

# *THE LIVING ENVIRONMENTS OF COMMUNITY-DWELLING OLDER PEOPLE WHO BECOME FRAIL: ANOTHER LOOK AT THE LIVING STANDARDS OF OLDER NEW ZEALANDERS SURVEY*

Patrick Barrett<sup>1</sup>  
Stephen Twitchin  
with Sharon Kletchko and Faye Ryan  
University of Waikato  
Tauranga

## **Abstract**

Efforts to support older people who live in the community and who become frail will be enhanced by a better appreciation of the shared characteristics of this group. This paper reports indicative findings from a re-analysis of the Living Standards of Older New Zealanders survey (Fergusson et al. 2001) about the living conditions of this group in terms of their household arrangements, their income and standard of living, their housing situation, issues they face in terms of mobility and transport, and their social connectedness. Findings suggest a higher prevalence of frailty among older people with lower income levels and wealth, less secure housing, limitations to mobility, and with less frequent social contact. Disadvantage in these areas reduces the ability of the older person to adjust to their living environment, affecting the potential for recovery and the maintenance of wellbeing. Such disadvantage may well be amenable to social policy amelioration and is worthy of consideration by policy makers.

## INTRODUCTION

Most ... pathological agents are ubiquitous in our environment – everyone who lives is exposed to them. Social factors are what make people more or less resistant to them. (Kovar and Stone 1992:303)

Population ageing and preferences by older people to “age in place” raise issues for health and social service planners, not least in terms of how best to support those who become frail and continue to live in the community. The “ageing in place” policy means, in effect, supporting older people to live in their own homes for as long as they can,

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### **Correspondence**

Patrick Barrett, University of Waikato, Private Bag 12027, Tauranga. Email: pbarrett@waikato.ac.nz.

providing home-based medical, personal and domestic care services. This paper reports on the characteristics of older people likely to be in need of such services. It re-analyses data from the Living Standards of Older New Zealanders survey<sup>2</sup> (Ferguson 2001), which provides information about the living conditions of older New Zealanders – their household arrangements, their income and standard of living, their housing situation, issues they face in terms of mobility and transport, and their social connectedness. It includes as-yet-unanalysed information about the health and functional difficulties experienced by community-dwelling older people.

We endeavoured to use the survey's information about health and functional difficulties to identify those older people who had become frail and who continued to live in the community. The re-analysis reported here involved, first, establishing criteria for the identification of a frail subgroup within the broader survey population. Once we had identified that subgroup, we were able to observe their living environments across a number of indicators. Indicative findings suggest a higher prevalence of frailty among those with lower levels of income and wealth, less secure housing, limitations to mobility, and less frequent social contact. Disadvantage in these areas reduces the potential for older people to achieve a balance between their changing abilities and their living environments. The paper concludes by considering implications of these observations.

It is important to note at the outset, however, that the majority of community-dwelling older people should not be classified as frail. Frailty is a term used to describe those older people at risk of falls, admission into rest homes, disability in key activities of daily living, and death. There is a considerable literature on the issue of frailty from a biomedical perspective. Nevertheless, social research into ageing has tended not to focus on frailty, owing to concerns that to do so would tacitly endorse views that old age primarily involves processes of decline. Instead, social research has examined the way by which older people have been excluded by various social processes, and it has emphasised the latent potential for active and fulfilled lifestyles in later life and the development of better ways to take advantage of this potential. The resulting successful ageing movement has had significant benefits. There continues to be, however, a greater risk of frailty among, especially, the oldest-old (Baltes and Smith 2003).

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2 The Living Standards of Older New Zealanders survey data set was compiled by Statistics New Zealand for the Ministry of Social Development, administered through the Household Labour Force Survey (HLFS), using the HLFS sampling frame. All households containing a person aged 65 and over who had participated in the HLFS in 1999 or up to March 2000 were eligible. The survey was conducted between 7 February 2000 and 7 April 2000, it involved face-to-face interviews of about 90 minutes, it obtained a sample of 3,060 people age 65 and over, and it achieved a response rate of 68%. Just under 96%, or 2,931, of those respondents consented to being included in the data set used in this paper.

## DEFINING FRAILITY

Frailty is one of those elusive concepts like “wellbeing” and “quality of life” (Kaufman 1994). It can be contrasted with resilience or hardiness, and when used with reference to late life is used to capture something beyond disability and isolated medical conditions. Other terms used to capture this broader sense include: “diminished reserve capacity”, “unstable disability”, “comorbidity”, “dependence in activities of daily living”, and “failure to thrive”. Much of the considerable biomedical literature on frailty is directed towards arriving at a precise clinical definition. Identification of clinical criteria for frailty has been found to be highly complex, with some arguing that frailty is no more than a synonym for disability (see Gillick 2001:M134).

Linda Fried and colleagues (2001) have been leaders in biomedical attempts to find a clinical definition. In an interview with Radio National in Australia in June 2003, Fried described frailty as a physical condition, “something very deep in the body”. Gillick (2001:M134) described her efforts as an attempt to make the case that frailty is a “well-defined syndrome with biological underpinnings and chemical markers”. Fried’s work has led to assertions that 7% of community-dwelling older people have some type of biologically determinable frailty. These research efforts are designed to help geriatricians identify the different presentations of frailty, and thus assist in the development of screening tools and inform interventions and preventive strategies. Taxonomic efforts continue, and in the 2005 Journal of the American Geriatrics Society, Rockwood, another researcher in this field, editorialises that arriving at a clinical definition of frailty continues to be a worthy challenge.

Biomedical models can, however, be criticised for their tendency to focus us on individual decline and restrict our attention to the assessment of individual loss and need for service. Such views tend to draw our gaze away from social and environmental factors that contribute to frailty in late life. It is this notion – that we can observe the incidence of frailty within a social context – that is the topic of this paper. We are interested in the idea that frailty does not simply reflect physical frailty.

Researchers who have attempted to understand frailty in terms of a broader environmental context have emphasised the way frailty involves “diminished ability to carry out the important practical and social activities of daily living” (Brown et al. 1995:95). “Practical activities” means those basic activities of daily living such as bathing, dressing, eating, toileting, grooming, managing finances and shopping. “Social activities” include interrelating with family or friends on a regular basis, and giving and receiving support. Diminished ability to perform these activities may stem from personal factors (cognitive, physical and psychological) and environmental factors

(things like financial, interpersonal, and living situations). The important point is that these definitions seek to incorporate greater recognition of environmental effects on frailty in late life.

Allowing frailty to be seen as having a wider range of causes and defining frailty in these terms allows us to draw on the insights contained within critical definitions of disability. While there is overlap between conceptualisations of frailty and disability, reference to diminished ability to carry out the important practical and social activities of daily living does not equate frailty with disability. Both concepts imply diminished ability, but, as Brown et al. (1995:99) suggest, “disability results from fairly specific and identifiable impairments, whereas frailty results from a much broader range of personal and environmental factors”.

Critical definitions of disability emphasise relational processes, with disability seen as “a dynamic social phenomenon that has as much to do with cultural norms and socio-economic status as it does with physiological conditions” (Kennedy and Minkler 1999:91). The focus in such a definition is on processes that disable – institutionalised processes within social environments that limit the ability of individuals to perform key tasks. The focus in a broader definition of frailty, then, should also be on those processes that, alongside physiological decline, undermine the ability of older people who experience physiological decline to perform key activities and roles in social environments. That is, attempts to characterise frailty in later life are enhanced by attending to the way individuals are constructed as frail, and by the way they become connected to and embedded in a variety of institutional and community services and agencies. Such a focus requires us to consider institutionalised practices in the health and aged care sector, broader cultural norms and discourses, and socio-economic factors.

When looked at in this way, frailty is not a fixed state defined by degree of physical wellbeing, but a state that is relational, influenced by social, institutional and environmental contexts, and the way these affect the ability to perform key activities and roles. Kaufman’s (1994) research into the transition into frailty was concerned with identifying factors in this relational process – a “frailty process” as she described it. She observed the importance of the interplay, in this process, of both personal and environmental factors between the older person, their family and medical workers as they negotiated meanings of independence, autonomy, interdependence and surveillance. Such a view has potential to take account of the discourses that inform the different people and institutions in contact with the older person and the physical environments of the older person.

## IDENTIFYING COMMUNITY-DWELLING OLDER PEOPLE WHO HAVE BECOME FRAIL

We asked whether there were shared characteristics in the living environments of community-dwelling older people who become frail. We conceptualised frailty in a way that could be operationalised within the context of the information collected in the Living Standards of Older New Zealanders survey. The survey involved structured interviews with a sample of 3,060 core economic units (or community dwellings), comprising 1,618 (52.9%) single-person units and 1,442 (47.1%) partnered units (Fergusson 2001:40). The survey results included information about basic demographic characteristics, the health and disability status of individuals, their mental health status, their level of social and family support, and their economic living standard. Ours was an opportunistic research exercise, re-analysing the living standards survey data set in a way that would allow observations to be made about a subgroup of older people who become frail and who continue to live in the community.<sup>3</sup>

Drawing on Strawbridge et al. (1998:59), we defined frailty as “a complex or syndrome of underlying problems” contributing to vulnerability to environmental challenge. Following Strawbridge et al. (1998), we used a two-staged approach to capture, first, a condition or constellation of conditions and, second, problems with practical and social activities of daily living stemming from that condition or conditions. Identifying a subgroup of older people who were frail would involve identifying those with a number of conditions, and those who also reported difficulty with carrying out practical and social activities of daily living – that is, those who were experiencing environmental challenge. We surmised that, with this approach, we might capture the consequences of the interaction between conditions and functioning that is typical in definitions of frailty.

The Living Standards of Older New Zealanders survey data set made this approach possible as it included, first, a record of the number of times an individual had a medical, physical or mental health problem, and, second, a record of reported difficulties with activities of daily living. The information in the health section of the data set included:

- self-reported health status
- reported use of health treatments for cardiovascular and pulmonary problems, arthritis, cancer, depression and disability
- reported physical problems, including sight, hearing, balance, concentration, exhaustion, grip strength and walking

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3 The data set was not originally intended for this use. The purpose of our analysis is primarily descriptive and indicative, with the aim of providing suggestions concerning the frailty patterns observed (as we have operationally defined frailty) and not to demonstrate statistical significance.

- reported use of medical services, including visits to general practitioners and medical specialists, use of prescriptions, incidence of surgery, incidence of x-ray and visits to dentists or opticians
- accounts of the impact of health problems on activities of daily living (i.e. housework, washing, dressing, participation in leisure activities, communication, mobility and transport, home maintenance, shopping, financial management, and maintaining contact with family and friends).

Similarly, the information on mental health included both mental health conditions and associated practical problems, which comprised:

- self-reported incidence of depression in the past 12 months
- reported loss of interest in personal pursuits – such as work and hobbies
- reports of appetite fluctuation and weight loss, problems with speech, absence of energy, feelings of inferiority and confusion.

We surmised that if an older person reported a certain a number of health or mental health conditions, it allowed us to classify them as having a complex or syndrome of underlying problems. We surmised, also, that those in this group who reported problems carrying out key activities of daily living because of the underlying problems could be taken to represent a subgroup who were frail.

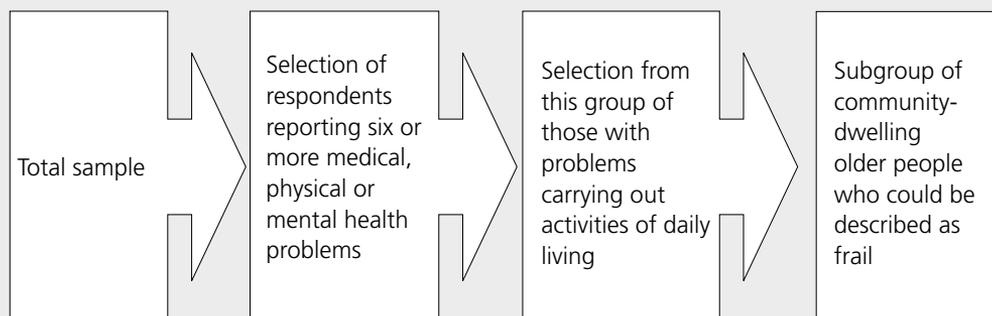
Following the Strawbridge et al. (1998) approach, then, the first step in identifying a subgroup of older people who were frail involved selecting those with a collection of conditions. We did this by counting the number of medical conditions, physical problems and mental health/mood problems each individual reported (Box 1). Adopting a cautious approach, to reduce the risk of selecting false positives, we selected those who reported having six or more of these conditions. The figure of six was conservative, as those with as few as two conditions could be described as having a complex of health problems. We are aware that the level of precision is less than ideal, but counting the number of problems reported was a simple way of identifying whether an individual had a complex or syndrome of underlying conditions. In addition, we endeavoured to avoid having too low a threshold of conditions, given the nature of some of the conditions listed, such as “feelings of tiredness” and “feeling mixed up.” We are confident that a community-dwelling older person reporting six or more conditions can be described as having a complex of underlying problems.

**Box 1 Medical Conditions, Physical Conditions and Mental Health/Mood**

Blood pressure	Injury	Loss of weight
Coronary	Disability	Slowed movement
Diabetes	Eyesight loss	Feelings of tiredness
Rheumatism	Hearing loss	Feelings of worthlessness
Back pain	Loss of balance	Loss of confidence
Asthma	Concentration	Inability to concentrate
Cancer	Breathing	Slowed thinking
Kidney problems	Loss of grip strength	Feeling mixed up
Colds	Loss of appetite	Other
Depression	Problems with short walks	
Nervous system problems	Problems climbing stairs	

The second step (Box 2) involved taking the group with six or more medical, physical and mental health problems, and identifying those who reported specific difficulties with daily functioning stemming from those problems (Box 3).

**Box 2 The Selection Process**



**Box 3 Difficulties with Activities Caused by Medical, Physical and Mental Health Problems (Included in the Living Standards Survey Results)**

Light housework		Mental health/mood problems interfered with:
Washing		Looking after self
Dressing		Relationships with friends
Using phone		Family relationships
Moving around house		Relationship with partner
Shopping		
Keeping records		
Visiting		

The Living Standards of Older New Zealanders survey results provided scaled responses by participants describing the degree of difficulty experienced. The scale for the eight items in the left column in Box 3 was: couldn't do it (3); a lot of difficulty (2); some difficulty (1); no difficulty (0). The scale for the mental health items in the right column was: not at all (0); a little (2); a great deal (3). Older people were classified as frail if they had a complex of conditions and scored nine points or higher on these scales. A score of nine or more indicated difficulty in carrying out activities of daily living across a number of key areas, leaving the older person likely to be in greater need of health, personal or domestic services. A score of nine meant that even if an older person was having some difficulty with all of the tasks in the left hand column, they would still need to have experienced difficulty with a mental health or mood problem to be included in the frail group. Similarly, an older person reporting difficulty in each of the mental health or mood problems would need to have reported difficulty with one of the practical activities in the left column. There was potential for respondents to report many combinations of problems, with differing degrees of severity. Our measure was a simple means of identifying those who had such problems stemming from a complex of six or more medical and mental health problems. The measure did not allow us to distinguish between those who were moderately or severely frail, and we accept it allows only indicative findings to be reported.

By using this approach, a sub-sample of 8.1% was selected. This was in keeping with the findings of Fried et al. (2001) that 7% of older people in the community were frail. Having identified this group, the data set allowed us to describe the demographic characteristics of its members (gender, age, ethnicity, marital and socio-economic statuses). We could also detail their living arrangements, housing issues, social interactions with family and friends, access to and use of health services, mobility issues, mood and life satisfaction issues, and a number of life history events.<sup>4</sup>

#### PREVALENCE OF FRAILTY BY AGE, GENDER AND ETHNICITY

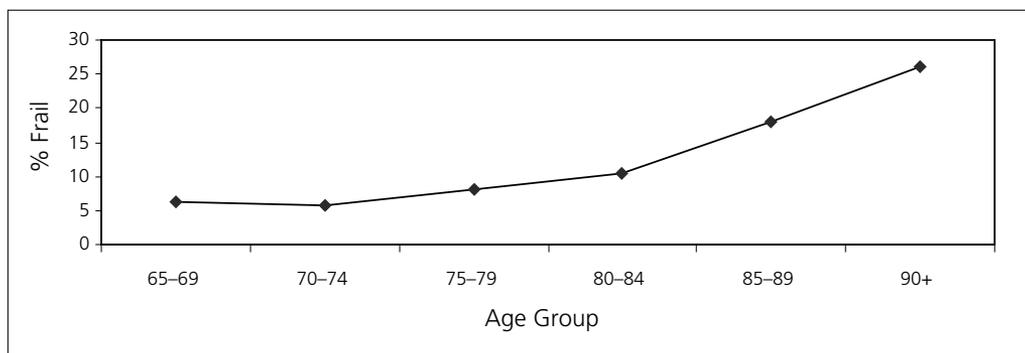
Of the 2,931 subjects, 8.1% or 237 were classified as frail. As expected, the prevalence of frailty among those in the sample increased with age, more steeply after 80 years. Figure 1 presents the proportion frail by age from 65 onwards.<sup>5</sup> There was, according to the criteria we used, a 6% prevalence of frailty in the 65–74 years of age group, compared to a 20% prevalence of frailty in the 85–94 years of age group.

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4 There may have been a higher non-response rate from those elderly who were frail. The technical account of the survey reports the survey population as non-institutionalised people aged 65 years and over and living in fixed permanent private dwellings (Fergusson et al 2001). Households containing a person aged 65 and over were eligible, and one eligible person per household was selected. The survey, then, may under-report the incidence of frailty, it being likely that community-dwelling older people who were frail would not complete it, or that their spouse would be interviewed.

5 See Appendix, Table 1 for actual numbers in each category.

Figure 1 Prevalence of Frailty, by Age Group

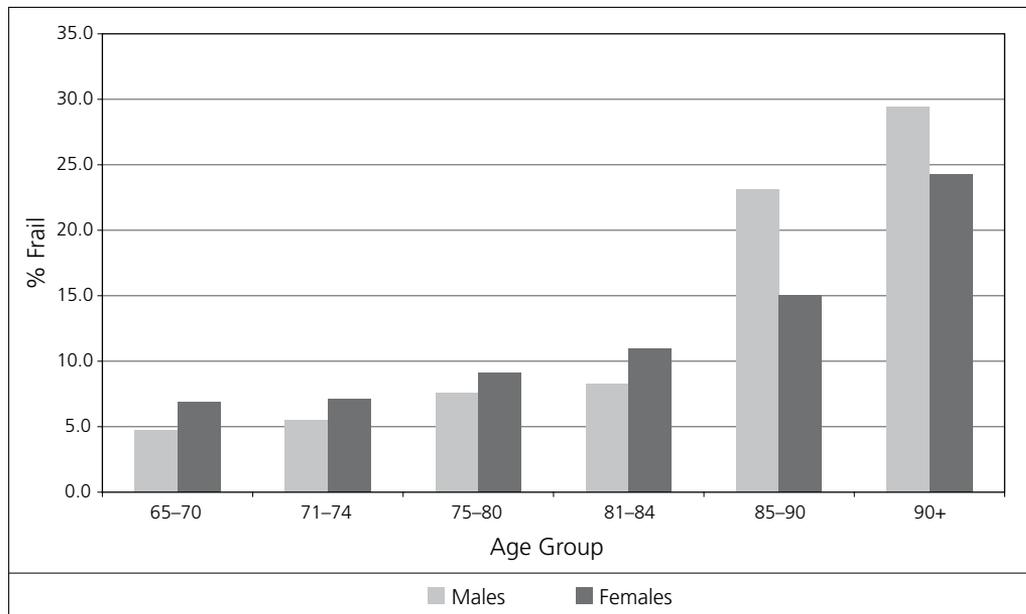


The increase in prevalence beyond age 85 is consistent with recorded higher rates of entry into rest home care beyond this age. This is consistent with the younger-old/older-old categorisation of later life referred to by Baltes and Smith (2003) and earlier by Neugarten (1974) and points to a discernable transition point at this later stage of life.

Prevalence of frailty was slightly higher for females than for males – 8.9% compared to 7% – which is in line with biomedical research findings reporting that, in general, frailty is more common among older women. The difference by gender is also consistent with rates of disability among older people (Davey and Gee 2002:25). Figure 2 illustrates a higher rate of frailty for women up until about age 84, which is the point when prevalence of frailty in men rises to the 20–25% rate typical for the post-85 age group. The small number of cases in our sub-sample of older people who were frail among those over age 90 suggests that comparisons among men and women at this age, in Figure 2, should be read with caution.

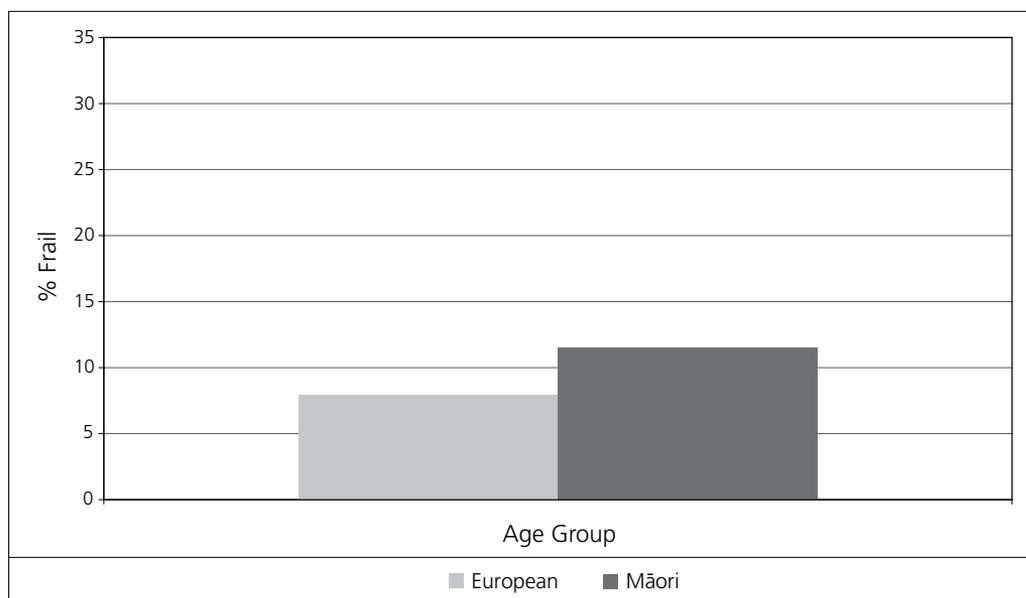
The increase in the prevalence of frailty among men in their mid-80s, in Figure 2, reflects that at this age men are more likely than women to experience the collection of health problems and related problems with function that characterise frailty. This most likely mirrors different life expectancy rates of four to five years, the increase in prevalence of frailty among men pointing to closer proximity to death and the collection of health conditions that are a part of that process at the late stages of life.

Figure 2 Prevalence of Frailty by Age and Gender



There were distinctive patterns of prevalence for Māori and non-Māori. The prevalence of frailty among Māori was higher than for non-Māori. Of the total non-Māori group in the 2000 survey sample, 7.9% were frail, while 11.5% of the Māori group were frail.<sup>6</sup>

Figure 3 Prevalence of Frailty by Ethnicity



6 See Appendix, Table 2 for actual numbers in each category.

The prevalence of frailty among Māori in the 65–70 years of age group was the same as that among non-Māori in the 81–84 years of age group, suggesting a 10 to 15 year difference in the onset among Māori of the conditions and functional problems associated with frailty. This is greater than the eight-year difference in life expectancy between Māori and non-Māori for the year 2000 (Statistics New Zealand 2004:12). It suggests a greater proportion of Māori who survive into their mid-70s and 80s do so with a higher relative number of health conditions and functional problems. The peak of frailty among Māori was in the 75–80 years of age group and likely reflects the accumulation of health problems and losses of function associated with close proximity to death. Notably, a similar higher prevalence was not evident among non-Māori until their late 80s and 90s. These findings of a higher prevalence among community-dwelling older Māori may also reflect the tendency for older Māori who become frail to remain in the community supported by family members rather than enter rest homes.

### LIVING ARRANGEMENTS

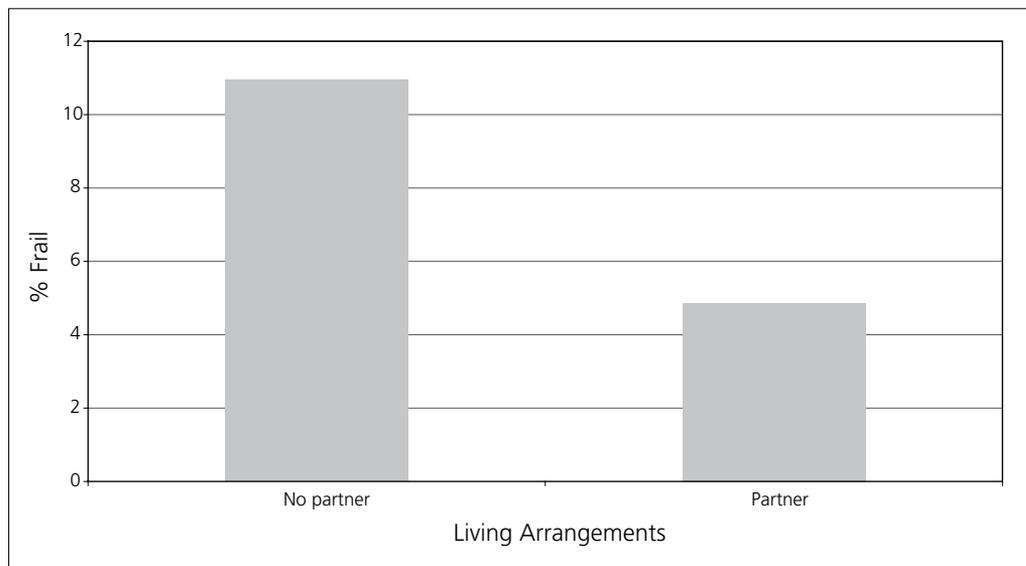
The living arrangements of older people are powerfully influenced by marital or partnership status. Across the total sample of the Living Standards of Older New Zealanders survey, including the frail sub-sample, 52.9% lived in single-person households and 47.1% lived in partnered households. The majority of those in single-person households were widowed (76%), with a further 13% being separated or divorced. The remaining 11% were never married. Of those in single-person households, 32.3% were over the age of 80, proportionally more than those in partnered households, where 20.5% were over age 80 (Fergusson et al. 2001:40–42).

Across the total sample, 10.9% of those who lived alone were in the frail subgroup compared with 4.9% of those in couple households (Figure 4).<sup>7</sup> Older people who were frail, then, according to our criteria, were more likely to be living alone. This is likely to mirror both the older age and higher rates of widowhood, especially among older women who live alone. The lower prevalence of frailty among couple households may also mirror a likelihood that the more resilient or less frail partner was the person interviewed (as noted in footnote 4).

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7 See Appendix, Table 3 for actual numbers.

Figure 4 Prevalence of Frailty by Living Arrangements



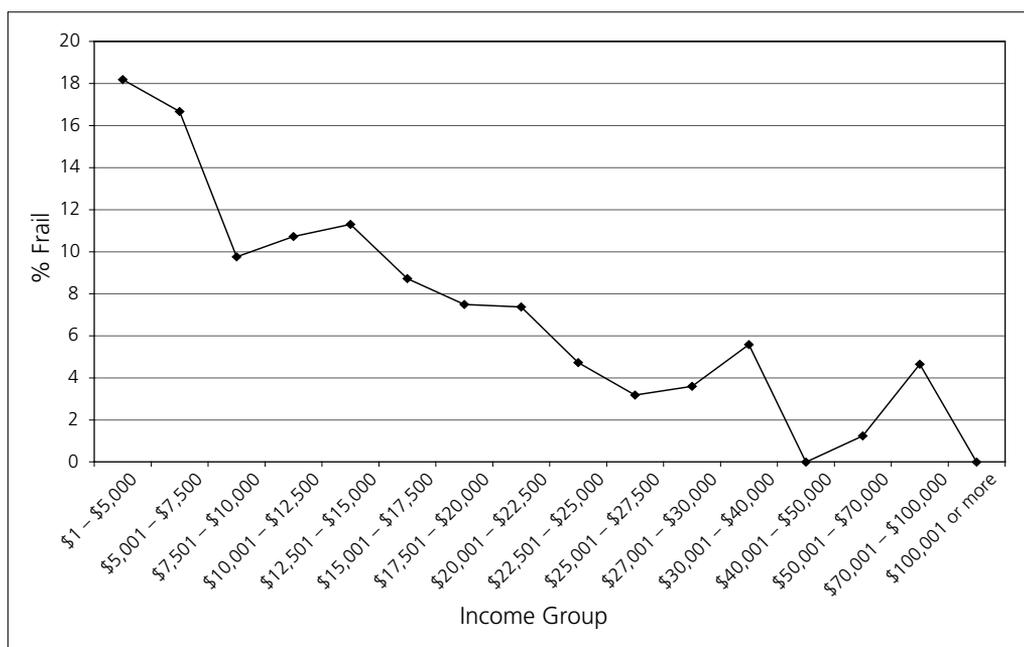
Across the sample as a whole, prevalence of frailty was 4.7% among those legally married. Among those divorced it was 10.6%, among those widowed it was 11.4%, and among those separated it was 16.4%. While this difference in prevalence of frailty is likely to have more to do with age than with living as a couple, it is suggestive of the impact of the immediate social environment on an older person's ability to continue to maintain activities and functions associated with independent living and an absence of frailty.

Other research has found that those older people in partnered households live longer, stay healthier and feel better than those without partners, although it tends to be men who gain the relative advantage in these arrangements (Hess and Soldo 1985, cited in Jerome 1993:244). It is within this immediate social environment that complementary roles and coping patterns of partners develop over long periods of time together. When one partner requires care, the other partner, more often the woman, is the first to provide it, and this continues even when adult children are close at hand. An explanation for lower levels of frailty among those in partnered households, then, is likely to include the impact of mutually provided compensations for functional loss.

## PREVALENCE OF FRAILTY BY INCOME AND ASSETS

The key purpose of the Living Standards of Older New Zealanders survey was to understand better the financial and economic circumstances of older people. The survey results, therefore, refer to the sources and levels of income of older people, as well as levels of savings, investments and other assets that contribute to material wellbeing.<sup>8</sup> Our analysis indicated a greater prevalence of frailty among those on lower incomes (Figure 5), these results reflecting the findings of other frailty researchers (see, for example Woods et al. 2005:1328). In general, this points to the way health status is embedded in socio-economic status – those with lower incomes having a higher prevalence of health problems and related functional problems. It suggests also that higher income has a protective effect against frailty in later life.

Figure 5 Prevalence of Frailty by Income



8 The explanation for those earning less than \$10,000, as New Zealand Superannuation (NZS) is higher than this, is provided by the Survey of Older People technical account which noted:

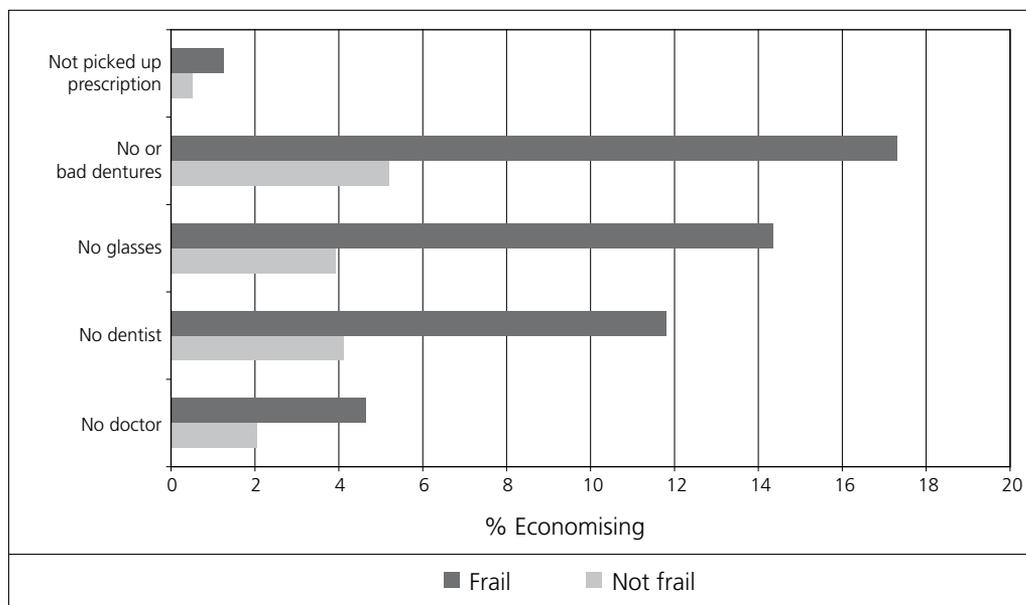
...2.3% of single CEUs [core economic units] not in receipt of NZS received income from a variety of alternative sources including: government allowances (0.3%), earned income (0.2%), investments (1.4%) and other sources (0.6%). The 1.3% of partnered CEUs not in receipt of NZS received their income in a similar way (earned income (0.4%); investments (0.8%); other sources (0.1%). (Fergusson et al 2001:47)

The survey results also allowed for the consideration of the prevalence of frailty against the number of assets owned within the household, the assets being classified as bank deposits, other investments (shares, unit trusts etc), life insurance policies, family trust investments, money owed, residential property (rentals, holiday homes), commercial property, and business ownership. The same pattern as that of income and frailty in Figure 5 was found for asset ownership and frailty – prevalence of frailty was higher among those with fewer assets.

Other measures of income tell very much the same story – measures of self-rated standard of living relative to others, measures of standard of living satisfaction, self-rated income adequacy, and ability to save. Across the sample as a whole, 5.7% of those who rated themselves as having a high standard of living were in the frail group while 28.3% of those who rated themselves as having a low standard of living were in the frail group. Across the sample as a whole, 48% of those who rated their living standard as fairly low or low, as opposed to medium, fairly high or high, were frail.

One further indicator of income adequacy for this group was information on the proportion of people in the total sample economising on health activities. The frail group was more than three times as likely to have gone without or not replaced dentures because they could not afford new ones, not visited the dentist for similar reasons, or gone without glasses.

Figure 6 Proportion Economising by Not Doing Each Health Activity

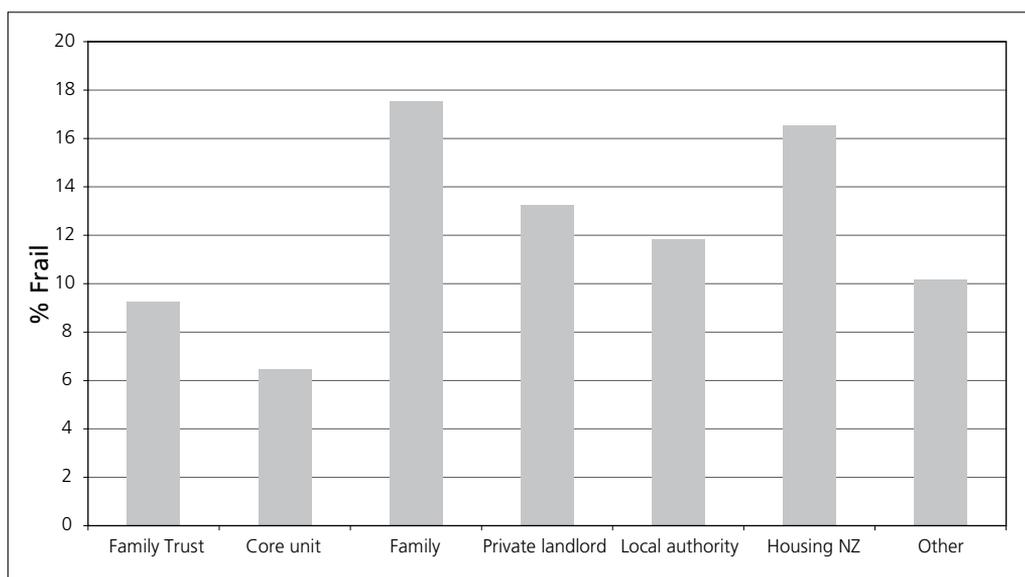


## HOUSING

The 2000 survey dealt with housing separately from other asset measures, given the role of home ownership in influencing the living standards of older people. The sample comprised people aged 65 and over living in permanent private dwellings, and these included self-contained units in retirement villages. Across the total sample group, the majority of homeowners were freehold (93%), and their accommodation costs were low. Costs for those living in rented accommodation were on average over four times higher for those who lived on their own and five times higher for those in partnered dwellings.

Prevalence of frailty was lowest among those who owned their own home and highest among those living in a family-owned home (Figure 7 shows that 17.5% of all those who lived in a family-owned home were in the frail subgroup). Prevalence of frailty was also high among renters, with 16.5% of Housing New Zealand tenants being in the frail group, and 13.3% of those with private landlords and 11.8% of those with local authority landlords.<sup>9</sup> Renting in the New Zealand context is, for many, another indicator of economic vulnerability and the previous section has described a higher prevalence of frailty among those on lower incomes. Renters paid a greater proportion of their income on housing, while homeownership provided for lower housing costs.

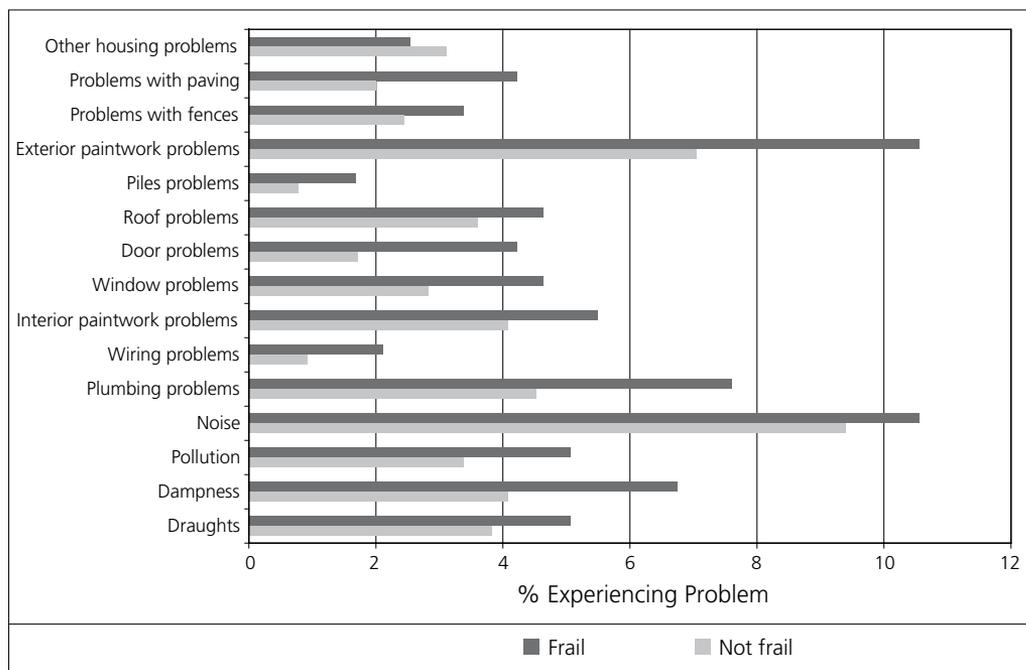
Figure 7 Prevalence of Frailty by Housing Tenure



9 See Appendix, Table 4 for actual sample sizes in each category.

Those in the frail subgroup were more likely to report problems with their housing. The 2000 survey asked respondents to comment on housing problems in the following areas: draughts, dampness, pollution, noise, plumbing, wiring, interior paint, windows, doors, roof, foundations, exterior paint, fencing and paving. While the actual percentages of older people experiencing problems with housing were low, Figure 8 indicates those who were frail experienced these at a higher rate compared with those in the non-frail group.

**Figure 8** Proportion Experiencing Each Type of Housing Problem

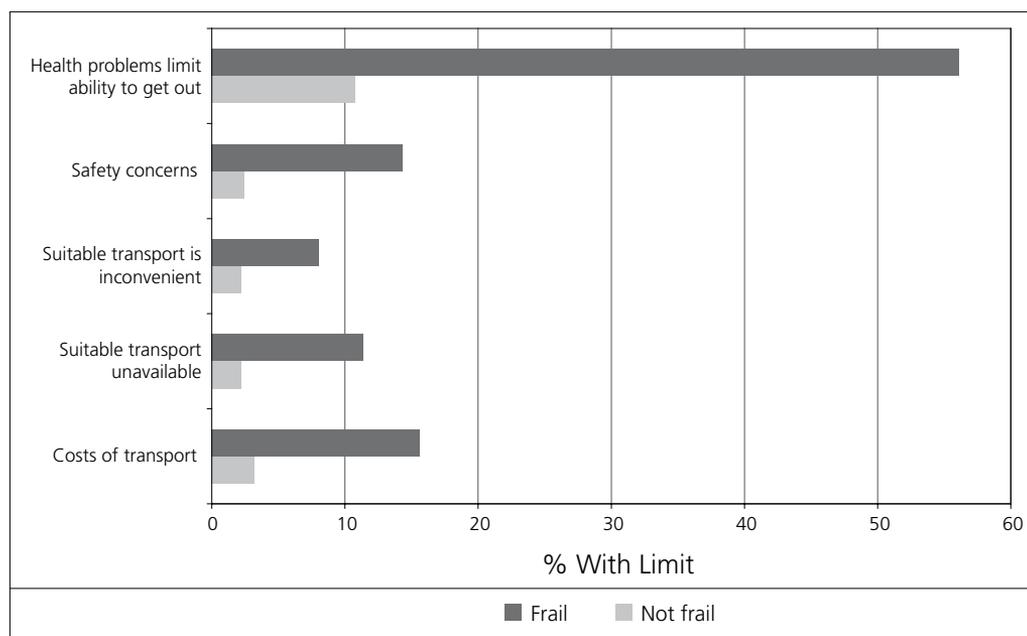


As well as being more likely to report housing problems, those older people who were frail were more likely than those who were not frail to economise in ways that were related to the quality of their housing. This included putting up with cold and staying in bed for the warmth. Over 20% of the frail subgroup reported putting up with cold “a lot”. Similarly, over 20% of those who were frail reported staying in bed “a lot” for warmth. Problems of this nature are most likely to be income related and indicative of the ability of the older person to pay for the maintenance and heating of their homes or pay for high-quality rental accommodation.

## PREVALENCE OF FRAILITY BY MOBILITY AND SOCIAL CONTACT

Two-thirds (65.8%) of those older people who were a part of the frail subgroup reported they could not get about.<sup>10</sup> When asked to indicate the causes of their problems with mobility, 56.1% of the frail subgroup (compared with 10.7% of the non-frail group) reported health problems as the most important reason for their limited mobility, but cost of transport (15.6% of those who listed cost of transport as a barrier to mobility were in the frail group compared with 3.2% from the non-frail group), safety concerns (14.3% from the frail group compared with 2.4% from the non-frail group), unavailability of suitable transport (11.4% of the frail group compared with 2.2% from the non-frail group), and inconvenience of suitable transport (8% from the frail group compared with 2.2% from the non-frail group) were also important.

Figure 9 Reasons for Limits in Ability to Get About



Health problems, then, were the most likely to constrain the mobility of older people who become frail, but cost, availability, suitability and safety concerns were found to impact more on older people who were frail than on those who were not frail. As a consequence of problems in getting about, those in the frail group were more likely, when compared with the non-frail group, to face problems carrying out the following activities: paying bills and banking; getting medical, dental or optical services; visiting

10 They were asked: Are you able to get about as much as you like for things like shopping, visiting, seeing the doctor?

the hairdresser; visiting libraries and participating in cultural activities; and voluntary work. Perhaps most importantly, shopping (44.3% of the frail group compared with 6.5% of the non-frail group) and visiting friends (41.4% of the frail group compared with 5.5% of the non-frail group) were among the key activities affected. Greater difficulty in these activities has important implications for the ability of the older person to maintain social connectedness and live independently.

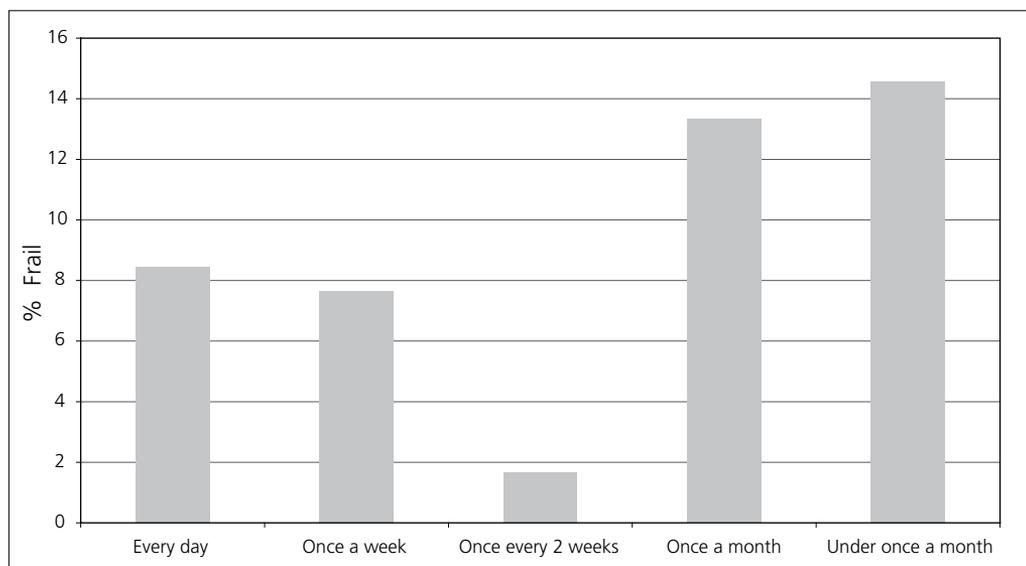
While the survey results did not include information about the home-based medical, personal and domestic care services older people were receiving, it did include information on the level and type of support provided by family members and, as expected, those in the frail subgroup were more likely to be receiving support across a variety of activities from family members. Those in the frail subgroup were more likely to be receiving assistance with transport, meals, shopping for groceries, haircuts, lawns and gardening, housework and house maintenance. They were more than twice as likely to be receiving support with transport from family members.

The survey results included information about regularity of contact with close friends and family members and, interestingly, prevalence of frailty was lowest for those with a medium level of contact. Prevalence of frailty was higher for those with either frequent contact or infrequent contact. Higher prevalence of frailty for those with more frequent contact – that is, every day or once a week (Figure 10) – suggests, on the one hand, more support from family and friends for carrying out key activities of daily living and for maintaining friendship and family relationships. On the other hand, higher prevalence of frailty among those with infrequent contact (28% of those in the frail subgroup had contact with friends and family only once a month or less than once a month) suggests a sizeable portion in the frail subgroup had little practical support from family and friends.<sup>11</sup> Over a quarter of community-dwelling older people who become frail, then, are likely to have contact with family or friends once a month or less. While this observation does not suggest they were not receiving support from other sources, it is one indicator of a higher risk of social isolation among this group.

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11 See Appendix, Table 5 for the actual sample sizes in each category.

Figure 10 Prevalence of Frailty by Contact Frequency with Family and Friends



## DISCUSSION

The trend in providing care services for older people who become frail is to support them in the community rather than in residential facilities. Our efforts to support, in their own homes, those who become frail will be enhanced by a better appreciation of the shared characteristics of this group. The purpose of this paper is to begin to develop a descriptive account of the characteristics of older people who live in the community and who become frail, as a way of informing preventive care programmes and measures to support their functional needs.

Our opportunistic re-analysis of an existing data set framed the criteria we could use to identify a subgroup of community-dwelling older people who had become frail. It allowed for a two-step process identifying, first, those with a complex or syndrome of health and functioning problems that, second, undermined their ability to carry out key activities of daily living. We are aware we have not provided a definitive picture and we acknowledge our results need to be interpreted with caution. Furthermore, this type of analysis does not capture the fluctuating nature of the experience of frailty. Frailty is not an all-or-nothing phenomenon; it is changeable as a consequence of complex and intersecting processes. We are aware there are likely to be a number of false positives and false negatives in the subgroup we defined as frail. And, given the particular criteria at our disposal, those we selected may not match exactly the frail older person identified in other studies of frailty. Nevertheless, we believe we have provided an indicative picture of important shared characteristics of community-dwelling older people who

become frail, as observed within the Living Standards of Older New Zealanders survey data set.

The analysis suggests an association between the incidence of frailty among older people and socio-economic factors. The indicative findings point to a higher prevalence of frailty among those older people doing relatively less well. One of the general findings of the Living Standards research was the existence of a small minority with “quite marked material hardship and restrictions” (less than 5% of the sample), and a further 5–10% of respondents with some experience of economic difficulty (Fergusson et al. 2001:iii). It is, notably, among this group that the prevalence of frailty is highest, with those with fewer assets and less income being more likely to be living in the community with frailty. Income and assets are an indication of material wellbeing and it raises the question of the nature of the relationship between income, wealth and frailty.

There is a substantial body of literature on the association between poverty, deprivation and the health and wellbeing of older adults (see Berkman and Clark 2003:315). With regard to functional loss associated with frailty, income and wealth provide a means by which individuals can achieve a better balance between themselves and their environment. Lower levels of income and fewer assets in later life reduce the older person’s ability to respond to stresses associated with poorer health and to modify their environment. Higher incomes provide a means of environmental buoying (Glass and Balfour 2003), giving access to resources that allow older people who have become frail to overcome the effects of the loss of physical function by modifying their environment, or by increasing access to home care and other services. Material resources also allow greater access to support with transport and thus to opportunities for social participation, reducing the risk of social isolation.

Higher prevalence of frailty among those on lower incomes and with fewer assets points to the importance of pathway effects – the cumulative effect of one’s life history, including aspects of family, work and income history. While our research did not uncover specific reference to the impact of life events, the higher prevalence of frailty among those who experience material hardship points to a greater risk of frailty among those with a history of lower earning and/or of life events, such as bankruptcy, major illness, redundancy and unemployment, and separation, which interrupt efforts to build up wealth. This points, again, to links between the accumulation of relative disadvantage over the life course and the experience of frailty in old age. Frailty in later life, then, can in part be understood as a result of differing socio-economic and personal circumstances throughout the lifecycle (Keating and Hertzman 1999).

Differences in prevalence between Māori and non-Māori, with Māori experiencing a considerably higher rate of incidence up to 15 years earlier than non-Māori, are almost certainly linked to the accumulation of relative disadvantage. The higher prevalence of

frailty among Māori at younger ages is most likely to be linked to shorter life expectancy. Our findings are not inconsistent with those of the Ministry of Health (2002), which observes Māori have 7.5 years of independent life expectancy at age 65 (compared to 11 years for all New Zealanders). The association between socio-economic factors and prevalence of frailty also appears to be important. With frailty shown to be linked to lower income levels and lower rates of asset ownership, the higher rate of prevalence among Māori at a younger age is likely to have its origins in their different histories of opportunity. Disparities between Māori and non-Māori over the life course can be considered to have a cumulative effect that is manifest in later years as frailty.

Ethnicity is associated with different levels of frailty elsewhere. Assessments of the prevalence of frailty in the United States have found it to be twice as high among African Americans, with 15% of African Americans over 65 with indications of frailty as compared with 7% for the overall population (Fried et al. 2001). The higher prevalence there is linked with poverty, educational attainment and other indicators of socio-economic deprivation. It follows that the accumulation of disadvantage is manifest in late life in the earlier and higher rate of frailty and lower life expectancy. These observations lend weight to arguments to persist with measures to address social and economic disparities between Māori and non-Māori, and more particularly the shorter life expectancy of Māori and the higher incidence of health problems among older Māori.

Prevalence of frailty among community-dwelling older people was lowest among those who owned their own home. This may be indicative of the way the onset of frailty triggers the selling of the family home and moving into more supported forms of accommodation. Homeownership, as we know, not only provides housing security, but also equity and therefore access to resources that allow for the modification of the living environments of older people to provide for a better person-environment fit. Prevalence of frailty was highest among those older people who move in with their children; this group was small and more likely to include Māori and Pacific people. Prevalence of frailty was also higher among those living in rental accommodation, be it state, council or privately owned.

It is of concern that community-dwelling older people who were frail were more likely to experience housing problems – things like maintenance, exterior paintwork, plumbing, dampness and draughts – and they are more likely to put up with cold “a lot” and stay in bed for warmth “a lot”. Thus housing arrangements are likely to be crucial in meeting the needs of this group. High-quality rental accommodation targeted at the specific needs of older people has the potential to reduce some of the housing challenges faced by older people who become frail – things like adequate heating, maintenance and repairs, and gardening. The problem with much rental accommodation is the

higher proportion of income spent on housing costs for renters and subsequent lower disposable incomes.

Household living arrangements, homeownership status, income and access to family or social support all combine to create the living environment of the older person. There is a requirement for the ongoing development of supported housing models targeted towards the needs of this group. With differing levels of need, it is appropriate to ensure the availability of a variety of supported housing arrangements ranging from intensive residential care to less intensively monitored independent living arrangements. Maintaining a pool of suitably designed public-rental housing is likely to be central to this. High-quality supported housing that provides a living environment supporting basic functioning and is conducive to meeting the social integration needs of older people is an important requirement of older people who are frail and a policy challenge to be met.

Finally, the steady rise in the prevalence of frailty to age 84, followed by a sharper increase in later years, reinforces the observation that the transition into the “fourth age” is accompanied by a greater risk of frailty. On the basis of similar findings in the Berlin Ageing Study, Baltes and Smith (2003) assert that the new frontier in ageing research is with this older group. Their findings suggest an important life transition occurs in the early 80s that could be examined further. Such an examination might involve an extension of Phillipson’s (2002) study of transitions from the world of paid work into retirement – the “third age” – to an examination of transitions from the third age into the fourth age, to illuminate further the issues older people face at that stage of life. This transition is likely to incorporate certain important events that often accompany this stage of life. These events may involve the death of a spouse or significant other; shifting to move closer to other sources of support or to more suitable housing; a single major health event or the onset or progression of multiple health issues; decline in function and consequences for wellbeing; and the loss of social roles and responsibilities. The last might include changes in personal identity resulting from shifts from active, independent older person to inactive and dependent person; changes from caregiver to care receiver; and the loss of some potential for reciprocity in relationships with friends and family.

The effects of events across the life course accumulate in old age – the history of access to income and wealth, the history of access to housing and the opportunities for homeownership, and the history of social connectedness influencing the older person’s capacity to negotiate the physical, social and economic challenges at this stage of life. Many community-dwelling older people who have become frail, it would seem, are more likely to have had histories of lower incomes, less secure housing, and greater social isolation. It confirms, as Sidell (1995) observed, that old age is not a leveller of material or social advantage and disadvantage.

APPENDIX

**Table 1 Prevalence of Frailty by Age**

Age group	Total sample	Frail subgroup	Proportion (%) of total sample in frail subgroup
65–69	912	57	6.2
70–74	785	45	5.7
75–79	614	49	8.0
80–84	392	41	10.4
85–89	178	32	18.0
90+	50	13	26.0
	2,931	237	

**Table 2 Prevalence of Frailty by Ethnicity**

	Total sample	Frail subgroup	Proportion (%) of total sample in frail subgroup
Non-Māori	2,818	224	7.9
Māori	113	13	11.5
	2,931	237	

**Table 3 Prevalence of Frailty by Living Arrangements**

	Total sample	Frail subgroup	Proportion (%) of total sample in frail subgroup
Living with a partner	1,381	68	4.9
Living without a partner	1,550	169	10.9
	2,931	237	

**Table 4 Prevalence of Frailty by Housing Tenure**

Housing type	Total sample	Frail subgroup	Proportion (%) of total sample in frail subgroup
Family Trust	173	16	9.2
Core unit	2,242	145	6.5
Family	154	27	17.5
Private landlord	83	11	13.3
Local authority	93	11	11.8
Housing NZ	127	21	16.5
Other	59	6	10.2
	2,931	237	

Table 5 Prevalence of Frailty by Contact Frequency with Family and Friends

Contact frequency	Total sample	Frail subgroup	Proportion (%) of total sample in frail subgroup
Every day	1,456	123	8.4
Once a week	1,201	92	7.7
Once every two weeks	120	2	1.7
Once a month	90	12	13.3
Under once a month	48	7	14.6
Question doesn't apply	16	1	6.3
	2,931	237	

## REFERENCES

- Baltes, P. and J. Smith (2003) "New frontiers in the future of aging: From successful aging of the young old to the dilemmas of the fourth age" *Gerontology*, 49:123–135.
- Brown, I., R. Renwick and D. Raphael (1995) "Frailty: Constructing a common meaning, definition, and conceptual framework" *International Journal of Rehabilitation Research*, 18:93–102.
- Berkman, L. and C. Clark (2003) "Neighbourhoods and networks: The construction of safe places and bridges" in I. Kawachi and L. Berkman (eds.) *Neighbourhoods and Health*, pp.288–302, Oxford University Press, New York.
- Davey, J. and S. Gee (2002) *Life at 85 Plus: A Statistical Review*, New Zealand Institute for Research on Ageing, Wellington.
- Fergusson, D., B. Hong, J. Horwood, J. Jensen and P. Travers (2001) *Living Standards of Older New Zealanders: A Technical Report*, Ministry of Social Policy, Wellington.
- Fried, L.P., C. Tangen, J. Walston, A. Newman, C. Hirsch, J. Gottdiener, T. Seeman, R. Tracy, W. Kop, G. Burke and M. McBurnie (2001) "Frailty in older adults: Evidence for a phenotype" *Journal of Gerontology: Medical Sciences*, 56A(3): M146–M156.
- Gillick, M. (2001) "Pinning frailty down" *Journal of Gerontology: Medical Sciences*, 56A(3): M134–M135.
- Glass, T. and J. Balfour (2003) "Neighbourhoods, aging and functional limitations" in I. Kawachi and L. Berkman (eds.) *Neighbourhoods and Health*, pp.303–334, Oxford University Press, New York.
- Jerome, D. (1993) "Intimate relationships" in J. Bond., P. Coleman and S. Peace (eds.) *Ageing in Society*, pp.229–254, Sage, London.
- Kaufman, S. (1994) "The social construction of frailty: An anthropological perspective" *Journal of Aging Studies*, 8(1):45–58.
- Keating, D.P., and C. Hertzman (1999) *Developmental Health and the Wealth of Nations: Social, Biological, and Educational Dynamics*, Guilford, New York.

- Kennedy, J. and M. Minkler (1999) "Disability theory and public policy: Implications for critical gerontology", in M. Minkler and C. Estes (eds.) *Critical Gerontology: Perspectives from Political and Moral Economy*, Baywood Publishing Company, New York.
- Kovar, M. and R. Stone (1992) "The social environment of the very old" in R. Suzman, D. Willis and K. Manton (eds.). *The Oldest Old*, Oxford University Press, New York.
- Ministry of Health (2002) *Health of Older People in New Zealand: A Statistical Reference*, Ministry of Health, Wellington.
- Neugarten, B. (1974) "Age groups in American Society and the rise of the young old" *Annals of the Academy of Social and Political Science*, 415:187–198.
- Phillipson, C. (2002) *Transitions from Work to Retirement: Developing a New Social Contract*, The Policy Press, Bristol.
- Rockwood, K. (2005) "Frailty and its definition: A worthy challenge" *Journal of the American Geriatrics Society*, 53(6):1069–1070.
- Sidell, M. (1995) *Health in Old Age*, Open University Press, Buckingham.
- Statistics New Zealand (2004) *New Zealand Life Tables 2000–2002*, Statistics New Zealand, Wellington.
- Strawbridge, W., S. Shema, J. Balfour, H. Higby and G. Kaplan (1998) "Antecedents of frailty over three decades in an older cohort" *The Journals of Gerontology*, 53B(1):S9–S16.
- Woods, N., A. LaCroix, S. Gray, A. Aragati, B. Cochrane, R. Brunner, K. Masaki, A. Murray and A. Newman (2005) "Frailty: Emergence and consequences in women aged 65 and older in the Women's Health Initiative Observational Study" *Journal of American Geriatrics Society*, 53:1321–1330.