Health, Work, and Retirement Survey

Summary report for the 2006 data wave.

- Health -

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Most aspects of health tend to deteriorate as people get older. From a positive ageing perspective, the approach to this inevitable physical and mental decline that comes with age is two-fold. First, we can promote effective and healthy adaptation to changing needs. Second, we can work towards extending fitness, capacity, and well-being so that this decline is limited to the very last stages of life. To assist with information about the important factors that are related to better physical and mental health, the first HWR wave provides a snap-shot of the health status of our young-old population (54-70 years) and the relationships between their general health and structural and behavioural factors. Structural factors measured here include age and retirement, ethnicity, gender, and indicators of socioeconomic status (economic living standards, household income, and education). These are broader factors that reflect the importance of the impact of socially structured groupings on health. The impact of these factors is consistently similar across Western societies. From the individual's perspective, there are some health behaviour factors that are related to health outcomes. These interact with the broader social and environmental factors but will be examined separately in this overview. Individual health behaviours include health care utilisation, physical activity levels, smoking and alcohol use. The findings for these aspects will be described in turn.[1]

Self-Reported Health Status in the Sample

Self-reported health has been found to reliably predict mortality in a number of longitudinal studies. This subjective view of the person's health additionally places more emphasis on capturing perceptions of quality of life. The measure of health used for the HWR study was the Australian and New Zealand version of the SF - 36 which has become one of the most widely used (both in New Zealand and internationally) standard questionnaires for measuring physical and mental health status. The SF - 36 includes 36 items measuring physical and mental health in relation to nine health scales: general health (self assessment of health overall), physical functioning, role physical (how much physical health has affected daily activities), mental health, role emotional (how much emotional health has affected daily activities), social functioning (how health has affected social activities), health transition (perceptions of health changes), bodily pain, and vitality. The combined responses to each of the eight SF-36 sub-scales are expressed on a 0–100 scale. All scores have been weighted so that they may be interpreted in the same direction: higher scores mean better health. The sub-scales have also been combined to provide two summary scores for physical and mental health respectively. These summary scores are additionally normed and standardised so that the population mean is 50.

The general health status of this cohort is indicated by scores on the SF - 36 sub-scales in comparison to the population scores from the 1996/97 New Zealand Health

[1] A post-stratified weighting variable according to primary ethnicity was applied to all analyses. The weighting variable was based on the population estimates from the 2001 census (Statistics New Zealand, 2002) for the 55 to 70-year-old age group.

Survey (NZHS; Scott et al., 1999) which was a nationally representative survey measuring the health status of the general population. Table 1 compares the means and standard deviations of the standardised sub-scale scores from the HWR and the NZHS. The comparison shows that the older age group generally scored slightly lower on physical functioning, bodily pain, and general health. However they are higher on physical and emotional role and mental health, while similar on vitality and social functioning. Although, as shown below, the physical health of this group is deteriorating with age, these changes are not dramatic and do not affect emotional and mental wellbeing.

Table 1
Comparison of Means and Standard Deviations for SF – 36 Sub-Scales in HWR and NZHS samples.

	Physical Functioning	Role Physical	Bodily Pain	General Health	Vitality	Social Functioning	Role Emotional	Mental Health
N	6432	6434	6471	6249	6355	6853	6373	6389
Mean								
HWR	79.3	81.5	71.4	71.2	65.6	85.1	87.3	80.6
NZHS	86.0	80.7	77.9	73.8	65.6	86.6	85.0	78.0
SD								
HWR	23.1	24.3	23.8	21.6	19.8	22.6	20.7	15.9
NZHS	21.7	34.9	24.5	20.1	18.5	20.6	30.9	15.3

Structural Factors

Age

Although there are physical changes associated with individual ageing that are associated with health, there are also some profoundly important effects of the social status of the ageing person, and the interaction of that status with retirement and other changes that are structured by society.

For these comparisons the raw scores for each sub-scale and the summary scales were used. The sample was divided into three age groups: 54 to 59 years, 60 to 64 years, and 65 to 70 years old. Figure 1 shows comparisons between the mean scores on each SF - 36 subscale for each age group. Although some of the differences are very small or non-existent, the general trend for physical health is decline with age as expected. The differences between age groups for physical functioning, role physical, general health and role emotional are significant ($p < .05$).

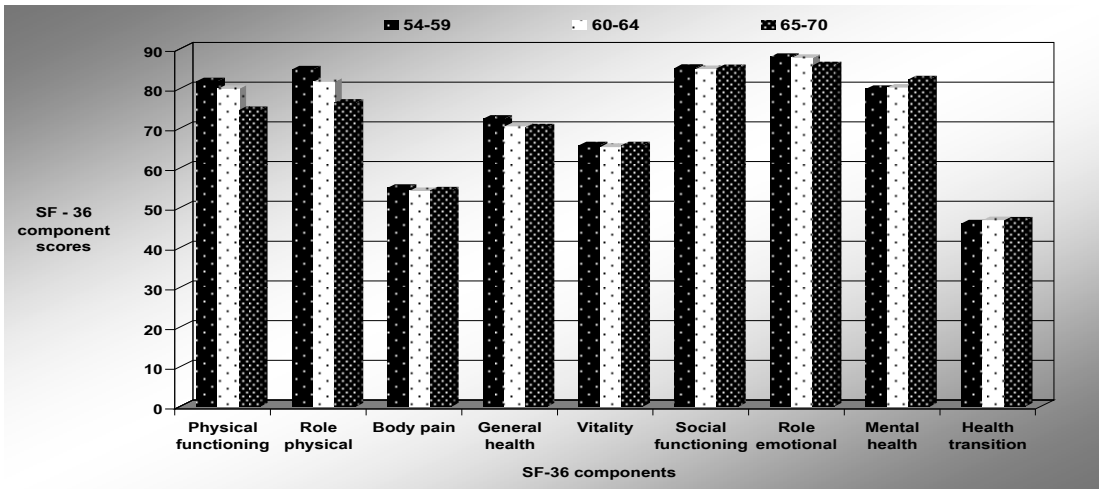

Figure 1. Mean scores on SF-36 components according to age group.

The increasing advantage for mental health seen across the age groups is also significant and these differences may be observed more clearly by comparing the significant differences between the mean summary scores. Figure 2 shows that on average physical health decreases across the age groups while mental health significantly increases (p <.001). An average increase in mental health with age is generally supported by international findings. For example, Chandola, Ferrie, Sacker, and Marmot (2007), using data from a longitudinal study of British civil servants who have been followed since 1985, report that mental health (measured across 18 years on five occasions) has generally improved with age.

"On average, physical health decreases across the age groups while mental health significantly increases."

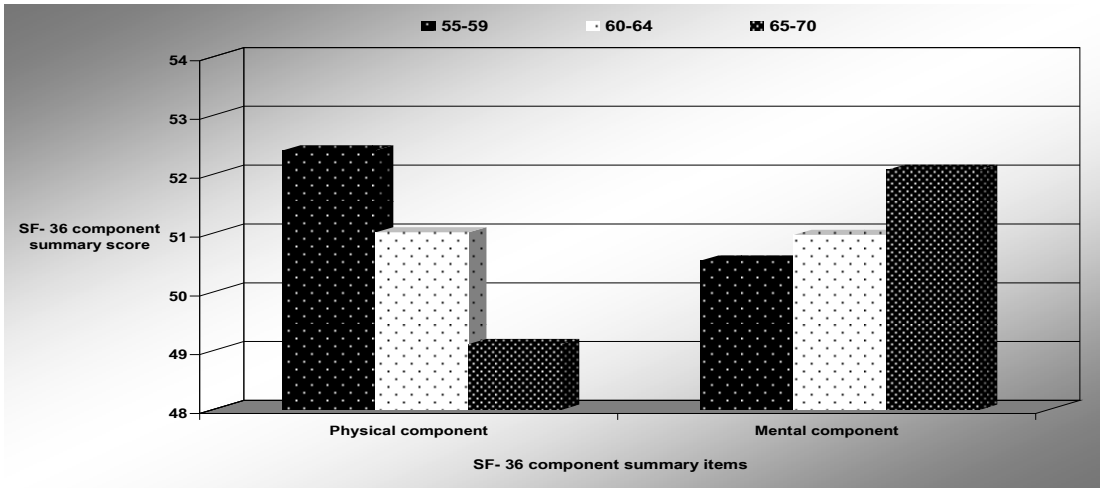

Figure 2. Mean scores on SF - 36 component summary by age group.

Retirement

Within this age group many people are moving from work to retirement and this change may be expected to have some effects on health. A comparison of the work status of the sample, in terms of full-time work, part-time work, and retirement, shows that retirement is associated with a consistent decline in physical health. There is also evidence to suggest that mental health is related to retirement in the same way (see Figures 3 and 4).

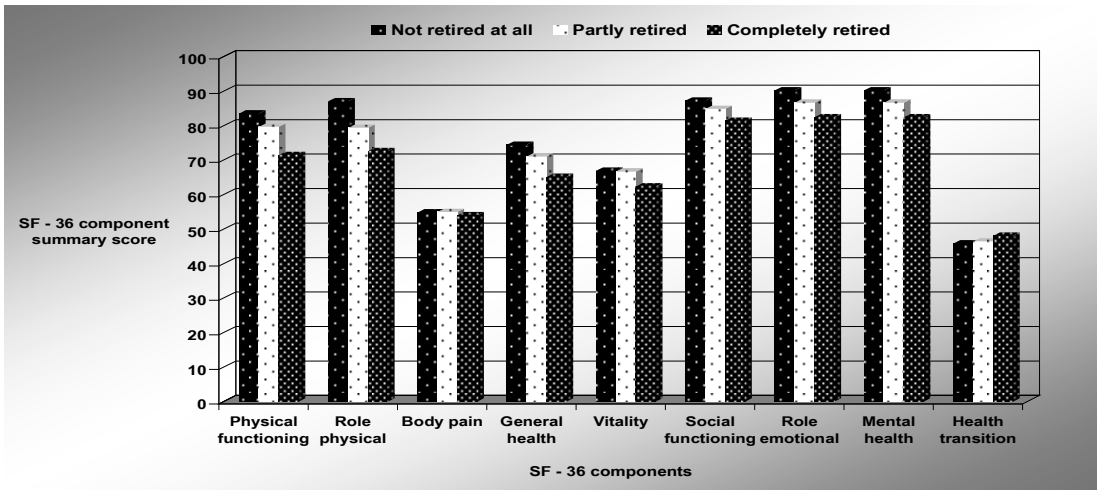

Figure 3. Mean scores on SF - 36 health items by work/retirement status.

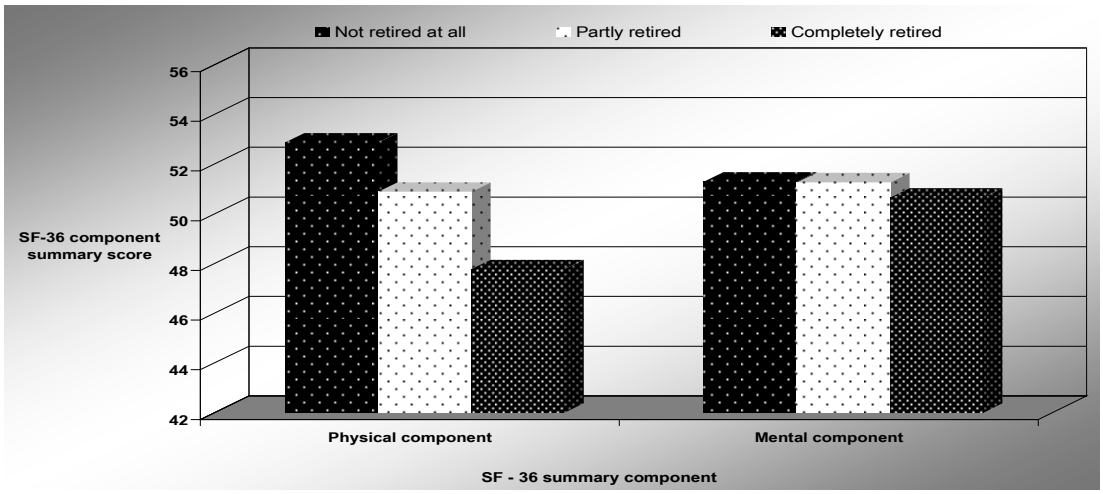

Figure 4. Mean scores on SF - 36 component summary by work/retirement status.

Of course, retirement is confounded by age. As people get older (and health decreases) then they are more likely to be retired. However, these results show a more consistent and stronger reduction in health for those who are retired. One likely explanation for these differences is that poor physical health has contributed to the retirement status of this group.

Statistical tests show that the differences in SF - 36 summary scores for physical health are significant across the age bands, (p<.001), and across the different levels of retirement status, (p <.001). There is also a significant interaction between age and retirement in relation to physical health, (p<.001). The shape of this interaction (see Figure 5) shows that the relationship between retirement and health is strongest for the oldest age group. Within this group, non-retired and partly-retired individuals report relatively high levels of physical health. However, physical health

drops sharply for older people who are completely retired. These results likely reflect the well-documented relationship between health status and ability to work. Those in poor health may be forced into retirement and this is a possibility that is more likely to affect older workers

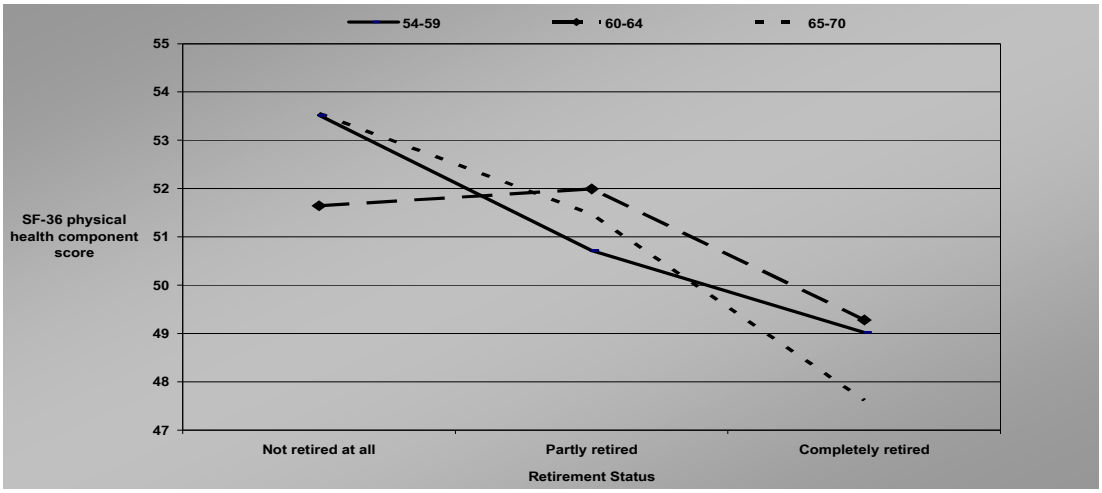

Figure 5. Plot of SF - 36 physical component summary mean scores by retirement status and three age groups.

For the mental health summary measure, both the differences across age groups and retirement status are also significant ($p<.001$). There is a significant interaction between age and retirement status ($p<.001$) which is shown in Figure 6. This plot demonstrates that those aged 65-70 tend to report relatively good mental health compared to the other age groups. However, this effect is strongest for older workers not retired at all. Those in the youngest age group, who are completely retired, also appear to be advantaged in terms of their mental health. Explanations for these differences are not found in these cross-sectional data. It may be that for 65 to 70-year-olds, retirement has a poor effect on mental health, or poor mental health leads to early retirement (or both are possible). Conversely, retirement may have a positive effect on the mental health of 54 to 59-year-olds, as this group may represent those who can afford, and therefore choose, to retire. What is of direct interest here is the clear differences between the effects of age and retirement on mental and physical health. Other factors besides advancing age are related to declining physical health. Furthermore, mental health can be seen to improve after age 65 in general, but it is more improved for those who are able to remain in full time work.

"Mental health can be seen to improve after age 65 in general, but it is more improved for those who are able to remain in full time work."

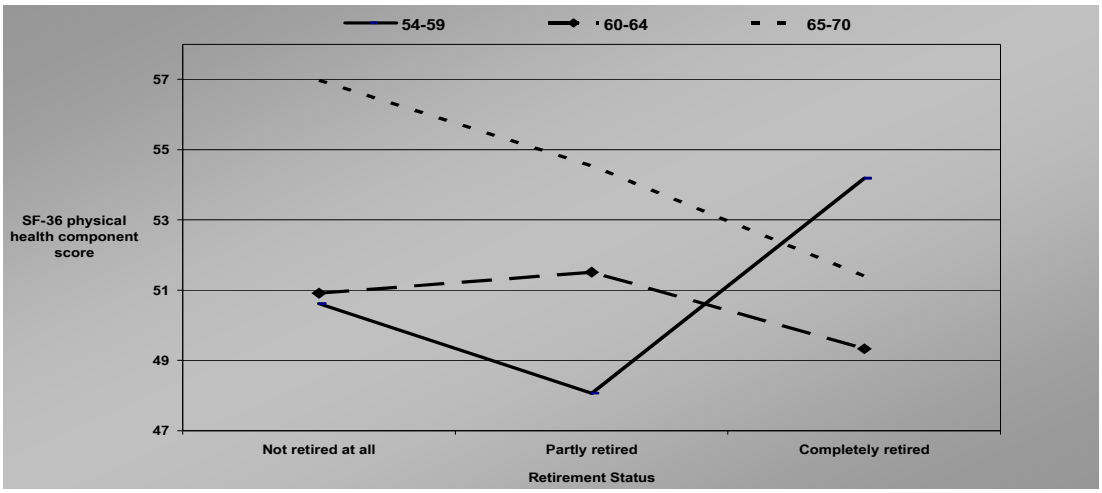

Figure 6. Plot of SF - 36 mental component summary mean scores by retirement status and age group.

Gender

It has been generally observed in population studies of modern Western countries that, although women have a mortality advantage and live longer, men report less morbidity (e.g. MacIntyre & Hunt, 1997). Similar morbidity advantages for men are reflected in the HWR data. Figure 7 shows that across all the subscales except general health, men report better health than women. These differences are small but the differences for physical functioning, vitality, role emotional, mental health, health transition and general health are significant (p<.05).

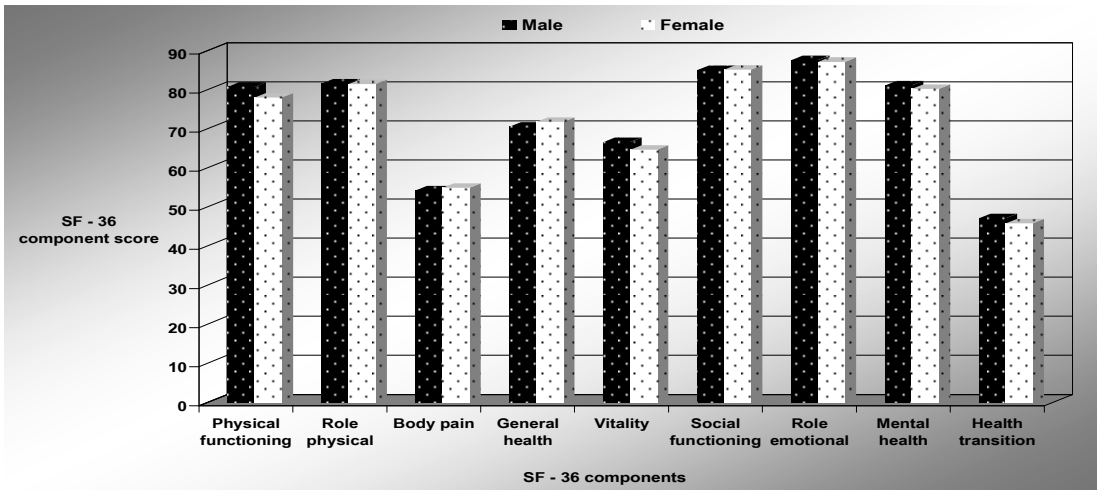

Figure 7. Mean scores on SF - 36 health items by gender.

Ethnicity

Membership in different ethnic groups has been reliably related to health outcomes internationally and in New Zealand (e.g. Blakely et al., 2005; Tobias & Yeh, 2006)). This finding has been particularly important in relation to considerations of differences between Māori and non-Māori health in New Zealand (Ministry of Health, 2002). Figure 8 shows that of all the largest ethnic groups identified in this cohort, there is a significant difference between European and Māori physical and mental health ($p<.05$). Those who identify as both Māori and European, report slightly poorer health than those who identify as European only. Pasifika peoples report significantly worse physical health than all groups and generally poorer mental health also.

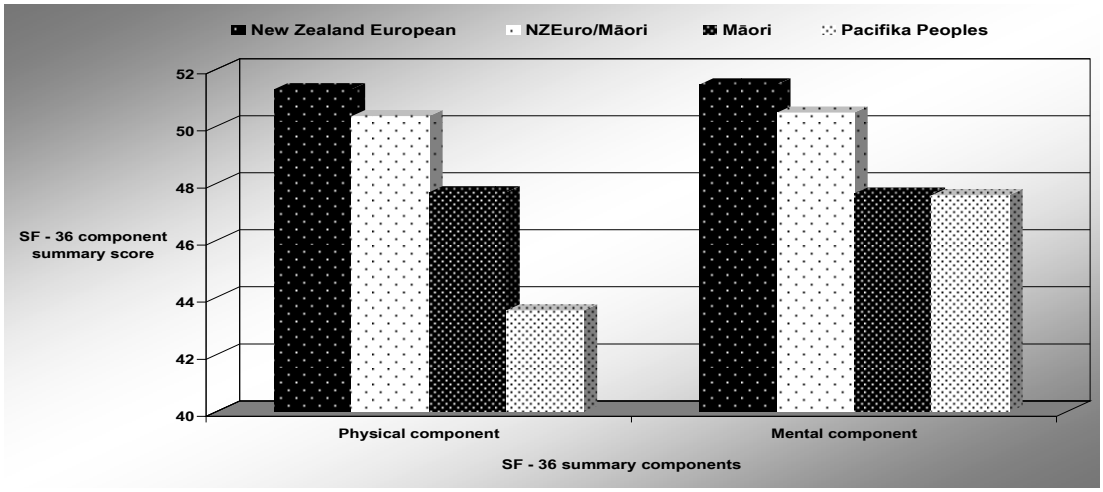

Figure 8. Mean scores of SF - 36 components scores by ethnicity

Socioeconomic status

Disparities in health between different ethnic groups have been closely linked to differences in socio-economic status (SES). It is presently generally accepted by epidemiologists in New Zealand that SES explains a large proportion of the differences in health outcomes between Māori and non-Māori, and for other ethnic groups (Blakely et al., 2005; Sporle, Pearce & Davis, 2002).

At the same time, there is a general acceptance of the reliability of international and New Zealand data that has demonstrated clear differences in health outcomes (mortality and morbidity) that are related to differences in SES for the population as a whole. This relationship is known as a 'gradient effect' because of the clear linear relationship between SES and health that has been consistently demonstrated no matter which way SES (e.g. income, education, and economic living standards) or health (e.g. mental or physical) is measured (Marmot, 2004). The gradient means that for every increase in SES there is a corresponding improvement in health status. Recent attention to the ageing population by UK researchers shows that health disparities related to occupational status while people were employed persist and increase in early old age (Chandola et al., 2007). People from lower occupational grades who have poorer health are more likely to report a more rapid deterioration in physical health.

Figures 8, 9 and 10 show the expected pattern of the SES and health relationship gradient. The trend is for levels of physical and mental health to increase as household income, self reported economic living standards, and educational qualifications increase

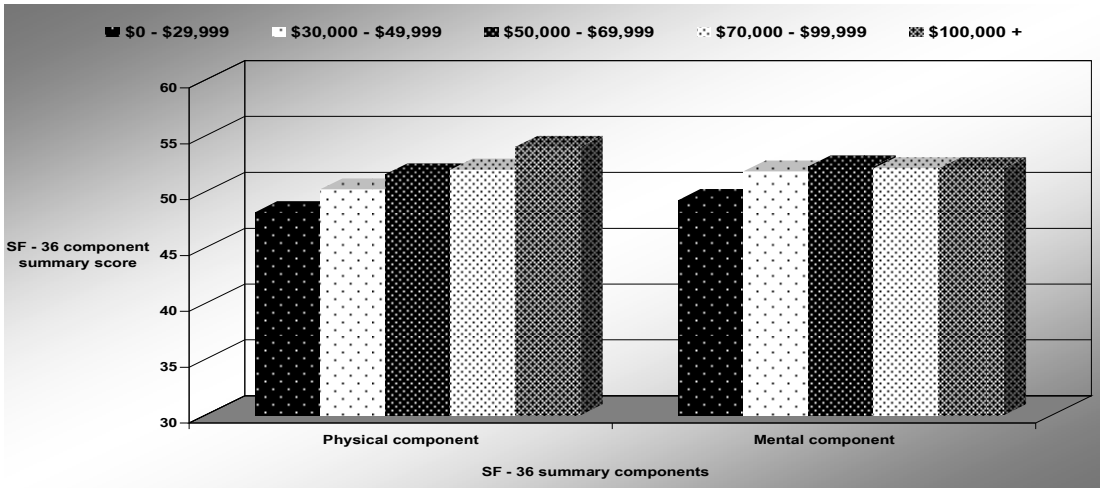

Figure 8. Mean scores of SF - 36 components by household income.

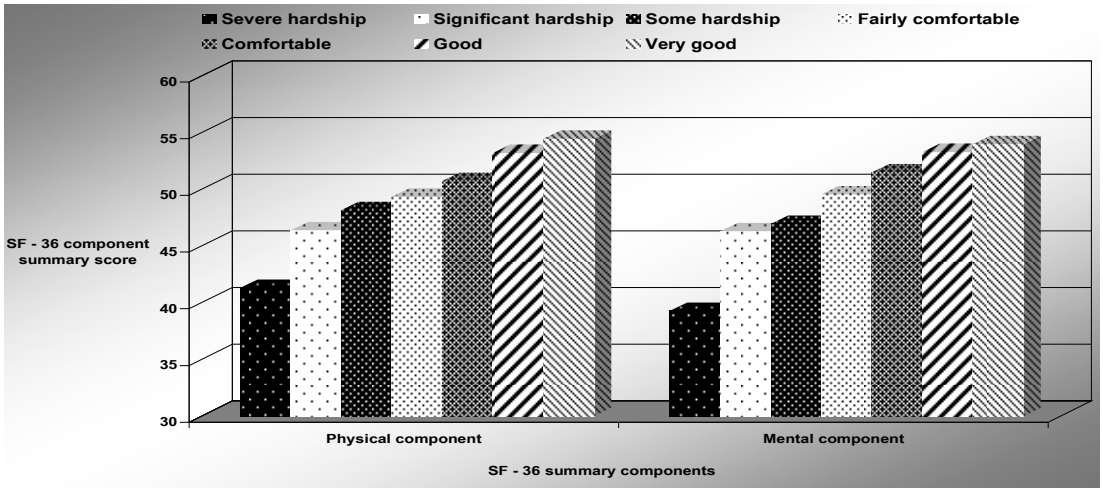

Figure 9. Mean scores of SF - 36 components by economic living standards.

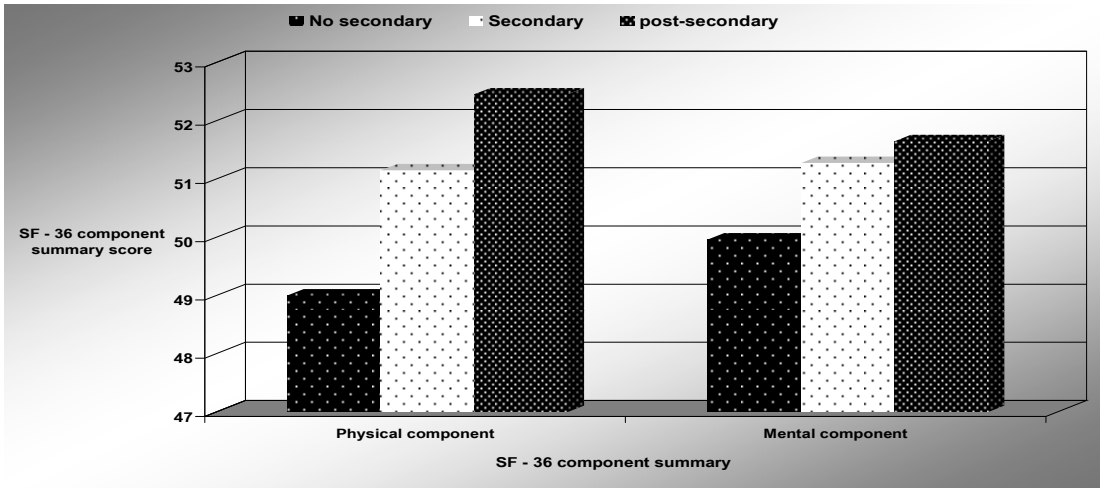

Figure 10. Mean scores of SF – 36 summary components by education.

Individual Factors

From the individual perspective there are particular behaviours that are known to affect health outcomes, such as smoking, levels of alcohol consumption, exercise participation and health care utilisation. Although these behaviours have been seen as amenable to individual change, mounting evidence supports the understanding that these behaviours are also socially structured and interact with other aspects of social life such as SES, retirement, and gender. For the purposes of this descriptive overview, each of these factors will be considered in relation to important structural factors: household income, education, gender, ethnicity and retirement.

Smoking Behaviour

Smoking behaviour was measured first by an item that asked respondents to identify as a regular smoker or not. The percentage of respondents who identified as regular smokers was related to household income and economic living standards in that those experiencing the greatest hardship were the most likely to identify as regular smokers (Figure 11). The percentage of regular smokers in the sample is related to educational qualifications on a gradient in which those with the highest qualifications were less likely to report smoking (Figure 12). Women in this cohort were slightly but significantly more likely to be smokers. At the same time as smoking has become medically and socially sanctioned, we have been able to observe a generational shift from male dominance of smoking behaviour over the last few decades. It appears that this gendered shift is already reflected in the 54 to 70 year old age group. Smoking is also significantly related to ethnicity, with those identifying as Māori, followed by Pasifika peoples, the most likely to report smoking (Figure 15). Those who are less likely to smoke include New Zealand Europeans and other ethnicities. This pattern of relationships suggests that smoking is strongly related to SES. However, those who are older and those who have retired are less likely to smoke than people still in work (Figures 13 and 14).

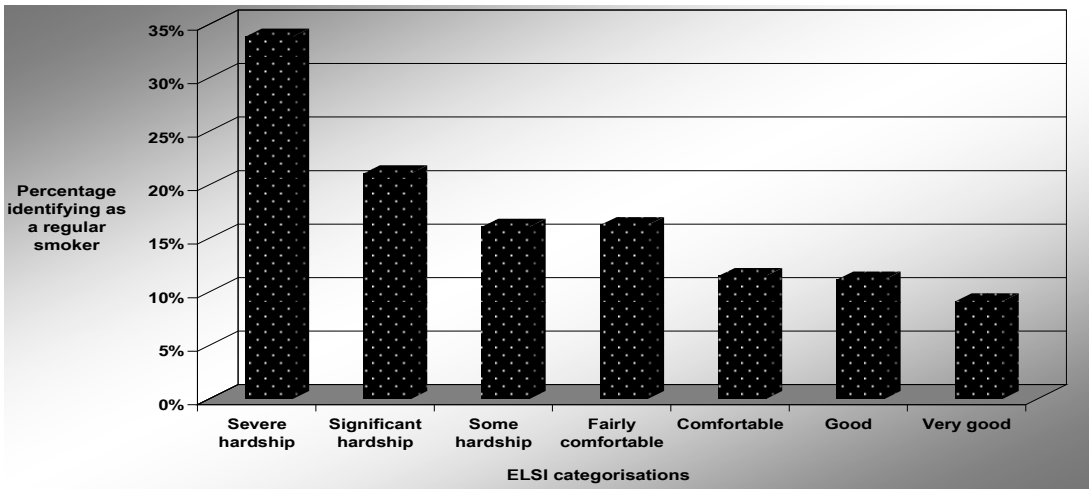

Figure 11. Percentage identifying a regular smoker by economic living standards.

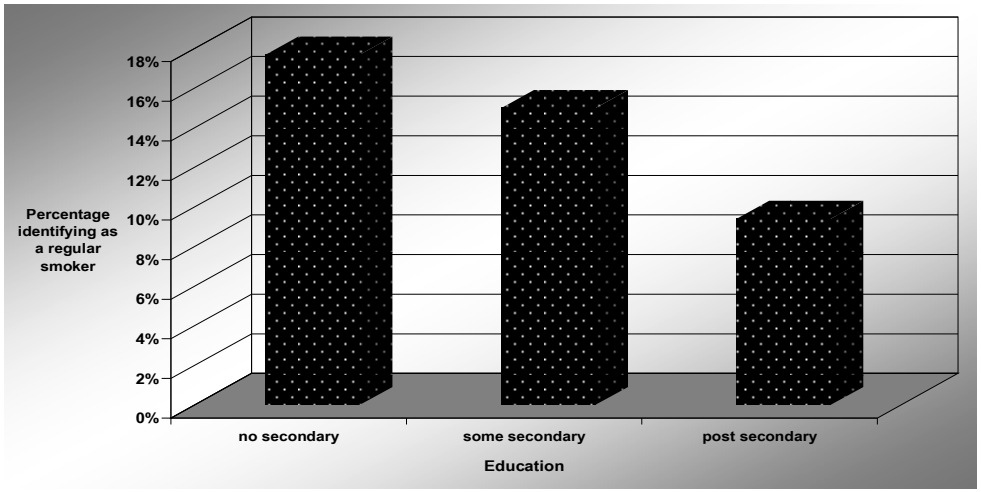

Figure 12. Regular smoking percentage by education

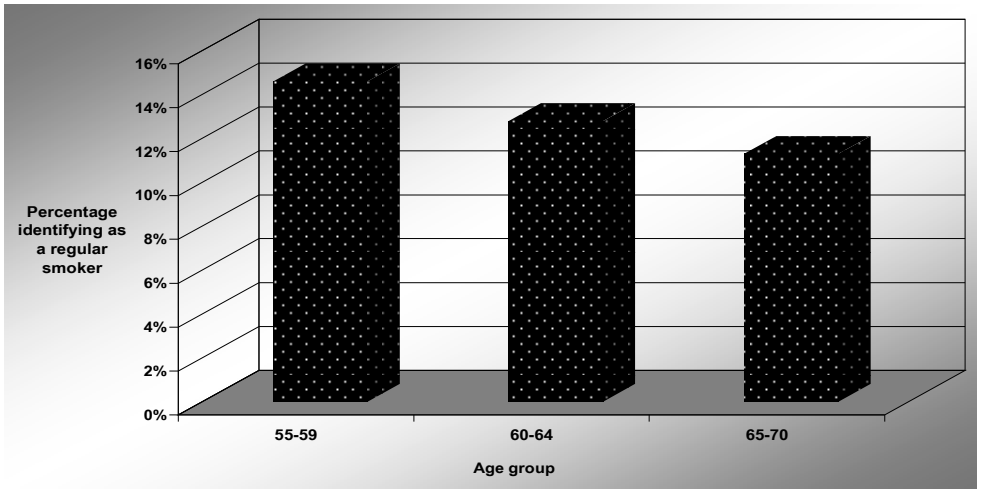

Figure 13. Regular smoking percentage by age

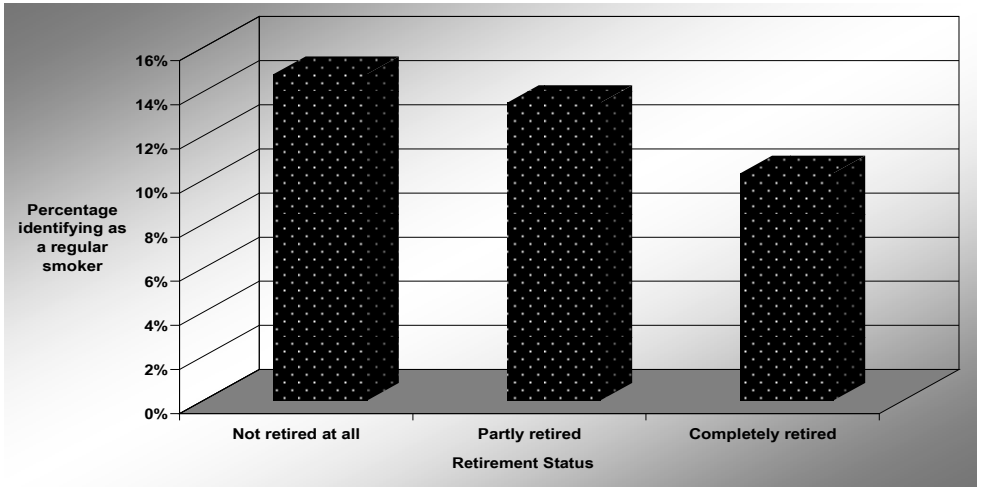

Figure 14. Regular smoking percentage by retirement status

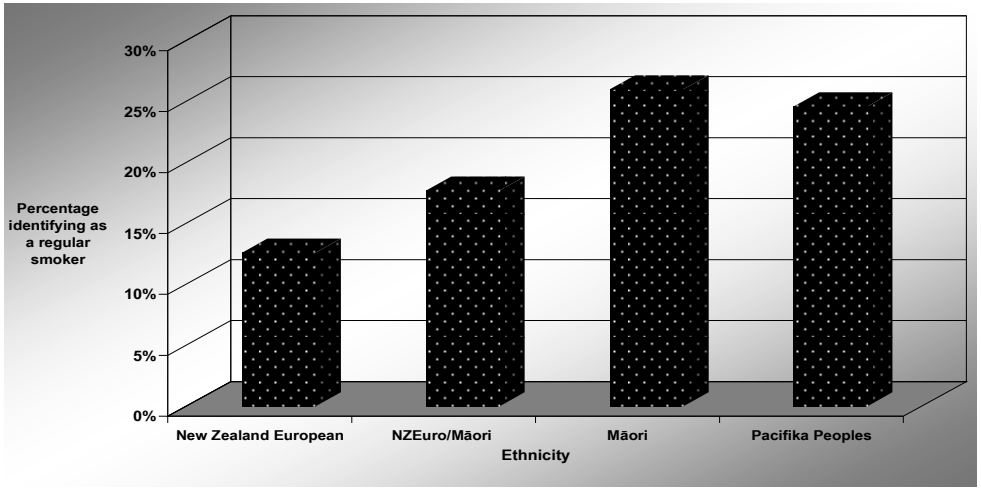

Figure 15. Regular smoking percentage by ethnicity

Alcohol Consumption

Alcohol consumption was measured first by an item that assessed frequency of drinking, from never, through up to four times a month (occasional drinker), to two or more times a week (regular drinker). In general, the largest group reported moderation (in times of consumption). Comparing the reports across these levels of frequency in relation to economic living standards (Figure 16) and household income showed a curvilinear relationship between level of economic hardship and level of consumption. Those experiencing hardship were most likely to abstain and those reporting a more comfortable standard of living were more likely to drink frequently. Thus, unlike smoking, being able to afford alcohol is apparently related to frequency of drinking. This same pattern is reflected in the levels of educational qualifications (Figure 17). Women in this cohort are more likely to abstain and less likely to drink alcohol regularly compared to men (figure 18). There is no clear pattern for ethnicity in this simple overview, however, it seems that New Zealand Europeans are the most likely to report regular alcohol consumption (Figure 19). Retired people are more likely to abstain and are less likely to drink regularly (Figure 20).

"Thus, unlike smoking, being able to afford alcohol is apparently related to frequency of drinking."

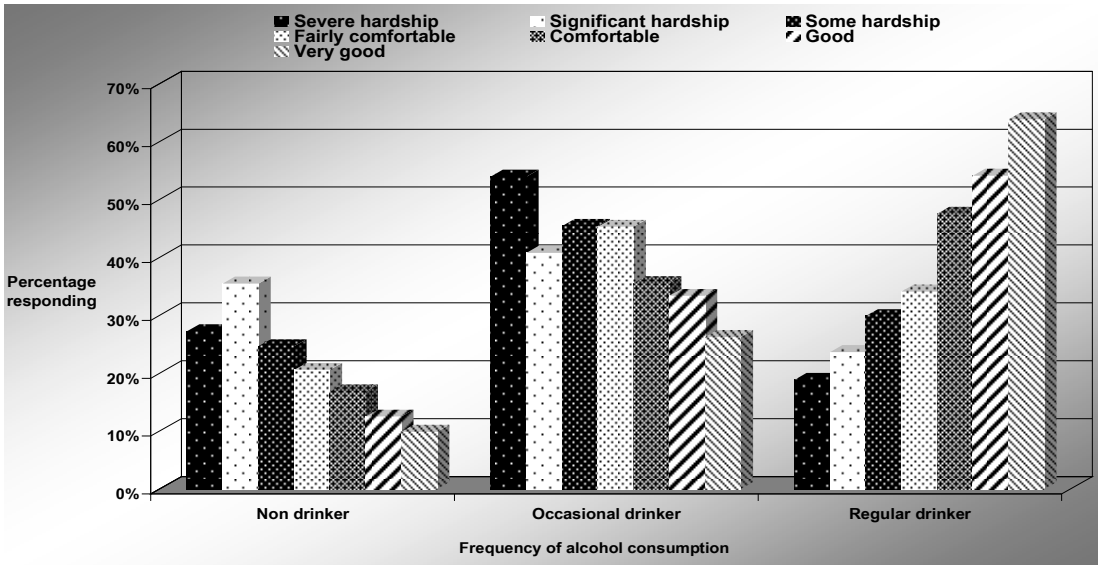

Figure 16. Frequency of alcohol consumption by economic living standards

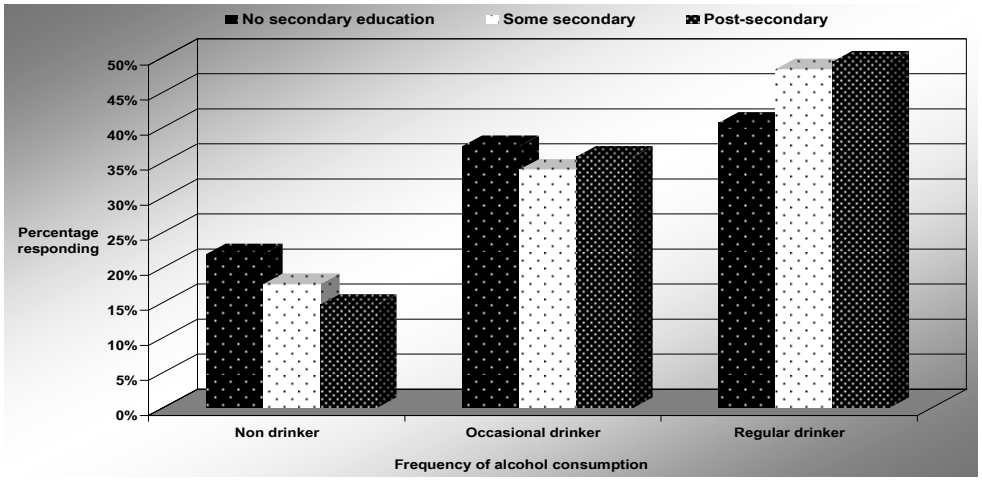

Figure 17. Frequency of alcohol consumption by education

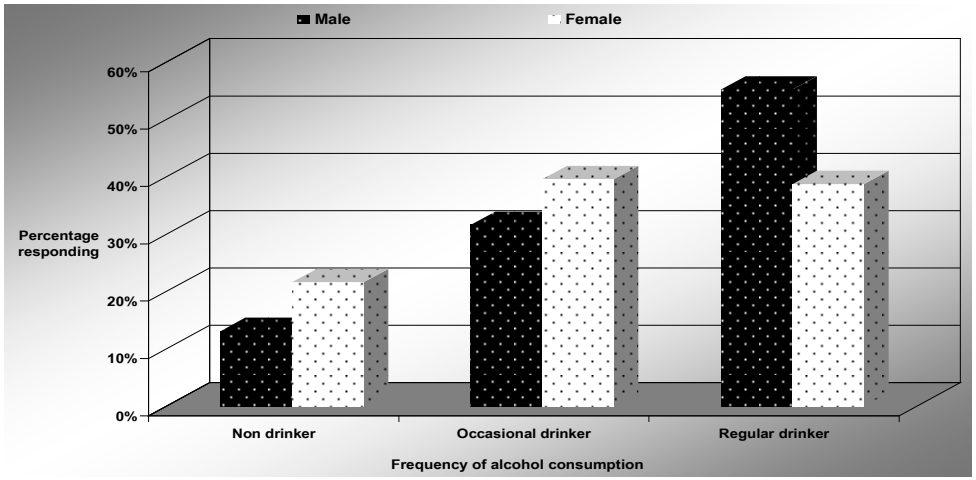

Figure 18. Frequency of alcohol consumption by Gender

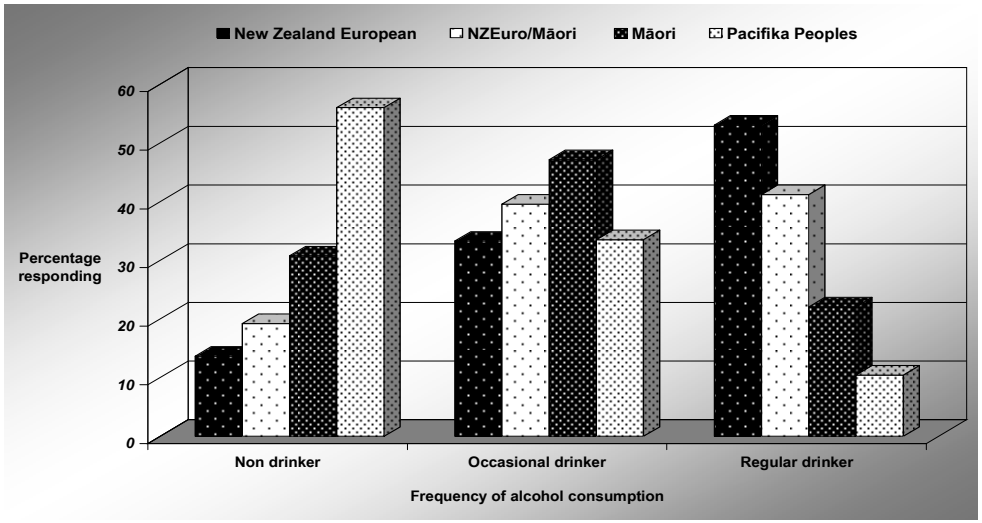

Figure 19. Frequency of alcohol consumption by ethnicity

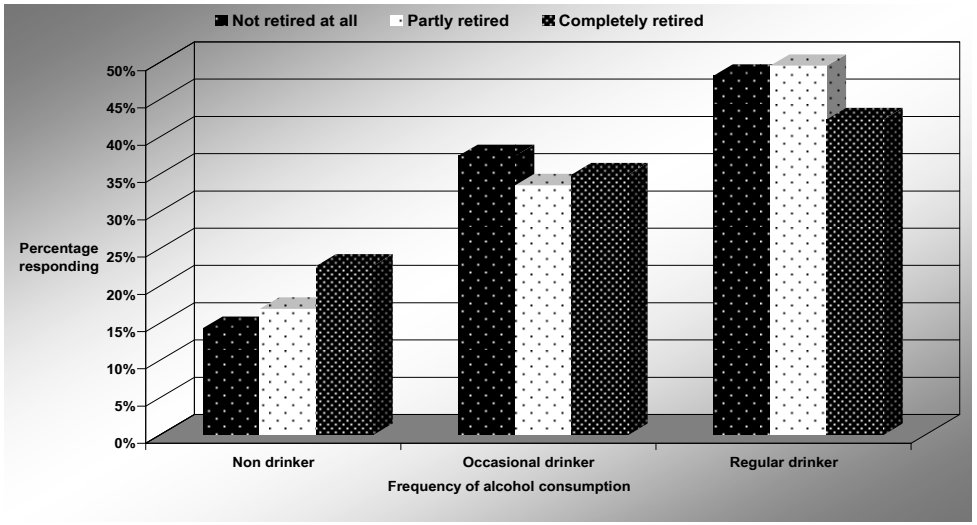

Figure 20. Frequency of alcohol consumption by work/retirement status

Physical Exercise

Exercise was measured by reports of activity level that were assessed as no regular activity, some activity, or regular activity. In general the lowest percentage of respondents reported no activity and the highest percentage reported regular activity. Within this pattern there were some effects shown by the structural variables. Household income and economic living standards showed the same gradient within levels of exercise as within levels of smoking: The highest percentage of non-exercisers (no activity) was among those experiencing the greatest hardship. The highest percentage of the regular exercisers was for those reporting a more comfortable standard of living (Figure 21). This pattern is reflected in the levels of educational qualifications (Figure 22). There were few differences between man and women for exercise levels (Figure 23). Pasifika peoples have the highest percentage of no activity or some activity, and the least percentage of regular activity (Figure 24). Those who have retired report a higher percentage of no activity and a lower percentage of regular activity than those people still in work (Figure 25).

"The highest percentage of non-exercisers (no activity) was among those with the lowest incomes."

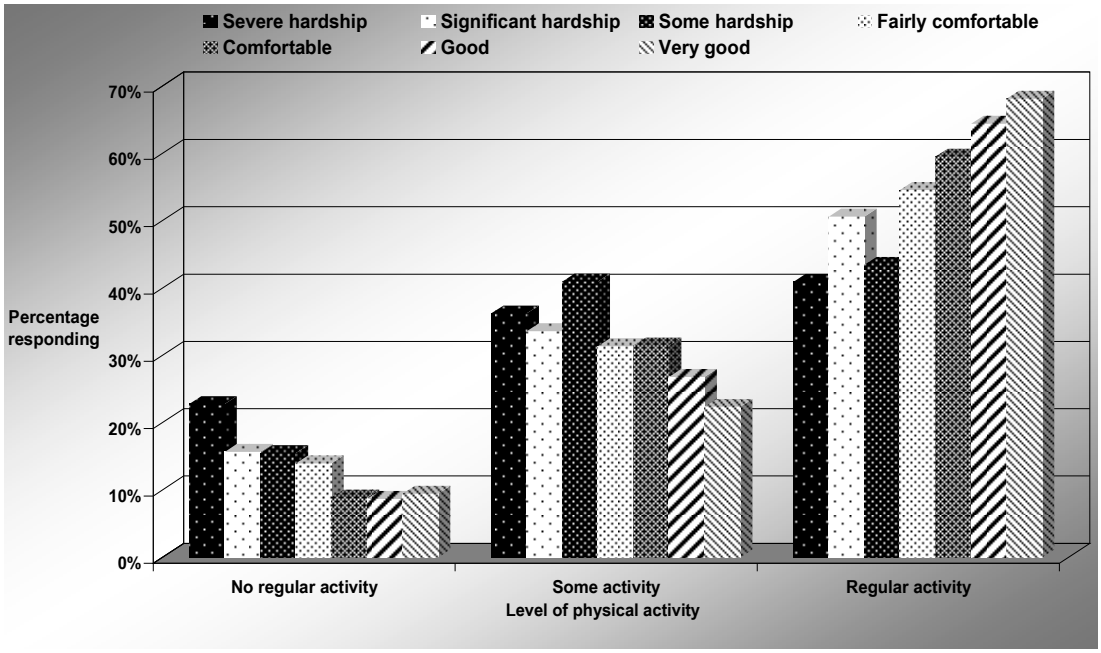

Figure 21. Level of physical activity by economic living standards.

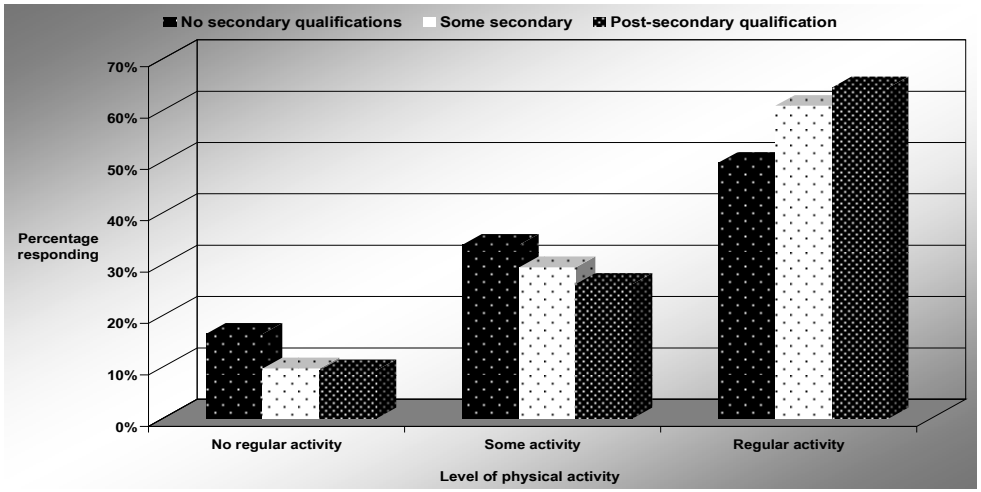

Figure 22. Level of physical activity by education.

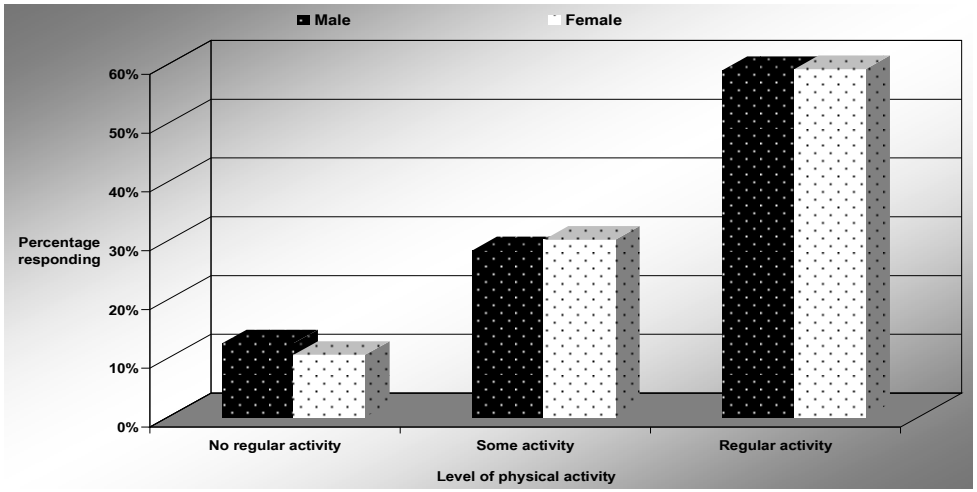

Figure 23. Level of physical activity by gender.

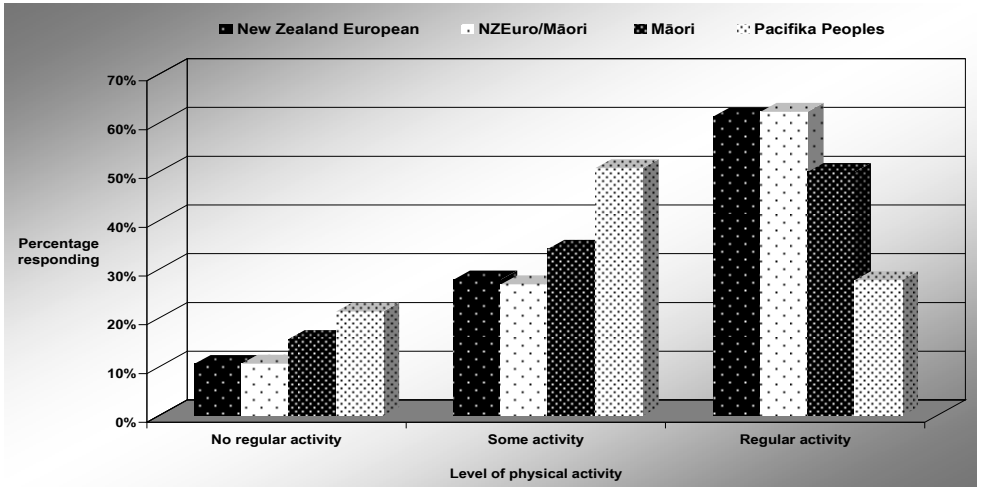

Figure 24. Level of physical activity by ethnicity.

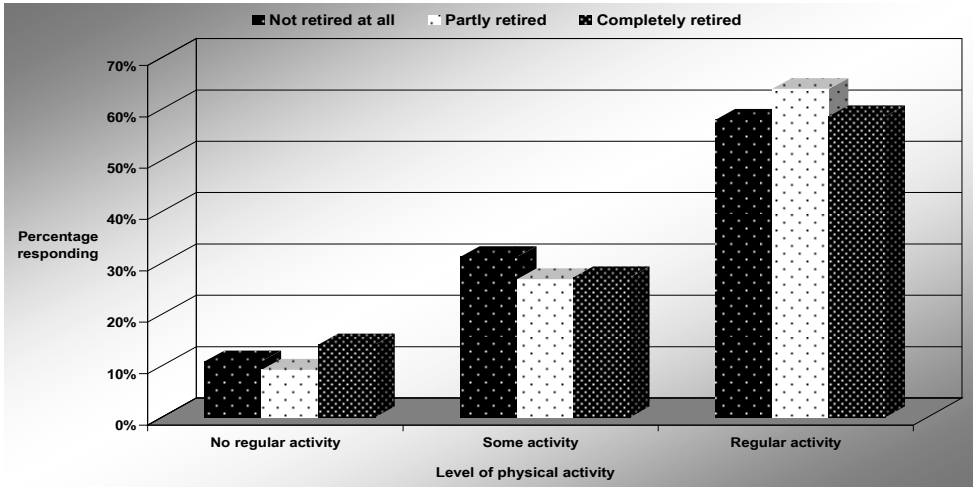

Figure 25. Level of physical activity by work/retirement status.

Health Care Utilisation

Health care utilisation in regard to visiting a doctor shows little difference across levels of household income or economic living standards. Admissions to hospital reflect the gradient of health outcomes from lowest (more likely to go to hospital) to highest income (least likely to be admitted). In New Zealand, where health care is subsidised by the State, this gradient relationship most likely reflects the health outcomes related to lower SES rather than any effect of income on ability to access medical care. There was also very little difference in health care utilisation according to education or gender. There may be some concern about the lower level of hospital admissions for Pasifika peoples compared to health reports but these data require more in-depth scrutiny (Figure 26). Retirement is related to increasing health care utilisation in this group (Figure 27).

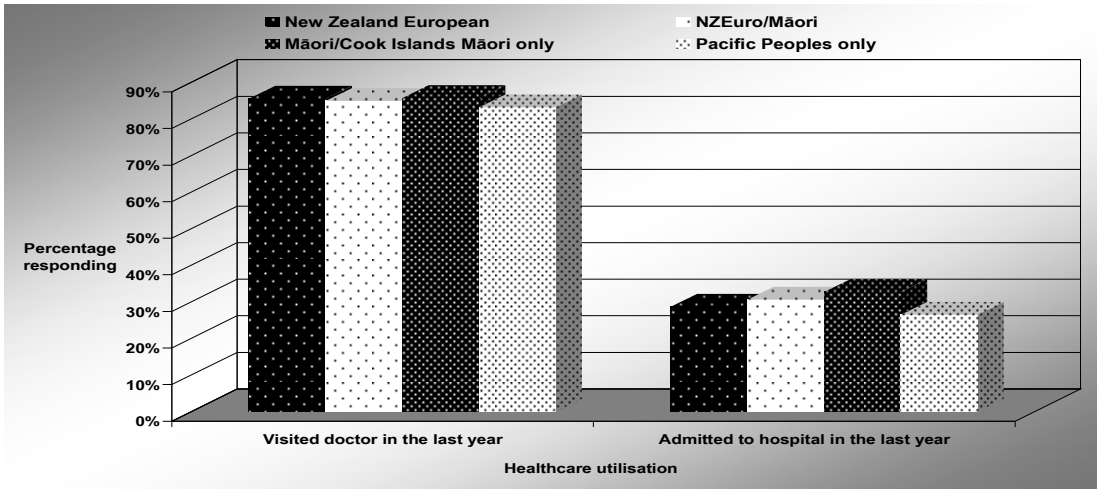

Figure 26. Health care utilisation by ethnicity.

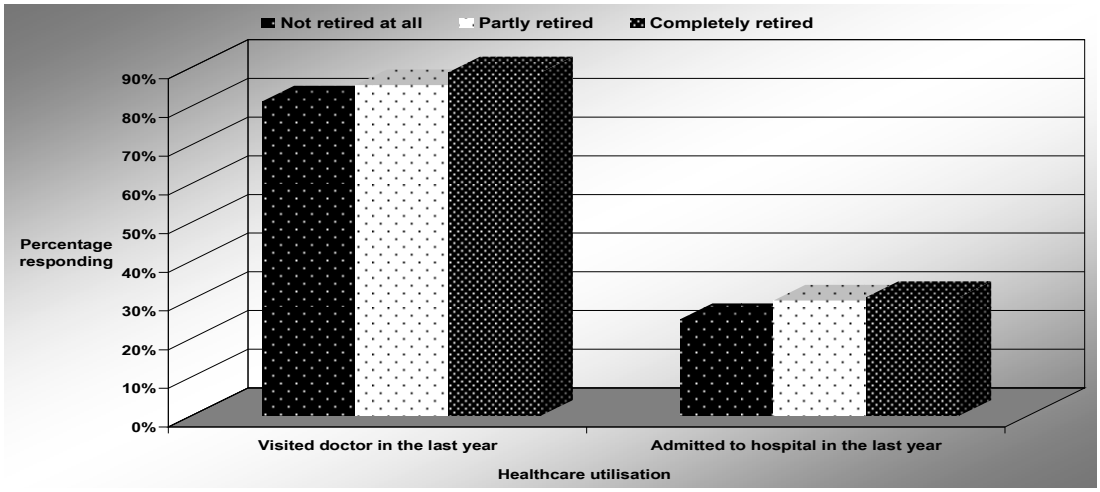

Figure 27. Percentages reporting health care utilisation by retirement status.

Concluding Comments

This brief overview highlights some areas for further in-depth analysis. Current epidemiological evidence (e.g. Chandola et al., 2007) suggests that these differences in health outcomes for the young-old will continue into older age. Those who have a health advantage before retirement are more likely to carry that advantage on to improve their chances of ageing well. It is also likely that current health behaviours including smoking and exercise will have effects on health and health care utilisation that will continue into older age. Early effects on health will lengthen the trajectory of declining capacities. To begin enquiry into the effects of ageing on health with the young-old is an opportunity to enquire into the determinants of ageing health and intervene to promote effective and healthy adaptation to changing needs, and to extend fitness, capacity, and well-being so that decline is limited to the very last stages of life.

Some specific effects are highlighted in this first overview of the data. For example, the differences in morbidity and health related behaviours for women and for some ethnic groups require attention. Many of these differences may be seen in the pattern of health outcomes related to SES. These differences have been observed regularly in international studies and are evident in our results. A focus on the effects of differences in income and social status on health outcomes and on health related behaviours (such as smoking and exercise) is suggested by these results.

The data reported here represent a simple snapshot of the health of this cohort and some relationships between health and structural factors. However, more in-depth quantitative analysis is required to make more definitive statements about some of the cross-sectional relationships suggested here. Most importantly, this is the first wave of a longitudinal study and some more definitive conclusions about any causal relationships will only be made through ongoing data collections.

References

Blakely, T., Tobias, M., Robson, B., Ajwani, S., Bonne, M., & Woodward, A. (2005). Widening ethnic mortality disparities in New Zealand 1981-99. *Social Science & Medicine, 61*(10), 2233-2251.

Chandola, T., Ferrie, J., Sacker, A., & Marmot, M. (2007). Social inequalities in self reported health in early old age: follow-up of prospective cohort study. *BMJ,* doi:10.1136/bmj.39167.439792.55. *BMJ, 334*(7601).

Jensen, J., V. Krishnan, et al. (2004). New Zealand Living Standards 2004. Wellington, Ministry of Social Development.

MacIntyre, S. & Hunt, K. (1997). Socio-economic position, gender and health: How do they interact? *Journal of Health Psychology, 2,* 315-334

Marmot, M. G. (2004). *The status syndrome: How social standing affects our health and longevity*. New York: Henry Holt.

Ministry of Health, N. Z. (2002). *Reducing inequalities in health*. Wellington, NZ: Author. Available at http://www.moh.govt.nz.

Ministry of Health. (2004). *A portrait of health: Key results from the 2002/03 New Zealand Health Survey*. Wellington: Ministry of Health.

Scott, K. M., I.Tobias, M., Sarfati, D., & Haslett, S. J. (1999). SF-36 health survey reliability, validity and norms for New Zealand. *Australian and New Zealand Journal of Public Health, 23*(4), 401-406.

Sporle, A., Pearce, N., & Davis, P. (2002). Social class differences in Māori and non-Māori aged 15-64 during the last two decades. *New Zealand Medical Journal, 115*, 127-131.

Tobias, M., & Yeh, L. C. (2006). Do all ethnic groups in New Zealand exhibit socio-economic mortality gradients? *Australian and New Zealand Journal of Public Health, 30*(4), 343-349.

Appendix 1. Standardised Means and Standard Deviations

	Physical Health Summary	Mental Health Summary	Physical Functioning	Role Physical	Body Pain	General Health	Vitality	Social Functioning	Role Emotional	Mental Health
Age										
54 – 59	52.4 (8.5)	50.5 (9.1)	81.9 (22.4)	84.9 (22.7)	72.9 (23.2)	72.5 (21.5)	65.8 (20.0)	85.2 (22.4)	88.0 (20.0)	80.0 (16.2)
60 – 64	51.0 (8.7)	51.0 (8.0)	80.0 (21.8)	81.7 (23.9)	70.8 (23.9)	70.5 (21.6)	65.3 (19.7)	85.0 (22.5)	87.8 (20.5)	80.2 (16.2)
65 – 70	49.1 (9.7)	52.1 (8.5)	74.6 (24.6)	76.4 (25.9)	69.8 (24.3)	70.2 (21.7)	65.7 (20.0)	85.2 (23.0)	85.1 (22.6)	82.4 (14.9)
Status										
Not retired	52.9 (7.8)	51.2 (8.4)	83.5 (20.2)	74.1 (22.7)	74.1 (22.7)	74.4 (20.0)	67.0 (19.0)	87.3 (20.5)	90.3 (17.4)	81.2 (15.2)
Partly retired	50.9 (8.8)	51.3 (9.3)	80.0 (21.7)	71.0 (23.4)	71.0 (23.4)	71.0 (21.8)	66.7 (19.3)	84.8 (22.0)	86.6 (20.8)	81.1 (16.3)
Fully retired	50.7 (9.6)	50.7 (9.6)	71.4 (26.4)	72.6 (28.2)	66.6 (25.5)	65.1 (24.2)	62.1 (21.6)	81.4 (26.2)	82.4 (25.0)	79.7 (16.8)
Gender										
Male	51.3 (8.7)	51.3 (8.6)	80.8 (22.5)	81.7 (24.3)	72.2 (23.5)	70.6 (21.3)	66.7 (19.8)	85.1 (22.1)	87.6 (20.5)	81.2 (15.7)
Female	50.9 (9.3)	50.9 (9.1)	78.1 (23.4)	81.5 (24.3)	70.6 (24.1)	71.8 (21.9)	64.7 (19.8)	85.1 (22.9)	87.2 (20.7)	80.2 (16.0)
Ethnicity										
European	51.3 (9.0)	51.5 (8.7)								
Euro/Māori	50.4 (9.5)	50.5 (9.8)								
Māori	47.7 (10.1)	47.7 (10.3)								
Pacifika	50.8 (9.2)	47.6 (8.5)								
Income										
$0 – 29,999	48.2 (10.5)	49.3 (10.8)								
$30k – 49,999	50.2 (8.8)	51.8 (8.3)								
$50k – 69,999	51.6 (8.7)	52.3 (7.6)								
$70k – 99,999	52.0 (8.3)	52.1 (8.1)								
$100,000 +	54.0 (6.7)	52.1 (7.5)								
ELSI										
Severe hardship	41.3 (12.2)	39.3 (12.1)								
Sig. hardship	46.4 (10.2)	46.3 (10.6)								
Some hardship	48.2 (9.4)	46.9 (11.0)								
Fairly comfortable	49.3 (8.8)	50.0 (9.2)								
Comfortable	50.7 (8.7)	51.5 (8.2)								
Good	53.2 (7.5)	53.3 (6.9)								
Very good	54.5 (7.3)	53.4 (6.8)								
Education										
No high school	49.0 (9.7)	50.0 (9.7)								
High School qual.	51.2 (9.1)	51.3 (8.6)								
Tertiary qual	51.7 (8.4)	51.7 (8.4)								

Appendix 2. Unstandardised Means and Standard Deviations for the SF-36 subscales

	Mean	SD
Physical Functioning	26.9	3.0
Role Physical	17.8	3.2
Body Pain	9.4	2.2
General Health	19.9	3.9
Vitality	17.4	3.8
Social Functioning	8.0	1.6
Role Emotional	13.9	2.0
Mental Health	25.4	3.8