tr>
<tr>
<td>1</td>
<td>(thought present occasionally)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td>(ask why doctors/others think they do____________________)</td>
<td>Never</td>
</tr>
</tbody>
</table>

*If patient answers "never" for 2a, go to question 12-3a*

2b. **Ask patient:** "Do you think you have a mental/psychiatric illness?"

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>(thought present occasionally)</td>
<td>Often</td>
</tr>
<tr>
<td>1</td>
<td>(ask why doctors/others think they do____________________)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td></td>
<td>Never</td>
</tr>
</tbody>
</table>

*If patient answers "never" for 2b, go to question 12-3a*

2c. **Ask patient:** "How do you explain your illness?"

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>(reasonable account given based on plausible mechanisms appropriate given patient’s social, cultural, and education background e.g. excess stress, chemical imbalance, family history etc.)</td>
<td>Reasonable</td>
</tr>
<tr>
<td>1</td>
<td>(confused account given, repetition of overheard explanation without adequate understanding, or &quot;don’t know&quot;)</td>
<td>Confused</td>
</tr>
<tr>
<td>0</td>
<td>(delusional explanation)</td>
<td>Delusional</td>
</tr>
</tbody>
</table>

3a. **Ask patient:** "Do you think that the belief that......[insert specific delusion] is not happening/true?" or "Do you think that......[insert specific hallucination] is not really there/happening?"

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<tbody>
<tr>
<td>2</td>
<td>(thought present most of the day, most days)</td>
<td>Often</td>
</tr>
<tr>
<td>1</td>
<td>(thought present occasionally; minimum once per day)</td>
<td>Sometimes</td>
</tr>
<tr>
<td>0</td>
<td>(never)</td>
<td>Never</td>
</tr>
</tbody>
</table>
3b. Ask patient: “How do you explain these phenomena [the belief that...hearing that
voice/seeing that image, etc.1]?”

\[\text{part of my illness}\]

\[\text{reaction to outside event(s) [e.g. 'tiredness', 'stress', etc.]}\]

\[\text{attributed to outside forces [may be delusional]}\]

\[\text{Part of}\]

\[\text{Outside}\]

\[\text{Outside}\]

forces 0

12. **Relapses**

a) Psychotic relapse not involving hospitalisation during previous six months at

*Totara House*

*Note: This category is only for psychotic relapses that do not involve hospitalisation
or respite care (which are covered in case manager evaluation).*

<table>
<thead>
<tr>
<th>First relapse</th>
<th>Second relapse</th>
<th>Third relapse</th>
<th>Fourth relapse</th>
<th>Fifth relapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychotic relapse (duration in days)</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

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Appendix Two

Ethical Approval

Disability Ethics Committees

26 March 2010

Mr Mark Radford
Totara House
194 Bealey Avenue
Christchurch

Dear Mr Radford

Ethics ref: URA/10/EXP/012
Study title: More than Just Meds; Does adjunctive adventure/recreation based group therapy promote recovery and improve physical health in clients with first episode psychosis?

Thank you for the above application for expedited review which was reviewed by the Chairperson and Deputy Chairperson of the Upper South A Regional Ethics Committee.

I confirm that according to the Ethical Guidelines for Observational Studies: Observational Research, Audits and Related Activities, NEAC, December 2006, no ethics committee review is required.

Please note, however, that the organisation in which you wish to carry out the study may specify their own processes regarding notification or approval.

It is noted that you have undertaken Maori consultation for this study. If possible, the committee would like to have a copy of the written confirmation of consultation for our files.

Yours sincerely

[Signature]

Alleke Dierckx
Administrator
Upper South A Ethics Committee
Alleke_dierckx@moh.govt.nz

Upper South A Regional Ethics Committee
Ministry of Health
4th Floor, 250 Oxford Tor
PO Box 3877
Christchurch
Phone 033 372 3937
Fax 033 372 1015
Email: uppersouth_ethicscommittee@moh.govt.nz
20 May 2010

Mark Radford
Social Worker/Case Manager
Totara House
164 Bealey Avenue
Christchurch

Re: More than Just Meds: Does Adjunctive Adventure/Recreation Based Group Therapy Promote Recovery and Improve Physical Health in Clients with First Episode Psychosis?

Tēnā koe Mark,

Ka nui te mihi tenel ki a koe me tou roopu o ō Kaipapukorero ki te hapai o te kaupapa whakahirihaire mou, moku mo tatou katoa. Ko Rapuha Korero te mea nui. No reira tena koe me te roopu o ō Kaipapukorero, tena koutou katoa.

Thank you for submitting your research for Māori consultation to Te Komiti Whakarite. Te Komiti Whakarite recognises the effort you have made with regards to the following:

- Collection of ethnicity data.
- Recognising the relevance this research has on Māori consumers of your service.
- Providing this committee with statistics of which are important in understanding how your research impacts Māori health.
- Prior discussion with pertinent Māori staff within the multidisciplinary team.
- Discussion of your findings with study participants.

Te Komiti Whakarite has reviewed your research and is happy to support your research application. We do request you send this committee a summary of your findings. I attach the submitted Te Komiti Whakarite - CDHB Research Consultation Form on which this assessment is based.

Heoi ano

[Signature]

Tahu Potiki Stirling
Chairperson
Te Komiti Whakarite