

The Impact of Neighbourhood
Characteristics and Support on
Well-being, Housing Satisfaction,
and Residential Stability for People
with a Mental Illness.

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Abstract

The global burden of disease attributable to mental illness is high, and as a result people with serious mental illness are at greater risk of indicators of social exclusion, such as poverty, homelessness and social isolation. Since deinstitutionalisation began in the 1960s, a variety of housing and support models have been used for this group. ‘Housing first’ models are proving superior to ‘continuum of care’ models in achieving positive housing outcomes and improving indicators of social exclusion. Housing first programmes are also believed to be more effective as they offer consumers choice, are not contingent on treatment, and are, therefore, empowering and philosophically compatible with harm reduction and recovery approaches. The physical and social environments have also been found to influence housing satisfaction and well-being outcomes for this group, but are often poorly measured or inadequately defined in the few studies which have been conducted.

As little recent New Zealand research has examined housing, support and environmental effects for people with serious mental illness, this twelve-month prospective cohort study provides a more current account of the experiences of this group. Thirty six participants were recruited from a group of people with serious mental illness referred to the Comcare Housing Service for assistance to obtain independent, community-based housing. An examination of the variables influencing housing and overall well-being ratings was conducted. Peace and Kell’s (2001) sustainability framework, outlining four categories of resources required for this group to maintain housing, was also evaluated.

The results demonstrate the success of housing support in improving outcomes for people with serious mental illness, particularly in terms of improved housing quality and satisfaction, and residential stability. They also provide further evidence that this group have high rates of homelessness and are frequently in situations where they are at risk of homelessness. The physical environment appeared to have little influence on housing satisfaction or other well-being measures, however, the social environment seemed to play a role in higher ratings on these outcomes. Participants rehoused by Comcare Housing reported higher housing

satisfaction and fewer housing problems, indicating that the service was providing effective housing support.

Peace and Kell's framework is a good model for conceptualising housing for this group, although environmental and neighbourhood effects need to be included in the model in order for it to have international applicability. The omission of those at risk of homelessness from the New Zealand definition is a serious concern and has policy implications as support to address housing issues for this group may be neglected due to their invisibility in the statistics.

1 Introduction

1.1 The burden of mental illness

Mental illness contributes up to twelve per cent of the global burden of disease (World Health Organization, 2003). Unipolar depression, currently the primary cause of disability in high-income countries like New Zealand, is predicted, by 2030, to be the chief cause of loss of productivity due to disability worldwide (World Health Organization, 2008). Bipolar disorder, schizophrenia, and alcohol and drug abuse disorders all feature in the top twenty diseases currently causing moderate to severe disability in wealthy countries (World Health Organization, 2008).

Mental illness, though not usually fatal, contributes to a large number of years of diminished or lost productivity as it usually first affects people during young adulthood (Durie, 2001). In addition to loss of productivity, mental illness also creates social costs as those experiencing it are at higher risk of social exclusion (Shaw, Dorling, & Davey Smith, 2006) and discrimination (Corrigan et al., 2003; Mental Health Commission, 2007; Peterson, Pere, Sheehan, & Surgenor, 2004). There are also substantial economic costs both in terms of treatment provision and for families providing care (World Health Organization, 2003). In order to address the disease burden attributable to mental illness, the World Health Organization (WHO) (2003) contends that effective policy and planning, and funding equivalent to the cost of the loss in productivity is required.

In New Zealand, the Mason Report (1996) made similar assertions. As well as leading to ring-fencing of mental health funding within the health budget and increases in the total amount spent on services for people with serious mental illness, it contributed to the creation of the Mental Health Commission, which disseminates policy and service development guidelines and addresses stigma and discrimination through education (Mental Health Commission, 2007).

1.2 Housing and mental health

Housing for people who experience mental illness was the domain of the large mental hospitals until the 1950s. The development of anti-psychotic medication (Brunton, 1985), the desire to cut costs (Mirams, 1960), and a growing call from the public for a more humanitarian approach, led to policies of deinstitutionalisation in most western countries (Bennie, 1993). Deinstitutionalisation was often implemented rapidly and quickly highlighted the lack of comprehensive community-based mental health services. This vulnerable population was placed at greater risk of other indicators of mental health problems and social exclusion, such as poverty and homelessness (Durie, 2001; World Health Organization, 2003).

There were few studies examining community-based housing services for this group, and clinicians and researchers recognised the need for research into the types of housing and support services required to assist people with serious mental illness to live well in the community (Baker & Douglas, 1990; Bennie, 1993; Carling, 1990).

Early community housing programmes for people with mental illness tended to use group home, boarding house, or halfway house models. They were criticised as resembling ‘mini-institutions’ (Durie, 2001) but provided a safe and stable living environment for residents, and are models still in use. In recent decades, as the consumer movement has strengthened and had input in service development, community-based housing for people with mental illness has moved away from staffed residences, through a range of models, to independent housing where supports are provided to individuals in their homes when they want and need them (eg. Mares & Rosenheck, 2004; Tsemberis, Gulcur, & Nakae, 2004).

1.3 Housing and mental health research

Developments in housing provision have been paralleled in the methods researchers use. Early research tended to use medically focused outcome measures (eg. Macmillan, Hornblow, & Baird, 1992; Sheerin & Gale, 1984) and indicated that a minimal level of input

was sufficient to maintain people with mental illness in the community. More recent studies have recognised that satisfaction ratings (eg. Forchuk, Nelson, & Hall, 2006; Siegel et al., 2006), participant well-being (eg. Nelson, Hall, & Walsh-Bowers, 1998; Prince & Gerber, 2005), and consumer preference (eg. Forchuk, Ward-Griffin, Csiernik, & Turner, 2006; Piat et al., 2008) are important outcomes which can contribute to improvement in some of the clinical outcomes used previously. These later studies suggest that a variety of forms of effective support are required to avoid social exclusion and to enable people to lead productive lives.

Housing and neighbourhood environments are known to have an effect on mental health and other life indicators (Halpern, 1995; Sampson, Morenoff, & Gannon-Rowley, 2002). Growing numbers of studies have investigated the role of housing quality and the local neighbourhood in mental health outcomes (eg. Harkness, Newman, & Salkever, 2004; Mares, Desai, & Rosenheck, 2005). Other studies have examined specific neighbourhood problems, such as safety, noise, traffic, and facilities, and their effect on well-being and satisfaction ratings (eg. Granerud & Severinsson, 2003; Rosenheck et al., 2001). However, as yet, results indicating which features are most successful in enabling positive outcomes for people with mental illness have been inconsistent (Leff et al., 2009; Newman & Goldman, 2008).

Another aspect of neighbourhoods that has received research attention recently is the effect of neighbour relationships on social cohesion and social capital, and the ability of these to mediate negative perceptions of the neighbourhood. There are several theories about how neighbourhood relationships affect feelings of community (eg. Macintyre, Hiscock, Kearns, & Ellaway, 2001; Trute & Segal, 1976; Witten, McCreanor, & Kearns, 2003) but findings have often been contradictory (eg. Mares, et al., 2005; Newman, Reschovsky, Kaneda, & Hendrick, 1994; Yanos, Felton, Tsemberis, & Frye, 2007).

1.4 Mental health in New Zealand

Te Rau Hinengaro (2006), conducted as part of the WHO World Mental Health Surveys (see Kessler & Ustun, 2008), was the first national survey of mental illness in New Zealand. It

found that the twelve-month prevalence of serious mental disorder was 4.7 per cent (Oakley Browne, et al., 2006). This is higher than countries such as Japan (1.5 per cent), Germany (1.2 per cent), and France (2.7 per cent), but lower than the United States (US) (7.7 per cent) and Colombia (5.2 per cent) (The WHO World Mental Health Survey Consortium, 2004). Assuming comparable sampling and diagnostic procedures, this suggests that a greater proportion of the burden of disease can be ascribed to mental illness in New Zealand than in some other countries. In contrast, New Zealand compares well with most other countries for receipt of assistance from health care providers in the previous twelve months. Oakley Browne, Wells and Scott (2006) suggest that fifty-eight per cent of those with serious disorder received assistance from health care providers in the previous twelve months, although using Mental Health Commission (1998) figures, Peace and Kell (2001) estimated that only forty per cent received services.

New Zealand's ethnic composition seems to affect the prevalence of mental illness; 6.1 per cent of Maori, 4.1 per cent of Pacific people, and 4.5 per cent of Others were found to have experienced serious mental illness when socio-demographic correlates were adjusted for (Oakley Browne, et al., 2006). Recognition of this and a growing acknowledgement of mainstream mental health services' inability to address the cultural needs of some ethnic groups have led to the development of culture-based services in New Zealand (Mason, et al., 1996; Mental Health Commission, 2007). Both Maori and Pacific Island concepts of health take a holistic view (Lui, 2007; Semmons, 2006). Maori cultural values, processes, and beliefs form the foundation of Kaupapa Maori services (Durie, 2001), likewise the Pacific Island cultures provide the philosophical basis for services for Pacific Island consumers (Mental Health Commission, 2007).

Te Rau Hinengaro's results have some limitations. As it was a community-based study, it excluded people living in institutions, who are likely to have higher rates of serious mental illness than the community population. In addition, less common diagnoses, such as schizophrenia, were excluded from the interview schedule due to the number of false

positives found in early testing. These exclusions, while avoiding other methodological complications, further underestimate the level of serious mental illness in New Zealand.

In 1999, the Mental Health Commission published a paper which stressed the importance of adequate and suitable housing in recovery from serious mental illness. It also emphasized several areas which were affecting the attainment of this.

“Those problems range from: low and uncertain income, loss of a home and possessions, occasional difficulties in managing their housing arrangements due to acute illness, significant fluctuations in health status and needs and consequent housing requirements, occasional or on-going needs for home-based support, and vulnerability to discrimination in the rental and lending markets.” (p. 23).

The paper concluded that both a coordinated approach to policy development by the various government departments involved in the care of, and service provision to, people with serious mental illness, and a research programme focused on the housing needs of this population and factors which contribute to successful housing outcomes were necessary to resolve housing issues for this group (Mental Health Commission, 1999).

1.5 Research into mental health and housing in New Zealand

Since the early work by Smith, Kearns and others (eg. Kearns, 1990; Kearns, Smith, & Abbott, 1991b; C. A. Smith, Smith, Kearns, & Abbott, 1994; C. J. Smith, Smith, Kearns, & Abbott, 1993), housing for people who experience serious mental illness, while highlighted as a problem by other authors (eg. Durie, 2001), has not been addressed by either an effective research programme or the development of policies to address the housing inequalities experienced by this group. A government work programme to investigate the housing needs of people with mental illness was established following the Mental Health Commission's report in 1999 (Peace, Kell, Pere, Marshall, & Ballantyne, 2002). An initial achievement of the programme was estimating the number of people with serious mental illness experiencing housing difficulty, and suggested that as many as eight thousand (seventeen per cent) were experiencing housing difficulty and up to two thousand (four per cent) were homeless or living in temporary or emergency accommodation (Peace & Kell, 2001). This may be an

underestimate, as the current research (Oakley Browne, et al., 2006) suggests that the prevalence of serious mental illness is higher than that on which Peace and Kell based their calculations.

Through their research, Peace and Kell (2001) developed a sustainability framework, arguing that four separate categories of resources are necessary for people with serious mental illness to maintain community living: a regulatory environment which addresses land, building and housing legislation and upholds human rights; material resources, including adequate income and appropriate housing; effective support services for the diverse range of needs found amongst this group; and social resources, including family/whanau and friends, community and cultural networks. Unfortunately, while this research was being conducted, the committee overseeing the work programme was disestablished and no further government guided research or policy development has specifically addressed the housing needs of people who experience serious mental illness.

Independent research into the housing needs of people with serious mental illness has also been conducted in New Zealand (eg. Kearns, 1990; Kearns, et al., 1991b; Macmillan, et al., 1992; Sheerin & Gale, 1984). However, as limited research has been conducted recently, little is known about the current housing experiences of this population.

Studies in related areas have focused on issues such as housing quality (eg. Howden-Chapman et al., 2007; Jera, 2005), heating and fuel poverty (eg. Isaacs et al., 2004; Lloyd, 2006), and homelessness (eg. Al-Nasrallah et al., 2005; Marsh, 2006). While these studies did not specifically associate their results with the experience of mental illness, study participants were often on low incomes and experiencing housing-related stress, thus their circumstances were likely to be similar to those with mental illness, providing further information regarding housing experiences for this group.

1.6 The aims and approach of this thesis

This thesis sought to provide a more current understanding of the housing environments and experiences of people with serious mental illness in New Zealand. The housing experiences of a group of Christchurch residents who experience serious mental illness and were referred to Comcare Trust for housing support were assessed at two time periods and used to investigate the circumstances of this group and to enable comparison with earlier New Zealand studies and research conducted internationally.

Peace and Kell's (2001) sustainability framework provided the theoretical basis for this study. The effect of the current regulatory framework on the material, support, and social resources of the participants was investigated. Relationships between material resources, including income, housing, and neighbourhood features and amenities, and housing and other satisfaction variables were explored to determine the optimal physical housing environment for people with serious mental illness. Likewise, formal support service delivery and the effect of informal social and community networks were examined to ascertain support requirements for this group to maintain tenure in independent community housing. Finally, this thesis assessed aspects of the Comcare Housing Service in order to make recommendations for future service development.

Christchurch is a moderately sized city by international standards, with reasonable public transport and a relatively low crime rate, particularly in terms of violent crime. Its population is less ethnically diverse than the national average and has comparatively fewer Maori (7.6 per cent) and Pacific Island (2.8 per cent) residents (Statistics New Zealand, 2006). It is unusual in New Zealand as its city council still has a role in housing provision (Mental Health Commission, 1999). There are also several smaller non-government social housing providers in Christchurch, including the Salvation Army, City Mission, YWCA, residential care providers and Comcare Trust.

1.7 Organisation of the thesis

Chapter 2 outlines current themes in the literature concerning provision of housing and support services for people with serious mental illness; the historical development of a New Zealand strategy for community-based housing and support for those with mental illness, and the effect of other government policies on the living circumstances of this group. New Zealand research on housing for people with mental illness is included in this chapter. Chapter 3 examines the literature concerned with environmental, particularly neighbourhood, effects on housing for people with serious mental illness. Studies discussed in this section come from a wide variety of research areas and are linked to what is currently known about neighbourhood and neighbour interactions for this group. Theories and research exploring the influence of the social environment on health, satisfaction, and well-being outcomes are also discussed.

Chapter 4 contains the methodology section. It explains sample selection and recruitment, details the statistical analyses employed and the reasons for their use, and compares the study sample to the broader group from which it was drawn. The results section is presented in Chapters 5 and 6. Chapter 5 provides a descriptive analysis of the sample, including demographic details, economic and housing circumstances, and neighbour and neighbourhood satisfaction. Relationships between these variables are also investigated. Chapter 6 seeks to elucidate links between well-being satisfaction ratings, and housing and neighbourhood variables. Regression is used for some of this analysis. Chapter 6 also includes an assessment of aspects of the Comcare Housing Service.

Chapter 7 discusses the results within the context of Peace and Kell's (2001) sustainability framework and compares them with other findings in the literature. Limitations of the study are considered and suggestions for future research are made. The results of the assessment of Comcare Housing are used to make recommendations for developments within the service. Chapter 8 provides final concluding remarks.

2 Mental Illness and Housing

2.1 Approach to the literature review

A clear understanding of the current issues and relevant literature was required before undertaking this study. An awareness of the historical development of housing provision, and concomitant research programme, for people who experience serious mental illness was also necessary. A literature search was conducted to find studies, reviews and meta-analyses which examined housing models and their effectiveness, satisfaction and well-being ratings, support service provision, and environmental effects.

Studies and articles for the review were found using online databases including Proquest, Medline, Sciencedirect and Psycinfo. Search terms used included hous*, support, mental*, ill*, disorder, and neigh*. New Zealand articles and research were found using Te Puna, New Zealand library, the Mental Health Commission and government websites.

Numerous published articles and books from a variety of countries and theoretical perspectives were found. The majority were from the United States (US) where the focus was on homelessness, and housing and support programmes which assist in the maintenance of tenure. Literature published in the United Kingdom (UK) tended to concentrate on the eradication of social exclusion and, therefore, focused on homelessness, fuel poverty, supported housing, and environmental effects. Other countries tended to lack an overriding research impetus, although Australia has targeted youth homelessness and the creation of a definition of homelessness. New Zealand had few, recent studies about housing for people with serious mental illness. Several small-scale studies about homelessness were found along with some Mental Health Commission and government reports and recommendations.

This chapter of the literature review examines the development of housing and support services for people with serious mental illness, while Chapter 3 examines environmental effects. Section 2.2 explains the importance of housing for health and well-being. This is followed by a discussion of homelessness and the development of a New Zealand definition.

The next section examines the development of housing models and support services to establish the factors important in assisting this group to maintain tenure in independent community-based housing. An explanation of the New Zealand context, including the effect of government policy on housing affordability and the development of services for this population, and research conducted thus far, is also included here. The chapter concludes by describing Christchurch, the city in which the study was conducted, and Comcare Trust, the organisation supporting the study participants.

2.2 Housing, health and well-being

Housing of an adequate standard that enhances health and well-being is a basic human right enshrined in Article 25 of the United Nations Declaration of Human Rights (1948). Housing which meets the needs of a household provides stability and opportunities for positive interactions outside the home (Hiscock, Macintyre, Kearns, & Ellaway, 2003; Jera, 2005; Johnson, 2005; Thorns, 2004). A wide variety of research has investigated the effect of poor quality, inappropriate, or no housing on health outcomes. While results have been conflicting, the majority of authors believe this is due to methodological problems, rather than lack of an effect attributable to housing improvement (Evans, Chan, Wells, & Saltzman, 2000; Thomson, Petticrew, & Morrison, 2002).

Several studies have investigated the effect of improvements in housing quality on non-clinical mental health ratings and found that psychological distress is decreased following housing improvement (Evans, et al., 2000; Thomson, et al., 2002). Thomson and colleagues (2002) found, in their review of studies, that housing improvement was followed by reductions in health service use and improvement in broad indicators of social inclusion. Other studies have examined the effect of housing problems for people with mental illness. Meltzer and colleagues (2002, cited in Johnson, 2005) found that people with mental health problems were more likely than the general population to report dissatisfaction with housing and attribute it to worsening health problems, while Johnson (2005) has suggested that

housing problems are a common reason for psychiatric hospital admissions. These studies provide evidence that housing quality influences mental health.

Poor quality housing and poverty are inextricably linked, and as such, the long-term effects of these types of social exclusion have serious implications in terms of life course disadvantage (Blane, 2006). The societal costs far outweigh the financial expense incurred addressing these causes of social exclusion.

Studies which examined the direct effects of specific housing improvements are discussed in the environmental section of the literature review (Section 3.2). The following section examines homelessness and the development of a New Zealand definition of homelessness.

2.3 Understanding homelessness

Homelessness is important in understanding housing issues for people who experience serious mental illness. International estimates of the numbers of homeless with mental illness vary widely, generally because of the lack of definitions about what constitutes homelessness, and the difficulties associated with enumerating such a highly mobile population. US estimates of the percentage of homeless who experience mental illness are typically about thirty per cent (Newman & Goldman, 2009; Shern et al., 2000), although some authors suggest it is much higher in the street-dwelling population (Tsemberis & Eisenberg, 2000). In the UK, estimates suggest as many as thirty-seven per cent of rough sleepers experience serious mental illness (Street to Home, 2009). These figures do not include those with substance use problems.

There are many different theories and definitions of homelessness (Anderson, 2007; Echenberg & Jensen, 2008; J. M. Smith, 2003; Toro, 2007). These are often dependent on the philosophical perspective of the authors (Chamberlain & MacKenzie, 1992). However, a definition of homelessness should be appropriate to the cultural context of a community, identify those at risk of homelessness, and enable calculation of the degree of the problem. This section examines international definitions of homelessness, looks at the New Zealand

definition recently developed by Statistics New Zealand, Housing New Zealand Corporation (HNZC) and the Ministry of Social Development (MSD), and tries to determine whether any of these definitions are appropriate in New Zealand, particularly for those who experience serious mental illness.

International definitions of homelessness have developed over the last thirty years. They have moved from physical definitions concerning lack of housing to include assessments of housing adequacy (Chamberlain & MacKenzie, 1992). While many countries have investigated the development of a definition of homelessness (Echenberg & Jensen, 2008), few have reached the stage of statutory legislation (Minnery & Greenhalgh, 2007). Lack of a statutory requirement means that government impetus to tackle problems for homeless people is low. Statutory definitions enable enumeration of the extent of the problem and targeting of funding for support services, housing and other initiatives.

The UK has had a statutory definition for over thirty years ("Housing (Homeless Persons) Act : UK," 1977), and whilst this has been adapted to take into account societal change over this period ("The 1996 Housing Act : UK," 1996; Homelessness Act : UK," 2002), many people are excluded from assistance as they are unable to complete the application process, do not meet criteria, are not eligible for priority rating, or are considered intentionally homeless for reasons such as non-payment of rent (Anderson, 2007). These criteria have been abolished in Scotland, and from 2012, all homeless there will receive government assistance (CRISIS, 2008). In Europe, the ETHOS definition is commonly used (European Federation of National Organisations Working with the Homeless (FEANTSA), 2007). It conceptualises housing as consisting of three domains – physical, social and legal. It uses the intersections of these domains to identify those who are roofless, houseless, or in inadequate or insecure housing. This enables not only assessment of those who are without housing, but also those who are at risk of homelessness. This definition has been investigated for use in Canada (Echenberg & Jensen, 2008).

In Australia, the definition in current use was developed by Chamberlain and colleagues (eg. Chamberlain & Johnson, 2001; Chamberlain & MacKenzie, 1992, 2003). It highlights three degrees of homelessness - primary, secondary and tertiary - and an at-risk population (Chamberlain & Johnson, 2001). People without any form of shelter are experiencing primary homelessness. Those who move frequently from one temporary situation to another are secondary homeless. Individuals living in single-occupancy rooms, such as boarding houses, are said to be experiencing tertiary homelessness. The at-risk population is those who may lose their housing. The authors believe that this definition allows homelessness to be measured objectively, much like poverty, removing any subjective element in assessing homelessness. The development of a definition of homelessness in Australia has been accompanied by extensive research to create a way of measuring not only street homelessness, but also to estimate, using census data, the number of people who are temporarily housed (Chamberlain & MacKenzie, 2008). Data from the 2006 Census indicated that 104,676 people were experiencing homelessness (Chamberlain & MacKenzie, 2008).

New Zealand is fortunate to have a small street-dwelling homeless population. Ninety-one people were found sleeping in central Auckland in June 2008 (Ellis & McLuckie, 2008). This is low in comparison with international rates (Canadian Institute for Health Information, 2007, cited in Echenberg & Jensen, 2008; Sermons & Henry, 2009; Street to Home, 2009). Homelessness in New Zealand is more commonly seen in the form of people staying temporarily with friends or family, overcrowding with more than one family living in a house (particularly common amongst Pacific Island families living in Auckland), and people living in housing where they have insecurity of tenure, such as boarding houses. Kearns and colleagues termed this 'incipient' homelessness (Kearns, Smith, & Abbott, 1992). This type of homelessness is difficult to quantify as this population is essentially invisible. The lack of visibility of a street-dwelling homeless population means that New Zealanders are, in general, relatively unaware that homelessness is a problem. Homeless people are viewed as a small minority who are 'deviant' in some way (Marsh, 2006). Media representations of homeless people perpetuate this view (Marsh, 2006).

The need for a New Zealand definition of homelessness protected by legislation was recognised by the 1980s. An early study in Christchurch found that seventy-seven per cent of people who approached social service and/or housing agencies for assistance with housing would have been considered homeless or at risk of homelessness using the UK Housing (Homeless Persons) Act (1977) definitions (Lea & Cole, 1983). In a similar study, Panofo (1985) estimated that seventy-five per cent of single women who approached agencies in Christchurch for housing support were physically homeless.

However, up until recently, attempts to define and tackle homelessness in New Zealand have lacked a planned, targeted or sustained approach. In 2007, at the second annual Homelessness Forum, the New Zealand Coalition to End Homelessness (NZCEH) was formed. The goal of the NZCEH is to end homelessness in New Zealand by 2020 (Wilkinson, 2008). Their recent focus has been the development of a definition of homelessness for the New Zealand context, as this could lead to legislation requiring the government to address issues relating to homelessness.

In 2008, Statistics New Zealand, in conjunction with HNZA and the MSD, undertook public consultation to create a definition of homelessness which was applicable to the housing and cultural needs of New Zealanders (Statistics New Zealand, 2009a). The ETHOS (2007) definition was chosen over that of Chamberlain and MacKenzie (2003) for adaptation to the New Zealand context. The use of the physical, social and legal domains to ascertain homelessness was preferred. However, the intersection of all three domains was the only aspect of homelessness included in the New Zealand definition. While those without shelter, in temporary accommodation, sharing accommodation or living in uninhabitable housing are counted as homeless, those who are at risk of homelessness (eg. facing eviction, due for release from an institution) and those who are living in substandard housing are not (Statistics New Zealand, 2009a). It is a concern that the New Zealand definition does not include categories for those at risk of homelessness. While it is suggested that the definition be used and reviewed in three to five years (Statistics New Zealand, 2009a), the omission of those at

risk of homelessness may result in an inability to clarify the at-risk population and lead to a lack of resources for services which assist in the prevention of homelessness.

In addition to studies investigating homelessness and the difficulties that people with serious mental illness have avoiding homeless experiences, a large body of research has examined the effectiveness of housing and support services for this group, using outcome variables such as residential stability, housing satisfaction, and overall well-being. The following section discusses some of the more pertinent findings in the literature.

2.4 Housing and mental illness

The body of research specifically focused on housing outcomes for people who experience serious mental illness has grown over the past few decades. Deinstitutionalisation policies in the US and the UK led to large numbers being discharged from the large institutions, in reasonably short timeframes, with little or no support in the community. In both countries, this contributed to an already growing homeless population. An increasing recognition that the costs of homelessness (Gladwell, 2006) are far greater than the cost of providing assistance to gain and maintain housing has led to a burgeoning literature examining the most efficacious living environments (eg. Mares, et al., 2005; Siegel, et al., 2006; Wolf, Burnam, Koegel, Sullivan, & Morton, 2001; Yanos, Barrow, & Tsemberis, 2004) and ideal types, intensities and timing of supports (eg. Forchuk, Ward-Griffin, et al., 2006; Pollio, Spitznagel, North, Thompson, & Foster, 2000; Prince & Gerber, 2005) which contribute to stable housing for individuals who experience serious mental illness. However, as a vast array of influences affect housing outcomes, the literature lacks guiding theories and a coherent approach (Leff, et al., 2009; Newman, 2001a; Newman & Goldman, 2008), and comparison of findings is difficult due to these inconsistencies.

This section examines homelessness, housing and support models, including clinician and consumer preferences, and housing satisfaction and its relationship to other quality of life outcomes for people with serious mental illness. Methodological difficulties that must be

overcome to produce replicable results conclude the section. The effects of the physical and social environments are discussed in more detail in Chapter 3.

2.4.1 Homelessness and mental illness

The disproportionately high numbers of homeless people who experience serious mental illness has led to a rapidly developing body of research examining the experiences of this group. There has been confusion as to whether mental illness itself is a contributing cause of homelessness, or whether homeless people with serious mental illness have causal factors in common with other homeless people. Mojtabai (2005) conducted a qualitative study asking a group of homeless people for their perceived reasons for loss of housing and continued homelessness. Though the sample was small and self-report data was used, the study found that the group which met criteria for mental illness and the group which did not gave similar reasons. The most commonly given reasons by both groups were financial and interpersonal problems. Mojtabai (2005) posited a general vulnerability hypothesis to explain these results, which suggested that aspects of social exclusion which cause other groups to become homeless, also lead to homelessness for those with serious mental illness. This population does not become homeless simply because of their illness.

Poverty has also been proposed as an explanation for the high numbers of people with serious mental illness in the homeless population (Draine, Salzer, Culhane, & Hadley, 2002). Serious mental illness frequently affects employment status and income, contributing to this group having a greater likelihood than the general population to experience poverty, therefore, resulting in a greater risk of homelessness. Although, it has been suggested that the lack of comparison studies with homeless people without mental health diagnoses has led to false inferences because of this narrow research focus (Draine, et al., 2002).

2.4.2 Housing mobility

Housing mobility, another aspect of the literature particularly related to homelessness and residential stability, has received little attention with regard to people with serious mental

illness. However, socially excluded groups have greater rates of housing mobility than the general population (Kearns, 2004), and evidence suggests that people with mental illness have higher rates of mobility than those with physical illnesses (Lix et al., 2006). Kearns (2004) posited 'push' factors, such as housing cost or eviction, as the most common reasons causing those in marginalised groups to move. While moving can have positive health effects through alleviating stress (Kearns & Smith, 1994, cited in Kearns, 2004), housing relocation can also disrupt social networks (Fried, 1966, cited in Thomson, et al., 2002). Further research on the causes of housing mobility among people with mental illness is necessary, as it could be possible to target interventions to prevent the need to move, minimising disruption to support networks.

2.4.3 Housing and support models

Research on effective housing models for people who experience serious mental illness has developed in tandem with developments in housing provision for this group (Leff, et al., 2009). Early housing programmes for those being released from hospitals resembled small institutions in community settings, with twenty-four hour staffing and strict rules governing acceptable behaviour. Research conducted at this time compared outcomes for those housed in supported living arrangements, such as group homes, with those housed in independent housing (Elliott, Taylor, & Kearns, 1990; Kennedy, 1989; Lurigio & Lewis, 1989; Segal, Silverman, & Baumohl, 1989). Several studies indicated that consumer preference was for independent housing (Schutt & Goldfinger, 1996; Schutt, Goldfinger, & Penk, 1997) and that satisfaction ratings were higher for those living in this type of housing (Seilheimer & Doyal, 1996). Clinicians' preferences were more conservative (Goldfinger & Schutt, 1996). This was likely due to concern for consumers' ability to cope in less restrictive settings and the belief that consumers sought independent apartments specifically to avoid the oversight of staff. However, studies suggested that consumers preferred independent living because they did not want to live with other consumers (Schutt & Goldfinger, 1996) and indicated that they generally wanted continued staff support (Goldfinger & Schutt, 1996).

This preference for independent living has been replicated in many studies (Mares & Rosenheck, 2004; Piat, et al., 2008; Wolf, et al., 2001) and appears to be unrelated to current living environment (Piat, et al., 2008), diagnosis and symptom level (Schutt & Goldfinger, 1996), or subjective quality of life (Wolf, et al., 2001). Growing acknowledgment of consumer choice has led to less structured and more independent housing models, with supports provided separately from the housing (Carling, 1990).

Much as deinstitutionalisation resulted from the recognition that policies of institutional care restricted the human rights of people with mental illness, the development of 'housing first' models grew from the realisation that as housing is a basic human right, the use of housing as coercion for treatment or support was ethically unsound and could affect consumers' ability to make choices, thus leading to disempowerment (Allen, 2003; Tsemberis, Moran, Shinn, Asmussen, & Shern, 2003). In addition, the provision of housing contingent on treatment or support had the potential to lead to homelessness if consumers refused aspects of treatment. There were also legal implications for the older 'continuum of care' approach in terms of tenancy law (Allen, 1996).

Housing first approaches also developed in response to the rejection of continuum of care models, as the research findings were clear that consumers wanted independent housing, and suggested that the best place for rehabilitation was in the housing that the consumer occupied long-term (Tsemberis, et al., 2004). Problems caused by the requirement to relocate, and the resultant loss of housing, when consumers needed a higher degree of care are also reasons why this approach has gained in popularity. Obtaining and maintaining a tenancy is not contingent on receiving supports or seeking mental health or addiction treatment (Greenwood, Schaefer-McDaniel, Winkel, & Tsemberis, 2005; Tsemberis, et al., 2004). However, use of services is encouraged and support is available when requested (Greenwood, et al., 2005; Padgett, Gulcur, & Tsemberis, 2006).

Housing first models have proved successful in enabling chronically homeless people with serious mental illness to maintain housing (Nelson, Aubry, & Lafrance, 2007; Tsemberis, et

al., 2004; Tsemberis, et al., 2003). It has been posited that the choice offered to consumers by housing first programmes is empowering, resulting in improved feelings of mastery and sense of coping, and decreases in psychiatric symptoms (Greenwood, et al., 2005).

Research examining the influence of formal support services on housing and other outcomes for people with serious mental illness has generally been conducted within the context of housing programmes. However, two studies in rural Iowa gathered information from both consumers and case managers regarding the adequacy and availability of support services (Rohland, 1996; Rohland, Friedrich, Hollingsworth, & Hradek, 1996). In general, both groups were happy with the support options offered and the accessibility of services. However, some consumers reported receiving services that they did not perceive as necessary, while low rates of use were identified for housing services and only sixty-two per cent of consumers were able to access emergency housing when it was required (Rohland, et al., 1996).

Pollio and colleagues have conducted several studies comparing service use for homeless and formerly homeless individuals with serious mental illness (Pollio, North, Thompson, Paquin, & Spitznagel, 1997; Pollio, et al., 2000; Thompson, Pollio, Eyrich, Bradbury, & North, 2004). Services available to participants included drop-in centres, counseling and transportation (Pollio, et al., 1997). The findings suggested that those who engaged well with services prior to obtaining housing were more likely to successfully maintain independent tenancies. The development of good personal relationships with support workers also appeared to be critical in achieving housing stability (Pollio, et al., 2000). They also posited that service use varied based on the stage individuals were at on their housing journey – high levels of service use prior to receiving housing which tapered off over time once housing was established (Pollio, et al., 1997; Pollio, et al., 2000).

The studies described above concurs with that of Susser and colleagues (1997), which using a randomised controlled trial, indicated that providing support at the critical period when formerly homeless individuals are newly housed and maintaining that support for nine

months following housing, resulted in fewer nights homeless for the intervention group compared with the control group up to eighteen months later. The support provided included assistance to strengthen relationships with family, friends and other services, and was posited to be successful because continuity of care was provided to participants during the crucial period establishing stable housing. This study also suggested that the development of good relationships with the participants was essential to the success of the intervention (Susser, et al., 1997).

In a study examining the effect of a programme providing housing supplements on housing outcomes and support needs, unmet support needs were found to increase over the duration of the study (Newman, et al., 1994). The authors suggested that this could have been due to a greater awareness of the supports available because of participation in the programme, an increased awareness of service needs because stable housing had enabled focus on other needs, or because of fluctuations that occurred as part of the disease course of mental illness (Newman, et al., 1994). Other authors have also indicated the need for a broad range of services following exit from homelessness to ensure that housing is maintained (Nelson, Aubry, et al., 2007; Wolf, et al., 2001).

In a more recent study, choice and control over formal support were found to be related to subjective quality of life, while more positive relationships with case managers were also related to improved outcomes (Forchuk, Nelson, et al., 2006). Forchuk, Ward-Griffin, Csiernik, and Turner (2006) conducted a qualitative study which examined consumers' experiences getting, keeping and losing housing. They posited that receipt of services during the housing establishment phase was imperative for successful housing outcomes but found that participants often could not access services in a timely manner.

The findings of research examining use of formal support services indicates that the provision of support during the early stages of the establishment of housing contributes to improved housing outcomes for people with serious mental illness. Several studies also suggest that this group frequently has unmet service needs, although this could be due to the cyclical nature of

mental illness. In addition, it appears to be essential that people with serious mental illness are able to develop positive and ongoing relationships with those providing formal support in order to achieve successful housing. The following section examines the influence of housing on satisfaction and quality of life outcomes.

2.4.4 The influence of housing on quality of life

Many studies have found that housing satisfaction increases with better quality, independent housing, particularly for people who were homeless prior to being housed (eg. Mares & Rosenheck, 2004; Schutt, et al., 1997; Seilheimer & Doyal, 1996; Wolf, et al., 2001), but satisfaction on other quality of life domains appears to be minimally affected by housing improvement alone (Nelson, Aubry, et al., 2007; Wolf, et al., 2001). Several studies have also indicated that those with higher levels of anxiety and depression are less likely to be satisfied with their housing (Schutt, et al., 1997; Siegel, et al., 2006) and with life in general (Schutt, et al., 1997).

A number of other studies have suggested that factors other than housing have an influence on broader quality of life outcomes (Forchuk, Nelson, et al., 2006; Nelson, Aubry, et al., 2007; Siegel, et al., 2006). In a review of studies comparing the effectiveness of housing and support, Nelson, Aubry, and Lafrance (2007) found that permanent housing and support programmes had positive effects for well-being and quality of life, indicating that in addition to suitable housing, support is an essential component of improved quality of life for people with serious mental illness. Nelson and colleagues (Nelson, Sylvestre, Aubry, George, & Trainor, 2007) posited empowerment theory to explain some of these results. They suggested that improvements in perceived quality of life can be derived from both increased housing quality and from the psychological benefits associated with having greater choice or control over housing environments.

The findings of the studies described above imply that quality of life is affected by a variety of influences. Improved housing quality and increased housing satisfaction seem to be

unrelated to outcomes on other quality of life measures. This suggests that further research examining a broader range of influences is necessary to ascertain other factors which could have an effect on quality of life for people with serious mental illness. The following section explores some of the criticisms outlined in the literature, with particular reference to methodological challenges.

2.4.5 Criticisms of the literature

The body of literature on housing, support and mental illness has been criticised for lacking a coordinated approach. Newman (2001a, 2001b) critiqued studies conducted over the previous twenty-five years and found problems with the ability of the studies to describe attributes critical in both the individual and the environment which enhanced the likelihood of maintaining independent living. Which housing programmes were most effective for which consumers had not been established. The literature had even failed to determine a consistent way of measuring outcomes and effectiveness. Newman suggested housing should be considered as either an input, an outcome, or as both an input and an outcome. Housing as an input views housing characteristics as independent variables with the outcome some non-housing factor. Housing as an outcome sees housing attributes as dependent variables which need to be explained. Housing as both input and outcome conceptualizes housing variables as both independent and dependent variables.

These criticisms have been reevaluated more recently (Leff, et al., 2009; Newman & Goldman, 2008, 2009) and three main findings have been confirmed since 2001: it is possible for people with serious mental illness to live stably in independent housing in the community; problems with discrimination may be affecting the ability of some people to get housing; and different models of case management appear to have different effects on housing stability (Newman & Goldman, 2008). However, methodological problems, including lack of clarification of interventions and participant characteristics (Leff, et al., 2009), lack of control or comparison groups, and poor use of statistical techniques (Newman & Goldman, 2009), still limit the comparability of studies. Newman and Goldman (2008) advocate a

major research programme of rigorously designed studies to overcome these methodological issues and provide useful results which can contribute to the development of more effective housing and support services for people with serious mental illness.

One reason that the literature lacks consistency is because rapid changes in mental health and housing policy and in the provision of services has made it difficult to develop an approach to studying housing and support for this group (Leff, et al., 2009). The current preference, particularly among consumers, is no longer clustered, segregated housing with support services onsite. Independent, community-based housing where supports can be called in when required by the consumer is favoured. In addition, as housing for this group was originally the responsibility of hospitals, and support is still generally provided by health agencies, recognition that government policies and housing provision need to consider this population has been slow.

The international research and literature enhance understanding of developments in New Zealand, however, as New Zealand is unique in terms of cultural and ethnic makeup, and government development of policy and services for people who experience serious mental illness, the following section gives an historical background to the development of housing and support services in the current context.

2.5 The New Zealand Context

In New Zealand, there is limited research and little government policy investigating or addressing homelessness and housing needs for specific groups, including those experiencing serious mental illness. WHO (2003) asserts that in addition to health policy, other government policies have the power to influence the mental health of a country. This is particularly true of housing policy, although income support policies and those which address social exclusion can also affect living circumstances and outcomes for people with mental illness. In the previous two decades, New Zealand has seen several large changes in the composition of the health system, major shifts in housing policy, the introduction of a new Mental Health Act (1992) and privacy laws. These changes have had an impact on all sectors

of society, but they have had a particular effect on those who experience serious mental illness.

Within New Zealand's history of the care and treatment of people with mental illness, three interrelated themes can be identified: these are accommodation, discrimination, and staffing and support. Challenges relating to accommodation include overcrowding (Bloomfield, 2001; Brunton, 1972; Philp, 2001), rundown and poor quality buildings (Bloomfield, 2001), and the provision of separate housing for different patient subgroups to enhance treatment outcomes (Caldwell, 2001; Philp, 2001). The stigma associated with having a mental illness and/or spending time in an institution and the discrimination experienced by many in terms of work and housing, in particular, are also issues that have been present since early in New Zealand's colonial history. Care and support provided to those who experience mental illness, by both paid and voluntary workers, has caused controversy at times, particularly when changes in philosophy, legislation or treatment have affected the working conditions of staff (Harre, 1985; Leibrich, 1988).

However, throughout New Zealand's history, government policy and legislation, and various stakeholder groups have sought to address the issues resulting from these themes. This section will discuss some of these issues and explain the effect they have had on mental health policy, service development and provision. The development of mental health services in New Zealand has also been defined by several key moments which have altered the status quo and led to rapid change in the provision of housing and support for those who experience serious mental illness. The following will also describe these changes and the effect they have had on service provision.

2.5.1 The history and impact of deinstitutionalisation

Literature discussing the early history and development of New Zealand institutions is scarce and authors often offer conflicting interpretations. Some early records have been lost, and the

majority of evidence available describing conditions in, and attitudes towards, the institutions is derived from letters, government reports and statutes, and patient records.

From the outset of European settlement, New Zealand, like other Western countries, adopted an approach of institutionalisation for those suffering from mental illness (Ernst, 1991). Early asylums, constructed during the 1850s, were in towns, but later ones were sited in the countryside, isolated from local communities. Some authors believe that this was due to public fear of the insane (Brunton, 1972), though others suggest that there were also more practical reasons, such as the opportunity for farming, which cut running costs and provided therapeutic work for the patients (Hubbard, 2001), and the curative effects of a healthy, rural environment (Caldwell, 2001). Initially, the asylums were administered by lay-people who promoted the philosophy of moral management - the belief that outdoor work, nutritious food and staff leading by example could cure mental illness (Bloomfield, 2001), and there is little evidence of the use of seclusion or restraint during this early period (Bloomfield, 2001; Williams, 1987). This gentle approach and resulting discharges contributed to a belief amongst the public that, in the right environment, mental illness could be cured (Brunton, 1972).

However, by the 1870s, the asylums were filling with incurable patients, causing severe overcrowding (Bloomfield, 2001). The public associated this with the lay administrators (Brunton, 1972), and following the introduction of the Lunacy Department and the first Inspector-General of Asylums in 1876, medical superintendents were placed in charge of each of asylum (Philp, 2001). They were expected to more accurately isolate and treat curable patients, thus increasing discharge rates and relieving overcrowding (Philp, 2001). However, the increase in numbers of incurable patients could also be attributed to local government bodies dumping senile, intellectually disabled, and alcoholic patients on the asylums to avoid the cost of their care (Caldwell, 2001; Philp, 2001), thus giving the superintendents or Inspector-General little real hope of alleviating the overcrowding.

There is also evidence to suggest that the increasing population of asylums was partly due to the shift towards the end of the nineteenth century from a colonial to a more urbanised and controlled society. At this time, a large proportion of the population were single men, working as itinerant labourers, highly mobile and with little or no family in New Zealand (Phillips, 1996). As society became more urbanised, this type of work became increasingly scarce and attitudes towards this more mobile section of the population grew increasingly negative (Phillips, 1996). Records indicate that many of those housed in the asylums during this period were single males (Bloomfield, 2001), suggesting that the asylums were being used to care for these men, who without work had no income, and without family had no support (Ernst, 1991).

The difficulties associated with accommodating those with disparate disorders together were recognised by the Government in the early 1900s, and the policy of the villa system, where those with similar disorders were housed together in separate buildings, was established (Brunton, 1985). The goal of this was to promote the development of community and new hospitals were built on this basis (Brunton, 1985). At the same time, outpatient clinics were established to minimise stigma and discrimination towards those who had spent time in institutions. However, for those whose illness was more chronic in nature, and who failed to respond to treatment, the large psychiatric institutions remained the only option, with little or no hope of release back into the community (Brunton, 1985).

The introduction of anti-psychotic drugs in the 1950s enabled a greater focus on the rehabilitation of long-term psychiatric patients (Brunton, 1985), and in other Western countries, the process of deinstitutionalisation began. However, in New Zealand, while the development of more effective forms of treatment meant that the length of time people spent in hospital was shorter, thus enabling a greater proportion of those with mental illness to live predominantly in the community, psychiatric hospital bed numbers did not decrease at the rates experienced in other countries (Kelly, 1995). Brunton (1985) suggests that policies promoting services for early diagnosis and treatment of acute episodes of mental illness, giving lower priority to those whose illness failed to respond rapidly, and the “traditional

philosophy of classification and care” (p. 57) of long-term patients, were also reasons deinstitutionalisation did not occur as rapidly in New Zealand.

In 1972, the management of psychiatric hospitals was passed from the Mental Health Division of the Department of Health to the Hospital Board in which each particular hospital was located (Fairgray, 1995). The psychiatric hospitals carried with them a significant level of funding which became part of the budget for each Hospital Board. However, the Hospital Boards were unprepared for this change and inexperienced in the development of policies for people with mental illness. While the Department of Health seemed to be supportive of community care, they lacked policies encouraging the development of alternatives to the institutions and institutionalisation remained the status quo. Despite this lack of direction, there were groups of people advocating for the development of comprehensive community-based mental health services (Mirams, 1960) and working in different parts of the country to create opportunities for people with mental illness to live in community settings (Bennie, 1993; Kelly, 1995). However, the paucity of national guidance also meant that deinstitutionalisation occurred at different rates in different parts of New Zealand (Hall, 1985).

Government documents from the 1970s suggest that while both institutional bed numbers for those with mental illness and numbers of first admissions were decreasing, the rate of readmission was increasing. This suggests there were still a significant proportion of the population with serious mental illness being discharged into the community without adequate care and follow-up, resulting in readmission to hospital when there was a deterioration in their mental health (Leibrich, 1988).

The slower pace with which deinstitutionalisation proceeded in New Zealand had some benefits. Most importantly, it allowed New Zealand to learn from some of the mistakes made in other countries, where people with mental illness were discharged from hospital with little or no follow-up or support in the community, contributing to increased social exclusion and often homelessness for many of them (Hall, 1985; Hoult, 1985; Sheerin & Gale, 1984).

2.5.2 *The Mason Report*

By the mid-1980s, a growing number of mental health professionals, researchers and consumers were calling for the development of a coordinated approach to deinstitutionalisation (Abbott, 1985). There was a need for clear government direction, funding and support for the establishment of effective community-based services (Hall, 1985; Hoult, 1985; Leibrich, 1988). As a result of pressure from various stakeholders and due to some serious incidents, there were many, often government-instigated inquiries into the care and treatment of those with mental illness during the 1980s and early 1990s (Durie, 2001), although these tended to focus on specific aspects or incidents. Wider issues, such as difficulties relating to funding, workforce development, and non-government organisation (NGO) participation, also needed attention.

The Mason Report (1996) was produced following an inquiry investigating the delivery of mental health services to those with semi-acute and acute mental illness. Judge Ken Mason explored issues relating to community-based care for people with mental illness in a much broader context than previous inquiries, conducting interviews with consumers, their families, and those working in the field. The Mason Report also looked at the impact of recent changes in legislation for people with mental illness, in particular the new mental health ("Mental Health (Compulsory Assessment and Treatment) Act ", 1992) and privacy ("Privacy Act," 1993) acts.

The inquiry found that people who required treatment for mental illness often could not access mental health services when first necessary, resulting in more acute need when services were finally available, and placing increased pressure on their family/whanau, friends and other support services. It also found that those with mental illness experienced very high levels of discrimination. There were also problems with low morale among the workforce and the loss of experienced staff. Many submissions to the inquiry felt that while the National Mental Health Strategy (Ministry of Health, 1994) provided an excellent vision for the future of mental health services, central government leadership and guidance on the

implementation of the strategy was lacking. Also of concern was the inability to check the implementation of the recommendations of earlier inquiries.

Rather than suggesting changes to legislation or specific tasks that needed to be undertaken in order to provide more comprehensive care, the Mason Report made several broad recommendations and advised that progress on their implementation be followed and reported to the Minister of Health. Among the recommendations was the development of a mental health commission to advocate for people with mental illness, provide resources and disseminate information to counter some of the discrimination experienced, and to gather and produce research and policy guidelines. The report also proposed that funding for mental health services be ring-fenced within the health budget and that funding levels should be increased so that services could be provided to people when they were first required. Greater coordination between mental health and alcohol and drug treatment providers was also promoted (Mental Health Commission, 2007).

The Mason Report led to the development of the *Blueprint for Mental Health Services in New Zealand* (Mental Health Commission, 1998) which described the developments required in mental health services to implement the National Mental Health Strategy (1994). The Mason Report has provided the focused approach which had been missing in New Zealand mental health policy, research and service development. Since the implementation of its recommendations began, the establishment of effective community-based mental health services has proceeded rapidly, some research has been undertaken, and the Mental Health Commission has been collecting and distributing information aimed at educating the public and reducing the stigma and discrimination experienced by people with mental illness.

Any study of housing and mental illness must also understand the context of the housing environment in which the study is conducted. In the next section, definitions of housing affordability are examined. This is followed by an explanation of the historical context of New Zealand housing and the influence of government policies on housing affordability, as

an understanding of the political and cultural development of housing provision gives a background to the current housing situation.

2.5.3 Housing policy and its effect on affordability

Numerous definitions of housing affordability are used internationally (Berry, Whitehead, Williams, & Yates, 2004; Burke & Ralston, 2003). Definitions vary based on factors such as organisational preferences, field of study and whether measuring rental or home-ownership affordability (Robinson, Scobie, & Hallinan, 2006). Each definition includes components relating to the adequacy of the accommodation and the amount of income remaining after housing costs are paid (DTZ New Zealand, 2004; Robinson, et al., 2006). The two most commonly used rental tenure measures are rent-to-income ratio and residual income measures (Robinson, et al., 2006). The rent-to-income ratio calculates the percentage of the total household income which is spent on rental costs. Residual income measures examine the amount of income remaining after housing costs are paid.

In New Zealand, a benchmark of housing-related costs of no more than twenty-five to thirty per cent of income is considered affordable (Robinson, et al., 2006). This type of ratio measure makes comparison between regions and analysis over time much simpler (DTZ New Zealand, 2004), but fails to take into account the quality and suitability of housing for a particular individual or family. There has also been confusion as to whether gross income or net income should be used in calculations (Robinson, et al., 2006). It also fails to consider families or individuals for whom spending even twenty-five per cent of income on housing costs is unaffordable, or those who have a high income and can afford to pay more than thirty per cent of their income on housing costs. A definition which includes an aspect relating to total income is required. For this study the definition proposed by the Affordable Housing National Research Consortium (2001, cited in Robinson, et al., 2006) was chosen.

“Households in the lower 40% income bracket who pay more than 30% of their gross income on housing costs, whether renting or buying, are said to be in ‘housing stress’” (cited in Robinson, et al., 2006, p. 12).

From early in New Zealand's history, governments have intervened in housing markets to pursue both political and social ends. In 1905, the Liberal government passed the Workers' Dwelling Act, allowing the state to set aside land to build houses which were leased to inner-city workers (Christchurch City Libraries, 2008). In Christchurch, this led to the construction of workers cottages in Sydenham and Riccarton (Christchurch City Libraries, 2008). Unfortunately, while the goal was to protect workers from 'greedy' landlords, the rents were unaffordable for many, and the scheme was stopped in 1919 (Housing Corporation of New Zealand, 2008).

State-owned housing was re-established by the First Labour Government (1935-1949), in acknowledgment of persistent housing problems (Fergusson, 1994, cited in Murphy, 2003), and as part of a programme to create a more inclusive welfare state, as people struggled with job losses and instability during the Depression (Housing Corporation of New Zealand, 2008). Successive governments continued to gradually increase the stock of state housing and lease properties to families in housing need. Although originally initiated as a result of discriminatory practices towards Maori, and with the hope of creating greater integration with the dominant Pakeha culture, 'pepper-potting' was introduced in the 1950s to disperse Maori families throughout the state housing stock and into a wider variety of neighbourhoods (Schrader, 2005). While pepper-potting was a controversial policy (Schrader, 2005), it has inadvertently succeeded in avoiding some of the problems experienced internationally, with large tracts of public housing becoming ghettoized, with high rates of crime and social disorder.

These early governments also assisted low-income families and first home buyers with a range of policies that included low interest mortgages. Between the 1930s and the 1970s, while housing policy did not have affordability as an explicit objective, it was always an implicit goal, and as the government played a large role in housing supply, prices tended to be low and affordable (DTZ New Zealand, 2004).

There was no significant change in housing policy until the newly elected Labour Government (1984-1990) introduced legislation which restricted assistance to those with serious housing needs (McLeay, 1992, cited in Murphy, 2003). The concept of housing affordability became more prominent during the 1980s, and in 1988, the Royal Commission on Social Policy reported a decline in affordability between 1975 and 1986 (cited in DTZ New Zealand, 2004). This trend of decreasing affordability continued during the late 1980s and early 1990s (Robinson, et al., 2006).

The 1990s saw a major paradigm shift in New Zealand housing policy. The National Government (1990-1999), mirroring developments overseas, altered the focus of housing policy from supply-side to demand-side provision of housing support. Supply-side programmes increase the amount of low-cost housing available to be rented by low-income families and individuals, while demand-side programmes provide subsidies to people to assist them in obtaining housing that is affordable. The theory underlying demand-side policies suggests that the market is the most effective mechanism for addressing housing need (DTZ New Zealand, 2004), while consumers are in the best position to make decisions about how to resolve their housing requirements (NHC, 1998, cited in Thorns, 2000).

Following the 1991 budget, the Housing Corporation, which had been established in 1974 to manage housing-related programmes, was restructured (Thorns, 2000). The rental portfolio was charged with generating a profit, and state housing rental was raised to market rates, with an Accommodation Supplement introduced in 1993 to assist families and individuals on low incomes (Murphy, 2003; Thorns, 2000). This was intended to create equality between state and private sector tenants through the provision of the Accommodation Supplement, and to promote more efficient use of housing stock by encouraging those consuming more housing than was required for their needs to obtain more appropriate accommodation (Thorns, 2000).

The Accommodation Supplement became, and still is, available to all beneficiaries and low-income workers. It is currently calculated using a formula which pays a maximum of seventy per cent of housing costs in excess of twenty-five per cent of the applicant's net income. The

payments are capped with the maximum amount offered dependent on region (Murphy, 2003).

As a result of these changes, HNZC rents increased by 106 per cent between 1992 and 1999, in comparison with a twenty-three per cent increase in the private rental sector (Gosche, 2000, cited in Murphy, 2003). Even with the additional income of the Accommodation Supplement, this dramatic increase in housing related costs, particularly when combined with the cuts to benefit rates also introduced in 1991, had a significant impact on housing affordability for those on low incomes (Robinson, et al., 2006; Thorns, 2000; Waldegrave, King, & Stephens, 2004).

While it is clear that the Accommodation Supplement helped to reduce hardship for families and individuals caused by rising housing costs during the 1990s (Krishnan, 2001), it was criticised for actually contributing to increased rental costs in the private market as landlords increased rents with the knowledge that tenants had an increased ability to pay (Thorns, 2000). Other criticisms included whether it actually increased the ability of those on low incomes to obtain affordable housing and if it did indeed increase equity within the housing market (Thorns, 2000). There was also concern over the use of geographic regions to calculate the level of assistance, as market rents varied within regions based on the suburb in which the property was located (Murphy, 2003).

The restructuring of HNZC also led to the sale of housing stock, resulting in a significant reduction in the number of properties owned by HNZC and a change in the geographic spread (Thorns, 2000). Between 1992 and 1999, HNZC's housing stock declined by sixteen per cent from 69,928 to 58,866 (Murphy, 2003). Initially, many properties were sold to private investors, but following public outcry, eventually one-third of the stock sold went to sitting tenants (Thorns, 2000).

Unsurprisingly, tension developed due to HNZC having both the objective of generating a profit and a social mandate to support those in housing need (Thorns, 2000). To ease conflict

between HNZC's fiscal responsibilities and social objectives, Community Housing Limited was established in 1994 to manage housing for people with disabilities, including those with mental illness, who were being deinstitutionalised as part of reforms undertaken in the health system (Thorns, 2000).

There is strong agreement that the demand-side housing policies of the National Government during the 1990s contributed significantly to the growth of poverty in New Zealand (Murphy, 2003; Robinson, et al., 2006; Waldegrave, et al., 2004). The policies most severely affected people on the lowest incomes and in the lowest cost housing (Robinson, et al., 2006). The presumption inherent in the use of demand-side subsidies for housing support is that there is an adequate supply of affordable housing within a given area (Bratt, 2008). Unfortunately, due to HNZC's sale of stock and the limited supply of smaller rental accommodation, many tenants were unable to reduce their housing consumption and move to more appropriately sized accommodation (Thorns, 2000), which left them struggling to cover housing-related costs.

The formation of the Labour-Alliance coalition following the 1999 election signaled a shift in the focus of housing policy. The Housing Restructuring (Income Related Rent) Amendment Act, passed in August 2000, re-introduced income-related rents in the state sector and removed HNZC's profit-making objective (Waldegrave, et al., 2004). The sale of state houses ceased, with increased capital expenditure for the maintenance of existing stock and investment in new housing (Murphy, 2003). A significant scheme of buying and leasing to increase stock levels to at least those prior to the National government's sell-off was undertaken. HNZC currently owns or manages about 69,000 properties (McTurk, 2009).

This change in housing policy had an almost immediate impact on housing affordability for those in HNZC properties on low incomes. The average turnover in HNZC rental properties dropped from twenty-three per cent in 2000 to 14.4 per cent in 2003 (HNZC, 2003, cited in Waldegrave, et al., 2004) and now stands at about 1.6 per cent (Housing Corporation of New Zealand, 2009a).

HNZC's current application process assesses each applicant or family on the basis of the following criteria: affordability (of current accommodation); adequacy (the physical condition of the house); suitability (whether the size of the house is appropriate for the household); accessibility (the ability of the applicant to obtain private sector rental housing); and sustainability (the ability of the applicant to sustain a private sector rental) (Housing Corporation of New Zealand, 2006). An applicant's ratings for these criteria are used to place them on a priority waiting list. A-priority households have severe and persistent housing needs that must be addressed immediately; B-priority indicates a significant and persistent housing need; a C-priority household has a moderate housing need; and a D-priority household should be able to function in the market but is either disadvantaged or in low-level housing need (Housing Corporation of New Zealand, 2006). In the current housing climate, it is unlikely that any applicant of C or D-priority would be housed by HNZC. As at 30 November 2009, there were 10,423 people on HNZC's waiting list. Of these, 324 were A-priority, 4,254 were B-priority, 3,213 were C-priority, and 2,614 were D-priority (Housing Corporation of New Zealand, 2009b). These numbers reflect both the re-introduction of income-related rents, and the increasing costs of private sector rentals.

In 2004, in recognition of the rising costs of renting in the private market, the Accommodation Supplement was significantly increased and the geographical areas and maximum thresholds available to applicants were altered (DTZ New Zealand, 2004). This ensured that more people were eligible for the supplement and, in particular, enabled families with children to earn more before their supplement was abated (DTZ New Zealand, 2004). However, the Accommodation Supplement rate has not changed since 2004. In 2006, the MSD and the Ministry of Housing began a review of the Accommodation Supplement. Public consultations and submissions generally supported increases, but no government action was taken.

Declining home ownership rates over the past fifteen years mean the number of households which must be accommodated within the private rental market has been steadily increasing (Housing Corporation of New Zealand, 2005). Rents increased by 166 per cent between 1987

and 2004, although the household income of renters only increased by fifty-nine per cent, meaning the rent-to-income ratio for private market renters increased from 11.5 per cent in 1988 to 16.8 per cent in 2001 (DTZ New Zealand, 2004, cited in DTZ New Zealand, 2004). While the trend of decreasing affordability is concerning, between 2001 and 2006 low-income households fared better than average on affordability ratings compared with the recent past (Robinson, et al., 2006). This is likely, in part, to be a consequence of the return to income-related rents in state-owned housing. The incomes of private market renters increased more quickly than those of owner-occupiers between 2001 and 2006, for the first time since 1986 (DTZ New Zealand, 2007). However, this may be an indication of the increasing difficulty some are finding trying to enter home-ownership.

The *New Zealand Housing Strategy* (2005) provides a ten-year plan for the development of the government's vision that

“[a]ll New Zealanders have access to affordable, sustainable, good quality housing appropriate to their needs.” (Housing Corporation of New Zealand, 2005, p. 7)

A range of short, medium and long-term interventions were identified which would facilitate the goals of the strategy. In particular, improvements to housing supply and affordability, development of the private rental sector and support for NGO providers to enable them to meet more diverse housing needs were identified as areas of action. However, in late 2007, due to concern on international money markets, and reflecting the sub-prime mortgage crisis in the United States, property price rises in New Zealand began to flatten, house sales slowed, and there was talk of a recession in the housing market. As a result of this, interest rates were lowered, but banks also introduced more stringent lending criteria. Since then, property prices and the numbers of sales have remained lower than the heights reached in the mid-2000s, however, it is, as yet, unknown what the long-term effect of this will be on housing affordability for New Zealand households, particularly for those living in private rentals.

The historical context of housing and support services for people with serious mental illness and the development of housing provision in New Zealand both provide a background for the following section, which examines the limited body of research conducted evaluating the role of housing and other supports for this group.

2.5.4 New Zealand studies on housing and mental illness

Considering the burden of disease and the high cost to the health system in treating mental illness and the importance of good quality, suitable housing in supporting well-being, relatively few studies have been conducted in New Zealand examining the housing experiences of people with serious mental illness, particularly in more recent years. Early studies were essentially descriptive, while more recent research has attempted to use broader approaches to examine processes and outcomes.

Several studies investigating the experience of people with mental illness in getting, keeping and losing their housing have been conducted in New Zealand (Kearns, 1990; Kearns, et al., 1991b; Macmillan, et al., 1992; Peace & Kell, 2001; Sheerin & Gale, 1984; C. J. Smith, et al., 1993). Each study looked at specific difficulties people with mental illness had with their housing, including problems with affordability, the physical building and levels of support when accessing housing, and when housing problems occurred. This information was obtained through surveys of mental health service providers and individual and group interviews with consumers. Each study found that while there were some ethnic differences in experience (eg. Pacific Island consumers had more problems with overcrowding), affordability, lack of choice in housing and discrimination were the main problems encountered.

Prior to the 1980s the experience of community living for people with mental illness was given minimal attention by researchers in New Zealand. Two studies capture the essentially descriptive nature of early research (Macmillan, et al., 1992; Sheerin & Gale, 1984). Sheerin and Gale (1984) conducted what they believed to be the first study in New Zealand to attempt

to gain a consumer perspective on community living. They interviewed people with mental illness who were living in group homes, boarding houses or private accommodation in Christchurch, their health professionals, and family/whanau and friends of some of them. The majority of the participants had spent long periods of time living in institutional care and overwhelmingly preferred community living. This view was also supported by their health professionals, family/whanau and friends. The participants' illnesses had not deteriorated since moving to the community and there were few readmissions to hospital. Most participants were satisfied with their current accommodation, although those in boarding houses were least satisfied.

The participants in Macmillan, Hornblow and Baird's (1992) study lived in staffed community residences in Christchurch. They had previously lived in hospital and were interviewed six monthly for eighteen months. These participants were also satisfied with their living arrangements, preferring them to hospitalisation, and were happy with the other residents and staff support. As with Sheerin and Gale's research, few of the participants experienced deterioration in their mental health during the study period and there were few readmissions among the group.

Some of Sheerin and Gale's (1984) participants struggled with tasks of daily living and many had others who performed those tasks for them, indicating that inpatient rehabilitation programmes were not teaching skills needed for community living, or confirming that long periods of institutionalisation created overdependence on staff. The authors also found that the participants and their family/whanau, friends and health professionals thought that they did not have enough social support and social contact, or enough to do in their spare time. Loneliness was also an issue for Macmillan, Hornblow and Baird's (1992) participants and more than fifty per cent had no contact with friends outside of the residence during each of the three follow-up periods, although approximately seventy per cent reported at least monthly contact with relatives during each of the periods. In addition, Sheerin and Gale (1984) found many participants felt that they needed assistance with obtaining employment or training.

Both of these studies suggest that while support provided by mental health services to consumers living in the community was sufficient to maintain the level of wellness and functioning they had achieved during a hospital stay, a broader multidisciplinary approach was required to help them develop social connections in their neighbourhoods, improve their ability to perform the tasks of daily living, and find employment or meaningful ways of using their spare time. They also illustrate a phenomenon common in New Zealand - that of deinstitutionalisation creating mini-institutions in the community (Durie, 2001). However, they also demonstrate that deinstitutionalisation did not cause many of the problems encountered overseas when large institutions closed rapidly and many of the patients found themselves either homeless or living in poor accommodation with no care or follow-up.

Kearns and colleagues (eg. Kearns, 1990; Kearns, et al., 1991b; C. J. Smith, et al., 1993) were responsible for the first studies on housing and mental illness in New Zealand which investigated the experiences of people with mental illness living in independent housing and recognised the need to comprehensively examine aspects of both the physical and social environment to ascertain their influence on acquiring, retaining and losing housing. They have published several papers examining the effect of housing stress on well-being, physical health, social support and coping mechanisms (Kearns, Smith, & Abbott, 1991a; Kearns, et al., 1991b, 1992).

Kearns, Smith and Abbott (1991b) compared two groups of individuals who experienced mental illness, one group recently discharged from inpatient treatment, and one which received outpatient treatment, with samples from the general public who were likely to be poorly housed, obtaining a mix of quantitative and qualitative measures of housing and mental health problems. They found that the mental health sample rated lower than the random sample on eight of the ten measures of housing stress, and appeared to be significantly more residentially mobile. Of the participants able to be contacted six months later, the housing situations of the mental health respondents had further deteriorated in comparison with the random sample. The most poorly housed of the mental health respondents were also the most socially disadvantaged. Those not living in a semi-

institutional environment had less space and fewer household amenities available to them. The authors also found that boarding house residents were significantly more likely to be male and have schizophrenia or organic psychotic conditions. However, while they had higher costs, less space and fewer amenities, those in boarding houses reported fewer problems with the condition of the dwelling than those in other forms of accommodation.

Kearns (1990) explored the influence of coping ability on community life for a group of former inpatients in Auckland. He developed a schedule which examined aspects of community living, such as housing, social support, income, and lifestyle, hypothesised to influence coping and community life. The one hundred participants interviewed made 252 moves over the period of time the study examined. The most common type of living situation was in boarding houses or lodges (thirty-five per cent of all periods of residence), while independent renting was also common. Forty-three per cent of the moves made by participants were for involuntary reasons such as loss of tenancy, financial problems, or unacceptable living conditions, like violence or overcrowding.

Kearns (1990) found that subjects fell into either excessively residentially mobile and relatively stable housing groups. Those which were considered to be excessively mobile tended to have a higher level of education, receive more types of treatment, live in central Auckland, and be familiar with and visit more places in and around Auckland. However, Kearns, Smith and Abbott (1991b) found that youth and higher housing cost-related stress predicted increased residential mobility. Those who were older, had a smaller household size, and lower cost-related stress tended to be more residentially stable.

In another study, the authors found that the most significant contributor to improved mental health was being rehoused by HNZC (Kearns, et al., 1991a). This improvement was attributed to living in better quality housing, with more space, and a more affordable rent. The data suggested that those housed by HNZC were likely to have been in worse housing situations prior to relocation than those not rehoused by HNZC. They attributed the

improvements in participants' mental health scores to the reduction in housing-related stress (Kearns, et al., 1992).

Peace, Kell and colleagues (eg. Peace & Kell, 2001; Peace, et al., 2002) conducted the most comprehensive study of independent housing for people with mental illness in New Zealand to date, surveying and interviewing service providers and consumers throughout New Zealand. As mentioned previously, estimates from District Health Board (DHB) providers indicated that eight thousand people (seventeen per cent) who received services from mental health services were in housing difficulty, and two thousand (four per cent) were homeless or living in temporary or emergency accommodation. As only half of those requiring support from mental health services were believed to actually receive it, the numbers of people with mental illness in housing difficulty may have been double these estimates. Affordability, lack of housing options, and discrimination were the main contributors to housing difficulties identified by both providers and consumers. The group interview participants also highlighted problems with lack of support services to assist with housing and other needs.

Through their research, Peace and Kell (2001) developed a sustainability framework with four separate categories of resources that are necessary for people with mental illness to be able to sustain community living. These are

“...a regulatory environment that encompasses the statutory central and local government frameworks that apply to safeguarding human rights, combating discrimination, labour market regulation and land use, building codes and housing standards pursuant to the Resource Management Act 1991; a set of material resources, including the stock of adequate, suitable housing to choose from, sufficient income to afford to pay for it, and access to basic necessities, such as food and utilities; a set of service resources, including clinical services, housing facilitation services, and personal support services that can be tailored to meet individual need; and a set of social resources derived from the community and groups within it, families/whanau and social networks, and local and/or culturally specific networks and activities.” (p113)

They suggested that this framework is a useful tool for conceptualising resource allocation and support service networks for this group, and could enable a comprehensive inter-agency

approach to provision of the broad range of services necessary to sustain independent living for people with serious mental illness (Peace, et al., 2002).

As the previous section has illustrated, studies examining New Zealand's unique cultural environment and its effect on the housing circumstances of those with serious mental illness are limited. The final section of this chapter describes Christchurch, the city in which this study is set, and the types of housing available to Christchurch residents. Comcare Trust and the Comcare Housing Service are also described in this section.

2.6 Christchurch

Christchurch is a moderately sized city with a population of about 350,000 (Statistics New Zealand, 2006). It is less ethnically diverse than New Zealand as a whole, particularly in terms of the numbers of Maori and Pacific Island residents, but its level of diversity is steadily increasing (Statistics New Zealand, 2006). The majority of Christchurch residents live in one family households, however, about twenty-five per cent identify as one person households (Statistics New Zealand, 2006). This is in stark contrast to the number of dwellings identified as one bedroom (5.4 per cent) (Statistics New Zealand, 2006).

Christchurch is known anecdotally to have a high number of services providing supports to individuals and families in need. The Salvation Army, Anglican City Mission, and Methodist Mission, in addition to a number of smaller church-based and NGO groups, provide a range of services, including addiction treatment and support, budget advice, and foodbanks. The Salvation Army and the City Mission both provide emergency housing to single men, and the Salvation Army also has a longer term men's hostel. The YWCA offers short and medium term emergency accommodation to single women and women with children. Women's Refuges, Home and Family Society and a few smaller providers also offer temporary accommodation for particular client groups. Permanent rental housing in Christchurch consists of three main options, the private rental market, HNZC, and City Housing.

2.6.1 City Housing

The Christchurch City Council (CCC) is the second largest social housing provider in New Zealand, with 2,649 units in complexes of varying sizes throughout the city (Christchurch City Council, 2009). It is one of a minority of local government bodies which continue to have a role in housing provision (Mental Health Commission, 1999). Initially established to provide housing for elderly people, City Housing's role has grown to include those with disabilities or on low incomes (Christchurch City Council, 2007). City Housing has a waiting list and uses the same priority-based allocation system as HNZC.

Housing provision by CCC is self-funding, using rental income to cover running costs, and does not draw on any financial support from rates. However, as the housing stock is aging and requires significant investment in maintenance and reconfiguration to make it suitable for more modern lifestyles, considerable financial investment is necessary (Christchurch City Council, 2007). In 2008, City Housing increased rents by twenty-four per cent to assist in funding rising maintenance and redevelopment costs. However, as insufficient public consultation was conducted concerning the impact of such a large rise, this increase was successfully challenged in the High Court by the Council of Social Services (COSS) ("Christchurch low-income housing rent rise overruled," 2008). A more modest increase was the result and public consultation has occurred regarding options for ongoing maintenance and development, while increasing rental costs to tenants at more affordable rates.

2.6.2 Comcare

Comcare Trust is an NGO which has provided a range of support services to people who experience mental illness in the Christchurch and Canterbury region for more than twenty years. It is one of four major NGO mental health agencies in the Canterbury. The others are Stepping Stone Trust, Richmond New Zealand, and Pathways. There are also two Kaupapa Maori mental health agencies in Christchurch, Kakakura Health Services and Te Awa O Te Ora.

Comcare was established in 1987 due to a perceived lack of housing support for those being discharged from large mental health institutions into the community. A group of nurses based at Sunnyside Hospital, who were working in the community, were concerned by the living environments of some of their patients and decided to obtain tenancies and set up shared housing for these people. The nurses provided support to these patients to help them budget, maintain their housing, and deal with any disputes between other tenants. Dr Les Ding, then medical superintendent of Sunnyside, recognised that a more formal arrangement was required and invited other interested people to assist in the creation of a charitable trust which would oversee and support these tenancies.

Currently, in addition to the housing service, Comcare has an extensive community support service which operates in Christchurch and North and South Canterbury. Activelinks, a leisure and recreation service in Christchurch and Canterbury, provides support individually and in groups for people wanting to develop exercise or recreation activities. Jobconnect, a supported employment service, assists people to obtain work. Warmline, a telephone service, staffed by volunteers, provides intentional peer support to callers. An active Consumer Advisor team also assists in the development of the organisation and its services. Recovery and strengths-based practices are the basis of Comcare's philosophy - in practice, this means empowering clients to achieve their goals by developing their strengths.

The Comcare Housing Service has developed over the past twenty years to provide a range of services, tailored to meet the diverse needs of the client group. There are still several group homes run by the service, but in addition to this there a number of single-person flats owned and/or leased by the service which are rented to clients. At the time of this study, the Housing Service also ran three emergency flats, and had just started 'Home Rescue', a service which helps people to retain housing when it is danger of being lost due to eviction. Comcare Housing started a Housing Facilitation Service in the mid-1990s. This service continues to support clients to find and establish independent housing in the community, through the private rental market, HNZC, City Housing and in Comcare's own tenancies. Comcare Housing ensures a clear separation between landlord and care roles through tenancy

management independent of support provision and by arranging independent advocacy for tenants if they wish. This approach is consistent with the recovery philosophy underpinning the work of Comcare Trust.

An evaluation of the effectiveness of the Comcare Housing Facilitation Service and its effect on client well-being was conducted by Ahuriri-Driscoll and colleagues (2002) using face-to-face surveys with clients of the service and a postal survey of case managers whose clients had used the service. Of forty-eight potential participants, thirty completed the survey, while eighteen case managers returned their surveys. The client response rate was high compared with similar surveys, although the authors believed that some of the non-responders had greater support needs than those who completed the survey, so the results may have underestimated the effectiveness of the service. At the time of the survey, Comcare Housing provided a service to help people with obtaining and establishing housing and a service which assisted people with maintenance and property upkeep. Overall, the clients and case managers were very satisfied with both aspects of the service, although the flat-hunting element of the service received more positive feedback (mean satisfaction rating 86/100) than the property maintenance part (mean satisfaction rating 60/100). Men, those with a diagnosis of schizophrenia, those living alone and those needing support due to discharge from an inpatient service tended to rate the flat-hunting service more highly than others. The property maintenance service was rated highest by those with a partner, or living alone, and least well by those who had children living with them.

All of the participants and case managers felt that good housing was important for physical and mental well-being. All respondents rated the Comcare Housing Service as having a positive effect on their well-being, with men, Maori and other ethnic groups providing higher ratings than women and Pakeha/New Zealand Europeans. Those living in Comcare tenancies rated their housing as significantly contributing to their sense of well-being (mean 86/100), while those in private rental gave a lower rating (mean 57/100). Many of the case managers commented that the service philosophy which works to empower clients to make positive

choices and learn about housing as they go, increased clients' sense of safety, reduced their anxiety, and helped to improve their mental health.

This evaluation confirmed that during the study period, the Comcare Housing Facilitation Service was providing quality, effective support to people with mental illness seeking independent housing in the community, and was contributing to increased well-being ratings for clients of the service. The small number who responded to the survey and the use of mean rating scores, rather than median rating scores, may have resulted in lower overall scores than might be expected among some of the participant groups. With small numbers in some groups, one extreme score had the potential to skew the mean quite significantly. It would have been advantageous to have also reported the median scores to allow for more useful comparison with other studies.

This chapter of the literature review has examined the influence of housing and support services on outcomes for people with serious mental illness, both in New Zealand and internationally. While there are some methodological challenges which need to be overcome, overall the literature indicates that this group has similar housing requirements to other socially excluded populations. The next chapter evaluates the role of the physical and social environments on housing outcomes for this population.

3 Mental Illness and the Environment

3.1 *Introduction*

Developing a definition of environment is a difficult process as an environment has both physical and social elements. It can be considered in a global sense, such as in the case of climate change (Freeman & Stansfeld, 2008). Social processes and networks can also be examined on a global level, particularly international legislature and organisations, such as the United Nations (UN) or WHO, or in terms of technological developments, like the internet. The majority of authors operationalise environment to suit the requirements of their research (Freeman & Stansfeld, 2008). Studies which explore environmental effects on health tend to focus on neighbourhood level features and processes. Whilst some researchers limit the definition of environment to physical features (Freeman & Stansfeld, 2008), social networks, and interactions within a community can have a powerful influence in mediating the effects of a poor physical environment. Macintyre, MacIver and Sooman (1993) suggested that the economic, social-relational, service, and physical aspects of neighbourhoods all have an influence on health outcomes. This chapter explores the effect of both the physical and social neighbourhood environments on housing outcomes for people with serious mental illness.

Research on the effect of neighbourhoods and their impact on health and well-being only began in earnest in the mid-1990s (Sampson, et al., 2002). The literature on the effect of neighbourhoods and neighbourhood characteristics and amenities on both physical and mental health crosses many disciplines, from sociology and psychology to geography and legal studies. As environmental effects are difficult to extricate from other individual and lifespan influences, this area of research is also linked to studies examining the level of social and other supports available to an individual. Much of the relevant literature was discussed in relation to formal support (Section 2.4.3), however, there are some studies of note which focus primarily on the effect of the social environment.

This chapter examines the influence of the environment for people with serious mental illness at three different levels: the housing environment, the physical neighbourhood, and the social neighbourhood, as difficulties at each level can result in social exclusion. Methodological considerations and implications for research conclude the chapter. A discussion of the effect of housing quality follows.

3.2 *Housing quality*

Some researchers have examined housing quality in the context of housing and support programmes for people who experience serious mental illness (eg. Forchuk, Nelson, et al., 2006; Mares, et al., 2005), however, much of the current understanding of the effect of housing quality on health outcomes comes from the fields of public health and geography (eg. Thomson, Petticrew, & Morrison, 2001; Thomson, et al., 2002). Poor quality housing is linked to other indicators of social exclusion and has been studied at the both the individual and neighbourhood levels. Unfortunately, this is another area of housing research in which methodological problems have affected the generalizability and rigour of findings (Evans, et al., 2000; Thomson, et al., 2001).

Many studies have found links between improvements in housing quality and health outcomes (eg. Hiscock, et al., 2003; Howden-Chapman, et al., 2007). Evans and colleagues (2000), in a review of studies examining the effects of housing improvement on non-clinical mental health ratings, found that housing improvement contributed to lower psychological distress scores, although some methodological difficulties were identified in the studies, including lack of randomisation and difficulties distinguishing the effect of housing improvements from other changes. Macintyre and colleagues (2001) posited that housing quality has direct effects on both physical and mental health, suggesting that any improvements in housing would have rapid and obvious benefits for households.

Several studies examining housing for people with serious mental illness have included measures assessing housing quality and its influence on other outcomes. In an early study, housing rated as poor quality by mental health case managers was associated with greater

unmet service needs (Baker & Douglas, 1990), indicating that housing quality has an influence on consumers' ability to access supports. Research conducted by Newman and colleagues (1994) also demonstrated a link between improved housing quality and fewer unmet service needs, as well as increased residential stability. A more recent cost analysis of the effect of poor quality housing suggested that both residential instability and increased treatment costs were associated with living in older buildings in need of repair (Harkness, et al., 2004). These studies all indicate that improvements in the quality of housing for people with serious mental illness would have significant benefits, particularly in increasing consumers' access to supports, lowering treatment costs, and improving residential stability. Other studies have examined subjective housing quality for this group (eg. Forchuk, Nelson, et al., 2006; Mares, et al., 2005), but have reported results in terms of clinical or socio-demographic variables, rather than housing outcomes.

3.2.1 Housing quality in New Zealand

New Zealand houses are often of poor quality, as there were few legal requirements for insulation in houses built prior to 1978. A large proportion of the housing stock is cold, difficult to heat, and has problems with damp and mould (Howden-Chapman, Crane, Baker, Cunningham, & Matheson, 2004). As poor quality housing is more likely to be rented, and those in lower socio-economic groups are more likely to be renters (Howden-Chapman, et al., 2004), people in vulnerable groups, such as those with mental illness, are more likely to be living in substandard housing, and are, therefore, at increased risk of negative health effects due to their living environment.

Researchers at the Wellington School of Medicine and Health Science are producing methodologically sound studies investigating the effects of improvements in housing quality, such as insulation and energy-efficient heating devices, on health outcomes for low-income New Zealanders (eg. Howden-Chapman, et al., 2004; Howden-Chapman, et al., 2007). Self-reported health outcomes, such as doctor visits, absenteeism from work or school, and wheezing, improved in homes following the installation of insulation (Howden-Chapman, et

al., 2007). The results of these studies greatly improve the understanding of the effect of housing quality on physical health as randomised controlled trials and sophisticated techniques for the measurement of temperature and humidity were used. It is likely that physical health improvements experienced by participants in these studies would also be reflected in improved mental health due to the link between the two (Brinson, 2007; Popkin et al., 2002). The results of these studies also have significant implications for another aspect of social exclusion commonly experienced by people with serious mental illness, fuel poverty, which is discussed in the next section.

3.2.2 *Fuel poverty*

Fuel poverty is a concept which developed in the UK in the early 1980s, following the oil shocks of the 1970s, in response to growing recognition that some households were struggling to pay their heating bills (Lloyd, 2006). Households in the UK are said to be experiencing fuel poverty when they require more than ten per cent of their total income for heating fuels to maintain a satisfactory indoor environment, based on WHO (1989) guidelines for optimum indoor temperatures, which suggest that indoor temperatures of less than 16°C lead to increases in numbers of health-related problems and mortality rates. The UK government has resolved to eradicate fuel poverty and is engaged in programmes, which include improving insulation and installing more energy-efficient heating devices, to lower heating costs for households.

Fuel poverty is of concern because houses which are poorly heated are more likely to have high levels of humidity, leading to increased problems with mould and damp. This in turn leads to a wide range of health risks for the occupants (Isaacs, et al., 2004), including respiratory problems (Blackman, Harvey, Lawrence, & Simon, 2001; Howden-Chapman, et al., 2007).

In New Zealand, fuel poverty has only recently entered the political discourse. The difference between the amount a household spends on heating costs and the amount required to maintain

optimum temperatures is frequently misinterpreted. The majority of fuel poverty studies conducted in New Zealand have taken a housing quality and insulation perspective. Lloyd (2006) used software to model housing conditions and fuel poverty in New Zealand, finding that a national average of ten to fourteen per cent of households would need to spend more than ten per cent of their total income on heating costs to maintain optimum indoor temperatures. However, the average spend increased further south and eighteen to twenty-five per cent of households in Christchurch were estimated to be experiencing fuel poverty. A Dunedin study examining housing quality in terms of safety, soundness, suitability and value for low income private renter households found that sixteen out of twenty-eight households were experiencing fuel poverty, because they either spent more than ten per cent of their income on heating their living areas to at least 18°C, or spent more than this but could not achieve this temperature (Presbyterian Support Otago, 2005). These figures excluded those who were spending less than ten per cent of their income on heating costs but failing to achieve an average evening temperature of 18°C, so are likely to be an underestimate.

Several New Zealand studies, while not directly investigating fuel poverty, have found evidence confirming that heating costs were a problem for participants (eg. Kearns, et al., 1991b; Saville-Smith, James, Fraser, Ryan, & Travaglia, 2007). The Household Energy End-use Project (HEEP) investigated indoor temperatures and fuel usage in three hundred households and found that those in the lowest income quintiles were over-represented in dwellings which were colder than the average of 17.3°C (Isaacs, et al., 2004). The lowest income quintiles tended to include more one-person and one-parent with child/ren households.

Electricity supply was deregulated in New Zealand in 1999, and since then electricity prices have risen at a far greater rate than wages and benefits. As many of the studies mentioned above used figures gathered in the early 2000s, the current numbers of households in fuel poverty are expected to be far higher than those reported. Isaacs and colleagues (2004) suggest that tackling fuel poverty requires a coordinated response through both energy and social policy. The previous and current governments have both introduced programmes with

subsidies aimed at increasing the levels of insulation and the efficiency of heating devices used in New Zealand homes (Energy Efficiency and Conservation Authority, 2010). Some of these programmes have targeted home owners, while others focus on owners of private rental housing. In addition, HNZA has a retrofitting programme which involves insulating and improving the heating in its housing stock (McTurk, 2009), but this is not specifically targeted to disadvantaged households.

While many of these programmes have experienced a rapid uptake, the overall benefit to average household temperatures, and therefore health outcomes, throughout the country will not be noticed in the short-term. Both Lloyd (2006) and Isaacs and colleagues (2004) suggest that targeted subsidies to help low income households pay for heating-related costs would provide some relief until the effects of insulation improvements and energy-efficient heating appliances are felt. Lloyd adds that subsidies could be based on regional differences in heating costs and would help to balance some of the inequality among different income groups.

The following section examines the effects of specific neighbourhood features and problems and broader neighbourhood characteristics on outcomes for people with serious mental illness.

3.3 The physical neighbourhood

The definition of a neighbourhood varies and can range from the few streets which surround a person's dwelling (Drukker & van Os, 2003) to the suburb in which they live. Neighbourhoods are generally defined by the geographic boundaries used by the census (Sampson, et al., 2002). This is a useful definition in practical terms as it is generally consistent over time but often fails to reflect the social networks and community links that those living in the neighbourhood would describe. Altschuler, Somkin and Adler (2004) confirmed Keller's finding (1968, cited in Altschuler, et al., 2004) that people use two concepts of neighbourhood, their immediate neighbourhood, usually the size of a block or

smaller, and a larger area defined by “communal, ... commercial and/or municipal boundaries.” (p. 1223).

Several studies have examined the broad neighbourhood characteristics which enhance housing satisfaction, residential stability and well-being for people with mental illness, however, it is also useful to look at some of the more seminal work on physical neighbourhoods for all populations, as they contribute to a greater understanding of environmental effects for a variety of marginalised groups.

3.3.1 Neighbourhood quality

Socio-economic deprivation is one neighbourhood measure which has been associated with poor physical and mental health outcomes (Drukker & van Os, 2003), as has the state of the neighbourhood (Shinn & Toohey, 2003). Social exclusion can also be a consequence of living in a poor quality neighbourhood, as access to services and amenities, particularly affordable, good quality grocery stores, is often restricted (Atkinson, 2008; Popkin, et al., 2002).

Wright and Kloos (2007) conducted a study examining the effect of different levels of the physical environment (housing, neighbourhood, and census level) on well-being outcomes for people with serious mental illness. They found that neighbourhood level variables explained a greater amount of variance in well-being than housing or census level variables. Although, this finding could have been due to participants living in supported housing, as housing was monitored by support staff, which may have led to lower variability in the quality of the housing (Wright & Kloos, 2007).

In a large study involving more than five hundred participants, living in a higher-income neighbourhood was found to predict subjective housing quality for people with serious mental illness, suggesting that increasing the supply of affordable housing in these areas could have benefits for people with serious mental illness (Mares, et al., 2005). Living in

higher-income neighbourhoods was also associated with increased satisfaction with neighbourhood safety (Mares, et al., 2005).

Specific physical aspects of neighbourhoods have also been studied in relation to housing outcomes. Physical and social problems within neighbourhoods and lack of accessible amenities are among variables assessed in studies. These are discussed in the following section.

3.3.2 Specific neighbourhood problems and features

Researchers have also investigated the effects of specific neighbourhood features and problems, such as safety, noise, traffic, and amenities, on various aspects of mental health functioning (eg. Granerud & Severinsson, 2003; Rosenheck, et al., 2001). Research suggests that neighbourhood problems are associated with increased costs in community and inpatient mental health treatment (Harkness, et al., 2004), and poorer self-rated health and psychological distress (Steptoe & Feldman, 2001). Physical neighbourhood problems have been categorised as relating to physical disorder (eg. houses and gardens in poor condition) or to social disorder (eg. vandalism or graffiti). A variety of terms have been used in the literature to denote these distinctions, including physical and social incivilities (Shinn & Toohey, 2003). This section will examine this literature to determine which specific neighbourhood problems and features affect housing outcomes, particularly for those who experience serious mental illness.

Safety and security, and individuals' perceptions of these, are frequently studied in relation to housing for people with serious mental illness. In a small, qualitative study, Whitley, Harris, and Drake (2008) examined adjustment and stability for a group newly housed in recovery housing, finding overwhelmingly that safety and security was the main concern of participants. However, as the participants were living in housing with shared entrances, it appears that much of the concern centred around other tenants allowing 'dangerous' individuals into the building. Yanos, Barrow, and Tsemberis (2004) found that those who

reacted positively to housing and had a sense of belonging in their community gave higher ratings for sense of safety, whereas Mares and Rosenheck's (2004) study indicated that those housed independently or with others were more satisfied with their neighbourhood safety than those who were homeless, in institutions, or moving between residences.

Sense of safety and security are important aspects of neighbourhoods as they often related to fear of crime, which can have significant negative effects on neighbourhood interactions and cohesion (Cattell, 2001; Ross & Jang, 2000). Halpern (1995) has suggested that fear of crime is related to direct and indirect experience of crime, individual vulnerability factors, such as age and gender, and indirect cues, such as poor physical neighbourhood conditions or social problems. Neighbourhoods which are perceived as having high levels of physical and social disorder have also been found to have higher levels of fear and mistrust (Ross & Jang, 2000). Some of these variables are likely to influence fear of crime and, therefore, sense of safety and security for people with serious mental illness, as they are more likely to be victims of crime and reside in poorer quality neighbourhoods.

It has been suggested that traffic and traffic noise may also influence mental health outcomes. Halpern (1995) identified studies which indicated that there is less social interaction on busy streets and that people are less helpful, although he suggested this may be due to noise. Traffic has also been posited to have an influence on well-being for people with serious mental illness (Wright & Kloos, 2007). Noise is also a problem commonly investigated in neighbourhood studies, although, it appears to affect mental health in only a very limited way (Halpern, 1995). It seems that individual traits have an influence on sensitivity to noise, and as a result, findings on the effect of noise on health outcomes have been inconsistent (Halpern, 1995). The influence of other neighbourhood problems, such as drug dealing and drug-related crime, gun crime and violent crime, has also been investigated, particularly in terms of neighbourhood safety (eg. Altschuler, et al., 2004; Popkin, et al., 2002). However, as New Zealand is fortunate to have few difficulties with these types of problems, they are not discussed here.

Neighbourhood amenities have also been posited as having an influence on mental health and other outcomes, such as well-being (Wright & Kloos, 2007). Macintyre and colleagues (2003) suggested that access to amenities is health promoting and that those living in social housing are more likely to live in neighbourhoods with poor access to amenities. Wright and Kloos (2007) found that the availability and accessibility of amenities influenced the well-being of people with serious mental illness, although another study indicated that ease of access to amenities was not associated with general or mental health, once socio-economic factors were adjusted for (Boreham et al, 2002, cited in Stafford & McCarthy, 2006).

However, while these studies have produced some interesting results, too little evidence is yet available to provide any consensus as to which types of neighbourhoods and specific neighbourhood features, and under which particular circumstances, are most successful in enabling positive outcomes for people with mental illness.

The physical neighbourhood can also affect social interactions within a neighbourhood (Brugha, Stansfeld, & Freeman, 2008; Witten, et al., 2003). The construction and layout of housing can enhance or detract from opportunities for social interaction. As Johnson (2005) posits,

“There are, in fact, some grounds for believing that it is the social environment, in tandem with and to some extent stemming from the physical design or condition of the housing stock, that has the greatest impact on emotional well-being.” (p. 22)

The influence of the social neighbourhood on outcomes for people with serious mental illness, and theory and research investigating its role will be discussed in the following section.

3.4 The social neighbourhood

Neighbourhoods and the communities that people live in are part of their social network, and while any investigation of neighbourhood must look at physical features, it must also examine the social context of the neighbourhood. There are many theories as to how people

interact in neighbourhoods and the effect of these interactions on housing and other outcomes.

Theories about how social support influences outcomes suggest that it has either a direct or a buffering effect on health (C. J. Smith, et al., 1993; Stansfeld, 2006). Stansfeld (2006) provides evidence for both, suggesting that direct effects may result from improved perceptions of control over the environment, increasing self-worth, and thus improving well-being, while buffering effects are posited to assist in reappraisal of a stressor, through supportive discussion or practical help, making it more manageable or avoidable.

Aspects of the social environment which have been investigated in relation to mental health and other outcomes include social cohesion, social capital, and social support networks. These are discussed in the following sections.

3.4.1 Social cohesion and social capital

Social cohesion, social control, and social capital have all been posited as having an influence on the social environment. Social cohesion is the extent to which neighbours trust and feel connected to each other, while social control refers to the likelihood that individuals will intervene in neighbourhood problems (Popkin, et al., 2002). Social cohesion and social control have together been termed collective efficacy (Popkin, et al., 2002), which is also known as social capital (Steptoe & Feldman, 2001). They are the most commonly used explanations for the influence of the social neighbourhood.

There is evidence to suggest that health outcomes are better in communities with higher levels of social cohesion (Stansfeld, 2006). Ellaway and Macintyre (2004) found that lower levels of social cohesion are reported in more deprived neighbourhoods, suggesting that the lower levels of social cohesion experienced in poorer neighbourhoods may result in poorer health outcomes. Macintyre and colleagues (2001) also discovered that while there were no reported differences in feeling part of their community, people who rented were less likely to

report reciprocal relationships with neighbours than owner-occupiers. This indicates that renters experienced lower rates of social cohesion than those who owned their homes.

In a study examining community integration for people with mental illness, interactions with neighbours were found to be related to sense of belonging to the community, implying that positive interactions assist people with mental illness in developing connections to their community (Prince & Gerber, 2005). Shinn and Toohey (2003) proposed that informal social ties with neighbours act to buffer the negative effects of fear and mistrust, although those living in highly disorganised neighbourhoods usually have limited ties with neighbours. Ross and Jang (2000) also suggested that supportive neighbourhoods and informal networks have a buffering effect against perceived neighbourhood disorder. The concept of 'resilient reciprocity' has been posited to explain the finding that more disadvantaged neighbours often have higher levels of social cohesion (Macintyre, et al., 2001) – the 'all in this together' phenomenon.

Yanos and colleagues (Yanos, et al., 2004; Yanos, et al., 2007) have also investigated the experiences of formerly homeless people with serious mental illness from the perspective of community integration. They examined reactions to housing and difficulties that subjects had in adjusting to their new living environments. One qualitative study examined experiences participants had in 'fitting in' to their new neighbourhoods (Yanos, et al., 2004). They found that while the majority of subjects did not experience any problems with fitting in, a small minority expressed some serious problems, often due to a racial mismatch between the person and the predominant race in the neighbourhood, or with the language spoken by the majority of the neighbourhood. A mismatch between the values of the participant and the values of the neighbourhood was another reason that participants felt they did not fit in. Others felt they did not fit in because the neighbourhood was intolerant of unusual behaviours, or because of crime or drug dealing in the neighbourhood. This study also found a significant correlation between sense of fitting in and sense of safety, as those who did not have problems fitting in to their neighbourhood gave higher ratings for sense of safety.

This study was followed by a quantitative investigation of forty-four formerly homeless people with serious mental illness who had been stably housed for at least a year (Yanos, et al., 2007). Measures of subjective and objective community integration, social functioning, social integration of the neighbourhood, and objective neighbourhood variables were examined using bivariate analysis to ascertain the nature of the relationships between these variables. While the authors acknowledged that the sample size limited their ability to conduct some analyses, they found that external community integration, prosocial functioning, and neighbourhood social interaction were all associated with sense of community, and that sense of community was significantly associated with fitting in to the neighbourhood. Sense of community was also negatively associated with the proportion of people born overseas living in the neighbourhood; however, unlike their earlier study (Yanos, et al., 2004), no association was found between participants' ethnic match with the neighbourhood and community integration variables. Interestingly, the objective neighbourhood variables, neighbourhood disadvantage and residential stability, were unrelated to any of the outcome variables.

A variety of different definitions have been developed for social capital, and an equally large number of explanations have been made regarding its effect on the social environment. Two types of social capital, bonding and bridging, have been posited to explain proximate and distal links within communities (Putnam, 2000, cited in Altschuler, et al., 2004). Bonding social capital refers to the informal social links within communities, and is essentially social cohesion, while bridging social capital describes the more formal organisational structures individuals participate in (Shinn, 2007). Social capital is believed to be generated through trust, and reciprocal and cooperative relationships within the community and its organisations (Cattell, 2001). Organisational affiliations through churches, community centres, and clubs, and informal connections to family/whanau, friends, and neighbours are the key aspects of social capital (Shinn & Toohey, 2003).

Like social cohesion, higher socio-economic neighbourhoods are reported to have higher levels of social capital (Stephoe & Feldman, 2001), although Drukker and van Os (2003) have

proposed that higher levels of perceived social capital may mitigate the negative effects associated with lower socio-economic neighbourhoods. Few studies have investigated the role of social capital in housing and other outcomes for people with serious mental illness, most likely due to the ill-defined nature of the concept (Altschuler, et al., 2004), and a greater focus has been placed on social cohesion and social networks for this group. However, there is some evidence to suggest that homeless people with serious mental illness who live in neighbourhoods with higher social capital and lower housing costs are more likely to become independently housed (Mares & Rosenheck, 2004).

The following section discusses the role of social networks in housing and other well-being outcomes for the study population.

3.4.2 Social networks

Social networks are closely linked to neighbourhoods, as much informal support comes from neighbours (Shinn & Toohey, 2003; Macintyre et al, 2001), but also include family/whanau, friends, and others within an individual's neighbourhood and community. People with serious mental illness tend to have smaller social networks than the general population, which has been linked with increased isolation and loneliness amongst this group (Perese & Wolf, 2005). Social supports are believed to have two roles, practical assistance and emotional support (Brugha, et al., 2008; Stansfeld, 2006), and have been found to mitigate stress for individuals (Brugha, et al., 2008; C. A. Smith, et al., 1994).

Few studies have investigated the role of social support networks for people with serious mental illness, especially in relation to housing outcomes. Stansfeld (2006) identified a number of studies which suggested that low levels of actual and perceived social support, and support which does not meet expectations, can contribute to psychiatric disorder. In particular, small social network size has been linked with depression and anxiety (Brugha, et al., 2008). Use of psychiatric services has also been found to decrease with larger support networks (Maulik, Eaton, & Bradshaw, 2009), although in this study use of general medical

services increased. In a study of people with psychosis, small social networks were associated with living in more marginal accommodation (Evert, Harvey, Trauer, & Herrman, 2003), while in a small qualitative study, Browne and Courtney (2005) found that living in independent housing enhanced housing stability and, therefore, the development of social networks. Brunt and Hansson (2002) compared the social networks of people with serious mental illness living in inpatient settings with those in two kinds of community-based housing, congregate community residences and independent housing with support, but found no clear differences. However, social networks were positively associated with overall quality of life. Smith, Smith, and colleagues (1994; 1993) examined the role of social networks in mitigating psychological distress caused by housing stressors and determined that perceived support from friends reduced distress, irrespective of the degree of housing stress.

These studies suggest that social networks have an influence on housing outcomes and other quality of life variables for those with serious mental illness, although, the body of research is, as yet, too limited to provide consistent findings. The following section draws together the environmental literature to establish the most effective physical and social environments for positive housing results for this group.

3.5 Which neighbourhood environments are most effective?

Since the early studies on housing for people with serious mental illness, researchers have attempted to establish which types of neighbourhoods were most efficacious in enabling positive outcomes for people with serious mental illness. Trute and Segal (1976), and others (eg. Newman, et al., 1994), have found that neighbourhoods which were neither highly socially cohesive nor significantly socially disintegrated were most helpful in promoting social integration for those with mental illness. Neighbourhoods with

“...socio-economically and demographically diverse populations, with a mix of commercial and residential land uses, and not physically pristine are associated with better mental health outcomes for the CMI [Chronically Mentally Ill],

perhaps because they are more tolerant and less rejecting of residents with mental illness.” (Harkness, et al., 2004, pp. 1344-1345).

However, another study has provided only weak support for this finding, instead proposing that the physical quality of the neighbourhood, particularly having newer and well-maintained buildings, little sign of physical deterioration, and a range of amenities, was associated with reduced mental health treatment costs and greater housing stability (Harkness, et al., 2004).

It has also been suggested that highly cohesive communities may make residents feel isolated, while disintegrated communities are too chaotic and threatening to enable positive social interaction (Newman, 2001a). Segal, Silverman, and Baumohl (1989) also discovered that conservative middle-class neighbourhoods were less tolerant of the community care residents in their study. They found that neighbourhoods in which the participants had key characteristics of the dominant social group produced the best outcomes (Segal, et al., 1989). The findings of Yanos and colleagues (2004) also support this result.

Results from studies examining the effect of the social neighbourhood on other health outcomes have indicated, however, that neighbourhoods with higher levels of social cohesion and stronger informal support networks buffer against the effects of stressors in the environment (Prince & Gerber, 2005; Ross & Jang, 2000; Shinn & Toohey, 2003). Higher income neighbourhoods have greater levels of social cohesion and social capital (Ellaway & Macintyre, 2004; Stansfeld, 2006; Steptoe & Feldman, 2001), implying that higher socio-economic neighbourhoods would be more efficacious for people with serious mental illness. Perhaps, as has been suggested by several authors (eg. Macintyre, et al., 2001; Wright & Kloos, 2007), the development of community interventions to foster good neighbour relations and increase social cohesion within communities will be effective irrespective of the nature of the physical neighbourhood.

3.6 *Methodological challenges*

The investigation of the influence of the physical and social environments on health, housing and well-being has been plagued by methodological difficulties. Newman (2001a; 2001b) critically analysed studies conducted over the past thirty years investigating the impact of different types of neighbourhoods on various outcome measures for people with serious mental illness, and found serious methodological problems, in particular with study design and statistical analysis.

Halpern (1995) identified two methodological problems which affect the rigour of environmental studies, social selection and response bias. It is difficult to separate the influence of environmental variables from individual genetic and lifespan effects (Freeman & Stansfeld, 2008). Self-report measures are frequently used in neighbourhood studies and have been subject to response bias, where those with negative perceptions tend to provide more negative responses (Freeman & Stansfeld, 2008; Halpern, 1995). In addition, evidence has suggested that people with serious mental illness may have difficulty accurately reporting poor conditions in their living environments (Newman, 1995).

Poor explanations of measures used, and study sample demographics and living circumstances have also affected the ability to compare results between studies (Newman, 2001b). Social networks are often measured by number of people and frequency of contacts but these variables do not convey the quality of relationships (Stansfeld, 2006). In addition, measures of neighbourhood problems are often combined into one overall rating variable (eg. Steptoe & Feldman, 2001), making it difficult to assess the effect of particular problems. Another methodological criticism is the lack of control or comparison groups (Newman & Goldman, 2009).

The most effective way to resolve these methodological challenges is to use longitudinal, randomised controlled trials (Freeman & Stansfeld, 2008; Newman & Goldman, 2009; Thomson, et al., 2002). This type of study design minimises response and recall bias (Freeman & Stansfeld, 2008) and provides stronger evidence of outcomes (Thomson, et al.,

2002). However, it would also require significant research and financial investment (Newman, 2001b; Newman & Goldman, 2009).

This literature review has examined the current body of research to establish the optimal housing and support environments for people who experience serious mental illness. A thorough examination of this literature crosses a number of disciplines and highlights numerous methodological challenges. To address some of these criticisms and to add to the body of knowledge on housing for this group, this thesis examined the effect of housing, support and neighbourhood variables on housing and well-being outcomes for people with serious mental illness living in Christchurch, New Zealand, using Peace and Kell's (2001) sustainability framework. The next chapter describes the methodology used in this study, with particular reference to addressing methodological challenges through study design and statistical techniques.

4 Methods and Sample Characteristics

This study explored the role of specific housing and neighbourhood features and broader characteristics, and formal and informal support in enhancing the housing satisfaction, residential stability and well-being of people with serious mental illness. It also examined the effect of support from Comcare Housing on these outcome variables to provide recommendations for future service development. Methodological difficulties experienced by researchers in this area and the effect of these on the ability to draw strong conclusions about the most effective living environments for this group have been highlighted by many authors (eg. Leff, et al., 2009; Newman, 2001a; Newman & Goldman, 2008) (Section 2.4.5). These criticisms were considered during study design and their implications and effect on decisions are discussed in this chapter. The research instruments used and statistical analyses employed are also described along with explanations for their choice. This chapter also includes a comparison of the study participants with the wider group from which the sample was drawn.

4.1 Study Design

Newman and Goldman (2008; 2009) promote randomised controlled trials as the foremost approach in studying housing outcomes for people with serious mental illness, although they acknowledge that the cost and difficulty in implementing the variety of control and experimental conditions required for this type of study make this difficult. The use of randomised controlled trials is favoured as it eliminates many of the methodological problems, such as lack of a control group or selection bias, which make interpretation and comparison of results difficult (Newman & Goldman, 2009). Newman (2001a) has also been critical of the lack of consistency in the research, as researchers appear to ‘reinvent the wheel’ each time they conduct a study, using different outcome variables than those used in previous studies and classifying housing environments in a variety of different ways. In addition, recall bias in retrospective studies (Thomson, et al., 2002) and the effect of a negative response bias among people who experience mental illness (Freeman & Stansfeld, 2008) have also been identified as other methodological considerations.

A randomised controlled trial was beyond the scope of this thesis as time and resource constraints meant it was not possible to establish a control group. However, in order to address some of the methodological difficulties discussed here, and in Section 2.4.5, a twelve-month prospective cohort design was used. Cohort studies identify subsets of a population which may be exposed to particular factors expected to have an effect on outcome variables (Nicholas & Broadstock, 1999), and the National Health and Medical Research Council (NHMRC) (2000, cited in Doughty & Tse, 2005) classifies them as of moderate methodological quality. This study design enabled comparisons over time within the study group, illustrating the effect of changes in housing, support and other circumstances on participants' well-being, and reduced the effect of both recall and response bias.

The study sample was drawn from a group of people with serious mental illness who were referred to the Comcare Housing Service, a community-based housing facilitation service which assists people with mental illness in accessing and retaining independent rental housing. As randomisation was not possible, to minimise the effect of selection bias, consecutive referrals to the service were invited to take part in the study until a large enough sample was achieved. A sample of 50 was the initial goal, however, due to difficulties and delays in recruitment the final number was 36. At any one time, Comcare Housing has 200 active clients on its database, therefore recruiting 50 participants represents a sampling frame of 1 in 4 (50/200). A power analysis was deemed unnecessary as the results of the recruited participants would not be compared with a control group. It was expected that all the pertinent characteristics of those individuals referred to Comcare Housing would be observed in this sample.

Ethical approval for this study was granted by the Upper South A Ethics Committee. Consultation on the recruitment process and the design of the study was conducted with both the Comcare Service Advisor Group and the Te Awa O Te Ora Whanau Forum. Both groups were supportive of the study.

4.1.1 Research instruments

Newman's (2001a) methodological criticisms concerning lack of consistency in evaluation tools guided the decision to base the questionnaires used in this study on one first used in New Zealand by Kearns (1990), and also used by Kearns, Smith and Abbott (1991b) and Peace and Kell (2001). This enabled comparison with other results in New Zealand, assisting with the development of the sparse body of research on housing and mental illness for the New Zealand population. Questions concerning neighbourhood were drawn from the British Household Panel Study and the HOPE VI Panel Study (Popkin, et al., 2002), which was conducted in the United States, and adapted to the New Zealand context. Questions on support were also adapted from the HOPE VI Panel Study (Popkin, et al., 2002). Use of questions from these studies provided the opportunity for comparison with international research. Participants' satisfaction with aspects of their lives, such as safety, health and their personal relationships, were measured using the Personal Well-being Index (International Wellbeing Group, 2005). This scale was used to evaluate the impact of changes in housing circumstances and/or support on participants' feelings of satisfaction.

The questionnaires examined the subjects' current housing situation, including the condition of their housing, their satisfaction with their housing, neighbourhood and neighbourhood facilities, support services they received, and the two previous dwellings they resided in. There were also questions concerning participants' financial circumstances. These questions were designed to ascertain the affordability, sustainability, suitability, and accessibility of the subject's current and previous housing. The questions concerning support asked in the first questionnaire ascertained the participants' current supports and perceived support needs, while the follow-up questionnaire examined current supports and amount of time spent with each support. Both questionnaires also included some demographic items, such as age, ethnicity, and mental health diagnosis.

4.2 Recruitment

Study participants were recruited through Comcare Housing from referrals made to the service by mental health case managers based in community services run by the Canterbury District Health Board (CDHB), social workers at the acute inpatient service, or mental health needs assessors. The inclusion criteria for the study were people diagnosed with a serious mental illness, aged between 18 and 65 years old, referred to and accepted by Comcare Housing for assistance with finding housing in the community. The exclusion criteria were people referred to the service but **not** accepted for assistance.

Between 1 December 2006 and 31 January 2008, people who met the inclusion criteria were invited to participate in the study. The Housing Service Manager contacted each person by phone, or by letter sent to their last known address or to their mental health case manager, and asked if they would object to their contact details being given to a Comcare Service Advisor (consumer of mental health services who advises Comcare Trust on consumer perspectives on service development) who would contact them about taking part in the study. If the person was agreeable, they were contacted, given an explanation of the study, and offered an information sheet. Those who were sent an information sheet were contacted again one week later, given the opportunity to ask any questions, and asked if they would like to participate, or if they needed more time to decide. People who consented were then contacted by the interviewer and a suitable time was made to conduct the first interview. Attempts to arrange the follow-up interviews began nine to twelve months after the first interviews. All interviews were conducted face-to-face at a time and place of the participants' choosing. Participants were given a \$10 grocery voucher for each interview they completed, to show appreciation of their time and input.

4.3 Sample

One hundred and eighty referrals were received by Comcare Housing during the sampling timeframe. Twenty-six referrals were not accepted by the service and 8 were for people who had already been referred during the study period. Thirty-six of 147 possible participants

agreed to participate in the study. The initial goal was to recruit 50 participants, however, due to difficulties contacting and following up potential participants and time constraints on the completion of the study, recruitment ceased before 50 was reached. The difficulties involved in contacting potential participants is reflected in the fact that 65 either could not be contacted even though they had a current phone number (29 people) or did not respond to letters (36 people). Forty-five people were contacted and decided not to take part in the study at some point during the recruitment process.

Study participants were not necessarily assisted with housing by Comcare Housing workers as the service has an urgency-based waiting list and there were situations where the person referred found alternative housing by themselves, or with assistance from other workers or support people, before a Comcare Housing worker was able to engage with them.

4.3.1 Comparison of participants and non-participants

Table 4-1 shows the numbers and percentages of participants and non-participants in particular demographic categories. Unfortunately, some of the non-participants' demographic details were not collected by the service making comparison with the participants difficult. However, tests of difference were conducted on the available data and found that there were no significant gender, age, ethnic, or diagnostic differences between the recruited sample and those who did not to take part (Sex – $r=-0.115$; Age – $r_s=-0.104$; Ethnicity – $\chi^2_{(3)}=2.536$; Diagnosis – $\chi^2_{(3)}=5.127$). These results indicate that the sample were representative of the larger population in terms of key demographic characteristics.

Table 4-1 - Demographic characteristics of participants and non-participants

	<u>Participants</u> n (%)	<u>Non-participants</u> n (%)
<u>Sex¹:</u>		
Male	11 (30.6)	48 (43.6)
Female	25 (69.4)	62 (56.4)
Total	36 (100)	110 (100)
<u>Age²:</u>		
≤ 30 years old	10 (27.8)	41 (38.0)
31-40 years old	12 (33.3)	36 (33.3)
41-50 years old	10 (27.8)	21 (19.4)
51 years plus	4 (11.1)	10 (9.3)
Total	36 (100)	108 (100)
<u>Ethnicity³:</u>		
Pakeha/NZ European	27 (75.0)	68 (63.0)
Maori	8 (22.2)	32 (29.6)
Pacific Island	0	4 (3.7)
Other	1 (2.8)	4 (3.7)
Total	36 (100)	108 (100)
<u>Diagnosis⁴:</u>		
Depression and/or anxiety	15 (41.7)	18 (27.3)
Schizophrenia	8 (22.2)	21 (31.8)
Bipolar disorder	8 (22.2)	9 (13.6)
Other	5 (13.9)	18 (27.3)
Total	36 (100)	66 (100)

¹ One non-participant was of unknown gender.

² Three non-participants were of unknown age

³ Three non-participants were of unknown ethnicity

⁴ Forty-five non-participants were of unknown diagnosis

Table 4-2 - Assistance provided to participants and non-participants by Comcare Housing

	<u>Participants</u> n (%)	<u>Non-participants</u> n (%)
<u>Assisted by Comcare:</u>		
Yes	32 (88.9)	52 (46.8)
No	4 (11.1)	59 (53.2)
Total	36 (100)	111 (100)
<u>Housed by Comcare:</u>		
Yes	28 (87.5)	33 (63.5)
No	4 (12.5)	19 (36.5)
Total	32 (100)	52 (100)
<u>Housed in Comcare tenancy:</u>		
Yes	15 (53.6)	12 (36.3)
No	13 (46.4)	21 (63.6)
Total	28 (100)	33 (99.9)
<u>Still living in housing:</u>		
Yes	23 (82.1)	13 (39.4)
No	4 (14.8)	9 (27.3)
Don't know	1 (3.7)	11 (33.3)
Total	28 (100)	33 (100)

The degree of assistance provided to participants and non-participants was also compared (Table 4-2). The results of this analysis suggested that a greater proportion of participants than non-participants received support ($r=0.365$, $p<0.01$) and obtained housing ($r=0.262$, $p<0.05$) through Comcare Housing, although there was no significant difference in the proportions housed in a Comcare owned or controlled tenancy ($r=0.173$), indicating that participants and non-participants were equally likely to be offered a tenancy by the service. There was also a significant difference between the proportion of participants and non-participants who, at the end of the follow-up period, were still living in housing obtained through Comcare Housing ($\chi^2=12.710$, $p<0.05$), although this could be because of the numbers of non-participants for whom their current address was unknown.

Table 4-3 illustrates the reasons that participants and non-participants were not assisted or rehoused by Comcare Housing. Unfortunately, the reasons for over half of the non-participants not being assisted are unknown, but as explained in Section 4.3, a large proportion were unable to be contacted during recruitment and it is likely that many of them were not assisted by Comcare Housing due to difficulties contacting them. This is another example of the high level of mobility in this population, and as there was no difference in the proportions offered Comcare tenancies, it is unlikely that this is a reflection of bias on the part of Comcare Housing workers.

Table 4-3 – Reasons for not being assisted or rehoused by Comcare Housing

	<u>Participants</u> n (%)	<u>Non-participants</u> n(%)
<u>Reasons for not being assisted:</u>		
Found own housing	2 (50.0)	12 (20.3)
Stayed in current housing	1 (25.0)	1 (1.7)
Moved out of Christchurch	0.0	3 (5.1)
Got housing support elsewhere	1 (25.0)	2 (3.4)
Lost/couldn't contact	0.0	2 (3.4)
Other reasons	0.0	8 (13.6)
Don't know	0.0	31 (52.5)
Total	4 (100.0)	59 (100)
<u>Reasons for not being rehoused:</u>		
Found own housing	0	4 (21.1)
Stayed in current housing	2 (50.0)	3 (15.8)
Got housing support elsewhere	0	1 (5.3)
Wanted to live with others	0	2 (10.5)
Lost/couldn't contact	0	5 (26.3)
Other reasons	2 (50.0)	4 (21.1)
Total	4 (100)	19 (100.1)

4.4 Data Analysis

The data collected from the questionnaires were entered into a spreadsheet as soon as practicable after each interview to enable early recognition of any anomalies and to reduce the likelihood of data entry errors by making the process less arduous. Once data collection was complete, the spreadsheets were imported into the SPSS statistical package ("SPSS for

Windows," 2008) and the data were checked and cleaned. Six of the first interview questionnaires were randomly selected and manually checked for data input errors. Four errors were found, representing an estimated error rate of one error per 474 entries. A further six second interview questionnaires were also randomly chosen and were not found to have any data entry errors. These results indicate that data input was sufficiently accurate.

The majority of data collected were quantitative, although many of the answers were categorical in nature. The range of responses was checked and recoded into smaller numbers of categories where possible. Several open ended, qualitative questions were also asked during each interview. Responses to these questions were examined to elicit key themes and were coded accordingly.

4.4.1 Statistical techniques

Newman (2001b) has also been critical of the statistical analyses used by researchers who study housing for people with serious mental illness. She is critical of the use of correlational analysis and its inability to establish causality, positing that the use of multivariate analysis is necessary in order to understand the contribution of particular independent variables on outcomes. However, multivariate techniques require larger, normally distributed samples, and the data collected in this study were not sufficiently rigorous for multivariate analysis to be used extensively. This section examines the statistical techniques used for data analysis and the reasons for their use.

4.4.1.1 Correlation analysis

Correlation analysis was the primary method of analysis employed in this study. Chi-square, Spearman's rho and Pearson's r were all used to establish whether there were relationships between variables. The level of measurement of the variables used determined which type of correlation was used for each analysis. Some variables were recoded to a higher level of measurement to enable use of a particular correlation.

Spearman's rho and Pearson's r assist in understanding the strength of the relationship between particular variables but do not enable the establishment of causality. The correlations they produce are always between -1 (a perfect negative correlation) and +1 (a perfect positive correlation). The closer a result is to -1 or +1 the stronger the relationship between the variables. In practice, correlations between 0 and +/-3 are considered weak, indicating that there is little or no relationship between the variables, correlations between +/-3 and +/-6 are moderately strong, suggesting that the variables have a reasonably strong relationship, and correlations which are larger than +/-6 are strong, signifying that the variables are highly related.

4.4.1.2 Tests of difference

Tests of difference were used to examine the degree of change in participants' responses between first and second interviews. Chi-square, McNemar's test, Wilcoxon Signed Ranks test, and Paired Sample T-tests were all used, and were selected based on the level of measurement of the variables being tested. McNemar's test was used for variables with only two categories or in situations where it was possible to recode the variable into two categories without losing explanatory power. Wilcoxon test was used for variables which had more than two categories but were ranked in order.

The use of the techniques described above provided an understanding of the relationships between variables but, as explained in the next section, regression analysis was also used in data analysis to determine the effect of independent variables on outcomes.

4.4.1.3 Multivariate analysis

Multivariate analysis, also known as regression analysis, was also used in this study as it is able to provide information concerning the causal relationship between variables, and lack of use of this type of analysis is a common criticism of the literature (Newman, 2001b). There are several criteria which data must meet to ensure accurate results when using regression analysis. The sample size must be sufficient such that the variables are normally distributed,

and its use relies on assumptions of linearity, multicollinearity and homoscedasticity which must not be violated if accurate conclusions are to be drawn.

The data from the second interview were used for this analysis. Variables which were not moderately correlated with the dependent variables were excluded from the analysis. Violation of the assumptions mentioned above was checked early in the modeling process. Initial analysis was conducted using each independent variable separately to establish the degree of variance each contributed to the value on the dependent variable. Following this, the independent variables which seemed to explain the greatest variance were entered into the analysis in various combinations to establish which could best explain the dependent variable scores.

4.4.1.4 Statistical significance

All statistical analyses provide a measure of the probability of a particular result occurring by chance. Results which are not likely to have occurred by chance are considered statistically significant. P-values are used to identify the level of significance, and a value of 0.05 or less is necessary for a result to be significant. This value means that the likelihood of the result occurring by chance is less than five per cent. The conventional level of significance accepted by most researchers is 0.05, however, some prefer to use 0.01. Both are used in this study.

Chapters 5 and 6 present the results of the data analysis using the techniques described in Section 4.4.1. Chapter 5 contains primarily descriptive analysis while Chapter 6 examines the nature of the relationships between variables using multivariate analysis.

5 A Socially Excluded Population

Chapters 5 and 6 present the results of the data analysis of the participants' responses to the first and second interview questionnaires. Chapter 5 includes the demographic profile of the sample, their economic circumstances, analyses related to housing, and neighbour and neighbourhood relationships. Chapter 6 presents an analysis of satisfaction data and assesses aspects of the Comcare Housing Service.

Thirty-six participants took part in the first interview, while 31 completed the second. The median length of time between interviews was 13 months, with a range of 9 to 16.5 months. Four participants were unable to be contacted for the second interview and 1 began, but did not complete, it. Unless otherwise stated, responses from these 5 participants were excluded from analysis of second interview variables.

5.1 Profile of the Sample

5.1.1 Demographic details

Figures 5-1 to 5-6 illustrate some demographic details of the participants. Twenty-five (69.4 per cent) respondents were female and 11 (30.6 per cent) were male (Figure 5-1). Twenty-seven (75 per cent) identified as Pakeha/New Zealand European, whilst 8 (22.2 per cent) were Maori, and 1 (2.8 per cent) participant was categorised as other (Figure 5-2). The percentage of Maori participants was greater than that found in the Christchurch population (7.6 per cent identified as Maori in the 2006 census (Statistics New Zealand, 2009b)). This could be due to the higher rates of mental illness experienced by Maori in comparison with Pakeha or may be a reflection of the added discrimination faced by Maori in relation to housing. It could also indicate that Comcare Housing workers are able to engage well with Maori.

The participants' ages ranged from 19 to 57 years, with 61 per cent of participants aged less than 41 years (Figure 5-3). Almost two thirds (23 (63.9 per cent)) of the participants were

single, 10 (27.8 per cent) reported being divorced, separated or widowed, and only 2 (5.6 per cent) were currently married (Figure 5-4). One participant reported a change in marital status between the first and second interviews, from married to separated. Despite high numbers of participants indicating they were single, 20 (55.6 per cent) had children (Figure 5-5). For the 18 participants where the age and numbers of children was known, 9 (50 per cent) had children under the age of 18, while 7 (38.9 per cent) had adult children, and 2 (11.1 per cent) had both children under 18 years old and adult children (Figure 5-6). Five (27.8 per cent) respondents had their own children under 18 living with them at the time of each interview. These findings suggest that many of the participants represent single-person families and are, therefore, more likely to require dwellings which are smaller than those commonly available.

Figure 5-1 – Sex (n=36)

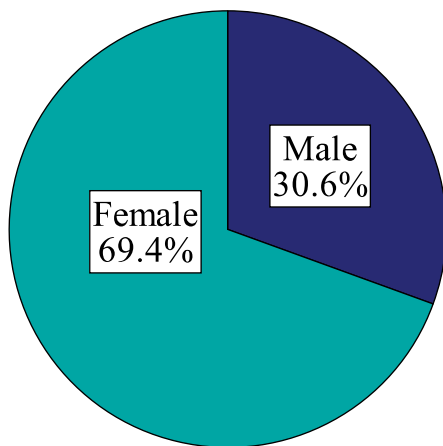


Figure 5-2 – Ethnicity (n=36)

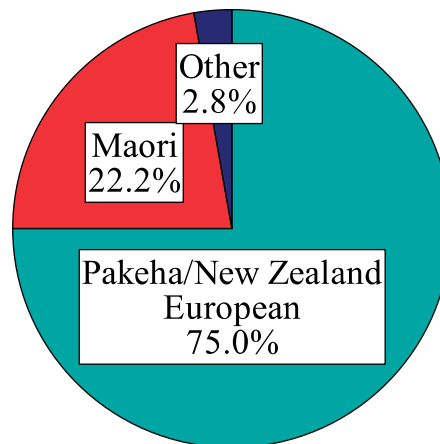


Figure 5-3 – Age (n=36)

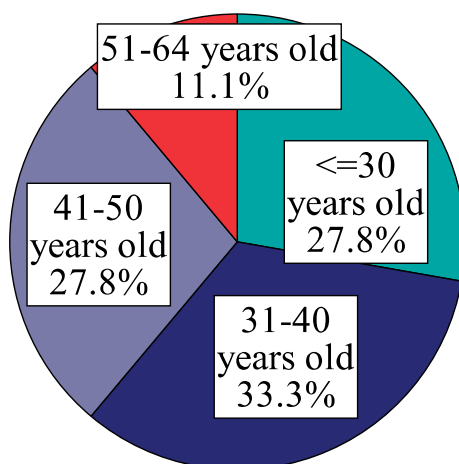


Figure 5-4 – Marital status (n=36)

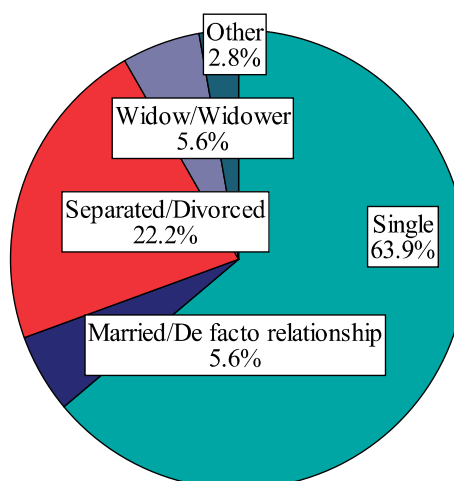


Figure 5-5 – Children (n=36)

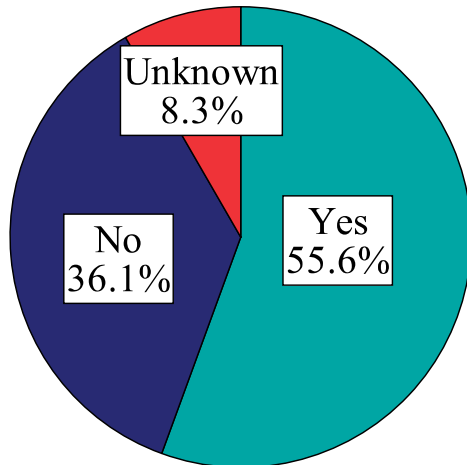


Figure 5-6 – Ages of children (n=18)

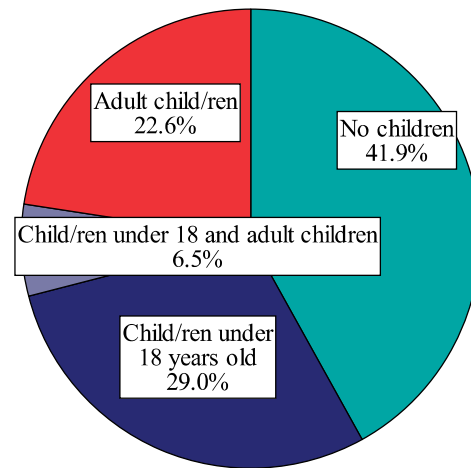
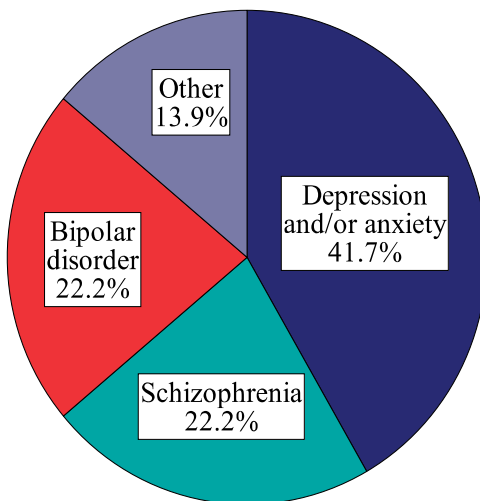


Figure 5-7 – Mental health diagnosis (n=36)

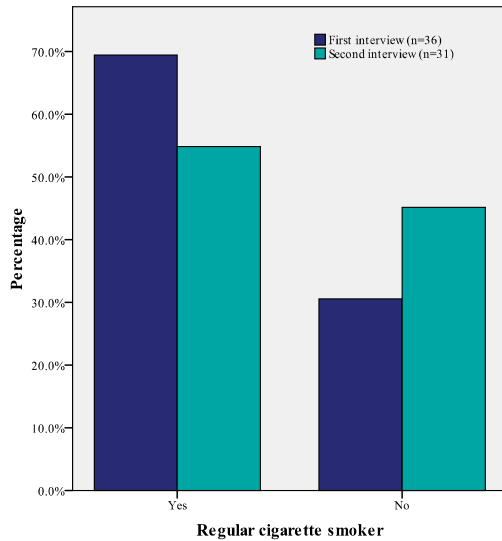


The most common mental health diagnosis was depression and/or anxiety (15 (41.7 per cent)), followed by schizophrenia and bipolar disorder (8 (22.2 per cent) participants each). Five (13.9 per cent) participants had other disorders, which included 2 with schizoaffective disorder and 1 with psychosis (Figure 5-7).

Lifestyles factors were also examined.

In comparison with the general population, a very high percentage of participants were cigarette smokers at both the first and second interviews (25 (69.4 per cent) and 17 (54.8 per cent) participants, respectively) (Figure 5-8). It is positive to note that some participants had quit smoking between the first and second interviews, although the change in number of smokers was non-significant ($\chi^2=1.800$).

Figure 5-8 – Cigarette smoking at first and second interviews



Respondents were also asked about their alcohol and other drug use at each interview. Eighteen (50.0 per cent) participants at the first interview said they drank alcohol, with 17 (54.8 per cent) at the second. The frequency with which participants drank decreased between the first and second interviews, with 5 (27.8 per cent)

drinking once a week or more at the first interview, while none of the participants reported drinking that frequently at the second. This decline in frequency, while positive for participants, was non-significant ($W=-1.715$).

Participants were also asked about their use of illicit drugs. Few respondents reported using any illicit drugs (2 (5.6 per cent) at the first interview and 5 (16.1 per cent) at the second). This increase was non-significant. Unfortunately, the frequency with which participants used illicit drugs also increased between the first and second interviews, with 1 participant using daily at the first interview and 3 using daily at the second. However, this increase in frequency was not significant. Like many studies investigating the use of illicit drugs, it is difficult to know whether this study has captured the true usage levels of participants, so it is, therefore, difficult to draw firm conclusions about drug use among the participants.

Summary of demographic details

- almost 70 per cent of the participants were female, 60 per cent were 40 years old or younger, and 40 per cent were diagnosed with depression and/or anxiety.
- a greater percentage of participants identified as Maori than would be expected in the Christchurch population.
- the number of participants who were regular cigarette smokers decreased but was still over 50 per cent at the second interview.

5.1.2 Economic circumstances

The economic circumstances of the participants have particular relevance to this study as they dictate the ability of participants to manage their living costs, especially housing. They also affect participants' eligibility for, and likelihood of being able to access, certain types of housing and income support.

The majority of participants were receiving a Work and Income New Zealand (WINZ) benefit at the time of each interview (Figure 5-9). Three (8.3 per cent) respondents were not receiving a benefit at the first interview, while 4 (12.9 per cent) did not receive a benefit at the second. Sources of income for the five (13.9 per cent) participants who were unable to be followed up are unknown.

Participants were most commonly in receipt of the Invalids Benefit, with 24 (66.7 per cent) at the time of the first interview and 21 (67.7 per cent) at the second. This suggests that members of the study population were significantly affected by their illness as the eligibility criteria for Invalids Benefit include the inability to undertake full-time work for at least two years (Figure 5-10). At the time of the first interview, 23 (63.9 per cent) participants were not doing any sort of work. At the second interview, 20 (55.6 per cent) participants were not employed.

Figure 5-9 – Percentage of participants receiving each type of benefit at first and second interviews

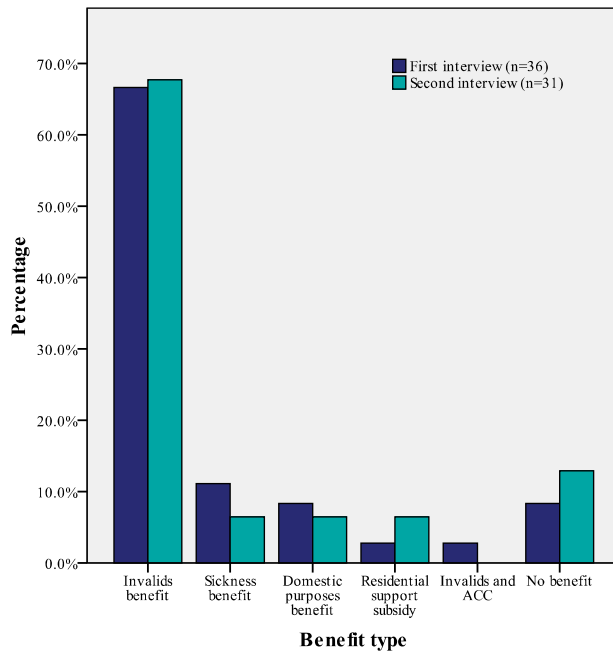
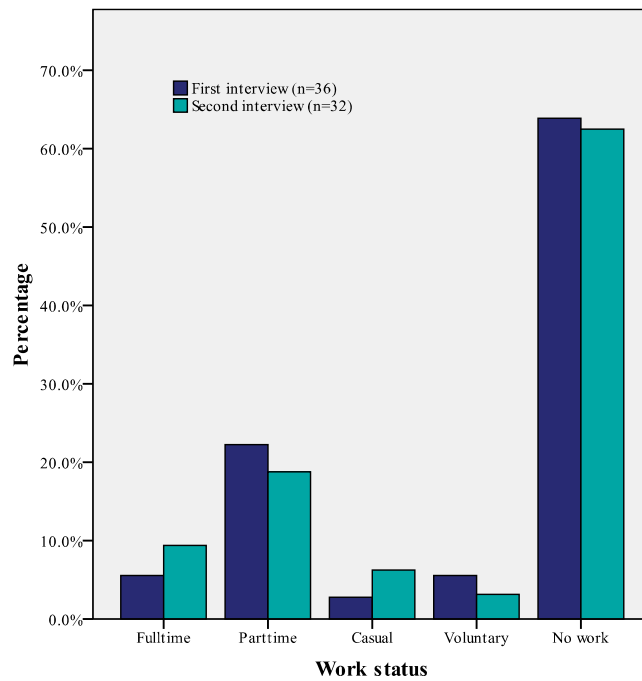


Figure 5-10 – Work status



The median weekly income of the respondents rose from \$284.00 to \$290.00 between the first and second interviews. A paired sample t-test was performed and found no significant difference between participants' income at the time of the first and second interviews ($t_{(30)} = -1.294$). Due to the low numbers of participants who were working (Figure 5-10), this increase is most likely attributable to cost of living increases given to clients by WINZ in April each year.

In addition to a base benefit, most respondents were also receiving additional supplements, such as disability allowance and accommodation supplement, from WINZ (Table 5-1). The decline in numbers receiving accommodation supplement is due to 4 (11.1 per cent) respondents moving from private rental to HNZN properties, while 2 others stopped receiving it for other reasons. The fall in numbers receiving a Community Services Card to subsidise health costs was unexpected, as it seems unlikely that the income of many participants would make them ineligible for this support. One explanation for this could be that the 5 participants who were not re-interviewed still had Community Services Cards and would thus make up most of the drop in numbers in receipt of one.

Table 5-1 – Additional supplements/support received from Work and Income New Zealand*

	First interview (n=36) n (%)	Second interview (n=31) n (%)
Community Services Card	33 (91.7)	26 (83.9)
Accommodation Supplement	24 (66.7)	18 (52.9)
Disability Allowance	21 (58.3)	23 (74.2)
Child Disability Allowance	1 (2.8)	3 (9.7)
Temporary Additional Support	8 (22.2)	8 (25.8)
Family Assistance	5 (13.9)	5 (16.1)

* Number of participants receiving each type of supplement/support

Many of the respondents also received additional financial assistance from WINZ, in the form of repayable advances or non-recoverable grants (Table 5-2). At the time of the first interview, 24 (66.6 per cent) participants had received additional assistance from WINZ in the previous 12 months. At the second interview, 23 (74.2 per cent) had received this type of assistance in the previous 12 months. The most frequently accessed additional assistance was food grants, which are non-recoverable assistance given to purchase food when the WINZ case manager determines the client has a severe need. Single clients of WINZ can access up to \$400 worth of food grants each year, increased from \$200 per year in August 2008. Half of all participants received at least one food grant in the 12 months preceding each interview.

Table 5-2 – Types of additional assistance received from WINZ in 12 months prior to each interview*

	First interview (n=36) n (%)	Second interview (n=31) n (%)
Food grant	19 (52.8)	18 (58.1)
Rent and bond advance	17 (47.2)	9 (29.0)
Healthcare advances**	8 (22.2)	8 (25.8)
Assistance with purchasing whiteware	4 (11.1)	2 (6.5)
Payment of utility bills	4 (11.1)	1 (3.2)
Clothing/shoe grant	4 (11.1)	3 (9.7)
Reestablishment grant	2 (5.6)	1 (3.2)
Other	4 (11.1)	3 (9.7)
No additional assistance from WINZ	12 (33.3)	8 (25.8)

* Number reporting receiving each type of assistance.

** Including doctor and dentist bills and assistance with glasses.

Repayable advances for rent and bond payments to secure housing were also common (17 (47.2 per cent) respondents prior to the first interview and 9 (29.0 per cent) in the 12 months before the second). Several respondents (8 at each interview) also received advances for health-related items, such as doctor or dentist bills or glasses. Participants also received a number of other types of grants and advances during the study period. The numbers of participants receiving additional assistance from WINZ is an indication of the difficulty

meeting unexpected costs when on a restricted income. It also explains why the most common type of debt was with WINZ (Table 5-3). However, no correlation was found between the number of types of grants made by WINZ and participants' total weekly income in either interview ($r=-0.013$ and 0.159 , respectively). There was no significant difference in the number of types of grants made by WINZ between first and second interviews ($t_{(30)}=0.812$).

Table 5-3 – Types of debts at first and second interviews*

	First interview (n=36) n (%)	Second interview (n=31) n (%)
Work and Income debt	26 (72.2)	19 (61.3)
Doctors/Dentists bills	13 (36.1)	7 (22.6)
Loans/Overdrafts	9 (25.0)	6 (19.4)
Collection Agency Debt	8 (22.2)	3 (9.7)
Hire Purchase Agreements	5 (13.9)	4 (12.9)
Credit Card Debt	2 (5.6)	3 (9.7)
Court Fines	3 (8.3)	1 (3.2)
Student Loan	2 (5.6)	3 (9.7)
Other debts	7 (19.4)	7 (22.6)

* Number reporting to have each type of debt.

Participants' levels of debt also affected their ability to cover living costs. Six (16.7 per cent) participants did not have any debt at the first interview, while 8 (25.8 per cent) were debt free at the time of the second interview. The median number of types of debt for each participant was 2, with a range of 0 to 5 at both interviews. However, the mean number of types of debts decreased from 2.14 in the first interview to 1.77 in the second, suggesting that the overall level of debt of the participants was lessening over time, although no significant association was found between number of types of debts and first or second interview ($t_{(30)}=1.186$). As explained above, the most common type of debt was WINZ debt, with 26 (72.2 per cent) participants reporting it at the first interview and 19 (61.3 per cent) at the second. Many respondents also had unpaid doctor and dentist bills, reflected in the number of WINZ grants

made to pay health-related expenses, and a symptom of the low income and poor health of the study population (Table 5-3).

Another indication of financial circumstances is foodbank use. At each interview, respondents were asked which of the major foodbanks in Christchurch they had used at least once during the previous 12 months. Seven foodbanks were identified (Table 5-4). Sixteen (44.4 per cent) participants had used at least one foodbank in the 12 months before the first interview, 15 (48.4 per cent) had used one in the 12 months before the second.

Table 5-4 – Foodbanks used by participants at first and second interviews*

	First interview (n=16) n (%)	Second interview (n=15) n (%)
0800 Hungry	14 (87.5)	9 (60.0)
Salvation Army	7 (43.8)	5 (33.3)
Christchurch City Mission	3 (18.8)	6 (40.0)
Methodist Mission	3 (18.8)	0
St Vincent de Paul	3 (18.8)	0
Catholic Social Services	1 (6.3)	2 (13.3)
Delta Community Trust	0	1 (6.7)

* Number of participants who reported using each foodbank at least once.

Much of the economic information gathered about the participants seemed to be unrelated, however, significant correlations were found between the number types of grants made by WINZ and the number of different types of debts at both interviews ($r=0.387$, $p<0.05$ and $r=0.426$, $p<0.05$, respectively). In addition, there was a significant correlation between the number of types of WINZ grants and number of different foodbanks used at the first interview ($r=0.547$, $p<0.01$), however, this correlation was not significant at the second interview ($r=0.280$). There were no significant correlations between debts and foodbank use in either interview ($r=0.222$ and $r=0.313$, respectively).

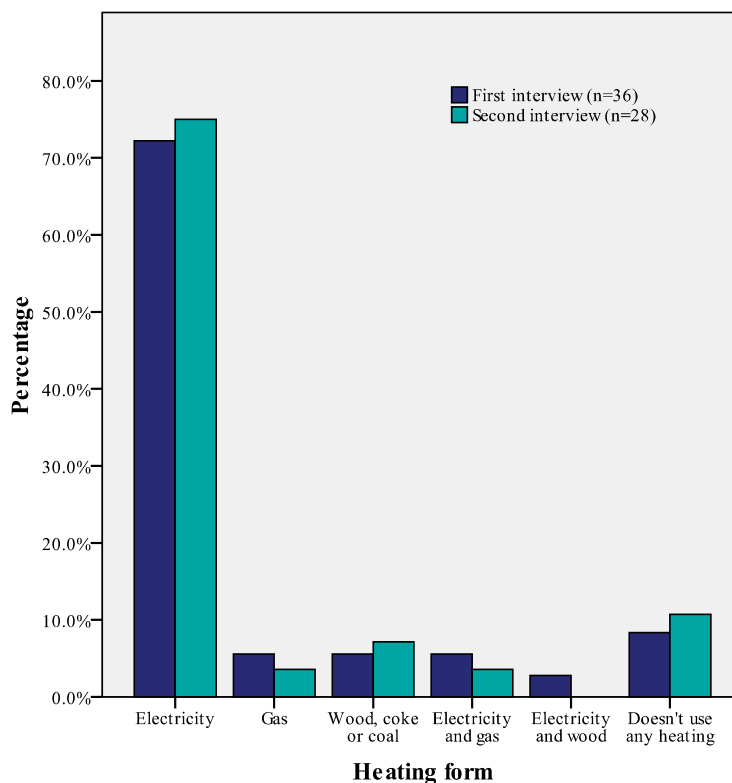
Work status also appeared to be unrelated to other economic variables. No significant correlations were found between work and the number of types of debts, the number of different foodbanks used, or the number of types of WINZ grants received, at either interview. However, as 13 (36.1 per cent) respondents reported working at the time of the first interview, and 12 (37.5 per cent) were known to be working at the second interview, it is possible that the small numbers in some categories affected the analysis. It is also likely that those working were on comparatively low incomes, and, therefore, still unable to decrease their level of indebtedness.

5.1.2.1 Heating and fuel poverty

At each interview participants were asked what form of heating they used. The vast majority (26 (72.2 per cent) at the first interview and 21 (70.0 per cent) at the second) used only electricity to heat their homes (Figure 5-11). A few participants used gas or wood, or combinations of electricity, wood and gas, while 3 at each interview reported not using any form of heating. This compares with 86.6 per cent of the Christchurch population who reported using electricity at the last census, although approximately 30 per cent of the population also reported using both wood and bottled gas (Statistics New Zealand, 2006), suggesting that the participants were more reliant on electricity than other Christchurch householders.

Participants were also asked whether the temperature of their home had caused them or anyone in their household discomfort during the previous winter. At the first interview, 8 (22.2 per cent) respondents had this problem in the previous winter, while 7 (22.6 per cent) reported it at the second. Twelve (33.3 per cent) first interview respondents had not lived there during the previous winter, while 8 (25.8 per cent) had not been living in the housing in the winter prior to the second interview.

Figure 5-11 – Heating form used at first and second interviews



The most commonly reported reason for being too cold in the previous winter was to keep costs down (4 participants at both the first and second interviews). One participant at the first interview said it was because they could not pay the bill, while 2 said their heaters were inadequate and 1 had other reasons. At the second interview, 1 participant reported running out of wood and 2 participants had other reasons.

Fuel poverty, as explained in Section 3.2.2, is experienced by a household when the amount they need to spend on power and heating-related costs to maintain optimum indoor temperatures exceeds 10 per cent of the household income. At the second interview, respondents were asked about the cost of their power bills in summer and winter. Twenty one (67.7 per cent) could estimate the cost of an average summer power bill and 17 (54.8 per cent) provided estimates of a winter bill. Those who could not provide estimates were often paying board (3 (9.7 per cent) participants), which included power costs, or said they did not

know how much their power bills were (5 (16.1 per cent) for summer, and 9 (29.0 per cent) for winter). This was often because they had not been living in their current housing long enough to know how much the power bills cost throughout the year.

For those participants who provided estimates, their total weekly income and power costs were used to calculate the proportion of income spent on power in summer and winter. In summer, 4 (19.0 per cent) were spending more than 10 per cent of their income on power, while in winter, 8 (47.1 per cent) were. Although these figures are probably an underestimate of the number of participants in fuel poverty, they reinforce the fact that the study population struggle financially to cover basic costs. There were no significant correlations between the amount participants spent on power and other financial indicators, such as assistance from WINZ for food grants or payment of utility bills, foodbank use or the number of types of debts that participants had. This suggests that those who were in fuel poverty were prioritising power usage over other areas of expenditure.

Summary of economic circumstances

- the participants were on very low incomes, with high levels of debt. Many relied on WINZ and foodbanks for extra support.
- fewer than half of the participants were doing any form of work at either interview.
- at least half of the participants were experiencing fuel poverty in winter. The actual proportion is likely to be much higher.

5.1.3 Support service environment

Respondents were asked about the types of supports they received at the time of each interview. Supports received were many and varied, and included the mobile medication team, self-help groups and telephone support. However, because of the small numbers receiving many of the different types of supports, analysis was difficult. Table 5-5 shows the percentage of participants at each interview with more frequently received supports. Using McNemar's test, no significant change was found in the number of participants receiving each support at the first and second interviews.

Table 5-5 – Supports*

	First interview (n=36) n (%)	Second interview (n=31) n (%)
Mental health case manager	25 (69.4)	16 (51.6)
Access to respite	23 (63.9)	20 (64.5)
Needs assessor	UK**	19 (61.3)
Community support worker	20 (55.6)	13 (41.9)
Housing support	23 (63.9)	13 (41.9)
Job search services	5 (13.9)	8 (25.8)
Counselling	6 (16.7)	7 (22.6)
Day programmes	6 (16.7)***	6 (19.4)
Budget advisor	4 (11.1)	6 (19.4)
Domestic assistance	4 (11.1)	5 (16.1)
Parenting support	5 (13.9)	4 (12.9)
Consumer advocacy	2 (5.6)	1 (3.2)

* number of participants who reported having each type of support

** participants were not asked if they had a needs assessor at the first interview

*** Step Ahead only

Supports received by participants were examined by location within Christchurch. The only significant association found was at the first interview with mental health case management ($\chi^2_{(4)}=10.189, p<0.05$). A greater than expected number of participants living in the eastern

suburbs had case management, while fewer than expected living in the western suburbs had a case manager. Area of Christchurch and having a community support worker were significantly associated at the second interview ($\chi^2_{(4)}=10.155$, $p<0.05$). Fewer participants living in the southern suburbs than expected had a community support worker. None of the other types of supports had significant associations with locality at either interview. Type of support received by participants was also examined by mental health diagnosis but, surprisingly, no significant associations were found between supports and diagnosis.

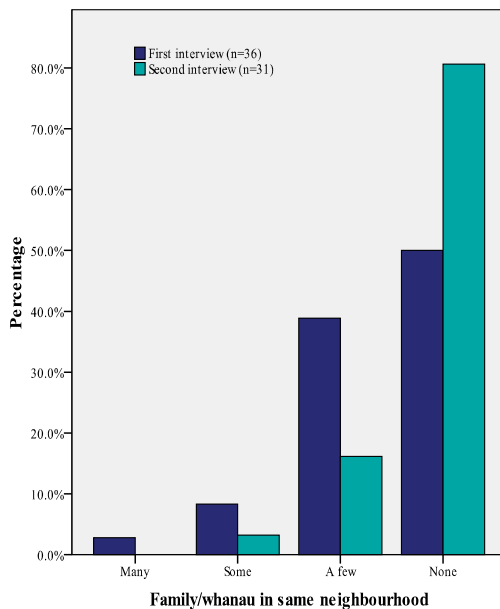
The total number of supports participants had was calculated using the supports detailed in Table 5-5. Needs assessor was excluded as it is unknown how many participants had a needs assessor at the first interview. Use of parenting support was also excluded as this was not a support required by most of the participants and use of consumer advocacy was not included as very few respondents had this support. The median number of supports at each interview was 3, although the mean had decreased from 3.22 to 3.00 between the interviews. A paired sample t-test found no significant difference in the number of supports received at the first and second interviews ($t_{(30)}=0.191$).

5.1.3.1 Informal support

At each interview, respondents were asked whether they had family/whanau or friends living in their neighbourhood. Interestingly, while there was a decline in the number of participants who had family or whanau living in their neighbourhood between the first and second interviews, there was an increase in the number of participants who had friends living in their neighbourhoods (Figures 5-12 and 5-13).

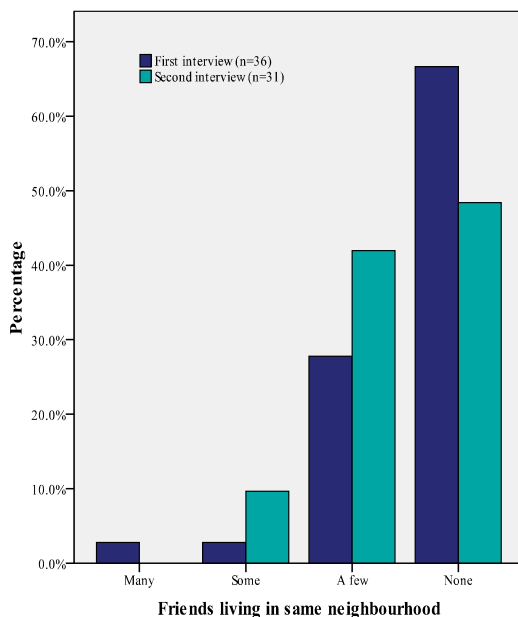
Wilcoxon Signed Rank test found no significant difference in the number of friends living in participants' neighbourhoods between the first and second interviews[($W=-1.711$), although the decline in numbers with family or whanau living in the same neighbourhood was significant ($W=-2.398$, $p<0.05$). Respondents were also asked how frequently they saw family or whanau at both the first and second interviews.

Figure 5-12 - Participants with family/whanau in their neighbourhood



At the first interview, 30 (83.3 per cent) participants saw a family member regularly. At the second interview, 29 (93.5 per cent) did. Participants saw family members slightly less frequently at the second interview. Seventeen (58.6 per cent) saw someone in their family at least once a week, compared with 21 (70.0 per cent) at the first interview. This change in frequency was not significant ($W=-0.276$). The decline in frequency with which participants saw family was not attributable to a change in numbers of participants living with family, as 2 (5.6 per cent) were living with family at the first interview, while one (3.2 per cent) was living with family at the second interview.

Figure 5-13 - Participants with friends in their neighbourhood



Respondents were asked about the frequency with which they saw friends at the second interview. Twenty two (73.3 per cent) saw a friend at least once a week, 4 (13.3 per cent) saw a friend 1 to 3 times a month, 3 (10.0 per cent) once every 2 to 3 months, while 1 participant (3.3

per cent) saw a friend once every 6 months. Unfortunately, a comparison can not be made with the frequency of visits with friends at the first interview, but as the number of respondents with friends in their neighbourhood increased between interviews, it is likely that the frequency of visits with friends also increased.

Locality was not associated with having family/whanau or friends living in the neighbourhood at either interview. However, the type of housing provider was related to having family in the neighbourhood at the second interview ($\chi^2_{(4)}=10.499, p<0.05$). None of the 15 participants living in social housing at the time of the second interview had family in their neighbourhood, while a slightly greater proportion of those living in private rental than expected had family in their neighbourhood. This may be due to the lack of choice able to be offered by social housing providers because of low vacancy rates and waiting list pressure.

Summary of support environment

- participants received a wide variety of supports. The most common were mental health case management, respite, needs assessment, community support worker, and housing support.
- a slight decrease in the number of supports received was found between interviews.
- the majority of participants saw family/whanau and friends regularly.
- participants were more likely to have family/whanau living in their neighbourhood if they lived in private rental housing. This was unlikely if they lived in social housing.

5.2 *Housing-related analysis*

None of the participants were physically homeless at the time of either interview. However, two respondents reported spending a period of time homeless between the interviews. One spent 3 days at a backpackers while the other lived in temporary accommodation, with family, and in a car for a total of 58 days homeless.

The housing circumstances of the participants at referral and each interview were classified using the ETHOS, Chamberlain and MacKenzie (C&M), and New Zealand (NZDEF) homelessness definitions (Table 5-6). At the time of referral, 16 (44.4 per cent) respondents met one of the ETHOS classifications for homeless or at risk of homelessness, with 9 (25.0 per cent) each meeting criteria for both C&M and NZDEF. By the time of the second interview, 3 (8.6 per cent) participants met the ETHOS definition, while only 1 (2.9 per cent) met the C&M and NZDEF definitions. None of the participants who met definitions of homelessness at the second interview were rehoused by Comcare Housing. Of those who met homelessness definitions at the first interview, 8 (22.2 per cent) had not engaged with the service, while 2 (5.6 per cent) were living in Comcare emergency housing. This suggests that once the Comcare Housing workers engaged with clients, they were able to support them into sustainable housing.

It is interesting that more participants were classified as homeless using the ETHOS definition. This is because the Chamberlain & MacKenzie and the New Zealand definitions do not consider people who are in hospital or residential treatments services at risk of homelessness, even if they are ready to be discharged. In addition, people who are in jeopardy of losing housing through eviction are not considered homeless using these definitions.

Table 5-6 - Classification of homelessness status using ETHOS, Chamberlain & MacKenzie and New Zealand definition

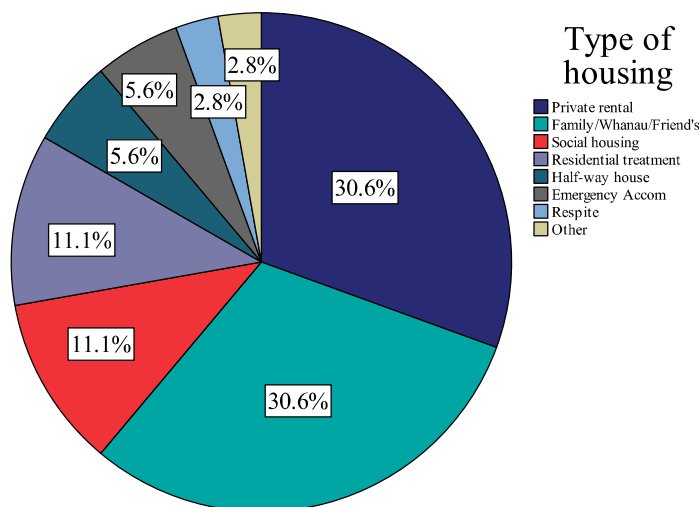
		Referral (n=36) n (%)	First interview (n=36) n (%)	Second interview (n=35) n (%)
ETHOS definition	Roofless	0	0	0
	Houseless	8 (22.2)	5 (13.9)	2 (5.7)
	Insecure	6 (16.7)	3 (8.3)	1 (2.9)
	Inadequate	2 (5.6)	2 (5.6)	0
	Do not meet definition	20 (55.6)	26 (72.2)	32 (91.4)
Chamberlain & MacKenzie definition	Primary	1 (2.8)	1 (2.8)	0
	Secondary	8 (22.2)	4 (11.1)	1 (2.9)
	Tertiary	0	0	0
	At risk	0	0	0
	Do not meet definition	27 (75.0)	31 (86.1)	34 (97.1)
New Zealand definition	Living rough	0	0	0
	Temporary shelter	2 (5.6)	2 (5.6)	0
	Sharing accommodation	6 (16.7)	2 (5.6)	1 (2.9)
	Substandard	1 (2.8)	1 (2.8)	0
	Do not meet definition	27 (75.0)	31 (86.1)	34 (97.1)

5.2.1 Housing mobility

Seventeen (47.2 per cent) participants moved house between the time of their referral to the Comcare Housing Service and the first interview. Fourteen (38.9 per cent) were rehoused with some assistance from Comcare Housing while 3 (8.3 per cent) moved either by themselves or with support from other people. As such a large proportion of participants had moved since their referral, analysis of the types of housing they were living in at the time of referral provides a more accurate understanding of the housing difficulties faced by participants (Figure 5-14). Eleven (30.6 per cent) participants were living in private rentals, and a further 11 were living with family/whanau or friends. Four (11.1 per cent) were in both

social housing and residential treatment while 2 (5.6 per cent) were living at half-way houses or in emergency accommodation. One (2.8 per cent) was in respite care, while the 'other' was living in a storage unit.

Figure 5-14 - Type of housing at time of referral



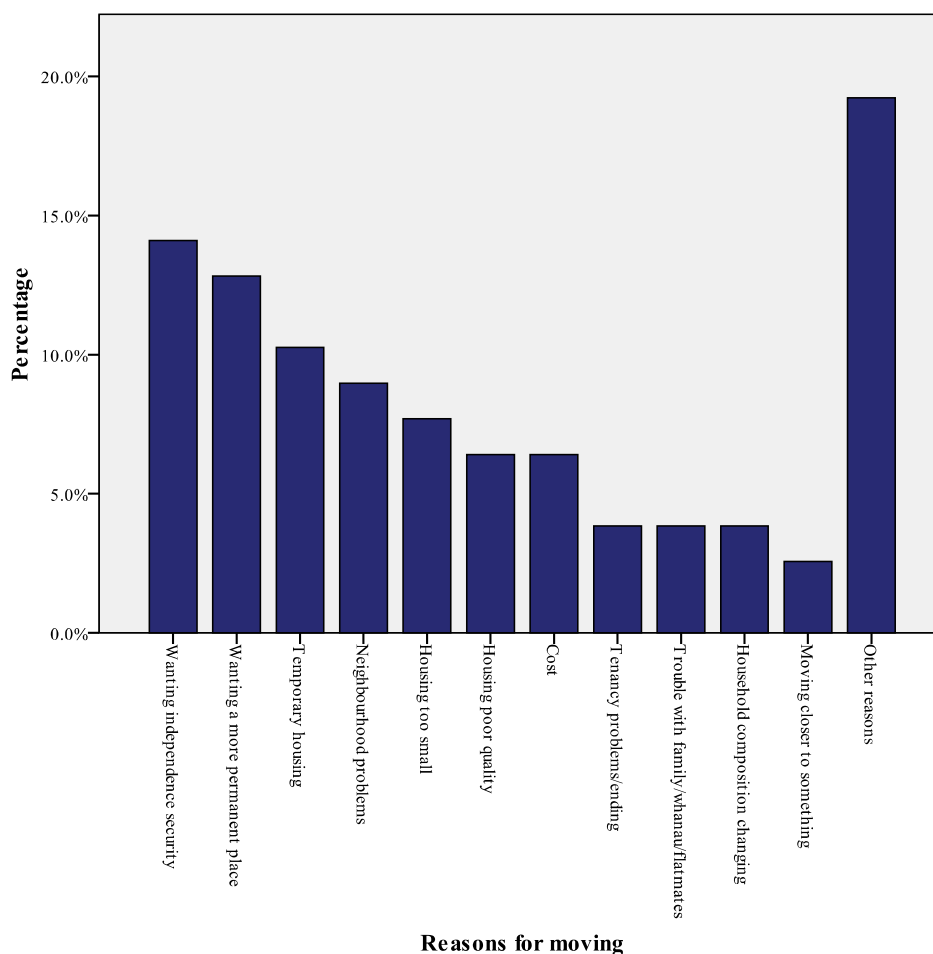
During the first interview, respondents were asked to rate whether a range of housing-related problems, such as quality of housing, tenancy issues, neighbourhood problems, or trouble with family/whanau or flatmates, were important factors in their decision to move or wanting to move. Respondents

were then asked to choose the 3 most important reasons. Not all participants gave 3 reasons and the 35 who answered this question provided 78 reasons for wanting to leave the housing they were living in at the time of referral (Figure 5-15). 'Other reasons' (19.2 per cent) was the most frequently given reason for deciding to move. These reasons were often particular to respondents' personal circumstances and were not able to be recoded and combined with other categories.

Aside from 'other reasons', the most commonly given reasons for moving were 'wanting independence or security' (14.1 per cent) and 'wanting a more permanent place' (12.8 per cent). These answers are a reflection of the number of participants who were in temporary housing, whether that was emergency housing, residential treatment, or living short-term with family/whanau or friends. Problems relating to the physical quality (6.4 per cent), size (7.7 per cent), and cost (6.4 per cent) of housing were also frequently given reasons for wanting to move. Surprisingly, 'trouble with family/whanau/flatmates' was not cited often (3.8 per cent of reasons), even though more than 30 per cent of participants were living with family or

friends. ‘Neighbourhood problems’ was also a recurrent issue (9.0 per cent), and included difficulties with others living in the same building or housing complex.

Figure 5-15 - Reasons for wanting to move from housing at time of referral to Comcare Housing



The reasons participants wanted to move were categorised as being push or pull factors, as explained in Section 2.4.2. Of the 78 reasons, only 4 (5.1 per cent) could be attributed to pull factors (2 were due to household composition changing, 2 were to move closer to work or family). As all the other reasons given were likely to be push factors, this suggests that participants had very little control over the decision to move.

The total number of moves that respondents made between referral and the second interview was calculated. Nineteen (54.3 per cent) participants only made one move. Five (14.3 per cent) made 2, while 4 (11.4 per cent) made 3 moves. Three (9.7 per cent) participants made 5 or more moves, and 4 (11.4 per cent) did not move at all (one of these was supported by Comcare to settle into a new flat they had moved to by themselves). None of the demographic or economic variables seemed to be related to the number of moves made. Formal supports also appeared unrelated to moving, however, there was a moderate positive correlation between number of moves and having family/whanau in the neighbourhood at the second interview ($r_s=0.456, p<0.01$).

Summary of housing mobility

- the vast majority of the reasons participants gave for moving or wanting to move at the time of referral could be categorised as push factors.
- most participants moved only once or twice during the study period.
- none of the demographic or economic variables were related to the number of moves participants made.

5.2.2 Rental

The amount of rent paid and the proportion of income spent on rent at the time of referral and at each interview were also examined (Table 5-7). The actual proportion of income spent on rent was calculated using the amount of rent paid and total weekly income as reported by the participants. The majority of participants' estimates were fairly accurate, however, some estimates were up to 20 per cent above the actual proportion. Possibly some participants were not including disability-related income when estimating proportions or were paying board and therefore calculated their proportions differently.

Table 5-7 - Amount of weekly rent and proportion of income spent on rent at referral, first interview, and second interview

	Amount of weekly rent		Proportion of income spent on rent	
	Mean	Median	Mean	Median
<u>At referral</u>				
Rent	\$154.92 (n=20)	\$152.50	47.2% (n=18)	50.0%
Board (incl utilities)	\$127.40 (n=5)	\$112.00	50.0% (n=5)	40.0%
Full board	\$130.00 (n=8)	\$135.00	51.7% (n=8)	50.0%
Total	\$144.71 (n=33)	\$150.00	48.8% (n=31)	50.0%
<u>At first interview</u>				
Rent	\$136.15 (n=26)	\$145.00	43.5% (n=26)	45.5%
Board (incl utilities)	\$144.00 (n=3)	\$150.00	47.8% (n=3)	35.0%
Full board	\$144.00 (n=5)	\$150.00	61.3% (n=5)	60.0%
Total	\$138.00 (n=34)	\$150.00	46.5% (n=34)	50.0%
<u>At second interview</u>				
Rent	\$124.92 (n=24)	\$113.50	37.3% (n=25)	33.3%
Board (incl utilities)	\$145.00 (n=2)	\$145.00	37.5% (n=2)	37.5%
Full board	\$160.00 (n=4)	\$150.00	62.5% (n=4)	60.0%
Total	\$130.93 (n=30)	\$126.00	40.6% (n=31)	33.3%

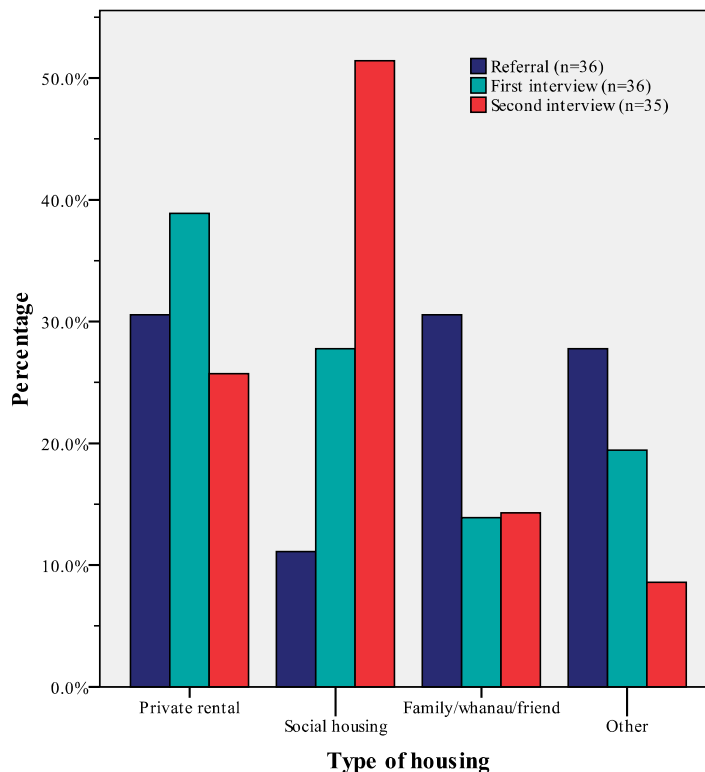
Participants who were not paying rent at the time of referral or at each interview were excluded from this analysis as their answers skewed the results. Throughout the study period the majority of participants were paying rent (55.6 per cent at referral, 72.2 per cent at the first interview, and 75.0 per cent at the second interview). Table 5-7 shows a gradual reduction in both the amount of rent paid by participants and the proportion of their income spent on rent during the study period. By the second interview the median proportion of income spent on rent had decreased to 33.3 per cent, close to the benchmark commonly used to estimate whether housing is affordable for a particular household.

The amount of board paid by participants increased over the study period. This may be a reflection of increasing costs of living, and power and food price increases being passed on to boarders. The number of respondents who were boarding decreased over the study period, from 36.1 per cent at referral, to 22.2 per cent at the first interview and 17.1 per cent at the

final interview. This, along with the increase in the numbers paying rent, suggests that while many of the participants may have been boarding at some point during the study, the goal for the majority was to rent independently in the community. These results suggest that one of the main barriers to this goal is cost of rent in relation to income.

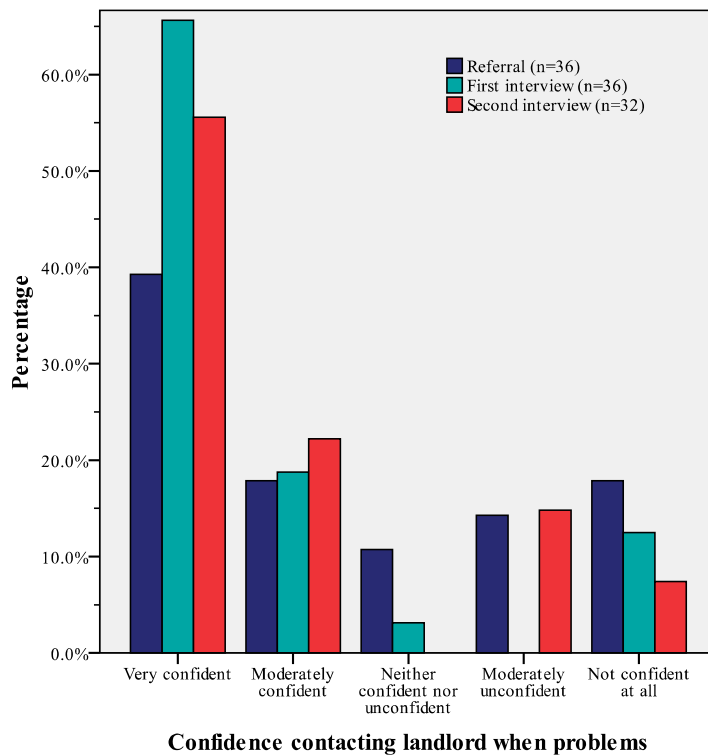
Type of housing provider was recoded into four categories (Figure 5-16). Those living in hospital, residential treatment, and temporary housing were recoded as ‘other’ as they were not permanent housing, although the landlord was often a social housing provider. As Figure 5-16 illustrates, the number of participants who lived in social housing dramatically increased over the study period. The numbers living with family/whanau or friends, or in ‘other’ situations decreased. This again indicates that participants had a preference for living in their own independent housing. A Friedman Test found that change in housing provider over the study period was not significant ($\chi^2_{(2)}=1.561$).

Figure 5-16 - Housing provider at referral, first and second interviews



Respondents also rated their confidence contacting their landlord when there were problems with their housing. As Figure 5-17 illustrates, confidence increased over the study period. A Friedman test found that this result was significant ($\chi^2_{(2)}=9.347$, $p<0.01$). This may be because support from Comcare Housing increased participants' confidence in approaching their landlord or because living in more suitable housing increased participants' self-esteem and they were, therefore, more confident contacting their landlord.

Figure 5-17 - Confidence contacting landlord at referral, first and second interviews



Participants were also asked whether their landlords conducted property inspections. At the time of referral, 16 (44.4 per cent) participants reported property inspections, while 25 (69.4 per cent) at the first interview and 20 (62.5 per cent) at the second did. Participants who did not have property inspections were generally living with family/whanau or friends or in a residential treatment service. The change in numbers of participants who had property inspections over the study period was not significant ($\chi^2_{(2)}=2.526$).

No relationships were found between the amount or proportion of rent paid, property inspections and confidence contacting landlord at the time of referral. However, at the first interview, a negative correlation was found between the proportion of income spent on rent and confidence contacting the landlord ($r_s=-0.449$, $p<0.05$), suggesting that those who spent a higher proportion of their income on rent were less confident. At the second interview, there was a strong negative correlation between amount of rent paid and having property inspections ($r=-0.740$, $p<0.01$). This is because only 1 of the 7 participants in private rental had property inspections while all 16 of those in social housing did.

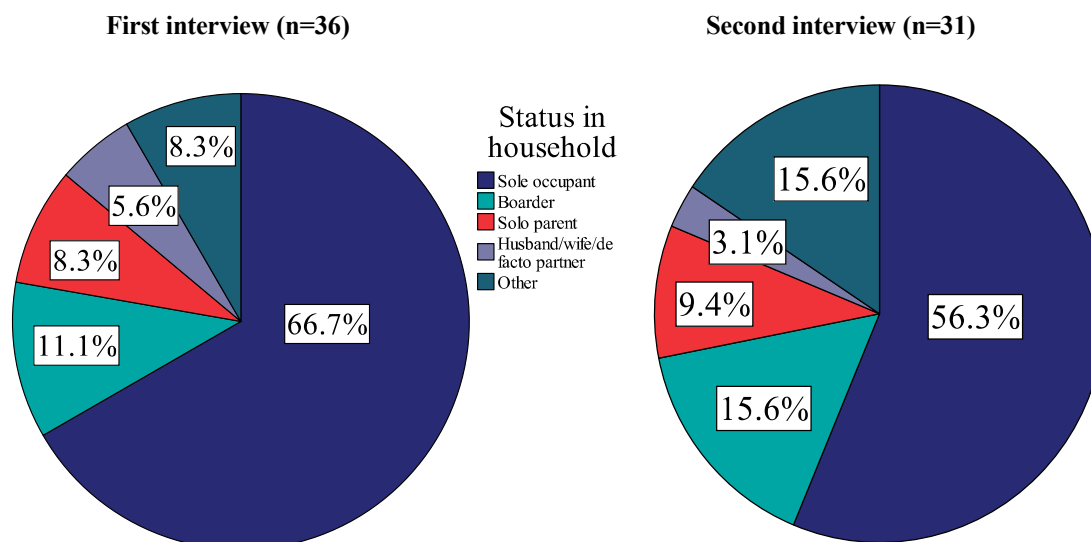
Summary of rental

- housing affordability improved for the participants during the study.
- decreases in the numbers who were boarding suggests participants had a preference for living alone.
- by the second interview, many participants had been rehoused into social housing, but the change in housing provider was non-significant.
- participants' confidence contacting their landlord increased significantly over the study period.

5.2.3 Household Status

Many participants lived in single-person dwellings/families (Figure 5-18). At the time of the first interview, 24 (66.7 per cent) respondents reported being the sole occupant of their dwelling, dropping to 18 (56.3 per cent) at the second interview. Chi-square tests found no significant difference in the household status of participants between the first and second interviews ($\chi^2_{(4)}=1.572$), but this non-significant result may be due to the cell sizes of some of the categories being small.

Figure 5-18 - Status in household



Summary of household status

- the majority of participants were sole occupants.

5.2.4 *Housing features and problems*

At both the first and second interviews, participants were asked to describe the amenities within their housing. They were also asked to comment on possible problems with their housing and rate their satisfaction with particular features.

At the first interview, the households of 34 (94.4 per cent) participants had exclusive use of bathroom and kitchen facilities. One participant had shared access to bathroom facilities but did not have kitchen facilities. The other participant, who was living in a storage unit, only had shared access to a toilet and was lacking all other facilities. Thirty-one (86.1 per cent) respondents had their own laundry facilities, while 4 (11.1 per cent) had shared laundries and 1 (2.8 per cent) did not have access to a laundry. Twelve (33.3 per cent) respondents had exclusive use of a garage, 2 (5.6 per cent) shared a garage, while the other 22 (61.1 per cent) did not have a garage. Of the participants re-interviewed, 29 (80.6 per cent) had exclusive use of amenities at the time of the second interview. Two (5.6 per cent) were sharing all facilities, 1 (2.8 per cent) was sharing a laundry, and 2 (5.6 per cent) shared a clothesline. This indicates that the vast majority of participants generally did not share any household facilities with people who did not belong to their household. Those who were sharing facilities were generally in hospital or supported communal living arrangements.

These results suggest that boarding houses, in the past commonly used by people who experience mental illness, were not often rented by the study population. This may be due to the high number of participants who were female, as many of the boarding houses in Christchurch are considered unsuitable for women, or could be a reflection of the diagnoses of the participants, with many experiencing anxiety or depression. Boarding houses are more likely to house men who experience schizophrenia and have alcohol and/or other drug problems (Kearns, et al., 1991b).

At both first and second interviews, the respondents were also asked to rate their satisfaction with various aspects of the physical features of their current housing (Appendix, Table 10-1).

At both interviews, overall, participants were satisfied with the physical features of their housing. Participants were least satisfied with the amount of storage space, with 8 (22.2 per cent) at the first interview and 10 (32.3 per cent) at the second rating themselves as dissatisfied or very dissatisfied. Respondents were also dissatisfied with the number of bedrooms at both interviews (5 (13.9 per cent) at the first interview and 7 (22.6 per cent) at the second). This is likely to be because many of the sole occupant participants wanted to live in housing with two bedrooms but were unable to afford it as they were on single-person incomes. Participants also expressed some dissatisfaction with bedroom size (2 (6.1 per cent) at the first interview and 6 (19.3 per cent) at the second interview). These concerns about space were also reflected by the 4 participants at each interview who were dissatisfied by the overall amount of space.

Wilcoxon signed ranks tests were performed on the data and found no significant difference between participants' ratings of their satisfaction with the physical features of their housing at first and second interviews. However, there were moderate correlations between satisfaction with housing features and having moved before the first interview. Those who had moved were more satisfied with their current housing ($r_s=0.369$, $p<0.05$), the number of bedrooms ($r_s=0.356$, $p<0.05$), storage space ($r_s=0.382$, $p<0.05$), space for children to play ($r_s=0.641$, $p<0.05$), and overall amount of space ($r_s=0.447$, $p<0.01$). These results suggest that those who had moved prior to the first interview were more satisfied with their housing and, in particular, more satisfied with the amount of space that their new housing provided. Similar analyses could not be conducted on the second interview data as only 3 participants had not moved by the second interview.

Participants were asked to rate possible problems with physical aspects of their housing as being a big problem, some problem, or no problem. The participant living in the storage unit at the time of the first interview did not answer any of these questions.

A variety of different problems were identified by respondents, including problems with vermin, such as rats, mice, or borer, plumbing, and heating. In general, most of the specified

problems were rated as ‘no problem’ by more than 80 per cent of the participants. (See Appendix, Table 10-2 for details of ratings for each problem). However, while few respondents reported having many of these housing problems, in situations where a specific problem was present, it had the potential to have a dramatic impact on the person’s life.

Several types of problems were more commonly identified. These included needing insulation or redecoration, problems with plumbing, the stove, vermin, mould and damp, and noise. As many of the housing problems were not experienced by the majority of participants, analysis of big, small and the total number of housing problems was conducted. At the first interview, only 5 (13.9 per cent) participants did not have any physical housing problems. Ten (32.3 per cent) did not identify any physical housing problems at the second interview. The median number of small housing problems decreased from 2 to 1 between interviews and the median number of all housing problems dropped from 3 to 1 (Table 5-8).

Table 5-8 - Numbers of housing problems at first and second interview

		Small problems	Big problems	Total number of problems
First interview	Mean	2.29	0.71	3.00
	Median	2.00	0	3.00
Second interview	Mean	1.23	0.42	1.65
	Median	1.00	0	1.00

Paired sample t-tests were conducted. For the total number of housing problems at first and second interviews $t_{(29)}=3.340$, $p<0.01$, while for the number of small housing problems $t_{(29)}=3.471$, $p<0.01$. There was no significant result for the number of big housing problems ($t_{(29)}=1.300$). These results indicate that the participants had fewer housing problems and therefore, overall, were living in better quality housing at the time of the second interview. The lack of a significant result for the number of big housing problems is most likely due to the small numbers of participants who reported such problems. The first interview data was used to compare the number of problems reported by participants before and after they moved. Moderate correlations were found between the total number of housing problems and

moving ($r=0.401$, $p<0.05$) and the number of small housing problems and moving ($r=0.336$, $p<0.05$), indicating that those who had moved prior to the first interview were experiencing fewer housing problems than those who had not moved. No significant correlation was found between the number of big housing problems and moving ($r=0.236$). As the majority of participants (33 (91.7 per cent)) had moved by the second interview, it was not possible to conduct this analysis on the second interview data.

Summary of housing features and problems

- the majority of participants had exclusive use of household amenities, indicating that few were living in boarding houses.
- most participants had at least one housing problem although the number of housing problems decreased significantly between first and second interviews.
- common housing problems were related to mould/damp and lack of insulation.

5.3 Neighbours and Neighbourhood

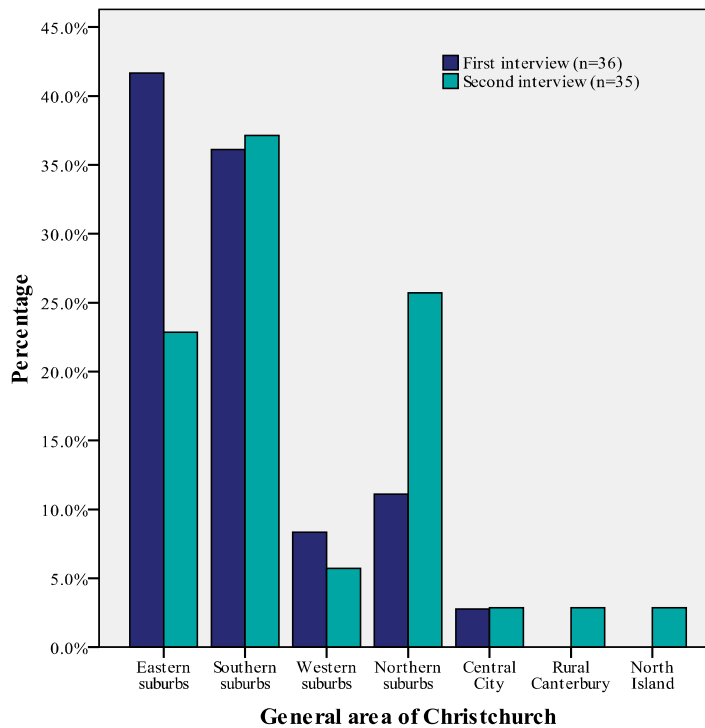
At each interview, respondents were asked a variety of questions about their neighbours and neighbourhoods. These questions were designed to elicit information about participants' satisfaction with various features of their neighbourhoods and to understand the nature of possible problems within their neighbourhoods.

5.3.1 Neighbourhoods

The range of suburbs within which participants lived throughout the study was quite extensive, however, particularly at the time of the first interview, many were living in Addington (6 (16.7 per cent)) and Linwood (6 (16.7 per cent)). To enable analysis by locality of residence, the suburbs were recoded as larger areas. Eastern Christchurch included Linwood, Avonside, Richmond, New Brighton, Woolston, Bexley and the hill suburbs.

Southern Christchurch encompassed Addington, Spreydon, Beckenham, Sydenham and Waltham. Northern Christchurch included St Albans, Shirley, Burwood and Papanui while Western Christchurch was made up of Riccarton, Hornby and Heihei. Figure 5-19 illustrates the general areas of Christchurch that participants were living in at the time of the first and second interviews.

Figure 5-19 - General suburbs lived in by participants at each interview



Large proportions of the participants lived in the Eastern and Southern suburbs at the time of each interview. The increase in participants living in Northern Christchurch from 4 (11.1 per cent) to 9 (25.7 per cent) is partly attributable to several of the participants being offered tenancies with Comcare Housing in the St Albans area. Chi-square analysis was performed on the data for the participants who were living in Christchurch city. The categories, Central City, Rural Canterbury and the North Island were recoded as ‘other’ as there was only 1 participant in each. The results indicate a non-uniform distribution of participants across Christchurch at both interviews ($\chi^2_{(4)}=22.33$, $p<0.01$ and $\chi^2_{(4)}=11.714$, $p<0.05$, respectively).

This suggests that participants tended to live in particular, quite restricted areas, and is likely a reflection of the low income and, therefore, limited financial ability this population has to choose where in the city they dwell, although the smaller result found at the second interview indicates that participants were more evenly distributed across the city than they were at the time of the first interview.

At each interview, the participants were asked whether they liked their neighbourhood or not. More than 80 per cent of participants liked their neighbourhoods at both interviews. McNemar's test found no significant change in whether or not participants liked their neighbourhoods between the first and second interviews.

Chi-square tests were used to examine whether participants who lived in certain parts of Christchurch were more likely to like or dislike their neighbourhoods. At the first interview, the proportion of participants living in the western suburbs who disliked their neighbourhood was higher than expected, resulting in a significant association ($\chi^2_{(4)}=10.121, p<0.05$). No significant association was found at the second interview which is likely due to the broader spread of participants across the city.

At the second interview, respondents were asked to describe specific likes and dislikes about their neighbourhoods. Twenty-six participants gave 42 separate reasons for liking their neighbourhoods. The most common reason was convenience (10 times (23.8 per cent)), followed by amenities and other reasons (7 times each (16.7 per cent)). The neighbours and the quiet were also frequently given reasons (6 times each (14.3 per cent)). Fourteen participants had specific dislikes about their neighbourhood and gave 17 separate reasons, including the neighbours (3 times (17.6 per cent)), amenities and the quiet (1 time each (5.9 per cent)), which were also reasons other participants liked their neighbourhoods. Other reasons (9 times (52.9 per cent)) were the most frequently cited reasons for disliking the neighbourhood. There did not seem to be any association between reasons for liking or disliking the neighbourhood and area of the city participants were living in.

Summary of neighbourhoods

- the geographic spread of participants increased between interviews.
- more than 80 per cent of participants liked their neighbourhoods at each interview. Those living in the western suburbs were more likely to dislike their neighbourhoods.
- participants gave a variety of reasons for liking and disliking their neighbourhoods. None of the reasons were associated with a particular area of Christchurch.

5.3.2 Physical aspects of the neighbourhood

Respondents were also asked about their level of satisfaction with the amenities and physical features of their neighbourhoods. In general, participants were satisfied with the physical features of their neighbourhoods at each interview (Appendix, Table 10-3). Satisfaction with proximity to shops, schools, work and bus stops, and availability of leisure facilities each had fewer than 10 per cent of participants rating themselves as either dissatisfied or very dissatisfied. Participants were less satisfied with the safety of the neighbourhood, the amount of traffic in the area, distance to their doctor or clinic and family/whanau and friends, and the amount of privacy. However, for each of these variables fewer than 25 per cent of participants rated themselves as dissatisfied or very dissatisfied. These data were analysed using Wilcoxon signed ranks tests and no significant differences were found in satisfaction ratings between first and second interviews. However, a weak correlation was found between moving prior to the first interview and satisfaction with privacy ($r_s=0.354$, $p<0.05$), suggesting that there were slight improvements in participants' satisfaction on this variable after moving.

Analyses were conducted to test the hypothesis that participants' satisfaction ratings for the physical features of their neighbourhood would be affected by which part of the city they lived in. The only significant association was found at the second interview with the variable

satisfaction with distance to family and friends ($\chi^2_{(12)}=22.934$, $p<0.05$). A greater percentage of those living in the southern suburbs (11 (37.9 per cent)) rated themselves as satisfied or very satisfied on this variable, indicating that those in the south of Christchurch were more satisfied with the distance to their family and friends than those in other areas. No significant associations were found between area of Christchurch and any of the other variables. These results indicate that overall respondents were mostly satisfied with the amenities and physical aspects of their neighbourhoods regardless of where in the city they lived. This is most likely a reflection of Christchurch as a city and, while there are some parts of the city which are more deprived than others, in general, Christchurch is a city which provides amenities accessible to this population group.

Respondents were also asked to rate possible problems in their neighbourhoods as being a big problem, some problem or no problem at all. None of the participants who knew about quality of schools in their neighbourhood thought that they were a problem in either interview (12 (33.3 per cent) at the first interview and 11 (35.5 per cent) at the second). By far the most commonly reported problem was boy racers (young people driving cars quickly and loudly at night), with almost 60 per cent of respondents reporting it as a problem in the first interview and nearly 40 per cent at the second. Unemployment was also considered to be a problem by respondents at both interviews (12 (33.3 per cent) at the first interview and 11 (35.5 per cent) at the second), although many, particularly at the first interview, did not know whether it was neighbourhood problem or not. Graffiti and vandalism were also commonly reported problems, as was groups of people hanging around the neighbourhood. For details of participants ratings of problems see Appendix, Table 10-4. No significant scores were found using Wilcoxon signed rank tests on neighbourhood problem variables and first or second interview, indicating that there was little change in participants' ratings on these problems between each interview.

The neighbourhood problem variables were recoded into 2 responses – problem and no problem – to enable chi-square analysis with area of Christchurch. Problems with noisy neighbours or loud parties was the only problem which produced significant results at either

interview ($\chi^2_{(4)}=9.831$, $p<0.05$ and $\chi^2_{(4)}=12.255$, $p<0.05$, respectively). Both these results seem to be due to a higher than expected proportion of participants living in the western suburbs having problems with noisy neighbours, in conjunction with a lower than expected proportion of participants in the southern suburbs having this problem.

Analyses using individual suburbs were conducted to see whether particular suburbs were more likely to experience any of the neighbourhood problems, however, due to the small numbers reporting problems and the large number of individual suburbs, it was not possible to draw any conclusions about whether some suburbs were more problematic than others.

Summary of physical aspects of the neighbourhood

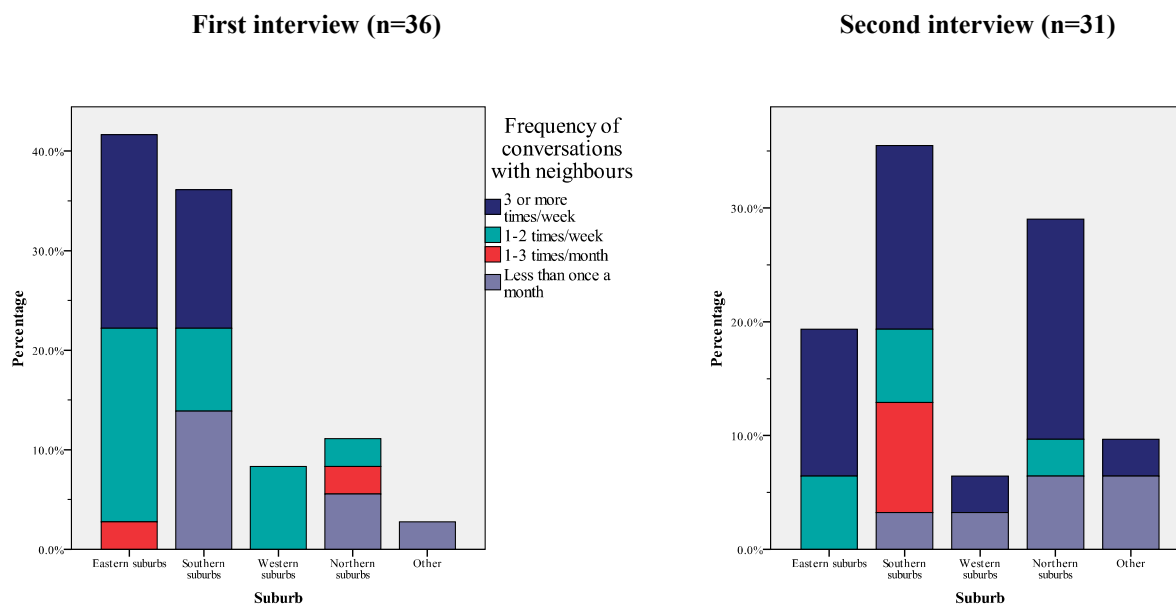
- participants were generally satisfied with the amenities and physical aspects of their neighbourhoods regardless of which part of the Christchurch they lived in.
- serious neighbourhood problems were not experienced by many of the participants. The most commonly reported problem was boy racers.

5.3.3 *Social neighbourhood*

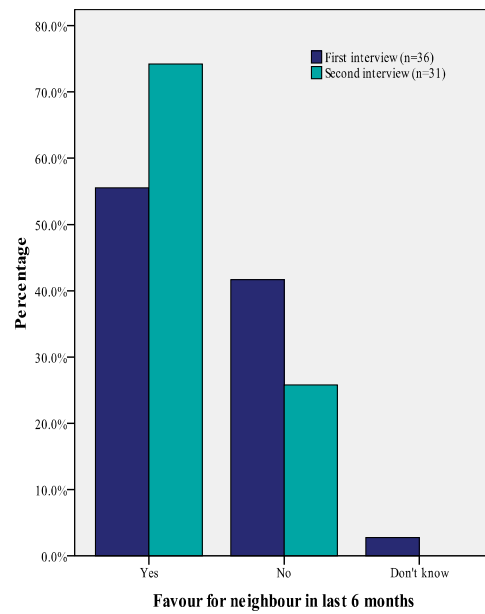
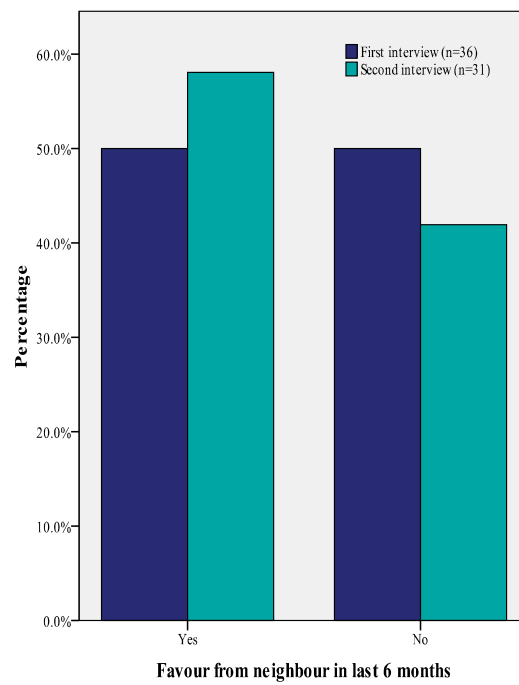
The study respondents were asked a series of questions about their relationships with their neighbours. At both the first and second interviews, more than 70 per cent of the participants spoke with their neighbours at least once a week. Change in the frequency with which participants' spoke with neighbours at first and second interview was analysed using Wilcoxon signed ranks test. No significant result was found ($W=1.079$), indicating that participants had conversations with neighbours at a similar frequency at each interview. Frequency of conversations was also examined by area of city in which participants were living. A statistically significant relationship was found with area of the city that participants lived in at the time of the first interview ($\chi^2_{(12)}=21.460$, $p<0.05$), but this was not found at the second interview ($\chi^2_{(12)}=14.590$). These results are likely to be due to the number of

participants (7 (22.6 per cent)) who moved away from the Eastern suburbs between the first and second interviews, and a reflection of the broader range of areas in which participants were living at the time of the second interview (Figure 5-20).

Figure 5-20 - Frequency of conversations with neighbours by area of Christchurch at each interview



At least half of the respondents in each interview had given and received favours from their neighbours in the past 6 months (Figures 5-21 and 5-22). Between the first and second interviews, there was an increase of almost 25 per cent in the number of participants who had done at least one favour for a neighbour. McNemar's test was used to check the significance of this increase but no statistically significant results were found (for favours given $\chi^2=2.571$, and for favours received $\chi^2=0.692$). Favours by area of Christchurch were also examined. There were no statistically significant relationships concerning area and performing favours for neighbours ($\chi^2_{(4)}=2.898$ (first interview) and $\chi^2_{(4)}=4.174$ (second interview)), nor were there significant relationships found when area and receipt of favours from neighbours was examined ($\chi^2_{(4)}=6.292$ (first interview) and $\chi^2_{(4)}=5.882$ (second interview)). However, more favours were performed by neighbours in the eastern suburbs, suggesting that those who live in lower socio-economic areas of the city were more likely to be supportive of their neighbours.

Figure 5-21 - Participants who performed a favour in the last 6 months**Figure 5-22 - Participants who received a favour in the last 6 months**

Respondents were also asked about how they perceived their neighbours and neighbourhoods. At each interview, they rated their neighbours and neighbourhoods on five statements (itemised in Table 5-9) designed to understand how cohesive and inclusive their living environments were. Many of the participants found these questions difficult to answer, and many answered ‘don’t know’ to the question about values. Interestingly, even though almost half of the participants had moved between interviews, there were fewer ‘don’t know’ answers at the second interview. There were no significant associations between respondents’ answers and first or second interview.

Table 5-9 - Neighbour ratings

		Strongly agree n (%)	Somewhat agree n (%)	Neither agree nor disagree n (%)	Somewhat disagree n (%)	Strongly disagree n (%)	Don’t know n (%)
Neighbours are willing to help others	First interview	11 (30.6)	8 (22.2)	0	2 (5.6)	2 (5.6)	13 (36.1)
	Second interview	13 (41.9)	9 (29.0)	1 (3.2)	2 (6.5)	2 (6.5)	4 (12.9)
Neighbours share same values	First interview	3 (8.3)	4 (11.1)	2 (5.6)	3 (8.3)	3 (8.3)	21 (58.3)
	Second interview	2 (6.5)	5 (16.1)	0	4 (12.9)	2 (6.5)	18 (58.1)
This is a close-knit neighbourhood	First interview	7 (19.4)	8 (22.2)	3 (8.3)	5 (13.9)	4 (11.1)	9 (25.0)
	Second interview	10 (32.3)	9 (29.0)	0	5 (16.1)	2 (6.5)	5 (16.1)
Neighbours can be trusted	First interview	5 (13.9)	9 (25.0)	5 (13.9)	4 (11.1)	4 (11.1)	9 (25.0)
	Second interview	4 (12.9)	9 (29.0)	4 (12.9)	6 (19.4)	5 (16.1)	3 (9.7)
Neighbours generally get along	First interview	10 (27.8)	11 (30.6)	2 (5.6)	2 (5.6)	4 (11.1)	7 (19.4)
	Second interview	11 (35.5)	13 (41.9)	1 (3.2)	1 (3.2)	2 (6.5)	3 (9.7)

The neighbour rating data was analysed using the Wilcoxon Signed Ranks test. Those who responded 'don't know' to the questions were excluded from the analyses. There was a significant score for 'neighbours generally get along' ($W=-2.290$, $p<0.05$), indicating that a greater proportion of participants agreed with this statement at the second interview. The numbers of participants agreeing with these statements increased between first and second interviews, indicating that the participants had developed better relationships with their neighbours, and a better understanding of what their neighbourhoods were like, between the first and second interviews.

When the first interview responses were analysed based on whether participants had moved house, the variables 'neighbours share the same values', 'neighbours can be trusted' and 'neighbours generally get along' produced strong positive correlations ($r_s=0.652$, $p<0.01$, $r_s=0.497$, $p<0.01$ and $r_s=0.517$, $p<0.01$, respectively). These results suggest that participants had developed better relationships with their neighbours following their move and that the neighbourhoods they were living in were more socially cohesive.

As Table 5-10 illustrates, participants' second interview ratings of neighbours were positively correlated with some of the social aspects of the neighbourhood. Those who liked their current neighbourhood more strongly agreed with the statements 'neighbours are willing to help others' and 'neighbours can be trusted', while those who gave and received favours from neighbours gave higher ratings for 'this is a close-knit neighbourhood'. In addition, frequency of conversations with neighbours was strongly positively correlated with both giving and receiving favours at the first and second interviews. These results confirm that participants who had more interactions with their neighbours were more likely to give higher ratings on the neighbour variables, suggesting that those who had positive interactions with neighbours were more likely to give positive ratings of their neighbourhoods.

Table 5-10 - Correlations between neighbour ratings and neighbourhood social variables**

		Like current neighbourhood	Favour from neighbour in last 6 months	Favour for neighbour in last 6 months
Neighbours are willing to help others	First interview	0.284	0.459*	0.322
	Second interview	0.421*	0.344	0.273
Neighbours share the same values	First interview	0.258	0.435	0.217
	Second interview	0.153	0.420	0.153
This is a close-knit neighbourhood	First interview	0.248	0.000	0.022
	Second interview	0.158	0.423*	0.397*
Neighbours can be trusted	First interview	0.211	0.209	0.021
	Second interview	0.455*	0.073	-0.040
Neighbours generally get along	First interview	0.319	-0.097	-0.116
	Second interview	0.295	0.049	-0.043

* $p < 0.05$

** All correlations are Spearman's rho.

Significant correlations were found between some of the neighbour ratings and satisfaction with some of the physical aspects of the neighbourhood. At the first interview, satisfaction with safety of the neighbourhood was strongly correlated with 'neighbours can be trusted' ($r_s=0.617$, $p < 0.01$) and moderately correlated with 'neighbours generally get along' ($r_s=0.388$, $p < 0.05$). Satisfaction with the amount of traffic was strongly correlated with 'neighbours can be trusted' ($r_s=0.625$, $p < 0.01$) and 'neighbours generally get along' ($r_s=0.615$, $p < 0.01$), and moderately correlated with 'close-knit neighbourhood' ($r_s=0.469$, $p < 0.05$). Satisfaction with availability of leisure facilities was also moderately correlated with 'close-knit neighbourhood' ($r_s=0.421$, $p < 0.05$) at the first interview. Satisfaction with safety of the neighbourhood was also moderately correlated with 'neighbours can be trusted' at the

second interview ($r_s=0.466$, $p<0.05$). Satisfaction with privacy was positively correlated with 'neighbours can be trusted' ($r_s=0.418$, $p<0.05$) and 'neighbours generally get along' ($r_s=0.450$, $p<0.05$) at the second interview. Two significant correlations which are slightly more difficult to explain were those of satisfaction with distance to family or friends and proximity to shops with 'neighbours generally get along' ($r_s=0.423$, $p<0.05$ and $r_s=0.422$, $p<0.05$, respectively).

Relationships between neighbourhood problems and neighbour ratings were also examined. At the first interview, negative correlations were found between problems with vandalism and 'neighbours can be trusted' ($r_s=-0.475$, $p<0.05$) and 'neighbours generally get along' ($r_s=-0.451$, $p<0.05$). Groups hanging around in the neighbourhood was also negatively correlated with 'neighbours generally get along' ($r_s=-0.516$, $p<0.01$). Problems with houses and gardens in bad condition was also negatively correlated with 'this is a close-knit neighbourhood' ($r_s=-0.453$, $p<0.05$). At the second interview, negative correlations were found between problems with noisy neighbours and 'neighbours are willing to help others' ($r_s=-0.554$, $p<0.01$) and 'neighbours can be trusted' ($r_s=-0.436$, $p<0.05$). Problems with rubbish in the streets was also negatively correlated with 'neighbours are willing to help others' ($r_s=-0.446$, $p<0.05$) and 'this is a close-knit neighbourhood' ($r_s=-0.430$, $p<0.05$) at the second.

Summary of social neighbourhood

- the majority of participants spoke with their neighbours at least once a week, regardless of area of the city.
- at least half had given and received favours from neighbours at each interview, although a greater proportion of favours were performed in the eastern suburbs.
- increases in the number of participants agreeing with neighbour rating statements between interviews, and relationships between neighbour ratings and liking the neighbourhood, giving and receiving favours, satisfaction with safety, and privacy, all suggest participants perceived their neighbourhoods as more socially cohesive.
- some problem variables were related to lower levels of agreement with neighbour rating statements.

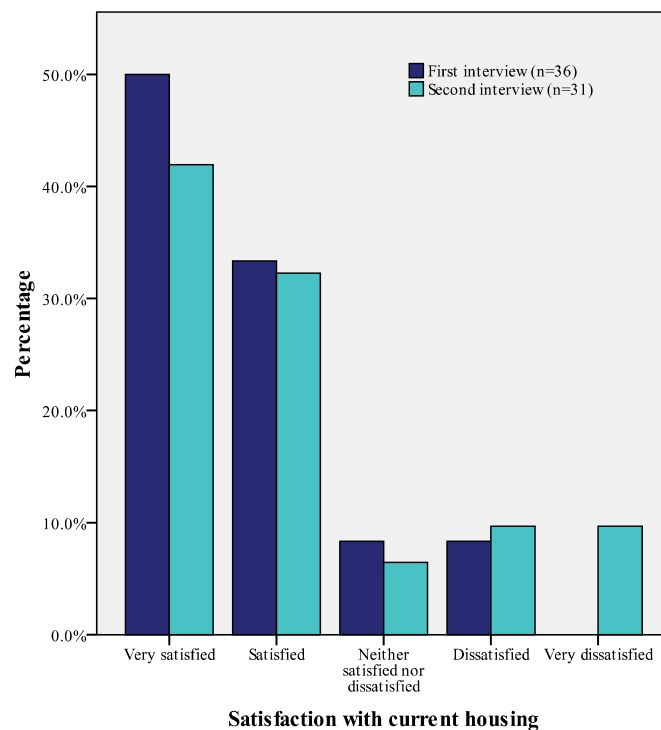
5.4 Housing satisfaction

At each interview, respondents were asked to rate their satisfaction with their current housing. Overall, participants were generally satisfied with their housing but, as Figure 5-23 illustrates, more participants were dissatisfied with their housing at the second interview, although, this change in satisfaction was not significant ($W=-0.728$).

The descriptive variables analysed in this chapter were used to assess which factors contributed to participants' housing satisfaction. None of the demographic or economic variables were related to housing satisfaction at either interview. Housing satisfaction was also unrelated to any of the support variables.

At the first interview, amount of rent and proportion of income spent on rent were both negatively correlated with housing satisfaction ($r_s=-0.378$, $p<0.05$ and $r_s=-0.378$, $p<0.05$, respectively), however, at the second interview, no significant correlation was found. This is most likely because participants were paying significantly lower rents at the second interview (Table 5-7).

Figure 5-23 - Satisfaction with housing at first and second interviews



Housing provider was not associated with housing satisfaction at the first interview but, at the second, a significant association was found ($\chi^2_{(12)}=27.444$, $p<0.01$). More participants than expected who were living in 'other' situations were dissatisfied with their housing, producing this result. Property inspections were unrelated to housing satisfaction at either interview, however, confidence contacting the landlord with problems was associated with housing satisfaction at the first interview ($\chi^2_{(9)}=22.040$, $p<0.01$), but not at the second. Interestingly, this result seems to be due to several participants who were satisfied with their housing at the first interview, describing themselves as 'not confident at all' in contacting their landlords.

There was no association between household status and housing satisfaction at the first interview. However, at the second, a significant association was found ($\chi^2_{(16)}=34.284$, $p<0.01$). Respondents who were living in 'other' situations were more dissatisfied with their housing than expected, while those who were sole occupants were more satisfied, providing further evidence of the preference among participants to live alone.

Spearman's rho was used to examine whether participants' satisfaction with the physical features of their housing was related to overall housing satisfaction. At the first interview, significant positive correlations were found between housing satisfaction and satisfaction with the dwelling inside ($r_s=0.367$, $p<0.05$), number of bedrooms ($r_s=0.362$, $p<0.05$), and storage space ($r_s=0.489$, $p<0.01$). At the second, positive correlations between housing satisfaction and satisfaction with bedroom size ($r_s=0.420$, $p<0.05$), number of bedrooms ($r_s=0.608$, $p<0.01$), and overall amount of space ($r_s=0.408$, $p<0.05$) were found. These findings indicate that respondents were more likely to be satisfied with their housing when they were satisfied with the amount of space, particularly the number and size of the bedrooms.

Participants' housing satisfaction was also examined in relation to housing problems. At each interview, housing satisfaction was negatively correlated with housing problems (Table 5-11). This provides strong evidence that the fewer housing problems participants had the more satisfied they were with their housing.

Table 5-11 - Correlation between housing satisfaction and number of housing problems

		Number of housing problems	Number of small housing problems	Number of big housing problems
Satisfaction with current housing	First interview	-0.514**	-0.418*	-0.403*
	Second interview	-0.513**	-0.352	-0.448*

All correlations are Spearman's rho.

* $p < 0.05$

** $p < 0.01$

Some specific housing problems were also significantly correlated with housing satisfaction. At the first interview, problems with mould and/or damp was moderately negatively correlated with housing satisfaction ($r_s = -0.466$, $p < 0.01$). This was not found at the second interview, although negative correlations between housing satisfaction and problems with the décor ($r_s = -0.361$, $p < 0.05$), noise ($r_s = -0.442$, $p < 0.05$), and needing redecoration ($r_s = -0.394$, $p < 0.05$) were. However, as only 2 (6.5 per cent) participants reported some dissatisfaction with these problems, it is difficult to draw strong conclusions. The lack of a significant correlation between housing satisfaction and problems with mould and/or damp at the second interview is positive as it suggests that participants were living in housing which had fewer moisture problems than at the first interview, potentially having significant health benefits.

The effect of neighbour and neighbourhood variables on housing satisfaction was also investigated. The area of Christchurch that participants were living in was unrelated to housing satisfaction at the first interview ($\chi^2_{(12)} = 16.477$), however, at the second, a significant association was found ($\chi^2_{(16)} = 27.885$, $p < 0.05$). More participants living in the eastern and southern suburbs than expected rated themselves as very dissatisfied with their housing, while more living in the northern suburbs than anticipated were satisfied or very satisfied with their housing.

Spearman's correlations were also used to compare participants' satisfaction with the physical features of their neighbourhoods and problems in their neighbourhoods with their housing satisfaction. At the first interview, satisfaction with housing was moderately

positively correlated with satisfaction with the amount of traffic in the area ($r_s=0.353$, $p<0.05$) and availability of leisure facilities ($r_s=0.391$, $p<0.05$). At the second interview, it was positively correlated with satisfaction with amount of privacy ($r_s=0.529$, $p<0.01$). Examining the neighbourhood problem variables, at the first interview, problems with houses and gardens in poor condition was negatively correlated with satisfaction with housing ($r_s=-0.506$, $p<0.01$). This moderately strong negative correlation indicates that respondents who were less satisfied with their housing were more likely to be living in neighbourhoods where they thought there were problems with houses and gardens in poor condition. At the second interview, none of the neighbourhood problem variables were significantly correlated with satisfaction with housing. These results confirm the finding that participants' satisfaction with their housing had little relationship to features of their physical neighbourhoods, most likely as Christchurch has very few extremely poor quality neighbourhoods.

Whether or not participants liked their neighbourhoods, giving and receiving favours from neighbours, frequency of conversations with neighbours, and having family/whanau or friends in the neighbourhood were generally all unrelated to housing satisfaction. The only significant result these variables produced was at the first interview. Having friends living in the neighbourhood was positively correlated with housing satisfaction ($r_s=0.460$, $p<0.01$). These findings indicate that social aspects of the neighbourhood and neighbour interactions had relatively little effect on respondents' housing satisfaction.

Table 5-12 - Correlations between housing satisfaction and neighbour ratings

		Neighbours are willing to help others	Neighbours share the same values	This is a close-knit neighbourhood	Neighbours can be trusted	Neighbours generally get along
Satisfaction with current housing	First interview	0.011	0.499	0.547**	0.364	0.389*
	Second interview	0.139	0.409	0.266	0.700**	0.351

All correlations are Spearman's rho

* $p<0.05$

** $p<0.01$

However, several neighbour rating variables were correlated with satisfaction with current housing (Table 5-12). The results suggest that respondents at the first interview who gave higher housing satisfaction ratings were more likely to agree that their neighbourhood is close-knit and that neighbours generally get along. At the second interview, a strong positive relationship was found between satisfaction with housing and trusting neighbours. This indicates that respondents were more likely to be satisfied with their housing if their perception of their neighbours was positive.

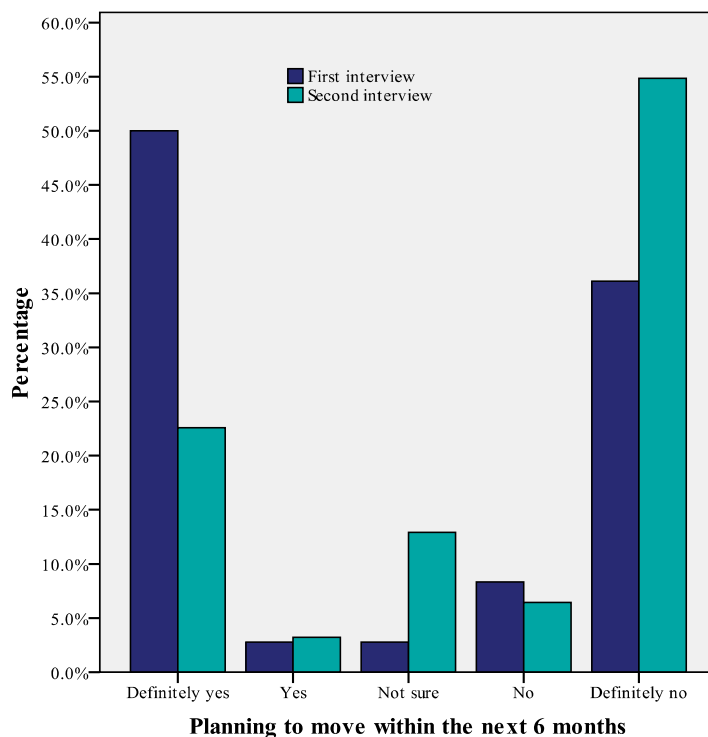
Summary of housing satisfaction

- participants who were more satisfied with the spaciousness of their housing had higher overall housing satisfaction ratings.
- the number of housing problems participants had was strongly negatively correlated with housing satisfaction.
- participants who were living alone were more satisfied with their housing.
- most neighbourhood variables appeared to be unrelated to housing satisfaction, although having positive perceptions of neighbours was.

5.5 Housing stability

At each interview, participants were asked whether they were planning to move in the next 6 months. As Figure 5-24 illustrates, the percentage of participants planning to move decreased between the first and second interviews. Wilcoxon signed ranks test found this change was significant ($W=-2.326$, $p<0.05$), indicating that by the second interview, participants were more settled in their housing.

Figure 5-24 - Planning to move at first and second interviews



At both interviews, planning to move was significantly negatively correlated with housing satisfaction and neighbour rating variables but no significant correlations were found between planning to move and numbers of housing problems (Table 5-13). This suggests that participants' housing stability was related to their perception of social cohesion in their neighbourhoods, as measured by the neighbour rating variables. Neighbourhood problem variables were also related to planning to move, particularly at the second interview. Problems with graffiti ($r_s=0.404, p<0.05$), rubbish on the streets ($r_s=0.459, p<0.05$), and noisy neighbours ($r_s=0.416, p<0.05$) were all found at the second interview to be correlated with planning to move within the next 6 months. At the first interview, problems with groups hanging around in the neighbourhood was significantly correlated with planning to move ($r_s=0.388, p<0.05$). These results suggest that some measures of neighbourhood disorder may be related to participants' decisions to move.

Table 5-13 - Correlations between planning to move, housing satisfaction and neighbour ratings

		Housing satisfaction	Neighbours are willing to help others	Neighbours share the same values	This is a close-knit neighbourhood	Neighbours can be trusted	Neighbours generally get along
Planning to move in the next 6 months	First interview	-0.463**	-0.065	-0.814**	-0.462*	-0.509**	-0.492**
	Second interview	-0.641**	-0.485*	-0.387	-0.373	-0.580**	-0.509**

All correlations are Spearman's rho

* $p < 0.05$

** $p < 0.01$

Summary of housing stability

- participants were significantly more residentially stable at the second interview, with a reduction in the numbers who were planning to move in the next 6 months.
- variables measuring housing satisfaction and social cohesion appeared to have the strongest relationship with planning to move, as more participants with low ratings on these variables were intending to move.

5.6 Summary

The results outlined in this chapter demonstrate that the sample population were typical of most studied in housing research for people with serious mental illness. They rated poorly on many indicators of social exclusion, including poverty, housing stress, and homelessness. However, the results also indicate that improvements in housing quality can improve housing satisfaction and residential stability. The physical neighbourhood seemed to have a limited influence on outcomes for the study sample, however, positive neighbour interactions appeared to improve perceptions of social cohesion. The following chapter examines the relationships between these variables in greater detail.

6 Developing the Links

This chapter provides a more detailed analysis of well-being ratings and the influence of housing and environmental factors on well-being. An assessment of the influence of support from the Comcare Housing Service is included in Section 6.4.

6.1 *Satisfaction with living environment*

Participants were asked to rate their satisfaction on a 10-point scale (0 = very dissatisfied to 10 = very satisfied) with aspects of their lives expected to contribute to an overall sense of their well-being. Table 6.1 details the satisfaction variables and the mean and median for each at the first and second interviews. As the mean and median scores illustrate, in general, participants' satisfaction increased between the interviews. Slight decreases occurred for the variables satisfaction with personal relationships and satisfaction with future security. Paired sample t-tests did not find any significant difference between the satisfaction ratings for any of the variables and first and second interview. These results suggest that participants were probably slightly more satisfied on most of the variables, and slightly less satisfied with their personal relationships and future security.

Table 6-1 - Mean and median satisfaction ratings for first and second interviews

Satisfaction with....		First interview	Second interview
health	Mean	5.83	6.26
	Median	6.00	7.00
personal relationships	Mean	6.99	6.45
	Median	7.00	6.00
feeling of safety	Mean	6.97	7.63
	Median	8.00	8.00
feeling part of the community	Mean	6.00	6.63
	Median	6.00	7.00
standard of living	Mean	6.33	7.08
	Median	7.00	7.50
achievements in life	Mean	5.64	6.15
	Median	6.00	7.00
future security	Mean	5.53	5.48
	Median	5.00	5.00

The satisfaction rating variables were significantly correlated with each other at the first interview. Overall, these relationships appeared to strengthen at the second interview (Appendix, Table 10-5). Satisfaction with feeling part of the community, standard of living, achievement in life, and future security were all highly correlated with each other at both interviews. At the first interview, satisfaction with health was significantly correlated with

feeling part of the community ($r=0.343$, $p<0.05$) and standard of living ($r=0.381$, $p<0.05$), while satisfaction with personal relationships was significantly correlated with standard of living ($r=0.418$, $p<0.01$), achievement in life ($r=0.394$, $p<0.05$), and future security ($r=0.482$, $p<0.01$). At the second interview, significant correlations were found between satisfaction with health and personal relationships ($r=0.529$, $p<0.01$), and standard of living ($r=0.532$, $p<0.01$). The change in significant correlations found at first and second interview may have been due to the slight decrease in ratings of satisfaction with personal relationships between interviews. Satisfaction with feeling of safety was not significantly correlated with any other satisfaction ratings at the first interview, but the second interview ratings produced significant correlations between safety and feeling part of the community ($r=0.425$, $p<0.05$), and standard of living ($r=0.454$, $p<0.05$).

Summary of satisfaction ratings

- overall, participants satisfaction ratings increased between interviews, but these increases were not significant.
- the satisfaction ratings were highly correlated with each other at both interviews.

6.2 Relationships between satisfaction ratings and other variables

The relationships between participants' satisfaction ratings and other demographic and housing variables were also examined. In general, chi-square analysis was used but, where possible, Spearman's rho and Pearson's r were used for correlations.

6.2.1 Demographic variables

At the first interview, sex was positively correlated with satisfaction with feeling of safety ($r=0.374$, $p<0.05$). Surprisingly, women rated their satisfaction with safety higher than men. Having children was also positively correlated with satisfaction with safety ratings at the first interview ($r=0.439$, $p<0.05$), but not at the second. These results are likely to be due to 12

(33.3 per cent of participants) women with children giving very high satisfaction with safety ratings at the first interview.

Mental health diagnosis was associated with satisfaction with feeling part of the community at the second interview ($\chi^2_{(9)}=17.287, p<0.05$). A greater proportion of those diagnosed with bipolar disorder rated their satisfaction on this variable high, while a larger than expected proportion of those with 'other' diagnoses rated it low, compared with those diagnosed with depression and/or anxiety, and schizophrenia. Mental health diagnosis was not associated with any other satisfaction rating variables at either interview. Age, ethnicity, and marital status did not show any significant association with any satisfaction ratings at either interview.

Other lifestyle variables that were associated with satisfaction ratings include cigarette smoking which was negatively correlated with satisfaction with achievement in life at the second interview. The 14 (45.2 per cent) non-smokers at the second interview rated their satisfaction higher than smokers. The percentage of non-smokers increased from 30.6 to 45.2 per cent between the first and second interviews so this finding may be a reflection of the satisfaction participants who had quit smoking between their first and second interviews felt about their achievement.

Drinking alcohol was negatively correlated with satisfaction with future security at the first interview ($r=-0.358, p<0.05$), but no significant correlations were found at the second. This may be due to the decrease in frequency with which participants reported drinking at the second interview. Use of illicit drugs was negatively correlated with satisfaction with health at both interviews ($r=-0.417, p<0.05, r=-0.545, p<0.01$, respectively). However, only 2 (5.6 per cent) participants at the first interview and 5 (16.1 per cent) at the second interview said they used illicit drugs. Use of illicit drugs was also negatively correlated with satisfaction with personal relationships at the second interview ($r=-0.385, p<0.05$), suggesting that drug use was causing problems in participants' personal relationships.

Summary of demographic variables

- generally, none of the demographic variables were associated with participants' ratings for the satisfaction variables.
- mental health diagnosis was associated with satisfaction with feeling part of the community, those with bipolar disorder were more satisfied than others at the second interview.
- higher ratings for satisfaction with achievement in life at the second interview may be related to some participants quitting cigarette smoking.

6.2.2 Economic variables

Total weekly income, amount of rent and proportion of income spent on rent were all significantly correlated with some of the satisfaction variables at both the first and second interviews. Total weekly income was not significantly correlated with any of the satisfaction variables at the first interview, however, at the second, it was positively correlated with both satisfaction with feeling part of the community ($r=0.391$, $p<0.05$), and achievement in life ($r=0.542$, $p<0.01$). The amount of rent paid was negatively correlated with satisfaction with personal relationships at the first interview ($r=-0.354$, $p<0.05$). This negative relationship strengthened at the second ($r=-0.516$, $p<0.01$).

The proportion of income spent on rent was negatively correlated with satisfaction with future security at the first interview ($r=-0.470$, $p<0.01$), while at the second, it was negatively correlated with satisfaction with personal relationships ($r=-0.507$, $p<0.01$). Obviously, amount of rent paid and proportion of income spent on rent are highly correlated, but their relationship with satisfaction with personal relationships is interesting and difficult to explain. It is possible that those paying higher rent, which was often in the form of board, were having problems maintaining relationships with the people they were living with.

Work was positively correlated with satisfaction with standard of living at the second interview ($r=0.374$, $p<0.05$). This indicates that the 12 (37.5 per cent) participants who were working at the time of the second interview were more satisfied with their standard of living than those who were not working. This is not surprising as those who were working were likely to have a higher income than those who were not. However, while work was positively correlated with weekly income, this correlation was not significant at with either interview.

Level of debt was not correlated with any of the satisfaction ratings at the first interview, however, at the second, it was negatively correlated with satisfaction with personal relationships ($r=-0.385$, $p<0.05$), standard of living ($r=-0.376$, $p<0.05$), and health ($r=-0.509$, $p<0.01$). These findings are of concern as they suggest that those with higher levels of debt have lower satisfaction on some dimensions of well-being. However, use of foodbanks was not significantly correlated with any of the satisfaction variables at either interview.

Summary of economic variables

- the amount of rent paid was negatively correlated with satisfaction with personal relationships at both interviews.
- work was positively correlated with satisfaction with standard of living at the second interview.
- participants with higher levels of debt were less satisfied on some of the well-being variables.

6.2.3 Support

The receipt of different types of support and participants' satisfaction ratings were also examined. In general, having a particular support was not correlated with any of the satisfaction ratings, however, where correlations were found they were negative. The only significant result found at the first interview was a negative correlation between receiving domestic assistance and satisfaction with feeling of safety ($r=-0.520$, $p<0.01$). At the second

interview, having a community support worker was negatively correlated with satisfaction with feeling part of the community ($r=-0.405$, $p<0.05$), access to respite care was negatively correlated with satisfaction with health ($r=-0.390$, $p<0.05$), and having housing support was negatively correlated with satisfaction with feeling of safety ($r=-0.503$, $p<0.01$). Attendance at day programmes was also negatively correlated with satisfaction with feeling of safety ($r=-0.449$, $p<0.05$) and feeling part of the community ($r=-0.417$, $p<0.05$).

One role of a community support worker is to help consumers engage with their community so the negative correlation between feeling part of the community and having a community support worker can be explained. The negative correlation between access to respite and satisfaction with health also makes sense intuitively as respite is often used as time out because consumers are unwell, therefore, those that use respite are more likely to have periods of being unwell and are, hence, less likely to be satisfied with their health. The negative correlation between housing support and feeling of safety is more difficult to explain. Participants identified several different sources of housing support, including HNZC, City Housing, and Comcare Housing, so this result may have some relationship with housing support provider.

The total number of supports received by participants was not significantly correlated with any of the satisfaction variables at the first interview, however, at the second, it was negatively correlated with satisfaction with feeling of safety ($r=-0.372$, $p<0.05$), feeling part of the community ($r=-0.442$, $p<0.05$), health ($r=-0.401$, $p<0.05$), and achievement in life ($r=-0.395$, $p<0.05$). It is understandable that participants who have higher levels of support are less satisfied with their health, as poor health is the most likely reason they have high support needs. It also follows that those with high support needs are less satisfied with their achievement in life as their ill health is likely to be a barrier to achieving their goals. Respondents with more supports were also less satisfied with feeling part of the community. It is possible that their disability made it difficult for them to interact with others in their community and so they felt less a part of it. It is more difficult to explain why those with more supports were less satisfied with their safety. Chi-square tests with diagnosis and

numbers of supports found no significant association at either interview so mental health diagnosis does not explain these differences.

Surprisingly, the frequency of visits with family at both interviews and with friends at the second interview were not significantly correlated with any of the satisfaction ratings. The frequency of visits with friends was not asked at the first interview.

Summary of support

- generally, having a particular support was not correlated with any of the satisfaction ratings, although any correlations found were negative.
- the total number of supports was negatively correlated with some of the satisfaction ratings at the second interview. As those with higher support needs are more likely to have poor mental health, this is not unexpected.

6.2.4 Housing variables

The relationships between housing variables and participants' satisfaction ratings were also explored. The only significant association found between the satisfaction variables and household status was at the first interview with satisfaction with personal relationships ($\chi^2_{(12)}=23.078, p<0.05$). Those who were sole occupants rated their satisfaction with personal relationships higher than those who lived in other housing situations. This suggests that for this population group, living alone may enhance their satisfaction with personal relationships. A significant association may not have been found at the second interview as fewer respondents were sole occupants.

Type of housing provider was recoded into four variables and chi-square analysis was used to look for significant associations between provider and satisfaction ratings. At the first interview, housing provider was associated with satisfaction with achievement in life

($\chi^2_{(9)}=19.947, p<0.05$). A greater than expected proportion of those living in private rental gave high ratings for satisfaction with achievement in life, while a larger proportion of those living in 'other' situations gave low ratings. There were no significant associations between housing provider and satisfaction ratings at the second interview. For those participants who had regular property inspections, the frequency of inspections was not significantly correlated with any of the satisfaction ratings at either interview. How often participants saw their landlord was negatively correlated with satisfaction with personal relationships at the second interview ($r_s=-0.465, p<0.05$), indicating that those who saw their landlords more often were less satisfied with their personal relationships. This is probably because those who were boarding saw their landlords more frequently.

Spearman's rank correlations were performed using the participants' satisfaction ratings for their physical housing features and their ratings on measures of satisfaction. At the first interview, satisfaction with the dwelling inside was moderately positively correlated with satisfaction with safety ($r_s=0.494, p<0.01$), feeling part of the community ($r_s=0.516, p<0.01$), and future security ($r_s=0.333, p<0.05$). None of the other housing feature satisfaction variables were significantly correlated with well-being satisfaction variables at the first interview. At the second interview, well-being satisfaction variables were moderately correlated with bedroom variables. There were moderate correlations between satisfaction with size of bedroom(s) and satisfaction with feeling of safety ($r_s=0.358, p<0.05$), feeling part of the community ($r_s=0.451, p<0.05$), standard of living ($r_s=0.556, p<0.01$), future security ($r_s=0.534, p<0.01$), and achievement in life ($r_s=0.503, p<0.01$). Satisfaction with the number of bedrooms was also correlated with satisfaction with standard of living ($r_s=0.587, p<0.01$) and future security ($r_s=0.501, p<0.01$). These results indicate that having the appropriate size and number of bedrooms had a large effect on participants' well-being, especially in terms of their satisfaction with their standard of living and future security.

The number of housing problems participants were experiencing was also significantly correlated with some of the satisfaction variables. Satisfaction with feeling of safety was negatively correlated with the total number of housing problems and the number of small

housing problems at the first interview ($r=-0.453, p<0.01$ and $r=-0.349, p<0.05$, respectively). It was also negatively correlated with the number of small housing problems at the second interview ($r=-0.415, p<0.05$). Satisfaction with feeling part of the community was also negatively correlated with the total number of housing problems and number of small housing problems at the first interview ($r=-0.510, p<0.01$ and $r=-0.526, p<0.01$, respectively), and with the total number of housing problems at the second ($r=-.0371, p<0.05$). At the first interview, the number of big housing problems was negatively correlated with satisfaction with personal relationships ($r=-0.409, p<0.05$). At the second interview, the number of small housing problems was negatively correlated with satisfaction with standard of living ($r=-0.356, p<0.05$). It is interesting the housing problems seemed to affect participants' perception of their safety and community. This could be because living in poorer quality housing leads to participants perceiving their neighbourhoods as being more problematic.

Participants' satisfaction with their current housing was also positively correlated with some of the satisfaction ratings. At the first interview, it was moderately correlated with satisfaction with standard of living ($r_s=0.403, p<0.05$). At the second, it was again correlated with satisfaction with standard of living ($r_s=0.361, p<0.05$), and also with feeling part of the community ($r_s=0.443, p<0.05$) and future security ($r_s=0.439, p<0.05$). These results suggest that for the study group, satisfaction with their housing had a positive effect on some of the satisfaction variables. Satisfaction with standard of living appears strongly linked to satisfaction with current housing.

A moderate negative correlation was found at the second interview between satisfaction with feeling of safety and the length of current tenancy (in months) ($r=-0.411, p<0.05$), indicating that those who had lived in their current tenancies for longer were less satisfied with their feeling of safety. This could be because those who had lived in their tenancies longer knew their neighbourhoods better and were therefore more aware of safety problems. It could also be a reflection of those who wanted to shift due to dissatisfaction with their housing having lived in their tenancies for longer than those who had moved.

Planning to move in the near future was correlated with lower satisfaction with both health ($r_s=0.411, p<0.05$) and standard of living ($r_s=0.371, p<0.05$) at the first interview, suggesting that the reasons participants wanted to move were negatively affecting their health and their perception of their standard of living. Analysis was conducted using the first interview data to ascertain if there was any change in satisfaction ratings related to having moved or not. No significant correlations were found. This analysis could not be conducted using the second interview data as all but 3 participants had moved.

Summary of housing variables

- having the appropriate size and number of bedrooms seemed to improve participants' ratings on well-being scales indicating that having what participants perceived as appropriate housing had a positive effect on well-being.
- satisfaction with feeling of safety and feeling part of the community were related to the number of housing problems participants had, suggesting that more problematic housing affected participants' perceptions of their neighbourhoods.
- satisfaction with current housing was related to satisfaction with standard of living.
- planning to move in the near future was correlated with satisfaction with health and standard of living, suggesting that dissatisfaction with housing was negatively affecting participants' well-being.

6.2.5 Neighbour and neighbourhood variables

Chi-square tests of area of Christchurch and the satisfaction variables recoded into four categories were used to investigate whether the area of Christchurch respondents lived in was related to their satisfaction ratings. The only significant association found was at the first interview with satisfaction with achievement in life ($\chi^2_{(12)}=22.091, p<0.05$). Greater

proportions of participants living in the eastern and southern suburbs rated themselves above 5 for this variable, indicating that those living in those areas were more satisfied with their achievement in life. It is possible that a similar association was not found for the second interview data because many participants had moved away from the eastern suburbs and the sample was more dispersed throughout Christchurch.

Interestingly, whether or not respondents liked their neighbourhood was moderately correlated with satisfaction with feeling at safety at both interviews ($r=0.411$, $p<0.05$ and $r=0.403$, $p<0.05$, respectively). At the first interview, it was also correlated with satisfaction with feeling part of the community ($r=0.493$, $p<0.01$), while at the second interview, it was correlated with satisfaction with standard of living ($r=0.448$, $p<0.05$). These results suggest that regardless of where in the city participants lived, if they liked their neighbourhood, they had greater satisfaction with their feeling of safety.

At the first interview, having family or whanau in the neighbourhood was positively correlated with satisfaction with standard of living ($r=0.342$, $p<0.05$) and achievement in life ($r=0.426$, $p<0.01$). It was positively correlated with satisfaction with feeling part of the community ($r=0.378$, $p<0.05$) and negatively correlated with satisfaction with health ($r=-0.436$, $p<0.05$) at the second interview. Friends living in the neighbourhood was not correlated with any of the satisfaction ratings at either interview.

There were no significant correlations between satisfaction with safety and feeling part of the community and any of the neighbourhood problems at the first interview. Likewise, using the second interview data, no significant correlations were found between these satisfaction variables and neighbourhood problems. Satisfaction with safety was correlated with the variable satisfaction with safety of the neighbourhood at the second interview ($r_s=0.463$, $p<0.01$) but no correlation was found at the first ($r_s=0.300$).

The neighbour rating variables were strongly positively correlated with many of the satisfaction rating variables at both interviews (Appendix, Table 10-6). Interestingly, neither

satisfaction with health nor satisfaction with personal relationships was significantly correlated with any of the neighbour ratings at either interview. Satisfaction with standard of living was strongly positively correlated with all five neighbour variables at the first interview, and moderately positively correlated with 'neighbours are willing to help others' and 'neighbours can be trusted' at the second. As it was also positively correlated with satisfaction with current housing at both interviews, these results indicate that both neighbour and housing satisfaction variables were related to participants' ratings of their satisfaction with standard of living. Both satisfaction with feeling of safety and satisfaction with feeling part of the community were positively correlated with some of the neighbour ratings at each interview. Particularly strong correlations were found at the second interview between both these satisfaction variables and 'neighbours are willing to help others' and 'neighbours can be trusted', suggesting that these neighbour variables may have an effect on participants' feelings of fitting in to their neighbourhoods.

Pearson's r was used to examine whether giving or receiving favours from neighbours was correlated with any of the satisfaction variables (Appendix, Table 10-7). At the first interview, satisfaction with standard of living and achievement in life were both moderately positively correlated with both giving and receiving favours from neighbours. However, at the second interview, none of the satisfaction variables were significantly correlated with the giving or receiving of favours. Likewise, using Spearman's r , frequency of conversations with neighbours was moderately positively correlated with several of the satisfaction ratings at the first interview but not at the second (Appendix, Table 10-7). Interestingly, giving and receiving favours and the frequency of conversations with neighbours were all moderately positively correlated with both satisfaction with standard of living and achievement in life at the first interview, suggesting that good interactions with neighbours may have had a positive influence on these variables at the first interview.

Summary of neighbour and neighbourhood variables

- the area of Christchurch participants lived in seemed to be unrelated to any of the satisfaction variables.
- participants who liked their neighbourhoods were more satisfied with their feeling of safety at both interviews.
- neighbourhood problems appeared to be unrelated to satisfaction with safety and feeling part of the community.
- satisfaction with feeling of safety and feeling part of the community were strongly positively correlated with neighbour ratings at both interviews suggesting that positive feelings about neighbours improved participants' feelings about their neighbourhoods.

To summarise, some of the satisfaction variables produced more significant results with the variables tested than others. In particular, satisfaction with health and satisfaction with personal relationships seemed to be unrelated to any of the housing or neighbourhood variables, especially at the second interview. This indicates that participants' satisfaction ratings on these variables may be influenced by factors other than those investigated in this study.

Satisfaction with future security and achievement in life also produced few significant results, although those found were related to some of the housing and neighbourhood variables. Satisfaction with future security was a question which participants struggled to understand, even with further explanation, so it may be that the ratings given for this question were not an accurate measure of participants' feelings towards their future.

Satisfaction with feeling of safety, feeling part of the community, and standard of living were all significantly correlated with many of the housing and neighbour rating variables, suggesting these well-being variables are more strongly affected by participants' satisfaction with their housing and neighbours than the other variables used.

6.3 *Variables influencing satisfaction*

Multivariate analysis was used to assess the ability of housing, neighbour, and neighbourhood variables to predict satisfaction ratings. As explained above, satisfaction with health, personal relationships, and future security were found, in general, to be unrelated to housing or neighbourhood variables using correlation analysis. While some preliminary modeling was done using these variables, no significant results were found, suggesting that other factors influenced participants' ratings on these variables.

The second interview data was used for the analysis. While the number of subjects that could be used in the analysis was small, the satisfaction rating variables were generally normally distributed and thus appropriate for use in regression analysis. Violations of the assumptions of linearity, multicollinearity and homoscedasticity were also checked during the early stages of analysis. Variables which were shown to be correlated with each of the satisfaction ratings were used as independent variables. Initially, regression was conducted with each of the independent variables individually to ascertain the level of variance each contributed to the score on the dependent variable. Independent variables which appeared to explain higher levels of variance were entered into the analysis in various combinations to find which variables could best explain the satisfaction rating scores.

Satisfaction with feeling part of the community was correlated with several neighbour, housing, and support variables. The variables satisfaction with bedroom size, total weekly income, and having a community support worker explained 45.9 per cent ($F=7.627, p<0.001$) of the variance in satisfaction with feeling part of the community. All the measures were statistically significant, with satisfaction with bedroom size providing the largest beta value ($\beta=0.379, p<0.05$), followed by total weekly income ($\beta=0.379, p<0.05$) and community support worker ($\beta=-0.331, p<0.05$).

Satisfaction with feeling of safety was modeled using neighbour, housing, and support variables. Satisfaction with bedroom size, length of current tenancy, receipt of housing support, and attendance at day programmes were entered into the analysis and together

explained 61.1 per cent ($F=9.829$, $p<0.001$) of the variance in satisfaction with feeling of safety. Housing support recorded the highest beta coefficient ($\beta=0.381$, $p<0.01$), followed by satisfaction with bedroom size ($\beta=0.358$, $p<0.01$), then attendance at day programmes ($\beta=0.311$, $p<0.05$) and length of tenancy ($\beta=-0.291$, $p<0.05$).

Satisfaction with standard of living was modeled using housing quality, economic, and neighbourhood variables. Satisfaction with bedroom size, total number of debts, and employment status (doing some form of work or not) explained 60.9 per cent ($F=14.032$, $p<0.001$) of the variance in satisfaction with standard of living. All of the variables were significant, with satisfaction with bedroom size the largest beta coefficient ($\beta=-0.578$, $p<0.001$), followed by number of debts ($\beta=-0.313$, $p<0.05$), then employment status ($\beta=0.257$, $p<0.05$).

Lastly, satisfaction with achievement in life was modeled using housing and demographic variables. Satisfaction with bedroom size, number of formal supports, and smoking status explained 45.6 per cent ($F=7.540$, $p<0.01$) of the variance on this variable. Smoking status produced the largest beta coefficient ($\beta=-0.414$, $p<0.01$), then satisfaction with bedroom size ($\beta=0.355$, $p<0.05$) and number of supports ($\beta=-0.324$, $p<0.05$).

The results of regression analysis indicate that some of the housing, support, economic, and demographic variables used in this study explained some of the variance exhibited in the well-being variables. Satisfaction with bedroom size was a particularly strong predictor of variance as it was a variable in the models for each of the well-being variables able to be tested. It is possible that bedroom size was acting as a proxy for another variable.

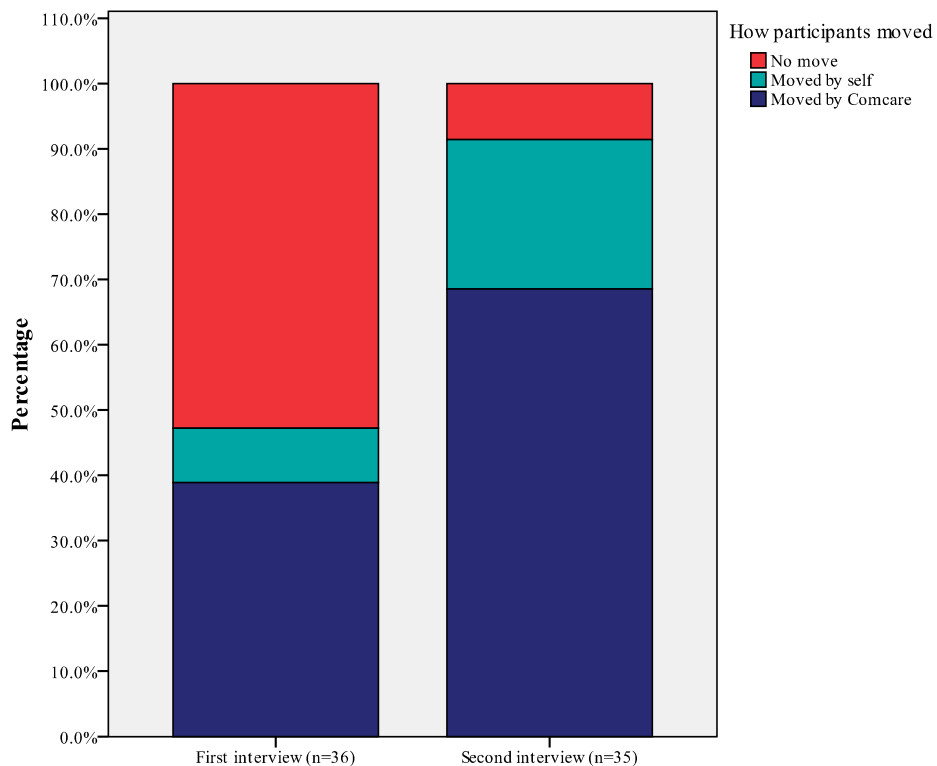
6.4 Evaluation of Comcare Housing Service

This section provides an assessment of the effect of support from the Comcare Housing Service. Participants' demographic details were compared to establish whether Comcare Housing was providing more support or housing to particular groups. Pearson's correlation found no significant correlations between sex and receiving support from Comcare or moving

into Comcare housing at either interview. A moderate positive correlation was found between age and moving into Comcare leased or controlled housing at the second interview ($r_s=0.394$, $p<0.05$), suggesting that older participants were more likely to be living in a Comcare leased or controlled tenancy. No other significant correlations were found in relation to age and Comcare support. Chi-square tests found no significant associations between mental health diagnosis and support or housing from Comcare at either interview. This indicates that Comcare Housing provided support and housing to respondents regardless of diagnosis. In addition, no association was found between the ethnicity of participants and receiving support to move or housing from Comcare Housing. The participants comprised two ethnic groups, Pakeha/New Zealand European and Maori, therefore, these results suggest that Comcare Housing provided similar levels of support to members of each ethnicity.

6.4.1 Housing-related evaluation

At the time of the first interview, 14 (38.9 per cent) participants had moved house with the support of the Comcare Housing Service. Seven (19.4 per cent) were housed in housing where Comcare was the landlord or had control over who could live in the housing. Three (8.3 per cent) respondents had moved by themselves or with the support of others between their referral and the first interview. At the second interview, 23 (65.7 per cent) participants were living in housing that they had moved to with the support of the housing service. Eleven (31.4 per cent) of these were living in Comcare housing. Nine (25.7 per cent) participants had moved by themselves or with support from somewhere other than Comcare between the first and second interviews. Three (8.3 per cent) participants had not moved from the housing they were living in at the time of their referral. One participant was moved with Comcare support prior to the first interview but could not be followed up for the second interview and it is unknown if they were still living in the housing they moved to with Comcare assistance. A few participants (4 (11.1 per cent)) moved again by themselves following support into housing by Comcare. Generally, this was due to a change in circumstances unrelated to the housing, although 1 participant moved because the flat Comcare supported them to move into was unsuitable (Figure 6-1).

Figure 6-1 - How participants moved by interview

Satisfaction with current housing was positively correlated with moving to housing leased or controlled by Comcare at the first interview ($r_s=0.354$, $p<0.05$). This result is most likely because 5 of the 7 participants who moved into Comcare housing moved into newly built flats. At the second interview, receiving assistance from Comcare Housing to obtain housing and move house was positively correlated with satisfaction with housing ($r_s=0.486$, $p<0.01$). This result was unrelated to whether participants moved into Comcare leased or controlled housing, indicating that the Comcare housing workers were able to support participants into more satisfactory housing regardless of whether or not Comcare was the provider.

At the first interview, a moderate correlation was found between participants who were living in Comcare leased or controlled housing and the amount and proportion of rent paid ($r=0.485$, $p<0.01$ and $r=0.376$, $p<0.05$, respectively). This result is attributable to the housing that those participants moved into being managed by HNZC and thus having the rent set at 25

per cent of the tenants' income. At the second interview, there were no significant correlations between support from Comcare Housing, moving into Comcare Housing and the amount or proportion of rent participants were paying.

Chi-square tests found no significant association between the household status of the participants at first or second interview and receipt of support to move or housing from Comcare Housing, indicating that Comcare was assisting participants in various different living situations.

Differences in the types of rental housing and landlords participants had as a result of support from Comcare Housing were examined using chi-square tests. An association was found between the type of rental tenure and support from Comcare Housing at the second interview ($\chi^2_{(4)}=13.449$, $p<0.01$). Participants supported by Comcare Housing were more likely to be living in social housing (15 (42.9 per cent) participants) or private rental (7 (20.0 per cent) participants) than respondents who were not helped by Comcare, who were more likely to be living with family/whanau or friends (4 (11.4 per cent) participants). There was also an association between what type of landlord participants had at the second interview ($\chi^2_{(6)}=16.699$, $p<0.05$). Those housed with support from Comcare were more likely to have HNZC (10 (28.6 per cent)), a social housing provider (5 (14.3 per cent)), or a property management agency (3 (8.6 per cent)) as landlord. Those not supported by Comcare were more likely to have a private landlord (3 (8.6 per cent)) or family/whanau or friends (3 (8.6 per cent)) as landlords. No significant associations were found between first interview rental type or landlord, and support from Comcare Housing. The results of chi-square tests using these variables were approaching significance, so it is likely that the lack of any significant results is due to only 14 participants moving with Comcare support by this stage of the study.

Some aspects of satisfaction with housing features were correlated with support from Comcare Housing and moving into housing leased or controlled by Comcare at both the first and second interviews. These correlations were particularly apparent at the first interview. Those housed with support from Comcare Housing at the first interview were more satisfied

with the number of bedrooms ($r_s=0.341$, $p<0.05$), the amount of storage space ($r_s=0.371$, $p<0.05$), children's play space ($r_s=0.617$, $p<0.05$), and the overall amount of space ($r_s=0.484$, $p<0.01$). Those who moved into Comcare leased or controlled housing were also more satisfied with the number of bedrooms ($r_s=0.396$, $p<0.05$), storage space ($r_s=0.439$, $p<0.01$), and the overall amount of space ($r_s=0.567$, $p<0.01$). At the second interview, those housed with Comcare support were more satisfied with the number of bedrooms ($r_s=0.359$, $p<0.05$) than those who did not receive Comcare support to move. Participants housed in Comcare leased or controlled housing at the second interview were more satisfied with the overall amount of space ($r_s=0.417$, $p<0.05$). These results suggest that support to obtain housing from Comcare Housing and having a tenancy with Comcare Housing are both related to improved satisfaction with aspects of the amount of space in participants' housing.

Pearson's correlation was used to evaluate whether support from Comcare Housing had an effect on the number of housing problems identified by participants. At the first interview, receiving support from Comcare was negatively correlated with the total number of housing problems ($r=-0.491$, $p<0.01$) and the number of small housing problems ($r=-0.411$, $p<0.05$), suggesting that participants who moved with the support of Comcare were less likely to have problems with their housing. This result strengthened when those who moved into Comcare leased or controlled housing were compared ($r=-0.511$, $p<0.01$ for total number of housing problems and $r=-0.426$, $p<0.05$ for small housing problems), indicating that Comcare leased or controlled housing was less problematic than other forms of housing. Similar results were found at the second interview. There were negative correlations between the total number of housing problems and the number of big housing problems and moving with support from Comcare ($r=-0.396$, $p<0.05$ and $r=-0.362$, $p<0.05$, respectively), however, no significant correlation was found between moving with Comcare support and the number of small housing problems. No significant correlations were found between moving into Comcare leased or controlled housing and numbers of housing problems at the second interview. These results confirm that Comcare Housing was able to support participants into housing that was less problematic than the housing they were living in at the time of referral.

Summary of housing-related evaluation

- participants who had support from the Comcare Housing Service to obtain housing were more satisfied with their housing.
- those moved by Comcare Housing were more likely to be living in private rental or social housing.
- participants who moved with support from Comcare or into Comcare controlled housing were more satisfied with the amount of space in their housing.
- participants rehoused by Comcare Housing had fewer housing problems suggesting that Comcare support assists participants to obtain less problematic housing.

6.4.2 Neighbourhood comparisons

Chi-square tests were used to check for associations between receiving housing support from the Comcare Housing Service and area of the city that participants were living in. No significant associations were found at either interview ($\chi^2_{(4)}=4.749$ and $\chi^2_{(4)}=7.004$, respectively). This indicates that Comcare Housing workers were able to house participants throughout Christchurch. No significant associations were found between area of Christchurch and moving into housing leased or controlled by Comcare at either interview ($\chi^2_{(4)}=5.290$ and $\chi^2_{(4)}=3.768$, respectively), suggesting that the housing offered to participants by Comcare Housing was also distributed throughout the city.

Participants' satisfaction ratings of the neighbourhood and its features were also compared for those who were supported by or housed into Comcare housing. At the first interview, those housed with Comcare support were more satisfied with their privacy ($r_s=0.389$, $p<0.05$), whereas those who moved into Comcare leased or controlled housing were more satisfied with the proximity of shops ($r_s=0.362$, $p<0.05$) and the proximity of bus stops ($r_s=0.391$, $p<0.05$). The only significant result found at the second interview was a negative correlation between being housed in Comcare housing and satisfaction with availability of

leisure facilities ($r_s=-0.381$, $p<0.05$). This suggests that the Comcare flats which participants moved into were not thought to be conveniently located near leisure facilities.

There was little relationship between neighbourhood problem variables and whether or not participants were rehoused with Comcare support or moved into Comcare housing. At the first interview, none of the neighbourhood problem variables were significantly correlated with moving with Comcare support or moving into Comcare leased or controlled housing. At the second interview, the only significant correlation was between support from Comcare to move and problems with graffiti ($r=0.518$, $p<0.01$), suggesting that those who were moved by Comcare had fewer problems with graffiti in their neighbourhoods than those who did not have Comcare support to move.

Whether or not participants liked their neighbourhoods, frequency of conversations with neighbours, and giving and receiving favours from neighbours were all unrelated to moving with support from Comcare Housing or moving into housing leased or controlled by Comcare. This result is surprising and suggests that Comcare support had little effect on participants' interactions with their neighbours. Participants' ratings of their neighbours were also compared to establish whether support from Comcare Housing had an effect on ratings. At the first interview, there were moderate correlations between participants who were housed with help from Comcare and agreement with the statements 'neighbours can be trusted' ($r_s=0.430$, $p<0.05$) and 'neighbours generally get along' ($r_s=0.371$, $p<0.05$). No significant correlations were found at the second interview. These results indicate that receiving support to move from Comcare Housing or being housed in Comcare leased or controlled flats had a limited effect on respondents' ratings of their neighbours.

Summary of neighbourhood comparisons

- there was no relationship between Comcare support and area of Christchurch that participants moved to, indicating that Comcare workers housed participants throughout Christchurch.
- neighbourhood problem variables were also unrelated to receiving support from Comcare.
- support from Comcare also appeared to be unrelated to neighbour rating variables, suggesting that Comcare support had little effect on participants' interactions with their neighbours.

6.4.3 *Satisfaction variables*

Generally, support from Comcare Housing to move seemed to be unrelated to participants' ratings for their satisfaction with well-being variables. However, at the first interview, moving into Comcare leased or controlled housing was positively correlated with satisfaction with feeling of safety ($r=0.421$, $p<0.05$). This relationship was not found at the second interview. At the second interview, Comcare support to obtain housing was positively correlated with satisfaction with personal relationships ($r=0.398$, $p<0.05$), suggesting that assistance to obtain new housing helped to improve respondents' relationships. This may be because family/whanau or friends were not required to provide this support or because participants were able to move from unsuitable situations living with family/whanau or friends, thus relieving some of the pressure on those relationships.

The results of the assessment of aspects of the Comcare Housing Service suggest that support from the service leads to greater satisfaction with housing and improved ratings of housing quality and spaciousness. Assistance from the service did not appear to have any effect on neighbourhood and neighbour ratings.

The findings outlined in this chapter suggest that housing has some influence on other quality of life outcomes, however it appears that other variables may have a more profound effect.

The next chapter examines the results in relation to previous findings in the literature and evaluates them within the context of Peace and Kell's (2001) sustainability framework.

7 Discussion

This study set out to examine which physical and social characteristics of neighbourhoods, and which formal and informal supports enhanced housing satisfaction, residential stability, and well-being for people with serious mental illness. Participants' housing, support, and neighbourhood experiences, and their changing circumstances were investigated over a year. An assessment of aspects of the effectiveness of the Comcare Housing Service was also conducted to provide recommendations for the future development of the service. This chapter interprets the results and places them within the context of the current body of research and literature. It also considers the findings within the framework created by Peace and Kell (2001) to establish whether this is an appropriate conceptualisation of housing for this group.

The dearth of recent research on the housing, support, and neighbourhood needs and experiences of people with serious mental illness living in New Zealand is addressed by the findings of this study. While it confirms some previous findings in the New Zealand and international literature, some unanticipated outcomes and relationships were discovered, particularly in terms of the influence of both the physical and social environment. Section 7.1 describes the study population and compares and contrasts the results with those from other studies.

7.1 A vulnerable group

Thirty-six people agreed to participate in the study and thirty-one were able to be followed up for a second interview. Overall, the living circumstances, and particularly the economic situation, of the respondents were poor. The majority were reliant on government income support and high levels of debt were found amongst the group. In addition, while over the course of the study the proportion of income respondents spent on rent decreased significantly, it was still sufficiently high for some participants to struggle to meet other costs. A cursory examination of participants' heating costs indicated that many were experiencing fuel poverty (Section 3.2.2), and about half at each interview had received food

grants from WINZ and help from foodbanks during the previous twelve months. In addition, because of their mental illness, and often other physical health needs, many participants had high health-related costs. These were usually subsidised through the Disability Allowance, but the difficulties respondents faced in meeting these costs were illustrated by the high numbers who received additional assistance from WINZ for health-related expenses, and who had doctor or dentist bills. These findings confirm those of other authors (eg. Forchuk, Nelson, et al., 2006; Hanrahan, Luchins, Savage, & Goldman, 2001; Kearns, 1990; C. A. Smith, et al., 1994), and describe a vulnerable group which struggles to maintain the basic necessities of life.

The sample appeared to be similar in terms of demographic variables to respondents in other studies, both in New Zealand and overseas (eg. Forchuk, Nelson, et al., 2006; C. A. Smith, et al., 1994). However, a greater proportion of participants were female (69.4 per cent) than that found in some studies, such as Piat and colleagues (2008) whose sample was forty-three per cent female. The median age of the sample was also lower than that found in other research. Other studies have found that women and younger people are more likely to agree to participate in research, so it is possible that this is the reason for these differences. However, as the participants were seeking support to find independent community-based housing, it is also possible that these findings are a reflection of a younger, less institutionalised population, than that found in studies which examine supported housing models.

7.1.1 Housing circumstances

Many of the housing-related results found in this study confirmed findings that have been previously established in the New Zealand and international literature. In particular, they have provided further confirmation of the relationship between housing quality and housing satisfaction and the preference of people with serious mental illness to live alone in independent community housing (Piat, et al., 2008; Schutt, et al., 1997; Wolf, et al., 2001). Over the study period, the number of participants boarding decreased, while the numbers

paying rent increased, indicating a trend towards independent housing and sole occupancy. Unlike earlier New Zealand studies (Kearns, 1990; Kearns, et al., 1991b), few of the participants at either interview were sharing essential amenities with people who were not in their household, indicating a move away from boarding house accommodation with communal facilities for this group. However, concerns, both in New Zealand and overseas, about the disproportionately high numbers of homeless people who experience serious mental illness were also confirmed in this study. The reasons participants gave for moving were almost all identified as push factors (Kearns, 2004), suggesting that this group was vulnerable to sudden changes in their housing circumstances.

Housing satisfaction was most strongly related to the physical nature of participants' housing. Housing quality, measured by the number of housing problems, was strongly correlated with housing satisfaction. The fewer problems participants had, the more satisfied they were with their housing. The most commonly identified problems were mould or damp and lack of insulation. This finding is important not only in terms of the fuel poverty literature, but also because other studies have found that better quality housing improves residential stability, mental health outcomes, and social isolation (Evert, et al., 2003; Harkness, et al., 2004; Newman, et al., 1994).

Variables examining the spaciousness of participants' housing were also related to housing satisfaction. Respondents who were more satisfied with the overall amount of space and number and size of bedrooms were more satisfied with their housing. This result is interesting in light of the large proportion of participants who were living alone, as Mares, Desai, and Rosenheck (2005) found those who lived alone were less satisfied with space than those who lived with others.

Housing satisfaction was also found to be strongly associated with participants' satisfaction with their standard of living. This result, when considered in conjunction with the relationship between housing satisfaction and the physical housing variables discussed above, suggests that for this group, relatively small improvements in physical housing could have

large benefits in terms of satisfaction ratings. It also indicates that addressing physical problems in low-cost rental housing would improve housing satisfaction for tenants and lead to greater residential stability. However, the findings also provide further evidence that housing satisfaction has a limited influence on other life satisfaction variables, such as satisfaction with personal relationships or future security, indicating that appropriate housing is only one aspect in the lives of people with serious mental illness, and that additional support in other areas is necessary for improvements in overall life satisfaction.

7.1.2 The environment

Both the physical and social environments were examined in this study to establish which aspects of each were related to housing and satisfaction outcomes for the study sample. Surprisingly, none of the physical neighbourhood variables had any relationship to other outcome ratings for the participants. The participants were generally satisfied with the physical features of their neighbourhoods and few neighbourhood problems were identified. These results were independent of the area of the city that participants were residing in. This is in contrast to other studies, where neighbourhood variables affected sense of community and feeling of fitting in (Yanos, et al., 2004; Yanos, et al., 2007). However, it may be a reflection of Christchurch which, by international standards, is a safe city where even the poorest neighbourhoods are well-serviced, and is inclusive of all members of its population.

The social environment had a much greater influence on housing and other outcomes than was anticipated. Social cohesion was measured using neighbour interaction and rating variables, and the findings indicated that those who had positive interactions with their neighbours were less likely to be intending to move and had higher ratings for satisfaction with sense of community and feeling of safety. Other studies have found similar effects (Prince & Gerber, 2005; Ross & Jang, 2000; Shinn & Toohey, 2003), and these results suggest a greater role for support services in assisting people with serious mental illness to develop good neighbour relationships.

7.2 *Applicability of Peace and Kell's sustainability framework*

A variety of models have been used to explain and identify the housing needs of people with serious mental illness. Consumer involvement in service development and philosophies encouraging individual empowerment have led to a preference for 'housing first' models, as illustrated in the literature (Forchuk, Nelson, et al., 2006; Tsemberis, et al., 2004; Tsemberis, et al., 2003). However, while the research supports the efficacy of these models, the broader physical and social environment is often not considered (Newman & Goldman, 2008). A multidisciplinary approach and the use of models and theories from a wide range of research areas is required for a complete understanding of all factors involved in successful housing outcomes for this group.

The scope of the sustainability framework developed by Peace and Kell (2001) makes it an appropriate model for evaluating the results of this study and interpreting them within the New Zealand context. It addresses some of the broader issues which can affect the ability of people with serious mental illness to obtain and retain housing. The findings are examined within the four categories of resources the framework deems necessary for this group to maintain community living (a supportive regulatory environment, material resources, effective support services, and social resources), and assessed in terms of their implications for the effectiveness of the framework in identifying the needs of this population.

7.2.1 *Regulatory environment and material resources*

A thorough examination of the effect of a regulatory environment which addresses land, building and housing legislation and upholds human rights requires a different type of approach than that taken in this study, however, several aspects of this category and that of material resources are affected by government policy and legislation so these two categories will be discussed together. Material resources include housing supply, adequate income, and food and utility supply (Kell & Peace, 2002).

Recent changes in government policy and legislation driven by the *New Zealand Housing Strategy* (2005) will lead to improvements in the physical adequacy of the housing stock. The Building Act (2004) has increased requirements concerning insulation and heating devices. The rapid uptake of subsidies for the installation of insulation and energy-efficient heating offered to both home-owners and landlords will also contribute to improvements in the quality of older housing stock. In addition, HNZC has undertaken a programme retrofitting insulation and heating in older properties (Housing Corporation of New Zealand, 2009a). These changes indicate that in the future the New Zealand housing stock will be of better quality and easier to heat and keep warm.

The study findings suggested that the quality of participants' housing improved, as the number of housing problems decreased between interviews. However, the most commonly reported problems at both interviews related to lack of insulation, and mould and damp, suggesting that the homes of some participants were of poor quality and, as yet, had not been retrofitted with insulation and heating. As the respondents were generally living in housing at the low end of the rental market, it is likely that, unless rehoused by HNZC, improvements in the quality of their housing attributable to recent changes in government policy and legislation will take some time to be realised.

Adequate income is another material resource examined in this study. While the participants' income between interviews increased slightly and their level of debt decreased slightly, they had an overwhelming reliance throughout the study on income support from the government. An evaluation of the Accommodation Supplement was nearing completion when this study commenced, however, while the cost of rent has increased significantly since the last increase in the supplement in 2004, changes in the level of support provided have not been forthcoming.

Food and utility supply are other material resources investigated. More than fifty per cent of respondents at each interview had received at least one food grant from WINZ during the previous year. In addition, foodbank use was high at both interviews, with almost half the

participants at each receiving at least one food parcel in the preceding twelve months. Participants' power costs were also examined. Estimates of the proportion of income spent on power costs by the participants suggested that almost fifty per cent were experiencing fuel poverty during winter. This estimate did not include participants who were living in cold homes because they did not want to have high heating costs, and so is likely to underestimate the true number of participants who were experiencing fuel poverty.

Lloyd (2006) proposed targeted assistance to low-income households likely to be in fuel poverty to create more equality across households and reduce the rates of fuel poverty and its consequent health effects. This would allow time for changes in legislation to have an effect on housing quality and subsequent costs. The findings of this study strongly support this suggestion, as the participants were clearly struggling on limited incomes, and heavily reliant on extra government and non-government support, particularly in the form of food. The members of the study sample were not in receipt of sufficient material resources to maintain independent housing without additional assistance from other sources.

The development of a definition of homelessness by the New Zealand government is likely to have the most profound effect on the material resources available for people who experience serious mental illness. The definition was based on the ETHOS one, and while it includes people staying temporarily with family/whanau or friends, it excludes people at risk of homelessness, such as those leaving institutions (Statistics New Zealand, 2009a). It was believed that inclusion of this group would not provide an accurate assessment of the level of homelessness in New Zealand. Unfortunately, the exclusion of this population may mean that their priority on housing waiting lists and eligibility for other housing-related assistance could be affected.

At the time of referral to the Comcare Housing Service, use of the New Zealand definition estimated the proportion of participants experiencing, or at risk of, homelessness twenty per cent lower than the ETHOS definition did. Those who were excluded by the New Zealand definition were living in residential treatment services or other institutional settings. While it

is suggested that this group does not need to be included as "... people discharged from mental health services may have housing arranged for them..." (Statistics New Zealand, 2009a, p. 12), Peace and Kell's (2001) research found that housing support was a service gap for this group.

The reasons respondents gave for moving or wanting to move were frequently related to the adequacy of material resources. Housing size, quality and cost were commonly reported by study participants as reasons for moving. These findings suggest that adequate housing was unobtainable for some members of the sample at some stages of the study, further illustrating a lack of material resources.

7.2.2 Formal support services

The set of formal support resources described by Peace and Kell include clinical support services, housing support and facilitation services, personal support services, such as community support workers, and anti-discrimination initiatives (Kell & Peace, 2002). Many of these types of supports are available throughout New Zealand and are usually funded through the Ministry of Health. Rural consumers have more restricted access to a variety of supports and, as Peace and Kell (2001) reported, housing facilitation services are not always accessible to all groups of consumers.

The respondents in this study received a wide variety of formal support services but some supports were used by only a few participants. In general, use of formal supports seemed to be unrelated to any of the housing outcome variables, but this could be due to the small numbers receiving some types of support. The number of supports for each respondent also seemed to be generally unrelated to ratings on the well-being variables. However, where significant correlations were found, these tended to be negative, indicating that having more supports was related to lower ratings on well-being variables. This could imply that support was being adequately targeted to those who most needed it, or may be a statistical artifact, reflecting the lack of heterogeneity within the sample.

A large number of the study respondents received housing support as they were recruited through the Comcare Housing Service. Those who received support from Comcare Housing were more satisfied with their housing at the second interview than those who did not receive housing support from Comcare. They were also more satisfied with the amount of space in their housing, reported fewer housing problems, and were more likely to be living in their own independent housing in the community, than those who did not receive support. These results provide further evidence for the formal support aspect of Peace and Kell's framework, as having support to obtain housing indicated an increased likelihood of being satisfied with that housing and, therefore, more likely to remain there. Housing support also enables 'managed mobility', the ability to plan moves when they become necessary to minimise stress and ensure appropriate housing is obtained (Kearns, 2004).

7.2.3 *Informal social networks*

The final category posited by Peace and Kell (2001) are a set of social resources, which include family/whanau and friends, and community and cultural networks. There are many theories which attempt to explain how informal support networks help to protect members from housing and life stressors (Brugha, et al., 2008; C. A. Smith, et al., 1994; Stansfeld, 2006). In this study, social resources were examined in two ways. Respondents were asked to report whether they had family/whanau or friends living in their neighbourhoods and how frequently they saw family/whanau or friends. More than half of the participants saw both a family member and a friend at least once a week, however, fewer than half had family/whanau or friends living in their neighbourhood at either interview.

The types and frequency of interactions with neighbours and participants' perceptions of their neighbours were also investigated to provide further information regarding informal support networks. These questions provided measures of social cohesion and the results suggested that participants who gave higher ratings on these variables were more satisfied with their feelings of safety and feeling part of their community. This provides further evidence of the

efficacy of assisting people with serious mental illness to develop stronger informal support networks.

Overall, the framework proposed by Peace and Kell appears to accurately identify the set of resources required to house people with serious mental illness in a sustainable way in the community. One aspect of the environment, investigated in this study, which it fails to incorporate is the physical neighbourhood and the effect of neighbourhood problems. This fits within both the regulatory environment and material resource categories of the framework and can also influence the development of informal social networks. Government and local body legislation and policy can have an effect on both the development of neighbourhoods and measures taken to address neighbourhood problems, while having sufficient amenities within a neighbourhood could be considered a material need.

However, in this study, the respondents were generally satisfied with the physical features and amenities in their neighbourhoods and reported few neighbourhood problems. This could be because Christchurch is a reasonably safe and quiet city, and as such, even the lower socio-demographic neighbourhoods in which the participants generally lived, were not of poor quality in comparison with marginalised neighbourhoods in other countries. Whether this is the case, or is due to problems with data analysis, the inclusion of neighbourhood variables in Peace and Kell's framework should be considered, as international studies suggest that neighbourhoods can have an effect on the housing tenure of people with serious mental illness.

7.3 Limitations

This study has addressed some of the methodological criticisms of previous research identified in particular by Newman (Newman, 2001a; Newman & Goldman, 2008, 2009). A twelve-month prospective cohort study was conducted as use of a randomised controlled trial was beyond the resources available. This type of study design suggests the need for some caution in generalising the results to the larger population. The small sample size, the percentage of participants lost to follow-up, and the use of participants' subjective ratings of

their economic, housing, and neighbourhood circumstances are all areas which could affect the reliability of the results.

The generalizability of the results of this study to the wider group of New Zealanders with serious mental illness seeking housing support is also limited as the participants were people with mental illness referred to the Comcare Housing Service for assistance with finding alternative independent housing in the community and the number of refusals to participate was high. However, people referred to Comcare Housing are only assisted if they have no other housing support, and would have significant difficulty in finding rental housing in the community without some sort of assistance. Those accepted are amongst the ‘three percent’ (Oakley Browne, et al., 2006) who experience significant impairment due to their mental illness. In addition, referrals made to Comcare Housing can only be made by mental health case managers or needs assessors, meaning that those making referrals have expertise in the mental health field and are expected to make referrals only for those with a genuine need for assistance. Therefore, the significance of this study lies not in the potential to generalize findings to other groups but in the fact that it is a twelve month follow-up of housing support for a group from one of the most vulnerable sectors of our society.

7.4 Summary

This study has provided an interesting insight into the housing experiences of a group of people with serious mental illness referred for support to obtain independent community-based housing in Christchurch, New Zealand. The results describe a population which experienced social exclusion on a number of indicators, however, they also suggested that small improvements in some aspects of housing and neighbourhoods could have a significant impact on outcomes for this group. Peace and Kell’s (2001) sustainability framework is an effective tool for assessing the availability of resources for this population, although the addition of an aspect addressing the physical neighbourhood would enable it to have more applicability in an international context. The final chapter of this thesis contains concluding comments and recommendations for future research and service developments.

8 Conclusion

This study enhances the understanding of the effects of housing, support, and the environment for people with serious mental illness living in New Zealand. The findings also enable recommendations for future service development, highlight implications of current local body and national government policy, and provide guidance for the development of future research.

The study sample typified those of other studies conducted both in New Zealand and overseas. They were a vulnerable group, reliant on government income support, struggling to meet basic costs of living. Furthermore, the additional difficulties of coping with a lifelong, serious disability, and its associated health costs, meant this group experienced social exclusion in a number of areas. WHO (2003) considers the use of government policy and legislation as the most effective way of addressing the inequalities experienced by people with serious mental illness.

8.1 Achieving the aims of the study

One aim of this study was to enhance the limited body of research on the effect of broad neighbourhood characteristics, including neighbourhood integration and problems, and neighbourhood features, such as amenities and traffic, on housing outcomes and satisfaction variables for people with serious mental illness. The finding that the physical neighbourhood had limited influence, while the social neighbourhood was related to housing satisfaction and other outcome variables, was unexpected. Christchurch, the city where the study was conducted, is a safe and accessible city by international standards, and as such, the study setting provides a plausible explanation for the limited effect of the physical environment. This also suggests that the variables evaluating the social environment have most likely accurately captured the experiences of participants.

The second goal was to examine the effect of both formal and informal support on housing and well-being outcomes. The wide variety of formal support services received by

participants made it difficult to evaluate their influence on outcomes. This implies the need for policy and practice to recognise and allow for flexibility in support provision, tailoring specific supports to individual needs. As informal support was closely linked to the social environment, this has implications for the development of supports to encourage the expansion of social networks for people with serious mental illness.

The final aim was to assess the effect of aspects of support from the Comcare Housing Service on housing and overall well-being. The majority of the study sample was successfully assisted by Comcare Housing over the study period. They reported greater housing satisfaction and fewer housing problems as a result, indicating that the Comcare Housing Service was successful in supporting clients in achieving improved housing outcomes.

8.2 Implications of the research

Peace and Kell's (2001) sustainability framework was, in general, an effective tool for evaluating the results of this study. Examining the results in terms of the four categories of resources (the regulatory environment, material resources, formal support services, and informal support networks) identified by Peace and Kell as necessary for the successful maintenance of independent housing by people with serious mental illness, highlighted several gaps in policy and service delivery, and implications for future research.

The scarcity of material resources continues to have serious consequences for this group, particularly in terms of the availability of housing and adequate income to cover basic living costs. The clear preference of people with serious mental illness to live alone is affected by the high cost and limited number of single housing units available for rent. Christchurch is unusual as the local city council provides a large number of social housing units, the majority of which are for single people, easing pressure on other social housing providers who cater to this group. However, the Christchurch City Council's policy of self-funding for its social housing means that rent increases must be used to generate income for maintenance and replacement of housing stock. While the rental cost is currently affordable for those on low

incomes, there is a suggestion that rents will increase to seventy per cent of market rates, which will make this type of housing prohibitively expensive for some people with serious mental illness. In addition, the rent rise policy has caused controversy as the majority of council tenants receive an Accommodation Supplement from the government which covers seventy per cent of rent rises at current rental rates, meaning that indirectly the New Zealand government is paying for seventy per cent of maintenance and rebuilding conducted by the council.

Housing provided by DHB and NGO mental health treatment providers also fills some of the housing need for people with serious mental illness. However, the majority of providers use a continuum of care model, resulting in housing changes for consumers whose support needs increase or decrease. This leads to disruption in social networks and can also contribute to other indicators of social exclusion, including homelessness, particularly if a consumer is hastily discharged because of refusal to undertake treatment. The inclusion of 'housing first' options within housing provision for people with serious mental illness in New Zealand would increase choice for consumers and, as international studies indicate, would result in increased residential stability, the development of larger community networks and higher levels of community integration, and improvement on indicators of social exclusion.

The housing model used primarily by the Comcare Housing Service is a supportive housing model. Referrals to the service are accepted from DHB mental health case managers and needs assessors from DHB funded needs assessment services because of contract requirements. Receipt of housing assistance is, therefore, contingent on receiving some treatment or support at the time of referral. Continuing support from the housing service is not necessarily, however, subject to ongoing treatment. The development of a true housing first approach for the service would require changes in the funding contract with the DHB or additional funding from other sources, such as HNZC.

Several small-scale housing providers in New Zealand, such as Downtown Community Ministry in Wellington and Whatever It Takes Trust in Hawkes Bay, use a housing first

approach, and have illustrated success for difficult client groups. However, the development of housing first services in New Zealand faces some challenges, as the current thinking is that housing for people with serious mental illness is a health issue and should be funded through the health budget, whereas the use of housing first models suggests that funding should be provided by the housing budget. Until this conundrum is resolved, it is likely that housing first models will remain the domain of small providers who are able to develop unique funding relationships to support their philosophical approach.

At a national level, HNZA supports the development of housing provision in the third sector, including mental health providers, through the Housing Innovation Fund (HIF). HIF provides low interest loans to purchase or build housing to social housing providers who meet certain criteria and can illustrate an ability to manage housing stock and service the loan. This type of financial support has been beneficial for providers and some have grown their housing stock to the extent that they can finance their own developments. However, social housing and the third sector, in particular, represent only a small proportion of New Zealand's housing stock. There is a growing need for government support of public, private, and third sector partnerships to provide adequate housing stock to meet the needs of people with mental illness and other minority groups. Overseas, governments have encouraged partnerships through the use of tax breaks for private investors or introduced legislation ensuring a proportion of all housing developments are social housing. It is important that the New Zealand government considers some of these options to ensure adequate, suitable, and sustainable housing for this vulnerable and marginalised group.

A further government policy decision which will have implications for people with serious mental illness was made during the development of the New Zealand definition of homelessness. While the definition was based on the ETHOS definition used in Europe, which includes people at risk of homelessness, this group have not been included in the New Zealand definition. The consequence of this is that those who are living in institutional settings, such as hospitals or community-based residential treatment services, who could be discharged if housing were available, are not included in homelessness data. Statistics New

Zealand suggests monitoring this group through other data sources to provide an indication of future housing need, however, exclusion of this group from the definition of homelessness may mean that policies developed to address the needs of homeless people using information generated through the use of this definition may fail to take into account the needs of a population which is particularly vulnerable to housing problems and homelessness.

Informal social networks are another set of resources identified by Peace and Kell (2001) as improving housing stability for people with serious mental illness. The influence of good interactions with neighbours on housing satisfaction and other well-being variables indicates that broadening the role of Comcare Housing workers to include support to help clients engage with their neighbours in a positive way, and to assist in the development of good neighbour relations, would be a useful service development. Community support workers and other community workers could also include an aspect within their work concerning neighbour relations. It is clear that this type of intervention would have significant benefits in decreasing social isolation and increasing community integration for people with serious mental illness. The most effective way to support the development of good neighbour relations would require further research and evaluation, and may vary between different groups of consumers.

The only omission in Peace and Kell's (2001) set of resources is the physical neighbourhood. While some aspects of the physical neighbourhood are encompassed by regulatory and material resources, the sustainability framework does not account for the entire influence of the physical neighbourhood. While this seems to have a minimal effect on outcomes for people with serious mental illness in Christchurch, New Zealand, it is likely that for this framework to have applicability in an international context, the physical neighbourhood needs to be included.

8.3 Future research

The implications of the findings described above indicate several areas for further research. The suggestion that Comcare Housing workers could provide additional support to clients in

developing positive interactions with neighbours requires further exploration and evaluation within the service. This could be conducted by consumer advisors through phone surveys or by using posted questionnaires.

Comparison of outcomes in continuum of care and housing first programmes for New Zealanders with serious mental illness is a research gap which should be addressed in the short to medium-term, as rigorous studies in this area would provide much needed evidence and guidance for housing and support policy, service development, and provision for this group. The small number of services using housing first models makes the establishment of this kind of research difficult, however, the use of randomised controlled trials, with follow-up periods of more than twelve months would produce results that could be considered methodologically sound even if the number of participants was small in comparison with international studies.

A final research area which should be targeted in the future is an evaluation of the New Zealand definition of homelessness, as the results of this study suggest that by excluding people at risk of homelessness, particularly those who are in institutional care, a large underestimation of the size of the homelessness problem may occur. People approaching housing services for assistance could be assessed using both the ETHOS and the New Zealand definitions, and variations in homelessness rating could be compared to evaluate which most accurately reflects the circumstances of New Zealanders in housing difficulty. The findings of this type of research would have enormous benefits for further policy, funding and service developments for marginalised groups, including those with serious mental illness, who experience serious housing problems.

This thesis has demonstrated the overall success of housing support in contributing to positive housing outcomes for people who experience serious mental illness. However, the ongoing high level of need amongst this group and expectations of consumers, their families/whanau, and the wider community for the attainment of the best possible quality of life, highlights the need for ongoing studies evaluating housing and support outcomes, and

reviewing policy and its implications for this group. A comprehensive research programme with rigorously developed studies would enable the most effective use of the resources available to house and support this population.

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Appendix

Table 0-1 - Satisfaction ratings for housing features

Satisfaction with...		Very satisfied n (%)	Satisfied n (%)	Neither satisfied nor dissatisfied n (%)	Dissatisfied n (%)	Very dissatisfied n (%)
current housing	First interview	18 (50.0)	12 (33.3)	3 (8.3)	3 (8.3)	0
	Second interview	13 (41.9)	10 (32.3)	2 (6.5)	3 (9.7)	3 (9.7)
dwelling inside	First interview	20 (55.6)	10 (27.8)	2 (5.6)	4 (11.1)	0
	Second interview	17 (54.8)	11 (35.5)	1 (3.2)	2 (6.5)	0
bedroom size(s)	First interview	12 (36.4)	18 (54.5)	1 (3.0)	2 (6.1)	0
	Second interview	9 (29.0)	15 (48.4)	1 (3.2)	5 (16.1)	1 (3.2)
number of bedrooms	First interview	16 (47.1)	11 (32.4)	2 (5.9)	4 (11.8)	1 (2.9)
	Second interview	7 (22.6)	17 (54.8)	0	4 (12.9)	3 (9.7)
storage space	First interview	11 (31.4)	14 (40.0)	2 (5.7)	5 (14.3)	3 (8.6)
	Second interview	8 (25.8)	13 (41.9)	0	8 (25.8)	2 (6.5)
space for children to play	First interview	2 (15.4)	8 (61.5)	0	3 (23.1)	0
	Second interview	3 (25.0)	7 (58.3)	1 (8.3)	1 (8.3)	0
overall space	First interview	10 (27.8)	19 (52.8)	3 (8.3)	3 (8.3)	1 (2.8)
	Second interview	7 (22.6)	19 (61.3)	1 (6.5)	4 (12.9)	0

Table 0-2 - Housing problems

		Big problem n (%)	Some Problem n (%)	No problem n (%)
Décor	First interview	1 (2.9)	5 (14.3)	29 (82.9)
	Second interview	1 (3.2)	2 (6.5)	28 (90.3)
Plumbing	First interview	1 (2.9)	4 (11.4)	30 (85.7)
	Second interview	2 (6.5)	2 (6.5)	27 (87.1)
Vermin/pests (rats, mice, borer, ants)	First interview	3 (8.6)	7 (20.0)	25 (71.4)
	Second interview	1 (3.2)	5 (16.2)	25 (80.6)
Locks	First interview	0	5 (14.3)	30 (85.7)
	Second interview	0	0	31 (100)
Broken windows	First interview	0	2 (5.7)	33 (94.3)
	Second interview	0	3 (9.7)	28 (90.3)
Heating system	First interview	0	2 (5.7)	33 (94.3)
	Second interview	0	2 (6.5)	29 (93.5)
Stove	First interview	1 (2.9)	4 (11.4)	30 (85.7)
	Second interview	0	2 (6.5)	29 (93.5)
Wiring/electrics	First interview	0	3 (8.6)	32 (91.4)
	Second interview	1 (3.2)	1 (3.2)	29 (93.5)
Noise	First interview	2 (5.7)	8 (22.9)	25 (71.4)
	Second interview	1 (3.2)	3 (9.7)	27 (87.1)
Damp/mould	First interview	1 (2.9)	8 (22.9)	26 (74.2)
	Second interview	2 (6.5)	4 (12.9)	25 (80.6)

		Big problem	Some Problem	No problem
Leaking roof	First interview	0	3 (8.6)	32 (91.4)
	Second interview	0	1 (3.2)	30 (96.8)
Lack of insulation	First interview	4 (11.4)	3 (8.6)	28 (80)
	Second interview	2 (6.5)	4 (12.9)	25 (80.6)
Needs redecoration	First interview	2 (5.7)	4 (11.4)	29 (82.6)
	Second interview	2 (6.5)	4 (12.9)	25 (80.6)
Structural damage	First interview	0	1 (2.9)	34 (97.1)
	Second interview	0	0	31 (100)
Leaking spouting	First interview	2 (5.7)	1 (2.9)	32 (91.4)
	Second interview	1 (3.2)	0	30 (96.8)
Other physical problems	First interview	3 (8.6)	0	32 (91.4)
	Second interview	0	4 (12.9)	27 (87.1)

Table 0-3 - Satisfaction with the physical neighbourhood

Satisfaction with...		Very satisfied n (%)	Satisfied n (%)	Neither satisfied nor dissatisfied n (%)	Dissatisfied n (%)	Very dissatisfied n (%)	Don't know n (%)
safety of neighbourhood	First interview	7 (19.4)	18 (50)	4 (11.1)	4 (11.1)	2 (5.6)	1 (2.8)
	Second interview	5 (16.1)	17 (54.8)	3 (9.7)	6 (19.4)	0	0
amount of traffic	First interview	7 (19.4)	21 (58.3)	2 (5.6)	5 (13.9)	1 (2.8)	0
	Second interview	4 (12.9)	23 (74.2)	1 (3.2)	3 (9.7)	0	0
proximity to shops	First interview	13 (36.1)	21 (58.3)	1 (2.8)	0	1 (2.8)	0
	Second interview	6 (19.4)	24 (77.4)	0	1 (3.2)	0	0
proximity to schools	First interview	1 (2.8)	1 (2.8)	0	1 (2.8)	0	33 (91.7)
	Second interview	3 (9.7)	3 (9.7)	2 (6.5)	1 (3.2)	0	22 (71.0)
proximity to work	First interview	3 (8.3)	10 (27.8)	1 (2.8)	1 (2.8)	0	21 (58.3)
	Second interview	3 (9.7)	5 (16.1)	1 (3.2)	2 (6.5)	0	20 (64.5)
proximity to bus stops	First interview	17 (47.2)	13 (36.1)	0	0	0	6 (16.7)
	Second interview	11 (35.5)	17 (54.8)	0	0	0	3 (9.7)
privacy	First interview	5 (13.9)	17 (47.2)	6 (16.7)	7 (19.4)	1 (2.8)	0
	Second interview	8 (25.8)	17 (54.8)	2 (6.5)	1 (3.2)	3 (9.7)	0
distance to family/friends	First interview	7 (19.4)	17 (47.2)	6 (16.7)	3 (8.3)	0	3 (8.3)
	Second interview	5 (16.1)	19 (61.3)	1 (3.2)	5 (16.1)	1 (3.2)	0
distance to doctor/clinic	First interview	4 (11.1)	21 (58.3)	3 (8.3)	8 (22.2)	0	0
	Second interview	6 (19.4)	16 (51.6)	4 (12.9)	4 (12.9)	1 (3.2)	0
availability of leisure facilities	First interview	6 (16.7)	21 (58.3)	4 (11.1)	1 (2.8)	0	4 (11.1)
	Second interview	3 (9.7)	23 (74.2)	4 (12.9)	0	0	1 (3.2)

Table 0-4 - Neighbourhood problems

		Big problem n (%)	Some Problem n (%)	No Problem n (%)	Don't know n (%)
Boy racers	First interview	9 (25.0)	12 (33.3)	15 (41.7)	0
	Second interview	7 (22.6)	5 (16.1)	18 (58.1)	0
Unemployment	First interview	4 (11.1)	8 (22.2)	6 (16.7)	18 (50.0)
	Second interview	4 (12.9)	7 (22.6)	12 (38.7)	8 (25.8)
Graffiti	First interview	4 (11.1)	11 (30.6)	21 (58.3)	0
	Second interview	2 (6.5)	9 (29.0)	20 (64.5)	0
Rubbish on streets, lawns, parks etc	First interview	3 (8.3)	8 (22.2)	25 (69.4)	0
	Second interview	3 (9.7)	6 (19.4)	21 (67.7)	1 (3.2)
Groups hanging around	First interview	0	11 (30.6)	21 (58.3)	4 (11.1)
	Second interview	0	9 (29.0)	22 (71.0)	0
Noisy neighbours/loud parties	First interview	2 (5.6)	6 (16.7)	28 (77.8)	0
	Second interview	1 (3.2)	4 (12.9)	25 (80.6)	1 (3.2)
Vandalism	First interview	1 (2.8)	9 (25.0)	25 (69.4)	1 (2.8)
	Second interview	1 (3.2)	5 (16.1)	24 (77.4)	1 (3.2)
Houses and gardens in bad condition	First interview	0	6 (16.7)	30 (83.3)	0
	Second interview	1 (3.2)	1 (3.2)	28 (90.3)	1 (3.2)
Dogs and dog mess	First interview	1 (2.8)	2 (5.6)	33 (91.7)	0
	Second interview	1 (3.2)	3 (9.7)	27 (87.1)	0
Quality of schools	First interview	0	0	12 (33.3)	24 (66.7)
	Second interview	0	0	11 (35.5)	20 (64.5)

Table 0-5 - Correlations between satisfaction ratings

Satisfaction with ...		Health	Personal relationships	Feeling of safety	Feeling part of the community	Standard of living	Achievement in life	Future security
Health	First interview	1	0.305	-0.038	0.343*	0.381*	0.279	0.303
	Second interview	1	0.529**	0.275	0.253	0.532**	0.368*	0.252
Personal relationships	First interview	0.305	1	0.109	0.306	0.481**	0.394*	0.482**
	Second interview	0.529**	1	0.125	0.101	0.340	0.191	0.208
Feeling of safety	First interview	-0.038	0.109	1	0.207	0.200	0.098	0.293
	Second interview	0.275	0.125	1	0.425*	0.454*	0.278	0.330
Feeling part of the community	First interview	0.343*	0.306	0.207	1	0.479**	0.155	0.561**
	Second interview	0.253	0.101	0.425*	1	0.376*	0.475**	0.484**
Standard of living	First interview	0.381*	0.481**	0.200	0.479**	1	0.596**	0.436**
	Second interview	0.532**	0.340	0.454*	0.376*	1	0.639**	0.762**
Achievement in life	First interview	0.279	0.394*	0.098	0.155	0.596**	1	0.507**
	Second interview	0.368*	0.191	0.278	0.475**	0.639**	1	0.737**
Future security	First interview	0.303	0.482**	0.293	0.561**	0.436**	0.507**	1
	Second interview	0.252	0.208	0.330	0.484**	0.762**	0.737**	1

All correlations are Pearson's r.

* $p < 0.05$ (2 tailed)

** $p < 0.01$ (2 tailed)

Table 0-6 - Correlations between satisfaction and neighbour ratings

Satisfaction with...		Neighbours are willing to help others	Neighbours share the same values	This is a close-knit neighbourhood	Neighbours can be trusted	Neighbours generally get along
feeling of safety	First interview	0.195	0.070	0.394*	0.369	0.434*
	Second interview	0.490**	0.054	0.241	0.482**	0.346
feeling part of community	First interview	0.535**	0.237	0.383*	0.304	0.332
	Second interview	0.563**	0.418	0.325	0.570**	0.391*
standard of living	First interview	0.603**	0.631*	0.588**	0.561**	0.473**
	Second interview	0.424*	0.522	0.370	0.519**	0.203
achievement in life	First interview	0.181	0.238	0.330	0.328	0.328
	Second interview	0.097	0.187	0.033	0.434*	0.224
future security	First interview	0.259	-0.214	0.323	0.403*	0.504**
	Second interview	0.264	0.437	0.328	0.503**	0.099
personal relationships	First interview	0.021	-0.032	0.148	0.056	0.101
	Second interview	-0.038	0.107	0.157	0.086	0.015
health	First interview	0.063	0.312	-0.002	0.349	0.246
	Second interview	0.126	0.179	-0.055	0.147	0.160

All correlations are Spearman's rho

* $p < 0.05$ (2 tailed)

** $p < 0.01$ (2 tailed)

Table 0-7 - Correlations between satisfaction ratings and interactions with neighbours

Satisfaction with...		Favour from neighbour (r)	Favour for neighbour (r)	Frequency of conversations with neighbours (r _s)
feeling of safety	First interview	-0.252	-0.168	-0.215
	Second interview	-0.159	-0.206	-0.035
feeling part of community	First interview	0.000	0.119	0.267
	Second interview	0.272	0.001	-0.062
standard of living	First interview	0.342*	0.373*	0.491**
	Second interview	0.142	0.149	0.020
achievement in life	First interview	0.405*	0.413*	0.435**
	Second interview	-0.088	-0.092	-0.249
future security	First interview	-0.010	0.018	0.310
	Second interview	0.196	0.175	0.068
personal relationships	First interview	0.129	0.274	0.331*
	Second interview	0.048	0.204	0.014
health	First interview	0.165	0.193	0.340*
	Second interview	-0.004	0.086	0.193

* $p < 0.05$ (2 tailed)** $p < 0.01$ (2 tailed)