

“Gee my account is in credit!”
Qualitative component of the Warm Homes Pilot Study

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Abstract

Fuel poverty, or the inability to heat one's home to World Health Organisation recommended standards for less than 10% of household income, is a significant social and public health problem in New Zealand. Those particularly at risk of fuel poverty include older people and those with chronic illness or disability. Despite estimates that around 23% of the total population of New Zealand may be experiencing fuel poverty, limited research of the phenomenon has been undertaken to date.

This thesis describes the qualitative component of the Warm Homes Pilot Study, a pilot for a randomised community intervention trial undertaken in the winter of 2007. The study was designed to raise indoor temperatures and reduce morbidity among older people with Chronic Obstructive Pulmonary Disease, a respiratory condition that is sensitive to cold temperatures and has a significant burden in New Zealand. Participants were given a \$500 electricity 'voucher', directly credited to their electricity accounts.

The qualitative study aimed to explore the narratives of nine older COPD patients who live in cold homes in relation to home heating and health, in order to investigate the social implications of fuel poverty. Semi-structured interviews were undertaken with nine participants, around the topics of home use, heating patterns and costs, and the acceptability of electricity vouchers. Labovian Structural Narrative Analysis was used to analyse the data collected.

The results of this study showed that fuel poverty is a real problem experienced by the participants and their community. Participants identified housing quality and improvements that could be made to improve the thermal efficiency of their houses to make achieving adequate indoor temperatures more affordable. Heating patterns and methods for coping with the cold were described, and five of the participants indicated that being cold has a negative effect on their illness. Methods of saving electricity to mitigate electricity expenses, and trade-offs made to afford electricity were described. Some participants also spoke about their fear of disconnection because of their reliance on medical equipment. The use of electricity vouchers directly credited to electricity accounts to reduce fuel poverty was unanimously supported by the participants, particularly for older people who were identified by the group as often struggling with electricity costs. There was some disagreement between participants about how best to benefit from electricity vouchers, suggesting that not all of the benefit was taken as increased heating. While participants gave mixed reactions to the description 'fuel poverty', they believed that fuel poverty is a problem experienced by people in their own community and within New Zealand.

This study provides some social context to the problem of fuel poverty in New Zealand through exploration of the narratives around home heating and health of a particularly disadvantaged group. It raises the problem of the extra expenses incurred through using prepayment meters. It is hoped that this study will inform the main study, and stimulate further research and discussion about how best to address fuel poverty in New Zealand.

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Personal Preface

I would like to preface this thesis with a personal reflection on how I became interested in public health, policy and fuel poverty. During a trip to India helping a volunteer physiotherapist with administration, I was struck by the lack of public health infrastructure available to service a rural community. While there will always be room for improvement in any public health service, I felt that what was available in this town was a stark contrast to the infrastructure of New Zealand and health access available to New Zealanders. This sparked my interest in public health. Pursuing this, I took papers in social health policy, health economics, and health research methods, which strengthened my interest in continuing further research in this area.

While studying for my Diploma of Public Health, I was working part time as a Ministerial Assistant in the Office of the Minister of Energy, Climate Change Issues and Land Information. As part of my job I had to keep databases of Ministerial correspondence that was being processed, and I also spoke with constituents who called with enquiries and comments. The winter of 2006 seemed a particularly cold one in New Zealand. I was struck by the number of complaints about rising electricity prices, and the situations that were being described by people who were calling to explain the measures they took to keep warm or keep their electricity from being disconnected. The lengths that some of these people were going to in order to reduce their power bills included showering every other day, or having only a quick wash to save on hot water costs, and spending daytime in bed to keep warm.

I became interested in fuel poverty, which has been acknowledged in the United Kingdom for some time, though barely mentioned in New Zealand. What was this phenomenon and why was there limited general awareness or recognition of this in the public arena? I had studied in Dunedin whilst living in extremely cold flats, with up to four unflued gas heaters in use by my flatmates in their bedrooms, with water literally pouring off the windowsills indoors. It was not unheard of for ice to form in pots in the kitchen overnight in some of the coldest student flats. I loathed the idea that this was considered normal and reasonable, if somewhat of a joke, by the majority of the student body. I had no idea that the problem was so widespread in the older population that I was now hearing about this issue from on an almost daily basis.

During 2007 I explored ideas of how I could further research fuel poverty in New Zealand while completing my research papers. In the winter of 2007 fuel poverty was given more prominence in the media due to the tragic death of Mrs Folole Muliaga, a forty-four year old South Auckland mother of four, who had died shortly after the household power was disconnected in the family's home after payments on the electricity bill had lapsed. I was disappointed that it took this sorry circumstance for the media to investigate this issue which had been just as relevant, yet almost never reported on, the previous winter. Consistent perhaps with this media focus, I observed that the majority of correspondence from constituents to the Energy Minister was shifting towards concern from those who could afford to pay their electricity bills about those who could not, which was also reflected in letters to the editor of major newspapers at that time.

It was these social aspects of fuel poverty that I found most interesting and for this reason I decided on a qualitative research project for my Masters Thesis. I would like to acknowledge all of those people who I have come into contact with that have fostered this interest of mine into exploring what I consider to be an issue of the utmost importance to public health and social policy in New Zealand.

Chapter One

Introduction

Fuel poverty was originally defined by Brenda Boardman in her 1991 doctoral thesis as occurring when a household needed to spend 10% of its income on all household energy (excluding transport) to achieve adequate indoor temperature (Boardman, 1991). The World Health Organisation accepted indoor temperature level for the maintenance of physical health is 18-21°C (World Health Organisation, 1987). In practice, an internationally accepted heating regime is to heat the home to 21°C in the living areas and 18°C in bedrooms and other rooms, for nine hours on weekdays and sixteen hours on weekends or if the house is occupied all day (Harrington et al., 2005). Fuel poverty is distinct from poverty in general, as it takes into account the contribution of inadequate income, energy inefficiency of housing, and energy inefficiency of heating sources (Boardman, 1991). Those who suffer from poverty in general, however, are at higher risk of being in fuel poverty because they tend to live in older houses, which have more limited heating available, which is more expensive to use. Fuel poverty is of particular importance for those people who spend most of their time at home, including the elderly, infirm, or young children and their caregivers (Department for Environment Food and Rural Affairs and Department of Trade and Industry, 2001).

Fuel poverty has been discussed and researched in the United Kingdom and Europe for many years. In addition, fuel poverty has been on the policy agenda; for example in 2001 the British Government outlined their objective to eradicate fuel poverty in England by 2010 (Department for Environment Food and Rural Affairs and Department of Trade and Industry, 2001). This has certainly not been the case in New Zealand, where fuel poverty is largely unheard of, seldom researched and for the most part unaddressed by policy, although interest in fuel poverty is growing rapidly. Even overseas, qualitative research into the complex social aspects of fuel poverty has been limited.

Despite this, it is clear that fuel poverty plays an important role in health and is in keeping with the current public health model of addressing the social determinants of health in order to promote and protect population health (Wilkinson and Marmot, 2003). While fuel poverty may seem a recently developed idea, the social determinants of health have long been recognised as playing an important role in public health and also in public policy.

Fuel poverty also links in with housing, which is a clear determinant of health. There is a strong public health argument for cooperation between health and housing agencies to improve thermal efficiency of housing as poor energy efficiency of buildings and inability to afford heating, rather than general poverty, facilitates poor winter health outcomes (Rudge and Gilchrist, 2007).

Poor housing conditions have been associated with several negative health outcomes, including but not limited to: respiratory symptoms and asthma (Gillespie et al., 2006; Shaw, 2004); increased incidence of influenza (Howieson and Hogan, 2005); allergies (Shaw, 2004); poor mental health (Shenassa et al., 2007; Kearns et al., 1991); increased incidence of infectious diseases including meningococcal disease (Baker, 2004); and increased household accidents (Bonney, 2007).

Improving the thermal efficiency of housing by retrofitting insulation has been shown to be associated with improved respiratory health (Howden-Chapman et al., 2007; Gilbertson et al., 2006). Studies have also shown that increasing indoor temperatures improve respiratory health (Free, 2008; Walker et al., 2005; Osman et al., 2008). Other work has found that risk of fuel poverty is predictive of excess winter respiratory morbidity (Rudge and Gilchrist, 2007).

Presently 23% of the total population of New Zealand is estimated to be in fuel poverty (Lloyd, 2008), and as electricity prices continue to rise the number of people affected will increase. The thermal efficiency of housing in New Zealand is poor in comparison to countries of similar climates (Taylor Baines & Associates, 2005), and New Zealanders use low levels of space heating, resulting in low indoor temperatures by international standards (Howden-Chapman et al., 2008b). New Zealand has a high rate of excess winter mortality compared to European countries with more severe climates (Davie et al., 2007), and housing conditions are thought to influence excess winter mortality. People living in certain types of housing in New Zealand, including pre-war bungalows and villas, have higher rates of winter hospitalisation (Telfar Barnard et al., 2007).

When looking at how to address fuel poverty in New Zealand, an obvious place to start is with those who are most vulnerable. One such group is older people who have chronic respiratory disease, as respiratory diseases are particularly affected by poor quality housing conditions including cold indoor temperatures (Collins, 1993). Chronic Obstructive Pulmonary Disease (COPD) is a progressive inflammatory respiratory disease

state encompassing chronic bronchitis and emphysema, and symptoms include chronic cough, breathlessness, sputum and wheeze (Pauwels et al., 2001). Smoking is the main cause of COPD (Broad and Jackson, 2003). COPD usually affects older people, and Māori women have the highest reported rate of COPD of any population in the world (Broad and Jackson, 2003). COPD is the fourth leading cause of mortality in New Zealand, and the cost burden is significant, due to high morbidity and hospitalisation rates (Broad and Jackson, 2003). The natural progression of COPD typically includes acute exacerbations, or significant worsening of symptoms, which frequently require hospitalisation (Sherwood Burge, 2006). Socioeconomic deprivation has been shown to be associated with a three-fold risk of hospitalisation for acute exacerbations of COPD (Prescott et al., 1999). COPD reflects health inequalities present in New Zealand as a result of significant socioeconomic disparities.

Older people who are experiencing poverty are likely to be living in fuel poverty, meaning that they will be living in inadequately heated homes, which is of particular concern for those with COPD. Fuel poverty is a likely contributor to COPD associated winter hospital admissions, and it may be that some of these hospitalisations may be preventable by interventions addressing fuel poverty in this group, thereby reducing the health burden of COPD in New Zealand. The cost of hospitalisation of acute exacerbations of COPD in New Zealand, along with the health inequalities it demonstrates, is compelling for social policy interventions. Since the Prime Minister stated her aspiration for New Zealand to become carbon neutral (Clark, 2007), sustainability and energy efficiency have gained much publicity. It is clear however, that New Zealand's housing stock has a long way to go in terms of energy efficiency, and improvements will have several benefits including warmer, healthier indoor environments, and reduced carbon consumption and heating costs. It may also be more sustainable to reduce health costs and hospital admissions by increasing access to heating in the homes of COPD patients, and improving household energy efficiency.

While there has been a lot of interest overseas in fuel poverty, this has been rather more limited in New Zealand. In addition the majority of all research into fuel poverty has been limited to quantitative methodologies. This reflects a serious gap in the knowledge about how people think, feel and make choices about home heating. This study, using narrative analysis to explore fuel poverty in older people with COPD living in cold homes in New Zealand, provides context to this social problem.

Problem statement: Older people, with COPD, and on low incomes, live in unhealthily cold homes.

The Warm Homes Pilot Study, which the study for this thesis contributes to, was a pilot for a randomised community intervention trial which was designed to raise indoor temperatures and improve health outcomes for low income older people with COPD. The study was undertaken in conjunction with Tu Kotahi Māori Asthma Trust, with support from the Hutt Mana Charitable Trust. The participants were given a \$500 electricity 'voucher', which was directly credited into their electricity account in the winter of 2007. The study undertaken for this thesis is the qualitative component of this study, which was designed to explore the social aspects of this intervention.

Aim

The purpose of this study is to explore the narratives of older COPD patients who live in cold homes in relation to home heating and health.

Research Question

How do older people with COPD who are living in cold homes describe home heating and how this relates to health?

Objectives

1. to explore the narratives of older COPD patients living in cold homes towards home heating and health

2. to explore the acceptability of the description “fuel poverty” for older people living in cold homes in New Zealand
3. to investigate the likely acceptability of electricity vouchers as a policy strategy for reducing fuel poverty to older people living in cold homes in New Zealand
4. to add social context to the issue of fuel poverty in New Zealand and the body of quantitative research into fuel poverty internationally
5. to identify key issues around fuel poverty for older people living in cold homes in New Zealand for exploration in further research.

Scope

This study is limited to the participants of the Warm Homes Pilot Study carried out by *He Kainga Oranga*/Housing and Health Research Programme in collaboration with Tu Kotahi Māori Asthma Trust in Lower Hutt in the winter of 2007.

Thesis outline

Chapter One has outlined the reasons why a qualitative study investigating fuel poverty among older people with COPD will provide information that will help to fill a current knowledge gap in New Zealand. Chapter Two contains a literature review which discusses the health implications of poor housing and fuel poverty, and the housing situation of older New Zealanders. It also outlines COPD, and the effects of being cold on COPD and older people. The literature review draws together the combination of fuel poverty and COPD which is demonstrated by a small, but not unimportant group of older people, for whom this has important implications. Chapter Three briefly outlines *He Kainga Oranga*/Housing and Health Research Programme and its two flagship intervention studies, and the Warm Homes Pilot Study, which the qualitative study undertaken for this thesis complements. This chapter also describes the methodology and method behind this qualitative study. Chapter Four displays the results of the study and Chapter Five discusses the public health implications of this project and draws positive conclusions that I hope will contribute to the policy debate in this area.

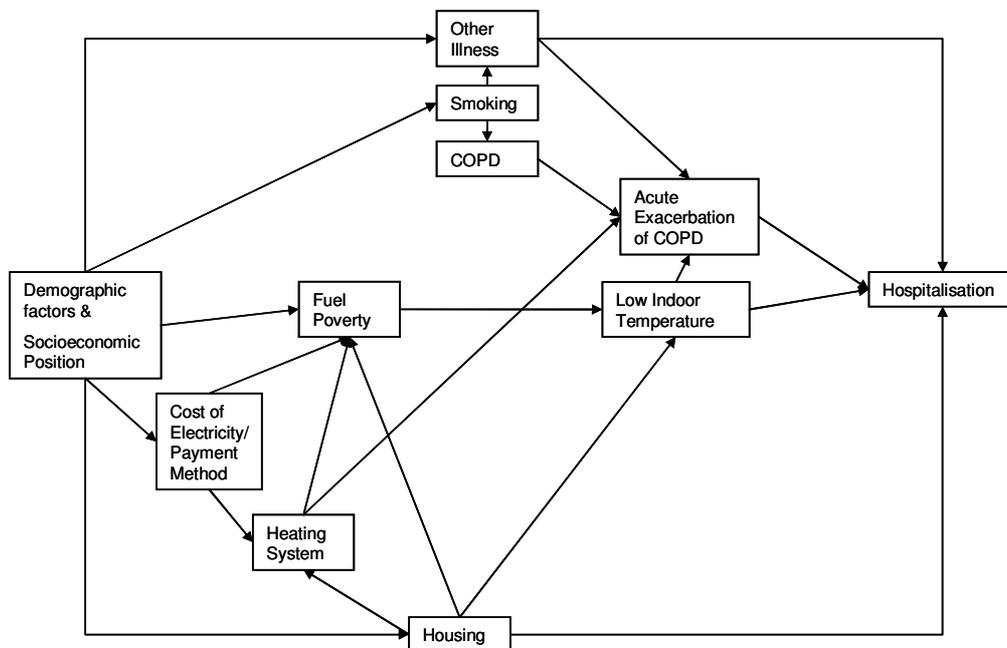
Chapter Two

Background

As the introduction to this thesis describes, the issue of fuel poverty is complex, involving the physical aspects and health outcomes of housing, energy affordability and efficiency. The Warm Homes Pilot Study was designed to examine whether a particularly vulnerable group, those who are older and suffering from a respiratory disease (COPD) with high rates of hospitalisation, could benefit from an intervention to reduce fuel poverty and raise indoor temperatures. This chapter will discuss the contributing factors to fuel poverty and hospitalisation.

A useful starting point was to explore factors that I felt might influence hospitalisation of older people with COPD in New Zealand. This chapter will outline these factors. The diagram below shows the relationship between these factors, and illustrates the nexus of interaction between fuel poverty and hospitalisation that lies within the boundaries of the broader determinants of health including socio-economic position, and housing.

Figure 1: Factors influencing hospitalisation in older New Zealanders with COPD



K C O'Sullivan July 2008

Poor housing contributes to poor health outcomes. These will be outlined, followed by a discussion of the health outcomes related to home heating. I will describe the housing situation in New Zealand, particularly that of low income older people. I will then explain fuel poverty, and critically analyse qualitative research of fuel poverty to date. I will outline some of the factors contributing to the rising cost of electricity in New Zealand, which strongly influences fuel poverty. COPD and the particular vulnerability to cold and fuel poverty that is experienced by COPD sufferers will be described. In discussing these facets of the fuel poverty problem for older people in New Zealand, I will provide a foundation for analysing the results of the Warm Homes Qualitative Study, and a background to the later discussion of these results.

Housing and health

The once tenuous connection between poor housing quality and ill-health has become better established over the past twenty years as research into this area has expanded. Housing is now accepted to influence a number of health conditions (Bonney, 2007; Shaw, 2004; Burrige and Ormandy, 1993; Howden-Chapman, 2004). A major review concluded in 2001 that while the majority of research in this area been cross-sectional, strong associations have been found between poor housing and ill-health (Thomson et al., 2001), results confirmed by recent community trials outlined in the following table.

Table 1: Recent community trials investigating the association between housing and health

Study Name	Reference	Study Design	Objective	Study Outcomes
Warm Front Study	(Oreszczyn et al., 2006)	Randomised controlled trial.	To evaluate the effects of the Warm Front home energy efficiency scheme.	Study found that Warm Front improvements were associated increased indoor temperature, and that heating and insulation measures had a greater effect than heating alone, which in turn had greater effect than insulation alone. This was supported by findings from semi-structured interviews analysed using grounded theory from a purposive sample of warm front recipients that found participants reported improved physical and mental health, and viewed the Scheme positively (Gilbertson et al., 2006).
Scottish Housing Regeneration Study	(Thomson et al., 2007)	Prospective case-control study.	To evaluate self-reported health effects of housing-led regeneration.	The study found that participants who moved to improved housing showed a trend towards increases in reports of “good” or “excellent” health.
Watcombe Housing Study	(Barton et al., 2007)	Randomised controlled trial.	To evaluate the health effects of upgrading housing.	Study found that upgrading housing (central-heating, ventilation, rewiring, insulation, and re-roofing) improves health. Respiratory symptoms were reduced, and small but measurable improvements in health benefits were gained.
Housing Insulation and Health Study	(Howden-Chapman et al., 2007)	Community based, cluster, single-blinded, randomised controlled trial.	To evaluate whether the standard insulation package improves indoor temperature, relative humidity and health of occupants.	Study found that retrofitting with the standard insulation package offered by the Energy Efficiency and Conservation Authority (ceiling, underfloor, draft-stopping, pipe-lagging), improves self-rated health, reduces wheeze and GP visits, reduces days off school and work. A trend towards reduced hospitalisation for respiratory complaints was also found.
Housing Heating and Health Study	(Howden-Chapman et al., 2008a)	Randomised controlled trial.	To evaluate the effects of installing energy efficient heating on the health of children with asthma.	Study found that installing energy efficient heating (heatpump, woodpellet burner, or flued gas heater) reduces asthma symptoms, days off school, GP visits, and pharmacist visits in children with asthma.

Cold, damp housing increases susceptibility to airborne influenza viruses (Howieson and Hogan, 2005). Mould is associated with respiratory symptoms, diarrhoea, headaches, and fever, and also increases dust-mites, which cause allergies (Shaw, 2004; Shenassa et al., 2007). Dampness and mould are also risk factors for depression, and the perception of control over housing situation has an additive effect on this relationship (Shenassa et al., 2007). Endotoxin, found on the cell-wall of bacteria present in dust is associated with wheezing, and allergic rash in infants (Gillespie et al., 2006). Pest infestation and pets also cause allergies (Shaw, 2004). Overcrowding increases the spread of infectious diseases including meningococcal disease (Baker et al., 2000), and is also associated with poor mental health (Gabe and Williams, 1993; Evans et al., 2003; Kearns et al., 1991). Indoor air pollutants, including carbon monoxide, radon, nitrogen dioxide and sulphur dioxide gases, tobacco smoke, and asbestos fibres are also associated with ill-health effects (Shaw, 2004; Howden-Chapman, 2004; Bonnefoy, 2007). Design and maintenance of housing can contribute to domestic accidents (Bonnefoy, 2007; Shaw, 2004). In addition to housing itself, the surrounding environment including both community characteristics such as level of education and socio-economic deprivation, and urban design may also influence health (Bonnefoy, 2007).

Heating and Health

When the body is cold, a series of defence mechanisms are triggered, which result in the thickening of the blood, increased blood pressure or hypertension, and this increases the risk of cardiovascular or cerebrovascular events (Howieson and Hogan, 2005; Lan Chang et al., 2004). Additionally, respiratory processes are affected by local inflammation (Howieson and Hogan, 2005).

The World Health Organisation has recommended that for health safety, bedroom temperatures should be 18°C and living room temperatures should be 21°C (World Health Organisation, 1987). Indoor temperatures should be maintained above 16°C, below which respiratory stress occurs, and below 12°C cardiovascular stress occurs (Collins, 1993). It has been shown by several studies that damp, cold housing conditions impact negatively on respiratory conditions among other health conditions (Howden-Chapman et al., 2007; Walker et al., 2005; Gilbertson et al., 2006). In addition to respiratory and vascular effects, low indoor temperature increases the risk of household accidents (Collins, 1993).

Commenting on a risk assessment of health hazards in housing in the United Kingdom carried out by Raw and Hamilton (1995), which placed hygrothermal conditions as the foremost risk factor for ill-health, Isaacs et al (2004) noted that there are several interactions that may influence the home environment. For example, poor insulation and inefficient heating creates a cold environment, which also influences dampness, which increases the risk of airborne pathogens, and mould and fungi growth (Isaacs et al., 2004). Dampness and mould in schools, workplaces, and homes are associated with significant public health implications and economic risks in the United States of America (Mudarri and Fisk, 2007). New Zealand's high rate of use of unflued gas heaters, which contribute to dampness and indoor air pollution, is also problematic (Howden-Chapman et al., 2008b). Qualitative research undertaken in the Wairarapa town of Masterton suggests that portable unflued gas heaters are preferred by low income people because they allow them to budget for heating expenses more easily (Dunn, 2003). However portable unflued gas heaters provide the most expensive form of heating available to New Zealanders, according to an article based on a comparison by Consumer New Zealand, which was aired on TV 3's *Campbell Live*, on 4 June 2008. While this may not be considered a rigorous scientific comparison, Consumer New Zealand is generally perceived as providing impartial and trustworthy advice to consumers. The fact that this information was broadcast in a current affairs programme on prime time national television illustrates the level of public interest in the cost of heating.

Oreszczyn et al (2006, p250) found that indoor temperature was "not strongly related to area-based markers of socio-economic deprivation, but self-reported difficulty paying bills and dissatisfaction with the heating system were both associated with substantially lower temperatures". This is consistent with research in New Zealand showing that indoor temperature is not influenced by socio-economic position (Isaacs et al., 2004), but participants of qualitative studies report difficulty achieving adequate indoor temperatures, due to cost. For example, a study which investigated the impact of housing reforms in the early 1990s, found that participants "described the problems that occurred after paying housing costs when it was necessary to make choices between essentials such as food, heating and medical care" (Waldegrave et al., 2004). Further, participants in this study described having their power and phone cut off, and going without food in order to pay rent, one of the participants explaining, "Well your power gets cut off, your phone gets cut off, and you don't eat. But you've still got a roof over your heads" (Waldegrave et al., 2004). Similarly, Kearns et al (1991) reported that participants in their study of state house

tenants in Auckland and Christchurch most commonly said that they were unable to keep warm due to having no heaters, or the high cost of fuel (Kearns et al., 1991). While indoor temperatures in New Zealand are unlikely to reach adequate levels without heating, 2.4% of dwellings were unheated in 2006, relatively unchanged from 2.8% in 2001¹. Data from the 2006 Census shows that 6% of households living in Housing New Zealand Corporation (HNZC) houses have no heating in their homes (Viggers et al., 2008). The most recent New Zealand Living Standards Report identified that 10% of Pākehā families, and 25% of Māori families, could not keep up with electricity, gas, or water bills (Jensen et al., 2006). This indicates that fuel poverty, discussed below, has been problematic in New Zealand for many years.

In addition to cost, there appears to be a culture of masculine stoicism among New Zealanders, whereby home heating is undervalued, or seen as ‘wussy’ or ‘wimpy’ (Cupples et al., 2007). Drawing on their qualitative study of perceptions of high particulate air pollution and home heating in Christchurch, Cupples et al (2007, p2892) note that “even when faced with physical discomfort from inadequate heating and with ill health in the form of respiratory illnesses, many New Zealanders fail to act – reworking and performing a neo-colonial and highly gendered ‘she’ll be right’ attitude”. These attitudes may also contribute to action taken by older New Zealanders to uphold their civic duty and ‘do their bit’, by going without heating to conserve power for the collective good at times of concern over electricity shortages.

He Kainga Oranga/Housing and Health Research Programme

He Kainga Oranga/Housing and Health Research Programme was formed to generate “cross-disciplinary knowledge to reduce inequalities in health, by addressing the quality and availability of housing in New Zealand”, with a particular focus on using community-based trials to achieve this (Howden-Chapman et al., 2008c). Since the programme began, two flagship randomised, single-blinded, community trials have been completed. I will briefly outline these two community trials below.

¹ <http://www.stats.govt.nz/census/2006-census-data/quickstats-about-housing/quickstats-about-housing-revised2.htm?page=para011Master>

Housing, Insulation and Health Study

This study took place between 2001 and 2003, with the aim of assessing the effectiveness of retrofitting insulation (Howden-Chapman et al., 2005). 1350 households in seven predominantly low income communities were randomised to intervention or control groups. The intervention, installed in the summer of 2002 following baseline measurements taken in the winter of 2001, was a standard insulation retrofit package; ceiling insulation, draught stopping, underfloor insulated foil and moisture-stop polyethylene cover on the ground. For ethical reasons, control group houses were also insulated following data collection. The study found that the insulation package increased indoor temperatures, reduced relative humidity and self reported dampness and mould (Howden-Chapman et al., 2007). Improved self reported health measured by the SF-36 questionnaire, reduced days off school and work, visits to general practitioners, and a trend for reduced respiratory associated hospital admissions was also found. The study illustrated that retrofitting insulation is a cost-effective public health and social policy intervention which improves housing quality and health. The findings of this study were disseminated widely, and appear to have contributed to government policy increasing funding for retrofitting programmes (Howden-Chapman et al., 2008c).

Housing, Heating and Health Study

This study followed on from the previous study, and was carried out between 2005 and 2007. 409 households who had a child between seven and twelve years of age with asthma, from five communities around New Zealand, were randomised to intervention or control groups, and baseline measurements were taken in the winter of 2005 (Howden-Chapman et al., 2008c). The intervention, the standard insulation package, and an energy efficient heater (a heatpump, woodburner, or wood pellet fire), was installed in the autumn of 2006. Control group houses also received the intervention following data collection. While the intervention did not result in a significant improvement of lung function in asthmatic symptoms, there was a trend towards reduced respiratory symptoms in asthmatic children, and significant reductions in health care utilisation and visits to pharmacists was observed. Indoor temperatures were significantly increased, and both the asthmatic children, and their siblings had fewer days off school (Free, 2008). Indoor nitrogen dioxide levels were reduced (Gillespie-Bennett et al., 2008), and replacing unflued

gas heaters which emit high levels of nitrogen dioxide was significantly associated with reduced days off school (Free, 2008). Dissemination of the findings of this study is ongoing, and it already appears to have contributed to social policy decisions in New Zealand (Howden-Chapman et al., 2008c).

Housing in New Zealand

Our homes supposedly shelter us from the elements; however it has become apparent that housing in New Zealand is failing to protect our communities from the cold. New Zealand has an excess winter mortality of around 1600, meaning 18% more people die during the winter than summer months, a figure that is higher than that of less temperate European countries (Davie et al., 2007). As with other countries suffering excess winter mortality such as Britain, (Keatinge, 2000), New Zealand's housing stock is likely to play a significant role (Davie et al., 2007). Howieson and Hogan (2005 p6), in a study of excess winter mortality in Scotland, conclude that "Excess winter deaths are relatively easy to measure and may be considered as the acute outcome of cold damp housing". It follows that if fuel poverty is linked to mortality, there must also be an effect on morbidity. A study in the United Kingdom which investigated the relationship between respiratory morbidity and fuel poverty found that householders at risk of fuel poverty have increased respiratory morbidity, increasing with age (Rudge and Gilchrist, 2007). In New Zealand, certain housing types, including pre-war bungalow housing and villas, have been linked to excess winter hospital admissions (Telfar Barnard et al., 2007). New Zealanders spend over 70% of their time indoors at home, and the majority of time spent away from home is also spent indoors, be it at work, or travelling (Baker et al., 2007). Therefore, improving housing quality seems a good place to start addressing some of these problems.

Indoor temperature is associated with property characteristics relating to the thermal efficiency of housing, including property age, insulation, and wall type; and the heating system (Oreszczyn et al., 2006). Insulation standards in New Zealand have been comparatively low; the earliest regulation for ceiling insulation was introduced in 1978. Isaacs et al (2004) comment that older houses in New Zealand are colder houses, and that houses built post-1978 are significantly warmer, however their energy-use is not significantly lower than houses built up to 1978 (Isaacs et al., 2004). Compared with other countries, housing in New Zealand is more commonly constructed using wood, and even

today many houses still have limited insulation (Howden-Chapman et al., 2004). A national survey undertaken by the Ministry for the Environment estimated that at least 500,000 houses had no ceiling insulation, and only half of New Zealand's homes had any wall insulation (Taylor Baines & Associates, 2005). Fewer homes had underfloor insulation (22%), or double-glazed windows (10%) (Taylor Baines & Associates, 2005).

The Household Energy End-use Project, a nationwide study of 400 households over ten years, found that the largest proportion of household energy (34%) in New Zealand is used for space heating; however indoor temperatures are below recommended levels (Isaacs et al., 2006). Average living room temperatures in the evening were 17.9°C, ranging from 10°C to 23.8°C (Isaacs et al., 2006). In addition, spot heating, or heating only the room or rooms in use is common in New Zealand (Isaacs et al., 2003), so other areas of the house, such as bathrooms, may be even colder. A study of the efficacy of an energy efficiency upgrade programme for residential properties in Dunedin, one of the southernmost cities of the South Island, found that less than 3% of the houses' bedroom temperatures reached 18°C, and that indoor temperatures were less than 12°C for almost half of any day during winter (Lloyd et al., 2008). Lloyd (2006) comments that New Zealand's history of comparatively low electricity prices, discussed further below, is likely to have significantly influenced the poor thermal performance of housing, as energy efficiency improvements were less cost-effective than electric heating. As the cost of electricity increases, these energy efficiency measures will become more cost-effective, particularly as carbon-pricing on electricity and other heating takes effect. The New Zealand Building Code was revised in 2007 with changes to take effect nationwide from October 2008 and will improve insulation standards for new-build housing²; however new-build housing makes up only a small percentage of the total housing stock, and is predominantly occupied by those on higher incomes.

In addition to the problem of housing quality in the physical sense, housing inequalities have also been a problem in New Zealand. Low income people are increasingly unable to enter the housing market due to rising house prices, reducing the availability of decent rental housing (Howden-Chapman and Beirre, 2008). Low income people are also more likely to own older, colder houses, or to live in overcrowded homes (Howden-Chapman and Beirre, 2008; Howden-Chapman et al., 2005). Racial discrimination exists in the housing market, with Māori self-reporting 13 times more racial discrimination than Pākehā

² <http://www.tenancy.govt.nz/codewords-24-5>

when buying or renting (Harris et al., 2006). Pākehā have a historical land ownership advantage, stemming from Māori land dispossession (Howden-Chapman and Beirre, 2008). While most older people own their own homes, there are large racial differences, with many more older Pākehā homeowners than Māori, and even fewer older Pacific homeowners (Howden-Chapman and Beirre, 2008; Ministry of Social Development, 2007; Howden-Chapman et al., 1999). Asian and Other ethnic groups had even lower rates of home ownership in 2006 (Ministry of Social Development, 2007). A national survey of landlords in 2003 found that while retired people were preferred tenants, (retired couple and retired single were preferred by 51.1% and 39.7% of landlords, respectively), 30% of landlords said that refugee/migrant families were not preferred, and Māori and Asian tenants were also described as undesirable (Saville-Smith and Fraser, 2004).

According to the New Zealand Housing Strategy, (p6) “Government’s vision for housing is that all New Zealanders have access to affordable, sustainable, good quality housing appropriate to their needs” (Housing New Zealand Corporation, 2005). Older homeowners with limited incomes, usually government superannuation, are unlikely to keep up with home maintenance requirements (Howden-Chapman et al., 1999; Davey, 2006). The Positive Ageing Indicators (2007) report discusses housing quality among older people (over 65 years) in New Zealand, including a range of ‘accommodation problems’ which were mostly maintenance issues (Ministry of Social Development, 2007). Dampness and draughts were two problems identified by over 12% of older people. Older people were less likely than younger people to report accommodation problems, and there were also income differences, with 64% of older people with an income of \$10001-\$20000 reporting a problem compared with 50% with income below \$10000 and 45% with income of over \$20000 (Ministry of Social Development, 2007). The current level of New Zealand superannuation ranges from \$13073.84 to \$18084.04 per annum before tax, depending on situation, and some superannuitants also qualify for living alone or disability allowance payments³. A recent report suggests that assisting with maintenance and home improvement for both rental and owner-occupied homes will help to support ‘ageing in place’ for the growing population of older people in New Zealand (Davey et al., 2004). This report also comments that this could reduce costs to Government by reducing the projected number of older people who will need residential care without improvement of the housing stock. This could also help to achieve Goals Three and Five of The New Zealand Positive Ageing Strategy (2007, p iv), which are “Affordable and appropriate

³ <http://www.workandincome.govt.nz/get-assistance/main-benefit/nz-superannuation.html>

housing options for older people” and “Older people feel safe and secure and can ‘age in place’ ” respectively.

Retrofitting insulation and the installation of efficient heating has been shown to raise indoor temperatures, and improve the health of householders (Howden-Chapman et al., 2007; Howden-Chapman and Beirre, 2008). Targeted ENERGYWISE™ Home Grants, subsidising retrofitting of insulation in private properties are currently available through the Energy Efficiency and Conservation Authority⁴. Uptake of these grants has been limited in the private rental market however, as there is still an outlay of costs required by property owners. Government has recognised the importance of home insulation and efficient heating, with the Housing Minister announcing that government will retrofit insulation in 21,000 state houses that have not yet been insulated over the next five years⁵. Housing in New Zealand needs to transition to more energy efficient and sustainable housing rapidly, both to address fuel poverty, outlined below, and to reduce carbon consumption.

Cold and the Elderly

The poor housing quality and cold indoor environments typical of New Zealand housing as described above are particularly problematic for older people, both as they spend more time at home and for physiological reasons. Elderly people are at increased risk of thrombosis, and raised blood pressure in cold conditions compared to their younger counterparts (Goodwin, 2000). In addition, Goodwin (2000) comments that elderly people who are cold have higher hypertensive responses than elderly people who are warm. Excess winter death is higher for older people, and increases with age (Wilkinson et al., 2004; Davie et al., 2007; Hajat et al., 2007). Cold temperatures slow reflexes, increasing the risk of accidents in the home (Roaf et al., 2005), and older people are already at increased risk of domestic accidents.

While older people are more at risk of ill-health effects of insufficient heating, behavioural practices are likely to have a significant influence on heating patterns. Oreszczyn et al (2006, p251) found that indoor temperatures varied with age of householders, “older people having higher living room temperatures but lower bedroom temperatures”, which

⁴ <http://www.eeca.govt.nz/residential/energywise-home-grants/index.html>

⁵ <http://www.beehive.govt.nz/release/state+house+insulation+programme+fast-tracked>

they suggested might “largely reflect personal choice”. Interestingly, the Eurowinter study found that bedroom heating was more frequent in colder countries (Eurowinter Group, 1997), which may also be influenced by cultural preferences (Cupples et al., 2007). While thermal comfort is also held to play a role in the mediation of indoor temperature, perhaps acting as a way of exerting a level of control over one’s situation, older people have decreased thermoregulation, affecting temperature awareness, and therefore are at risk of accidental exposure to dangerously cold temperatures while feeling comfortable (Critchley et al., 2007; Roaf et al., 2005). Accidental hypothermia can result from these behaviours. A study of elderly patients presenting to the emergency department during winter in Scotland found that 5% of patients were hypothermic, and these patients more frequently required admission to hospital and had higher mortality rates (Pedley et al., 2002).

Physiologically, older people are at more risk of ill-health responses to cold temperatures than younger people, and this is further complicated by behaviour, as older people tend to be less mobile than younger people. Older people often have a number of chronic health problems, which come with higher health costs. People who are not working spend more time at home, and have to spend more on heating than those who can work and earn higher incomes. These points begin to explain why older people are at particular risk of fuel poverty (Burholt and Windle, 2006), outlined below.

Fuel Poverty

Fuel poverty was originally defined by Brenda Boardman (1991, p201) as “the inability to obtain adequate energy services for 10% of income”. While this definition of fuel poverty forced the issue into the political limelight in the United Kingdom, it raised several issues about the practical use of the definition in measuring “adequate energy services” and “income” satisfactorily (Chapman and Scannell, 2000; Lloyd, 2006; Boardman, 2000). The current accepted definition of fuel poverty is that “a household is in fuel poverty if it would need to spend more than 10% of the total household income on all household fuel to achieve a satisfactory indoor environment”, where a satisfactory indoor environment is 18°C in bedrooms/other rooms and 21°C in living areas (Lloyd, 2006). It is important to draw attention to the emphasis on what households would “need to spend”, rather than what they actually do spend, as many households do not achieve adequate temperatures (Lloyd, 2006; Burholt and Windle, 2006). While the usefulness of separating ‘fuel poverty’

from poverty in general has been debated, the fuel poverty definition includes the thermal efficiency of the home, and the cost of electricity, while poverty places emphasis only on income. There has been recent discussion about the need for a definition of fuel poverty to be formally recognised in New Zealand⁶, and the Foundation for Research Science and Technology has funded a Cross-Departmental Research Pool project led by the Ministry of Social Development.

Fuel poverty is not the only contributor to excess winter mortality, however fuel poverty is a particular problem for older people living alone, a group accepted to be of high risk of excess winter death (Keatinge and Donaldson, 2000). As discussed, in New Zealand, these are also groups who are more likely to be living in older houses or rental properties. Additionally, Howden-Chapman and Bierre (2008, p165) note that these houses “are likely to be harder to heat due to inefficient or inadequate heating systems, poor construction, and lack of insulation”.

Older people are also likely to remain in homes that are larger than required, making them more expensive to heat (Howden-Chapman and Beirre, 2008). A Welsh survey of older people admitted to hospital found that living alone and owning their own property was associated with feeling cold (Morgan et al., 1996). Most of the participants of the survey could not keep warm without financial hardship, 57% said keeping warm was a major worry in winter, and 29% reduced spending on food to afford household fuel bills. To keep warm, participants had also worn extra clothing (86%), had extra hot drinks (35%), used hot water bottles (33%), or done other things including using electric blankets and jogging. The authors concluded that elderly people should be encouraged to heat their homes in winter, and that subsidies for heating in the home may reduce hospital admission, and morbidity and mortality associated with low temperatures. Another Welsh study found correlations between lower income and low home energy efficiency, and having to put on extra clothing to keep warm during the day (Burholt and Windle, 2006).

There are currently few studies that attempt to describe fuel poverty among New Zealanders. In addition, the estimates of the prevalence of fuel poverty in New Zealand by the Ministry of Economic Development have used actual energy consumption rather than energy required for adequate heating (Lloyd, 2006). This is likely to have resulted in a gross underestimation of the number of people in New Zealand suffering fuel poverty.

⁶ Fuel Poverty Workshop, 4 June 2008, Community Energy Action, Christchurch

Based on a modelling study Lloyd (2006) calculated that between 10-14% of the total population of New Zealand may be living in fuel poverty. However, this study used 2001 income and electricity price data. The current estimated level of fuel poverty among New Zealanders is now 23%, based on revised projections using 2008 electricity prices and income data from the 2006 Census (Lloyd, 2008).

Another point when considering the effects of fuel poverty, are the dynamics of fuel poverty, as households experiencing temporary fuel poverty may be at less risk of the health effects than those who are experiencing persistent fuel poverty (Sefton, 2004). Sefton (2004) notes that those most at risk of persistent fuel poverty in the United Kingdom are single pensioner households. This is likely to be consistent with the situation in New Zealand, and as a large proportion of those hospitalised due to COPD fall into this category, targeted policies may be useful in addressing this inequality.

While the focus of this thesis is the effects of fuel poverty among the older population, it should be noted that the older population is only one of three populations considered to be particularly vulnerable to the effects of fuel poverty. The other populations include those with ill-health or disability and children, especially those aged five years or younger, and these groups are also likely to spend a great deal of time in the home, thereby increasing their potential exposure to cold indoor temperatures. An American study of those eligible to receive the Low income Home Energy Assistance Program (LIHEAP), found that children aged three years or under from recipient families of LIHEAP who presented at the Emergency Department, were less likely than those from non-recipient families to be at nutritional risk for growth problems, or be acutely admitted to hospital on the day of interview (Frank et al., 2006). Additionally, families receiving LIHEAP had more food insecurity and lower birth weight children, indicating that LIHEAP reaches those at greatest risk, and is successful in mitigating the “heat or eat” problem of household expenditure allocation among low income families. Another American study found that low income families with children shifted spending from food to fuel during cold weather, reducing their calorific intake by 10% (Bhattacharya et al., 2003). Richer families did not reduce food intake, although they increased spending on fuel more so than poorer families. These studies show that poverty, and fuel poverty creates vulnerability in young children. This is also reflected in excess winter mortality statistics, with New Zealand children up to five years of age are at increased risk of excess winter mortality (Davie et al., 2007).

Cost of Electricity in New Zealand

The cost of electricity is a significant driver of fuel poverty in New Zealand, and therefore the pathways through which the cost of electricity influences fuel poverty are important to consider. In the section below, I will outline the factors that have led to the current situation in the electricity market where residential prices for electricity have risen steeply and continue to increase (Bertram, 2001). Improving competition in the residential electricity market has been suggested as a method for reducing electricity affordability problems (Electricity Commission, 2008), however there are constraints that limit competition, which I will describe. Disconnection from electricity services, and the increased use of prepayment metering to pay for electricity among low income consumers (which does not prevent self-disconnection for financial reasons) are problems that have been observed in the United Kingdom and Australia (Drakeford, 1997; Graham, 2006; Graham and Marvin, 1994; Sharam, 2003). These issues are also important in the New Zealand situation, as I will discuss. The newly legislated Emissions Trading Scheme also has implications for the cost of electricity which I will briefly comment on. Finally, the limited financial assistance currently available to alleviate fuel poverty in New Zealand will be outlined.

The cost of electricity has obvious implications for the level of fuel poverty experienced in New Zealand, as most households use at least some electricity for heating. The electricity market in New Zealand has undergone significant reform since 1984 when deregulation was introduced by the government, as it was across the wider economy, with the aim of increasing competition and efficiency (Scully, 1998; Bertram, 2001). The continued restructuring of the electricity sector has left the New Zealand market largely unregulated, and efficiency gains have returned increasing profits to monopolistic suppliers and network owners rather than to residential consumers (Bertram, 2001). Scully (1998) argues that reforms have benefited consumers by keeping electricity costs low citing similar real prices in 1994 to those in 1982. However Bertram (2001) points out that while costs have remained the same overall, commercial consumers have benefited from reduced prices while a 20% increase in price has been passed on to domestic consumers.

There is significant variation in electricity network charges across New Zealand, making electricity significantly more expensive in some regions, as network charges constitute around 40% of the total customer bill (Electricity Commission, 2008). The Electricity Commission has highlighted concerns about potential barriers to effective competition in

the electricity market, based on the variation in electricity network prices, and the fact that residential consumers could save around \$150 per annum on electricity costs by switching electricity providers, however there appears to be a reluctance among consumers to do so (Electricity Commission, 2008). Residential electricity prices continue to rise, and between 1999 and 2006 the real price of electricity rose by 28% (Ministry of Economic Development, 2008). There are a range of payment options for electricity users in New Zealand, including a low user tariff for those using under 8000kWh per annum, direct debit options which often have a 10% prompt payment discount (offered, for example, by Genesis Energy, and Contact Energy) and prepayment meters.

There is growing concern about energy affordability in New Zealand. While competition has been encouraged by the Electricity Commission, and Consumer Affairs, this has done little to assuage public concern about electricity prices. I note that even through the use of the 'Powerswitch' website⁷ managed by Consumer New Zealand, and other websites managed by the major electricity companies, I have found it difficult to assess what would be the cheapest electricity pricing plan the participants of this study could obtain. In addition, until the site was updated on 4 July 2008, Powerswitch quoted 2004 prices for some companies, which is of concern given that electricity prices have continued to rise rapidly (Ministry of Economic Development, 2008). The Electricity Commission (2008, p21) has outlined steps they intend to take to encourage competition, which include ensuring "Powerswitch data is accurate and comprehensive by requiring retailers to disclose price information to the Electricity Commission" and to "broaden Powerswitch coverage to all major tariff options including prepayment meters". While encouraging competition is important, there are also transaction costs to consumers associated with switching electricity retailers that may prevent some consumers from doing so. For example, bonds are charged by electricity retailers to some consumers, bank fees may be incurred when altering automatic payments, and there are time costs when selecting the most appropriate retailer to switch to and then arrange switching.

Using Genesis Energy's pricing plans as an example⁸, I calculated an estimated power bill for one month, comparing prepayment meter pricing, an "anytime" or uncontrolled c/kWh rate labelled a "classic plan" (low fixed-daily charge plan suitable for a household using less than 8000kWh per year), and a "household plan" (for those who use more than 8000kWh per year) with an "anytime" c/kWh rate. The classic plan and anytime rate, and

⁷ www.powerswitch.org.nz

⁸ <http://www.genesisenergy.co.nz/genesis/index.cfm?4FCAB57D-F394-9650-4E3C-D1356B29CF27> accessed July 2008

the household plan and anytime rate receive a prompt-payment discount of 10% which is included in the calculation. I estimated that as the number of kWh is likely to be higher in winter than summer, but the total in one year should not exceed the average 8000kWh used per year, a reasonable number of kWh to use during a winter month would be 800kWh. Although a household using more than 8000kWh per year is likely to use more electricity per month on average, I have kept the electricity usage the same for ease of comparison. The comparison is shown in the table below.

Table 2: Comparison of Genesis Energy charges for electricity over one month using 800kWh

	Fixed Daily Charge per day	Fixed Daily Charge for 30 days	c/kWh Rate	Rate for 800kWh	TOTAL COST
Prepaid meter	67.50c	\$20.25	21.50	\$172.00	\$192.25
Classic plan with anytime	33.75c	\$10.13	22.11	\$176.88	\$187.01
Household plan with anytime	97.15c	\$29.15	19.23	\$153.84	\$182.99

This table clearly shows that it is very important to ensure that consumers are on an appropriate pricing plan, as the charge for using the same amount of electricity varies depending on the pricing plan. Genesis Energy’s website proclaims their “Right Plan Promise”, which means that they will review their customers’ electricity usage every 12 months, and advise them of which pricing plan they believe that they should be on⁹. In addition, this table demonstrates that for those households who qualify for a low daily fixed charge plan as they use less than 8000kWh per year, shifting to a prepayment meter will result in higher electricity costs. Although the “household plan with anytime” is the cheapest option according to this comparison, consumers using this plan would be expected to use more than 8000kWh per year, and have higher bills as a result. However this comparison highlights that for those using close to the threshold of 8000kWh, the low fixed user tariff does not provide a great deal of relief. It should also be noted that the cost of Genesis Energy’s prepayment pricing plans varied geographically – prices quoted above are for Wellington, as the participants for this study are from the greater Wellington

⁹ http://www.genesisenergy.co.nz/genesis/your-home/pricing-plans-for-your-home/right-plan-promise/en/right-plan-promise_home.cfm

region. Retailers reported in March 2007 that fixed daily charges for prepayment meters varied between 21c and 113.87c (Electricity Commission, 2007).

Where prepayment meters are in use, disconnection is not carried out by the electricity retailer as the supply to the house continues. However, consumers may “self-disconnect” by not purchasing credit to ‘top-up’ prepayment meters, leaving them without electricity. The Electricity Commission (2008, p86) compared New Zealand’s much higher rate of disconnection with that of Victoria, Australia and the United Kingdom, and commented that while “prepayment meters have been used extensively in the United Kingdom, and this may be reducing the apparent rate of disconnection for non-payment”, prepayment meters are not used in Victoria. United Kingdom information suggests a clear correlation between official electricity disconnection figures dropping, and increases in prepayment meter use (Graham, 2006; Drakeford, 1997). In addition, the United Kingdom has had a range of policy measures to mitigate fuel poverty, with the aim of eliminating fuel poverty by 2010 (although this is now unlikely to be achieved) (Graham, 2006). In New Zealand, as the rate of disconnection has fallen rapidly over the past two years, however at the time of writing there is no information to confirm that the number of prepayment meters in use has increased although this is likely. Without similar policy tools to mitigate the effects of fuel poverty, it is possible that prepayment meters are now masking disconnection rates. In fact, in a yearly survey of electricity retailers regarding prepayment meters undertaken in March 2007 by the Electricity Commission, one retailer “noted that it did not believe that prepayment meters were an effective solution for low income consumers” and that “prepayment meters ‘hide’ the difficulties of low income consumers” (Electricity Commission, 2007). This calls into question the ethics of promoting prepayment meters as a budgeting tool for those who are consistently having difficulty paying their electricity bills.

Several articles discuss the effect of prepayment metering on low income domestic consumers in the United Kingdom (Graham, 2006; Graham and Marvin, 1994; Graham, 1997; Drakeford, 1997; Speak and Graham, 1999) Grey literature produced by community organisations discusses fuel poverty and the use of prepayment meters¹⁰ (Sharam, 2003). These writers highlight the higher prices generally paid by consumers using prepayment meters, and the essential nature of electricity services, as growing concerns which can lead to social exclusion of low income consumers. Using prepayment meters for electricity

¹⁰ http://www.cab.org.nz/issues/policy/Electricity_Governance_submission.htm

acts to “shift the burden of disconnection from the public to the private sphere”, through self-disconnection (Drakeford, 1997, p120). Because of this, official statistics on disconnection rates are not collected (Graham, 2006). Cosmo Graham (2006) cites figures from Ofgem, the regulatory body for the electricity and gas markets in the United Kingdom, suggesting around one quarter of consumers using prepayment meters experienced self-disconnection in the third quarter of 2005.

Stephen Graham (1994, 1997), terms shifting low income consumers to prepayment metering “social dumping”, whereby companies reduce the costs and negative publicity of disconnection to the household. The increased movement towards “smart” meters, which will enable consumers to be more active in selecting competitive tariffs, has the opposite effect of “cherry picking” more lucrative consumers, who can afford this technology, by offering them greater choice and competition (Graham and Marvin, 1994; Graham, 1997). Despite this, many consumers using prepayment meters express a high level of satisfaction with them, and state that they would be reluctant to switch to a different payment plan^{11,12}. This may be due to the limited competition between prepayment meter plans, or to costs associated with switching. Sharam (2003) points out that low income people prefer the discretion and privacy that prepayment metering offers, rather than face negotiating with electricity companies, reconnection fees, and uncertainty about when they will be disconnected. Prepayment metering may contribute to poor health, by increasing cold and damp through lack of heating (Speak and Graham, 1999).

Electricity services are identified as a human right by several jurisdictions including the United Nations, the French, South African and Brazilian governments, and this is supported by Non-Government Organisations (Tully, 2006). Tully (2006 p33), notes that using a human rights framework to view electricity access means that:

“electricity must be affordable but not necessarily free. A human rights orientation simply requires that individuals not be disconnected from the essential minimal quantity of electricity for reasons of financial inability”.

Electricity is regarded as essential in contemporary society, as so much of our daily life – cooking, food storage, cleaning, and achieving healthy indoor temperatures – is reliant on an electricity supply (Speak and Graham, 1999; Tully, 2006). The overseas experience

¹¹ <http://www.ccp.uea.ac.uk/publicfiles/publications/Prepayment%20Meters%20-%20Boon%20or%20Bane.pdf>

¹² http://www.nea.org.uk/Policy_&_Research/Policy_Briefings/Prepayment_Meters

suggests that prepayment meters do not assist low income consumers to avoid disconnection for financial reasons. If the use of prepayment meters is to become widespread in New Zealand, careful consideration needs to be given to the above concerns; and measures to protect low income consumers from adverse effects of this technology introduced.

In addition there have been criticisms of the Emissions Trading Scheme, which was passed into legislation on 10 September 2008 by the current Labour-led government¹³, on the basis that it will increase the cost of electricity to New Zealand consumers. A report by the Centre for Advanced Engineering commissioned by the Petroleum Exploration and Production Association of New Zealand suggested that electricity costs will increase by at least 15%, and possibly up to 40-50% in real terms over 20 years¹⁴. The government, however, predicts only a 5% increase in residential electricity if the price of carbon is \$15 per tonne, or 10% at \$25 per tonne¹⁵. A recent Australian report into the impact of the proposed Emissions Trading Scheme for Australia suggests that by 2025, if a low carbon price is set the price of electricity will increase by 18%, rising to 67% with a high carbon price (Hatfield-Dodds and Denniss, 2008). The same report recommends the Australian government make an 'affordability payment' to low income households of \$50-\$185 per annum to reduce the impact of the price increase (Hatfield-Dodds and Denniss, 2008). Regardless of the various arguments about the size of the increase of electricity costs to residential consumers, all parties agree that there will be an increase due to the introduction of emissions trading. In May 2008 the New Zealand government announced that it will introduce an electricity rebate scheme through the SuperGold card held by all superannuitants, when electricity is brought into the Emissions Trading Scheme in 2010¹⁶. A 'green homes fund' of \$1billion has also been secured to reduce energy use in homes through improved insulation and efficient heating¹⁷. Precise details about these compensation schemes have not yet been announced.

Currently, there is limited financial assistance available to low income New Zealanders who cannot afford electricity. A disability allowance is available for additional costs directly related to a disability¹⁸ (including heating costs), but because eligibility is benchmarked by

¹³ <http://www.beehive.govt.nz/release/historic+climate+change+legislation+passes>

¹⁴ <http://www.pepanz.org.nz/documents/PEPANZ%20Media%20Release.doc>

¹⁵ <http://www.climatechange.govt.nz/files/emissions-trading-impacts-presentation.pdf>

¹⁶ <http://www.beehive.govt.nz/speech/budget+2008+speech>

¹⁷ http://www.parliament.nz/en-NZ/PB/Debates/Debates/Speeches/2/7/6/48HansS_20080909_00000228-Woolerton-R-Doug-Questions-for-Oral-Answer.htm

¹⁸ http://www.workandincome.govt.nz/manuals-and-procedures/income_support/extra_help/disability_allowance/disability_allowance-105.htm

the average cost of electricity of households in the local area, some people are not able to access the disability allowance (Dunn, 2003). There appear to be other barriers to uptake of the disability allowance, for example a qualitative study found that one participant ‘didn’t bother’ to apply because it was such a difficult process (Dunn, 2003). A United Kingdom study of barriers to uptake of welfare entitlements among older people found that lack of awareness of available benefits, and the impenetrability of ‘the system’ contributed to lack of uptake (Moffatt and Higgs, 2007). Feeling demeaned by ‘the system’, and not wanting to ask for help also reduced uptake of entitlements, as did the inability to fill out the required forms (Moffatt and Higgs, 2007). It is probable that similar barriers exist in New Zealand. Another form of financial assistance available in New Zealand is an emergency advance on benefits from Work and Income¹⁹; however this must be paid back over time.

Qualitative research investigating fuel poverty

It should be noted that there are several community organisations advocating for the fuel poor both overseas and within New Zealand, and some of these have also undertaken research into fuel poverty²⁰. Thus far the majority of academic research into fuel poverty however, has been limited to quantitative methodologies. Some quantitative studies have included qualitative components, including interviews (Buzar, 2007; Shortt and Rugkasa, 2007). However, in these instances the use of qualitative research appears supplementary and is not reported in as much depth as the quantitative work. Of the three solely qualitative studies available that specifically address fuel poverty, only one of those discusses in depth the qualitative methodology employed. This section will examine in depth these three qualitative studies of fuel poverty.

The earliest published article described a study undertaken in the United Kingdom in which 64 older householders were interviewed to explore home energy efficiency and heating experiences (Wright, 2004). Based on income, energy expenditure and energy efficiency data, it was found that over a quarter of the sample population were in fuel poverty as defined previously. Alarming, Wright (2004, p493) reported that “one widower aged 84 and in poor health had spent 22 percent of his income on fuel”. The study found that gender, age and health status influenced responses about feeling cold, and that people associated the temperature and air quality of their homes with wellbeing. Wright (2004)

¹⁹ http://www.workandincome.govt.nz/manuals-and-procedures/income_support/extra_help/advance_payment_of_benefit/advance_payment_of_benefit-26.htm

²⁰ see for example www.nea.org.uk, www.cea.co.nz

concluded that the culture of older people plays a significant role in their living in cold homes as many preferred to have unheated bedrooms, or felt that it was not healthy to live in such warm indoor temperatures that their younger families preferred. Switching off heating during the day was a common practice, even among those who had year-round flat rates for power. This qualitative study also explored Government initiatives to address fuel poverty, and found that these did not go far enough to eliminate fuel poverty in this age group partly due to barriers to uptake such as requiring householders to clear out the ceiling space when some of the participants were physically unable to do this. Another United Kingdom study also found barriers to uptake of the offer of free installation of central heating in an elderly community (Armstrong et al., 2006).

The second article reports the qualitative arm of the Warm Homes Project also carried out in the United Kingdom (Harrington et al., 2005). A purposive sample of 141 participants from the Project was interviewed to gain a range of experiences of fuel poverty and heating. The findings of the study showed that there was marked variation in the participants' beliefs about the importance and expectations of a warm home. Social interaction within the home was affected by the availability of home heating. While some participants described the physical health effects of home heating, mental health either directly due to being cold or through financial stress was most commonly discussed, and the emphasis on indoor temperature as an important cause of ill health varied between participants. Participants described methods of coping with fuel poverty that ranged from wearing extra layers of clothes to reducing the space used within the home, and while the participants mostly described insulation and heating as having a favourable influence on home comfort, the authors noted that a sample from the trial "suggest that 80% of the benefits of improved fuel efficiency were taken in the form of reduced fuel consumption rather than extra warmth" (Harrington *et al.*, 2005, p265). In describing measures to change their fuel poverty status participants had used do-it-yourself or commercial energy efficiency improvements, or heating system improvements, but the authors expressed concern that there were misconceptions about the benefits of measures such as double-glazing and what these improvements should be expected to cost among the participants, which is consistent with other studies.

O'Neill et al., (2006 p98) discussed the results of their phenomenological inquiry in the United Kingdom which aimed to "explore older women's beliefs and experiences of fuel poverty, and investigate their perceptions and understanding of Government initiatives". Ten participants identified using snowballing technique through Age Concern, were

interviewed using a semi-structured interview schedule. The authors identified four themes from the data. "Causes of fuel poverty" included the cost of fuel bills and their pension incomes, home energy efficiency, and pride, which could be a barrier to uptake of grants available such as Energy Efficiency Grants available in the United Kingdom. In describing "heating as a priority", two of the participants discussed trade-offs being made by cutting back on food in order to afford to heat their homes. In terms of "managing money", participants spoke about needing to switch off heating and appliances, concern over heating costs, heating only rooms in use, and trying to learn to manage the bills at a late age after becoming a widow. The participants reported limited knowledge of available "government initiatives", with the exception of the Winter Fuel Payment which is automatically credited to individuals over 65, and was favourably viewed as being useful and fair. Participants expressed their reluctance towards changing energy suppliers or shifting from their family homes into a small home that would be less costly to heat. The authors concluded "that heating is an important health and financial concern for older women" (O'Neill *et al.*, 2006, p105). Similarly to Wright (2004), the authors noted that despite the introduction of policy initiatives such as Powergen Staywarm flat rates for energy costs, and Energy Efficiency Grants, there were barriers to uptake in this group.

Critique of current qualitative research into fuel poverty

Wright's (2004) study clearly displays fuel poverty as a relevant and persistent issue for older householders in the United Kingdom despite significant Government initiatives aimed at reducing - if not eliminating - fuel poverty. The paper displays quotes collected from the interviews. However, a discussion of the analytical methods used to unpack the interview data was not provided, which raises questions about the methodological rigour of this study as this cannot be easily assessed.

Harrington *et al* (2005) used interviewing and coding techniques consistent with the Grounded Theory approach, and achieved the aim of the study loosely outlined as describing "the meaning of fuel poverty". The discussion was limited in that it identifies the need to account for the social context of fuel poverty in policy initiatives, but did not put forward a model or theory emerging from the study suggesting how this may be achieved, such a model being a typical goal of grounded theory research. For this reason another qualitative approach such as inductive thematic analysis may have been more appropriate for the study.

The most rigorous qualitative research so far put forward investigating fuel poverty is that of O'Neill et al (2006). A full explanation of the methodology and method used enables readers to assess the approach taken. Semi-structured interviews between 30 – 90 minutes long, held in the participants' homes were recorded, transcribed and subsequently analysed using a Husserlian Phenomenological approach which includes the use of 'bracketing' to suspend researchers currently held beliefs in an attempt to remove their influence the research (O'Neill et al., 2006).

Although there are limitations within the research described above, these studies have provided useful insights into the social aspects of fuel poverty in the United Kingdom. The studies highlight the usefulness of qualitative research into fuel poverty, and the need for further qualitative research in this area.

Growing Public Awareness of Fuel Poverty in New Zealand

While academic articles mentioning the problem of fuel poverty in New Zealand first appeared in the early 1990s (Kearns et al., 1992), studies focussing specifically on fuel poverty came much later, (see for example, Lloyd 2006). Government documents have mentioned fuel poverty in a limited way if at all. Community Energy Action, a grassroots group in Christchurch is the only group who have consistently sought awareness and action on fuel poverty for the past 15 years, however other community organisations including Age Concern, Citizens Advice Bureau, and Greypower have also raised concerns about the high cost of electricity. Interest in fuel poverty in New Zealand has grown over the past few years.

In the winter of 2007, there was a highly publicised incident in South Auckland, where Mrs Folole Muliaga, a forty-four year old mother of four, died after the electricity to their home was disconnected, despite the contractor who carried out the disconnection seeing oxygen tubes protruding from her nose. Although it was widely debated through the media whether her death was in fact caused by the electricity disconnection, or due to her significant co-morbidities, Mrs Muliaga's death prompted a sudden public and political interest into the issue of fuel poverty. The electricity retailer involved, Mercury Energy, was depicted in the media as heartless, particularly given that the total bill owing on the

Muliaga's account was \$168.40²¹. A sample of cartoons relating to this incident, which were published at the time in major newspapers and demonstrate its significance within the public arena, is shown in Appendix 4. The high level of publicity continued throughout a coroner's inquest into the death of Mrs Muliaga, the report of which is due to be released shortly after the time of writing this thesis.

Following this incident the Electricity Commission issued revised guidelines for the disconnection of vulnerable consumers. The government also introduced the Electricity (Disconnection and Low Fixed Charges) Amendment Bill 2008²², which increases the low fixed daily charges threshold, currently at 8000kWh per year, to 9000kWh for the south of the South Island to reduce the current geographical inequality in uptake. Presently the average annual electricity use for the lower South Island is 9000kWh, and therefore only 9% of consumers in this area are presently on a low fixed tariff, while 52% of Auckland consumers are able to take advantage of the low fixed tariff²³.

Public and political awareness of the issue of fuel poverty in New Zealand has grown over the past few years, driven by the increasing cost of electricity, the interest into the death of Mrs Muliaga, and initial research that has begun to quantify the level of fuel poverty present in New Zealand. Fuel poverty is a complex issue to address, and until more is known about the extent of fuel poverty in New Zealand, it is sensible to begin trying to mitigate this problem among population groups that are most at risk. As discussed, older people are one population group who are particularly at risk of fuel poverty due to physiological, behavioural, and socioeconomic constraints. Those older people who also have a respiratory condition are at even more risk of the ill-health effects of fuel poverty. In the following section I will outline Chronic Obstructive Pulmonary Disease, a respiratory disease more common among older people, which is negatively affected by cold, as older people suffering from this condition are one group who can be expected to have greater risk of fuel poverty than the general population.

²¹ http://www.nzherald.co.nz/section/1/story.cfm?c_id=1&objectid=10511078

²² http://www.legislation.govt.nz/act/public/2008/0029/latest/viewpdf.aspx?search=qs_act_disconnection

²³ http://www.parliament.nz/en-NZ/PB/Debates/Debates/9/f/1/48HansD_20080410_00000954-Electricity-Disconnection-and-Low-Fixed.htm

Chronic Obstructive Pulmonary Disease

As discussed, respiratory illnesses are particularly affected by poor housing conditions and low indoor temperature. One avenue for reducing the health burden could be through mitigating these factors for those who are particularly at risk, such as those with Chronic Obstructive Pulmonary Disease (COPD). COPD and the effect of being cold on COPD will be outlined below.

COPD is defined by the Global Initiative for Chronic Obstructive Pulmonary Disease as “a disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is both progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases” (Pauwels et al., 2001). The term COPD encompasses chronic bronchitis and emphysema, and patients usually suffer chronic cough, breathlessness, sputum and wheeze (Pauwels et al., 2001; Broad and Jackson, 2003). Smoking is the main cause of COPD, and COPD is therefore a largely preventable disease (Broad and Jackson, 2003). Various pharmacological and behavioural treatments are available for COPD, which may improve quality of life and COPD symptoms, and reduce exacerbations (van den Bemt et al., 2008). Co-morbidities such as diabetes mellitus, heart disease, and osteoporosis for example are common among COPD patients (Chatila et al., 2008), and patients often report anxiety, depression, and poor health status, increasing with severity of COPD (Gudmundsson et al., 2006). Undernutrition is a problem among COPD sufferers, caused by decreased oral intake, increased energy used for respiratory processes, and chronic inflammation (King et al., 2008). Poor nutritional status indicates poor prognosis and may increase exacerbations (King et al., 2008).

COPD is the fourth leading cause of mortality in New Zealand, with an estimated minimum cost burden of \$102 million (Broad and Jackson, 2003). The average age of those hospitalised in Auckland due to COPD is 70.6 years, and Māori women have the highest mortality rates due to COPD of any reported female population in the world (Broad and Jackson, 2003). COPD reflects health inequalities present in New Zealand as a result of significant socioeconomic disparities.

Acute exacerbation of COPD, characterised by sudden worsening of symptoms frequently results in primary care visits and hospitalisation of COPD patients (Broad and Jackson, 2003). The average length of hospitalisation for acute exacerbation for New Zealand

COPD patients was 9.6 days in 1999 (Broad and Jackson, 2003). Broad and Jackson (2003) costed hospitalisation at \$925 per day in a medical ward bed, and commented that this is the largest cost associated with COPD. The most common cause of exacerbation is infection, and other causes include cold weather and winter season, pollution events, and treatment withdrawal (Sherwood Burge, 2006). Socioeconomic deprivation has been shown to be associated with a three-fold risk of hospitalisation for acute exacerbations of COPD (Prescott et al., 1999).

In a study of the characteristics of patients admitted to Auckland Hospital with COPD, Poole et al (1997) found that 45% lived alone, many of the patients stated that they required help with household tasks, or shopping, and 20% needed assistance to shower. In addition, 60% said that they needed help when they were more breathless than usual. Poole (1997, p274) notes that “This group of patients are considerably disabled by their respiratory disease, as shown by their low usual physical scores and number who utilise services”, however when they had an exacerbation, none of the patients initiated extra support, and therefore may not receive appropriate levels of assistance during the long recovery period following exacerbations of COPD.

Cold and COPD

Those with COPD are particularly affected by cold temperatures. Ciliary action is disrupted in the membranes of the respiratory tract, and bronchoconstriction or the narrowing of respiratory passages, is triggered by breathing cold air (Collins, 2000). Because cold, damp conditions increase the risk of mould growth, and viral infection, respiratory health is further affected (Collins, 2000). In addition, Collins (2000, p43) states that “Acute infections respiratory diseases cause the highest mortality when they affect a vulnerable section of the population, such as elderly people already suffering from chronic disabling respiratory illness”. This group’s susceptibility to respiratory disease is also increased by factors such as reduced immune function, close-contact due to institutionalisation, and poor nutrition (Collins, 2000).

The Eurowinter study shows that the warmer the average temperature in cold weather, the greater the mortality (Eurowinter Group, 1997). Cold stress may occur when moving from indoors to outdoors, or from a warm room to an unheated room. The Eurowinter study

showed that opportunities for cold stress to occur were increased in more temperate countries, where behaviours such as wearing very warm clothing outside, and heating bedrooms were less common than in colder countries. Sherwood Burge (2006) uses this information to suggest that while there are no controlled studies that show that reducing cold stress indoors can reduce exacerbations of COPD, a multidisciplinary approach is needed. Further to this Sherwood Burge (2006, p260) asserts that “in relatively warmer countries, indoor temperatures need to be higher in cold weather in both living rooms and bedrooms; patients with COPD need to be able to afford heating”. Additionally, both Wright (2004), and Sherwood Burge (2006) acknowledge the tendency for older people in Britain to sleep with the window open at night in winter, believing that this is healthful, suggesting that education is required to inform behavioural change and reduce exposure to cool temperatures. Evidence that increasing indoor temperatures reduces exacerbations of COPD remains unclear, and it was with this in mind that *He Kainga Oranga*/Healthy Housing Research Programme developed the Warm Homes Pilot Study, which the research undertaken for this thesis contributes to. The Warm Homes Pilot Study will be outlined in Chapter Three.

A recently published report of the cross-sectional component of an intervention study which monitored indoor temperature in both the living and bedrooms of elderly COPD patients admitted to hospital with an exacerbation of COPD between January 2003 and October 2004, found that more than 50% of the participants’ living room temperatures had not reached the recommended 21°C for at least 9 hours of the day (Osman et al., 2008). The study found that patients with homes that did not achieve recommended temperatures were associated with significantly worse respiratory symptoms, and that smokers showed a greater health effect than non-smokers.

Summary

In conclusion, in this chapter I have outlined the health effects associated with poor housing, and cold environments. The effect of cold homes on older people, and those with COPD was also discussed. I have described fuel poverty, and critiqued the limited qualitative research in this area. Because of the influence of the cost of electricity on fuel poverty in New Zealand, a background to New Zealand’s experience of electricity price increases was described. The use of prepayment meters was also discussed, as one of

the participants in this study uses a prepayment meter, and there are significant issues associated with this technology. I have also described COPD and the inequalities it represents in New Zealand.

The research outlined above suggests that increasing indoor temperatures could improve health, particularly for those who are especially vulnerable to fuel poverty because they are older, or through poor health. The remainder of this thesis will discuss the Warm Homes Pilot Study, and the qualitative study undertaken for this thesis, which was designed to discover whether this might be true.

Chapter Three

From Methodology to Method

This chapter discusses the methodology that lies behind the study for this thesis, and the methods used in the research. Because my qualitative study contributes to the Warm Homes Pilot Study, I will first outline the Warm Homes Pilot Study, and the arguments for selecting qualitative methodology for my study. I will then discuss the qualitative methods considered for the study. This will be followed by a description of the methods used in this study.

Warm Homes Pilot Study

Because the effects of acute exacerbation are greater for those with severe COPD, interventions giving small benefits can have a large effect on reducing exacerbations (Sherwood Burge, 2006). Given that COPD has a large health burden in New Zealand, particularly among Māori and those with lower socioeconomic status, preventing hospitalisation due to acute exacerbation is a logical goal, which should reduce health costs and improve quality of life for COPD patients. As described, New Zealand homes have comparatively low indoor temperatures in the winter months, and New Zealand also has a high rate of excess winter mortality.

He Kainga Oranga/Housing and Health Research Programme are committed to conducting research that will inform policy by “establishing causal links between housing and health, which can lead to a firm evidence base for this link and encourage more cross-sectoral investment in this area” (Howden-Chapman and Beirre, 2008). In light of the above information, *He Kainga Oranga*/Housing and Health Research Programme designed the Warm Homes Pilot Study. This study was a pilot for a randomised community intervention trial, designed to raise indoor temperatures and improve health outcomes for low income older people with COPD. The study was undertaken in conjunction with Tu Kotahi Māori Asthma Trust, with support from the Hutt Mana Charitable Trust. The sample group were selected by Tu Kotahi Māori Asthma Trust,

running care programmes for those with COPD. The participants were required to be over 55 years, a lower age than that usually considered to be “older”, however one that is appropriate in the Māori population due to the lower life expectancy than other population groups in New Zealand.

The participants were given a \$500 electricity ‘voucher’, which was directly credited into their electricity account in the winter of 2007. Temperature loggers, and activity diaries were used for two weeks following the payment of the voucher to collect temperature and behavioural data. A follow-up questionnaire was administered face-to-face in the spring of 2007 to obtain information about the acceptability of the study to the participants, and this information will be used to inform the main study that is proposed for the next four years. Ethical approval for the study was obtained through the Central Ethics Committee.

The Qualitative Component of the Warm Homes Pilot Study, which I have carried out for this thesis, was conceived to further inform the main study, and to provide qualitative information about the experience of living in fuel poverty in New Zealand. It must be noted that as income data for the participants was not collected, they cannot be formally defined as being in fuel poverty. However, the participants were selected by Tu Kotahi Māori Asthma Trust on the basis that they felt that they would benefit most from the additional support provided by the electricity voucher. It is likely that most of these participants would be categorised as being in fuel poverty, as most told me that they experience significant financial hardship, found it difficult to heat their homes in the winter, and benefited greatly from the electricity voucher. Whether or not the participants could formally be defined as being in fuel poverty did not materially affect the qualitative study, as this could still explore the issues with all participants.

Why qualitative?

As discussed, after becoming interested in the phenomenon of fuel poverty, and whether this phenomenon may be being experienced in New Zealand, I searched for research exploring fuel poverty in New Zealand, and found few published articles. Searches for qualitative research articles on fuel poverty in New Zealand yielded no papers. The combination of my interest in pursuing qualitative research, the lack of qualitative research available in this area, and the initiation of the Warm Homes Pilot Study as I was selecting

my research topic was somewhat serendipitous in propelling me towards undertaking this study.

An overarching goal of qualitative research is to improve understanding of an issue, whether the research will be used in a policy setting or not. However, to be useful for informing policy, research needs to be timely, topical, and widely disseminated (Davis and Howden-Chapman, 1996). I agree with other researchers who argue that qualitative research can provide compelling evidence for social policy (Feindt and Oels, 2005; Squire, 2005; Davidson et al., 2007). Qualitative research can be used to generate hypotheses for further research, and to explore subjective experiences that cannot be investigated through quantitative research (Davidson et al., 2007). Davidson et al., (2007) also comment that “policy-makers find stories and other narrative formats highly persuasive means of swaying the public and elected officials”. It seems that the issue of fuel poverty in older people with COPD could be particularly amenable to social policy solutions, yet there is a paucity of qualitative research in this area.

I was interested in the social aspects of fuel poverty, and the experience of fuel poverty by New Zealanders as described in my preface. How do older people experience fuel poverty, and how does it affect them, I wondered? How do they cope with being cold? Why do they have to be cold, what choices do they have and make? The questions I had about fuel poverty also contributed to my decision to use qualitative methods. Patton (2002, p13) offered sage advice about choosing between qualitative and quantitative study using the example of obesity, suggesting that scales would be useful to measure what people weighed, but “If you want to know what their weight *means* to them, how it affects them, how they think about it, and what they do about it, you need to ask them questions, find out about their experiences, and hear their stories.” (Patton, 2002). The sort of questions that Patton (2002) suggests were appropriate to a qualitative study complementing an intervention study.

Selecting a Method

Having established that the study would use qualitative methods, that the sample population would be those participants involved in the Warm Homes Pilot Study who agreed to be interviewed, and some general study objectives, my next task was to identify

which qualitative method would be most appropriate for this study. Early in planning for the study, the questions that I was raising about the experience of fuel poverty in New Zealand aligned with the foundational questions of phenomenology, hermeneutics, and both social constructionism, and constructivism (Patton, 2002). Below I discuss the qualitative methods that I considered before selecting the most appropriate method to use for the study.

Grounded theory

Grounded theory is concerned with theory generation through close analysis of the data. Grounded theorists use 'constant comparative methods' in cycles of data collection, coding, and testing of emergent themes in fieldwork to build a theory of the phenomenon under study (Patton, 2002; Hancock, 2002). While grounded theory could have been useful in the development of a model of coping mechanisms employed by the participants to mitigate fuel poverty, in the absence of qualitative research on fuel poverty in New Zealand, I considered it more urgent to first describe how fuel poverty is experienced, and to present stories the participants had to share about their experiences and beliefs about home heating and health. I felt that grounded theory as a method did not fit with the study objectives.

Discourse analysis

Initially, I was drawn to discourse analysis as a method. Discourse analysis can be used to describe the ways in which discourses are used to construct the social realities of the people employing them, and what using a particular discourse achieves (Hansen, 2006; Holstein and Gubrium, 2005). It was considered that the participants in this study would use one or more cultural or social discourses to describe home heating and health, for example the discourse of a patient to describe events, medical discourse they had picked up from their healthcare practitioners, or current political/social discourse around energy efficiency and conservation, and the importance of warm, dry homes for health. Discourse analysis lends itself to postmodernism and social constructivism in its emphasis on the validity of multiple positions that can be used to describe any one reality (Hansen, 2006).

This may have been useful in that, if discourses used by COPD sufferers reflect the ways in which they think and act as argued by Michel Foucault (Hansen, 2006), points of intervention prior to hospitalisation may be more readily identified.

Several forms of the discourse analytic process have been described, ranging from broader thematic analysis through to more structured approaches to discourse analysis. Wilson (2001) suggests a three stage analysis, initially focussing on the text of the discourse as in linguistic analysis to identify key words, terms, phrases, and linguistic features such as metaphors used to position the speaker (Wilson, 2001). Secondly, this method identifies “dominant, contradictory and/or silent discourses and includes an examination of what function the presence or absence of these discourses serve in the texts” (Wilson, 2001, p 297). Lastly, Wilson (2001, p 297) recommends exploring “the wider social, cultural and historical conditions in which discourses are embedded”, noting that this enables the examination of “the constitution of subjectivity and power relations”.

Foucault argues that the discourse a person uses to describe himself or herself is dependent on the patterns of discourse imposed through the culture and society in which the person lives (Holstein and Gubrium, 2005). Scanning of local newspapers, and relevant policy documents published by local government departments and non-government organisations circulating during this time period, may help to add social context to these discourses. Using discourse analysis would help to describe power relationships that may be active through perceived and actual deprivation measures such as education and income, government messages about energy efficiency and sustainability or through the medicalisation of life of these COPD sufferers, for example. Feindt and Oels (2005) note that it is this exploration of the society-wide impact of discourses used to reinforce power relationships that makes Foucauldian discourse analysis useful in bringing about social policy change (Feindt and Oels, 2005).

In the planning stages of my research it seemed that discourse analysis would be the ideal method with which to explore the language used, and discourses available for the participants to draw on, in their talk about home heating, health and fuel poverty. However, I soon came to realise that discourse analysis has a way of **de**constructing language that could appear to be ‘fragmenting’, and that I wanted to keep the participants’ stories ‘whole’. I wanted to be able to take the broad ‘findings’ of the research back to the participants and felt that the approaches typical of discourse analysis could be intimidating, and create barriers between the findings of the research and the data that the participants

had so freely contributed. Aspects of discourse analysis still appealed however, such as the exploration of power and knowledge relationships, and societal discourses available to draw upon, which would be useful in examining the use of electricity vouchers as a policy tool to mitigate the effects of fuel poverty. I resolved to move towards a different methodology that would enable me to allow the participants' stories to remain whole, but to consider drawing upon those wider aspects of discourse analysis that would be useful in the synthesis of the research.

Phenomenology

Phenomenology studies the 'lived experience', and is essentially concerned with the participants' everyday experience of the phenomenon under inquiry. Phenomenology explores "how human beings make sense of experience and transform experience into consciousness" (Patton, 2002, p104). Patton (2002, p107) differentiates between "conducting a study with a phenomenological focus, (i.e., getting at the essence of the experience of some phenomenon)" and a phenomenological study, which "focuses on descriptions of what people experience and how it is that they experience what they experience". While I was interested in examining the experience of fuel poverty, I felt that phenomenology would not be able to answer some of the other study objectives that I had identified, for example whether the use of the term 'fuel poverty' is acceptable to older people living in cold homes in New Zealand. I was also concerned that using phenomenology would limit my ability to examine how the experience of fuel poverty was situated within society, but considered that the exploration of experience central to phenomenology would be useful to draw upon.

Narrative analysis

Narrative analysis, according to Patton (2002, p115) is "influenced by phenomenology's emphasis on understanding lived experience and perceptions of experience". However, where phenomenology seeks understanding from the participants perspective, narrative analysis explores language used in a meaning-making process that could be described as a 'natural' form, frequently practised in everyday life. White (1980, p5) tells us that "so

natural is the impulse to narrate, so inevitable is the form of narrative for any report of the way things really happened, that narrativity could appear problematic only in a culture where it was absent". Because narrative appears across all languages and cultures, it is universally understood (Barthes 1977, p79, as cited in Franzosi 1998). In studying narrative, we attend to experience in its natural form. Hardy illustrates the use of narrative in everyday life, commenting that we "dream in narrative, daydream in narrative, remember, anticipate, hope, despair, believe, doubt, plan, revise, criticise, construct, gossip, learn, hate and love by narrative" (Hardy, 1968, as cited in Williams 2007). In addition, narratives are commonly used and "are privileged forms of discourse which play a central role in almost every conversation" (Labov, 1997, p1).

It is this acceptance that the storied form is so frequently employed in natural life that leads to the belief that narrative analysis is an especially useful method in examining society. In this vein, Williams (2004, p280) describes narratives as a "window upon society", that provide us with "a way of understanding the relationship between agency and structure within the frame of personal experience" (Williams, 2004).

In contrast to phenomenology, narrative is able to be generalised beyond the individual as there is also a focus on the 'language of experience', and recognition that an individual will draw upon the available social and cultural narratives to tell their personal stories. Explaining how this is so, Drewery and Winslade (1997, p42) offer "we can only ever speak ourselves into existence within the terms or stories available to us". Considering the use of narrative to explore concerns with social, cultural and political discourses, Squire (2005, p93) comments that "'story' does often seem to operate in social research and practice as a kind of Trojan horse, an initial sortie carrying politics into the walled city of the personal". Narrative researchers then, "retain an awareness of social conditions as they consider how culture, and social structures, surface in the stories participants and researchers tell" (Frazer, 2004, p182). In this way narrative analysis allows the examination of the wider context that phenomenology lacks. As discussed, the issue of fuel poverty is highly complex, and social policy solutions are required to begin to address the problem. I felt it essential to select a method that could be used to inform policy in a more general sense than a phenomenological study could. Narrative analysis seemed a more policy-relevant approach in this sense.

Two issues central to narrative analysis which require some exploration are *truth* and *temporality*. I will briefly outline these issues, before turning to the narrative methods that I considered when planning the study.

Truth in narrative

Skultans (2004, p293) notes that “narrative as a research tool has both been criticised on the grounds of giving an incomplete and unreliable version of the truth and, conversely extolled on the grounds of giving a more authentic “experience-near” version of the truth”, a statement which suggests that some examination of the nature of narrative truth is required here.

Whether participants’ stories can be corroborated is irrelevant and would bring no added value to the research. Sandelowski (1991, p165) labels validating stories, citing ‘test-retest’ methods for example, as ‘misguided’, suggesting that those who seek to validate narrative truth have a “misplaced preoccupation with empirical rather than narrative standards of truth and a profound lack of understanding of the temporal and liminal nature and vital meaning-making functions of storytelling” (Sandelowski, 1991). The participants in this study have shared their stories, their experiences, their truths; and as one participant put it “all I’m saying it is the truth you know, not trying to say that oh everything you know is A1 because there are days when it’s not so...”. Of course this does not negate the strength of combining qualitative research and narrative analysis with quantitative research, which may provide supporting ‘evidence’ as it were, however I view the combination of these as quite different to testing the reliability of participants’ stories. Qualitative and quantitative methods provide inherently different information, complementing each other in a manner similar to the use of text and imagery in illustrated books.

Temporality in narrative

While there has been disagreement about the precise nature of what constitutes a ‘narrative’, the general consensus throughout the development of the field of narrative analysis is that most narratives are temporally ordered (Franzosi, 1998). In order to be understood by others, narratives require a chronological structure and are most often presented in sequence. Nair (2003, p29) explains that this temporal organisation allows us to ‘order the world’, and describes narrative as requiring ‘a meta-theory of time’, noting that Alzheimer’s patients for example are considered to have a ‘fuzzier sense of time’ and are therefore ‘unable to process the world in narrative terms’.

However, Nair (2003) points out that not all narratives are temporally ordered, and that during the telling of some narratives, audiences will indicate that they are aware the story is in progress prior to a temporal juncture in the narrative. This shows that while temporality is a common feature in narrative, every narrative clause within a given narrative is not required to be temporally ordered in order to be understood (Nair, 2003). Furthermore, temporally ordered sequences alone do not indicate narrative, but must be linked by logical coherence, so that two temporally ordered events are understood to be connected to each other (Franzosi, 1998).

In a similar vein, Riessman (1993, p18) comments that “Not all narratives in interviews are stories in the linguistic sense of the term”, citing other recognisable genres such as habitual narratives, hypothetical narratives and topic-centred narratives. The habitual narrative is ordered chronologically, but does not reach a climatic point (Riessman, 1993). Hypothetical narratives describe events that do not occur (Riessman, 1993). Topic-centred narratives give “snapshots of past events that are linked thematically” (Riessman, 1993, p18).

As has been shown, the definition of ‘narrative’ itself is complex, and deserves careful consideration. Generally, ‘narrative’ refers to the telling of events connected in a sequence that has contingency (Salmon, forthcoming, as cited in Riessman 2008), and imparts meaning. Narrative analysts make choices about the definition of ‘narrative’ based on the research objectives and methodology. I will return to the definition of ‘narrative’ used for this study below.

Narrative methods

Having selected narrative analysis as the most appropriate methodology, I was then faced with the task of selecting an appropriate method for the task. Riessman (2008) provided an accessible introduction to the methods through which narrative analysis may be undertaken.

Thematic narrative analysis

Researchers using thematic narrative analysis, Riessman (2008 p62) says “are not generally interested in the form of the narrative, only its thematic meanings and “point”. Interrogating the particular language a speaker selects is not relevant to their purpose; focus is on the act the narrative reports and the moral of the story.”. As Riessman (2008) shows, the focus on the thematic meanings of the narrative generally eliminates attention to the ‘local context’ of the narrative, and the lives and situations of the participants, although social structures and power relationships are attended to. Depending on the focus of the researcher, the definition of ‘narrative’ ranges from short bounded segments of text, to extended accounts or life stories about the phenomenon under study (Riessman, 2008).

As in grounded theory, thematic narrative analysts focus on the thematic content of the narrative, however there are some key differences between the two methods (Riessman, 2008). Thematic narrative analysis examines whole sequences of narrative within cases, while grounded theory uses coding to isolate portions of the transcript that have areas of common focus across cases (Riessman, 2008). Clarke (2005, p8), comments that the “pulling apart” of stories is key to the analytic strength of grounded theory; conversely narrative analysis in allowing the participants stories to remain whole has strength in representation. Another distinction is that thematic narrative analysis uses prior theoretical concepts, where grounded theory seeks emergent concepts from the data, and uses these to build theory (Riessman, 2008).

Thematic narrative analysis may have been useful in this study, particularly as it pays attention to the wider context of the narratives produced, something that I had identified as being important in my analysis. However it is limited by assuming that all participants place the same meanings on the narrative content discussed thematically (Riessman, 2008). The group of participants that had been identified for the study was relatively diverse, including: both men and women; participants living alone, with a partner or spouse, or with children; owner-occupiers, and tenants of both public and private accommodation; employees, beneficiaries, and superannuitants. I felt it necessary to pay attention to the ‘local context’ of the participants in the analysis (Riessman, 2008). I also felt that the nature of the narratives, in length, form, and content, was varied, and that it would be difficult to reflect that using thematic narrative analysis. However, as will be

shown, I did resolve to organise the narratives thematically as the topics of the narratives were wide-ranging, and this allowed for a more coherent discussion of the issues raised.

Dialogic/performance narrative analysis

Riessman (2008) describes dialogic/performance narrative as a broad interpretive approach to narrative that uses elements of other forms of narrative analysis. Riessman (2008, p105) further explains that dialogic/performance narrative “interrogates how talk among speakers is interactively (dialogically) produced and performed as narrative”. Where the focus in thematic narrative analysis is on the ‘told’ or the ‘what’ of the narrative, Riessman (2008, p105) comments that “the dialogic/performance approach asks ‘who’ an utterance is directed to, ‘when’ and ‘why’, that is, for what purposes?”. Dialogic/performance narrative analysis closes in on the contexts of the narrative, both the local context of how the narrative arose and in what setting, and the wider contexts of society, history and culture (Riessman, 2008). It is in the close examination of broader contexts that the strength of dialogic/performance narrative analysis lies (Riessman, 2008).

Dialogic/performance narrative analysts present their interpretations of the narrator’s performance, evidenced by features of the text, and interview context. Examination of linguistic features characteristic of performance are also presented, for example, direct speech or the assignment of lines to characters in the narrative, asides to the audience, repetition highlighting key moments in the narrative, expressive sounds to emphasise turning points or resolutions, and changes in verb tense (Riessman, 2008). Throughout the exploration of the construction and performance of narrative, the researcher’s reflective voice is presented, creating particularly interpretive texts, and readers have the opportunity to engage with the researcher’s voice through the ‘story’ created within the research report (Riessman, 2008).

Dialogic/performance narrative analysis raises interesting points about the nature of narrative representation, and the ongoing interpretive processes involved in reading narrative texts. Aspects of this method are appealing, in particular the close examination of social contexts active throughout the narrative, and the transparency of the researcher’s representation of the narratives. I felt that this method was not appropriate for the study

topic because I wanted to explore the experience of fuel poverty itself, rather than how the participants performed the experience. Where performative language features were particularly striking (see for example chapter four, Elizabeth's house and home narrative), I have presented some analysis of the performance aspects of the narratives gathered.

Structural narrative analysis

Structural narrative analysis began out of linguistic attention to the narrative itself, with emphasis on the way in which the story was told, rather than on the experience (Riessman, 2008). By attending to the structure or the 'way' the narrative is told, the 'what' that is told becomes clear (Geertz, as cited by Riessman, 1990). Labov's structural approach has been cited widely, and as Labov himself (1997 p1) notes has been "useful in approaching a wide variety of narrative situations and types". It appeared that this method would be more likely to suit the range of narratives that were present in the data for this study.

Labov and Waletzky (1967) described a method for analysing narrative sequences of talk by identifying their structural clauses, and the function of those clauses. Their involved analysis of the Black English Vernacular in the street-culture of youths in Harlem provided definitions of the structural components of a narrative, through examining the temporal relationship between the clauses of several narratives. Using a displacement-set method, which "probes each clause of a narrative for the potential displacement of a different position before or after the clause's original position in a narrative" (Cariola, 2008, p18), Labov and Waletzky identified common elements of narrative structure including abstract, orientation, complicating action, evaluation, resolution and coda. Labov further clarified the definitions of these structural clauses as discussed below in subsequent publications (see Labov 1997, 2007).

Abstract

An abstract is "an initial clause in a narrative that reports the entire sequence of events of the narrative" (Labov, 1997, p5).

Orientation

As Labov (1997, p5) defines it, “an orientation clause gives information on the time, place of the events of a narrative, the identities of the participants and their initial behaviour”. The orientation ‘sets the scene’ (Squire, 2005), and introduces the situation of the narrative (Riessman, 2008). Orientation clauses may also be spread throughout the narrative (Squire, 2005). Labov (2007, p3) explains that the orientation “provides answers to the potential questions, ‘who? when? where? what were they doing?’”.

Complicating action

Complicating action clauses make up the ‘main body’ of the narrative and usually consist of a ‘series of events’ (Labov & Waletzky, 1967 p93). A complicating action clause is “a sequential clause that reports a next event in response to a potential question, ‘And what happened [then]?’” (Labov, 1997, p5).

Evaluation

Evaluation makes the narrative understandable as it serves to “reveal the attitude of the narrator towards the narrative by emphasizing the relative importance of some narrative units as compared to others” (Labov & Waletzky, 1967, p97), or as Squire (2005, p94) puts it “describes the human consequences of the event”. Evaluation provides the meaning of the narrative (Squire, 2005). Labov and Waletzky (1967) suggest that a narrative containing only an orientation, complicating action, and resolution is incomplete and difficult to understand and further, lacks significance as the audience is left without realising what ‘the point’ of the narrative is. Labov (2007, p4) comments that the evaluation “provides a response to the potential question, ‘So what?’”. Evaluations act to “convey judgement with an attached emotional or ideological value” and are clauses in which “the narrator reflects upon and verbalizes the remembered past event and consequently enriches the narrative, explicitly or implicitly, with the narrator’s personal involvement and feelings” (Cariola, 2008, p23). In addition, evaluation can take the form of ‘irrealis’ clauses, to “evaluate the events that actually did occur in the narrative by comparing them with an alternate stream of reality: potential events or outcomes that were not in fact realized” (Labov 2007, p4). Evaluation clauses are typically found between a complicating action clause and a resolution clause, but may also be embedded within the narrative, and there are frequently several evaluation clauses within a narrative (Labov

and Weleztzsky, 1967). Labov (1997, p6) expands on the placement of evaluative clauses, noting that “evaluative material is frequently spread throughout a narrative, but more frequently it is concentrated in a way that suspends the forward movement of the action”.

Resolution

The resolution follows the evaluation (Labov and Weleztzsky, 1967), and ‘gives the ending’ (Squire, 2005). Riessman (1993) adds that the resolution ‘resolves the action’.

Coda

According to Labov and Waletzky (1967, p100) “The coda is a functional device for returning the verbal perspective to the present moment.” Further, Cariola (2008, p23) adds that the coda:

“is often introduced through a change of tense in relation to the overall employed tense of the narrative. This indicates to the listener that the temporal narrative sequence is about to end since the temporal coherence is interrupted and functions as a temporal bridge between the past event of the narrative and the actual, grounded spatio-temporal properties of the present moment and the listener.”

The coda itself is not necessary for the audience to understand the narrative as it is usually not required to “answer the question ‘what happened?’” (Labov & Waletzky, 1967, p101), and Labov and Waletzky (1967, p100) point out that “many narratives end with a resolution”.

The defining properties of ‘narrative’ according to Labov, are rather rigid. Labov holds that narratives must be temporally ordered, contain at least a complicating action and at least one other narrative clause, and be about a primary personal experience. A “fully formed” narrative has all six of the narrative clauses (Labov and Weleztzsky, 1967). While I have used the Labovian structural narrative clauses to analyse the narratives in this study, I have defined narrative somewhat more loosely, and have accepted ‘narratives’ that contain a complicating action and one or more further narrative clause. I have chosen not to restrict ‘narrative’ to discussion of primary personal experiences, because some of the

participants gave examples in a hypothetical storied form, which I felt should not be excluded, as they add depth to the exploration of these issues in the New Zealand context. After considering the narrative methods described above, I settled on a structural narrative analytic approach, based on the Labovian framework. This method provided entry into the data which broached a number of subject areas. I will now describe in detail the methods used for sampling and processes, interviews, and data analysis.

Sampling and Processes

The sample of this study was restricted to the participants of the Warm Homes Pilot Study. Ten participants were selected in order to trial the processes intended for the main study, including the direct-crediting of electricity vouchers to the participants' accounts, temperature logging, and testing of the proposed questionnaires. Informed consent was gained by the community worker liaison from Tu Kotahi Māori Asthma Trust, and the researcher from the Wellington School of Medicine coordinating the pilot study at the time of the questionnaire visit for the pilot study. I then contacted the participants by telephone to arrange visiting to interview them, with the exception of the first interview which was arranged and attended by the community worker as she felt that the participant would be more comfortable with somebody they already knew. In addition I had attended a COPD support group meeting that two of the participants were at so that I could meet them prior to the interview. Interviews took place in the participants' homes, with the exception of one participant, whom I interviewed in a private room at her workplace for her convenience. Nine of the ten participants from the Warm Homes Pilot Study took part in this study.

Interviews

Allen (1998), in describing a study using interpretative biography to explore the experience of housing renewal, used a paired interviewing technique, whereby the second interview was used to focus on issues arising from initial analysis of the first transcript (Allen, 1998). Consideration of the participant burden of those involved raised concerns about the potentially time consuming nature of narrative analysis as a method for the qualitative component. The participants of the pilot study had already been asked to keep a relatively

extensive diary of symptoms and use of the house for the two weeks of monitoring for the main part of the pilot study. The interview schedule was therefore designed with the intention of interviewing each participant only once.

Bertaux and Kohli (1984) describe the suggested format of a single narrative interview as such, with initial interviewer comments restricted to turn-taking expressions indicating listening, followed by questions to stimulate elaboration and introduction of further themes (Bertaux and Kohli, 1984). In keeping with this, initial questions were designed to elicit a narrative following the history of the participants' housing, and the heating of those houses. Subsequent themes included discussion of fuel poverty and the groups likely to experience fuel poverty, and electricity vouchers. (See Appendix 3 for the interview schedule used.) Although I had predetermined the interview questions, I took care about the way in which they were asked, and where the theme was touched on by the participant prior to questioning, the order of the questions was changed to reflect this. In addition, initial open-coding was performed after the first few interviews, and then again after the first six interviews, to allow the interview schedule to be reconsidered if necessary before completion of data collection.

Evaluation of interviews - reflection

After the first few interviews it became apparent that one of the questions regarding the label "fuel poverty" posed a challenge to the participants. Only one of the participants suggested an alternative name for the phenomenon "pohara" meaning poor in Māori. However, during most of the interviews, when I explained that I had wondered whether labelling a person as "fuel poor" might be prejudicial, further dialogue ensued and it was resolved to leave this question in and ask it as I felt appropriate in the remaining interviews.

Some of the interviews failed to provide detailed narratives which may have been achieved through revisiting areas of interest in subsequent interviews, however due to the ethical concerns of participant burden as discussed above, this was constrained in the present study. Each participant was offered a second visit to go through the parts of their talk which had been selected for inclusion in the analysis, and four participants accepted this

offer. At the second visit participants were asked to confirm that they were comfortable with the use of their stories, and the accuracy with which they were portrayed.

With the benefit of hindsight, I do not believe that changing the interview structure would have greatly changed the narratives that were collected. While these issues are important to this group of people and have been discussed more widely in New Zealand recently, stimulated by media and political debate, the narratives collected are probably not narratives that have been formed as a result of several tellings by the participants as a life-history or biography might be (Taylor and Littleton, 2006). Perhaps aspects of these interviews, such as the housing history, and some of the discussion of illness and heating may have been previously described to Work and Income²⁴ or Housing New Zealand Corporation (HNZC) case managers, or to health professionals, but I argue that for the most part, these are not biographies that have been well-rehearsed. Abstract clauses were not included, except in house and home narratives (see Chapter Four). Narratives on different topics are scattered throughout the interviews, and participants frequently revisited ideas they had talked about earlier to clarify their explanations of their experiences, for example their heating routines, or methods of saving electricity. The interview topics are interconnected but, with the exception of the housing questions, probably would not have generated enough talk to warrant repeat interviews introducing one topic per interview. For these reasons I believe that it is appropriate to pool these narratives thematically, before analysing them closely using structural narrative analysis.

Analytic process

The interviews were recorded using a digital Dictaphone, and were then fully transcribed. The interviews were initially transcribed verbatim. In places gestures and notes were also inserted to give context, for example if the participant pointed towards an oil heater in the corner of the room, which was not described during talk. In transcribing interviews, researchers can become closer to the stories, and after transcribing, specific lines in the talk are familiar, which in turn aides the analytic process (Fraser, 2004). I found that transcribing the interviews myself allowed me to revisit the interviews, triggering useful connections to literature I had read or to points in other interviews.

²⁴ Work and Income is the agency responsible for welfare payments in New Zealand, formally known as Work and Income New Zealand (WINZ).

This method was followed for all participants, bar one, who asked not to be recorded during the interview. During this interview, notes were taken, and fully typed immediately afterwards. In order to achieve the best representation of the participant's stories as possible in this instance, this draft was then sent to the participant to check for accuracy, and she made few changes to the 'transcript'. Note taking during the interview was relatively extensive; however I found that this interview differed in that I participated more conversationally, in part to make up for being less affirmative during her 'turns' of talk than in the other interviews.

Initial rough transcription was laid out in tables denoting the time in the recording for ease of returning to the original data, and a new line for every "turn" in the talk, and commas denoting pauses. In order to see where the participants had talked for extended periods more clearly I found it useful to then delete my backchannel talk²⁵, creating blocks of talk in the interviews and allowing sections of the participants talk to be considered in a less fragmented manner. Reading over these 'cleaned' transcripts I was then able to identify sections of narrative talk for analysis. Once these were identified, backchannel talk was re-entered.

In her article outlining suggestions for prospective researchers, Fraser (2004, p189), comments that disaggregating "long chunks of talk into specific stories, or segments of narratives", can be difficult. Fraser (2004, p189) notes that this is particularly challenging when "one story ebbs seamlessly into another", or when "a speaker hops from one subject to another, producing stories that are not discrete or self-contained". Certainly I experienced this problem when I began my analysis, and lamented that this problem was caused partly due to the interview schedule covering so many topics, which I believed were essential to examine in order to fill the current 'knowledge gap' about fuel poverty in New Zealand. In attempting to resolve this issue, I found Fraser's (2004, p189) suggestion to "divide the talk into sets of ideas expressed" invaluable. By first separating the narratives thematically, and then attending to the structure of the text, I was able to continue using narrative analysis.

Because of the nature of the interview topics, the narrative talk in the interviews, while closely related, fit largely into broad themes. Most of the participants talked about their housing history, although these past housing narratives have not been analysed in this

²⁵ Backchannel talk in the interviews included comments such as "yeah", "yep", "mmhm" and "mm" - affirmations to the participants during their 'turns' of talk

thesis due to space and time constraints. They then went on to give narratives about the current housing situation; narratives which I have termed 'house and home' narratives (see Chapter Four for further discussion of this point). In most cases these were discussed in close connection with the heating used in the home, although further talk about the heating in the home often occurred again later in the interview. Typically this was followed by discussion of the cost of electricity, which was the primary source of heating for most of the participants. Methods of coping with cold were discussed by many of the participants as a result of their concerns about the cost of electricity. Towards the end of the interview I asked about the use of the description 'fuel poverty', which was not well received by some of the participants, however this question prompted interesting narratives from some of the participants. It also allowed me to ask whether the participants thought that this was a problem for people in New Zealand, and the majority of participants discussed fuel poverty as being a problem predominant in the older population. The electricity vouchers that the participants had received were discussed, followed by the acceptability of electricity vouchers as a tool for helping to alleviate the problem of fuel poverty. Through several readings of the interviews, the following themes have been selected for analysis: house and home narratives; heating narratives; cost of electricity narratives; fuel poverty narratives; and voucher narratives.

As noted, while housing history narratives were collected, and were rich and lengthy accounts, these have not been analysed here due to time and space constraints. Asking about housing history did however serve the purpose of giving the participants 'the floor' from the beginning of the interview. I believe that this encouraged the participants to give lengthier narratives about the subsequent topics because housing history is more familiar, and is therefore probably easier to narrate than the importance of heating, which is likely to have been discussed far less often prior to the interviews.

Having identified narratives for inclusion in the "cleaned" transcripts, backchannel talk was re-entered, and narratives were then retranscribed into lines separated by a significant pause or intake of breath, and line numbers added. This was a lengthy process, and to simplify this line numbers were only assigned to the text of the narrative, rather than the entire transcript as is usual in narrative analysis (Fraser, 2004). Because the line numbering does not correspond to the placement of the emerging narratives in the interview but rather the theme that the narrative is aligned to, breaks in the narrative are signalled with a new row in the table for each new narrative. For each participant, line numbering begins at 000 for House and Home Narratives, 100 for Heating Narratives, 400

for Cost of Electricity Narratives, 600 for Fuel Poverty Narratives and 800 for Voucher Narratives [See Appendix 5]. Labovian structural clause codes were assigned, and lines that had no narrative function were deleted. In some narratives there was significant repetition, and I have shortened some of these narratives for coherence, and due to space constraints, although the full narrative was considered during the analysis.

The following table is an example of the core narratives used for analysis. Line numbers are shown at the beginning of new clauses to show the sequence of the narrative. First initials are used to show the speaker. The interviewer is represented using 'I'. Where I have included abbreviations for the questions from the interview schedule asked, the questions are shown at the beginning of the corresponding results section. [See Appendix 3 for full Interview Schedule.]

Table 3: Sample of tables used for analysis - George: Fuel Poverty

Orientation	Complicating action	Evaluation	Resolution	Coda
Prompting from Q9 and 9a	601 G: "I haven't got any personal friends that I've heard about, (Yep) that do have those problems but, I have heard of people with those problems you know."	606 D: "And not that we could do anything, cos we haven't got a hell of a lot of money to go, and give it to them to, you know, pay their bill for heating or anything like that you know."	610 G: "Yeah, yeah there's and, there would be a lot of that going around."	
612 I: "Like you think in this area too as well." G: "Oh definitely so. (Yep) But there [suburb's] not a bad place.	616 G: "you get the Hutt Valley, the temperature over there may be 20, (Yep) over here it'd be 22, 23." 620 G: "that's only on account of the hills, (Yep) and it keeps the wind out, (Yep) supposedly."	619 G: "So it's a bit warmer."	624 G: "If it's gonna be a cold day it's warmer over here than over in the Hutt you know."	625 G: "Stupid little things like that you know."

The assignment of Labovian units of functionality to specific clauses in a narrative is an inherently interpretive process. Riessman (2008) reflects that she would now code differently the narrative she used in her analysis of 1989, and that readers viewing the analysis through their own interpretive lenses might also disagree with her coding. She advises that she "would not recommend that contemporary researchers include coding of clauses in a published paper", pointing out that this level of detail also risks disengaging readers and is unnecessary for most publications (Riessman, 2008, p89). However, there

are the issues of interpretation and 'representation' during the research process; the participants have interpreted their experiences through their vocalisation of them, I have then interpreted them during transcription and analysis, they may be interpreted differently by others who bring their own experiences into their reading of these narratives (Riessman, 1993). Rabinow and Sullivan (1979, p12) summarise this problem, saying; "The text is plurivocal, open to several readings and to several constructions". For the purpose of providing readers of this thesis the full context of the narratives analysed, and for transparency of the analytic process, I have resolved to appendicise the reduced narratives that have been included in the analysis. The narratives presented in the appendices also include the coding of clauses for these reasons, and can be found at the end of the thesis.

Most of the narratives analysed here are long and complex, involving many narrative cycles within the narrative. They typically do not simply move through the narrative structure from abstract to resolution or coda, rather they frequently have several cycles of orientation, complicating action, evaluation and sometimes resolution within the narrative. For these reasons I found the content difficult to unpack prior to close analysis of the narratives, but after applying Labov's method, the content was highlighted by retranscription into the core narrative. Riessman²⁶ described perfectly the conundrum I experienced where her interview "felt" like it was narrative, but before applying this method it was difficult to identify and therefore examine the content within the narratives in the data. Attending to the structure of these narratives, and the function of the structural clauses embedded within them, allowed me to gain a deeper understanding of the content.

Conclusion

In this chapter, I have analysed the reasons for undertaking qualitative rather than quantitative research and then reviewed the possible methods of analysis I could have used. Reasons for selecting narrative analysis included: the attention to the 'lived experience'; attending to the 'whole' narratives of the participants; the capacity for social and cultural contexts to be explored; and that narrative analysis is policy-relevant. Labovian structural analysis was selected as the method for the analysis as this process allowed me to focus on the structure of the narrative as a starting point, and then attend to

²⁶ During a workshop on narrative analysis, 12 March 2008, Massey University, Albany, North Shore City

the content of the narratives. This method also suited the wide range of narratives within the data. Methods used in this study, including the sampling, data collection, and analytic processes were also described. The following chapters outline the results of the study, provide a synthesis of these results, and suggest points of intervention for addressing fuel poverty.

Chapter Four

Results

The results of the study are separated into the five themes identified for analysis. These are House and home; Heating; Cost of electricity; Fuel poverty; and Voucher narratives. In order to maintain confidentiality, pseudonyms have been used. Brackets in quotes indicate my backchannel talk. The results are presented below.

House and Home Narratives

House and home narratives are those narratives in which the participants discussed their current housing situation. I have termed these house and home narratives because the participants discussed both the physicality of the house, and the emotional/social qualities of the home within these narratives. House and home narratives usually followed narratives about the participants' housing histories discussed at the beginning of the interview.

As a summary measure, to compare and contrast the house and home narratives given by the participants, I found it useful to tabulate common elements of discussion, as below.

Table 4: Common Elements of House and Home Narratives

	Landlord	Physical Structure	Maintenance	Insulation
Don			X	
Catherine		X		X
George				X
Wiki and Pete		X	X	X
Elizabeth	X			X
Kahu and Howard	X		X	X
Ripeka	X	X	X	X
Mabel				X
Kiri	X	X		

This enabled me to identify salient points in the participants' discussions, which I will now analyse.

Landlord

Tenancy issues came through very strongly in these interviews. I was struck by the way in which owner-occupiers tended to describe actions that they had taken (or that community organisations had taken) to improve their houses, however tenants of both public and private landlords tended to frame improvements that landlords had made or were planning as inadequate or problematic. Within the participant group, tenants who raised these kinds of problems included Kiri, who was the only private rental tenant in the group, Kahu and Howard, Ripeka, and Elizabeth. Mabel was also a state house tenant, however she did not talk about her relationship with her landlord in her current house. Catherine did not discuss whether she was renting or not. Wiki and Pete, George, and Don were living in their own homes. Because landlord issues coloured the house and home narratives of the tenants within the participant group I will describe these below, before moving onto other issues raised by these narratives.

Kiri described tenancy issues in detail throughout her narratives. She is in a private rental home which she has lived in for seven years, despite saying “every wintertime we froze”. The first two complicating actions in Kiri’s house and home narrative are related to the poor housing quality and the issues with the landlady, which concerns the absence of the landlady, with whom she had no contact with for three years of the tenancy. The initial evaluations describe what Kiri has tried to say to the landlady in an attempt to explain her situation, “And I told her that I’m sick of it, I said ‘I’m not blaming your house but it [my health] could improve with the standard of the house’.” The third complicating action is concerned with the main problem, the house is expensive and difficult to heat because of the lack of insulation, and Kiri is not certain that the landlady will improve things before the next winter. The complicating actions of the poor housing quality, the difficult relationship with the landlady and the high cost of heating the house adequately due to the poor standard of the house are resolved simply. “So and then we resorted to um, what heating that we can afford”. While I have coded this as a narrative resolution clause, this has not solved the problems in real terms, but it is how Kiri has been forced to deal with them; it resolves the narrative, but does not actually resolve the issues that are being narrated by Kiri.

Elizabeth’s narrative contains three complicating action clauses. The first notes that the house is cold, the second that she is unsure if the insulation is adequate, and the third that

her Housing New Zealand Corporation²⁷ (HNZC) case manager said “oh no they’re fine” in response to Elizabeth raising her concern that the kitchen windows are draughty. While other participants also expressed that they felt their landlords (state or private) were not adequately addressing their concerns about the perceived structural deficiencies of their homes, for Elizabeth this ran deeper. She blames the development of her COPD on the previous state house that she lived in, describing it as “the wet house”. Elizabeth says: “It had big wet patches on the walls and I actually breathed in the fungus and the mould, (Oh right) and that went into my lung, and that’s what gave me the CORD, (Oh ok) the COPD.”. She described at length the state of the house, and how “I kept telling them, for three years I was trying to get a transfer and they wouldn’t do a thing”. So when in her house and home narrative she says “But my case manager went ‘oh no they’re fine’.”, she indicates that she feels the landlord will not be taking her seriously, or attempting to address concerns she may raise in her present house either. This is supported by her coda “Mm. So they’re draughty. (Yep) Those ones.”. Elizabeth ends her narrative with her assertion that contrary to the landlord’s opinion the windows are draughty, and she uses her first-hand experience of this to qualify her statement.

Ripeka, when discussing her dealings with the state landlord also describes “telling them and telling them” about issues with the house. In her initial house and home narrative, Ripeka talks about her desire to get carpet in the lounge and hallways. While Ripeka agrees that polished wooden floors are easier to clean, in this house the lack of carpet is a problem for her and her evaluation is that she needs carpet. However she says that HNZC “don’t do that anymore they used to, (Yep) and now they tell us that they don’t do it anymore”. Ripeka’s coda “Well that’s Housing Corp for you, because, you know.” indicates her frustration with HNZC’s policy, and her inability to have this matter considered on an individual basis. Ripeka returns to her desire for carpet at the end of the interview, saying that ‘they’ are trying to get carpet for her, talking about her community nurses. This illustrates her lack of control over her housing situation; she is unable to effect changes through her discussions with her landlord, and hopes that her nurses may be able to help.

Kahu and Howard also portray the state landlord negatively. We learn later that their individual case manager appears to be on-side, however they speak negatively of HNZC throughout their interview. Kahu and Howard cite the lack of willingness of HNZC to

²⁷ Housing New Zealand Corporation (HNZC), is sometimes referred to by participants as “Housing Corp” or less formally as “Housings”.

replace the wallpaper in the dining room and lounge, and the “long long time” it took for HNZA to install insulation in their home as examples of HNZA acting as an unresponsive landlord.

Physical Structure

Four of the participants commented on the physical structure of their houses. Wiki and Pete described the building materials in their house, which is predominantly constructed with concrete blocks, and has only two wooden walls. Ripeka complained that she has told her landlord repeatedly about maintenance problems, which had not been addressed. She evaluated “And I’m telling them that whoever made the house, built it in a hurry because it feels like, sometimes it feels like the house that Jack built. Cos you can really feel the draughts coming through the floorboards even”. While Kiri did not comment on specific problems with the physical structure of her house as Ripeka did, she did comment generally that she was unhappy paying the amount of rent she did, when she felt that “the house is not up to standard”. Later in the interview, she told me that she would look for different qualities in a house if she shifted, such as dryness, orientation to sun, and insulation. Catherine commented only that her current house was much smaller than their previous house.

Although not in her house and home narrative, Mabel made a comment that having decent curtains alters the indoor temperature that can be achieved. When asked if she thought other people found it difficult to keep their houses warm, Mabel replied “It depends what kinda house they’ve got... I haven’t got a flash house, I haven’t got drapes. (Mmhm) I have got drapes but they’re not [thermal-backed]”.

Maintenance

Four participants discussed deferred maintenance of their house. Don’s very brief house and home narrative discussed a single complicating action that his house is “a heap of junk at the moment, heheh!” Don evaluated “there’s a lot of work to be done on it”, indicating that he felt he had not kept up with maintenance of his house. His resolution

“It’s a home I ’spose” shows that while the house itself needs ‘work’ it still retains social and emotional functions associated with the idea of ‘home’.

At the end of the interview, I asked Kiri directly if, in her experience, landlords were part of the problem, and Kiri summarised this in terms of prioritisation of maintenance and home improvements:

“Where she was worried about fixing glaze in the windows, (Yeah) and I was concerned about the heating, (Yeah) and she had to prioritise two things. (Mmhm) The windows are, the double glaze windows, the old fashioned ones, (Yep) well, to her that was a priority, but for me the priority was the insulation.”.

Both Ripeka and Kiri described their houses as being mouldy, and draughty. Ripeka commented that she believed there may be a leak in the lounge which was resulting in a mouldy patch, and that she had told HNZA when they did their housing inspections “every time about it but, there’s nothing done about it”. She concluded her story with the coda “You just keep telling them and telling them.”, a phrase that when presented as a coda has particular weight as she indicates that there is nothing more to say as that is how it is, and again leaves us with a negative last impression of HNZA as a landlord.

Kahu and Howard’s house and home narrative discusses their desire to have the lounge and dining rooms redecorated as the wallpaper is very dilapidated. They expressed their frustration over HNZA’s apparent lack of willingness to replace the wallpaper in the lounge, despite having rewallpapered the bedrooms. The rationale that HNZA had given Kahu and Howard for doing this was that they “reckon that’s where we entertain people”. This strange explanation had evidently not impressed Kahu who emphatically exclaimed “and I said what do you think I am a bloody prostitute or something!” and was quick to defend her position when I laughed in surprise, saying “no that’s what I said to the man eh?”. Finally after several years of waiting for HNZA to address their request to replace the wallpaper in the dining room, they had taken action and started to strip the wallpaper. Unfortunately Howard then became ill. Their relationship with their landlord must surely be negatively affected by the constant reminder of inaction, the patchy wallpaper in the dining room.

Insulation

Some of the participants commented specifically on either ceiling or under-floor insulation, while others talked more generally about insulation in their houses. Catherine mentioned briefly that 'lining' had been installed under the kitchen and lounge, and that she supposed "in a way it actually keeps warmer". Wiki and Pete talked about the insulation that they had recently had installed in the roof, however Pete commented that the structure of their house prevented them from having further insulation installed. Mabel described how she "noticed the difference" after insulation was installed in her house, "Yes because the house was so cold and it's not as bad as it used to be since they insulated it... I mean I couldn't walk on the floor, that's why this old mat is in here, (Yep) because it was so cold". Kahu and Howard also commented that recent insulation had noticeably improved their home, Howard evaluating "It has made...quite a difference to be honest. (Yeah) You know once they done that." They felt it had improved Kahu's health, prior to having the insulation installed she had been to hospital more frequently with respiratory symptoms, fifteen times in the past year she said. Don was the only participant who did not mention insulation during his house and home narrative, however we did discuss insulation briefly during the interview in non-narrative talk.

Ripeka and Elizabeth were unhappy about the insulation installed in their houses by HNZC, and believe that the underfloor insulation is inadequate. In addition, Ripeka's nurse told her that the insulation in the ceiling has not been installed correctly. Ripeka performs the conversation with her nurse "she's going crook... 'they've only spaced it'..." Ripeka evaluates "It's not compacted in like all how it should be.". This is one of the issues Ripeka has raised with her landlord. She later said that HNZC has put draught-stoppers on the edges of the doors, but Ripeka seems to view this as a half-hearted attempt at mitigating the draught problem even though she comments "that has helped heaps".

George talked during a non-narrative sequence about the insulation that had been installed in their house. George had been talking about housing in the region, comparing housing quality within different areas. When I asked if he thought it might be a bit of a problem that houses in New Zealand were not really built for the cold, he responded strongly "I think the people ah, don't give a damn. That's what I really think you know.". When prompted later about this statement George offered an explanation for this. He told a story about how these days in many households both parents are required to work,

meaning that the family spends less time in the home, so are not as concerned about the home environment.

This narrative, while not about George’s own housing situation, is an insightful commentary on the housing situation in his community. George uses story telling forms that are instantly recognisable, for example his orientation “many moons ago...”, and the coda “that’s my opinion”. This type of talk is identifiable as entrance and exit talk, whereby the narrator clearly indicates to the listener that a story is beginning and ending (Jefferson, 1979, as cited by Riessman, 1993). George also deploys the use of an evaluation clause that ‘suspends the forward movement of the action’, (Labov, 1997) saying “I think that’s the reason why there’s no need to have the heating system”, right before he narrates the ‘most reportable event’ (Labov, 1997); that “They get up in the morning, have breakfast, off to work, come home in the evening, have a shower and off to bed you know.”. This has the effect of drawing our attention to the ‘point’ of the story, and counters the ‘so what?’ question that needs to be addressed to justify any narration (Labov, 1997). While this narrative is not strictly a narrative of personal experience, this insight could fit the situation of many young families, providing an explanation of why it is not a high priority for many people to have adequate insulation or efficient heating installed. It also raises the issues of heating and cold housing which some of the other participants mentioned in their house and home narratives. George’s narrative provides a good introduction to the following section of results on heating narratives, which discusses the heating that the participants use in their homes, and is presented in the following table.

Table 5: George – House and Home Narrative

Abstract	Orientation	Complicating action	Evaluation	Resolution	Coda
001 I: “You know before, when we were talking about the houses and the insulation and stuff, and you said that you just didn’t think that people cared that much”. G: “Yeah a lot of people do not care that much, you know”	005 G: “I don’t know I could be right I could be wrong but ah, many moons ago this place used to be called nappy valley.”	010 G: “in those days a man could go out and work, and get enough to afford to look after the families, you know. (Yep) And they could afford to have children. (Mmhm) Now... how would I say not so much money or not getting much money for the work they’re doing you know, that both of the parents have gotta go out and work and they can’t afford to have families.”	019 G: “I think that’s the reason why there’s no need to have the heating system.”	020 G: “They get up in the morning have breakfast, off to work, come home in the evening, have a shower and off to bed you know.”	022 G: “So, yeah, that’s my opinion.”

Summary

This section of results describes salient points raised within the participants' narratives of house and home.

Landlords were flagged as an added problem for tenants to overcome when trying to improve the quality of the house. The physical structure of the house was described, as was home maintenance. The participants often identified what could be done to improve the thermal quality of the house. Insulation was discussed by all but one of the participants, and many of the participants felt that the insulation of their houses could also be improved.

The participants' house and home narratives provide context for the following sections of results, and set the scene for developing intervention points to improve housing quality, and therefore the indoor temperatures that may be achieved for reasonable cost.

Heating Narratives

Heating narratives are narratives that the participants gave in relation to heating patterns or requirements, methods of coping with the cold or how they mitigated having to limit the amount of heating used, and how heating affected their health and wellbeing. Heating narratives arose from the following five questions in the interview schedule:

- Q3 Can you tell me about the heating in this house?
- Q4 How important is it to you to be able to heat your home?
- Q5 Do you find it difficult to heat your home? (adapted from O'Neill, et al., 2006)
- Q6 Some people think that keeping warm is really important. Other people say that we should just put an extra jersey on. What do you think about the way that we use electricity?
- Q7 What kinds of differences, if any, do you notice about how you feel when you are using heating in your home, compared to when your home feels cold.

The summary table showing common elements of discussion in heating narratives is shown below.

Table 6: Common Elements of Heating Narratives

	Important for family	Heating routine	Coping with cold	Older / infirm	Effect on COPD	Cost
Don	X		X			
Catherine			X	X		X
Wiki and Pete			X		X	
Kahu and Howard	X	X		X		X
Ripeka		X	X	X	X	X
Mabel		X	X		X	
Elizabeth					X	X
Kiri		X	X		X	
George	X		X	X		

Important for family

Don, Kahu and Howard, and George all commented in their orientation that it was important to heat their homes for their grandchildren's' sakes when I asked how important it was to them to heat their homes. Don's narrative indicated that this could be problematic because 'they use gas', describing that they use an unflued gas heater which Don evaluates they feel is affordable, but is not healthy. Kahu and Howard also used an unflued gas heater, developing a complicated heating routine to ensure that their home could be warm for their grandchildren, but that Kahu would not be exposed to the unflued gas heater when it was in use. George's resolution was that if they knew their grandchildren would be coming to visit "we turn the heater on, you know, just to put a bit of warmth in the place".

Don indicated that he has lower requirements for heating than his family, preferring to 'go to bed put my electric blanket on low and just lie on it hahahm!'. Similarly, George said that if he and his wife were at home alone 'and it wasn't cold but, you needed the heater or something like that, we just put a blanket over our legs', giving a justification in his coda 'save wasting power and all that you know".

Heating routine

Some of the participants had developed heating routines that they believed allowed them to get the most benefit out of the heating that they could afford. Kahu and Howard, who use a prepayment electricity meter, had an elaborate heating routine, which Howard described through several complicating action and resolution clauses. This involved him being "up very early in the morning", at five o'clock, to light the unflued gas heater and the electric oil column heater in the kitchen and dining rooms, "and turn it off before she gets up". According to their evaluation, this allowed them to have a warm living area, while requiring a lot of effort on Howard's part.

Like Kahu and Howard's heating narratives, Ripeka, Mabel, and Kiri's heating narratives all described their heating routines and home use through complicated action clauses. While Mabel and Ripeka described heating different rooms of their home, first heating the living room as Kahu and Howard had done, and then attempting to let the heat flow

through to the bedrooms. Kiri had a different resolution, heating only her bedroom for most of the time, and then her daughter's bedroom for a short time: "So we try and stick to that one bedroom, or her bed, when I said "oh um, come sit a minute just warm your room up", cos she closes her door so it'll hold the heat. (Mmhm) And when she goes to bed she switches it off.". These narratives display the typical heating patterns of New Zealand householders, who usually 'spot heat', heating only the rooms of the house that are in use (Isaacs et al., 2003).

Coping with cold

All but two of the participants had resolution clauses in their heating narratives that described mechanisms for coping with being cold. Four different mechanisms were identified, including; wearing more clothing, using a blanket, staying in bed, or sleeping in the heated room in the house.

Wearing more clothing was seen by the participants as being an obvious solution, as illustrated by Don's emphatic complicating action "you go outside in your singlet and it's cold you gotta problem!". Some of the women described wearing cardigans:

Catherine: "I might just put on a cardigan"

Mabel: "I've got a cardigan on the back of my chair"
"I've got a cardigan in the kitchen, I've probably got a cardigan in the lounge, cardigans in my bedroom, (Yep) ponchos or whatever they are"
"I've probably got a cardigan in the washhouse hanging"

Similarly to this, other participants described using blankets.

Ripeka: "I have blankets on my chairs, (Mm) so, when I'm sitting on them and I feel a bit draughty there, I get it and wrap it around me."

George: "we just put a blanket over our legs"

However, Pete pointed out that while putting "extra clothing on" was fine for him, for Wiki, severe COPD means that without heating "she's gotta stay in bed". This method of staying warm is connected with the heating patterns described above, and is similar to

Ripeka's resolution to stay in the lounge, which was the only heated room in her home, and Kiri's resolution "I've made my sitting room into my bedroom".

Older / infirm

Most of the participants explained that older or infirm people needed more heating than younger people, although as discussed above, heating was considered important for children. Being older was portrayed as another problem to overcome to achieve an adequate temperature, as shown through the participants' placement of their comments about older people needing more heating in complicating action clauses, as below:

George: "a couple of years ago, it didn't worry her [wife]. Cold weather. (Mmhm) But all of a sudden, (Yep) it's reversed you know."

"when you start to get older and age, you know. (Yep) It's not like [son] and his wife."

Howard: "like the elderly couple waiting for a heat pump down south"

Catherine: "I mean it's difficult for folk like when you get older and you don't move about as much as you used to."

Ripeka: "and what about those dear old people?"

In addition, some participants gave personal evaluations, for example Ripeka evaluated "How are they, oh I reckon they can't handle it either... But I most certainly can't." moving towards a justification that people who are ill also need extra heating as she had just described that "COPD's are worse hit" by the cold. Similarly, Catherine evaluated that "I have arthritis and things so I can't move about as freely or do as much exercise". Elizabeth commented "You just gotta keep warm. The main thing is once you get older you gotta keep warm."

Narratives commenting that older or infirm people need more heating than others were usually resolved in clauses describing methods of coping with cold, as described above.

Effect of cold on COPD

Question 7 was included in the interview schedule in an attempt to unlock the impact of fuel poverty on COPD. While some of the participants felt that their breathing was not affected by heating, others described how being cold negatively affected their wellbeing.

In one of the most poignant explanations of the effect of being cold on her COPD, Wiki gave a fully-formed narrative about the impact of her COPD, summarised in the table below:

Table 7: Wiki - Heating Narrative - Effect of Cold on COPD

Orientation	Complicating action	Evaluation	Resolution	Coda
Q7 156 W: "It's good when the fire's on because you feel the warmth and it takes away some of the, you know the pain and the stress in the body"	160 P: "She went down to, oh, forty-odd kg" 163 W: "on some form of heating. Because without it I feel breathless" 179 W: "You know you're hungry but, you can't eat"	162 W: "I rely on that" 184 W: "stressful when it's like that" 186 I: "So you feel quite stressed when you can't keep the house warm?" W: "Yeah" 190 W: "you know if you're in the condition that I'm in, yeah you'll understand"	169 W: "Yeah the fire has to go otherwise, otherwise I go back in [to hospital]" 174 W: "Yeah, I don't hesitate when I feel it, because then it starts my asthma going you see"	176 W: "Yeah"

Wiki's narrative illustrates that for her, having a warm home means being able to stay out of hospital.

While the impact for Kiri was not as striking, she also gave a fully-formed narrative. Unlike Wiki, although Kiri first described that "when I'm feeling cold... mentally, (Mmhm) I think 'oh no, I'm gonna catch a cold, oh no!' ", she said that she did not feel stressed out when she was cold. However Kiri's resolution was active compared to Wiki's passive resolution of going to hospital. Kiri resolved "automatically I just put warm clothes on anyway", showing that being able to use the methods for coping with cold as above, is important for mitigating the negative effects on the participants' COPD.

Elizabeth's comments on the effect of cold on COPD, were more general, and were contained within her narrative about the importance of heating. She noted through a

complicating action clause “it’s days when you haven’t got the sun but it’s cold, and that’s when you feel shivery, and that’s when you get bronchitis and things”.

While Ripeka and Mabel did not give narrative responses, however they did comment that they felt much better when they were warm, and that being cold affected their breathing. Mabel described her usual peak flow score²⁸ “And I mean my best peak flow is only about I’ve been, if I get two hundred I yahoo!”. When I asked Mabel if she found that her peak flow was better when she was warm, she was able to quantify the impact of feeling cold on her COPD by comparing her peak flow scores; “Different when I’m cold. I can’t get it I’ll be lucky if I get a hundred and sixty hahaha! (Ha ok) When I’m cold. You know but when I’m warm, I’m ok, I feel good.”.

Cost

While the cost of electricity was discussed in other narratives and is addressed as a separate theme below, some participants commented on the cost of heating within their heating narratives. This was always discussed within evaluative clauses.

Howard described how he and Kahu felt that the unflued gas heater was inexpensive. Howard gave a very long and detailed narrative about how he would like to have a heat pump installed in the house, as his friends have, but that the cost of having it installed is prohibitive. By placing this embedded story in his narrative, Howard is able to demonstrate that their problems could be remedied through the installation of a more efficient heating system. This story justifies their claims, and evokes empathy. During this story, Howard says six times that they couldn’t afford to have a heat pump installed. This repetition is further emphasised through the use of expletives, performative sentences, and intonation.

Catherine raised the cost of electricity in regards to the importance of heating “well I ‘spose it is important but there again with the rising cost of electricity...”. Elizabeth’s commented on the cost of electricity throughout her interview, and like Catherine raised this in response to question 4, however Elizabeth gave a much more personal evaluation “But

²⁸ The normal Peak Expiratory Flow Rate for a 60 year old woman who is 160 cm tall is 400 l/min.
http://www.asthmanz.co.nz/files/WordDocs/Resources/de_hamel_landscape.doc

unfortunately power's so expensive that, pfhh! It will just take all your money away hahahah! ... And of course I'm only on just enough to barely live as it is [Sigh]".

During Ripeka's interview, I prompted from question 5, asking what it was that made it difficult to heat her home, and asked if she worried about the cost. She replied "I worry about the cost alright, but I don't care I just don't want to be cold".

Summary

In this section I have described six points arising from the participants' heating narratives. Discussing the importance of heating for their grandchildren, and for older or infirm people, the participants have identified these three groups as being particularly vulnerable to cold. Five of the participants indicated that being cold has a negative impact on their illness. Four of the participants described fairly elaborate heating routines, and almost all of the participants suggested methods for coping with being cold. The cost of heating was raised by four of the participants.

The participants' heating narratives support what is already known about the importance of heating, and contribute to the growing awareness of the impact of inadequate heating and fuel poverty on older people and those who have chronic illnesses.

Cost of Electricity Narratives

As discussed in the previous section, many of the participants raised the cost of electricity during their heating narratives. However, the cost of electricity was also the focus point of many of the narratives, and therefore I have chosen to analyse these separately.

The summary table showing common elements of discussion in cost of electricity narratives is shown below.

Table 8: Common Elements of Cost of Electricity Narratives

	Saving electricity	Inadequate income	Disconnection
Catherine	X		
Wiki and Pete		X	
Kahu and Howard	X	X	X
Ripeka		X	X
Mabel	X		X
Kiri	X		

Saving electricity

Most of the participants talked about methods of saving electricity throughout their interviews. Four of the participants talked about saving electricity in their cost of electricity narratives.

The cost of electricity is an over-arching problem for Kahu and Howard, and their narratives reflected this. Kahu and Howard's prepayment meter for their electricity has probably focused their attention on their ability to conserve electricity more keenly than the other participants, as Kahu noted "because we're on PayGo you see, (Yep) and we have to watch what we use, (Oh right) how we use our power". Howard evaluated that by switching off everything at the wall, aside from Kahu's medical equipment "we still save".

In addition to switching off appliances at the wall, Mabel said she had "thrown my mod-cons out. I threw my toaster out, I threw my um, big jug out. My sandwich maker. I've thrown them all out in the rubbish, because they used up power". She also described

taking “the taps off the hot off the bath”, evaluating “which is naughty, but because I was concerned, (Yep) bout the electricity. (Yep) I want it for my machine”. Other participants also talked about needing electricity for their medical equipment; I will return to this point when discussing disconnection below.

Catherine’s cost of electricity narrative was centred around her methods of saving electricity to reduce her electricity expenses. In particular she described how she saves on using hot water from her hot water cylinder, by boiling the jug to do the dishes, and as a further measure to reduce the electricity consumption of her hot water cylinder she explained “I switch it on at night and turn it off again in the morning... And of course that means it is still going for eight or nine hours”.

Like Catherine, Kiri also structured her cost of electricity narratives around saving electricity. Kiri talked about restricting the use of heating to save electricity “and to make do and I said “put another jersey on, and if you’re sitting there, put a blanket over your knees and I’ll switch the heater off” and she [daughter] said “what?!” (Hhh!) and I said “well we’ll just get the room warm and then I’ll switch it off”.” Kiri uses the methods of coping with cold the participants had described in their heating narratives because she is limiting heating used due to the high cost. Kiri described constantly making sure that she and her daughter had switched off lights and heaters in the rooms that were not being used, evaluating “so I’m like a, you know um a hawk over the watch”, evoking a feeling of pressure to be vigilant about electricity conservation.

Ripeka gave a narrative that was difficult to classify as it spanned cost of electricity, heating and vouchers, however she described in this narrative that in addition to saving electricity, she tries to “conserve” warmth. Ripeka explained how the orientation of her house to the sun dictated her routine: “In the morning, the sun hits in there, (Yep) the bathroom, and in the laundry. It’s best for me to have a shower or bath first thing in the morning because the heat’s there. (Yeah) In there, in the bathroom.” When I asked Ripeka if that was why she chooses to have a shower in the morning she said “Yeah yeah, sometimes, I’ve gotta have it before eleven o’clock (yep) cos that’s when the warmth starts to disappear. (Yeah) But hey, I’ve got a chair and everything in there...I close the door, so that I keep the warmth in there. Yeah, everything in general, all the warmth I normally conserve is, through the sun.”.

Inadequate income

While low income was not a criterion for admission into the pilot study, the community coordinators at the marae selected participants who they felt would benefit the most from the electricity vouchers. Several of the participants spoke about the need to budget for electricity and other expenses, a point which I will return to when discussing narratives about electricity vouchers. Mabel, Kiri, and Kahu and Howard described electricity as “essential”, and this feeling was generally reflected by the other participants even if it was not explicitly stated.

When I felt that it was appropriate, I asked participants if they would give up other things to keep electricity or heating on in the winter, and most of the participants said that they sometimes did. Howard said they tried to mitigate this by doing the grocery shopping once a fortnight, which allowed them to “build up” the following week, spending more on electricity. When I asked in clarification if Howard considered heat to be one of the more important things he evaluated “One of the more important things. (Ok) You know I put it up there with food at the moment.”, and then resolved “Well I hope not, not this winter.”. Mabel explained that she would use powdered milk, and make her own bread to cut back on food costs in the winter. She evaluated “I don’t think there’s many people that can live on what I’ve got!”.

When I asked her if she worried about the cost of electricity she said “I worry about the cost alright, but I don’t care I just don’t want to be cold”. Ripeka said that she was so affected by the cold that she had decided to “burn” her heater regardless of the cost. However, she later said “Oh it does worry me yeah, (Yep) because I can’t pay the bills!”. Later I asked Ripeka if she knew about any benefits that she could get to help with her heating costs. The narrative that followed discussed the disability allowance, and the unrealistic expectation by Work and Income that the \$11.36 that Ripeka receives per week will cover the expenses it is supposed to. Ripeka’s evaluation that she “shouldn’t have bothered!” because this was “pathetic” emphasises how unrealistic this is. Viewed in conjunction with her resolution from her initial cost of electricity narrative “if I can’t pay for my power bill, like it might be \$70 extra that I owe, yeah I just take it to WINZ”, it seems obvious that the increased cost of heating that Ripeka faces due to her disability is unlikely to be met by the disability allowance that she receives. Ripeka’s narrative is shown below.

Table 9: Ripeka - Cost of Electricity Narrative

Orientation	Complicating action	Evaluation	Resolution	Coda
Prompting from Q8 about benefits for heating.	<p>1 R: "I get a disability allowance of \$11" I: "And is that the one that covers your power bill...Covers the extra heating."</p> <p>R: "It comes to \$11 (Yep) All the extras, come to \$11, and that's even for my lawn-mower man. (Oh really? Ok) He's in there as well...My petrol, (Yep) to the doctors and anywhere, you know like to the clinics and anything. (Yep) Um, cos I take my mileage. (Yeah) My visits to the hospital and to the chemist and all that, (Yep) that's included in there and any time I may have to go to hospital... yeah that's all included in this \$11.36."</p> <p>3 R: "No. Yes I know it does, but oh! Look I've put in for all these things and that's all you're gonna give me? \$11, that's all I qualify?"</p> <p>5 R: "But I took it. (Yep) And, um, because my benefit, I get \$204. (Yep) A week. (Mm) How can you live on that?... Plus, (Yep) the \$11 extra."</p>	<p>2 R: "Yeah it's pathetic!... That's why I went oh I shouldn't have bothered! (Yeah!) Why did I bother! (Yep) And she said to me every little bit helps, and I went hhh! [Looks skywards]"</p> <p>4 R: "...\$11. (Yep) Extra money. Um, yeah and it's not really worth it."</p>	<p>6 R: "It's pathetic. (Mm) I mean, that's a day and a half's wages somewhere. (Yep) You know, maybe two days wages for someone somewhere but, no that has to be mine for a whole week... Pathetic! (Heh!) It's, I want to you know, I wanna say to them why bother? (Yeah) Why bother?"</p>	<p>7 R: "Mm"</p>

Pete explained how heating their home was not difficult when they used wood, "but if it was electricity it would be up in the hundreds and hundreds". Wiki and Pete told me that they had found things difficult when Pete was unable to work because of an injury, and that by the time he had received financial assistance from the Accident Compensation Corporation, they had used their savings. Wiki evaluated "it took a whole year to wait for something, and you know we were practically on our bums cos we'd spent just about everything, you know using what you've saved, you know tried to save." Later Wiki initiated a narrative enacting a typical conversation between her and Pete, about having to "manage". While not strictly about the cost of electricity, Wiki's story shows the extra strain that has been placed upon Wiki and Pete by their financial constraints limiting the heating that they can afford. Wiki had also spoken during the interview about how they managed by doing away with luxuries, describing it as "day-to-day living". She talked about using their "Santa Clause savings". These comments show that the stresses of Wiki's coping

with severe illness, and Pete's being her primary caregiver, have been hampered further by the cost of heating.

Elizabeth discussed the cost of electricity however did not give a fully formed narrative about this. I elected not to prompt her further as she had been visibly upset when talking about how she felt her income was inadequate. She explained that her benefit had not increased substantially since she had moved and she now had to cover the entire bills for phone and electricity, as opposed to sharing the costs when she had been living with her family. She also commented that on top of this she was now further from the doctor and the pharmacy and had increased travel expenses that she felt had not been taken into account by Work and Income.

Disconnection

Mabel, Ripeka, and Kahu and Howard discussed disconnection within their cost of electricity narratives. Kiri had also talked about disconnection during her voucher narrative. Most of the participants explained that they needed electricity for their nebuliser and/or oxygen machine. Participants generally described a fear of being disconnected, or not being able to use their machines. This was obviously increased by the publicity around the death of Mrs Folole Muliaga in the winter of 2007, after her electricity was disconnected despite the contractor who disconnected the power seeing her using an oxygen machine. Participants spontaneously made references to this particular incident, and to the resulting public advice that people who had medical requirements for electricity should have their doctors advise their electricity providers.

While not in her cost of electricity narrative, Kiri did discuss "that incident that happened with that lady", resolving in her narrative about electricity vouchers that she had spoken with her electricity provider saying to them "because I'm COPD... I'll provide you with a letter from my doctor... please don't cut us off". Ripeka talked about the need to "stop them" from "cutting my power off", saying that her doctor had written to her electricity provider explaining her condition, and that she uses a nebuliser, "and that under no circumstances must my power be turned off". Ripeka explained that "they take \$30 a week out of my benefit", resolving "That's just to stop them from ever cutting my power off".

When I asked Mabel whether she worried about the cost of electricity her first response was “Yes it does. Because, without that electricity I can’t use my machine”. She evaluated that without “the power for my nebuliser, I can panic hm!”. Mabel later described a particular incident where they had shifted into a new house where the previous tenants had not paid their electricity account, and her and her husband had had to argue forcefully with their electricity provider to have the electricity connected despite them having paid up fully on their own account. Mabel suggested a solution to this problem in her resolution “So that’s when I says “well why don’t you people put PayGo in places like this””, however she did say when I asked about this that she did not believe that prepaid electricity meters would be suitable for older people as getting to the post office to buy more prepaid cards may be difficult for those who are less mobile.

Kahu and Howard, using a prepayment meter, described self-disconnecting as a method of rationing the electricity remaining before they would be able to afford more. Howard described this in a detailed complicating action sequence:

“I’ve done it three times now... turning it off on a Tuesday morning... because I’ve only had say four or five dollars in there, (Yep) and I turn it on at four o’clock... do a barbeque for the kids when I come home, so they got dinner, (Yep) and then turn it on at night... we had a dollar fifty left in the morning, it would last until nine o’clock and I’d go down and buy some.”

He explained that if the credit runs out, the electricity is not disconnected between 4pm and 8am. Howard evaluated after this “But ah no one likes to live like that! (Yeah) Every week. Yeah.”. Later in the interview, Howard described how Kahu had once been admitted to hospital because they had run out of electricity on a Monday, and get paid on a Wednesday, meaning she would have been without her nebuliser for that time. He had then been told by Work and Income that he should have come to get an emergency loan, which he had not realised was available. He said “my case manager told me off she said “don’t feel ashamed, you come and get \$20”.” and then evaluated “I was quite amazed when I got told off” unsurprisingly, Howard was confused that he was reprimanded for not accessing help he was unaware of. I asked Howard that now that he knew the emergency loan was available, would he use that instead of turning off his power, and he resolved “I’ll stick to turning it off. Because you’ve gotta still pay that back... you don’t have to if I turn it off.”. In some ways having the prepayment meter has given Howard a method of controlling their electricity usage, and ensuring that they remain out of debt, and in this

sense he has agency to control their situation. However, this method means that on the days where he has self-disconnected, he and Kahu will be at home on a winter's day with no electricity.

Summary

In this section I have discussed three common elements arising from the participants' cost of electricity narratives. Participants spoke about saving electricity to mitigate their electricity expenses. They also discussed how inadequate incomes limited their ability to afford enough electricity to adequately heat their homes, and some participants described the trade-offs they would make with other necessities such as food. Participants also spoke about disconnection, and these participants often cited their need for electricity to use their nebulisers and/or oxygen machines. Some participants spontaneously raised the well-publicised incident where Mrs Muliaga had died after the electricity to her home was disconnected, and this had obviously caused concern about their own situation.

Don and George did not discuss the cost of electricity narratively, and both Don and George said that they did not worry about the cost of electricity during the interview. While the cost of electricity clearly concerned Elizabeth a great deal, she did not give a fully formed narrative about this. Comments that she made in regards to electricity were often incorporated into her other narratives.

The participants' cost of electricity narratives raise complex issues such as the right to electricity, and electricity conservation, which I will return to in the discussion. These narratives also raise concerns about the inability of the participants to afford adequate heating, in part due to inadequate incomes, even when some of this group access disability allowances that are intended to cover heating expenses.

Fuel Poverty Narratives

Fuel poverty narratives were initiated in response to Question 9: Some people use the phrase “fuel poverty” or “fuel insecurity” to describe the situation that someone can’t afford to heat their home. What do you think about those descriptions?

Where appropriate, participants were asked Question 9a: Do you think that this is a problem among people that you know?

The summary table showing common elements of discussion in fuel poverty narratives is shown below:

Table 10: Common Elements of Fuel Poverty Narratives

	“fuel poverty” as a description	Fuel poverty is here too	Who is vulnerable?	Budgeting
Don		X	X	X
Catherine			X	X
Wiki and Pete	X			
Kahu and Howard	X			
Ripeka	X		X	
Mabel				X
Elizabeth		X		
Kiri	X		X	
George		X		

“Fuel poverty” as a description

Participants reacted in varied ways to Question 9, some of them dismissing the question outright, others suggesting alternative descriptions that could be used, or methods of saving electricity that might mitigate the problem. Although early in the data collection phase, I had considered removing this question from the interview schedule, the responses of the participants to this question were interesting, and often provoked comments on the current social situation in their community.

When I asked Don about what he thought about the description 'fuel poverty' he reacted quite strongly, saying "Oh I haven't ever got into that problem. (Yep) I wouldn't have a clue really. (Yeah?) I think there's people that have had that problem, that they're much better to ask. (Yep and-) I haven't had that problem.". I was surprised by Don's reaction, I felt that I had carefully framed my question as being about what he thought 'about that description' of 'fuel poverty, when people can't afford to heat their home'. I had not considered that as Don felt he had never 'got into that problem', he would feel that he could not comment about the description of fuel poverty.

Howard commented that he felt that there wouldn't be many people that would not be able to afford electricity, noting that the Work and Income emergency payment was "at hand" if it was necessary. However, he then commented that "if you're the only breadwinner in the house... if you've got kids going to college... you know your wife tries and does her best with her budgeting and all of that... you will run out... it may only happen once a year", describing a situation of a family who would very likely be classified as being in fuel poverty. Perhaps my simplifying the definition of fuel poverty I explained to him, by not including the criteria of spending more than 10% of income on household energy, resulted in his discussing the situation where "you will run out", rather than the difficulty of having to spend a proportionately larger sum to achieve adequate indoor temperatures. Howard again described their method of switching off their power on Tuesday during the day if they did not have enough credit in the prepayment meter to get them through to their Wednesday payday. Howard resolved "that is quite a, pretty harsh question", and when I asked if he thought there might be a better description he said "Well, hardship is better than poverty".

Kiri commented that she had "never heard that, um phrase said before". Like Howard, Kiri also suggested an alternative "Um, we say for Māori, (Yep) pohara for being poor".

Ripeka made the point that it was "a good idea" to have a defined name for fuel poverty, because she felt it would be easier to "claim poverty" to Work and Income that she required extra money for heating. She related it to the distribution of foodbank grants in New Zealand.

When I asked Wiki what she thought about the use of the phrase fuel poverty, saying that when I first heard the term I thought that it sounded a bit harsh, she replied "No I mean it's

because we can't afford it you know?... I'm not trying to hide the fact or anything, but yeah".

Catherine commented that she disagrees with the use of the term fuel poverty because she feels that shouldn't be separated from poverty in general. While this is a valid point, the use of the term fuel poverty is useful in that the definition takes into account the physicality of the house, not just the available budget for electricity expenditure.

Fuel poverty is here too

When I asked Ripeka if fuel poverty was a problem with people that she knew she replied "Oh I know a few people that have a problem with the heat... yeah with lack of heating". When I asked Kiri if she thought that fuel poverty was a problem among people that she knew, Kiri replied "Yep. Big problem. Yep."

I described the term 'fuel poverty' to Elizabeth and asked her if she felt that that fuel poverty was a problem for people that she knew as well, here in New Zealand. She agreed, saying "Yeah, well I know it's getting worse and worse. (Mmhm) People just can't afford it." She linked fuel poverty to the form of heating being used, and to the cost of different types of heating.

When I introduced fuel poverty as a phrase used overseas to describe the situation where somebody could not afford to heat their house to a comfortable temperature, George responded with "Well there's a lot of that in New Zealand too isn't there". When I asked if not being able to afford to pay for heating was a problem with people that George knew he gave the following narrative:

Table 11: George – Fuel Poverty Narrative

Orientation	Complicating action	Evaluation	Resolution
Prompting from Q9 and 9a	601 G: "I haven't got any personal friends that I've heard about, (Yep) that do have those problems but, I have heard of people with those problems you know."	606 D: "And not that we could do anything, cos we haven't got a hell of a lot of money to go, and give it to them to, you know, pay their bill for heating or anything like that you know."	610 G: "Yeah, yeah there's and, there would be a lot of that going around."

George highlights in his evaluation that he and his wife would not be in a position to help, although he has previously said that the cost of electricity is not a problem for them personally. This is perhaps offset by his wife's prolific baking, which she also sells, serving a double purpose of providing an extra income, and increasing the temperature of the living area of their home. George described in a second narrative that his suburb was warmer than "over there" in the Hutt Valley, which he explained was "on account of the hills". He finished with a coda "Stupid little things like that you know". George has used a very similar coda before in this interview, shown in his heating narratives, reflecting his narrative style. He frequently uses these qualifying statements which serve to humble his narrative, so that he does not appear all-knowing, but modestly provides insightful commentary on the situation in his family and the wider community.

Who is vulnerable?

When I asked Don whether he thought fuel poverty was a problem with people that he knew, he said that "some people, looks like they're getting into the aged group... I spose they ah, just can't afford it... some people find it very hard, very hard... Like in their eighties and that, I reckon they do". Don felt that fuel poverty was a problem that older people were more likely to experience.

After Kiri suggested an alternative to the phrase fuel poverty, pohara, she then went on to explain that she felt that this was a problem for "bigger families rather than just my daughter and I". Later in the interview I asked what she would suggest to help people with fuel poverty, she made the comment that heating is "one of the necessities with a disability, that they should have warmth in their house", suggesting that those with disability may also be at particular risk of the effects of fuel poverty. Similarly, Ripeka identified fuel poverty as a problem that would have a greater impact on people with COPD, giving a long narrative explaining the effect of being cold on her COPD, which she had previously discussed.

Catherine's fuel poverty narrative was centred around budgeting, however when I asked if she thought it was a problem for some people she said "I think for some it is, it actually is". When I prompted about who this would be a problem for, she said "parents with children", however she added "but then children move about more quickly and keep warm, but if

they're on a set wage or benefits, then it is a matter of balancing out what you can afford". This comment serves as a good introduction to the participants' views about budgeting to offset the problem of fuel poverty.

Budgeting

In addition to Catherine's narrative, budgeting was a recurrent theme throughout many of the participants' narratives. This was particularly strong when participants' discussed younger people, with the most common view that if younger people were having difficulty with fuel poverty then they had not budgeted as they should have.

Catherine gave an example of a friend of hers who told her that "they couldn't afford to have the power on apart from the cooking, and they just had to get used to cold showers". Catherine evaluated "I couldn't believe it, because you see you need to balance that all out", and her resolution, as with her other narratives, discussed methods of saving electricity, including washing clothes in cold water.

Don pointed out that older people may also have trouble budgeting, saying "Mind you some of them pakas²⁹ only spend on what they not 'sposed to spend! (Mmhm!) Spend on wrong items such as whatever!... at the end of the day ooh, you haven't got enough to do something else like get food". Don explained that this could be a problem especially "if you are a alcoholic or drinker... or a smoker", and resolved that "loneliness" could make this more difficult, and that "they've gotta find some sort of thing for themselves". He then praised the COPD support group run by Tu Kotahi Māori Asthma Trust that he has attended regularly.

When I asked Mabel if she thought that fuel poverty was a problem in New Zealand, she said "it depends on the size of house, and what their, oh their entertainment their, their social life", bringing two contributing factors to fuel poverty that had been raised by other participants together. She gave a long evaluation explaining that without budget, "those problems" would arise. Mabel resolved that "what they really needing for the older people... is budgeters... so that the money is being spent wisely". Where fuel poverty and budgeting was commonly placed within the complicating actions of the participants'

²⁹ 'paka' is a Māori term equivalent to 'bugger'

narratives, their resolution clauses suggested budgeting could be part of the solution to address fuel poverty.

Summary

The participants gave mixed reactions to the description 'fuel poverty', however they agreed that this is a problem that their own community, and New Zealand shares with other countries.

Through their fuel poverty narratives, the participants identified the same groups that they had identified as more likely to need more heating, as being likely to suffer from fuel poverty, including older people, those with disabilities, and low income families with young children. Some of the participants raised poor budgeting as a problem leading to fuel poverty, or suggested that effective budgeting would solve, or at least mitigate fuel poverty.

The participants' fuel poverty narratives give social context to the problem in New Zealand, and together with their other narratives, suggest points of intervention, and some potential solutions to help in addressing fuel poverty.

Voucher Narratives

Voucher narratives were usually given in response to the following questions from the interview schedule:

- Q10 I'd like to talk with you a little now about electricity vouchers. In what ways have things been different in your home, if they have been different, while you have known you were getting the electricity voucher?
- Q11 Some people think that vouchers are a good way of helping the 'fuel poverty' problem, for example in the UK, the government gives vouchers in winter to those who are aged over 60 for electricity. In New Zealand, people can go to Work and Income to get a loan if their power gets disconnected. What do you think is the most acceptable way of helping 'fuel poverty'?

The summary table showing common elements of discussion in Voucher narratives is shown below.

Table 12: Common Elements of Voucher Narratives

	"Vouchers are great"	Voucher means warm home	How to benefit most	Who should get vouchers	Direct-credit electricity vouchers
Don	X			X	
Catherine	X		X		X
Wiki and Pete	X	X			
Kahu and Howard	X		X	X	
Ripeka	X	X			X
Mabel	X		X	X	X
Elizabeth	X	X		X	
Kiri	X	-			X
George	X		X	X	X

“Vouchers are great”

The participants all spoke positively of the electricity voucher that they received. It was evident that the vouchers had made a large impact on many of the participants' lives and I was interested to note the language that the participants used to describe the voucher, which struck me as being on the other end of the scale to electricity costs which appeared to be a necessary evil for many of the participants. Some of the participants' responses are shown below:

- Ripeka: “So, oh no it was great big help.”
- Mabel: “I says “oh some angel’s given me some!” ”
- Elizabeth: “Oh! I was kept much warmer... It was really good. (Yep) It was really handy.”
- Kiri: “it’s just like Christmas all at once! And really excited.”
- Howard: “You know I think ‘gosh I wish gifts like this would come all the time’... that really helped us.”
- Pete: “And that grant, was a Godsend this year”
- Wiki: “to us it’s Christmas when we can get something to help us along as well. And that’s no lie... to me it’s a saviour, it just helps to go with your [income], yeah.”
- Don: “I think it’s a bonus to get something like that.”

Vouchers mean a warm home

Three of the participants talked about how the voucher meant that they could have a warm home. While this study cannot show quantitatively whether there was an increase in the indoor temperature of the house, these participants felt that the voucher had been the difference between being warm or suffering from the cold last winter.

As discussed earlier, Wiki and Pete had found themselves in financial difficulties in the year leading up to the study. Pete described this again through his voucher narrative,

resolving “And the voucher allowed us to, have a, a warm house so that (Yep) we could pay the electricity, with that money and, what we weren’t paying we bought the wood.” Pete and Wiki’s evaluations were highly emotive, in addition to the evaluations shown above, Pete also said “and that grant has pulled us through this” and “it helped out a helluva lot.”. Later in the interview Pete returned to this, saying “That’s what I was saying, that electricity voucher *saved* us because we could afford the wood.”, and Wiki agreed.

Ripeka had discussed how she felt heating was so important that she would “burn my heater no matter what”. She told me that the voucher had “put my bill way down and I was in credit! And I’ve never been in credit for aaages!”. While Ripeka said that the voucher allowed her to have a warm home, she said, “I must have had about, three weeks of the heater burning, (Mmhm.) and then it went up again”. Ripeka felt that the voucher had made “no difference” because “it was like it came and went”. Ripeka’s narrative indicates that in order to make a substantial difference, her inefficient heating, and inadequate insulation also requires attention. Although Don did not indicate that he had felt warmer with the voucher, he commented similarly to Ripeka that “You know Christmas only comes once a year! (Yeah) Like anything else it just comes, and it comes (Yep) and it’s gone!”.

Similarly, Kiri told me how she had felt when the voucher had gone into her electricity account; “I said “gee my account is in credit!”... And it really made me feel *really* good”. While Kiri did not state that the voucher had meant that she could afford heating, she had told me that regardless of the cost she had “never not had my room heated”, and she had explained that at the end of each winter they usually owe \$600 - \$700 on their electricity bill. However, the electricity voucher had relieved them of this burden.

Elizabeth described what the voucher had done for her; “Oh! I was kept much warmer because I was allowed to run the heater longer. (Right) And when I was cold I was able to have it on but, when you know, it came time that I had to go back to normal, and it was cutting down you know, I only had it on when I really had to”.

How to benefit most

Other participants talked about how to benefit most from the electricity voucher, and this did not involve additional heating.

George's narratives about vouchers presented the most common responses within the group to the use of vouchers, who they could most benefit and how they should be implemented. George commented that when they got the electricity voucher "we didn't ah, how would you put it, jump for joy and do extras or anything like that, we just kept on natural you know." George explains in his evaluation that by doing "extras", you would not "get any benefit out of it will you". This indicates that for George, the benefit is taken as increased disposable income instead of heat. However, this may have been masked by the installation of the heat pump, which clearly provides more efficient heating than they were using previously. But certainly he implies that it would be wasteful somehow to use extra heating and that in his understanding, the point or benefit of the voucher is that they are not required to pay for the electricity that they are using, rather than to achieve an increased indoor temperature.

Mabel spoke about the cost of living, and how she has a budgeter that handles her accounts for her. She is given an allowance and is brought food parcels. She finished by saying "But yep, it helps to know it's there, that I don't have to worry about it". After prompting about this it emerged that Mabel has not 'spent' any of the voucher, she has decided to keep her electricity account in credit, so that if anything happened she would have the \$500 as a buffer. It also became clear at this point that there had been some misunderstanding with the voucher, because it had moved in and out of Mabel's account. I reassured her that the voucher should have stayed in there for her to use, and that the fact that it had been taken in and out of her account was unexpected.

Catherine told me that she found that the voucher meant that she had credit in her account, "so it really enabled me to purchase something else, because I had made a saving on the electricity". I clarified that she had not done anything different, like use extra heating and she resolved "I probably looked and thought, 'well I can afford to buy a new jacket' or something like that" ". Conversely, later in the interview when Catherine agreed that directly crediting electricity accounts was the best method of giving electricity vouchers she said "I think that is a better idea than giving a voucher worth X. They might still do without electricity, and then they're still cold".

Like Catherine, Kahu and Howard talked about how the voucher had made a large difference to their discretionary spending. Howard said "You know we felt for a long time eh, we've had enough, never run out of anything, (Yep) foodwise.". He also talked about how he had "stretched" the electricity afforded by the voucher, "Cos I knew we were going

to have to be buying it again.” Later in the interview Howard told me “You know, it’s amazing we’ve never had so much money left on a weekend. (Mmhm) You know and to carry on through the week.” Howard talked about how they were able to buy “shoes and what-not” for his grandchildren, because of the money they had saved through the voucher.

Who needs electricity vouchers?

Earlier in their interviews, as displayed in their heating narratives, participants had raised concerns around the need for older people in particular to have heating, although children and those with disabilities were also considered to be especially susceptible to cold conditions by the participants. Where being older or disabled was problematic, the use of vouchers was described as a possible solution to overcome this.

George also views the fuel poverty problem as something that is an issue for older people, and that younger people have an income that is adequate to overcome fuel poverty if allocated correctly. George’s narrative illustrates older people as the ‘deserving poor’, who would be ‘worthy’ of receiving electricity vouchers. George concludes: “And the more they done of that the better off, (Right) people would be, or the country maybe. And she might get back in this year, Labour, heheheh!”. George ends his narrative with an astute political comment, both in the wider sense that the country might be ‘better off’ with older people in a position to afford heating and in the current sense that heating assistance could form what would likely be a well-received election policy for the current Labour-led government.

Kiri also suggested that vouchers be used not just for older people, “but those who are on a benefit, mainly for all those who have COPD”. She justified this by giving a vivid description of how she prefers to go to work on a cold day because it is colder at home. Kiri commented later “But with that idea look, oh I tell you what, (Yep) you’ll make anybody, person with COPD happy. (Yep. Cool) Or any old person that’s you know, (Yep) suffering with other disabilities”, reiterating that she believes financial help for heating is especially important for people with COPD or other disabilities.

Similarly, Elizabeth felt that those who have a “permanent” disability should also be eligible for a voucher, if such a programme was implemented. Elizabeth reacted strongly to my

comment that in the United Kingdom the Winter Fuel grant was given to those over sixty. As described, Elizabeth is chronically ill, but as she is under sixty would not qualify for assistance such as the Winter Fuel grant. She pointed out that if you had a permanent disability you should be treated in the same way because she feels that superannuitants are both on a higher income than her, and also benefiting from discounts available to them.

At the end of the interview, I asked Elizabeth if there was anything else that she would like to talk about, and she gave a short narrative explaining that “there’s just a lot of houses out there that are wet, you know concrete houses, kids get wet beds, my daughter’s kids they used to be in a wet bed”. Elizabeth clarified that she felt that children in single-parent families in particular, are at risk of cold and may benefit from electricity vouchers.

Direct-credit electricity vouchers

It is also worth commenting that the participants overwhelmingly supported the electricity vouchers being directly credited to their accounts. In addition to this being easier for the participants, several of the participants felt that in doing this, the money would be directed towards electricity, and not spent “down the pub” as George said it might be.

Later in the interview, when Mabel was talking about how she believed that older people genuinely had difficulty paying for power, I asked Mabel if she felt that a voucher would be a good way of helping. She replied “Yes if they don’t get it in their hand”. Mabel had already told me that she hates accounts, and has a budgeter through a non-government social agency who handles her accounts for her. She also raised the use of the SuperGold card³⁰ to distribute funds to older people.

Like the others, Don felt that vouchers would be “good for the older people. The ones that are really, they say ‘oh Jesus we don’t have to worry about power this week’ or whatever”, however he thought that the younger people might “waste it, ah instead of using it for

³⁰ The SuperGold Card is a discounts and concessions card issued free to all eligible seniors (over 65) and veterans in New Zealand. <http://www.supergold.govt.nz>

whatever they're 'sposed to use it for". Don resolved his narrative with the comment that young people will "just ah, expect it or whatever, (Mmhm) "oh I hope they hurry up and give us some more" ", whereas older people "they'll just get it and be happy with it". Don likened the vouchers to the rates rebates scheme, commenting about how the rates rebate was useful, providing relief for those on lower incomes. He said after a non-narrative exchange about the rates rebates scheme "It's a big help towards your, especially when you're on your own, when I was on me own."

When I asked Ripeka how she would prefer to access funds for heating costs, she said "the easiest way to get at it would be my option". She said she thought that vouchers paid directly into the electricity account was preferable, but added that you should have to provide proof, that the power bill was in your name, saying: "... you know that gets slapped on straight away as well, (Yep.) plus you have to have the proof. (Yep.) That it is your power bill, (Yep.) that it's under your name, it's the same with WINZ, you have to have proof."

Catherine gave a narrative justifying her preference for having the voucher directly credited to her electricity account, "Because I was given two vouchers, and not being used to them, I looked at them, and then popped them in my drawer or my handbag or something. I found them years later, and one shop had gone out of existence and I hadn't used it... Not only once this happened, but twice".

Summary

The participants all supported the idea of electricity vouchers, and felt that directly crediting these to their electricity accounts was acceptable, easy, and would increase the likelihood that the voucher would be used appropriately.

There was some disagreement between the participants' narratives about how best to benefit from the electricity vouchers. While four of the participants said that the vouchers meant that they could have a warm home, a further four participants felt that it would be best not to use electricity over and above what they would normally do, and therefore had increased discretionary spending as the main benefit from the vouchers.

The participants felt that electricity vouchers would be best directed towards older people, although some participants raised COPD sufferers / people with disabilities, and low income families as other groups that could benefit from electricity vouchers.

Chapter Five

Discussion

Agent: a person or thing that exerts power or produces an effect

Choice: a range from which to choose

The New Zealand Oxford Dictionary (2005)

Orientation

Agency and choice are common threads that run through many of the narratives outlined in Chapter Four. Feeling in control of one's situation, both in the workplace and at home, is important for the maintenance of health and wellbeing (Shenassa et al., 2007). This chapter will discuss the findings from Chapter Four, and suggest recommendations to support improved agency and the reduction of fuel poverty among low income older people with COPD. The implications of the study will be discussed, and suggestions for future research made.

Improving Relationships: Empowering State House Tenants

There were differences in the level of perceived control of housing situation between owner-occupiers and renters in this study. Participants identified the physical structure of their homes as an area where improvement was necessary, in order to make their homes warmer and healthier. Owner-occupiers tended to exhibit greater levels of agency than tenants, and framed improvements to their homes that they had been able to make positively, whereas tenants talked about how their landlord (mostly HNZA) had made improvements that were seen as sub-standard, cheap, or quick-fix measures. While tenants often said that the improvements had been beneficial, this was usually countered with a comment about how the landlord had not done something else the tenant desired,

or that the house was still deficient in some way. This reinforced their perceived lack of control.

HNZC was largely viewed in a negative light by the participants, reinforced by the positioning of comments in complicating action clauses, negative evaluation clauses, and in some cases codas. This is unfortunate given that HNZC has taken steps to improve the thermal efficiency of some of the homes of the participants. In particular, some participants held the view that insulation installed by HNZC, such as underfloor moisture stop insulation, was inadequate. HNZC could be more proactive in informing their tenants of the energy efficiency improvements made to their homes, either when improvements are made, or when tenants are moving in. This would help to improve the relationship between HNZC and state house tenants, by allaying tenants' concerns about the quality and efficacy of insulation installed.

Owner-occupiers provided differing narrative accounts to tenants, and tended to have a better understanding of the rationale for using certain forms of insulation, most likely because tenants had not been informed or involved in the decision-making process. If information was provided to tenants about the insulation being installed, and the benefits of this, the relationship between the landlord and tenant could be improved. Further, if existing tenants could be involved in the decision-making process in some way, for example, being provided with information about the pros and cons of using certain forms of insulation, and being asked for their views on what they felt would be most beneficial, it is likely that their perceived level of control over their situation would be greatly improved. Even if their choices were not able to be incorporated, feeling that their lived experience was being valued as useful knowledge, rather than being cast aside in favour of expert knowledge held by the landlord could improve relationships, and potentially the wellbeing of tenants.

Improving Efficiency: State Housing Stock

New Zealand's housing stock needs to be improved. Our current housing stock is not protecting New Zealanders from fuel poverty (Lloyd, 2006), and is also thought to contribute to excess winter mortality (Davie et al., 2007). Poor quality housing contributes to a range of health problems, and savings can be made in health and other sectors by improving housing conditions. Climate change also reinforces this as energy inefficient housing costs more to heat in terms of both energy and carbon consumption.

Since this study, HNZC has committed to further upgrading its housing stock³¹. In addition to insulation improvements and the installation of efficient heating in some houses, perhaps the provision of curtains in state houses should be revisited. Some participants in this study mentioned having good curtains, in recognition that this improves the warmth of the home and the amount of heating required to achieve adequate indoor temperatures. Curtain banking, or including a small fee to be paid with rent, for example a small sum per room per week for curtains, are options that might significantly improve thermal efficiency, and further empower tenants. In addition it seems illogical for government to use other measures to reduce fuel poverty such as draft-stopping, which is already used in state homes to improve thermal efficiency, or disability allowances or other allowances through Work and Income, if the housing that many of these people are living in have inadequate curtains, which seriously influences the thermal envelope of the house. Further, if the government is to consider the use of electricity vouchers, the biggest gains will be made from those in energy efficient homes, which adds impetus to the argument for providing curtains in state homes.

Improving Private Rental Stock: Home Energy Rating Scheme

While the majority of renters in this study were state housing tenants, the majority of tenants nationwide are in the private rental market. Landlords were generally positioned by the participants of this study as a problem to overcome when trying to improve their housing conditions. This indicates that there are interventions that could strengthen the position of tenants, by empowering them with better information for example. The housing

³¹ <http://www.hnzc.co.nz/hnzc/web/housing-improvements-&-development/property-improvement/modernisation-&-energy-efficiency.htm>

market is an imperfect market in economic terms. This is particularly true for low income people as they are price-takers. Competition is limited, and there are high transaction costs associated with moving that further limit competition. The present pressure on the rental market is driving prices up without significant improvements to the quality of rental housing. There is information asymmetry, and while the participants of this study recognised that there is a connection between housing and health, it is difficult for prospective renters or buyers to assess the thermal efficiency of a house during a short visit with a real estate agent.

The Energy Efficiency and Conservation Authority has implemented a voluntary Home Energy Rating Scheme³², (HERS) which can be used by home-owners or potential buyers or renters. However, there is a cost for having an assessment, and low income potential renters are unlikely to participate in the scheme. Making the HERS mandatory could improve information asymmetry, and increase the demand for energy efficient housing, which would help to reduce fuel poverty as inefficient housing is harder and more costly to heat. Costs to tenants to heat their homes would be decreased due to the improved thermal efficiency, which would help to off-set increases in rent which may occur as a result. If all rental housing was required to be improved over time by demand in the rental market, price increases could be a short-lasting effect. This could also help to improve landlord-tenant relationships, by setting a benchmark for landlords, and reducing pressure on tenants to justify desired insulation improvements. Of course there is the possibility that the most marginalised groups would end up renting the least energy efficient homes, but this is already the case (Howden-Chapman and Beirre, 2008). In improving energy efficiency, a HERS will also reduce household carbon consumption.

Part of the HERS is an assessment of the efficiency of the heating requirements and heating appliances in the home³³. Presently, landlords must provide tenants with the ability to use a heating appliance. In practice, providing an electric socket meets this requirement, because tenants can use an electric heater. There is no requirement for landlords to provide an energy efficient heater, such as an efficient woodburner, wood pellet fire, or heatpump. Perhaps this should be considered, as the limited requirements for thermal efficiency of housing and energy efficient heating is undoubtedly contributing to fuel poverty among tenants in New Zealand.

³² <http://www.energywise.govt.nz/yourhome/home-energy-ratings/index.html>

³³ <http://www.energywise.govt.nz/yourhome/home-energy-ratings/how-hers-are-calculated.html#Energy>

Landlords who have installed efficient heating have tended to favour heatpumps (Howden-Chapman et al., 2008b). Intermittent use of heating appliances was one way in which participants managed electricity consumption. Using this method in conjunction with a heatpump is inefficient, however it is possible that this would be viewed as a way of achieving some control over electricity bills. Previous research suggests that low income people prefer to use unflued gas heaters because they are better able to budget for heating expenses (Dunn, 2003). Wood pellet fires offer an energy efficient heating solution that allows similar budgetary control. Perhaps these should be actively promoted to landlords as part of a solution to mitigate fuel poverty among private sector tenants.

Resolution or Complicating Action? Prepayment Metering for Low income People

As is the case with housing, the electricity market is an imperfect market situation. There has been some discussion in New Zealand about electricity companies 'price gouging'³⁴, due to the 'light-handed' regulation of the electricity market which remains dominated by natural monopolies in networks and generation post energy sector reforms (Bertram, 2001). Electricity prices continue to rise, with Meridian Energy increasing prices by 6% for residential consumers in the Wellington region as this study ends³⁵. Further price increases are expected when electricity is brought into the Emissions Trading Scheme in 2010. In addition to the opportunities for monopolistic behaviour, there are limited opportunities for competition. This is particularly true for low income consumers who may have difficulty switching to cheaper tariffs offered by other electricity providers due to financial constraints to raise money required for bonds and other charges associated with switching, or who may have arrangements such as smooth-pay weekly direct-debits which they do not wish to disrupt. Prepayment metering, typically used by low income consumers, may also interfere with competition (Graham and Marvin, 1994). Low income consumers are typically offered prepayment meters as a budgeting measure when they are getting into arrears on electricity bills, and prepayment meters have also been used overseas as debt recovery tools by electricity retailers (Drakeford, 1997). Tariffs for prepayment meter consumers are higher than for those on other payment plans³⁶, which is consistent with the overseas experience. Of concern is the tendency for prepayment

³⁴ http://www.sef.org.nz/press/080403_SEF_Press_Release.pdf

³⁵ <http://www.radionz.co.nz/news/regional/124368b8d770>

³⁶ <http://www.genesisenergy.co.nz/genesis/index.cfm?4FCAB57D-F394-9650-4E3C-D1356B29CF27>

meter users to self-disconnect from essential services such as electricity, and for the loss of official statistics collected on disconnection due to prepayment meter use (Drakeford, 1997; Graham, 2006), which can be used to monitor the extent of fuel poverty in vulnerable groups.

One of the participants in this study used prepayment metering. The participant reported self-disconnection as a means of rationing their electricity during weeks where they could not afford to purchase the electricity required for basic living standards. In one instance, the participant had been admitted to hospital due to self-disconnection, as she was unable to use her nebuliser. The Electricity Commission has identified the potential for these situations to arise, and has been working with energy companies to ensure that prepayment metering is no longer offered to those who are medically dependant on electricity (Electricity Commission, 2007). The cost of being admitted to hospital is undoubtedly higher than paying for electricity and this suggests that significant public savings could be made from reassessing financial assistance available for electricity costs. The overseas experience suggests that low income people using prepayment metering express a high level of satisfaction with the service, however this may be because prepayment metering allows some control over when disconnection will occur, and privacy about the inability to afford essential electricity (Sharam, 2003). This is similar to the situation found in this study, evidenced by the participant's choice to self-disconnect during the day, enabling them to use electricity in the evening. Furthermore, the participant comments that they would prefer to continue self-disconnecting than to seek financial assistance in the form of an emergency loan from Work and Income so they "don't owe anyone", indicating that their financial situation is such that they would be disconnected from electricity services if they were not using prepayment metering, or be forced to take on unaffordable debt. The case identified in this study reinforces the problems associated with prepayment metering for low income people, and should be read as a caution to the growing use of prepayment metering among this group.

Resolution: Agency achieving measures

Participants in this study outlined measures that they used to reduce electricity consumption, such as turning the hot water cylinder off during the day, wearing extra clothing, or heating periodically. In this way the participants exerted what agency over

their situation that they could. They had the ability to choose between different measures to save electricity, and in this sense were empowered. However, this was often done not through their choice to save electricity, but to save electricity out of necessity due to financial constraints. Participants frequently talked about these practical steps in relation to budgeting, which is another concept tied into agency, as there is a sense of control achieved through budgeting.

These concepts were often talked about in resolution clauses of the participants' narratives, drawing these narratives to an end. This reinforces the agency that the participants were able to narrate in taking these measures, which served to mitigate the problems outlined in the complicating actions of their narratives, for example structural problems with the house, their landlord, or the high cost of electricity. By improving the reliability of information around the quality of the housing stock, encouraging the uptake of energy efficient heating appliances in the rental housing stock, and supporting increased competition in the electricity market for low income people, in addition to providing electricity vouchers, more effective resolutions may be available in real terms to low income people and could be evaluated through further study of narratives around heating.

At present, financial assistance for low income people suffering fuel poverty in New Zealand is limited. Disability allowances were viewed by participants who were eligible for them, as being inadequate and unreasonable. This is consistent with earlier research undertaken by *He Kainga Oranga*/Housing and Health Research Programme. The research illustrated that unless those who are otherwise eligible for disability allowances are able to pay the average electricity costs of households in their area, they are unable to access disability allowances to cover their electricity costs (Dunn, 2003). Obtaining a disability allowance for heating in that study was described as a harrowing process, which meant that one participant 'didn't bother' to apply for one (Dunn, 2003). Similar problems with the disability allowance were identified in this study, one participant describing it as 'pathetic', and another participant saying to go to Work and Income he had to 'swallow his pride' and 'grovel', like a 'second-class citizen'. The other assistance available is an emergency loan, which if accepted places a burden of debt upon low income people. These options seem impractical and unfair, as they are clearly not achieving adequate electricity services for low income people, yet electricity services are essential for the maintenance of health, and normal social participation (Speak and Graham, 1999; Tully, 2006).

In contrast, electricity vouchers were viewed by the participants as a useful tool and practical solution which would assist low income people, including older people, those with disabilities, and families with children to purchase 'essential' and 'necessary' electricity. Having electricity vouchers directly credited to electricity accounts was seen as the best method for distribution of financial assistance by the participants. Where the universal 'Winter Fuel Payment' to people over sixty is used in the United Kingdom, it may be more feasible for New Zealand to implement a targeted payment to mitigate fuel poverty. New Zealand has traditionally favoured targeted over universal payments, and is in effect implementing targeted payments through the disability allowance which could be used for heating, but in reality are inadequate and difficult to obtain. Perhaps electricity vouchers could be used in place of disability allowances for heating costs associated with medical requirements for those who have chronic illnesses such as COPD. To further reduce fuel poverty in New Zealand, electricity vouchers for older people, and low income families with young children could be considered.

Resolution: Policy recommendations arising from the findings of this study

Problems identified by the narratives of the participants, and some potential solutions to these problems have been described above. The following policy recommendations arise from the findings of this study:

- Housing New Zealand Corporation should provide tenants with information about the insulation improvements that have been made to their homes.
- Government should introduce a mandatory Home Energy Rating Scheme.
- Encouraging landlords to install efficient heating appliances could reduce fuel poverty and increase agency among low income tenants, and reduce household carbon consumption.
- The use of prepayment metering by low income people needs to be investigated and evaluated thoroughly to ensure that adequate protections are put in place to reduce the problems associated with prepayment metering.
- Electricity vouchers are an acceptable and practical tool to improve the quality of life of low income older people with COPD, and could be used to reduce fuel poverty in New Zealand.

Evaluation: Reflections on the method

This study achieved its aim which was to explore the narratives of older COPD patients who live in cold homes in relation to home heating and health. Using structural narrative analysis enabled me to explore the research question: *How do older people with COPD who are living in cold homes describe home heating and how this relates to health?* The method was useful in fulfilling the research objectives underpinning this question, in particular, Objectives One to Three: to explore narratives of older COPD patients living in cold homes towards home heating and health; to explore the acceptability of the description “fuel poverty” for older people living in cold homes in New Zealand; and to investigate the likely acceptability of electricity vouchers as a policy strategy for reducing fuel poverty to older people living in cold homes in New Zealand. This method also provided an opportunity to meet Objectives Four and Five: to add social context to the issue of fuel poverty in New Zealand and the body of quantitative research into fuel poverty internationally; and to identify key issues around fuel poverty for older people living in cold homes in New Zealand for exploration in further research.

As discussed in Chapter Three, semi-structured interviews yielded a large volume of data for analysis. While the topics covered in the interview schedule were broad, this enabled narratives to be drawn out on issues that had probably not been narrated by the participants before, for example those concerning the use of the phrase ‘fuel poverty’, and measures to reduce fuel poverty such as the vouchers. These narratives were not ‘fully-formed’, and did not usually include an abstract.

One of the interview questions explained in very basic terms the concept of ‘fuel poverty’, (“when people can’t afford to heat their homes adequately”) and asked what the participants’ felt about the use of that phrase. During the analysis, I wondered whether I had simplified the definition too much, and whether the answers given by some participants would have been different had I given the full definition of fuel poverty, and explained that the efficiency of the home and the heating used also plays a role in fuel poverty. On the other hand, explaining that fuel poverty occurs when a household spends more than 10% of its income on household energy may have been unfair on the participants, by effectively labelling them as fuel poor, without offering any long-term solutions to improve their situation. However, in future studies the definition provided to participants is something to be considered further.

Labov's structural narrative analysis provided a useful framework for in-depth analysis of the data. Attending to the structure of the narratives allowed identification of narratives from the data, and unpacking of the content contained within them. Most of the data from the interviews could be analysed in this way. However, use of this method does not preclude supporting statements from non-narrative talk from being analysed alongside narratives, and non-narrative comments were considered during the analysis.

This framework was also useful in identifying the challenges the participants faced in order to achieve the greatest possible level of comfort in their homes. Complicating action clauses, for example, often contained references to agencies such as Housing New Zealand Corporation and Work and Income that participants then evaluated negatively, reinforcing that these agencies were adding to problems, rather than solving them. Resolution clauses frequently highlighted the inability of the participants to overcome these challenges in real terms. Narratives were resolved, but real life situations were not. This method allowed potential points of intervention to be identified, through the narrative function participants' allocated to such factors.

Evaluation: Study Limitations

While the data collected from this study provide information in an under-researched area in New Zealand, there are limitations to this study.

The sample was limited to the participants of the Warm Homes Pilot Study. It would be useful to interview a greater variety of people around these issues, as there is such a paucity of research into this area in New Zealand; however this study achieved its aim. The nine participant interviews for this study generated an amount of data sufficient for a project of this size, and I elected not to analyse the data around the participants' housing histories due to space constraints.

This group was relatively homogenous, in that they were all identified by Tu Kotahi Māori Asthma Trust. These participants may have an increased understanding of the health effects of housing conditions, including indoor temperature, and COPD in general due to the comprehensive programmes run by Tu Kotahi Māori Asthma Trust. This may have influenced the results. However, while there were similarities among the group there were also a range of differences, for example owner-occupiers vs tenants, living alone, with

family or spouse. Structural narrative analysis allowed equal exploration of the different participants' narratives, without having to ignore these differences.

The participants cannot be formally identified as 'fuel poor' as income data were not collected. The community coordinator had discretion over who was approached to take part in the study, and is understood to have selected people that they thought would most benefit from the electricity voucher. Several of the participants told me that they were reliant on New Zealand superannuation, or sickness benefits, which would place them at the low end of the income spectrum, and it is therefore likely that they would be classified as fuel poor.

The Hutt Valley is a relatively damp area of New Zealand, and much of the land was reclaimed from swamp marsh, although it is not as cool as other areas. It follows that older people with COPD in cooler areas of the country will be suffering similar, if not worse effects of cold homes; however this cannot be confirmed by this study.

Evaluation: Implications of the study

This study has implications for both the main study and public health. I will address these in turn.

Main Study

Participants had mixed views on what the vouchers were intended to achieve and what their "part of the bargain" was. While some participants clearly valued extra warmth provided by the vouchers, others felt that to get "the benefit out of it" they should continue with their normal heating routine or "stretch" the voucher out by further limiting their electricity use. Arguably, participants may have got more benefit by continuing with their usual practices which would enable them to purchase items such as winter jackets or shoes that they had been unable to purchase for some time. Perhaps it is unreasonable to expect behaviour to change when the voucher that they received was a one-off, particularly when they are unlikely to have been able to afford increased warmth that they might have obtained through the voucher in the future.

This identifies the need for better education of the participants of the main study, in order for the intended intervention (ie raised indoor temperatures) to be tested. I suggest that participants are explicitly told that the study will test the effects of raising indoor temperatures, and if keeping their houses warmer is beneficial. It would be useful if this could be quantified by installing a thermometer in the living area and bedroom and asking the participants to try to keep the temperature above 18°C.

It may be that \$500 is too modest an amount of money to achieve adequate indoor temperatures in inefficient houses, with inefficient heaters. The houses in the main study (as in the pilot) will meet minimum insulation standards (ie ceiling and underfloor insulation). However, without wall cavity insulation, decent drapes if not double glazing, and efficient heating systems, as was the case with some of the houses in the pilot study, it is conceivable that \$500 may not cover the expense of heating to adequate temperatures during the winter. This may be particularly true for those who are using prepayment metering, or are not on the most competitive electricity tariffs in their area.

This study emphasises the usefulness of qualitative research to support quantitative methodologies. Qualitative research can identify behavioural practices that may influence the interpretation of qualitative results, and can also highlight the intangible benefits of interventions. For example, in this study some participants talked about how the vouchers reduced stress and improved relationships within the families of the participants, which would not have been recognised as a benefit in the quantitative study. This study was also able to explore the acceptability of using electricity vouchers, and uncover the behavioural aspects of electricity and heating use of the participants.

Public Health

This study clarifies that fuel poverty is a significant problem which affects the quality of life of older people with COPD on low incomes. Participants identified a range of methods of mitigating fuel poverty which may also negatively affect their health and wellbeing, for example reducing heating or electricity use, quantity or quality of food purchased, or reducing the space used in their homes. Some of these methods may worsen COPD health outcomes, as COPD patients are already prone to infection and poor nutritional status (Chatila et al., 2008; King et al., 2008). For some of the participants, electricity vouchers meant being able to be warm, or were the difference between paying for

electricity and going without heating or something else. Participants identified difficulty paying for electricity or heating as a growing problem within their community. All of the participants agreed that older people would benefit from the use of electricity vouchers. Other groups identified by the participants as people who would particularly benefit from electricity vouchers included low income families with young children, and people with disabilities, including COPD. This study demonstrates that electricity vouchers may be useful in mitigating hardship within the wider New Zealand population, and in particular might improve the quality of life of low income older people with COPD.

While New Zealand's climate may become warmer due to climate change, it may also become wetter. In describing possible effects of climate change on housing in Britain, Roaf (et al 2005) point out that while warmer conditions may reduce excess winter mortality due to cold indoor temperatures, increased rainfall may further reduce the thermal performance of poorly insulated houses due to increased dampness and condensation. If this holds true for New Zealand's future climate, and similar housing conditions, the number of people in fuel poverty may increase without improvements to the housing stock.

This research contributes information to an area where there is a current knowledge gap. While further research in this area is required, this research may help to provide impetus to the development of social policy to address fuel poverty in New Zealand. Qualitative research can offer a powerful human element to quantitative research findings. Timely research can contribute to positive policy formation (Davis and Howden-Chapman, 1996; Howden-Chapman et al., 2008c). A quote from this research project was recently presented to the Health Select Committee by *He Kainga Oranga*/Housing and Health Research Programme during their submission on the Public Health Bill 2008, and was received with interest³⁷.

Resolution: Future Directions

This study has shown that fuel poverty is a real problem experienced by the participants and their community; however this study was limited to participants from the Hutt Valley

³⁷ The quote was taken from Kiri's house and home narrative: "And I told her that I'm sick of it, I said 'I'm not blaming your house but it [my health] could improve with the standard of the house'."

area. Further studies should be undertaken to investigate the experience of fuel poverty in other communities within New Zealand.

This research investigated the experience of fuel poverty in a very specific cohort of people – older New Zealanders, with COPD. Further research could include other groups that are vulnerable to fuel poverty, such as low income families with young children, or people with other disabilities or chronic illnesses. As an aside, it would also be interesting to interview other groups, such as refugee and migrant people, and people of other cultures and backgrounds. While preparing for the interviews for this study, my mother kindly agreed to be interviewed as practice. I was interested to hear that her family, headed by my Dutch grandparents who had immigrated in 1952, had always had heating in living areas, and in all of the bedrooms also, as this would not be the situation in all New Zealand families. This suggests that New Zealand's typical 'culture of cold' is not shared by all of our community members.

This study identified one case in which the use of prepayment metering resulted in self-disconnection, due to financial inability to pay for electricity. Further research is required to assess the level of self-disconnection among prepayment meter users in New Zealand. Prepayment meter use is growing in New Zealand, and the overseas experience suggests that this technology may be detrimental to low income consumers. Further study should investigate the experiences of other prepayment users to determine whether fuel poverty is exacerbated by the use of prepayment metering in New Zealand.

This study was limited to a single interview after the participants had received an electricity voucher in the winter of 2007. As the Warm Homes Study (main study) will progress over four years, future qualitative research could interview participants at baseline, during use, and after electricity vouchers are distributed. This would help to track any behavioural changes made by participants and assess 'take-back' choices of taking the benefit of the voucher as additional warmth, or savings, by investigating the value the participants place on benefits they attribute to electricity vouchers.

As mentioned, structural narrative analysis provided a means of assessing where interventions might be used to address problems identified in the participants' complicating action clauses. It would be interesting to develop this way of using structural narrative analysis further.

Coda

Fuel poverty is an important social and public health issue in New Zealand. Low income older people with COPD are one group who are particularly affected by fuel poverty and its effects, and this thesis has demonstrated through the narratives of this group that electricity vouchers are one way in which fuel poverty may be addressed. Physical home environments and the efficiency of heating appliances available to this group were also identified as avenues for action to reduce the effects of fuel poverty. The study brings to light some of the social implications of fuel poverty among this group and their community. It is hoped that this study will stimulate further research and discussion about how best to address fuel poverty in New Zealand.

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Appendix 1: Participant Information Sheet

Warm Homes Pilot Study: Qualitative Component Participant Information Sheet

You are invited to take part in the Warm Homes Pilot Study Qualitative Component of the Warm Homes Pilot Study being carried out by He Kainga Oranga, the Housing and Health Research Programme, which is part of the University of Otago, located in Wellington.

As part of the Warm Homes Pilot Study that you have been taking part in, we have been trying to find out if giving a power “voucher” results in older people who have Chronic Obstructive Pulmonary Disease (COPD, sometimes this is called Chronic Obstructive Respiratory Disease – CORP, or Chronic Obstructive Airways Disease – COAD) having warmer homes and less illness.

During the Warm Homes Pilot Study Qualitative Component, we will come and talk with you to try and understand more about how older people with COPD think about heating. We will then try to put together your stories so that we have a better picture of how we think about heating.

Why is the study being done?

In some parts of the world older people are given a subsidy to help them keep warm during winter. We think that if older people in New Zealand were helped to keep warm then possibly fewer would have to spend time in hospital over winter. The Pilot Study has been testing the procedures that will be used in the Main study to test this. The qualitative component is being done so that we can get a better picture of what older people think about heating. The qualitative component of the Warm Homes Pilot Study is being completed by Kim O’Sullivan as part of her Master’s degree in Public Health.

Where is the study being done?

The households that have been involved in the pilot study in the Hutt Valley have been approached to take part in the Warm Homes Pilot Study: Qualitative Component.

When is the Study going to take place?

The study will take place during the spring of 2007, once the questionnaires from the Pilot Study have been completed.

What will I have to do if I participate?

Kim O’Sullivan will have a face-to-face interview with the person with COPD from the household. The interview will need to be tape-recorded with your permission, so that it can be listened to again and to make sure that we have your stories correct. Nobody else will listen to the tape-recording of the interview. We think that the interview will take about an hour of your time.

Because the kind of interviewing that is going to be used is more like a conversation or normal talk, we don't know exactly what questions will be asked as these will depend on the way the interview develops. If you become uncomfortable with the question(s) at any time you can choose not to answer that question(s), or to stop the interview without any disadvantage to yourself of any kind. To give you an idea of the kinds of questions that will be asked, the question that we will start the interview with is 'can you tell me about the houses you have lived in?'

If you agree to another visit, a second time will be made for Kim O'Sullivan to come and talk to you to go over your stories and make sure that they are correct and that you are happy for them to be used. Any extra questions that come up after the first interview can be talked through then, and if you have thought of anything else you would like to add you are welcome to discuss these things too.

Can I change my mind?

Yes. If you do agree to take part in the Qualitative Component of the Pilot Study, you are free to withdraw at any time, and you can still take part in the rest of the Warm Homes Pilot Study.

What information will be collected and what use will be made of it?

The information collected will come from typed transcripts from the tape-recorded interviews. Kim O'Sullivan will ask questions about the houses you have lived in, heating in these houses, and how you feel this may have impacted on your health. Once you have been interviewed, we will join your stories in with the stories of the other participants so that we have a better picture of how we think about heating.

The only people to see the typed transcripts from the interviews will be Kim O'Sullivan, and two research Supervisors. Parts of the transcripts will appear in the final reports, but your name will not appear anywhere in the written reports. The results of the project may be published and will be available in the library but we will do our best to make sure that no one can identify you from the data.

Can I find out the results of the Qualitative Component of the Pilot Study?

Yes. Although there will be some time between the interview and the results being known, we will send you a summary of the results. We will also hold a community meeting for the participants to tell you the results in person.

The study is part of the development of the Warm Homes Study which has received ethical approval from the Wellington Ethics Committee.

What if I have questions?

If you have any queries or concerns regarding your rights as a participant in this study, you may wish to contact a Health and Disability Advocate

Telephone	0800 42 36 38 (4 ADNET)
Free Fax (NZ wide)	0800 2787 7678 (0800 2 SUPPORT)

Email (NZ wide)

advocacy@hdc.org.nz

If you would like to discuss any part of this research, or your participation in it, please feel free to speak with either

Supervisor

Professor Philippa Howden-Chapman (04 3855541 extension 6047) or

Student Researcher

Kimberley O'Sullivan (04) 9072060

Appendix 2: Participant Consent Form

The Warm Homes Pilot Study: Qualitative Component Consent Form

Participants Name _____

Address and Phone Number _____

I have read and understand the information sheet about the Warm Homes Pilot Study: Qualitative Component (dated September 2007) for people agreeing to take part in the study to understand more about how people think about heating.

I understand that:

- Taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without any disadvantage.
- The exact interview questions will depend on the way that the interview develops (like a normal conversation) and that if I am uncomfortable with the question(s) at any time I can choose not to answer that question(s), or to stop the interview without any disadvantage.
- The interview will be tape-recorded and typed up, and the data will be kept in locked storage for five years, and then destroyed.
- The results of the project may be published and available in the library but every attempt will be made to keep my identity confidential.

I have had the opportunity to discuss this study. I am satisfied with the answers I have been given. I consent to take part in this study.

Participant's Signature	
Name	
Date	

This study is part of the development of the Warm Homes Study, and has been approved by the Wellington Ethics Committee.

Appendix 3: Interview Schedule

WARM HOMES PILOT STUDY: QUALITATIVE COMPONENT

Interview Schedule: Key Prompts

Housing and Heating

I'm interested in the houses that we live in, and how heating our homes might have an impact on our health. I'm interested in peoples stories about this as I think you can get a lot of different information from stories that you can't get from other kinds of information like surveys.

1 Can you tell me about the houses that you have lived in?

Prompts for Q1

Did you shift house when you were growing up?

How about when you first moved out of your parents' home, where did you live then?

So you have always lived in eg Lower Hutt?

2 Can you tell me about the heating in those houses?

Prompts for Q2

Anything more?

3 Now I'd like to ask you about this house. Can you tell me about the heating in this house?

4 How important is it to you to be able to heat your home?

– trade-offs, substitution

5 Do you find it difficult to heat your home in the winter? (O'Neill et al., 2006)

Prompts for Q5

What is it that you find difficult?

Does the cost of your power bill worry you?

General perceptions of energy use

- 6 Some people think that keeping warm is really important. Other people say that we shouldn't use so much electricity, and should just put an extra jersey on. What do you think about the way that we use energy/electricity?**

Heating and COPD

- 7 What kinds of differences, if any, do you notice about how you feel when you are using heating in your home, compared to when your home feels cold?**

Prompts for Q7

Does it make a difference to the way you move about the house?

How about your breathing, does that change?

- 8 Do you know about any benefits that you might be able to get because of your COPD to help with heating?**

Prompts for Q8

Have you tried to get a disability allowance for heating?

Would you try and get one? (Can you tell me about the reasons that you wouldn't try to get one?)

Note W&I clients can get a disability allowance to help with additional costs such as for heating incurred due to their disability with verification from their GP – WINZ website

"Fuel Poverty"

- 9 Some people use the phrase "fuel poverty" or "fuel insecurity" to describe the situation that someone can't afford to heat their home. What do you think about those descriptions?**

Prompt for Q9

What do you think would be a better way of describing when people can't afford to heat their home adequately?

[If appropriate: **9a Do you think that this is a problem among people that you know?**]

Vouchers

- 10 I'd like to talk with you a little now about electricity vouchers. In what ways have things been different in your home while you have known you are getting the electricity voucher from the Warm Homes Study?**

- 11 Some people think that vouchers are a good way of helping the “fuel poverty” problem, for example in the United Kingdom, the government gives vouchers in winter to those who are aged over 60 for electricity. In New Zealand, people can go to go to Work and Income to get a loan if their power gets disconnected. What do you think is the most acceptable way of helping “fuel poverty”?**

Closing the Interview

- 12 Thanks, this has been a really interesting talk. Do you have any other thoughts that you would like to add?**

General Prompts

You mentioned that ... Can you tell me a bit more about that?

Its interesting that you mentioned ..., can you describe how ... feels/works/happened?

I'm not sure I understood what you meant when you said ..., can you explain that for me / give me an example of that?

One person said that ... Do you agree? (Eg one person said that they thought that “fuel poverty” was...)

Avoid WHY questions (Patton, 2002) – as they can be interrogatory and can be interpreted differently by different people → suggests instead “Tell me more, if you will, about your thinking on that”

Appendix 4: Sample of Cartoons Published in Major Newspapers Around the Time of Mrs Muliaga's Death



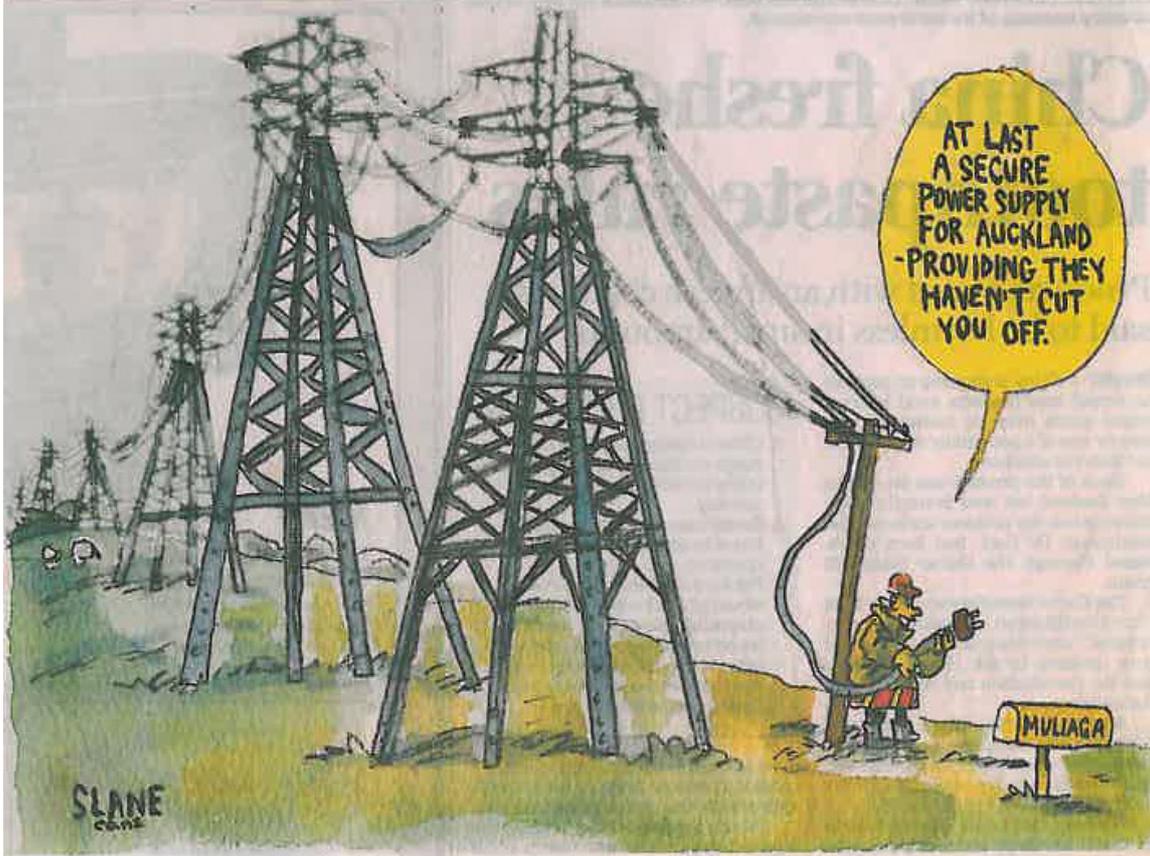
Scott, T. Published 1 June 2007, The Dominion Post.

Cartoonist's view — Parry Jones



Parry, Published 1 June 2007, Otago Daily Times.

SLANE'S VIEW



Slane, Published 6 July 2007, The New Zealand Herald.

Appendix 5: Narrative Tables

The following tables are the core narratives used for analysis in the results sections. They are summarised narratives identified within the original transcripts. Line numbers are shown at the beginning of new clauses to show the sequence of the narrative. First initials are used to show the speaker. The interviewer is represented using 'I'.

House and Home Narratives

Don

Orientation	Complicating action	Evaluation	Resolution	Coda
001 I: "Oh ok, so you've been here a long time as well?" D: "Oh it's a long time"	003 D: "and it's a heap of junk at the moment, heheh!"	006 D: "There's a lot of work to be done on it."	008 D: "It's a home I 'spose."	

Catherine

Orientation	Complicating action	Evaluation	Resolution	Coda
001 C: "Then we moved to here which is quite ok, though much smaller of course."	003 C: "Because I figured that if I had the carpet lifted and the lino in the kitchen too... and I decided to have the carpet in the lounge and the hallway lifted." 008 C: "They put in lining under the floor in here [lounge] and in the kitchen"	006 C: "because it is easier to clean you know, rather than dragging the Electrolux around which is a bit tiresome." 009 C: "I 'spose in a way actually it keeps warmer."	010 C: "But of course if you want to save electricity you might as well just put a rug over your knees and put extra clothes on."	

George

Abstract	Orientation	Complicating action	Evaluation	Resolution	Coda
<p>001 I: "You know before, when we were talking about the houses and the insulation and stuff, and you said that you just didn't think that people cared that much"</p> <p>003 G: "Yeah a lot of people do not care that much, you know"</p>	<p>005 G: "I don't know I could be right I could be wrong but ah, many moons ago this place used to be called nappy valley."</p>	<p>010 G: "in those days a man could go out and work, and get enough to afford to look after the families, you know. (Yep) And they could afford to have children. (Mmhm) Now... how would I say not so much money or not getting much money for the work they're doing you know, that both of the parents have gotta go out and work and they can't afford to have families."</p>	<p>019 G: "I think that's the reason why there's no need to have the heating system."</p>	<p>020 G: "They get up in the morning have breakfast, off to work, come home in the evening, have a shower and off to bed you know."</p>	<p>022 G: "So, yeah, that's my opinion."</p>

Wiki and Pete

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>008 P: "This house is a, there's only two wooden walls and all the rest is all concrete, all the walls are internal concrete"</p> <p>029 P: "But ah summer is, she's good in summer, (Yep) it's the winter with the cold and the damp"</p>	<p>024: P: "We tried the gas, no good. And this is the best heating, electricity is too expensive."</p> <p>033 P: "we've had people in but you can't do much insulation here, although we've got insulation in the roof but that's it"</p>	<p>020 P: "and with her condition, this is the only heating with, well her condition"</p> <p>036 W: "But even when it's like this it gets muggy and I get it, you know... Closed in air."</p>	<p>027 P: "But buy this load of wood and, hhhh, yeah."</p> <p>039 P: "But that's [points to woodburner], yeah but you gotta open up all the doors and, it heats up. Yep because dry as well because of her condition."</p>	
<p>044 P: "But I mean most of the houses we've lived in always have been, cold, in winter. (Yep) Cos there's only just a layer of wood there eh?"</p> <p>059 I: "And is this your own house?" P: "Yeah we own it"</p>	<p>046 P: "Layer of wood, layer of gib and that's it. (Yep) And then in those days, but now they're pushing for insulation what you can't do much with this"</p> <p>062 P: "We just had the new roof put on."</p>	<p>050 P: "it's good when that's on [points to woodburner], this concrete keeps the heat in."</p>	<p>055 P: "get up in the morning, light it again bout round about nine o'clock... when she gets up"</p> <p>064 P: "So that's got new insulation under there too."</p>	<p>070 P: "So that's saved a few draughts."</p>

Elizabeth

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>001 I: "Yep and so now they've put you into this house, is that right?" E: "Yeah I've been, because I needed time out to myself heheh"</p>	<p>008 E: "But I thought this would be a nice warm place because a state house, it gets nice warm sun." 013 E: "I don't know if it's properly insulated they reckon it is but I only saw black plastic <i>on the ground</i>. (Mhm) I didn't see anything up round the rafters, (Oh ok) to stop that wind coming up through the floors. So I don't know, and I don't know what's in the ceiling." 018 E: "But my case manager went 'oh no they're fine'."</p>	<p>011 E: "But ohh, it's pretty cold" 016 E: "And I know these windows here are draughty cos they whistle."</p>		<p>019 E: "Mm. So they're draughty. (Yep) Those ones." [points to large windows in kitchen where we sit]</p>

Kahu and Howard

Abstract	Orientation	Complicating action	Evaluation	Resolution	Coda
001 K: "But today the houses are [pause]"	<p>002 K: "took them a long time to, they finally put batts... they only just done over and underneath the floor"</p> <p>030 H: "this area here [dining room and kitchen]... has been like this thirty years, since we moved in"</p> <p>049 K: "And we're not young anymore otherwise we would rip the paper off and do it." H: "Yeah"</p> <p>I: "So you'd like to decorate it you mean?"</p>	<p>006 K: "before then I would just get sick and go in to the hospital"</p> <p>012 K: It took them a very long time to come and put this [insulation] in. Before then I was in and out of hospital maybe about fifteen times, asthma... in the last year, yeah."</p> <p>034 H: "And they kept on saying each year that they'd come and do it but... it's gone on thirty years now and it's still the same. (Yep) Hahah!" K: "But they came and done the bedrooms. And they reckon that's where we entertain people."</p> <p>044 K: "and I said 'what do you think I am a bloody prostitute or something!' (Ok heheh!) No that's what I said to the man eh?... Here this is where we have people. (Yeah) Nup!"</p> <p>052 H: "Yeah we, did start, we've stripped all the photos down and everything, and I ended up in hospital collapsed"</p>	<p>007 H: "It has made...quite a difference to be honest. (Yeah) You know once they done that."</p> <p>043 H: "Hhh naaah!"</p> <p>048 H: "Nah that was our thought."</p> <p>055 H: "[Sigh] yeah, we've had a rough, rough time the last two months"</p>	020 K: "And I still go to the hospital I've just come back this morning."	057 H: "But however , apart from that you know, (Mm) just one has to persevere."

Ripeka and Daughter

Abstract	Orientation	Complicating action	Evaluation	Resolution	Coda
001 R: "so, most of the houses that I've lived in haven't been warm at all. No. I don't think I ever have had one [warm house]."	004 R: "Oh I might've... with the heater going and all that, but no, even though they've had carpet." 017 R: "And they reckon the floors, are what do you call it, got that heating underneath it?"	011 R: "it's easier to vacuum the dust, (Yep) than it is to with carpet. (Yep) But, this house is so cold." 022 R: "and all it is really isn't it, is um, like foil. (Oh right) Yes."	008 R: "I like house a bit like this." 015 R: "It's so cold in the winter, I need carpet"		025 R: "Well that's Housing Corp for you, because, you know."
030 R: "my nurses, were going to get up there and have a look to see how the batts were"	036 R: "I wouldn't let them because, it's not their job to" 048 R: "And I was telling her about how, how I get mould often... So she seems to think I've got a leak up there and she was gonna get her husband to come and have a look up there for me."	038 R: "But one of them did anyway... up the manhole in the passage way there (Yep) and she said 'oh nah you've got batts', she said, 'oh but', she's going crook, 'oh look how they've done it they've only spaced it...it's like they've run out and just used it here and there.' 052 R: I've told Housing Corp, when they do their house inspection, every time about it but, there's nothing done about it."	045 R: "It's not compacted in like all how it should be." 056 R: "Yep. And I don't think they're going to you know."		R: "She says so make a note of that, make a note of that!" 057 R: "You just keep telling them and telling them. Mm."
059 R: "They're trying to, the nurses are really trying to get some carpet for me."	060 R: "Now, I only want it in here and down the passage. From Housing Corp." 074 R: "but the house is still drafts and I said to them, when they come and make you know the inspection"	063 R: "But, they don't do it anymore they used to, (Yep) and now they tell us that they don't do that anymore." I: "Right. But you think it would make a big difference to keeping the house warm?" R: "Oh yes. It would (Yep), because look how big the gaps are under the doors... Huge." 076 R: "see the skirting boards? (Yep) Well they're starting to drop... and the draught comes through there."	072 D: "If they didn't have that it would have been freezing in here." R: "that helped heaps, that has helped heaps" 078 R: "And I'm telling them that whoever made the house, built it in a hurry because it feels like, sometimes it feels like the house that Jack built. Cos you can really feel the draughts coming through the floorboards even."	068 R: "And what Housing Corp has done is come and put the, those things around the edges of the doors." D: "Draught-stoppers."	082 D: "Even when you've got your feet down, and you can feel it coming towards you, or at the back of you."

Mabel

Abstract	Orientation	Complicating action	Evaluation	Resolution	Coda
001 M: "Yes because the house was so cold and it's not as bad as it used to be since they insulated it... I mean I couldn't walk on the floor, that's why this old mat is in here, (Yep) because it was so cold, I spend a lot of time in the kitchen."	008 M: "You see it's just been done." I: "Ok so you wouldn't have had much of a chance to notice the difference from that yet." M: "Oh I've noticed the difference."	012 M: "Oh yes. You couldn't sit in this kitchen, (Yep) even if the sun, [gestures to kitchen windows], you'd be freezing in here... Even with the heater going there [motions 20cms away from her chair] it was freezing in here."		018 E: "I've got two cardigans on and, (Yep) that's the only way I can keep myself warm. (Yep. Ok) Bout three pairs of socks in my bed!"	

Kiri

Abstract	Orientation	Complicating action	Evaluation	Resolution	Coda
001 I: "and what about the house where you are living now?" 002 K: "Awww! (Aheh!) I wish I was living in my new house back in Napier!"	006 K: "how long have I been here? Just going on seven years, every wintertime we froze... it's been particularly me with my chest, eh. (Yeah) And the smell of mould." 023 K: And I told her because she came round and just by coincidence I still had my oxygen my ah mask on, (oh ok) the tubes in my nose" 034 I: "Yeah so is she gonna fix it up now?" K: "Oh so she says she would." 043 K: "She said 'well what about the fireplace?' And I said 'yes you' "	012 K: "I'm struggling with the landlady to improve things, (Yeah) and I've just about had enough eh." 025 K: "she got a fright, she really got a fright she said 'I've never seen you like this Kiri', and I said 'well I haven't seen you for three years have I? (Hh! Hahah!) And in three years I've had COPD.' " 036 K: "But I said 'I don't agree with paying the amount of rent that we pay (Yep) a week. And as well pay on top of that a big hefty power bill.' 044 K: "we did have it fixed but what happened, the smoke kept coming back inside, (Oh no!) and made my asthma worse."	019 K: "And I said, [to my landlady] 'you know for the amount of rent that I pay... the house is not up to standard.'" 029 K: "And I told her that I'm sick of it, I said 'I'm not blaming your house but it could improve with the standard of the house.'"	047 K: "So we just closed it off and, left it like that. (Oh ok) So and then we resorted to um, what heating that we can afford."	049 K: "Mm."

Heating Narratives

Heating narratives arose from the following five questions in the interview schedule:

- Q3 Can you tell me about the heating in this house?
- Q4 How important is it to you to be able to heat your home?
- Q5 Do you find it difficult to heat your home? (adapted from O'Neill, et al. 2006)
- Q6 Some people think that keeping warm is really important. Other people say that we should just put an extra jersey on. What do you think about the way that we use electricity?
- Q7 What kinds of differences, if any, do you notice about how you feel when you are using heating in your home, compared to when your home feels cold.

Don

Orientation	Complicating action	Evaluation	Resolution	Coda
Q4 103 D: "I've got my family here"	112 D: "they use gas"	113 D: "I know, they don't like it because it's not good for my health"	114 D: "being asthmatic. Well I wasn't, till I got sick."	117 D: "And all the pills under the sun have made me whatever!"
Q6	129 D: "you go outside in your singlet and it's cold you gotta problem" 135 D: "these grandchildren of mine they grab blankets"	121 D: "well that is the, that is the truth" 132 D: "No it's a fact yeah... warmer clothes"	131 D: "you come tearing back and put something else warmer on" 136 D: "throw it around themselves even though the heater's on"	137 D: "they still keep themselves warm somehow"

Catherine

Orientation	Complicating action	Evaluation	Resolution	Coda
Q4	104 C: "if you need to go outside and it's cold and you're used to an overheated room, then I don't think that is good for health"	101 C: "well I 'spose it is important but there again with the rising cost of electricity..."	109 C: "But I can always wheel the heater into the kitchen or put the oven on for a couple of minutes... I might just put on a cardigan"	
Q6	135 C: "I mean it's difficult for folk like when you get older and you don't move about as much as you used to"	137 C: "I mean I have arthritis and things so I can't move about as freely or do as much exercise"	139 C: "so you do need to have more clothes on"	

Wiki and Pete

Orientation	Complicating action	Evaluation	Resolution	Coda
Q4 and prompting	130 P: "when it was getting low and desperate, I wasn't lighting it til two o'clock in the afternoon and she was staying in bed"	106 P: "you have to grovel to go to WINZ to get this stuff it's like ah, you're, a second class citizen"	139 P: "swallowed my pride and went to WINZ. Got a load [of wood]."	
Q6 141 P: "Some people are mobile, she's not mobile"	150 P: "She cannot do exercise to stay warm"	145 W: "If only I could do it and, you know especially when you see somebody else doing what you know you yourself could do"	152 P: "While for me, yeah, I put the extra clothing on, but she's gotta stay in bed"	
Q7 156 W: "It's good when the fire's on because you feel the warmth and it takes away some of the, you know the pain and the stress in the body"	160 P: "She went down to, oh, forty-odd kg" 163 W: "on some form of heating. Because without it I feel breathless" 179 W: "You know you're hungry but, you can't eat"	162 W: "I rely on that" 184 W: "stressful when it's like that" 186 I: "So you feel quite stressed when you can't keep the house warm?" W: "Yeah" 190 W: "you know if you're in the condition that I'm in, yeah you'll understand"	169 W: "Yeah the fire has to go otherwise, otherwise I go back in [to hospital]" 174 W: "Yeah, I don't hesitate when I feel it, because then it starts my asthma going you see"	176 W: "Yeah"

Kahu and Howard

Orientation	Complicating action	Evaluation	Resolution	Coda
100 K: "we only had one heater, and it was down by the bedroom"	110 H: "But ah, we've been told by the asthma society to get rid of that [unflued gas heater]"	111 H: "Gas heater but we just can't because it's cheap. (Yep) And it's the only form of proper heating that we have."	119 H: "And if it's very very cold in the mornings I'm up at five to light that [unflued gas heater], and turn it off before she gets up"	
Q4 126 H: "Oh during the wintertime it is very very important... because... our grandchildren"	133 H: "that's why I get up very early in the morning and light that [unflued gas heater] and leave it on two. (Mm) And then I light the oil heater in there as well."	131 H: "it's cold in here it's absolutely like an ice block" 148 H: "During the winter it is yeah. (Yeah) Very inconvenient <i>but</i> , you know"	140 H: "No! I won't leave that on by itself – no I sit here! Heheheh!"	150 H: "the same token, it has to be done"
Q5 after prompting	204 H: "I've walked through a few of m friends homes down here... and I've had a look at their heat pump systems you know"	226 H: "and I said wow, and then when he told me the price I thought oh no thanks! Hh! [laughter] No! I can't afford that"	[Later in the interview] 298 H: "and I guess [HNZC installing a heat pump] it's still in the pipeline at the moment. (Yep) Still under consideration."	
310 I: "Did you feel less tense or stressed out or you didn't notice that kind of thing so much?"	318 H: "But you know I see it on the news, people that are living in far desperate areas than this. A lot colder than here." 324 H: "like the elderly couple waiting for a heat pump down south" 326 H: "cos Housings, they're going to the places where it's hot, putting heat pumps in... all the places that are cold have gotta wait two or three years!"	312 H: "No we don't notice that much" 325 H: "I thought that was pretty hard" 336 H: "Yeah there are times when... you feel down, it's because you've run short financially"	332 H: "but at the moment one has to wait. (Mmhm) And life goes on. If you don't bloody smile you might as well be down there! Heh! (Hmh!) So, have a smile and be happy." 339 H: "but uh above that I <i>try</i> and maintain that we've got electricity to get the heat here"	340 H: "You know."

Ripeka

Orientation	Complicating action	Evaluation	Resolution	Coda
Q3	103 R: "I have to shut that door... to heat up in here first, and when it gets a bit warm, I open the kitchen to let the chill in... And then I open up that one and close all the doors down there. And just leave the bedroom door open so the heat goes in my room and I go to bed."	101 R: "Freezing" 113 R: "I, I can't stand the cold anymore. (Yep) It never used to bother me but it sure does, now."	110 R: "But if it's too cold, cos sometimes it feels like a damn fridge, (Yep) down there, if it's too cold I don't bother, I sleep in here on the couch, (Yep) where it's a lot warmer for me."	
Q5, prompted	120 R: "it's big enough. (Mmhm) Because it throws good heat out... So the heat can go down there. (Yep) Especially in my room."	118 R: "I worry about the cost alright, but I don't care I just don't want to be cold"	119 R: "so I'll just burn it" 127 R: "But if it's too cold down there well I'll stay in here, (Yep) and... turn the heater off and just sit in the warm, (Yep) and then when it gets too cold I'll put it back on."	130 R: "Mm."
Q6	132 R: "Oh I know, (No?) they reckon we should conserve our power but, (Mmhm) ask people like me, I reckon COPD's are worse hit" 137 R: "And what about those dear old people?... that really can't afford to go into a, old peoples' home... that have to live at home"	136 R: "Cos the, we just can't handle the cold." 142 R: "How are they, oh I reckon they can't handle it either... But I most certainly can't."	150 R: "Oh, I even, I have blankets on my chairs, (Mm) so, when I'm sitting on them and I feel a bit draughty there, I get it and wrap it around me... Sometimes to save using the heater. But if it gets too cold cold, yes, definitely I'll just switch it on."	164 R: "Yep."

Mabel

Orientation	Complicating action	Evaluation	Resolution	Coda
Q3	<p>115 M: "I have got two oil [electric column] ones... I've had them from last year"</p> <p>123 R: "But at the moment the one for my lounge is down at my daughter's place."</p> <p>142 M: "So sometimes we light the fire about five o'clock in the afternoon, (Yep) and I'm around in here" [fire in lounge, Mabel in kitchen]</p> <p>156 M: "I can let the fire go for about an hour, but if the girls wana keep the fire going, that's ok I just go to bed"</p>	<p>111 M: "I don't like an open fire, (Yeah) I don't like a heater"</p> <p>127 M: "I don't like dry heat"</p> <p>140 M: "I like the house to be warm, (Mmhm) I can get it warm"</p> <p>149 M: "I found that one [electric column] is not too bad, but a gas heater" [shakes head]</p>	<p>122 M: "And um, I have one for my room and one for the lounge"</p> <p>159 M: "And I'll just say to them if it gets a bit too hot... "open a window in my room please?"</p> <p>165 M: "so they open a window and close the door so that, just to let the air out a bit"</p>	168 M: "they don't push the issue"
Q7	<p>172 M: "When I'm cold, I'm cold and I'm cold right through. (Mmhm) But with the home being warmer, you wouldn't catch me like this"</p> <p>179 M: "it's because I've got that used to it, having to have a cardigan around"</p>	<p>185 M: "cos I don't like coats, (Yep) cos they're too heavy they weight my body down"</p> <p>188 M: "But, I do feel the difference with a warmer house."</p>	<p>176 M: "I'd have a cardigan, I've got a cardigan on the back of my chair"</p> <p>181 M: "I've got a cardigan in the kitchen, I've probably got a cardigan in the lounge, cardigans in my bedroom, (Yep) Ponchos or whatever they are"</p> <p>187 M: "I've probably got a cardigan in the washhouse hanging"</p>	

Elizabeth

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>100 E: "It's a bit tricky now I'm here on my own"</p>	<p>101 E: "Because, there's no fireplace, (Oh right) they've put a silly heater in it's only got low or high, no thermostat"</p>	<p>104 E: "So it's going to cost a mint to run it"</p> <p>109 E: "That's what it means when there's no thermostat, it just takes all the power, yeah sucks it out, and costs a lot of money."</p>		<p>113 E: "Yeah."</p>
<p>Q4</p>	<p>119 E: "Because it's days when you haven't got the sun but it's cold, and that's when you feel shivery, and that's when you get bronchitis and things... So you got ventilation flow but you still got, warm as well."</p> <p>131 E: "Cos it costs too much you've gotta have all day going...just slowly all day."</p>	<p>117 E: "Very. (Yeah?) I think it's very important."</p> <p>123 E: "You just gotta keep warm. The main thing is once you get older you gotta keep warm."</p> <p>130 E: "You can't do it with a heater, hmhmhm!"</p> <p>134 E: "But unfortunately power's so expensive that, pfhh! it will just take all your money away hahahah!... And of course I'm only on just enough to barely live as it is [Sigh]"</p>	<p>129 E: "And the only way you can do that is with Kent fires."</p>	
<p>139 I: "So you think heating is, um you know definitely-" E: "Oh I think it's a definite essential thing in the winter."</p>	<p>145 E: "Well let's face it, it's like a person with no warmth and nothing in their stomach isn't it. (Mm) Yeah so you might as well be just out on the street around a bloody, forty-four gallon tin burning instead. Like a bum."</p> <p>152 E: "And they can't sleep properly if they're not warm."</p>	<p>151 E: "So virtually that's what the conditions you're in."</p>		<p>153 E: "Mm."</p>

Kiri

Orientation	Complicating action	Evaluation	Resolution	Coda
Q7 – prompted 104 I: "does it make a difference to the way that you move about the house?"	107 K: "moving about of course, you're naturally going to get warmed up eh by moving eh, (Mm) and when you're sitting you start freezing"		110 K: "And then naturally you put the heater on"	
113 I: "do you tend to just sit in one room and heat that room up?"	115 K: "Um, well my bedroom" 117 K: "specially when it's wintertime... with the TV in there of course.. when I get friends they all come and sit in my bedroom! Heheh!"	121 K: "And then cos it's nice and warm"	116 K: "seeing that I've made my sitting room into my bedroom!" 112 K: "So we try and stick to that one bedroom, or her bed, when I said "oh um, come sit a minute just warm your room up", cos she closes her door so it'll hold the heat. (Mmhm) And when she goes to bed she switches it off."	
Q7 prompt 129: I: "What about your COPD, how does that change when you feel warm compared to when you feel cold?"	134 K: "And when I'm feeling cold and I'll tell you, I get all sorts of things, I get you know mentally, (Mmhm) I think "oh no, I'm gonna catch a cold, oh no!" 146 K: "cos first things first you know... my skins cold, and then like of course I get my asthma eh. (Yep) Cos the fact is your body, you wanna go, I'm busting to go to the toilet."	132 K: "Oh I feel a lot, you know really good when I'm warm eh" 141 I: "So you feel kind of stressed out about being cold?" K: "Oh not stressed out" 145 K: "it's not nice when you hop out of bed when it's freezing" 151 K: "so um it's all happening at once"	143 K: "automatically I just put warm clothes on anyway"	152 K: "Mm"

George

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>100 I: "So I'm interested in houses that we live in, and how heating our homes might have an impact on our health." G: "Well our, our heating system has improved a hundred percent yeah"</p> <p>116 G: "Especially as far as mum [wife] is concerned."</p>	<p>105 G: "D'ya know why?... Go inside and have a look right up in that top corner, (Yeah?) and you'll see one of those new Fujitsu type of things." I: "Oh have you got a new heat pump in?" G: "Heat pump heat pump yeah"</p> <p>117 G: "she was ah... a couple of years ago, it didn't worry her. Cold weather. (Mmhm) But all of a sudden, (Yep) it's reversed you know. (Yep) But sitting in there with that heater going you know... especially when we're watching TV of a nighttime"</p>	<p>113 I: "Oh that makes a difference." G: "Oh does it ever."</p>	<p>127 G: "she sits there with an open window now. (Does she?!) She sits with the heater on, you know on a cold night."</p>	<p>130 G: "That's a woman for you!"</p>
<p>131 G: "And when you're young you don't feel the cold as much as you do"</p>	<p>132 G: "only when, when you start to get older, and age, you know. (Yep) It's not like [son] and his wife."</p> <p>139 G: "Where as we can have the heater on, they've got the windows open, you know."</p>	<p>137 G: "they don't feel the cold. (Mm) It doesn't worry them."</p> <p>141G: "It's stupid but, that's the way it is you know."</p>		<p>143 G: "Yeah."</p>
<p>Q4</p> <p>150 G: "you like it if you've got your grandchildren here"</p>	<p>162 G: "But if there was only just her and me at home, and it wasn't cold but, you needed the heater or something like that"</p>		<p>152 G: "we are going to know they're coming we turn the heater on, you know, just to put a bit of warmth in the place you know."</p> <p>160 G: "Oh yeah, we heat it up for them and ah, (Mmhm) and that would be about it."</p> <p>165 G: "we just put a blanket over our legs"</p>	<p>167 G: "Save wasting power and all that you know."</p>

Cost of Electricity Narratives

Catherine

Orientation	Complicating action	Evaluation	Resolution	Coda
Prompt clarifying that Catherine uses oil filled electric column heaters.	<p>400 C: "When they advertised them of course, they said that they would heat adequately but cost less to run."</p> <p>408 C: "my Daughter said, that if you take the hot water out of the tap to do dishes it will cos more, she said she boils the jug and then that lets the hot water stay hot for showers and washing and other things"</p> <p>416 C: Once upon a time I never ever turned the hot water off, but now I do. They did advertise the hot water being switched off at their mains at night, and I meant to ring the power board and ask, because I never read about what happened with that."</p> <p>430 C: "A few weeks ago I went away for a week and you would normally just not turn it off, but I did and only left the power on the fridge you see."</p>	<p>403 C: "I don't know whether that is correct with the recent increase in power charges, and now it's summer, it's difficult to assess so you have to wait for it to get cold so you can sort of judge I found."</p> <p>414 C: "She said she found it cheaper than letting cold automatically go into the hot water to be reheated."</p> <p>427 C: "You can find if it is cheaper, I mean it is all gauged on the number of units, so you can work it out from there.</p>	<p>421 C: "I switch it on at night and turn it off again in the morning... And of course that means it is still going for eight or nine hours."</p> <p>433 C: "And I rang my Daughter and said she could switch it on the night before or the day that I was coming so at least it would be hot when I got home."</p>	

Wiki and Pete

Orientation	Complicating action	Evaluation	Resolution	Coda
400 I: "Do you find it difficult to heat your home in the winter?"	401 P: "Not with wood... But if it was electricity oh it would be up in the, hundreds and hundreds... As it is with the wood... just paying for the fridge and what-not... it's round about ah, a hundred and ten, (Ok) a month, but if we had electricity it would be up in the five, six hundreds say."	415 W: "Mm." I: "Ok. So as long as you've got the fireplace it's not hard for you to heat the house?" P: "No."	418 P: "Oh plus I've been poaching pellets and stuff like that to keep it going. (Yep. Mm) We got a load of pellets from the prison... we even grovel there for wood. Hahaha. (Yep) Kindling."	
426 I: "do you, get any kind of benefits from WINZ to help with the heating?" W: "Nothing. (No) No I get absolutely nothing."	430 W: "No sooner we, we got the first lot... I mean he waited all year for something from ACC, no sooner we got it, seven days later WINZ was on his back to pay it within seven days what he borrowed."	434 W: "You know so yeah very hard. (Yeah) Yeah, I thought that wasn't very nice really... I mean took a whole year to wait for something, and you know we were practically on our bums cos we'd spent just about everything, you know using what you've saved, you know tried to save"	440 W: "And we were just down on our last, mm well put it this way we were on our bums then, (Yep) before anything came so, yeah."	
443 W: "you know sometimes he'll come in and go, "you alright" and the next thing I'll burst out and hahaha!"	445 W: "He goes "nevermind", (Yep) he said "we'll manage", yeah." 450 W: "He said "you've gotta keep smiling" so yeah" 453 W: "Oh! Fancy saying that to him, when he's the one who gives me my meal!"	447 W: "So that that's what we've been doing, you know we've managed. Yeah. It's not easy but yeah you get on with life." 451 W: "we have our good days, we have our quarrelsome days when I tell him to get! Hahahahahah!" 455 W: "Hm! Yeah it's like that some days but I mean that's the truth."		457 W: "Apart from that without him I wouldn't have a feed."

Kahu and Howard

Orientation	Complicating action	Evaluation	Resolution	Coda
421 I: "So in terms of importance, do you find that you start to go without other things in the winter, because you're trying to keep the power on, or keep the heating on?" H: "Well yes we do"	428 H: "we do seem to loose a little bit of a few things... what we do is one week, we try and build up so... the next week just get a little, (Yep) and get more power rather than, something else that we need."	434 H: "the essential things we have to get, that's always got, you know" 460 I: "But you would consider heat to be one of the more important-" H: "One of the more important things. (Ok) You know I put it up there with food at the moment."	463 H: "Well I hope not, not this winter but still, we'll see how this works [motions to ceiling with new insulation]... But it really has made a lot of diff- well I think a lot of difference."	466 H: "But ah, you know, we won't know until the actual, when it actually gets cold."
467 I: "And the cost of electricity obviously is a bit of a concern for you then?"	474 H: "at the moment we find that PayGo is the only option... Where on ordinary electricity some of them are paying in the vicinity of two to three hundred a month, (Mmhm) and I said 'well how the hell can someone run up, burn that much power?... my daughter she showed me her power bill she said "see Dad it's all estimated"... I was going 'how the hell can it?' "	468 H: "Ahhh [sigh]. Yes and no because it's, it is necessary and it is essential."	482 H: "I said 'well, no', I said 'we'll stick to PayGo'. (Yep) So, they just sent us out a letter it's going up... just gotta live with it."	485 H: "But uh yeah."
489 H: "when they took away the opportunity to buy some, like you know you ring up and you get ten dollars worth of power... they don't do it now."	499 H: "I've done it three times now... turning it off on a Tuesday morning... because I've only had say four or five dollars in there, (Yep) and I turn it on at four o'clock... do a barbeque for the kids when I come home, so they got dinner, (Yep) and then turn it on at night... we had a dollar fifty left in the morning, it would last until nine o'clock and I'd go down and buy some." 522 H: "we had no power at all, (Mmhm) and it was the day before payday" 526 H: "they said "we're supposed to be asking!" (Haha!) I said "well I didn't know about it."	496 H: "Mind you you had to pay it back but hey at least you didn't have to shut it down." 509 H: "But ah no one likes to live like that! (Yeah) Every week. Yeah." 525 H: "ah I had to ask a lot of questions" 533 H: "You owe nobody... they only part that I worry about is during the evening, (Mmhm) and when it gets cold and in the mornings."	516 H: "I did it once-twice this year... I've only done it three times. (Yep) And I've only ever been to WINZ once to get the emergency because you know I didn't think that that was there." 530 H: "I'll still stick to turning it off. Because you've gotta still pay that back... you don't have to if I turn it off." 536 H: "At least I've got power and give my kids a hot breakfast, rather than having no power and gotta wait, (Yep) and sit out in the shed with the barbeque with the pot on."	540 H: "Done that, eh? Heheh!" [Kahu nods, smiles] "Yeah"

Kahu and Howard (continued)

Orientation	Complicating action	Evaluation	Resolution	Coda
543 K: "One time there, I didn't have any [power] eh?" H: "No."	545 K: "I had to go to the hospital... Because the power was off." H: "Because she had to go to hospital and I rang the ambulance... I didn't know I could go to WINZ... I had to go down on a Monday, oh because it was two days before we get paid, (Yep) and that's when I found out I said "gosh"... they said "if she has to keep that ventilator"... my case officer told me off she said "don't feel ashamed, you come and get twenty dollars"."	566 H: "Yeah, I was quite amazed when I got told off." 572 H: "you can go there, and they don't expect you to pay back ten dollars a week you know (Yeah) it's a dollar a week... no it's a handy thing to have" 585 H: "But I mean to say we still save, (Yep) if you turn all the main switches off"	564: "I said "I honestly didn't know that", I said "I sent her to hospital"." 577 H: "But I try not to get that deep. (Yep) I conserve a lot of power (Mmhm) I turn everything off at the main switch at night. (Yep) So that there's nothing left on standby, TVs and all that I shut them all down... the only thing I leave for her on... because she needs her, the fan, (Yep) and her ventilators, so her power stays on all the time."	587 H: "Yeah"

Kiri

Orientation	Complicating action	Evaluation	Resolution	Coda
400 I: "would you choose heating over other things, like do you go without other things so that you could have heating?" K: "Well winter time possibly"	403 K: "Mm, we do make sacrifices with um, um turn the lights off, when they not used, (Yep) my daughter's bad for that, go switch the heater on leave it on in the other room, or leave it on when she goes out" 409 K: "and to make do and I said "put another jersey on, and if you're sitting there, put a blanket over your knees and I'll switch the heater off" and she said "what?!", (Hhh!) I said well we'll just get the room warm, and then I'll switch it off"."	408 K: "so I'm like a, you know um a hawk over the watch"	414 K: "So that's the, how we mm, (Yep) we compromise."	
Q6 and prompting 425 I: "um you know there's some messages around we should be saving energy and things like that, do you think that applies or not?" K: "Oh I think so"	430 K: "I mean in time over the years, (Mmhm) I've learned how to save you know... when I make a cup of tea I ask my daughter "would you like a drink? (Mmhm) Cos you're not putting this kettle on again and in one big thing and then leave it."... even I'm strict on the lights and all, and when we wash clothes, (Mmhm) I said "have you got any washing to do", cos we try to stick to about, um twice a week we do heavy washing."		446 K: "And it's um not one or two garments, (Yep) um cut back on that."	

Ripeka

Orientation	Complicating action	Evaluation	Resolution	Coda
401 I: "And so you've just got that one heater there?" R: "Yep. That one heater"	<p>403 R: "when I first moved here it was a older, older version... I asked them to come and have a look at it because it was making noises, and it was sparking. (Oh that's no good.) So they come and had a look at it, took it out and put that one in"</p> <p>409 R: "but in the winter, I've been twice to WINZ to pay my power bill cos I told them that there's no way I'm going to sit in my house cold."</p> <p>420 R: "They've, I've, gotta letter from my doctor who's sent to the power board, (Mmhm) explaining my condition, (Mmhm) and that, under no circumstances must my power be turned off. (Right) You know cos I use a nebuliser."</p> <p>431 R: "so to stop them from ever cutting my power off, (Yep) they take \$30 a week out of my benefit. (Ok) Regardless."</p>	<p>408 R: "Well now that one makes a darn noise and I'm thinking, (Mm) maybe because I've used it too much"</p> <p>412 R: "Freezing. I just can't handle it."</p> <p>419 R: "They've sort of accepted it."</p> <p>429 R: "But I use a nebuliser, and there's times when I really desperately need it"</p>	<p>414 R: "And, so if I have to burn my heater, I'm going to burn my heater, and that's probably why I can't keep up with my power, because that really is the only bill I've got. (Yep) Is my power bill."</p> <p>434 R: "That's just to stop them from cutting my power off. (Mmhm) So if I can't pay for my power bill, like it might be \$70 extra that I owe, yeah I just take it to WINZ, if I haven't got the money to pay for it, yeah."</p>	439 R: "Mm"
Prompting from Q8 about benefits for heating.	<p>1 R: "I get a disability allowance of \$11" I: "And is that the one that covers your power bill...Covers the extra heating." R: "It comes to \$11 (Yep) All the extras, come to \$11, and that's even for my lawn-mower man. (Oh really? Ok) He's in there as well...My petrol, (Yep) to the doctors and anywhere, you know like to the clinics and anything. (Yep) Um, cos I take my mileage. (Yeah) My visits to the hospital and to the chemist and all that, (Yep) that's included in there and any time I may have to go to hospital... yeah that's all included in this \$11.36."</p> <p>3 R: "No. Yes I know it does, but oh! Look I've put in for all these things and that's all you're gonna give me? \$11, that's all I qualify?"</p> <p>5 R: "But I took it. (Yep) And, um, because my benefit, I get \$204. (Yep) A week. (Mm) How can you live on that?... Plus, (Yep) the \$11 extra."</p>	<p>2 R: "Yeah it's pathetic!... That's why I went oh I shouldn't have bothered! (Yeah!) Why did I bother! (Yep) And she said to me every little bit helps, and I went hhh! [Looks skywards]"</p> <p>4 R: "...\$11. (Yep) Extra money. Um, yeah and it's not really worth it."</p>	<p>6 R: "It's pathetic. (Mm) I mean, that's a day and a half's wages somewhere. (Yep) You know, maybe two days wages for someone somewhere but, no that has to be mine for a whole week... Pathetic! (Heh!) It's, I want to you know, I wanna say to them why bother? (Yeah) Why bother?"</p>	7 R: "Mm"

Mabel

Orientation	Complicating action	Evaluation	Resolution	Coda
402 I: "Does it stress you out, do you worry about the cost of electricity?" M: "Yes it does."	405 M: "Because, without that electricity I can't use my machine (Yep. Ok) And it's, ahh eight hour pattern." 415 M: "but I've I know I've got them there, (Then that's ok) you know it's feel it coming on, I can um, get on the nebuliser and if that doesn't work then I know I can ring the ambulance."	411 M: "So without that, or the power for my nebuliser, I can panic hm!" 422 M: "But, yep, it does help, it does help to, in a way, and I've never had to think too, I don't have to worry about it too much which I really appreciate that."	419 M: "Then I can ring the ambulance to, to come and take me to the hospital to, maybe overnight."	427 M: "And financially I'm just starting to get back on track again."
401 I: "do you find that in the winter you'll go without some things so that you can have the heaters on? [M: Nods] And what kind of things do you tend to knock off first?"	405 M: "Oh if I've got nothing to eat, I mean if I've got no flour in the house well I wana go and buy bread, I'll have powdered milk. (Mm) You know if I don't have to go and spend money." 416 M: "But the um, power is something that is essential, so, that's why I say to the girls, "don't you fullas keep my TV on, all night, (Mmhm) or play all the stereo, the stereo's going and you fullers are outside, then I'll turn that off." (Mmhm) Anything that's got using power I said "turn it off if you're not using it love, you don't need it."	410 M: "I don't think there's many people that can live on what I've got!... I've had to learn from a young age, (Yeah) so what you haven't got, you don't worry about it."	423 M: "I said "wait 'til you get to my age and then you'll be wondering oh, we had it good at Nan's" and I says "well, I'm telling you now start learning to budget."	
Q6	429 M: "We use a lot of electricity... Everything we're eating, (Mmhm) we have a lot of cooking, a lot of electricity, because I've thrown my mod-cons out. I threw my toaster out, I threw my um, big jug out. My sandwich maker." I've thrown them all out in the rubbish, because they used up power, and they were taking up room and I stopped using it. (Mmhm) So when the girls came here I chucked them out. Well they were saying "I'm gonna buy a new jug for Christmas", (Mmhm) and I said "yeah well I don't mind but you can pay part of the power too".	445 M: I said "you know there's a five hundred dollar credit there", (Yep) I said "we gotta keep it that way" (Ok) I said "um, you never know something, something might just happen", or whether you people take it off I don't know."	451 M: "It does help, it may stop a lot of worry but, (Mmhm) so well I mean, electricity is expensive."	

Mabel (continued)

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>465 M: "that was one of the things I had when I was up north. When I first went on the, on the machine."</p>	<p>455 M: "I took the taps off the hot on the bath, which is naughty, but because I was concerned, (Yep) bout the electricity. (Yep) I want it for my machine."</p> <p>469 M: "We shifted into a place, and, I paid the power bill at the old place, and I told them to reconnect us up into the new place... we went out shopping... and while we were there that's when we paid the energy bill... and when I got home there was no power on"</p> <p>495 M: "my husband went to use the phone and he said to them, "you better get that power on we don't owe anything on our power... I'll take it a little bit further to Fair Go". (Hahah) And he said "my wife's got a machine to use", (Mmhm) he said "she's already stressing out it's not even dark"... so they said "wait 'til tomorrow", he said "no I'm not going to wait 'til tomorrow"... the commotion was, the tenants before us left their account... they wouldn't put the power on because that box... owed them power."</p>	<p>462 M: "to me I'm naughty doing that but I mean I as worried about my machine, (Yep) than anything else. I'd hate to panic at night if my machine's not going."</p> <p>491 M: "and I stressed out. I almost ended up in the hospital again. "How am I going to be able to sleep tonight?"</p>	<p>517 M: "So when the guy did come out and he said "if you hadn't don anything about it", he said I would have rung Fair Go"... "well I'm sorry" he says, "well what's the commotion about then?" He said "oh the previous tenants owed money", he said "well that's not our problem"... So that's when I says "well why don't you people but PayGo in places like this?"</p>	<p>531 M: "They should even do that in Housing New Zealand homes."</p>

Fuel Poverty tables

Fuel poverty narratives were initiated in response to question 9: Some people use the phrase “fuel poverty” or “fuel insecurity” to describe the situation that someone can’t afford to heat their home. What do you think about those descriptions?

Where appropriate, participants were asked question 9a: Do you think that this is a problem among people that you know?

Don

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>600 D: “Oh I don’t know some people, looks like they’re getting into the aged group.”</p> <p>619 I: “Do when you say some people, do you mean families or old people?” D: “Yes older people on their own.”</p>	<p>606 D: “I don’t think that the benefit sometimes is enough for some people, (Yeah) especially if they pay, I’m alright I don’t pay ah, rental or... well I pay phone and (Yep) power but I got power that ah, that’s also given to me and ah, being in the upper age group I sponse I took it. Apart from that ah, nah older, some people find it very hard, very hard.”</p> <p>623 D: “Mind you some of them pakas only spend on what they not ‘sposed to spend! (Mmhm!) Spend on wrong items such as whatever! (Mm) If they wana enjoy their life well they spend it on that which is ah, and at the end of the day ooh, you haven’t got enough to do something else like get food. (Mmhm) If you are, if you are a alcoholic or drinker... or a smoker.”</p>	<p>603 D: “I sponse they ah, just can’t afford it.”</p> <p>617 D: “Like in their eighties and that, I reckon they do.”</p> <p>633 D: “That is where a lot of them goes down I think, in their, in their old age.”</p>	<p>635 D: “Loneliness, loneliness is the other thing with old age is um, they’ve gotta find some sort of thing for themselves.”</p>	

Wiki and Pete

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>Prompting from Q9 – I: “when I first heard the term I thought that it sounded a bit harsh” W: “No I mean it’s because we can’t afford it you know?... I’m not trying to hide the fact or anything but yeah.”</p>	<p>601 W: “I think it’s like us, because you’ve gotta manage somehow, you have to. (Yeah) you know for what we get, we have to manage it, the luxuries have gone out the window.”</p>		<p>607 W: “So what we get is the bare essentials so, yeah. (Ok) Day to day living things.”</p>	<p>611 W: “If I could get a bit more heheh!”</p>

George

Orientation	Complicating action	Evaluation	Resolution	Coda
Prompting from Q9 and 9a	601 G: "I haven't got any personal friends that I've heard about, (Yep) that do have those problems but, I have heard of people with those problems you know."	606 D: "And not that we could do anything, cos we haven't got a hell of a lot of money to go, and give it to them to, you know, pay their bill for heating or anything like that you know."	610 G: "Yeah, yeah there's and, there would be a lot of that going around."	
612 I: "Like you think in this area too as well." G: "Oh definitely so. (Yep) But there [suburb's] not a bad place.	616 G: "you get the Hutt Valley, the temperature over there may be 20, (Yep) over here it'd be 22, 23." 620 G: "that's only on account of the hills, (Yep) and it keeps the wind out, (Yep) supposedly."	619 G: "So it's a bit warmer."	624 G: "If it's gonna be a cold day it's warmer over here than over in the Hutt you know."	625 G: "Stupid little things like that you know."

Catherine

Orientation	Complicating action	Evaluation	Resolution	Coda
Q9 615 C: "I did hear a friend of mine once said to me" 631 I: "But do you think that the problem of not being able to pay for electricity is a problem among people that you know?" 641 I: "some of the people that I've talked to have thought that it might be harder for older people, do you agree?"	605 C: "Quite frankly I think there is no difference between fuel poverty, and just if you can't afford things, everything in general. Because you have to balance it all out, but I wouldn't call it fuel poverty." 617 C: "that they couldn't afford to have the power on apart from the cooking, and they just had to get used to cold showers." 634 C: "I mean you know these bulbs [compact fluorescent bulbs] they tell us are much cheaper than the other kind of bulbs, and they appear to last longer, but they are twice the price so they would have to last twice as long." 644 C: "No not necessarily, also parents with children, but then children move about more quickly and keep warm, but if they're on a set wage or benefits, then it is a matter of balancing out what you can afford."	610 C: "To me that is a peculiar expression to use, because I think poverty covers everything, and it is a matter of balancing your budget accordingly." 616 C: "and I just about fell over I couldn't believe it" 619 C: "I couldn't believe it, because you see you need to balance that all out." 632 C: "I think for some it is, it actually is." 649 C: "You know it amuses me sometimes, people complain that they haven't got enough, I just can't understand but their children will be dressed in the latest fashion, and I don't know if I go along with that."	623 C: "I told her, I was quite rude with what I said. I mean I very rarely do a hot wash in the washing machine, I do a cold wash and I'm by myself, nothing gets that dirty, and if I needed to I'd certainly do a hot wash." 654 C: "What they buy doesn't last long, but they say well it didn't cost much, but by the same token I've always been careful about what I purchase, it doesn't matter what it is."	

Kahu and Howard

Orientation	Complicating action	Evaluation	Resolution	Coda
Q9	<p>604 H: "Well would it really minds be being poor well, I don't think so, (Yeah) because it to be absolutely honest, you know if you can't afford something, (Mmhm) like, especially to buy power, there is always a thing with WINZ where there's emergency, and of course you have to pay it back, but it is there."</p> <p>620 H: "maybe for working class... you might be earning \$700 a week, but then depends on how it's spent... some can swear upon the bible and say that's not enough money."</p> <p>628 H: "But I mean if you're the only breadwinner in the house, and that's all you're bringing in, yes it will, (Mmhm) if you've got kids going to college, you know, and you know your wife tries and does her best with her budgeting and all of that, (Yep) and you know you will run out, it is, it may only happen once a year... some people get it all the time every week, (Yep) and you can quite see where that ah comes from, but I mean it always depends on what situation you're in."</p> <p>656 H: "so if it gets so bad what we do is... I just calculate it out by \$9 a day... sometimes you don't even use that"</p> <p>666 H: "But there were occasions when there was only 6 on a Monday... I used to turn the power off... Tuesday in the morning, at 8 o'clock I used to shut it all down, (Right) and turn it back on at 4 o'clock... After 4 it stays on, (Right) but you can guarantee at 8 o'clock in the morning if there's no money in there it'll shut down... if it does that you know it's a Wednesday, you're getting paid you only got an hour to wait and, (Yep) top it up again. (Ok) Yeah but I mean it doesn't happen all the time."</p>	<p>617 H: "but I mean using the word poverty do- I don't think anyone would, well maybe so... but you know, I can't see us being in that situation when those sort of things are at hand."</p> <p>626 H: "And I mean you know, that causes poverty."</p> <p>640 I: "So you think that 'fuel poverty' sounds quite an extreme kind of" H: "Yeah" I: "description." H: "Yeah oh to me it does... people like us I guess, there are those other options out there, (Mmhm) where we could go to WINZ and ask for that emergency"</p> <p>662 H: "when we wake up, Tuesday morning we just hope and pray- I do, hope and pray I got \$12 in the machine. (Mm) If I know I've got 12 bucks, I says 'well I'm fine we can make it 'til Wednesday'."</p> <p>689 H: "Yeah. But that is quite a, pretty harsh question."... I: "Do you think there's a better way of describing that situation then?"... H: "Well, hardship is better than poverty." I: "Yeah, yeah I think it sounds quite harsh too." H: "Yeah it does... maybe there are some but... you gotta work it out (Yep) I guess."</p>	<p>701 H: "If you run out well it's because you've done something extra...say for instance we've got a birthday party, something like that you're gonna guarantee to use extra power, (Mmhm) you can't calculate those things. You know? (Yeah) Surprises that turn up, (Yeah) those things you can't calculate. (Mmhm) So you just gotta make sure you've got enough cash! Heheh!</p>	

Ripeka

Orientation	Complicating action	Evaluation	Resolution	Coda
I: "Some people use the phrase "fuel poverty" to describe when people can't pay their electricity bills."	604 R: "Oh like we got, um like we can go and claim poverty too. (Mmhm) And they give you um, ah like a, foodbank grant."		610 R: "you're not allowed the cash, (Yep) they give you, like a food grant."	613 R: "Yeah."
Q9 614 R: "Oh I don't know, I mean it's a good idea to have it, because, nobody likes being cold, and especially, people with my sickness COPD."	618 R: "I didn't know anything about it until, two years ago... and now that I've studied it and read about it... we just don't like the cold, ...definitely, that's the one thing we don't like, we like to be warmth and comfortable. Because it helps us with our breathing as well, you know?"	628 R: "Like you can tell the difference, like if I'm sitting her and I'm cold, I know I'm cold because my breathing starts to change. (Mmhm) I just start to get raspy, or I start to get chesty. (Mmhm) And then, you just start to, your body just starts to sort of feel <i>numb</i> . (Oh right) Well for me it does."	637 R: "And cold like, I can't do anything because I'm too cold to do it. (Mmhm) So I wanna go somewhere where I can be warm, so yep, wrap myself up in a blanket, and get by a heater... Keep warm."	644 R: "Keep your body warm. Mm."

Elizabeth

Orientation	Complicating action	Evaluation	Resolution	Coda
Q9 prompting I: "I just wondered if you think that it is a problem for people that you know as well"	605 E: "Yeah, well I know it's getting worse and worse. (Mmhm) People just can't afford it. (Yep) So they wrap up in blankets and things, but you can't lug blankets around with you all the times, doing your dishes and preparing tea and things" 614 E: "Because at least with kent fires you're not smelling the fumes the same as an open fire, in open fires you get the puffs of smoke puffing out with the wind down the chimney... it's gotta be more on the like a central heating kinda system"	611 E: "I think myself every place just needs to be really, good draft-proofed, insulated and kent fires just put in, (Yep) or a better way of heating." 621 E: "And I've found that the kent fires, the build in kent fires is the only thing that's the nearest to it."	625 E: "Cos you just put one log on and let it burn slowly and it's ready just to flame up in the morning... But you can't do that with a fireplace."	

Mabel

Orientation	Complicating action	Evaluation	Resolution	Coda
9a prompts	607 M: "Depends on what kinda house they've got... the superannuitants, we basically get all the same... some of us get a little bit more, like with a disability allowances... or living alone costs... it depends on the size of house, and what their, oh their entertainment their, their social life."	626 M: "So if you're not going to budget out, you're gonna have those problems yes. (Yep. Ok) So if like angels, like you people come in, and you pay up a large amount of money, surely they can, I find we can, (Mmhm) by putting aside our wants, (Mmhm) and concentrating on what we need, and we need warmth... You know it's, it can be done. (Yep) I haven't got a flash house."	653 M: "So what they really needing, for the older people... is budgeters... So that the money is being spent wisely... Because what's happening probably, they're getting it in one large sum and they're spending it on hmhh!"	

Kiri

Orientation	Complicating action	Evaluation	Resolution	Coda
Q9 604 K: "I've never heard that, um phrase said before."	606 K: "Um, we say for Maori, (Yep) pohara for being poor. (Yep) Um, I think about the bigger families rather than just my daughter and I, (Yep) having to make do or not at all." 613 K: "And even though I have COPD, my daughter would always say "Mum make sure your room is warm"	611 K: "But we've, I've never, regardless of the cost I've never not had my room warmed up."	615 K: "So I've made sure that I'm warm, (Mmhm) and but I have to put up with the smell of the mould when it rains."	617 K: "Mm."

Voucher Narratives

Voucher narratives were usually given in response to the following questions from the interview schedule:

- Q10 I'd like to talk with you a little now about electricity vouchers. In what ways have things been different in your home, if they have been different, while you have known you were getting the electricity voucher?
- Q11 Some people think that vouchers are a good way of helping the 'fuel poverty' problem, for example in the UK, the government gives vouchers in winter to those who are aged over 60 for electricity. In New Zealand, people can go to Work and Income to get a loan if their power gets disconnected. What do you think is the most acceptable way of helping 'fuel poverty'?

Don

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	803 D: "You just expect what comes heheheh. (Yep) You know Christmas only comes once a year! (Yeah!) Like anything else it just comes, and it comes (Yep) and it's gone!"	802 D: "I don't think so." 808 D: "Nah, I no no I don't think it's." I: "You didn't think anything different."		811 D: "Nah."
812 D: "Well I think the situation in England is a long different, ah different from here."	814 D: "They've always got more snow on their houses than anywhere else! (Heheh!) You never see that in this country unless of course if you live down South, or around the mountains like Tongariro and Ruapehu and them."	817 D: "But I don't think that you can compare this country to England."	818 D: "They do deserve that extra, well it's cold over there and you, everybody will tell you that."	
821 D: "Oh yeah dear, people have got different opinions. To me anyhow."	823 D: "But ah like you were saying about that ah, that extra on your power and that, well it's only extra, the price of power is that expensive today." 829 D: "It's a pity the younger people couldn't get it, but then they'd probably waste it, ah instead of using it for whatever they're 'sposed to use it for." 835 D: "The ones that are really, they say "oh Jesus we don't have to worry about power this week" or whatever."	827 D: "I think it's a bonus to get something like that." 834 D: "It's good for the older people." 837 I: "So it'd be good for older people you think... not good for younger people?" D: "Well, no. I don't think it's ah."	842 D: "They'll just ah, expect it or whatever, (Mmhm) "oh I hope they hurry up and give us some more" (Mmhm) to an older person they'll just get it and be happy with it."	846 D: "Oh as far as I'm concerned."
847 D: "The rating of homes and that is another thing."	848 D: "We get a rebate of \$500 per year we get, instead of paying 12 or \$1300 on your rates, you only pay about 8, 9. 800."	853 D: "It's a big help. (Yeah) A very big help."		

Catherine

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	<p>803 C: "I did find that it meant you had as credit in your account"</p> <p>805 C: "because I had made a saving on the electricity."</p>	<p>804 C: "so it really enabled me to purchase something else."</p> <p>806 I: "But you didn't do anything differently, like you kept the heating the same?" C: "That's right."</p>	<p>808 C: "I probably looked and thought, 'well I can afford to buy a new jacket' or something like that."</p>	<p>810 C: "if you know what I mean."</p>
Q11	<p>813 C: "It simply means that you've got more, and gives you more money. You do have more purchasing power, to get something that you might have been going without for a while."</p> <p>820 C: "They might still do without electricity, and then they're still cold."</p> <p>824 C: "Why I say that is because of the most unusual experiences I've had"</p> <p>826 C: "Because I was given two vouchers, and not being used to them, I looked at them, and then popped them in my drawer or my handbag or something. I found them years later, and one shop had gone out of existence and I hadn't used it... Not only once this happened, but twice."</p>	<p>811 C: "I think that if the government can afford to give us that as a bonus, it might be best to leave it as that."</p> <p>817 C: "I don't know why I did get the five hundred, so if it is going to be like that or even less, I think that is a better idea than giving a voucher worth X."</p> <p>822 I: "So you think that putting it straight into the account is better?" C: "Very definitely."</p> <p>825 C: "I was so cross with myself."</p> <p>836 C: "I was furious with myself."</p>	<p>837 C: "My relations had given me a voucher, and when I finally found them and took them into the shop they had gone past their useful date, and that is ridiculous. But I do love to read, and had been given vouchers for books, and then it was ridiculous to find that they no longer existed."</p>	

Wiki and Pete

Orientation	Complicating action	Evaluation	Resolution	Coda
	<p>800 P: "But in winter we've just gotta keep the house warm."</p> <p>803 P: "I was kicked off work and we were on a sickness benefit"</p> <p>805 P: "It didn't cover all the wood, we had, still had to go to WINZ and get another load"</p> <p>808 P: "Cos that's our primary heating the wood eh."</p>	<p>801 P: "And that grant, was a godsend this year"</p> <p>804 P: "and that grant has pulled us through this."</p> <p>807 P: "But it helped out a helluva lot."</p>	<p>809 P: "And the voucher allowed us to, have a, a warm house so that (Yep) we could pay the electricity, with that money and, what we weren't paying we bought the wood."</p>	<p>814 P: "Yeah."</p>
	<p>815 P: "That's what I was saying, that electricity voucher"</p> <p>819 P: "Then we went to WINZ for the extra. Because she's got to have the, she'll just shiver, and then, she'll use a lot of energy."</p>	<p>817 P: "saved us because we could afford the wood." W: "Mm."</p>	<p>825 P: "Because she stands up and goes to the commode there, and that's as far as she gets."</p>	
Q11	<p>829 W: "I think that's true because um, I mean, people in you know a position like our one, (Yep) I mean, you've gotta understand that too so to us it's Christmas when we can get something to help us along as well."</p>	<p>827 W: "I think so."</p> <p>831 W: "Yeah. And that's no lie... to me it's a saviour, it just helps to go with your, yeah."</p>		
prompt following Q11	<p>834 W: "Yeah because sometimes him and I sitting here and we think, sometimes you get stressed out when you talk to one another about something, (Mm) which you know you can't get means you've gotta apply to WINZ. When you get turned down, that's."</p> <p>839 W: "We'll talk about it, you know? (Mm) And then, it's when you get turned down you know the feeling? (Yeah) Yeah he comes in and he goes "oh mum, it wasn't too good this time round"."</p> <p>845 W: "Because he's come home and got rejected on something, but you know when you tell them the truth, hopefully something might happen."</p>	<p>833 W: "You know anything would help."</p> <p>838 W: "I see the disappointment on his face, and if I could say something or do something."</p> <p>843 W: "you know I just wana cry in front of his face hmheh."</p> <p>747 W: "Yep. Would be nice. Something would be nice."</p>	<p>849 W: "Yep, I mean we dreamed of something that could help us along the way, cos when you find that you know what you've saved you've had to use it, you know, (Mm), by golly I tell you what you know, it's more like you know, my Santa Clause savings is gone!"</p>	<p>854 W: "You know."</p>

Kahu and Howard

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	<p>809 H: "Yeah I said "well that money should last us 2½ months, the \$300 the first one that we put in."</p> <p>815 H: "And say "oh gosh I can do this I can do that" you know. (Yep) It didn't come from you.... I though well gosh, 2½ months it didn't last long, it only went for two. (Yeah) But when we put in the last 200 eh? I stretched that as far as I could!... Cos I knew we were going to have to be buying it again."</p> <p>831 H: "You know we felt for a long time eh, we've had enough, never run out of anything, (Yep) foodwise."</p>	<p>804 H: "Gosh well it really really did."</p> <p>811 H: "And so, gosh yeah you know it's <i>amazing</i>, that that's in there, and you know it didn't come out of <i>your</i> pocket, (Yeah) and it's amazing how much power you use, (Mm) gospel, you just take as if a <i>gift</i>."</p> <p>826 H: "that money, that \$60 a week bought a <i>lot</i> of things for my grandchildren... that money went a long long way." K: "Mm." H: "Honestly."</p> <p>834 H: "You know I think 'gosh I wish gifts like this would come all the time'... that really helped us."</p>		
949 H: "And cos her [Kahu]"	<p>950 H: "She is my main concern. (Yeah) And my grandchildren."</p> <p>956 H: "You know, it's amazing we've never had so much money left on a weekend. (Mmhm) You now and to carry on through the week."</p> <p>959 H: "The kids says "oh Papa, what are we gonna buy? (Yeah!) You know, and we go down and buy them shoes and what-not. (Yep) And my eldest grandchild she says "Papa can you afford it?", I says "darling we got plenty of power, we only spend \$50 a week", I said "they'll let us".</p>	<p>954 H: "But those voucher gosh well that was a <i>big</i> help to us"</p> <p>958 H: "And no it was great"</p>	966 H: "We go to the cheapest places of course but heheheh! (Yeah heheh!) But gosh well that was a help."	968 H: "A very big help yeah, mm."

Ripeka

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	<p>810 R: "No difference. Good that I knew I was getting one. (Yep) And all that. And rapt that I was. (Yep) Rapt when I did. (Yep) Um it was like it came and went."</p>	<p>807 R: "No different." I: "You didn't think there was any difference." R: "No. No."</p> <p>817 R: "So, oh no it was great big help."</p>	820 R: "And it was a, I mean it was a fright to think, that I could qualify. (Yep) Yeah for one."	823 R: "An excellent, excellent."

Mabel

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	812 M: "I have that on the clock, (Yep) that I have two fridges... I have a jug (Mmhm), I've got a sewing machine down there, (Mmhm) then my hot water, shower... I've always said to the girls "you give me, the power, (Mmhm) buy your own food you cook it" (Yep) Because I can't afford to keep them... After my husband died I put everything into credit, but it was only like 101 something, (Mmhm) but when I got my bill it was \$500."	807 M: "Well I probably, and I still am, aware, of power (Mmhm) usage." 828 M: "I thought 'ohhhh that's not right it can't be'."	829 M: "Then I think it was [community coordinator], came over here to see me and she spoke about the power, I said "I've got an account here", and I said "that \$500 in, \$500 discount"."	
Q11	851 M: "take my case for instance, (Yep) I've got three other girls here... I know I don't get much... one of them I get board money from which is enough to get some meat, (Yep) butter, milk, and then I sort of contribute towards the power supposed to be... if it goes less than what I think it should be then the next month... I'll go to the post office and pay onto the account, (Yep) so that it keeps it up into, (Mmhm) into that bracket." 872 M: "you people know you've done your job and it's up to us it's been given to us to keep it, in the right prospect..." I: "So you try and keep your account in credit now?" M: "Yeah." 890 M: "I remember when my husband was alive he was always cold... it had got to the stage that our power bill was, something drastic because, his machine was using power, my machine was using power... electric blanket, the TV."	845 M: "Vouchers, that's a fantastic idea, provided that we don't abuse it." 866 M: "It's not because I'm not using, no we are using it, but I don't want to abuse it." 879 M: "because you put it on the electricity you know, (Yep) that doesn't mean to say that I'm gonna just <i>abuse</i> it, (Mm) and think to myself 'that's alright so what they'll give me some more money'... my thing is that they've offered you this amount, (Yep) I'm gonna put \$27.50 a week into there... to keep it, my part of the play up." 908 M: "It was something terrible, but ah, I've got it down to a fine art now, and I intend to keep it that way."	911 M: "Thanks to you people helping out... well that money went into my account... budgeter came here and I said... "I haven't put any money, have you?" She says "no, I can't you haven't got the resources to do that with". I says "oh some angel's given me some!"...[community coordinator], or one of the girls turned up, came over to see me to find out whether I had received it, (Mmhm) I said "well, is that where it came from?"."	

Mabel (continued)

Orientation	Complicating action	Evaluation	Resolution	Coda
<p>925 I: "if the government was to introduce some kind of scheme to help older people, it should go straight into their account rather than going to the person?"</p>	<p>929 M: "because they're the ones that need to use the power, but the power goes up, the wage stays in the same place, food rises (Yep), and the wage stays in the same way, superannuitants may get two dollars extra"</p> <p>937 M: "that's the government that's doing that it's allowing that to happen, (Mmhm) but if they would turn around and they would put it in the old peoples' thing... I assume they know each and every one of us."</p>	<p>928 M: "I reckon that would be a fantastic idea."</p> <p>936 M: "You know they give it to you in the one hand and they take it out in the other hand."</p>	<p>940 M: "I've got my GoldCard... So they must know who we are. (Yep) And that's one of the things that we do struggle, really struggle with is power."</p>	

Elizabeth

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	<p>803 E: "because I was allowed to run the heater longer. (Right) And when I was cold I was able to have it on but, when you know, it came time that I had to go back to normal, and it was cutting down you know, I only had it on when I really had to"</p>	<p>802 E: "Oh! I was kept much warmer"</p> <p>809 E: "but oohhh I'd feel all shivery"...</p> <p>I: "So that was a big help for you then?" 812 E: "Ooo yeah. Yeah... It was all the way. (Yep) It was really good. (Yep) It was really handy."</p>		
Q11	<p>832 E: "Well see I'm not 60. (Oh right) And that's where I'm in between"</p> <p>843 E: "Yeah so I get no cuts on nothing, where as a pensioner would be and a pensioner's on a better salary than me too, (Yep) a better income than me."</p> <p>854 E: "So if they brought something like that in well then I'd be really had it, you know if they did offer anything because I'd miss out. (Yeah) Once again all because of my age. (Right) Instead of taking it that it's a permanent disability you know?"</p>	<p>836 E: "I'm the in between that misses out on everything because of my age."</p> <p>852 E: "So it's awful when you're in between."</p> <p>865 I: "if they were going to bring something in like that then, do you think that it needs to be extended to other groups?" E: "Yeah I think so yeah."</p>	<p>871 E: "The ones that are really permanent, disability. (Yep) Permanent, that it's a permanent thing. The doctor writes down it's permanent. (Yep) Not just a six monthly things, it's permanent, throughout life."</p>	<p>879 E: "Yep. (Yeah) Mm. Mm."</p>
Elizabeth spoke about the difficulties of families with young children. I asked if vouchers should be extended to people with young children.	<p>887 E: "The ones on a low bracket. (Yep) The ones on a higher bracket are ok because, let's face it they get enough you know. (Yep) Certainly they work for it, who's saying they're not but... low income people, (Yep) yeah. And a lot of mothers out there with no partners, just the children on their own and that. And they find it very tough. Keeping their kids warm"</p>	<p>885 E: "Well I think, you know, it could be of help."</p> <p>902 E: "And I think with all children you've gotta keep them warm, otherwise they're just into bronchitis and pneumonia and pleurisy and flu's, viruses all the time."</p>	<p>905 E: "It's a no-win situation."</p>	<p>906 E: "Yep."</p>

Kiri

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10 K: "Oh yeah, certainly has."	809 K: "Like are we, is this a one-off or are we going to get it all the time! Hahahah!" 813 K: "it kinda like after every winter my daughter and I are still paying off that big, like 6, almost \$700, (Yeah) it takes us over to the following year to pay off. And having to, um, argue with the electricity companies, "we can't afford that"... "well we'll put you on direct-debit", and I said "no I'm not, not a direct-debit" no I said "I'd rather pay, um what we can afford but still pay anyway"	812 K: "It was really great the feeling I felt"	825 K: "But until that incident happened with that lady, (Mm) I said "because I'm COPD... I'll provide you with a letter from my doctor... please don't cut us off... we will pay, we have paid in the past... look at my record... the past three years"... And I had a very good lady who said "yeah you're dead right Kiri, no we won't cut, cut your power off... even if you're behind"."	
837 I: "you didn't use more heating, you just felt less stressed with the voucher?"	842 K: "My daughter said "nahhh you didn't get that!", (Heheh) "Yes I did!" I even bulldozed [community coordinator] "it isn't in my bank yet!"... She said "should be everyone else has got theirs ohhh!" Because unbeknown to me it just come automatically out of my account, like "Hhhh! It has too!"	839 K: "Oh yeah course, course anyone would... it's just like Christmas all at once! And really excited." 852 K: "I said "gee my account is in credit!"... And it really made me feel <i>really</i> good oh thank you."		
Q11	865 K: "Especially for those like, I'm alright because I'm working, (Yep) but those who are on a benefit, (Mm) mainly for all those who have COPD, (Yep) because we do struggle. I mean days when I'm not feeling too well, I start putting clothes on, even if it is a [sunny] day like this"	864 K: "You know that's a great idea." 873 K: "I just wana curl up somewhere... you're suffering inside it's in silence eh, (Mm) because one it's cold, and people are looking at you wondering why you're like that"	878 K: "mmm, so you'd rather go home, and what do you go home to? A cold place! Hhmmh!" I: "So you'd rather come to work on those days" K: "Yeah heheheh!... [laughing] Got a heater right beside me here!"	

George

Orientation	Complicating action	Evaluation	Resolution	Coda
Q10	803 G: "Well, it didn't, we didn't ah, how would you put it, jump for joy and do extras or anything like that, we just kept on natural you know."	810 G: "Cos if, if you started you know yahoing and everything, you'll not get any benefit out of it will you?"	813 G: "So just shut up and heheh! Persevere, heheh!"	
Q11	817 G: "It would help, ahhh, say a pensioner or something like that." 832 G: "I'm saying because er, it helps look after the people you know. Um, in actual fact a lot more of it should go on." 836 G: "Also with the, the, as I says, the widow or widower or whatever it may be."	830 G: "Well that's a good thought. (Mmhm) It is a good thought." 835 G: "I think so."	839 G: "That would help them out a hell of a lot you know."	
840 I: "do you think it's mainly older people that have those kind of problems?"	842 G: "Well I think that it would be other people, that's got that problem" 846 G: "It's only the old people who have retired and everything who can't afford it." 848 G: "The ones that are still working and everything like that well, what do they do with their money?"	845 G: "I would say that they have brought that on themselves." 847 G: "They're the ones that are needy."	851 I: "So you kind of think it's more of a, budgeting thing with younger people?" G: "It's, it is yeah."	
856 I: "I wondered if you had any other ideas about what might, be a good way to help out people that are in that situation?"	862 G: "an elderly couple, (Mmhm) or a pensioner or not a pensioner a widower or something like that, (Yep) I'd like to see the government give them more money. (Yep) When I say, not giving the money themselves but, pay the heating bill or, (Right) whatever it may be, you know. Yeah I'd like to see that much." 874 G: " Yeah oh don't let them handle it. I'll say, you give it to me and I can go straight down the pub. (Yep) No it's, that's what a lot of people would do. (Yep) But by doing, what they done for us like... giving it to the power board yeah." 885 G: "And the more they done of that the better off, (Right) people would be, or the country maybe."	870 I: "So you think that it was quite a good way, like the voucher system where it goes straight-" G: "Oh definitely so" I: "into the bill." 883 G: "Well it, that was a good idea."	888 G: "And she might get back in this year, Labour, heheheh!"	