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Survey of Patients Attending GP Clinics in the Whitehorse Division of General Practice

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Table of Contents

List of Tables

List of Figures

1 Background to the study

It has been argued that health status surveys will provide the necessary profiles to enable better health planning and care provision. Although this argument is not new — it's origins can be traced back at least as far as Chadwick's surveys of the health status of Londoners in the 1830s (Porter 1997) — it has been given new impetus due to changes in disease profiles of communities (from acute to chronic), a concern with promoting outcomes-based medicine, dawning awareness that available medical services may not necessarily match the needs or wishes of communities, realisation that health care service money is a limited commodity, and the development of simple and convenient health status measurement instruments.

One such health status instrument is the SF-36, which is a health status profile instrument; i.e. the different scales (dimensions of health) within the instrument provide a portrait or profile of a person's health status. The scales within the SF-36 cover Physical function, Role physical, Bodily pain, General health, Vitality, Social function, Role emotional and Mental health. These are combined in turn into two summary scales reporting on a person's Physical and Mental health. The SF-36 has been promoted as a reliable and valid instrument for use with population surveys; Australian norms have now been published by the Australian Bureau of Statistics (ABS), (ABS 1995) and its use has been argued on the grounds of providing a standardised metric. (Lin and Ward 1998; Saltman, Myers et al. 1998)

In response to these challenges, the Whitehorse Division of General Practice conducted this survey of GP clinic patients with the intention of providing a health status profile of attending patients. The results were intended to be used as part of a needs assessment of patients within the Division, and to provide health profiles of attending patients for health care planning.

1.1 The survey

The survey was carried out in 1998 within the boundaries of the Whitehorse Division of General Practice, which is spread across the eastern suburbs of Melbourne. The epicentre of the Division is clustered around the localities of Box Hill, Blackburn and Ringwood.

When the Whitehorse Division decided to carry out this survey, they approached all the general practitioners (GPs) within the Division and invited GPs into the study; GPs from 17 clinics elected to participate.

Data collection was undertaken by two social work students from Deakin University, as part of their field placement training. The method used was for the researchers to visit the clinics in the mornings and late afternoons and to approach patients waiting to see the GP. Once consent was obtained (see Appendix 1 for a copy of the consent form), respondents were asked to complete the SF-36 on the spot. Children were not eligible to complete the SF-36.

Subsequently the data were double entered into EpiInfo (Dean, Dean et al. 1994) for cleansing and verification.

Obviously, in light of the recruitment strategy, the issue of generalizability was extremely important. The sample was a convenience sample drawn from GP clinics which volunteered to be involved in the study, the times when patients were approached were convenient for the interviewers and participation by patients was voluntary.

Regarding the sample size, given the study resource constraints it was determined that a 5% sampling error would be acceptable. Assuming random sampling from a heterogenous population of 985,804 persons this resulted in an estimate of 384 respondents.[1] In the event, 441 useable surveys were obtained.

1.2 SF-36: A brief review

The chosen instrument for measuring the health status of patients was the SF-36. It is very widely used, has been extensively investigated and validated, and has almost universal acceptance as the ubiquitous health status measure.

1.2.1 The instrument

The SF-36 has eight health state dimensions: Physical functioning, Role physical, Bodily pain, General health, Vitality, Social function, Role emotional and Mental health. These can be combined into two key health status measures—Physical function (PCS index) and Mental health (the MCS index). The MCS scale is reported to be superior to any of the SF-36 mental health dimensions (Ware, Kosinski et al. 1995). Other aspects of HRQoL or health status are covered more lightly or are omitted from the instrument altogether (Ware, Snow et al. 1993).

Each dimension is separately scored, using simple rating scale techniques. These data are then weighted such that they form scores on a 0–100 point scale. For computation of the PCS and MCS scale scores, each dimension score is weighted in a three-step process to produce a standardised T-score (where the population mean score is 50±10) (Hays, Sherbourne et al. 1993; Ware, Snow et al. 1993). Australian norms are available and have been used in this report. (ABS 1995)

1.2.2 Instrument administration

Administratively, the SF-36 is a simple scale and takes subjects between 10–15 minutes to complete depending upon the method of administration (Weinberger, Nagle et al. 1994). In a study of the elderly comparing it with the Sickness Impact Profile, it was reported as taking 50% less time than the SIP to administer (14 versus 33 minutes) (Weinberger, Samsa et al. 1991). Regarding administration, telephone interviews are quicker than interviews (actual time) (Weinberger, Nagle et al. 1994). Mail costs are approximately 50% cheaper than telephone administration. However, mail survey achieves a higher response rate (79% versus 69%), but missing data—particularly in the aged—is higher among mail surveys. Lower health status and chronic health conditions were more likely to be reported mail survey respondents (McHorney, Kosinski et al. 1994).

In the current survey, the SF-36 was administered by interviewer, but with self-completion.

1.2.3 Studies using the SF-36

Published studies cover the gamut of health conditions and medical interventions, and include: allergies, amputation, angina, angioplasty, anxiety, arthritis, asthma, back pain (including orthopaedic intervention, sciatica, spinal manipulation), cataracts, COPD, dementia of various

[1] The population size was calculated from postcodes serviced by the Whitehorse Division of General Practice. ABS population data for each postcode were obtained and summed. The sample size was estimated from EpiIno. (Dean, Dean et al. 1994)

kinds, depression, diabetes, dialysis, epilepsy, factures of various kinds, falls, headaches (including migraines and cluster headaches), heart surgery (including by-pass, valve replacement and transplant), haemodialysis and renal replacement, herpes, hip arthroplasty, HIV (AIDS), hypertension, knee injury/replacement, menorrhagia, multiple sclerosis, prostate cancer, schizophrenia, sinusitis, sleep disturbance, stroke, ulcers (including dyspepsia and duodenal), urinary tract infections, vasculitis, varicose vein surgery, vertigo and work injuries of various kinds. The SF-36 has been used in health promotion activities, including ageing, care quality in nursing/hostel residence, demographic health status, diet, exercise, and purpose in visiting GPs. It has also been widely used for population surveys. In one Australian GP-practice study, the SF-36 was administered by mail on two occasions at 1 week interval. The test-retest correlation coefficients were reported as falling between 0.62–0.87, indicating a moderate degree of robustness. (Lin and Ward 1998) With respect to using the SF-36 for assessing population changes in health, a British study reported that due to large variation in the general population's health status, the SF-36 may be too insensitive to detect the impact of population-wide health interventions (Ziebland 1995; Jenkinson, Layte et al. 1996). The study methodology used by Ziebland, however, has been criticised as being inappropriate (Ruta 1995). When population data are analysed by sub-groups, however, the SF-36 provides sensitive and reliable estimates of functional status (Jenkinson, Wright et al. 1994).

Regarding its use among the aged, available studies suggest that whilst those aged <75 years have no trouble completing it—particularly in interview settings (Lyons, Perry et al. 1994)—those aged ≥75 years with poor physical or mental health have difficulty self-completing it. Missing data appears to increase along with age and infirmity, and questions probing physical activities are perceived to be irrelevant by older people (McHorney, Ware et al. 1994; Hayes, Morris et al. 1995). In light of these difficulties modifications to the SF-36 items have been suggested by Hayes et al (1995), who also recommended that for infirm elderly people interview assistance may be required. In another study comparing telephone and interview administration among those aged ≥65 years, it was reported there were non-systemic discrepancies on all eight SF-36 scales—particularly on role functioning, physical role, social functioning and bodily pain. the correlations were between 0.3–0.6. The researchers concluded the results were not interchangeable and cautioned against mixing administration methods in elderly populations (Weinberger, Nagle et al. 1994). More generally, the elderly report poorer health status (physical function, role function, energy, fatigue scores) when compared with younger people but have similar global health perceptions (Mangione, Marcantonio et al. 1993). With respect to healthy older people, one study suggested there were ceiling effects (Andresen, Patrick et al. 1995). In a study of the elderly, comparing the SF-36 with the SIP it was reported that the SF-36 produced less optimistic health states than did the SIP, although the results from the two instruments were highly correlated (r = 0.73) (Weinberger, Samsa et al. 1991). These results should however be viewed in light of an American study reporting that the PCS and MCS indices were sensitive, valid and reliable measures amongst the depressed elderly in interview situations (Beusterien, Steinwald et al. 1996).

1.2.4 Instrument strengths

The very wide use of the SF-36 has resulted in numerous validation studies, including an Australian validation in which the scales demonstrated good discrimination between people with and without health conditions, including those with medical and those with psychiatric conditions. (McCallum 1994; McCallum 1995).

The SF-36 has been translated in to many languages, including most of those spoken by different Australian communities. The International Quality of Life Assessment Project (IQOLA), aimed at translating, adapting, validating and generating population norms for the SF-36 in 15 countries (Aaronson, Acquadro et al. 1992), has now reported data for over 40 countries. Validation studies include English (Brazier, Harper et al. 1992; McHorney, Ware et al. 1993; Ware, Snow et al. 1993; Jenkinson, Wright et al. 1994), French (Leplege, Mesbah et al. 1995), German (Bullinger 1995), Spanish (Alonso, Prieto et al. 1995), Swedish (Sullivan, Karlsson et al. 1995). Several of these studies have reported on the lack of sensitivity (see below).

1.2.5 Limitations

The evidence thus far would suggests that the SF-36 items cannot be meaningfully combined into a single index (Ware, Kosinski et al. 1995), although Brazier has produced a pilot utility algorithm based on 12 of the 36 items, known as the SF6D (Brazier, Usherwood et al. 1998).

The SF-36 scales do not produce single scores with interval properties: an improvement in the transformed score on any scale of, say, 10 points does not mean the same at different points of the same scale. In addition, the different scales possess different scoring ranges (they range from 4-points on the 'role emotional' scale to 26 on the 'mental health' scale) with the consequence that a change of 10 points on transformed scores from one scale do not necessarily reflect the same change in HRQoL for a similar change on another scale. A Swiss study into these properties of SF-36 items concluded that when patients with minor, moderate and severe disability were to be compared, the SF-36 would inflate treatment efficacy for those with moderate disability compared to the other two groups (Stucki, Daltroy et al. 1996). Consequently it is difficult to undertake an overall comparison of the magnitude of the improvement/deterioration in HRQoL. Despite the lack of the strict interval property and scale comparability, a large improvement in an SF-36 scale score increases confidence when compared with a smaller increase on other scales, or when compared with the two scales subsumed within the instrument (the PCS and MCS scales).

However, given that the scales within the SF-36 are not orthogonal (McHorney, Ware et al. 1993; Haley, McHorney et al. 1994; McHorney, Kosinski et al. 1994), correlated errors may play an important part in findings (Wolinsky and Stump 1996). Thus outcome from one sub-group within a sample may dominate other outcomes, in the sense that a superior outcome on one scale may either influence scores obtained on other scales or may contrast with smaller effects on other dimensions (for example, a large change score on Mental health will affect SF-36 scores obtained on Vitality since the two measures are not orthogonal). This implies that change scores obtained from the SF-36 should be interpreted cautiously

The SF-36 is not a particularly sensitive instrument. Whilst this partly reflects the different scale lengths as discussed above, it also reflects ceiling effects on some scales and is partly attributable to the insensitivity of particular items (Shadbolt 1996). In order to show significant improvements, therefore, either very large sample sizes are needed or very large changes in health status are required (Weinberger, Oddone et al. 1996); where small health changes occur or where health status is similar to that of the general population the SF-36 may not detect health status change (Keoghane, Lawrence et al. 1996). One difficulty posed by this insensitivity is that where large groups are disparate in nature, sub-group analysis may be necessary to show significant changes in health status (Jenkinson, Layte et al. 1996). This also implies that the SF-36 is not well suited to measuring individual patient health status changes (Weinberger, Oddone et al. 1996).

2 The study population

In order to provide a profile of respondents, the survey instrument included questions asking for basic demographic details. Two of the questions asked respondents for details of their postcodes and the nearest street corner. These data were used in conjunction with Australian Bureau of Statistics 1991 census data to examine the socio-economic status of respondents. The extent to which respondents were typical of Whitehorse Division GP patients in general is uncertain given the sampling method (described in Section 1; Background to the study).

2.1 Details of participating GP clinics

A summary of these GPs is given in Table 2.1. This shows that clinics ranged in size from 1 GP through to one clinic with 12 GPs; the average number of respondents per clinic was 26.

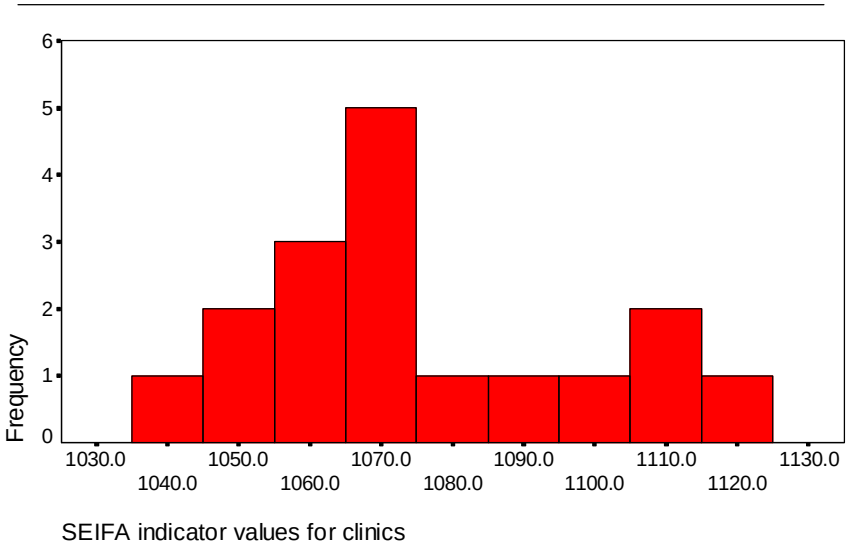
Table 2.1 Basic details of participating clinics

N. doctors in clinic	N.clinics	N. Respondents	Respondents per clinic (a)
1	3	30	10
2	3	54	18
3	2	49	25
4	1	11	11
5	5	137	27
6	2	67	34
12	1	93	93
Totals	17	441	26 (a)

Notes a = Mean number of respondents per clinic

Figure 2.1 provides ABS details of the aggregated SEIFA (Socio-economic Indicators for Australia) social disadvantage indicators for respondents attending the 17 participating clinics (Castles 1994; Castles 1994). The SEIFA indicators shown here were derived from the 1991 census; at the time of analysis the 1996 SEIFA data were not readily available. When reading the figure, it should be placed in the context that the 'average' ABS SEIFA values for Victoria on the disadvantage scale were 1030 (the Victorian median) and 1032 (the 50th percentile); the Victorian interquartile range was from 992 (25th percentile) – 1067 (75th percentile). As illustrated in the figure, the aggregate mean SEIFA score for patients of participating clinics was 1074.0±22.9, suggesting that the clinics were within the top Victorian socio-economic 25th percentile. None were below the Victorian median or 50th percentile.

Figure 2.1 SEIFA indicators for clinics' patients



2.2 Personal characteristics of respondents

Turning to the personal details of respondents, these are shown in Table 2.2, where they are broken down by gender. The table shows that 72% of respondents were female; not surprising given the method of recruitment into the study. The males that were recruited were older by an average of six years when compared with the females, the mean ages being 52 versus 46 years respectively.

For birthplace, the tables shows there was no significant difference between males and females. Eighty percent of respondents were born in Australia, 13% in Europe or the UK, 5% in Asia and 2% elsewhere in the world. As was expected, most respondents spoke English well (99%).

Regarding marital status, 65% reported they were either married or in a de facto relationship, 18% reported they were single and 17% reported they were divorced, separated or widowed. There were no significant differences between males and females.

There were significant differences, though, by education level. Forty-three percent of females had completed high school, as had 30% of the males; 16% of females reported a TAFE or college qualification compared with 25% of males. Trade qualifications were reported by higher proportion of males (8%) than females (3%). The proportion of respondents reporting a degree was 30% for females and 27% of males.

Table 2.2 Personal details of respondents

		Female	Male	All	Statistics
Number		318 (72%)	123 (28%)	441 (100%)	
Age	(mean±stdev. years)	46.3±18.9	51.5±19.4	47.7±19.1	ANOVA, F = 6.79, df = 1, p < 0.01*
Birthplace	Australia	255 (80%)	95 (79%)	350 (80%)	
	Asia	13 (4%)	7 (6%)	20 (5%)	
	Europe/UK	42 (13%)	17 (14%)	59 (13%)	
	Rest of world	8 (3%)	2 (2%)	10 (2%)	$\chi 2 = 0.92$, df = 3, p = 0.82, NS
	Missing data			2 (0%)	
English level	Very well	302 (95%)	106 (86%)	408 (92%)	
	Well	14 (4%)	16 (13%)	30 (7%)	
	Not well/ Not (limited English)	2 (1%)	1 (1%)	3 (1%)	Fisher's Exact Test, p <0.01*
	Missing data			0 (0%)	
Marital status	Single	53 (17%)	27 (22%)	80 (18%)	
	Married/de facto	203 (64%)	82 (67%)	285 (65%)	
	Divorced/Separated/Widowed	61 (19%)	13 (11%)	74 (17%)	$\chi 2 = 5.41$, df = 2, p = 0.07, NS
	Missing data			2 (0%)	
Education level	Primary	24 (8%)	11 (9%)	35 (8%)	
	Trade	9 (3%)	10 (8%)	19 (4%)	
	High	135 (43%)	37 (30%)	172 (40%)	
	TAFE	50 (16%)	31 (25%)	81 (19%)	
	University/College degree	95 (30%)	33 (27%)	128 (29%)	$\chi 2 = 14.05$, df = 4, p <0.01*
	Missing data			6 (1%)	

2.3 Demographic details of respondents

Respondents were asked for details of their employment and occupational status. For current employment the data showed that 44% of females and 45% of males were employed in either fulltime or part-time positions; that 4% and 5% respectively were looking for paid employment; and that 6% and 7% respectively were students

The other categories of employment showed significant differences: 30% of the females were homemakers compared with 1% of the males; and 42% of the males were retired or receiving sickness benefits compared with 16% of the females. The details are given in Table 2.3.

Table 2.3 Demographic details of respondents

		Female	Male	All	Statistics
Working status	Working fulltime/Part-time	140 (44%)	55 (45%)	195 (44%)	
	Unemployed/Looking for work	11 (4%)	6 (5%)	17 (4%)	
	Homemaker	96 (30%)	1 (1%)	97 (22%)	
	Student	20 (6%)	9 (7%)	29 (7%)	
	Retired/Sickness benefits	49 (16%)	52 (42%)	101 (23%)	Fisher's Exact Test, $p < 0.01$*
	Missing data			2 (0%)	
Occupation	Professional/Manager	57 (20%)	39 (34%)	96 (24%)	
	Paraprof/Clerical/Personal	192 (67%)	28 (25%)	220 (55%)	
	Trade/Driver/Labourer	23 (8%)	38 (33%)	61 (15%)	
	Other	13 (5%)	9 (8%)	22 (6%)	$\chi 2 = 69.53$, df = 3, $p < 0.01$*
	Missing data			42 (10%)	
Household income	$0 – $14,999	185 (58%)	50 (41%)	235 (53%)	
	$15,000 – $29,999	26 (8%)	20 (16%)	46 (11%)	
	$30,000 – $59,999	66 (21%)	33 (27%)	99 (23%)	
	$60,000 +	41 (13%)	19 (16%)	60 (14%)	$\chi 2 = 12.59$, df = 3. $p < 0.01$*
	Missing data			1 (0%)	

Although the above indicates the employment situation, the data do not give any indication of occupational status. This was asked separately, and the data coded according to the schema provided by the ABS (ABS 1986). The results show that the largest occupational group — 55% — was those who had worked as or were working as paraprofessionals, in clerical or in personal positions (e.g. in sales etc); followed by professional or managerial positions (24%), trade, driver or labouring positions (15%). When broken down by gender, the data showed there were significant differences in occupation. Males were more likely to be professionals/managers than were females (34% versus 20%); and they were more likely to be tradesmen, drivers or labourers (33% versus 8% of females). On the other hand, females were more likely to work as paraprofessionals, in clerical or in personal positions (67% compared with 25% of males).

There were also significant differences by household income. A higher proportion of males were in the middle range of income ($15,000 – $59,999: for males the proportion was 43% compared with 29% of females) whereas a higher proportion of females reported lower household incomes ($0 –14,999: for females the proportion was 58% compared with 41% of males).

2.4 Health service use and health status

The proportion of respondents who held social security, pension or sickness benefit cards was 38%. There were no differences in proportions by gender.

Regarding how often respondents visited their GP, the data showed different patterns for males and females. A higher proportion of males visited their GP on a weekly or fortnightly basis (12% versus 6% of females); a finding which was reversed for monthly visits, where a higher proportion of females reported regularly visiting their GP (29% versus 19% of males). Among those who reported visiting at six month or greater intervals, the proportions were similar with 64% of females falling in these categories and 68% of males.

For self-reported levels of illness, a higher proportion of males reported they were ill: 44% compared with 32% of females; it is worth emphasising that 68% of females and 56% of males reported that although visiting their GP, they were not ill.

Where a respondent indicated they were ill, they were asked to indicate whether their health state was acute or chronic. The data showed no significant difference by gender. Twenty-nine percent reported their illness was acute and 71% reported it was chronic.

The details of health service use and health status are given in Table 2.4.

Table 2.4 Health service usage by gender

		Female	Male	All	Statistics
Social Security/ Pension/Sickness benefits	Yes	119 (38%)	45 (37%)	164 (38%)	
	No	194 (62%)	76 (63%)	270 (62%)	$\chi 2$= 0.03, df = 1, p = 0.87, NS
	Missing data			7 (2%)	
Visit doctor	Weekly, or more often	6 (2%)	6 (5%)	12 (3%)	
	Fortnightly	14 (4%)	9 (7%)	23 (5%)	
	Monthly	93 (29%)	23(19%)	116 (27%)	
	Six monthly	155 (49%)	63 (52%)	218 (50%)	
	Yearly	38 (12%)	10 (8%)	48 (11%)	
	Less often	10 (3%)	10 (8%)	20 (5%)	$\chi 2$ = 14.33, df = 5, p = 0.01*
	Missing data			4 (1%)	
Illness	No	213 (68%)	69 (56%)	282 (64%)	
	Yes	102 (32%)	54 (44%)	156 (36%)	$\chi 2$= 5.12, df = 1, p = 0.02*
	Missing data			3 (1%)	
Type of illness (a)	Acute	31 (32%)	11 (22%)	42 (29%)	
	Chronic	66 (68%)	39 (78%)	105 (71%)	$\chi 2$ = 1.60, df = 1, p = 0.21,NS
	Missing data			294 (67%)	

Note: a = Illness was a filter question for this question; therefore the number of eligibles to answer the question was 156 cases. All other cases would be regarded as having no illness.

2.5 The impact of age on health service use and status

In the interests of uniformity, the respondents' characteristics were presented above broken down by gender; however, this stratification concealed certain information which was more fully explicated when the data were broken down by age.

Respondents were categorised into four age groups: those aged 10–29 years, 30–49 years, 50–69 years and those aged 70+ years, and then the data on health status examined by this stratification. The results are presented in Table 2.5.

Table 2.5 Health service use and health status by age group

		Age group (years)				Statistics
		10–29	30–49	50–69	70+	
Social Security/ Pension/Sickness benefits	Yes	15 (19%)	33 (40%)	52 (45%)	61 (86%)	
	No	65 (81%)	49 (60%)	64 (55%)	10 (14%)	$\chi 2 = 106.96$, df = 3, $p < 0.01$*
	Missing data				92 (21%)	
Visit doctor	Weekly/ Fortnightly	7 (9%)	7 (4%)	14 (12%)	7 (10%)	
	Monthly	20 (25%)	27 (16%)	32 (28%)	37 (52%)	
	Six monthly	43 (53%)	92 (55%)	59 (51%)	23 (32%)	
	Yearly/Less often	11 (14%)	40 (24%)	11 (10%)	4 (6%)	$\chi 2 = 50.84$, df = 9, $p < 0.01$*
	Missing data				7 (2%)	
Illness	No	67 (82%)	123 (73%)	60 (53%)	29 (41%)	
	Yes	15 (18%)	45 (27%)	54 (47%)	42 (59%)	$\chi 2 = 40.33$,df =3, $p < 0.01$*
	Missing data				6 (1%)	
Type of illness (a)	Acute	5 (33%)	19 (44%)	12 (24%)	6 (16%)	
	Chronic	10 (67%)	24 (56%)	39 (76%)	32 (84%)	Fisher's Exact Test,p = 0.03*
	Missing data				9 (2%)	

Note: a = Illness was a filter question for this question; therefore the number eligible to answer the question was 156 cases. All other cases would be regarded as having no illness.

The key finding in relation to possession of a social security, pension or sickness benefit card was that 86% of those aged 70+ years reported having one, compared with 19% of those aged 10–29 years.

For visiting the doctor, those in the three younger age groups reported similar frequencies; between 4–12% visited weekly of fortnightly, 16–28% visited on a monthly basis, 51–55% reported visiting every six months, and 10–14% reported visiting their GP yearly or less often than this. By comparison, of those aged 70 years and over 10% reported visiting weekly/fortnightly, 52% visited monthly, 32% visited six monthly and 6% reported they visited yearly or less often. These differences by age group were significant.

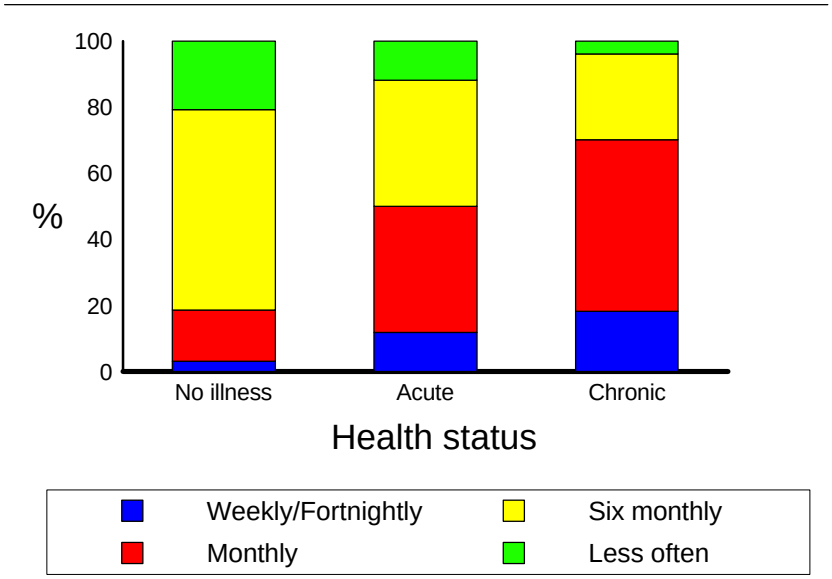
Significant differences by age group were also apparent when illness was examined. Of those aged 10–29 years, 82% reported they were not ill, as did 73% of those aged 30–49 years, 53% of those aged 50–69 years, and 41% of those aged 70+ years.

When type of illness was probed (see Table 2.5) for those who reported an illness, the data showed that 67% of those aged 10–29 years reported having a chronic illness, 56% of those aged 30–49 also reported their illness was chronic, as did 76% of those aged 50–69 and 84% of those aged 70+ years.

Combining the two questions probing illness and then using these data to examine frequency of visits to the doctor produced the data shown in Figure 2.2. This reveals that 61% of those who were not ill visited their doctor at six monthly intervals; of those reporting they were acutely ill 38% reported visiting monthly and 38% reported visiting six-monthly; and of those with chronic illness 52% reported visiting monthly. Of those who visited weekly or fortnightly, 58% were the

chronically ill compared with 15% of those with acute illness and 27% of those reporting no illness. The differences in proportions shown in the figure were statistically significant ($\chi 2$ = 97.14, df = 6, $p < 0.01$).

Figure 2.2 Frequency of visiting the doctor by health status



3 The study findings

3.1 The data

Figures 3.1 through 3.10 provide histograms of the SF-36 dimensions and scales. The histograms provide a profile of the health status of respondents. These show that the distribution of scores on all eight dimensions was non-interval. That there are broad gaps in the spread of the data for the Role Physical, Bodily Pain, Social Function and Role Emotion scales is a reflection of the scale construction underpinning the SF-36. These data reflect the discussion of the lack of interval data discussed in Section 1.2.5 above. The histograms also show that in addition to the lack of interval properties, the data were non-normally distributed, being skewed towards the healthy end of the scale, but with substantial numbers reporting low scores on the Role Physical and Role Emotion dimensions.

Figure 3.1 SF-36 Physical function scale histogram

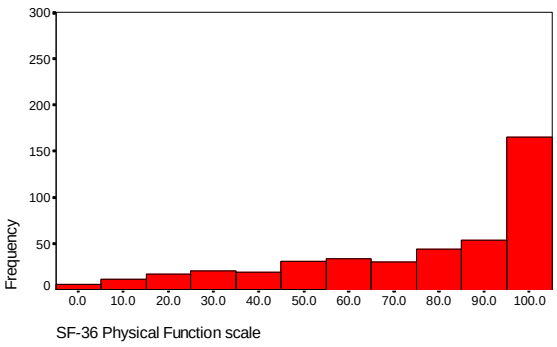


Figure 3.2 SF-36 Role physical scale histogram

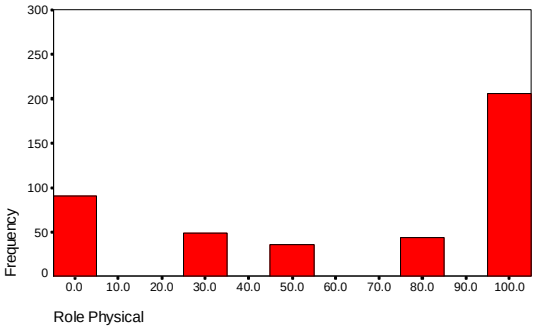


Figure 3.3 SF-36 Bodily pain scale histogram

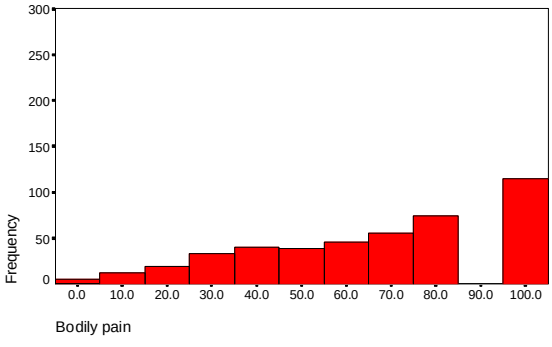


Figure 3.4: SF-36 General health scale histogram

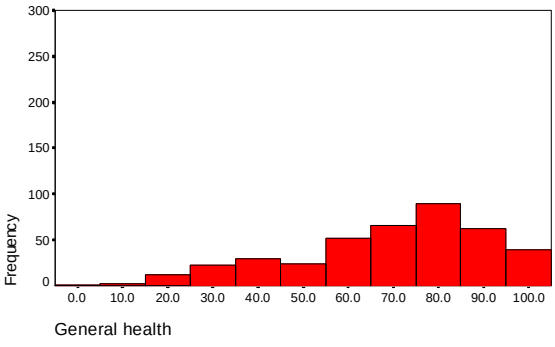


Figure 3.5 SF-36 Vitality scale histogram

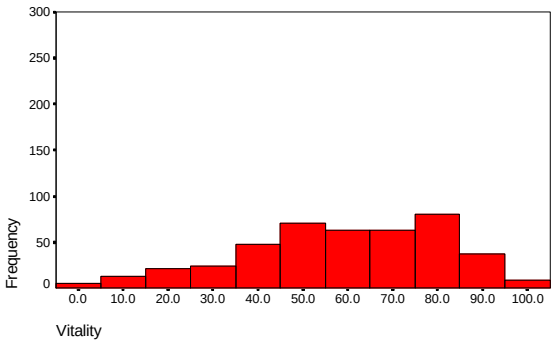


Figure 3.6 SF-36 Social function scale histogram

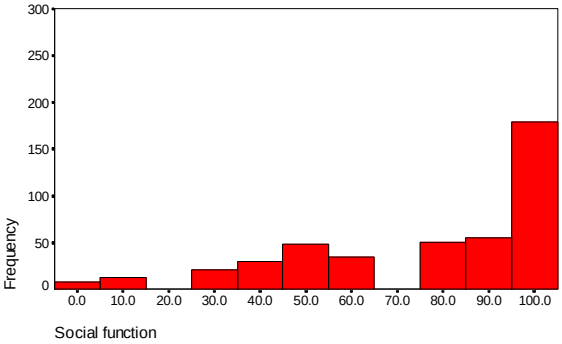


Figure 3.7 SF-36 Role emotional scale histogram

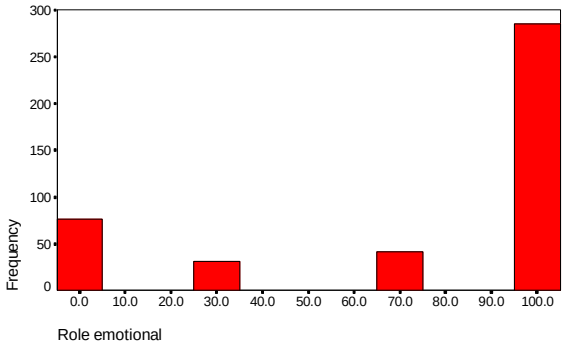


Figure 3.8 SF-36 Mental health scale histogram

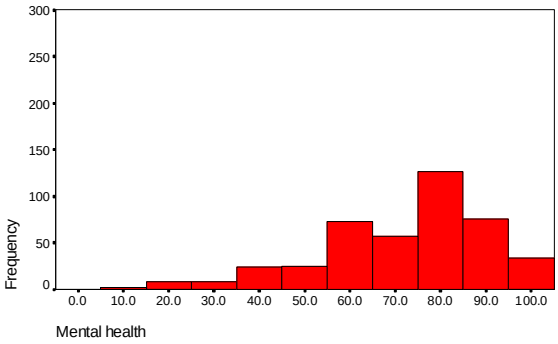


Figure 3.9 SF-36 Physical health summary scale

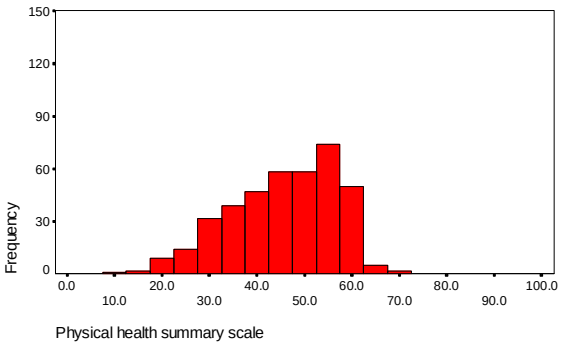
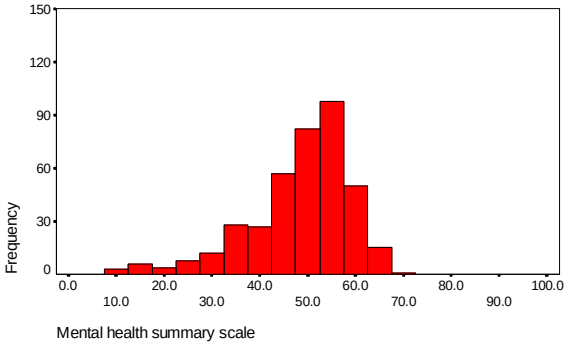


Figure 3.10 SF-36 Mental health summary scale



In consequence of these distributions, comparisons reported below are all based on using non-parametric statistical tests. Although mean score are presented, the non-normality of the data should be kept in mind when interpreting the figures.

3.2 The health status of respondents

Question 1 of the SF-36 asks respondents to nominate their overall health status on a 5-point scale from 'Excellent' to 'Poor". The results showed that 12% of cases reported being in excellent health, 39% in very good health, 31% in good health, 13% in fair health and 5% described their health as poor. The details are shown in Figure 3.11. Figure 3.12 shows whether respondents believed their health status had changed when compared with twelve months previously. This reveals that just under two-thirds reported their health status had not changed, 19% reported it was worse, 9% that it was better, 8% that it was much better and 5% that it was much worse.

Figure 3.11 Health status of respondents

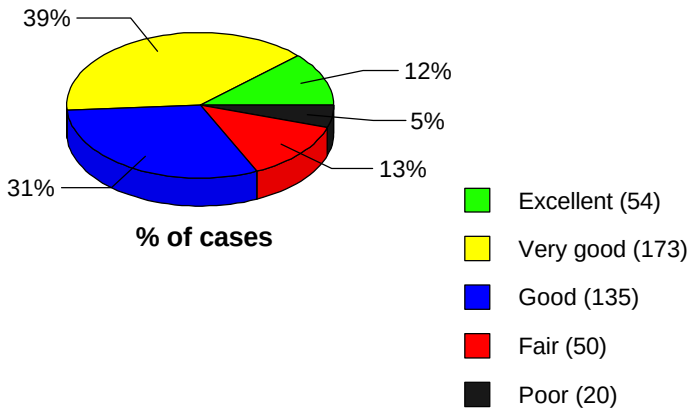
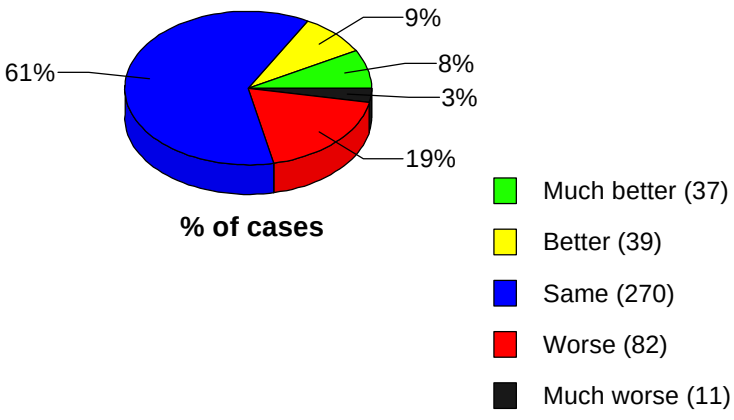


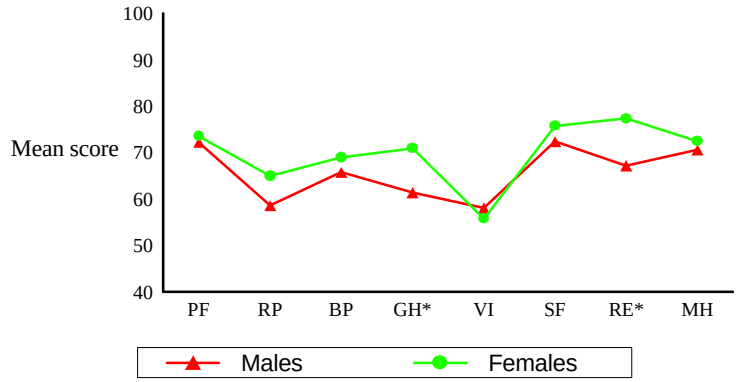
Figure 3.12 Change in health status of respondents



3.3 Analysis of SF-36 dimensions

Figure 3.13 shows the data broken down by gender; revealing that there were no significant differences on the Physical Function, Role Physical, Bodily Pain, Vitality, Social Function or Mental Health dimensions. Significant differences were apparent for General Health and for Role Emotional. On both these dimensions males reported a poorer health status than did the females. For General Health the difference was 16%, while for Role Emotional it was 15%.

Figure 3.13 SF-36 dimensions by gender



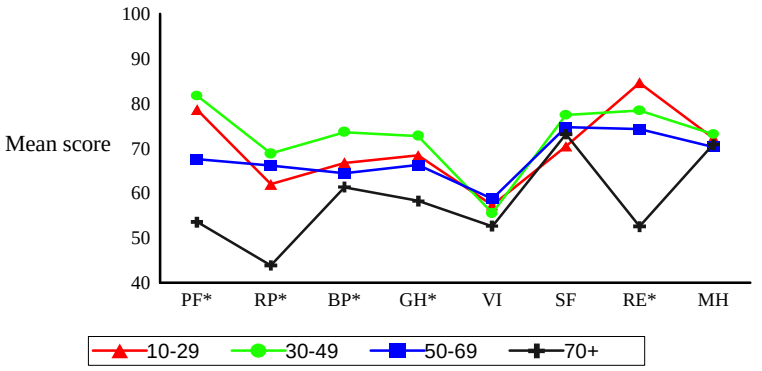
*Note: * Significant difference; Kruskall-Wallis H, p <0.05*

When the data were broken down by age, a rather different pattern emerged, as shown in Figure 3.14. Significant differences between the four age groups were reported for five of the eight SF-36 dimensions. On every dimension where significant differences were observed, with one exception — Role Emotional —, the age group with the highest reported health status was those aged 30–49 years. In contrast, on every scale where there were significant differences the age group reporting the lowest health status was the elderly; those aged 70+ years.

The differences were striking. For Physical Function those aged 70+ reported a health status that was 21% worse than any other age group; on the Role Physical their health status was 29% worse than any other group; for Bodily Pain it was 5% worse; for General Health it was 12% worse; and for Role Emotional it was 29% worse.

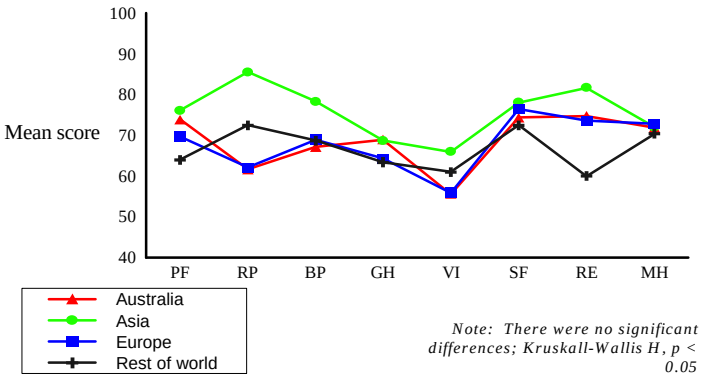
Examination of SF-36 dimensions by country of birth revealed that there were no significant differences among respondents; the data are shown in Figure 3.15. The null findings were possibly caused by the small numbers of Asian and Rest-of-world respondents (19 and 10 respectively). For this same reason the SF-36 data were not analysed by level of English (see Table 2.2 on page 8).

Figure 3.14 SF-36 dimensions by age (years)



*Note: * Significant difference; Kruskall-Wallis H, p <0.05*

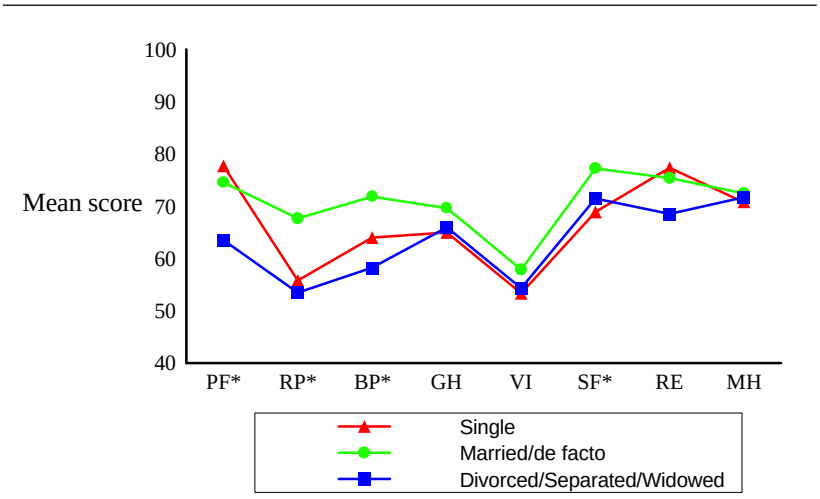
Figure 3.15 SF-36 dimensions by country of birth



Note: There were no significant differences; Kruskall-Wallis H, p < 0.05

When analysed by marital status (Figure 3.15), however, the findings indicated that on the Physical Function dimension those who were divorced, separated or widowed reported significantly worse health when compared with the married/de facto or single; the difference was –15%. On the Role Physical dimension those who were married/de facto reported significantly better health than the single or divorced/separated/widowed respondents; the magnitude of this difference was 21%. A similar significant situation was reported for Bodily Pain; here the married/de facto obtained a mean score that was 12% better than for the single or divorced/separated/widowed groups. Again, on the Social Function dimension those in a relationship obtained a significantly higher score; when compared with the single or divorced/separated/widowed groups their scores were higher by 8%.

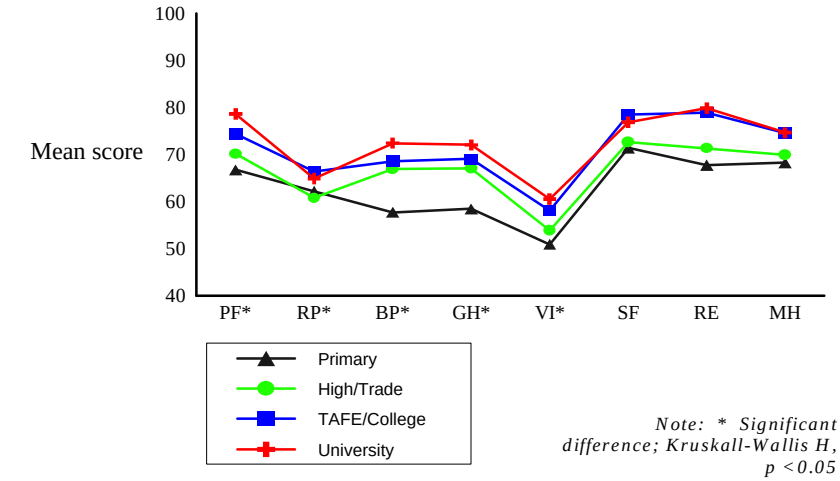
Figure 3.16 SF-36 dimensions by marital status



*Note: * Significant difference; Kruskall-Wallis H, p <0.05*

Prior to analysing the data by respondents' education level, educational level was recoded from the five categories presented in Table 2.2 (page 8) into four categories representing primary, high/trade, TAFE/college and university education. This was done due to the small numbers of trade respondents. Once recoded the data showed there were significant differences on the Physical Function, Bodily Pain, General Health and Vitality dimensions.

Figure 3.17 SF-36 dimensions by education level

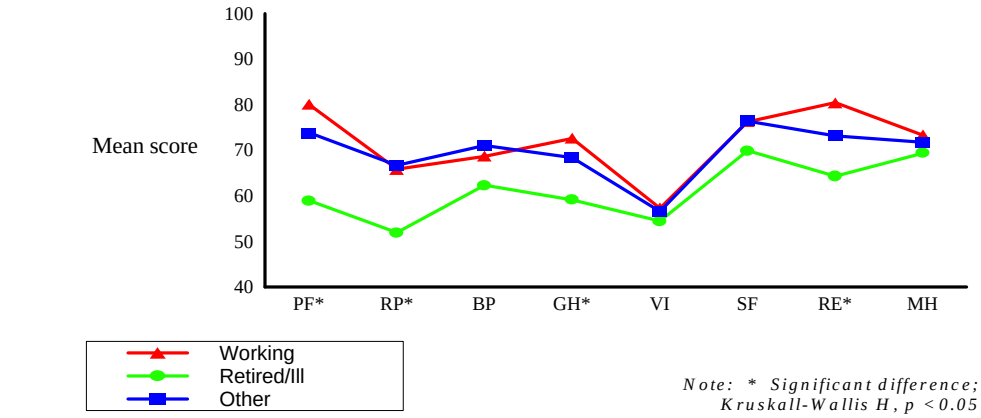


*Note: * Significant difference; Kruskall-Wallis H, p <0.05*

The details are given in Figure 3.17. Regarding the differences on the Physical Function dimension, the data showed that those with a university education reported their health status was 5% better than any of the other groups, and those with a primary school education reported their health status was 5% worse than that reported by any other group. On the Role Physical dimension education levels were effectively dichotomised into primary/high school and TAFE/university. The difference between the two groups was 6%. With respect to Bodily Pain, those with primary school education reported greater pain than any other group; the difference was 145 when compared with any other group. Likewise on the General Health dimension, primary school level respondents were 15% lower than any other group, and in the Vitality dimension they were 5% lower. There were no significant differences on any of the other SF-36 dimensions.

Recoding was also necessary for working status: the data were recoded into those working, retired/ill and other. The data are shown in Figure 3.18. This show that the retired/ill group scored significantly lower on the Physical Function dimension (the scores were 20% lower than the Other group, which included housemakers, students and the unemployed). Similarly, the retired/ill group scored significantly lower on the Role Physical dimension (their scores being 21% lower), on the General Health dimension (where they were 13% lower) and on the Role Emotion dimension (12% lower). Although the differences on the Bodily Pain dimension were not significantly different between the groups, the data were suggestive that the retired/ill group had worse health (Kruskall-Wallis H, p = 0.06; the score for this group was 9% lower than for the other groups).

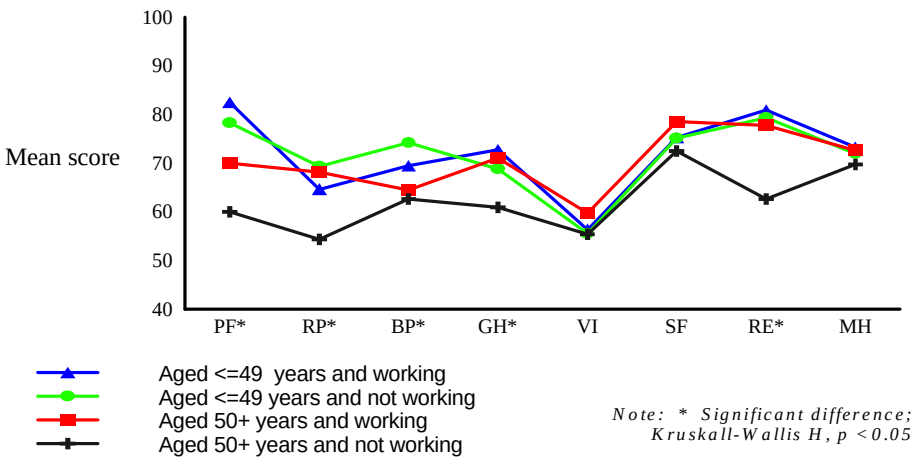
Figure 3.18 SF-36 dimensions by working status



The data in Figure 3.18 suggested there may be an association between age, working status and health status. This was investigated through recoding respondents' ages and working status into four mutually exclusive levels, as shown in Figure 3.19. The dominant feature of the table is that on four of the SF-36 dimensions, those aged 50 years or older who were not working reported significantly worse health when compared with the other three groups: their Role Function was 14% worse than that reported by any other group, for Physical Role it was 16% worse, for General Health it was 14% worse and for Role Emotional it was 19% worse. The other

dimension on which was a significant difference was Bodily Pain, where those who aged ≤49 years reported 7% better health.

Figure 3.19 SF-36 dimensions by age and work status



Regarding health status differences by income, those in the $15,000–$29,999 income bracket reported the lowest health status values on five of the SF-36 dimensions. They had significantly lower health status on three dimensions. For Role Physical their scores were 26% lower than any other group, for General Health their scores were 11% lower and for Social Function their scores were 19% lower. Although Bodily Pain was not significantly lower, the data were suggestive of this (Kruskall-Wallis H, p = 0.06; the score for this group was 13% lower than for the other groups). The data are shown in Figure 3.20.

Figure 3.21 shows the SF-36 data broken down by social security/pension card status. Cardholders reported significantly lower health status for Physical Function (17% lower than non-cardholders); for General Health (9% lower); and for Role Emotion (9% lower).

Figure 3.20 SF-36 dimensions by household income

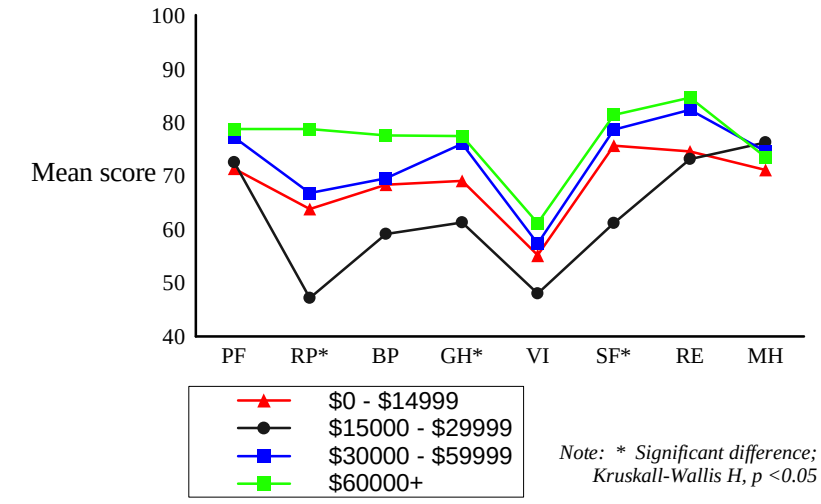
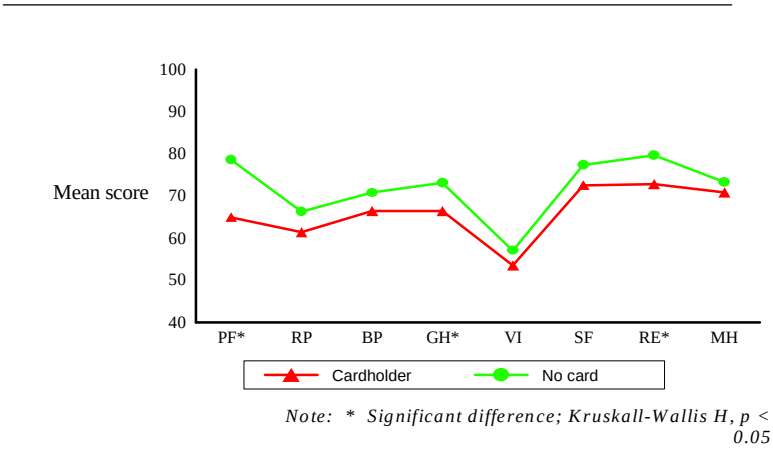
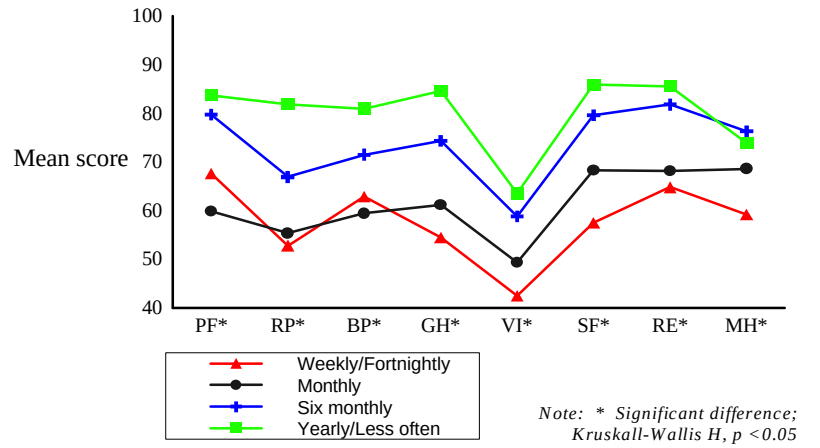


Figure 3.21 SF-36 dimensions by social security card



The frequency with which patients visited their GP was significantly related to their health status as measured by the SF-36. On all eight dimensions there were differences between those who visited frequently and those who visited less often. A visual inspection of Figure 3.22 reveals that respondents fell into two groups: those who visited monthly or more often, and those who visited six monthly or less often. For Physical Function the difference between these two groups was 15%, for Role Physical it was 17%, for Bodily Pain it was 12%, for General Health it was 18%, for Vitality it was 16%, for Social Function it was 17%, for Role Emotion it was 20%, and for Mental Health it was 7%.

Figure 3.22 SF-36 dimensions by GP visits



A similar situation was observed in regard to reported illness: those who reported they were ill obtained significantly lower SF-36 scores on all eights dimensions. For Physical Function the those who were ill, in comparison with those reporting they were not ill, obtained scores which were 29% lower, for Role Physical their score was 40% worse than the well, for Bodily Pain it was 31%, for General Health it was 25%, for Vitality it was also 25%, for Social Function it was 26%, for Role Emotion it was also 26%, and for Mental Health it was 12%. The details are given in Figure 3.23.

Figure 3.23 SF-36 dimensions by reported illness

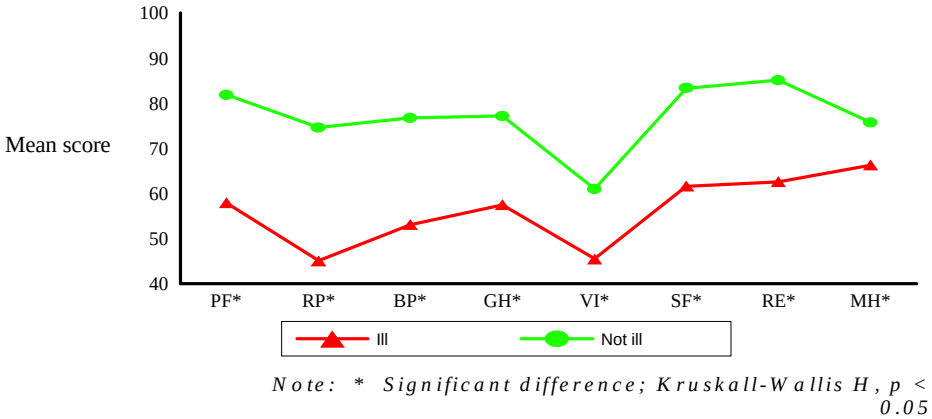
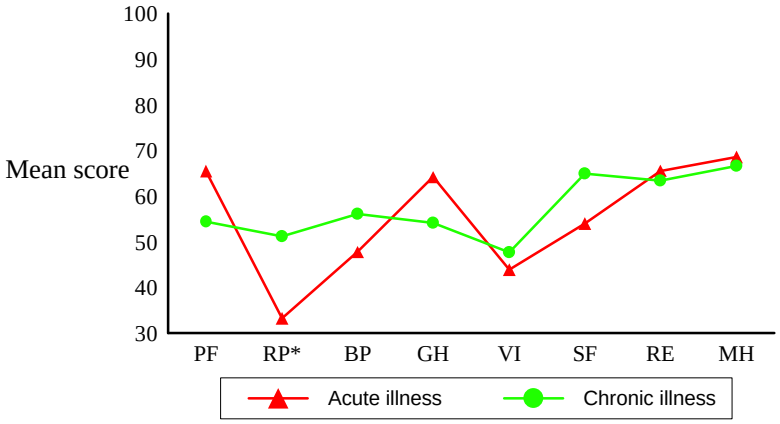


Figure 3.24 shows SF-36 dimension scores for those who reported being ill, broken down by whether their illness was indicated to be acute or chronic. The only dimension on which there were significant differences was the Role Physical, where those who were acutely ill obtained a score which was 35% lower than those with chronic illnesses.

Figure 3.24 SF-36 dimensions by type of illness



*Note: * Significant difference; Kruskall-Wallis H, p < 0.05*

4 Discussion

As with all cross-sectional surveys, there were a number of limitations which should be remembered when reading the findings. Three caveats particularly apply: the sampling method, voluntarism and multiple analyses.

The sampling method, outlined in Sections 1 & 2, involved an initial approach to all GPs within the Whitehorse Division; in the event 17 clinics elected to participate. The data shown in Figure 2.1 revealed that participating clinics mean socio-economic status profiles placed them within the top Victorian 25th percentile for socio-economic status; when examined individually none fell below the Victorian median or 50th percentile. Because of this and the fact that 99% of respondents reported speaking English well or very well it could be that Australians of non-Australian birth are underrepresented.

Voluntarism was present at two levels: first at the clinic level (as described above), and then at the individual respondent level. As described Section 1, recruitment was undertaken in the mornings and late afternoon; respondents formed a convenience sample; i.e. participants were those who were at the clinics at the data collection time, who were willing to participate. No inclusion or exclusion criteria were applied (other than excluding children).

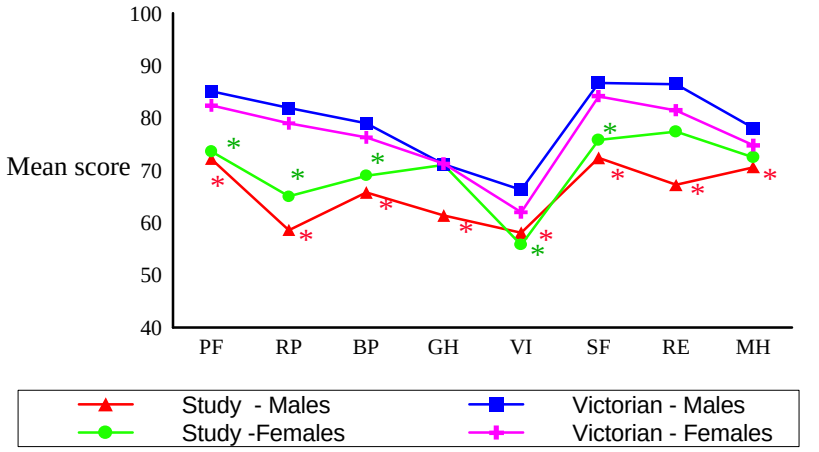
Thirdly, the SF-36 data have been analysed in twelve ways by the various demographic characteristics. Although the test size ($\alpha = 0.05$) was retained, this will have slightly increased the likelihood of finding significant differences; i.e. committing Type I errors.

Subject to these caveats, the study found that just under 72% of respondents were females. On average, respondents were aged 48 years. Eighty percent of respondents were born in Australia, and 99% reported speaking English well or very well. Most (65%) were married or in de facto relationships, and the most commonly achieved education level was completion of high school (40%). With respect to occupational status, 55% were paraprofessionals, clerks or personal service workers, and 44% of respondents were employed. Fifty-three percent reported their household income was less than $15,000 (Table 2.3; page 13).

Regarding their health status, 51% reported their health was either ‘Excellent’ or ‘Very good’, and 70% reported that their health was better when compared with twelve months previously (Figures 3.11 & 3.12; page 15). Thirty-eight percent held a social security card, and 50% reported visiting their GP every six months. Sixty-four percent reported they were not ill and of those who reported being ill 71% reported their illness as chronic (Table 2.4, page 14). The data also showed that 61% of those who were not ill visited their doctor at six monthly intervals, 38% of those who were acutely ill visited monthly and 38% visited six monthly, whereas 52% of the chronically ill visited monthly. Of those who visited weekly or fortnightly, 52% were chronically ill (Figure 2.2, page 16).

With respect to the SF-36 dimensions, the weightings used in this study were taken from the Australian Bureau of Statistics Australian norms. (ABS 1995). A comparison of the Victorian norms (ABS 1995) with those obtained from respondents, broken down by gender, is shown in Figure 4.1.

Figure 4.1 Victorian and study scores compared by gender



*Note: * Significant difference; ANOVA, p <= 0.05*

This reveals that for males, the obtained SF-36 scores were significantly worse on every dimension for survey respondents when compared with the Victorian population; the average being 17% worse. For females, their scores were significantly worse for Physical Function, Role Physical, Bodily Pain, Vitality and Social Function. There was no significant differences for females on General Health, Role Emotional or Mental Health. On average these scores were 9% lower than the Victorian norms. It would appear, perhaps tentatively given the caveats above, these data suggest that those attending the clinics were in worse health than that of the population in general — a finding not entirely unexpected given that they were recruited when attending their GP.

***

Lin and Ward reported on the reliability of the SF-36 when used in an Australian GP setting, and published the obtained values, commenting that their study needed to be replicated with a larger sample in other socio-economic settings; their data were drawn from 64 cases (of 110 patients who were invited and who completed both baseline and follow-up at one week) attending a clinic in a relatively high socio-economic area of Sydney (Lin and Ward 1998). Direct comparison of their baseline results with those from this study is shown in Figure 4.2. This reveals that there was only one dimension of the SF-36 on which the two studies differed: Role Physical, where their respondents obtained scores significantly higher than those in this study. In all other respects the two studies produced very comparable results. This would suggest, subject to the caveats that both samples were drawn from higher socio-economic status clinics and that both were biased due to recruitment methods, that the data may reflect the health status of those attending GP clinics in general.

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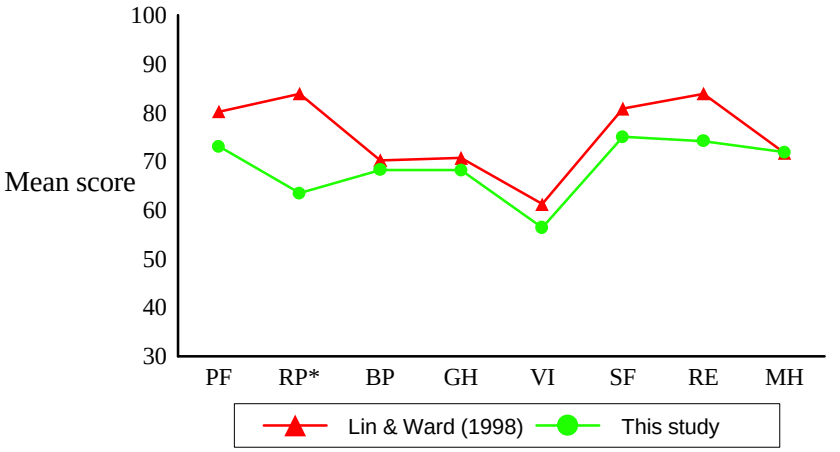
Figure 4.2 Comparing studies



*Note: * Significant difference; ANOVA, p <0.05*

Certainly it would appear, that although most of those attending their GP clinic reported they were generally 'healthy' (Figure 3.11) these patient surveys have revealed that those who attend have health profiles which are significantly worse than those of the general community (Figure 4.1), and that their health status varies by a range of key demographic (Figures 3.11 – 3.20) and medical (Figures 3.21 – 3.24) characteristics. The data suggest, though, that in some areas it may useful to supplement the SF-36 with another complementary instrument (it will be noted that the greatest differences were reported in the physical dimensions rather than the psychological or social dimensions).

Whether the SF-36 is a sufficiently sensitive instrument to be used for individual patient health status assessment and monitoring is as yet an unresolved question.

This survey has shown that it is acceptable to patients, that it is sufficiently sensitive to discriminate between those who were healthy and ill, and that the obtained data can be compared with published Australian norms. These findings would all suggest that it has the potential to be used to inform program planning (e.g. through targeting Division programs); future surveys such as this could be used to provide feedback to GPs of the health status of their patients; through highlighting the health status of particular groups it may be possible to more carefully monitor their health status; and it is also possible that patient surveys, such as this one, could be used to inform practice planning

References

Aaronson N, Acquadro C, Alonso J, Apolone G, Bucquet D, Bullinger M, Bungay K, Fukuhara S, Gandek B, Keller S. 1992, 'International Quality of Life Assessment (IQOLA) project', *Quality of Life Research*, vol 1, no 5, pp 349-351.

ABS 1986, Catalog of Census Tables, Melbourne, Australian Bureau of Statistics.

ABS 1995, National Health Survey: SF-36 Population Norms*, Australia*, Australia Bureau of Statistics.

Alonso J, Prieto L & Anto J. 1995, 'La version espanola del SF-36 Health Survey (Cuestionario de Salud SF-36): Un instrumento para la medida de los resultados clinicos', *Medicina Clinica Barc, 1995 May 27; (20),* vol 104, no 20, pp 771-776.

Andresen E, Patrick D, Carter W & Malmgren J. 1995, 'Comparing the performance of health status measures for healthy older adults', *Journal of the American Geriatrics Society,* vol 43, no 9, pp 1030-1034.

Beusterien K, Steinwald B & Ware J. 1996, 'Usefulness of the SF-36 Health Survey in measuring health outcomes in the depressed elderly', *Journal of the Geriatric Psychiatry Neurology,* vol 9, no 1, pp 13-21.

Brazier J, Harper R, Jones N, O'Cathain A, Thomas K, Usherwood T & Westlake L. 1992, 'Validating the SF-36 health survey questionnaire: New outcome measure for primary care', *British Medical Journal,* vol 305, pp 160-164.

Brazier J, Usherwood T, Harper R & Thomas K 1998, 'Deriving a preference-based single index from the UK SF-36 Health Survey', *Journal of Clinical Epidemiology*, vol 51, no 11, pp 1115-1128.

Bullinger M. 1995, 'German translation and psychometric testing of the SF-36 Health Survey: Preliminary results from the IQOLA Project. International Quality of Life Assessment', *Social Science and Medicine*, vol 41, no 10, pp 1359-1366.

Castles I. 1994, Information paper for 1991 census: Socio-economic indicators for areas, Canberra, Australian Bureau of Statistics, catalogue number 2912.0.

Castles I. 1994, *SEIFA-Socio Economic Indicators for Australia*, Canberra, Australian Bureau of Statistics.

Dean A, Dean J, Coulombier D, Brendel K, Smith D, Burton A, Dicker R, Sullivan K, Fagan R & Arner T. 1994, EpiInfo Version 6: A Word Processing, Database and Statistics Program for Epidemiology on Microcomputers, Atlanta, Centers for Disease Control and Prevention.

Haley S, McHorney C & Ware J. 1994, 'Evaluation of the MOS SF-36 Physical Function Scale (PF-10): 1. Unidimensionality and reproducibility of the RASCH Item Scale', *Journal of Clinical Epidemiology*, vol 47, no 6, pp 671-684.

Hayes V, Morris J, Wolfe C & Morgan M. 1995, 'The SF-36 health survey questionnaire: Is it suitable for use with older adults?', *Age & Ageing*, vol 24, no 2, pp 120-125.

Hays R, Sherbourne C & Mazel R. 1993, 'The RAND 36-Item Health Survey 1.0', *Health Economics*, vol 2, no 3, pp 217-227.

Jenkinson C, Layte R, Coulter A & Wright L. 1996, 'Evidence for the sensitivity of the SF-36 health status measure to inequalities in health: Results from the Oxford healthy lifestyles survey', *Journal of Epidemiology and Community Health*, vol 50, pp 377-380.

Jenkinson C, Wright L & Coulter A. 1994, 'Criterion validity and reliability of the SF-36 in a population sample', *Quality of Life Research*, vol 3, no 1, pp 7-12.

Keoghane S, Lawrence K, Jenkinson C, Doll H, Chappel D & Cranston D. 1996, 'The Oxford Laser Prostate Trial: Sensitivity to change of three measures of outcome', *Urology*, vol 47, no 1, pp 43-47.

Leplege A, Mesbah M & Marquis P. 1995, 'Analyse preliminaire des proprietes psychometriques de la version francaise d'un questionnaire international de mesure de qualite de vie: Le MOS SF-36 (version 1.1), *Revue D'epidemiologie et de Sante-Publique,* vol 43, no 4, pp 371-379.

Lin M & Ward J. 1998, 'Reliability of the MOS SF36 health status measure in Australian general practice, *Australian Family Physician,* vol 27, suppl S2, S94-S98.

Lyons R, Perry H & Littlepage B. 1994, 'Evidence for the validity of the Short-form 36 Questionnaire (SF-36) in an elderly population', *Age Ageing*, vol 23, no 3, pp 182-184.

Mangione C, Marcantonio E, Goldman L, Cook E, Donaldson M, Sugarbaker D, Poss R & Lee T. 1993, 'Influence of age on measurement of health status in patients undergoing elective surgery', *Journal of the American Geriatrics Society*, vol 41, no 4, pp 377-383.

McCallum J. 1994, 'The New 'SF-36' Health Status Measure: Australian Validity Tests, Canberra, National Centre for Epidemiology and Population Health.

McCallum J. 1995, 'The SF-36 in an Australian sample: Validating a new, generic health status measure', *Australian Journal of Public Health,* vol 19, pp 160-166.

McHorney C, Kosinski M & Ware J. 1994, 'Comparisons of the costs and quality of norms for the SF-36 health survey collected by mail versus telephone interview: Results from a national survey', *Medical Care*, vol 32, no 6, pp 551-567.

McHorney C, Ware J, Lu J & Sherbourne C. 1994, 'The MOS 36-item Short-Form Health Survey (SF-36): III. Tests of data quality, scaling assumptions, and reliability across diverse patient groups', *Medical Care*, vol 32, no 1, pp 40-66.

McHorney C, Ware J & Raczek A. 1993, 'The MOS 36-item short-form health survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs', *Medical Care*, vol 31, no 3, pp 247-263.

McHorney C, Ware J & Raczek A. 1993, 'The MOS short-form health survey (SF-36): II. Psychometric and clinical tests of validity in measuring physical and mental health constructs', *Medical Care*, vol 31, pp 247-263.

Porter R. 1997, *The Greatest Benefit to Mankind: A Medical History of Mankind*, New York, Norton & Co.

Ruta D. 1995, 'The short form 36 health status questionnaire: Clues from the Oxford region's normative data about its usefulness in measuring health gain in population surveys', Comment, *Journal of Epidemiology and Community Health*, vol 49, no 5, p 555.

Saltman D, Myers L, Kendrick J & Fischer G. 1998, 'Standardising health outcome measurements in general practice', *Australian Family Physician*, vol 27, suppl (S2), S89-S93.

Shadbolt B. 1996, General Health Status Measures: Pros and Cons, Workshop on Measures for the Coordinated Care Trials, Canberra, Australian Institute of Health and Welfare.

Stucki G, Daltroy L, Katz J, Johannesson M & Liang M. 1996, 'Interpretation of change scores in ordinal clinical scales and health status measures: The whole may not equal the sum of the parts', *Journal Clinical Epidemiology*, vol 49, no 7, pp 711-717.

Sullivan M, Karlsson J & Ware J. 1995, 'The Swedish SF-36 Health Survey–I. Evaluation of data quality, scaling assumptions, reliability and construct validity across general populations in Sweden', *Social Science and Medicine*, vol 41, no 10, pp 1349-1358.

Ware J, Kosinski M, Bayliss M, McHorney C, Rogers W & Raczek A. 1995, 'Comparison of methods for the scoring and statistical analysis of SF-36 health profile and summary measures: Summary of results from the Medical Outcomes Study. *Medical Care*, vol 33, no 4, Suppl, AS264-AS279.

Ware J, Snow K, Kosinski M & Gandek B 1993, *SF-36 Health Survey: Manual and Interpretation Guide,* Boston, The Health Institute, New England Medical Centre.

Weinberger M, Nagle B, Hanlon J, Samsa G, Schmader K, Landsman P, Uttech K, Cowper P, Cohen H & Feussner J. 1994, 'Assessing health-related quality of life in elderly outpatients: Telephone versus face-to-face administration', *Journal of the American Geriatrics Society*, vol 42, no 12, pp 1295-1299.

Weinberger M, Oddone E, Samsa G & Landsman P. 1996, 'Are health-related quality-of-life measures affected by the mode of administration?', *Journal of Clinical Epidemiology*, vol 49, no 2, pp 135-140.

Weinberger M, Samsa G, Hanlon J, Schmader K, Doyle M, Cowper P, Uttech K, Cohen H & Feussner J. 1991, 'An evaluation of a brief health status measure in elderly veterans', *Journal of the American Geriatrics Society*, vol 39, no 7, pp 691-694.

Wolinsky F & Stump T. 1996, 'A measurement model of the Medical Outcomes Study 36-Item Short-Form Health Survey in a clinical sample of disadvantaged, older, black, and white men and women', *Medical Care*, vol 34, no 6, pp 537-548.

Ziebland S. 1995, 'The short form 36 health status questionnaire: clues from the Oxford region's normative data about its usefulness in measuring health gain in population surveys', *Journal of Epidemiology and Community Health,* vol 49, no 1, pp 102-105.

Appendix 1 Plain language statement

The Whitehorse Division of General Practice is conducting a survey of patients who attend general practitioners. The purpose of the survey is to find out how healthy patients feel when they attend their GP, how well they can do their usual activities and how they rate their own health.

If you choose to participate in this research, you will be asked to complete a short questionnaire that will take about 15 minutes. The questionnaire is in two parts:

- One part consists of 36 questions about your health status (the SF-36 health status qestionnaire);
- The other part asks some questions about your background.

Although some of the questions ask you for details of your health or personal background, it is unlikely any of these questions will case you any distress or inconvenience. If you feel the questions are too personal, you may stop answering the questions, hand the questionnaire back to the researcher and ask that all your information be destroyed.

The information you provide through completing the questionnaire is personal to you and is confidential: this means it will not be shown to anyone other than the researcher. Nobody — including your doctor or the practice nurses — will have access to your information. To ensure your information is kept private, your questionnaire will be given a unique identity number. This will be used in all the research and your name will be discarded so that your information can never be traced back to you.

Participation in this research is voluntary: at any time you are free to withdraw and have any unprocessed information you have provided destroyed.

The information you povide will be used to help the your doctor to understand patients' health status and abilities better; it will also help the Division to understand what types of health services are needed by patients when they visit their doctor. Together these will enable the Division and the doctors plan for better health services in the future.

If you have any questions about this research, please feel free to ask; the researcher will try to answer your questions. If there are questions you would like answered, but which the researcher cannot answer immediately, please ring the Whitehorse Division of General Practice on this number (Tel: XXXXXXXXXX) and ask to speak with XXXXXXXXXX(contact person).

Thank you very much for taking the time to help with this important piece of research.

XXXXXXXXXXXXXX
DIRECTOR OF DIVISION

Appendix 2 Consent form

Whitehorse Division of General Practice

Consent form for persons participating in research projects

Name of participant:

Project title: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

Name of investigator(s):

1. I consent to participate in the above project, the particulars of which - including details of tests or procedures - have been explained to me. I have read the plain language statement attached to this form and understand what is require of me.

2. I authorize the investigator or his or her assistant to use with me the tests or procedures referred to under (1) above.

3. I acknowledge that:

   (a) the possible effects of the tests or procedures have been explained to me to my satisfaction;

   (b) I have been informed that I am free to withdraw from the project at any time and to withdraw any unprocessed data previously supplied;

   (c) The project is for the purpose of research and/or teaching and not for treatment;

   (d) I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements.

Signature Date

(Participant)

Where participant is under 18 years of age:

I consent to the participation of

in the above project.

Signature Date

(Signature of parent or guardian)

Signature Date

(Witness to consent)

Appendix 3 Demographic questionnaire

Some questions about your background

To assist us with the study we need to know a little about your background. This will help us to better understand your answers to the other questions. The information you give is personal, and will remain confidential: no-one will have access to it, except for the researchers.

- ☐ Please read each question carefully, and then tick the box which best describes you.
- ☐ Remember, only select one box for each question.

Thank you very much for your help.

---

1 You are a:

- ☐ Male
- ☐ Female

2 Your date of birth: _____/_____/_____

3 In which country were you born? _____

4 How well do you speak English?

- ☐ Very well
- ☐ Well
- ☐ Not well
- ☐ Not at all (you have very limited English)

5 You are:

- ☐ Single
- ☐ Married/de facto
- ☐ Divorced/Separated
- ☐ Widowed

6 What is your highest completed education level?

- ☐ Primary school
- ☐ Trade/Apprenticeship Certificate
- ☐ High school
- ☐ Technical & Further education qualification
- ☐ University/College degree

7 To the nearest $5,000, what is your annual household income after tax, i.e. all the money your household earns or gets from a pension, superannuation or from investments?

$ _____

8 Are you receiving any Social Security, pension, or sickness benefits payments?

- ☐ Yes
- ☐ No

9 What is your current working status?

- ☐ Working full-time or part-time
- ☐ Unemployed, or looking for work
- ☐ Homemaker
- ☐ Student
- ☐ Retired or on sickness benefits

10 What work do you do (or did the last time you worked)?_____

Eg Plumber, Nurse, Houseworker, Unemployed, Teacher, Clerk etc)

11 How often do you see your doctor?

- ☐ Once a week or more often
- ☐ Fortnightly
- ☐ Monthly
- ☐ About every six months
- ☐ bout once a year
- ☐ Less frequently

12 Do you currently have a significant illness?

☐ No

☐ Yes

☐ If YES, how long have you had it for? _____ months

☐ If YES, is it:

- ☐ Acute, i.e. temporary and you will get better.
- ☐ Chronic, i.e. you live with it over a long period of time.

Are you currently on any medication?

☐ No

☐ Yes

If YES, how long have you been using it for? _____ months

Please complete the following three questions. The information you provide here will be kept confidential and no-one will have access to this except for the researchers.

12. Your name: _____

13. Your telephone number: _____

14. Your postcode: _____

15. The intersection nearest you home:

Corner of: _____

and: _____