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Health Related Quality of Life in the ACT
1994-1997

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Health Related Quality of Life in the ACT 1994-97

1. Summary of findings

The majority of results from the analyses of the 1994-1997 Quality of Life Project are similar to those found in the baseline publication (Gannon et al, 1997).

Findings similar to those found in the baseline publication include:

In terms of age:

- Young people (18-24 years old) in the ACT had significantly better physical functioning than older people.
- The middle-aged group (45-64 years) reported worse general health when compared with the youngest (18-24 years) and the oldest groups (65 years and over).
- Older people (65 years and over) were significantly more likely to have good mental health than their younger counterparts.
-

In relation to gender: females tended to report lower (poorer) than males for mental health scales but better for general health.

Employment status results suggest that:

- People unemployed or not in the labour force had a significantly lower mean score on the physical functioning scale than those who were employed full or part time.
- On the other hand, people who were employed full time had a significantly better score than those unemployed or not in the labour force, especially for the vitality and mental health scales.

For educational attainment:

- It was found that people with higher education levels had a significantly higher score than people with lower education levels in physical functioning and bodily pain.
- Interestingly, it was found that people who attained the education level year 12 and/or with trade/secretary/business qualifications tended to report better general health than other groups (at most some secondary, year 10 only and degrees/postgraduates).

The usual area of residence of respondents presents an interesting result:

- It has been shown that respondents living in Weston significantly scored better than other town centres (Tuggeranong, Central Canberra, Woden Valley and Belconnen) especially on the general health scale.
- Furthermore, people living in Tuggeranong had better physical functioning than those living in Central Canberra, but poorer than those living in other areas.

Not surprisingly *recent hospitalisation* is significantly associated with respondents' perception about their well-being:

- It was found that physical functioning, role physical, bodily pain, mental health, role emotional, social functioning and vitality were reported at a significantly poorer level for respondents who had been hospitalised recently, compared with those who had not been recently hospitalised.
- Multivariate analysis also indicated similar results for people who had not recently been hospitalised who scored significantly better on all SF-36 scales except for general health.

Similarly, *disability status* showed strong association with respondents' well-being:

- Not surprisingly respondents who had moderate or extreme disability had the worst score in all of the SF-36 scales.

Differences between initial findings and this publication are:

- For the 1994-1997 data there were no differences for mean scores on the role-emotional scale (the overall part-timers mean scores increased and those for the unemployed and not in the labour force group decreased).
- In the 1994-1997 full study, educational attainment showed people with higher education levels also had significantly better mean scores for bodily pain.
- In relation to household composition the following minor differences were;
  - For the 1994-95 results, respondents who were married with children showed lower results on the mental health scales, whereas for the full period 1994-1997, respondents who are single with children tended to have poorer mental health than respondents who are married (with or without children) and those who are single without children.
  - During the four-year period there were no significant differences with regard to physical health.
  - Multivariate analysis found that respondents married with children had significantly better physical functioning and role-physical in the 1994-95 data and general health and physical functioning for the 1994-1997 period.
  - Multivariate analysis showed respondents who were married without children seemed to have worse bodily pain scores in the 1994-1997 period.

- In this publication the results show that respondents who had no disability scored significantly higher than those who had some or unspecific disability in all of the SF-36 scales, whereas in the baseline data there were no significant differences for the mental health and role-emotional scales.

The results from the Quality of Life project indicate that the ACT population experienced quality of life differently over time. The results suggest that for all of the mental health scales, there were significant differences over the 4 year period (1994-1997). Results show that in 1997 respondents reported significantly poorer mental health, role emotional, social functioning and vitality than in previous years both at univariate and multivariate levels. In relation to physical health scales, there were significant differences between the year 1995 and other years on role physical and bodily pain. It seems that in 1995 respondents reported worse bodily pain and role physical.

2. Introduction

The Quality of Life Project was developed to examine the quality of life of people residing in the ACT Region. The Australian Capital Territory (ACT) Department of Health and Community Care in collaboration with the Cultural Heritage Management program at the University of Canberra have conducted a series of annual surveys (1994-1997), using the Medical Outcomes Study's Short Form 36 (SF-36) to examine health-related quality of life in order to provide information for the project. The major aims of the Quality of Life Project are :

- to provide an information base on the health-related quality of life of people living in the ACT;
- to monitor trends in health-related quality of life among Canberrans;
- to develop profiles of the quality of life for various population subgroups according to their health status and social-demographic characteristics such as recent hospitalisation, disability status, age, sex, education and employment status;
- to determine peoples' perception about health and health-related issues such as hospitalisation, disability, ageing, and the environment; and
- to provide information useful for policy development and service planning to achieve better health outcomes for those with particular needs.

This report presents the results from an analysis of the responses given to the SF-36. In doing so it examines differences in quality of life between social-economic groups, disabilities, and hospitalisation status. It deals with both cross-sectional and time series analyses, over the four year period 1994-1997.

3. Overview of the Medical Outcomes Study Short Form 36

Quality of life has many dimensions, and over the years researchers and clinicians have produced numerous generic and disease specific questionnaires with which to measure it. A number of generic health-related instruments have been extensively tested for reliability and validity. Examples include the Short Form 36 (Ware and Sherbourne, 1992), the Sickness Impact Profiles (Bergner, et at, 1981), the Duke-UNC Health Profile (Parkerson, 1981), the Nottingham Health Profile (Hunt, 1981) and the Index of Well-being (Patrick, 1973). The ACT's Quality of Life Project chose to use the SF-36 because it is one of the best performing of the generic measures. The Short form 36 (SF-36) was developed in 1988 by the RAND corporation in the USA. The SF-36 is increasingly being advocated as an appropriate subjective health measure for use in population surveys (Jenkinson, 1993), routine measurement of health status (Garratt, 1993) and outcomes measurement in a clinical setting (Shadbolt, 1996). The SF-36 was constructed to examine health-related functioning and well-being using a minimum set of questions, while maintaining the psychometric integrity of the instrument. To date, the SF-36 has been used to investigate population differences, the burden of chronic disease, and the effect of treatment on general health status. The SF-36 comprises eight dimensions:

- Physical functioning (PF);
- Role limitation due to physical health problems (RP);
- Bodily pain (BP);
- General health perception (GH);
- Vitality (VT);
- Social functioning (SF);
- Role disability due to emotional health problems (RE); and
- General mental health (MH).

The eight concepts measure the two major health dimensions; physical health and mental health. The sub-scales most sensitive to the measurement of physical health are physical functioning, role physical, bodily pain and general health. The sub-scales most sensitive to the measurement of mental health are vitality, social functioning, role emotional and mental health. Table 1 provides a summary of the content for each of the 36 items and shows the scale assignment. As can be seen in Table 1 the single-item measure of health transition is not used in any of the eight main scales, and consequently is not examined in this report. For each of the eight main scales, item scores are coded, summed and transformed to range from 0 (worst possible status) to 100 (best possible status). The SF-36 has been extensively validated in the United States (Mchorney et al, 1993; Haley et al, 1994; Beaton et al, 1997) and in the United Kingdom (Brazier, et al, 1992; Lyon, et al, 1994). The SF-36 was also recently validated in Australia (McCallum, 1995; Shadbolt et al, 1997).

Table 1: Item Groupings and Items content for the SF-36

Health Scale	Item	Item Content
Physical functioning (PF)	PF1	Vigorous activities
	PF2	Moderate activities
	PF3	Lifting or carrying groceries
	PF4	Climbing several flights of stairs
	PF5	Climbing one flight of stairs
	PF6	Bending kneeling or stooping
	PF7	Walking more than a mile
	PF8	Walking several blocks
	PF9	Walking one block
	PF10	Bathing or dressing yourself
Role Physical (RP)	RP1	Limited in kind of work or other activities
	RP2	Cut down the amount of time spent on work or other activities
	RP3	Accomplished less than would like
	RP4	Difficulties performing the work or other activities
Bodily Pain (BP)	BP1	Intensity of bodily pain
	BP2	Extended pain interfered with normal work
General Health (GH)	GH1	Is your health excellent, very good, good, fair or poor?
	GH2	My health is excellent
	GH3	I am as healthy as anybody I know
	GH4	I seem to get sick a little easier than other people
	GH5	I expect my health to get worse
Vitality(VT)	VT1	Feel full of pep
	VT2	Have a lot of energy
	VT3	Feel worn out
	VT4	Feel tired
Social functioning (SF)	SF1	Frequency health problems interfered with social activities
	SF2	Extent health problems interfered with social activities
Role emotional (RE)	RE1	Cut down the amount of time spent on work or other activities
	RE2	Accomplished less than would like
	RE3	Did not do work or other activities as carefully as usual
Mental Health (MH)	MH1	Been a very nervous person
	MH2	Felt downhearted and blue
	MH3	Felt so down in the dumps nothing could cheer me up
	MH4	Been a happy person
	MH5	Felt calm and peaceful
Report change	TRA	Rating of health now compared to one year ago

4. Methodology

4.1 Sampling

The methodology and sampling have previously been described in the baseline publication (Gannon et al, 1996). Briefly, the Quality of Life Project involves a cross-sectional survey repeated each year since 1994. The samples used for each survey are non-proportionally stratified with a random selection within strata. Suburbs containing the highest rates of elderly people had a greater chance of selection within the samples. This approach was employed to ensure that adequate numbers of elderly people were represented in the samples. To correct for the sampling design, a weight is used that redistributes the proportion of respondents to represent the ACT population.

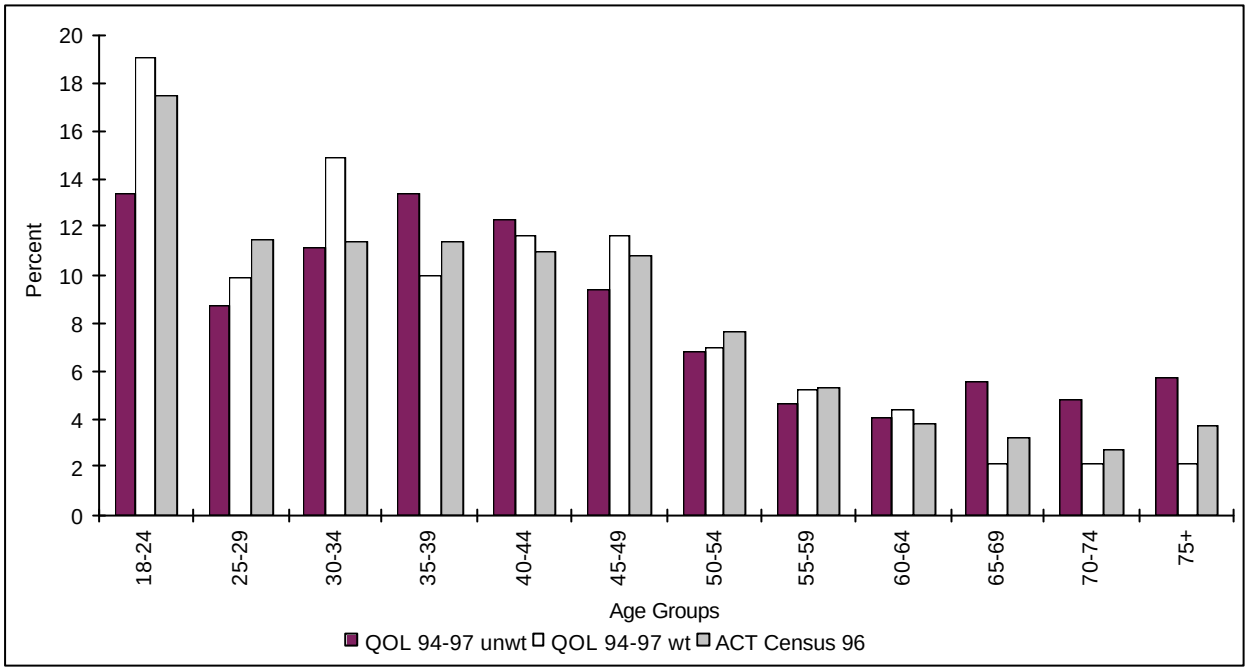
In terms of eligibility, the samples exclude people under the age of 18 years; and non-private dwellings. Within a household only one person was randomly selected for interview.

This report utilises the combined data from the Quality of Life Project collected in 1994, 1995, 1996 and 1997. The sample size over the 1994-1997 period is 1706 dwellings with 926 participants aged 18 years of age or older, yielding an overall response rate of 54% (360 people refused to take part in the survey and 420 people were unable to be contacted).

Socio-demographic information including age, sex, country of birth, employment status, household composition and length of residence in the ACT were collected. Other information related to health status and quality of life and the environment was also collected. In addition to a sampling weight, a non-response weight was incorporated to adjust for response bias. A demographic representation of age groups in the sample both before and after weighting is shown in Figure 1. As expected, all age groups 65+ were over-represented in the unweighted sample. These differences were reduced by the weight.

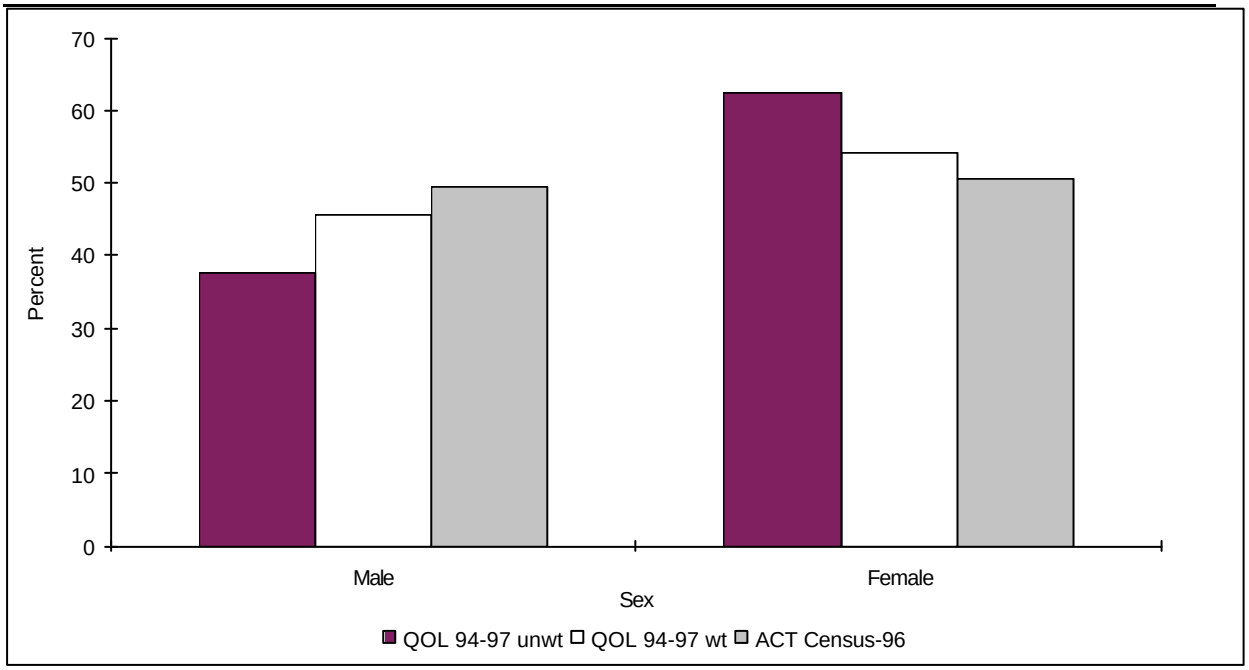
The sex distribution showed a higher proportion of females (54%) than males (46%) in the unweighted data. This is no surprise given the sample bias towards an elderly population. There was no significant difference between males and females in the combined sample after weighting (Figure 2).

Figure 1: Age Distribution for the ACT Quality of Life Project 1994-97 and ACT Census 1996



Source: ABS, *Census of population and housing*: *select social and housing characteristics ACT* ,1996, Cat No 2015.8
Quality of Life project 1994-1997 (weighted data)

Figure 2: Sex Distribution for the ACT Quality of Life Project 1994-97 and ACT Census 1996



Source: Census of population and housing: select social and housing characteristics ACT 1996, Cat No 2015.8
Quality of Life project 1994-1997 (weighted data)

4.2 Data analysis

Analyses were conducted on the combined sample 1994-1997. The analysis was designed to compare SF-36 scores between subgroups differing in social demographic characteristics, disability status and recent hospitalisation experience.

4.3 The Short Form-36

The completeness of data in terms of both item and scale-level missing was calculated by computing the percentage of respondents missing each SF-36 item. Also the skewness of each scale score distribution and the percentage of the sample achieving the lowest (floor effect) and highest (ceiling effect) score were examined. Cronbach's Alpha coefficient was used to estimate the internal-consistency reliability of each scale (Cronbach, 1951).

4.3.1 Data completeness

Completion of the SF-36 questions is summarised in Table 2. The missing value and percentage show incomplete data for each item in the eight SF-36 scales. For the combined sample (1994-1997) missing value rates for all scales were consistently low, ranging from 0.8% (GH1) to 2.1% (PF1) and averaging 1.6%.

The percentage of items within each scale that were completed, for the total sample were very high, ranging from 97% to 99%. Interestingly, the worst completion rate was for general health (97% complete across 5 items). In relation to subgroups, the results also indicated that the percentage of items completed within each scale were very high for all groups (95% and over).

Table 2: Responses distributions & percent missing for each item in the SF-36 scales

	Responses Distribution (a)						Missing	
Item	1	2	3	4	5	6	freq.	%
PF1	202	293	412	-	-	-	19	2.1
PF2	63	93	761	-	-	-	9	1.0
PF3	50	113	755	-	-	-	8	0.9
PF4	67	131	719	-	-	-	9	1.0
PF5	36	41	840	-	-	-	9	1.0
PF6	57	156	703	-	-	-	10	1.1
PF7	60	66	791	-	-	-	9	1.0
PF8	36	33	848	-	-	-	9	1.0
PF9	22	23	872	-	-	-	9	1.0
PF10	10	26	882	-	-	-	8	0.9
RP1	151	767	-	-	-	-	8	0.9
RP2	216	701	-	-	-	-	9	1.0
RP3	178	738	-	-	-	-	10	1.1
RP4	172	745	-	-	-	-	9	1.0
BP1	368	213	151	117	51	17	9	1.0
BP2	645	150	57	44	20	-	10	1.1
GH1	228	325	236	94	36	-	7	0.8
GH2	22	37	67	196	588	-	16	1.7
GH3	383	323	75	76	57	-	12	1.3
GH4	97	133	170	169	341	-	16	1.7
GH5	301	430	34	75	75	-	11	1.2
VT1	107	433	149	150	47	26	14	1.5
VT2	111	423	135	146	60	42	9	1.0
VT3	20	57	74	284	301	181	9	1.0
VT4	34	87	73	350	288	85	9	1.0
SF1	642	161	44	53	16	-	10	1.1
SF2	19	151	262	334	147	-	13	1.4
RE1	125	790	-	-	-	-	11	1.2
RE2	170	745	-	-	-	-	11	1.2
RE3	124	789	-	-	-	-	13	1.4
MH1	20	30	30	127	218	490	11	1.2
MH2	5	17	16	68	173	636	11	1.2
MH3	105	433	128	159	62	26	13	1.4
MH4	8	20	36	159	374	316	13	1.4
MH5	191	535	85	82	15	7	11	1.2

(a) The response ranges for items are from 3 to 6. Refer SF-36 Manual for details on response categories.
Quality of Life project 1994-1997 (weighted data)

4.3.2 Reliability and internal consistency

Overall the results show that the eight SF-36 scales have good internal consistency (refer Table 3). Over the four year period (1994-1997) Cronbach's Alpha co-efficient > 0.70 were obtained for all dimensions of the SF-36 scales except for social functioning scale (alpha=0.67).

Similar results were also reported for individual years with Alpha values >0.70 gained for all dimensions of the SF-36 scales except for general health in 1995 (alpha=0.62) and social functioning in 1997 (alpha=0.69).

Table 3: Chronbach internal consistency coefficient for SF-36 scales, 1994-1997 weighted Quality of Life data

Scale	Chronbach's Alpha				
	1994	1995	1996	1997	1994-97
Physical Functioning	0.89	0.92	0.86	0.90	0.89
Role-Physical	0.92	0.92	0.87	0.90	0.90
Bodily Pain	0.85	0.72	0.74	0.83	0.79
General Health	0.70	0.62	0.72	0.77	0.71
Vitality	0.74	0.82	0.78	0.83	0.80
Social Functioning	0.75	0.76	0.81	0.69	0.67
Role Emotional	0.81	0.81	0.71	0.83	0.79
Mental Health	0.61	0.86	0.79	0.80	0.78

Quality of Life project 1994-1997 (weighted data)

Internal-consistency reliability coefficients for subgroups in the combined (1994-1997) data are shown in Table 4. Reliability coefficients among subgroups range from 0.55 to 0.94. Minimum reliability standards for groups comparison purposes were met in all subgroups for each of the eight SF-36 scales.

Table 4 : Chronbach internal consistency coefficient for SF-36 scales for subgroups of respondents, 1994-1997 weighted Quality of Life data

		PF	RF	BP	GH	VT	SF	RE	MH
Age	18-44	0.81	0.89	0.74	0.71	0.80	0.83	0.79	0.79
	45-64	0.92	0.91	0.85	0.73	0.80	0.69	0.79	0.79
	65 Plus	0.92	0.90	0.84	0.73	0.80	0.63	0.60	0.76
Sex	Male	0.87	0.92	0.74	0.66	0.74	0.58	0.70	0.76
	Female	0.90	0.89	0.83	0.75	0.82	0.71	0.83	0.79
Disability	None	0.83	0.88	0.73	0.69	0.79	0.61	0.76	0.76
	Some (or unspecified)	0.91	0.88	0.90	0.71	0.82	0.74	0.87	0.82
	Moderate or extreme	0.94	0.90	0.89	0.75	0.84	0.89	0.86	0.87
Hospitalisation	Yes	0.93	0.76	0.94	0.84	0.93	0.81	0.91	0.84
	No	0.88	0.90	0.75	0.70	0.78	0.62	0.77	0.78
Household	Single with children								
	Married with children	0.89	0.88	0.91	0.80	0.73	0.69	0.92	0.83
	Married w/hout children	0.90	0.91	0.80	0.73	0.79	0.68	0.84	0.74
	Single without children	0.86	0.90	0.83	0.58	0.82	0.66	0.69	0.85
		0.91	0.88	0.68	0.75	0.81	0.58	0.55	0.76
Employment									
Full or Part time		0.87	0.89	0.77	0.69	0.79	0.63	0.75	0.76
Unemployed/not in labour force		0.91	0.91	0.84	0.75	0.80	0.73	0.85	0.81
Education									
At most some secondary		0.94	0.90	0.81	0.82	0.84	0.75	0.88	0.74
Year 10 only		0.91	0.95	0.81	0.71	0.70	0.65	0.78	0.82
Year 12 and/or trade		0.84	0.89	0.78	0.73	0.82	0.65	0.76	0.81
Degree/Postgrad/RN		0.92	0.88	0.80	0.61	0.79	0.69	0.83	0.71
Year of interview	1994	0.89	0.92	0.85	0.70	0.74	0.75	0.81	0.61
	1995	0.92	0.92	0.72	0.62	0.82	0.76	0.81	0.86
	1996	0.86	0.87	0.74	0.72	0.78	0.82	0.71	0.79
	1997	0.90	0.90	0.83	0.76	0.83	0.69	0.83	0.80

Quality of Life project 1994-1997 (weighted data)

4.3.3 Score distribution for the SF-36 Scales

Table 5 presents estimates of central tendency, dispersion, and other important features of score distributions for the eight SF-36 scales for the combined years sample. Because each scale differs in the range of sub group with different characteristics and health states enumerated, means and standard deviations differ substantially (see Appendix C for the breakdown of the means and standard deviations of each SF-36 scale by the variables used in the analysis).

All of the scales were negatively skewed, specially for physical functioning and role emotional scales, indicating more respondents scoring among the fully functioning states. In relation to the shape of the distributions, scores on the scales of physical functioning, bodily pain and social functioning tended to have J-shaped distribution. Vitality, general health and mental health were more normally distributed.

In the combined sample, interesting distributions from the two role-physical and role-emotional scales were noticed. For the role physical scale, 10% of respondents score the lowest possible score of 0, while 73% scored the highest. For the role emotional scale, 6% of respondents score the lowest possible score of 0, while 78% scored the highest.

Substantial 'ceiling' effect were also observed for physical functioning (46%), bodily pain (40%) and social functioning (43%). These results are comparable to those for the baseline data 1994-95 (Gannon et al, 1996) and other studies (Ware and Sherbourne, 1992; McCallum, 1995).

Table 5: Score distribution of SF-36 scales, 1994-1997 weighted Quality of Life data

	PF	RP	BP	GH	VT	SF	RE	MH
Mean	90.54	82.16	78.60	73.40	66.83	82.55	86.68	76.69
Median	95	100.00	84	77.00	70	85.71	100	81.82
Range	5-100	0-100	0-100	5-100	0-100	0-100	0-100	0-100
Std Dev	16.66	33.50	24.18	20.38	18.96	21.86	28.46	18.13
Skewness	-3.07	-1.65	-1.16	-0.79	-1.01	-1.53	-2.09	-1.37
% Floor	0.50	10.00	1.00	0.40	0.50	0.90	6.10	0.40
% Ceiling	46.20	73.40	40.30	8.40	2.00	43.20	78.30	6.80
No of cases	954	965	964	950	962	963	959	961

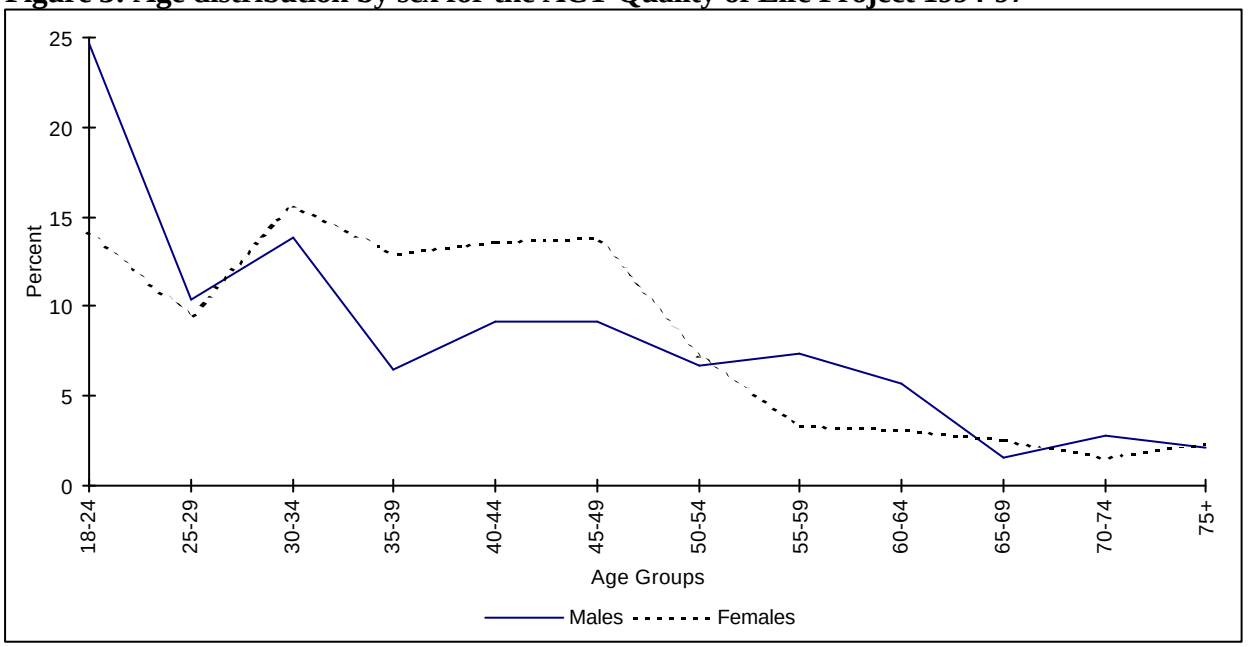
Quality of Life project 1994-1997 (weighted data)

5. Results

5.1 Age

The average ages of females and males were 39.9 and 38.9 respectively. There were significant differences (χ^2=46.1, d.f=11, p<0.00001) between males and females in their age distribution, particularly for the age groups of 18-24, 35-39, 40-44 and 40-49 (see Figure 3).

Figure 3: Age distribution by sex for the ACT Quality of Life Project 1994-97

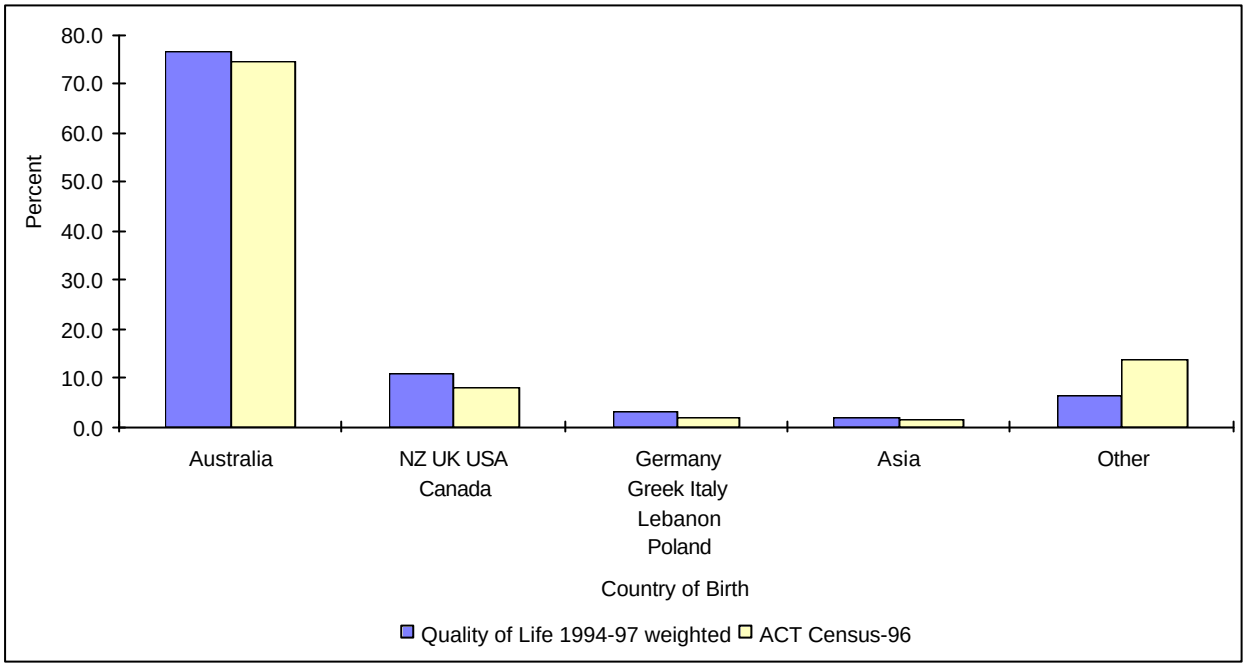


Source: Quality of Life project 1994-1997 (weighted data)

5.2 Country of birth

Similar to Census figures, the majority of the Quality of Life Project respondents were born in Australia (Figure 4). Country of birth and age were significantly different, (F=2.7, d.f.=4, p<0.05). Those born in Asia or Europe averaged 44 years of age, while those born in Australia had an average age of 38 years.

Figure 4: Country of birth for the ACT Quality of Life Project 1994-97 and ACT Census 1996



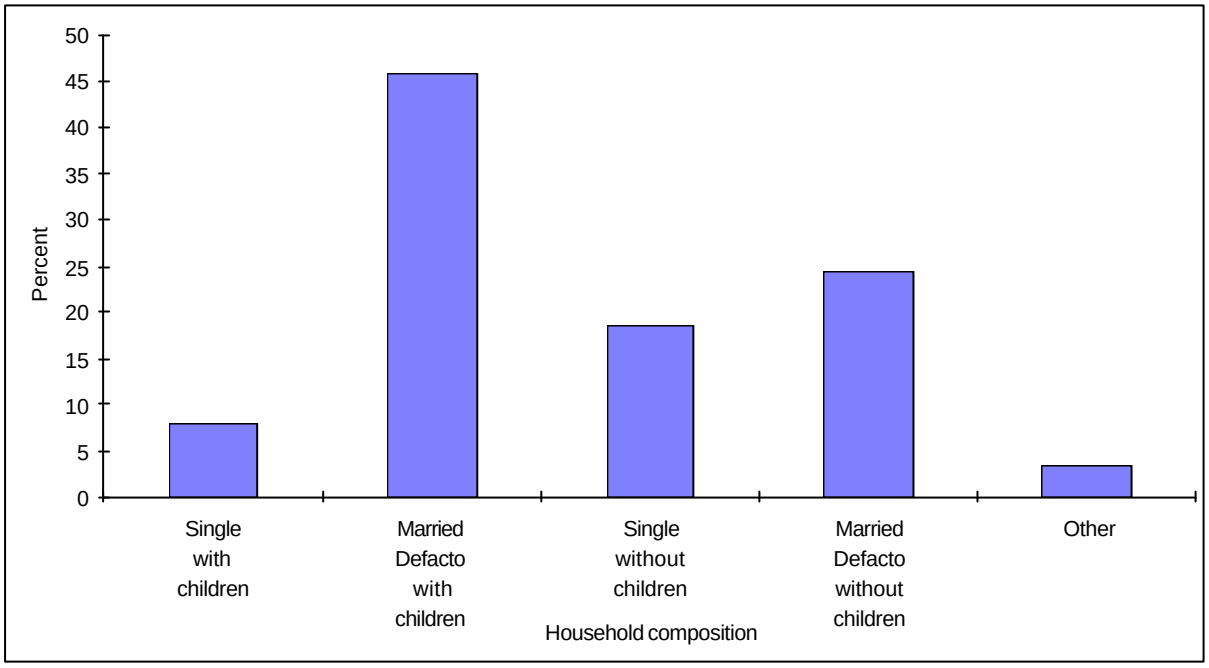
Source: ABS, *Census of population and housing: select social and housing characteristics ACT 1996*, Cat No 2015.8
Quality of Life project 1994-1997 (weighted data)

5.3 Household composition

For the combined sample (1994-97), there were more respondents in the 'married/defacto with children' group than in other groups (Figure 5). This profile is similar to ABS distributions. In addition, there were significant differences in the age distribution and household status ($p<0.00001$). 'Single without children' respondents tended to be the youngest (average age=32) and the 'married with children' were the oldest (average age=45). The average age for the 'married/defacto without children' and the 'single with children' were 42 and 37, respectively.

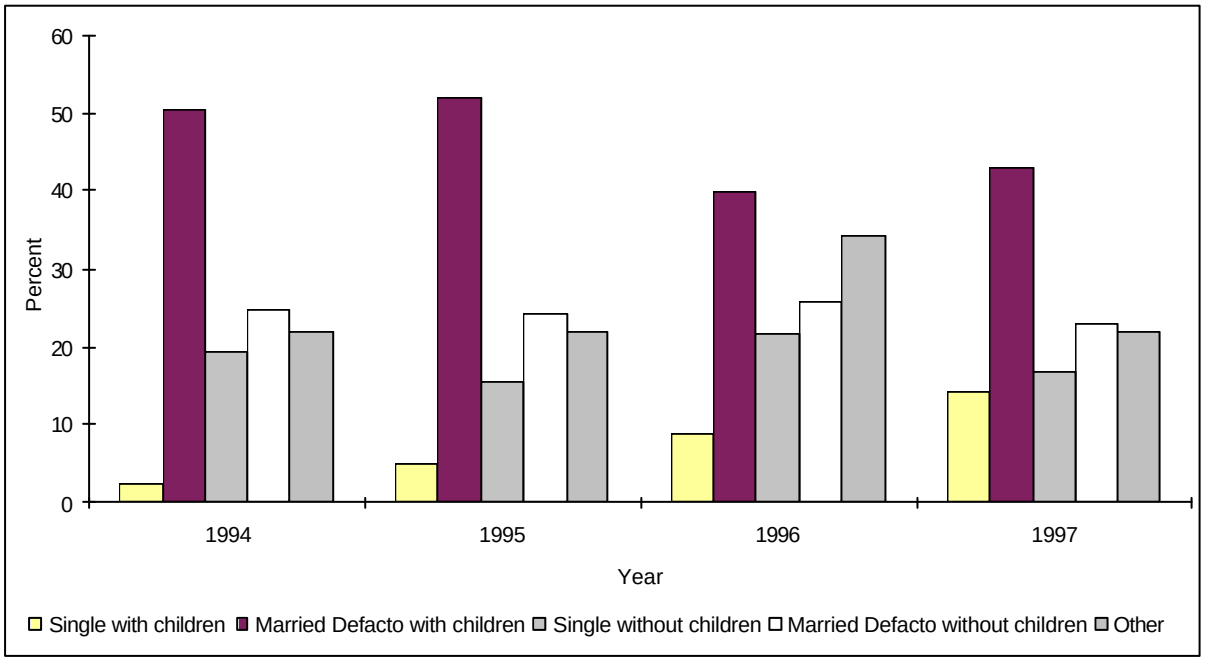
There were significant differences ($p<0.005$) between household distribution and year of interview. Figure 6 shows that the proportion of 'single with children' increased steadily from 2.5% in 1994 to 14% in 1997 while the proportion of 'married/defacto with children' decreased from 50% in 1994 to 43% in 1997. The proportion of 'married/defacto with children' was lowest in 1996 (39%).

Figure 5: Household distribution for the ACT Quality of Life Project 1994-97



Source: Quality of Life project 1994-1997 (weighted data)

Figure 6: Household distribution by year of interview for the ACT Quality of Life Project 1994-97

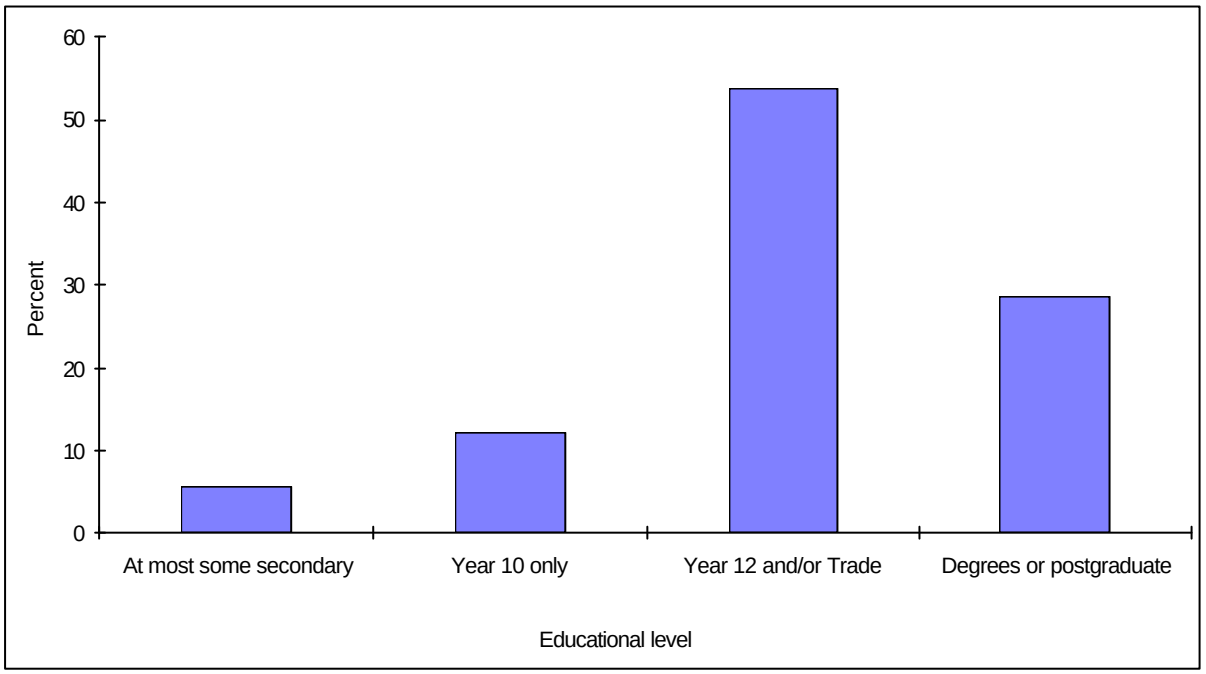


Source: Quality of Life project 1994-1997 (weighted data)

5.4 Educational attainment

In relation to educational levels, Figure 7 indicates that respondents who reported achieving 'year 12 and/or trade, secretariat and nursing certificate' were the highest proportion (54%), followed by respondents with 'degrees or postgraduate qualification' (29%), 'year 10 only' (12%) and 'at the most some secondary' (5.5%).

Figure 7: Distribution of education levels for the ACT Quality of Life Project 1994-97



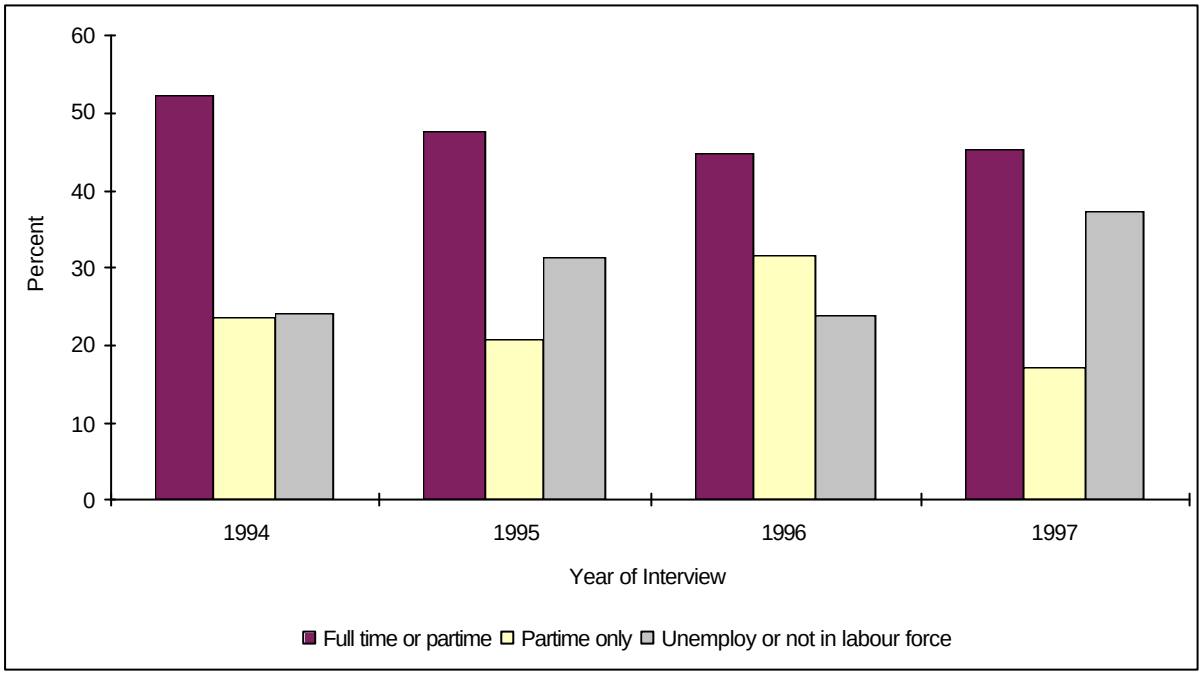
Source: Quality of Life project 1994-1997 (weighted data)

5.5 Employment status

The percentages for respondents who reported as 'working full time or part time', 'working part time only' and 'unemployed or not in labour force' were 47.3%, 23.9% and 28.8% respectively. In comparison, the Australian Bureau of Statistic, 1994 Labour Force Survey (for NSW and ACT) reported that nearly 70% of persons aged 20 years and over in the ACT were in full time or part time employment (ABS, 1994).

In addition, there were significant differences ($p<0.0005$) between year of interview and employment status. It appears that 1997 has the highest proportion of respondents reported as unemployed or not in labour force (see Figure 8).

Figure 8: Distribution of Employment Status by Year of Interview, ACT Quality of Life Project 1994-97



Source: Quality of Life project 1994-1997 (weighted data)

5.6 Disability Status

Overall, for the combined sample, 12% of the survey respondents (weighted) reported having some forms of disability. In comparison, the Australian Bureau of Statistic reported that 16.4% of the Australian population describe themselves as having a disability (ABS, 1993).

5.7 SF-36 Mean Score Profiles Quality of LIFE Project ACT 1994-1997

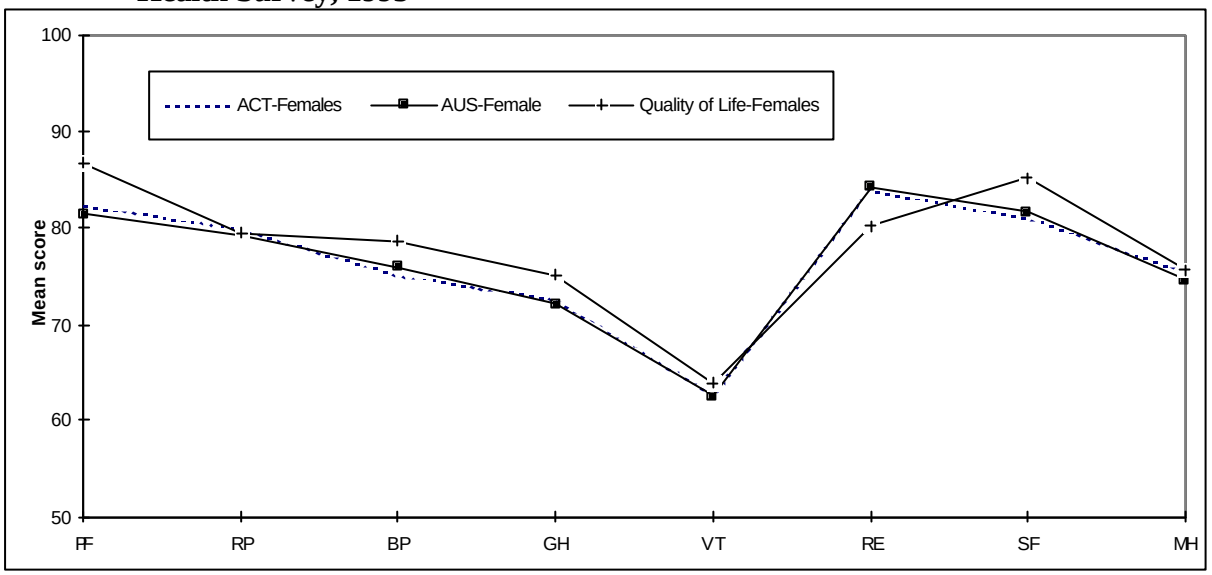
5.7.1 SF-36 mean score profiles for Australia and the ACT

A comparison of ACT's and Australia's normative data of the SF-36 are presented in Figures 9, 10 and 11. In general, the results from the 1995 National Health Survey (NHS) indicate that younger people and those in higher socio-economic groups experienced better health and health related well-being than those in other groups (ABS, 1997). The SF-36 profiles for males and females aged 18 years or more were similar for the ACT and Australia within the NHS (there were no significant differences).

However the results from the 1995 Quality of Life project indicated that ACT females scored similar or slightly higher than the Australian females average for all SF-36 scales except for role emotional

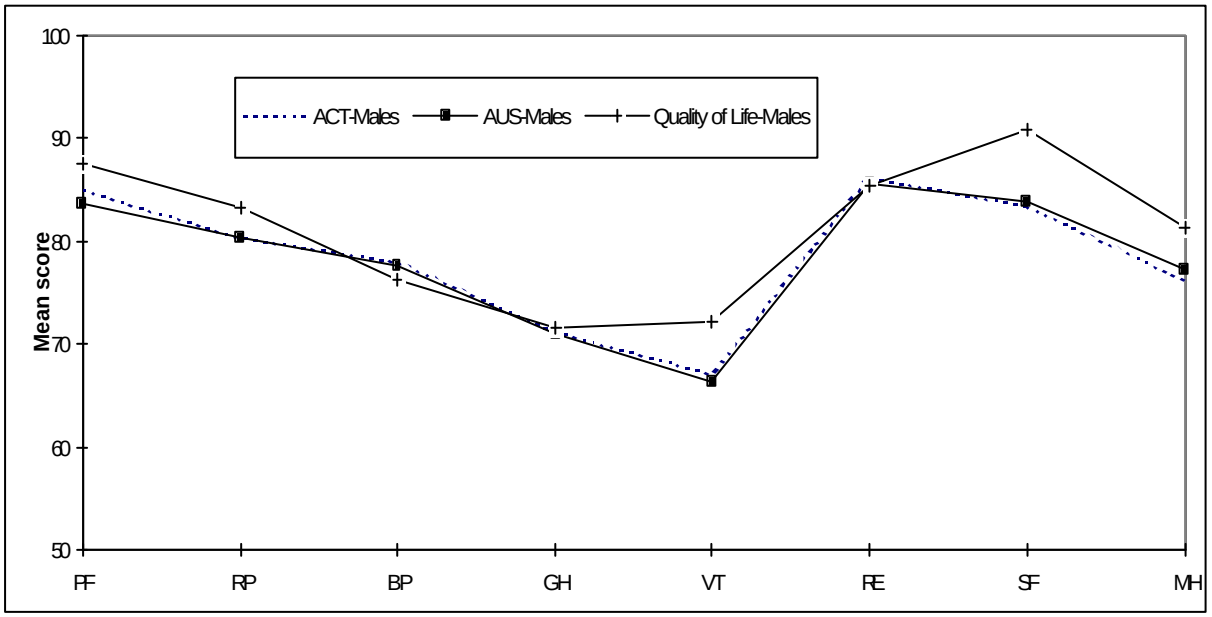
(Figure 9). Similarly, the findings from 1995 Quality of Life project also suggested that ACT males reported similar or slightly higher than their national counterparts for all of the SF-36 scales except for bodily pain (Figure 10).

Figure 9: SF-36 profiles for females, Quality of Life Project (1994-1997) and National Health Survey, 1995



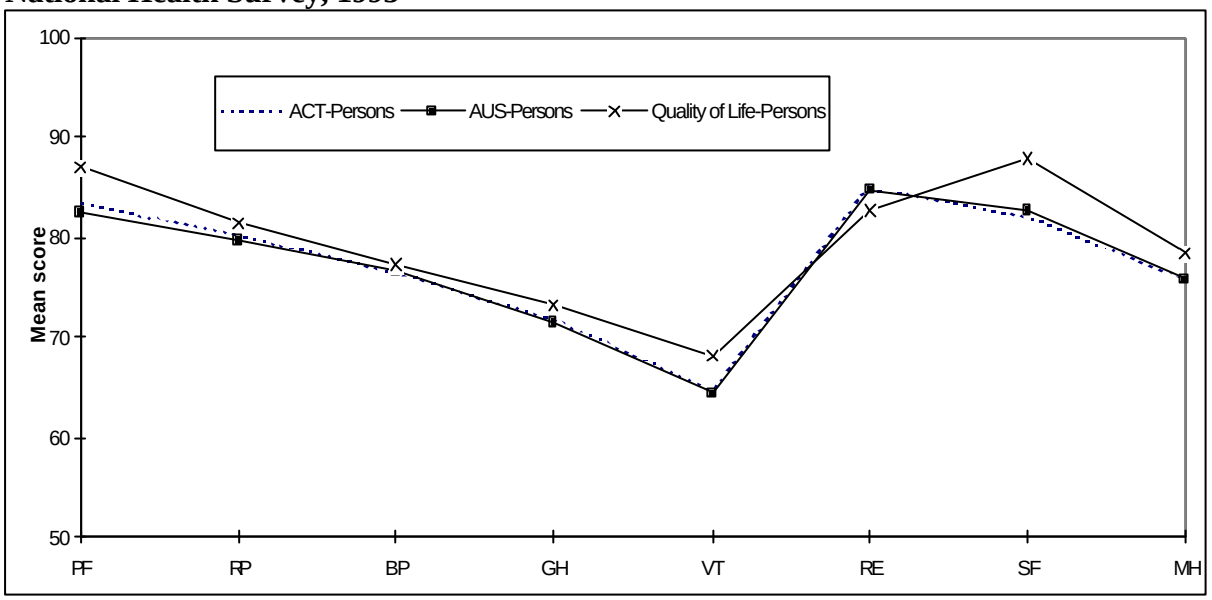
NHS-ACT sample age standardised to 1995 national sample
Source: ABS, NHS, *Cat No 4399.0* and *Quality of Life project 1995* weighted data

Figure 10: SF-36 profiles for males, Quality of Life Project (1994-1997) and National Health Survey, 1995



NHS-ACT sample age standardised to 1995 national sample
Source: ABS, NHS, *Cat No 4399.0* and *Quality of Life project 1995* weighted data

Figure 11: SF-36 profiles for persons, ACT Quality of Life Project (1994-1994) and National Health Survey, 1995

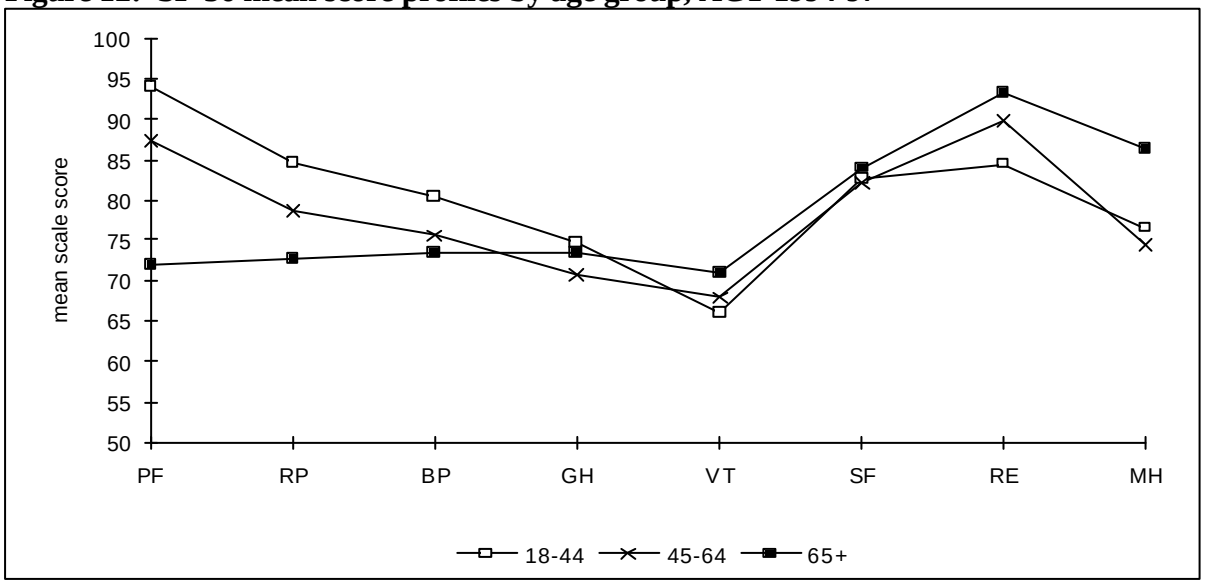


Source: ABS, NHS, Cat No 4399.0 and Quality of Life project 1995 weighted data.
NHS-ACT sample age standardised to national sample

5.7.2 Age

Mean scores for the SF-36 scales within three age groups are shown in Figure 12. There were significant differences between age groups for all physical health scales: physical functioning ($F=62.5$, $df=2$, $p<0.0001$); role-physical ($F=5.5$, $df=2$, $p<0.005$); bodily pain ($F=5.0$, $df=2$, $p<0.05$) and general health ($F=3.1$, $df=2$, $p<0.05$). In relation to mental health scales, role-emotional ($F=5.1$, $df=2$, $p<0.05$) and mental health ($F=10.1$, $df=2$, $p<0.0001$) also showed significant differences between age groups. These results are comparable to those for the baseline data 1994-95 (Gannon et al, 1996).

Figure 12: SF-36 mean score profiles by age group, ACT 1994-97



Source: 1994-1997 Quality of Life weighted data

Post hoc tests showed that the 18-44 years age groups tended to have significantly higher scores than the older age groups (45-64 and 65+) on all physical health scales (physical functioning, role-physical and bodily pain). For the mental health scores, it was found that older people (65 years and over) were significantly more likely to have good mental health than their younger counterparts (18-44 yr. and 45-64 years).

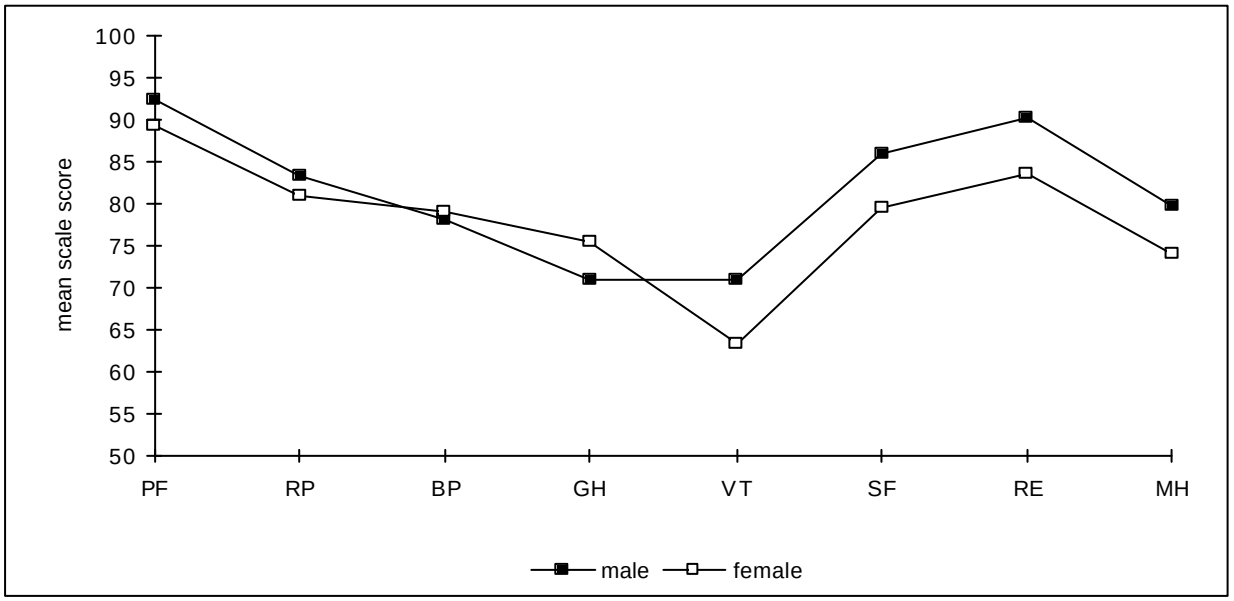
In a multivariate analysis, age, gender, employment status, educational attainment, household composition, usual area of residence, recent hospitalisation, disability status and year of interview were compared for their contribution to the eight SF-36 scales (see Appendix B for details). Age emerged as a significant factor for the physical functioning, vitality, social functioning and role emotional.

5.7.3 Gender

The mean score profiles for males and females are shown in Figure 13. There are significant differences in gender for physical functioning ($F=8.1$, $df=1$, $p<0.005$), general health scales ($F=11.4$, $df=1$, $p<0.005$).

There were also significant differences between males and females for all of the mental health scales: mental health ($F=23.9$, $df=1$, $p<0.0001$), role-emotional ($F=13.4$, $df=1$, $p<0.005$), social functioning ($F=19.7$, $df=1$, $p<0.0001$) and vitality ($F=40.7$, $df=1$, $p<0.0001$). Again these results are similar to baseline data (Gannon et al, 1996).

Figure 13: SF-36 mean score profiles by gender group, ACT 1994-97



Source*: 1994-1997 Quality of Life weighted data*

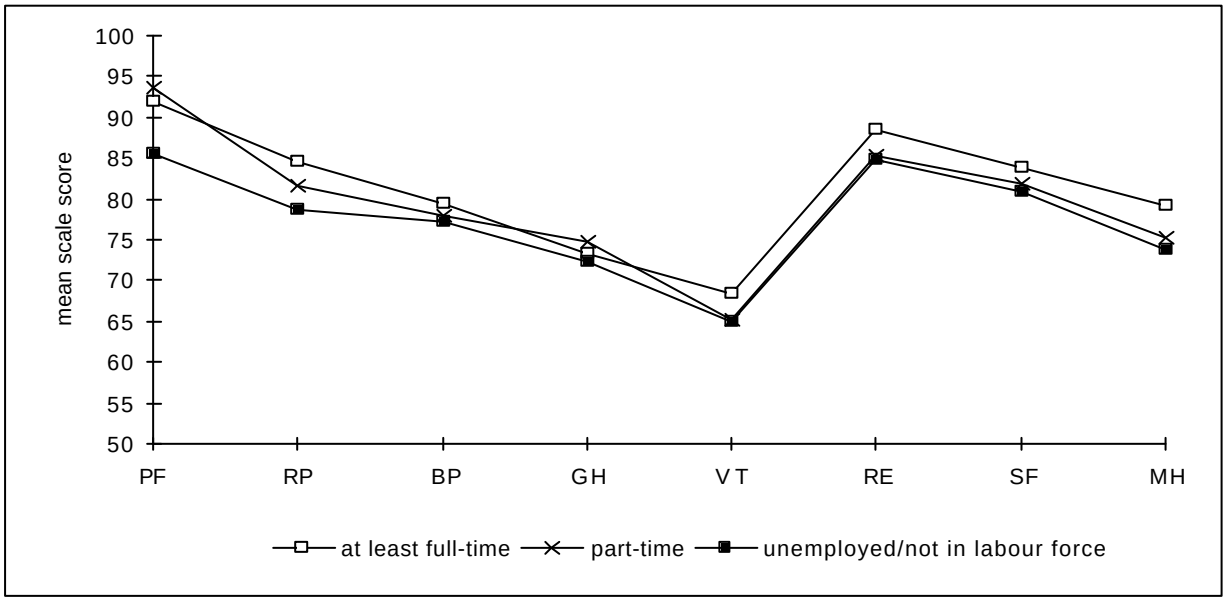
The multivariate analysis (Refer Appendix B) suggests that gender is a significant predictor for physical functioning and general health in the hypothesised physical health of the SF-36 scales. In relation to mental health scales, the multivariate analysis shows a significant difference between males and females in vitality, social functioning, role emotional and mental health. Females were significantly more likely to report lower scores than males on physical functioning, vitality, social functioning, role emotional and mental health, while males tended to report worse general health.

5.7.4 Employment status

Figure 14 shows the SF-36 mean score profile for employment status. The results suggest that only physical functioning ($F=18.12$, $df=2$, $p<0.00001$) and vitality ($F=3.78$, $df=2$, $p<0.05$) had significant differences according to employment status levels. It has been found that people who are unemployed or not in the labour force have significantly lower vitality and physical functioning than those who are employed full time or part time.

Results from Post Hoc tests suggest that respondents who were employed full time had significantly higher scores than those who unemployed or not in the labour force, on the physical functioning, role physical functioning, vitality and mental health scales.

Figure 14: SF-36 mean score profiles by employment status, ACT 1994-97



Source: 1994-1997 Quality of Life weighted data

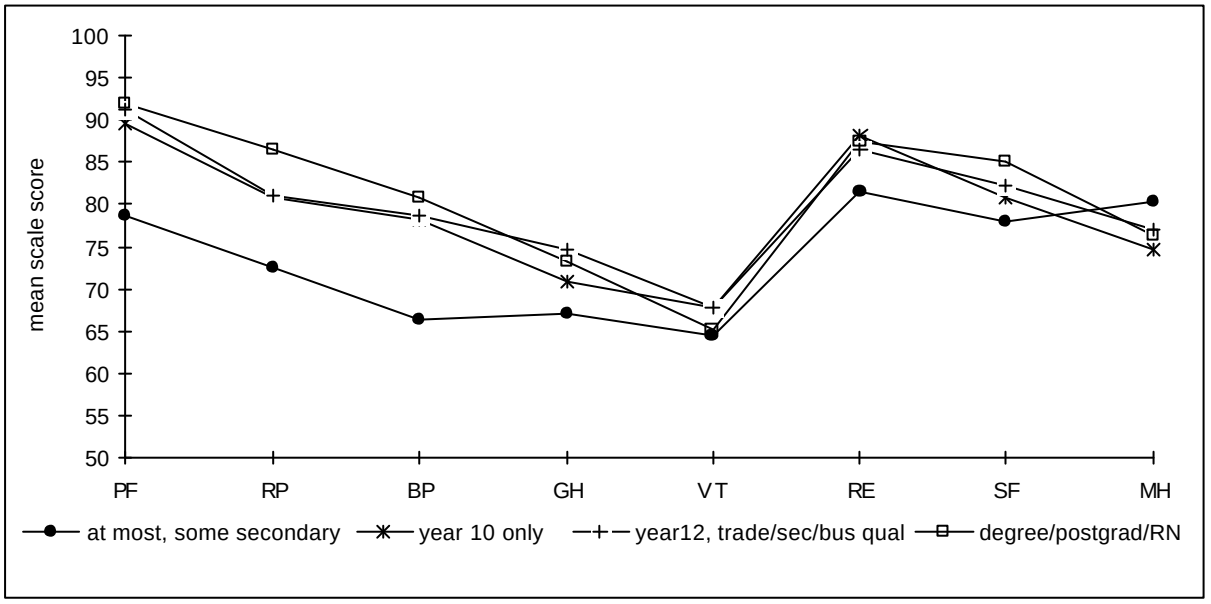
Multivariate analysis (Refer Appendix C) interestingly suggests that there are no significant associations between employment status and the SF-36 scales.

5.7.5 Educational attainment

Figure 15 presents the profile of SF-36 scores for different levels of education attained by the respondents. As Figure 7 shows, there were significant differences between education levels and eight SF-36 scales. The results suggested that physical functioning ($F=10.21$, $df=3$, $p<0.00001$), role functioning ($F=3.16$, $df=3$, $p<0.05$), general health ($F=2.97$, $df=3$, $p<0.005$) and bodily pain ($F=5.37$, $df=3$, $p<0.005$) vary significantly by educational attainment.

The results suggest that people with higher education levels have significant higher scores than people with lower education levels on most scales. For instance, people with a degree or post graduate qualification had significant higher mean scores for physical functioning, role functioning and bodily pain than other groups (year 12 or better, year 10 or better and at the most secondary).

Figure 15: SF-36 mean score profiles by educational attainment, ACT 1994-97



Source*: 1994-1997 Quality of Life weighted data*

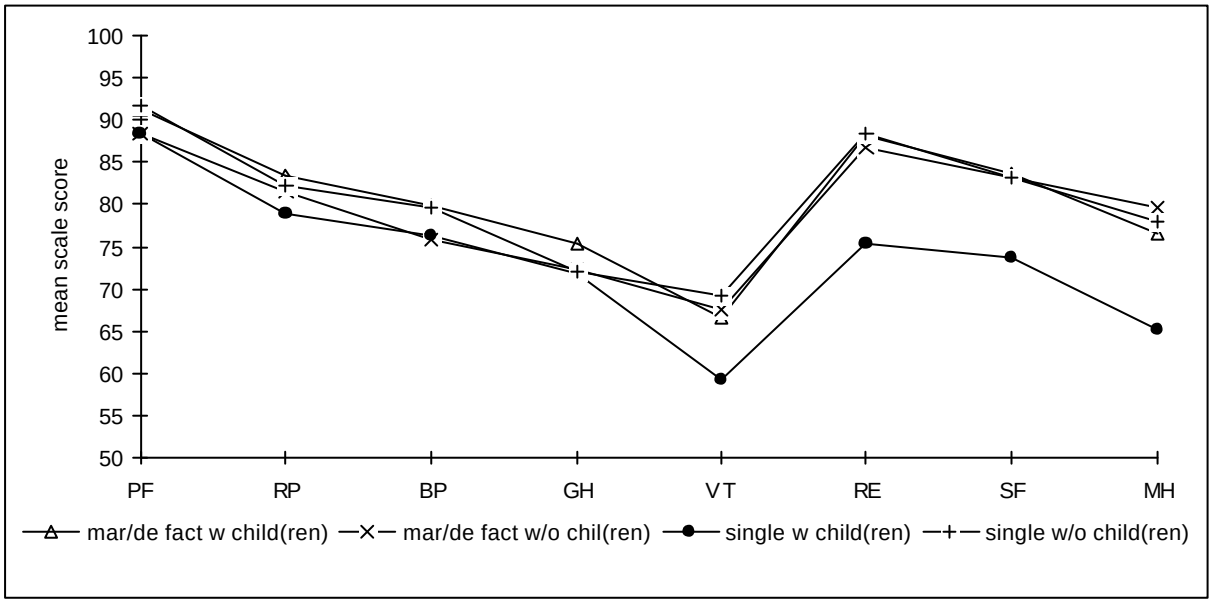
Results from the multivariate analysis shown at Appendix B indicate that educational attainment was significantly associated with the general health scale. Particularly, respondents who attained year 12 and/or a trade/secretary/business qualifications tended to reported better general health than other groups (at most some secondary, year 10 only and degree/postgraduate). Interestingly, educational attainment was not significant for the other SF-36 scales. Thus, educational attainment association with the SF-36 scales in the univariate analysis reflects its encapsulation of social-economic disadvantage, especially in relation to disability and recent hospitalisation.

5.7.6 Household composition

Figure 16 shows the mean score for the eight SF-36 scales for different household compositions. There were significant differences between household groups in the SF-36 mean score, especially in relation to the mental health scales (mental health, F=9.63, df=4, p<0.0001; role emotional, F=3.88, df=4, p<0.005; social functioning, F=3.47, df=4, p<0.05; and vitality, F=4.09, df=4, p<0.005). Respondents who were single with children tended to have lower mental health than respondents who were married (with or without children) and those who were single without children.

The results in the multivariate analysis shown at Appendix B suggest that household composition had a significant effect on physical functioning, bodily pain and general health. Respondents who were married with children appeared to be better in general health and physical functioning scales, while respondents who were married without children seemed to have worse bodily pain scores.

Figure 16: SF-36 mean score profiles by household composition, ACT 1994-97



Source*: 1994-1997 Quality of Life weighted data*

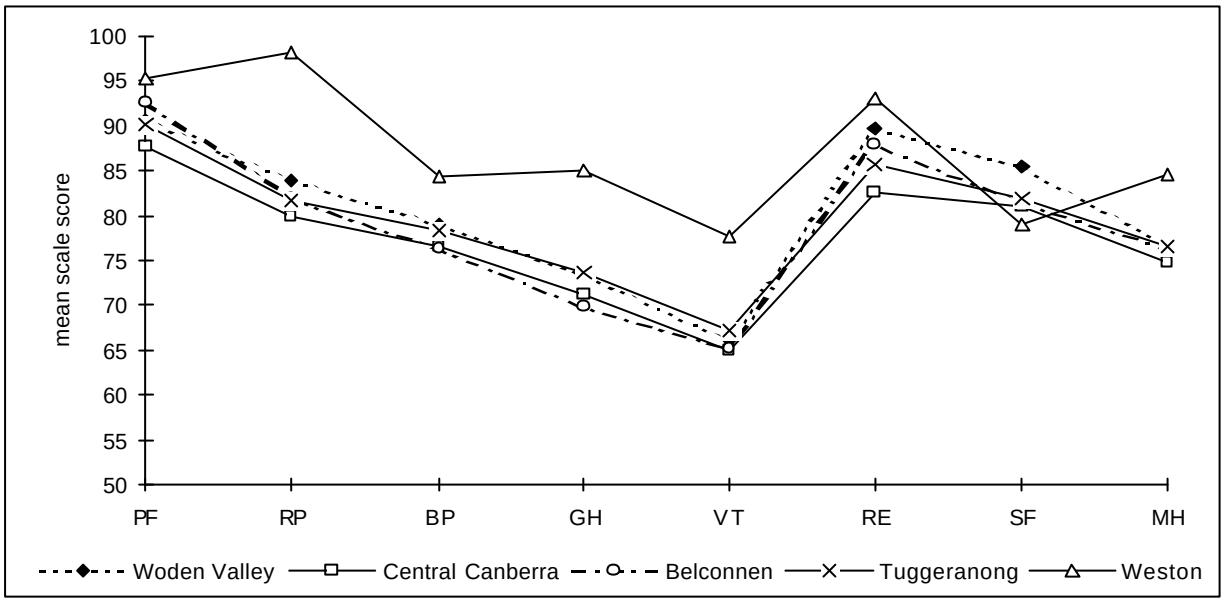
5.7.7 Usual area of residence

Figure 17 shows the average SF-36 scores across different areas of the usual residence (town centre) of the respondents. The general heath scale was the only scale that was significantly different (F=2.81, df=4, p<0.05). Respondents of Weston scored significantly better than other town centres (Tuggeranong, Central Canberra, Woden Valley and Belconnen).

The results in the multivariate analysis shown at Appendix B indicated that place of usual residence was significantly associated with physical functioning, general health and mental health. For example,

people living in Weston had significantly better general health and mental health than those living in other areas. Furthermore, people living in Tuggeranong had better physical functioning than those living in Central Canberra but poorer than those living in other areas.

Figure 17: SF-36 mean score profiles by usual area of residence, ACT 1994-97



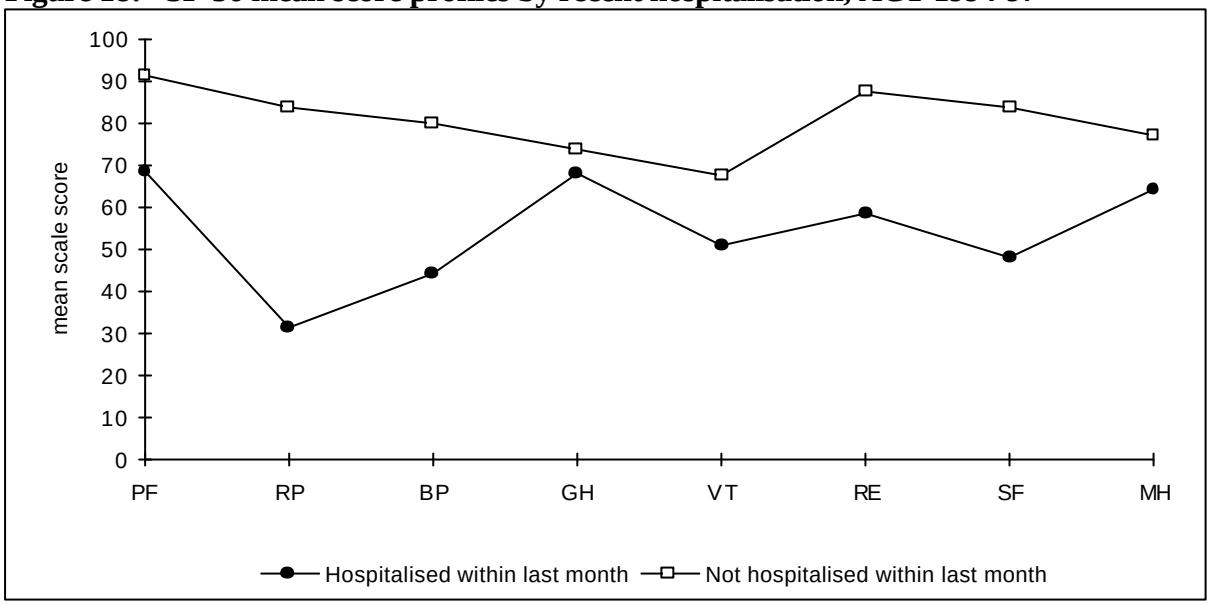
Source: *1994-1997 Quality of Life weighted data*

5.7.8 Recent hospitalisation

Figure 18 shows the SF-36 mean score profile and hospitalisation (hospitalised within last month). There were significant differences between hospitalisation status of the respondents for the eight SF-36 scales. Not surprisingly, physical functioning ($F=64.11$, $df=1$, $p<0.0001$), role physical ($F=88.79$, $df=1$, $p<0.0001$), bodily pain ($F=75.99$, $df=1$, $p<0.0001$), mental health ($F=15.67$, $df=1$, $p<0.005$), role emotional ($F=31.98$, $df=1$, $p<0.0001$) social functioning ($F=96.90$, $df=1$, $p<0.0001$) and vitality ($F=24.82$, $df=1$, $p<0.0001$) were reported significantly poorer for respondents who had been hospitalised recently compared with those who had not recently been hospitalised.

Multivariate analysis also indicated similar results (see Appendix B) with people who were not recently hospitalised scoring significantly better on all SF-36 scales except the general health scale. These results are consistent with baseline data (Gannon et al, 1996) and with the Care Continuum and Health Outcomes Project (Shadbolt, 1995) which reported that hospital patients had consistently lower average scores on all eight scales of the SF-36 compared with the general population in the ACT.

Figure 18: SF-36 mean score profiles by recent hospitalisation, ACT 1994-97

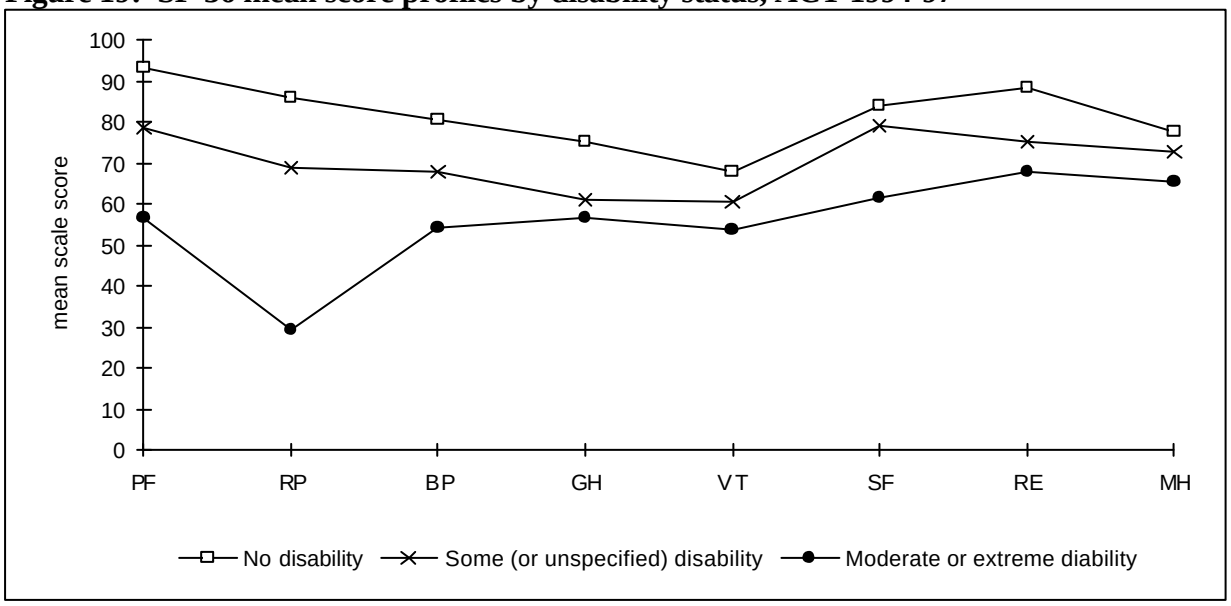


Source: *1994-1997 Quality of Life weighted data*

5.7.9 Disability status

Figure 19 shows the effect of disability on the average score of the SF-36 scales. The differences between disability levels were significant for all of the SF-36 scales. The results show that respondents who had no disability scored significantly higher than those who had some or unspecified disability in all of the SF-36 scales. Not surprisingly, respondents who had moderate or extreme disability had the worst score in all of the SF-36 scales.

Figure 19: SF-36 mean score profiles by disability status, ACT 1994-97



Source: *1994-1997 Quality of Life weighted data*

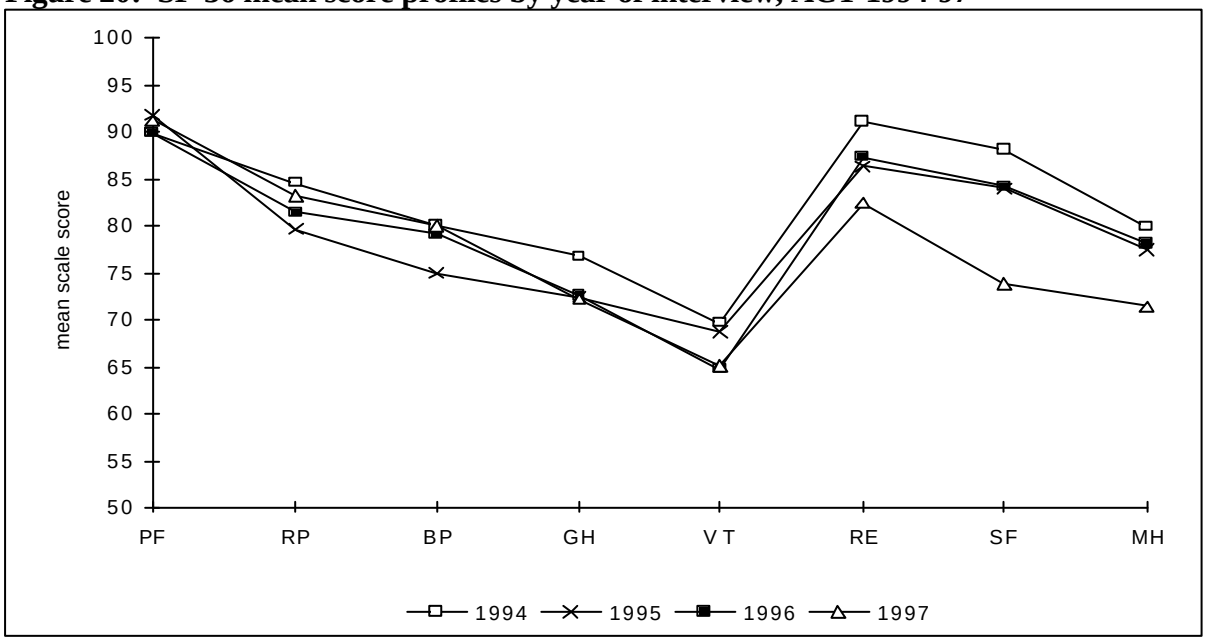
The results in the multivariate analysis shown at Appendix B also indicated that disability status was significantly associated with all of the SF-36 scales except general health. For instance, poor physical health seems to be significantly associated with people who had moderate or extreme disability. A similar pattern was also reported for the mental health scales, with severe disability significantly associated with poor mental health.

5.7.10 Year of interview

Figure 20 shows the differences in the eight SF-36 scales by the year of interview. The results suggest that all of the mental health scales varied significantly over the 4 year period (1994-1997). For example in 1997 respondents reported significantly lower scores for mental health ($F=9.84$, $df=3$, $p<0.0001$), role emotional ($F=3.64$, $df=3$, $p<0.05$) social functioning ($F=19,53$, $df=3$, $p<0.0001$) and vitality ($F=4.29$, $df=3$, $p<0.001$) than in previous years.

Similarly, results from a multivariate analysis show that mental health scales were significantly affected depending on the year in which they were interviewed (see Appendix B). Particularly, in 1997 respondents reported significantly lower scores on mental health, role emotional, and social functioning than in previous years. In relation to physical health scales, there were significant differences between the year 1995 and other years with 1995 reporting worse bodily pain and role physical scores.

Figure 20: SF-36 mean score profiles by year of interview, ACT 1994-97



Source*: 1994-1997 Quality of Life weighted data*

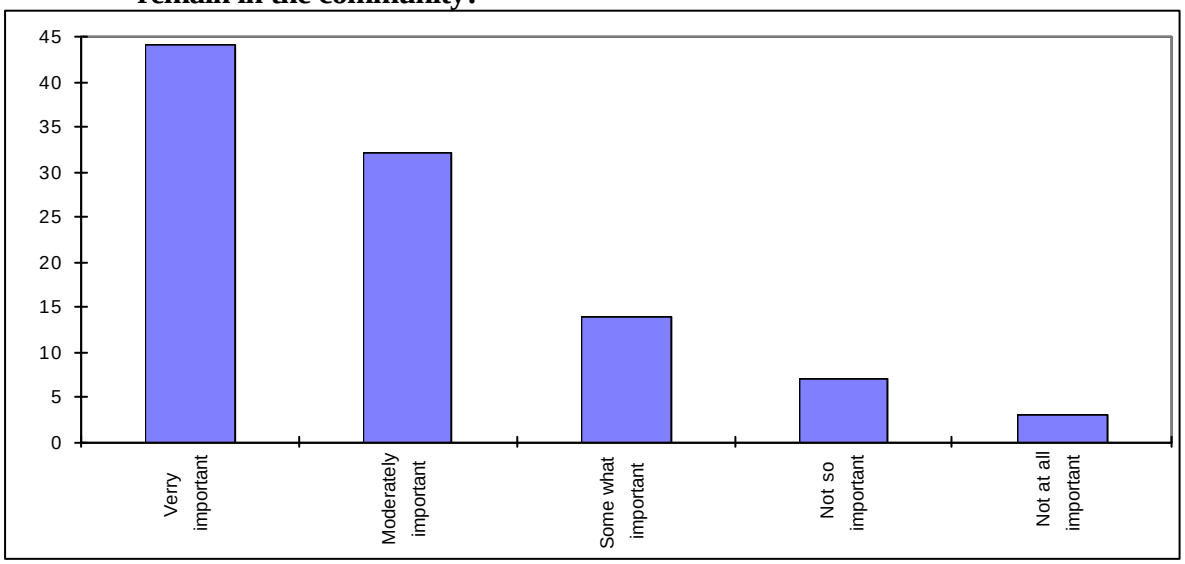
5.8. Environment

Besides social demographic factors, environmental issues may have some impact on an individual's health status and their risk of ill health. The results from the Quality of Life Project suggest that the population of the ACT places a high value on their natural environment and cultural heritage. In response to the question 'Do you think that your health relates to having a healthy physical environment around you?' a high proportion (92%) of the population believed that having a healthy physical environment is important for their health.

Furthermore, in relation to the physical environment, the findings from the Quality of Life Project also indicate that 'having familiar places and things remain in the community' play an important part in the perception of health status. Figure 22 shows that more than 90% of the respondents indicated that it is important to have familiar places and things remain in the community while only 3% responded as not at all important.

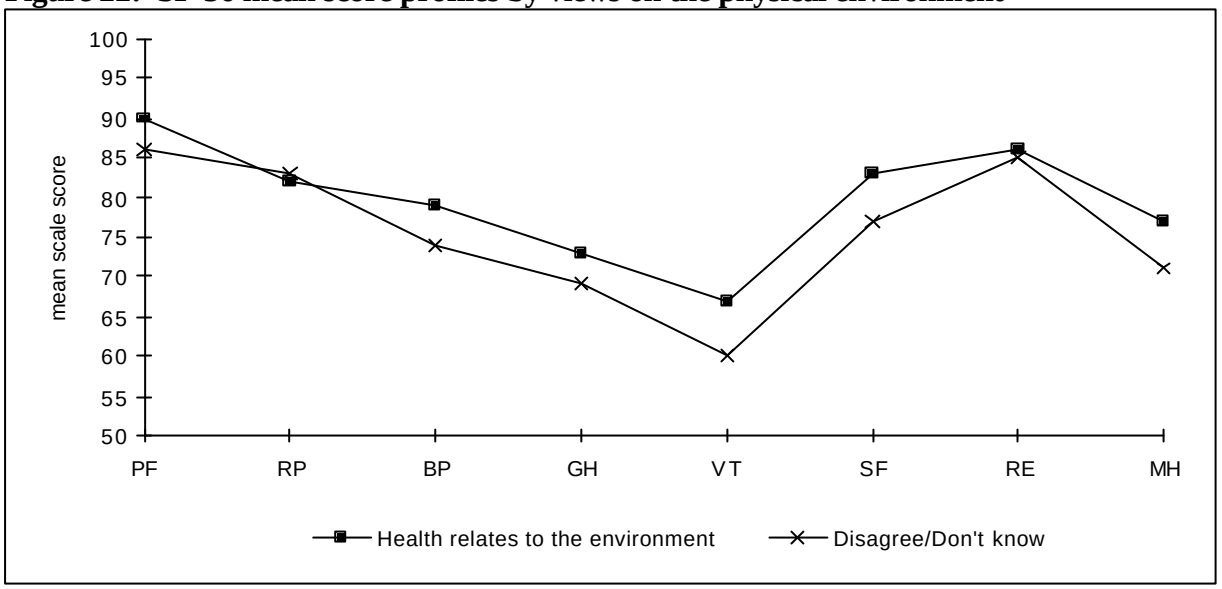
Also there are significant differences between respondents' views on the importance of the physical environment and their health-related quality of life as measured by the SF-36 (see Figure 23). Those who agreed that their health related to having a healthy physical environment around them scored significantly higher on the physical functioning ($F=3.79$, $df=1$, $p<0.05$), vitality ($F=8.53$, $df=1$, $p<0.005$), social functioning ($F=4.89$, $df=1$, $p<0.05$) and mental health ($F=5.89$, $df=1$, $p<0.05$) scales than those who disagreed or did not know.

Figure 21: Responses to "How important is it to you to have familiar places and things remain in the community?"



Source: 1994-1997 Quality of Life weighted data

Figure 22: SF-36 mean score profiles by views on the physical environment



Source: *1994-1997 Quality of Life weighted data*

6. Discussion

This report draws on four years of survey data to provide accurate estimates of the health-related quality of life of ACT adult residents. An analysis of the scaling and psychometric properties of the SF-36 support the validity and reliability of the instrument as a measure of functioning and general health (Mc Callum, 1995; Watson, 1996; Shadbolt et all, 1997). Furthermore, the high item response rates highlight the acceptance of the instrument by respondents.

The findings from the results strongly support those found in the 1994-95 baseline report and compare favourably with the Australian Bureau of Statistics estimates from the 1995-96 National Health Survey. Like the baseline report, the two factors which differentiated the most between levels of health-related quality of life were disability status and recent hospitalisation experience. People who had some form of disability or who had been hospitalised in the last month rated their functioning and general health substantially worse than other people. Obviously, people who have been recently hospitalised are sicker on average, than those who have not been admitted to hospital. Establishing good baseline estimates of population sub-groups like the recently hospitalised and those who have disability, is important to monitor the progress of these groups, especially as care and services change.

This report provides strong support for similar levels of health-related quality of life in the ACT adult population to the Australian average. The 1996 census results indicate that the ACT has a high socio-economic profile with a considerably higher activity than the national average in public

employment and higher education. Also, it has been suggested that 'With regard to health status the ACT fares as well or better than other states or territories....' (Kee, et al, 1998). These significantly better differences probably reflect the ACT's young age structure, and a general trend towards better lifestyles and lower disease rates.

In relation to age, results suggest that the elderly tend to have had poorer physical functioning but better mental health status compared with the younger aged groups. Other studies have shown similar findings, for example, it was found that higher mental health scores were found in the 65-74 age group in the Midland Region, New Zealand and that the 75 years and over age group had results for mental health similar to other age groups (Health & Disability Analysis Unit, Midland Health New Zealand, 1997). With an ageing population, age care becomes very important in health-care service planning. Strategies for monitoring/improving health status and quality of life of the elderly need to focus on issues such as prevention of physical health hazards; improving physical functioning and closely monitoring mental and psychological health problems. As the findings revealed that the young and middle aged groups reported poor mental health and general health, strategies in dealing with problems such as youth mental health, professional stress, social health problems and psychological problems also need to be targeted.

The results suggest that the health-related quality of life of the ACT population was experienced differently between the years of the survey. The significantly low level of role emotional, social functioning and mental health scales in 1997 compared with the previous years needs to be further investigated. It is hypothesised that during the last few years the economic environment and the cuts to the Federal Public Service from the Federal government may have effected the mental health of the ACT population. Furthermore, poorer role functioning and bodily pain experienced by respondents in 1995 also needs further attention.

Comparable with the baseline results, findings from this analysis also suggest that well planned evaluation, monitoring and implementation of strategies, focusing on the health related quality of life of the population (especially with the most disadvantaged groups such as those experiencing low social economic, disability and/or sickness status), need to be in place.

In addition, the results of this analysis in combination with the findings from 1995-1996 National Health Survey population norm for Australia and the ACT, will be a useful reference for researchers, clinicians, health service planners and policy makers. These findings can also be used to interpret or describe different group's current level of functioning in relation to a representative cross section of the ACT population.

Finally, from the results of the Quality of Life Project, it is envisaged that the SF-36 will be useful for identifying and monitoring clients of various health services and will have particular implication as a tool for health service planning exercises, the community support program and the evaluation of health care services.

Appendix A

SF-36 Questionnaire

1. In general, would you say that your health is excellent, very good, good, fair or poor ?

1 excellent
2 very good
3 good
4 fair
5 poor

2. Compared to one year ago, how would you rate your health in general now - much better, somewhat better, somewhat worse or much worse ?

1 much better now than a year ago
2 somewhat better now than a year ago
3 about the same as one year ago
4 somewhat worse now than a year ago
5 much worse now than one year ago

The Following Questions Are About Activities You Might Do During A Typical Day.

3. Does your health now limit you in these activities ? If so, how much - a lot, a little or not at all ?

(a) Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(b) Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or playing golf

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(c) Lifting or carrying groceries

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(d) Climbing several flights of stairs

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(e) Climbing one flight of stairs

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(f) Bending, kneeling, or stooping

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(g) Walking more than one kilometre

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(h) Walking half a kilometre

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(i) Walking 100 metres

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

(j) Bathing or dressing yourself

1 yes, limited a lot
2 yes, limited a little
3 no, not limited at all

4. During the past four weeks, have you had any of the following problems with your work or other regular daily activities, as a result of your physical health ?

(a) Cut down the amount of time you spent on work or other activities

1 yes
2 no

(b) Accomplished less than you would like

1 yes
2 no

(c) Were limited in the kind of work or other activities

1 yes
2 no

(d) Had difficulty performing the work or other activities (for example, it took extra effort)

1 yes
2 no

5. During the past four weeks, have you had any of the following problems with your work or other regular activities as a result of any emotional problems (such as feeling depressed or anxious) ?

(a) Cut down the amount of time you spent on work or other activities

☐

1 yes
2 no

(b) Accomplished less than you would like

☐

1 yes
2 no

(c) Didn't do work or other activities as carefully as usual

☐

1 yes
2 no

6. During the past four weeks, to what extent have your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups - not at all, slightly, moderately, quite a bit or extremely ?

☐

1 not at all
2 slightly
3 moderately
4 quite a bit
5 extremely

7. How much bodily pain have you had during the past four weeks - no bodily pain, very mild, mild, moderate, severe, or very severe ?

☐

1 no bodily pain
2 very mild
3 mild
4 moderate
5 severe
6 very severe

8. During the past four weeks, how much did pain interfere with your normal work (including work outside the home or housework) - not at all, a little bit, moderately, quite a bit or extremely ?

☐

1 not at all
2 a little bit
3 moderately
4 quite a bit
5 extremely

9 These next questions are about how you feel and how things have been with you during the past four weeks. For each question, please give the one response that comes closet to the way you have been feeling.

How much of the time during the past four weeks:

(a) Did you feel full of life - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(b) Have you been a very nervous person - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(c) Have you felt so down in the dumps that nothing could cheer you up - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(d) Have you felt calm and peaceful - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(e) Did you have a lot of energy - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(f) Have you felt down - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(g) Did you feel worn out - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(h) Have you been a happy person - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

(i) Did you feel tired - all of the time, most of the time, a good bit of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

10 During the past four weeks, how much of the time have your physical or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.) - all of the time, most of the time, some of the time, a little of the time or none of the time ?

☐

1 all of the time
2 most of the time
3 a good bit of the time
4 some of the time
5 a little of the time
6 none of the time

11 How true or false is each of the following statements for you ?

(a) I seem to get sick a little easier than other people

1 definitely true
2 mostly true
3 don't know
4 mostly false
5 definitely false

(b) I am as healthy as anybody I know

1 definitely true
2 mostly true
3 don't know
4 mostly false
5 definitely false

(c) I expect my health to get worse

1 definitely true
2 mostly true
3 don't know
4 mostly false
5 definitely false

(d) My health is excellent

1 definitely true
2 mostly true
3 don't know
4 mostly false
5 definitely false

Appendix B

Stepwise regression models of the eight SF-36 scales showing multivariate associations (Beta coefficients with standard errors in brackets) with socio-demographic variables, recent hospitalisation status, and disability status.

VARIABLES	PF	RP	BP	GH	VT	SF	RE	MH
Age	-0.32(0.03) ****	-	-	-	0.10(.04)*	0.11(0.46)*	0.21(0.06)****	-
Gender (female)	-3.68(0.93) ****	-	-	3.47(1.36)*	-9.75(1.22)****	-5.79(1.34)****	-7.02(1.86)***	-5.92(1.23)****
Hospitalisation Status:								
Hospitalised within last month	^	^	^	^	^	^	^	^
Not hospitalised within last month	16.53(2.50) ****	47.80(5.66)****	36.34(4.24)****	-	17.36(3.35)****	34.59(3.63)****	30.69(5.39)****	13.42(3.41)***
Disability Status:								
No disability	^	^	^	^	^	^		
Some (or unspecified) disability	-12.65(1.74)****	-17.92(3.81)****	- 12.60(2.86)****	- 14.35(2.47)****	-8.15(2.26)***	-7.46(2.50)**	-13.74(3.45)***	-5.32(2.24)*
Moderate or extreme disability	-35.80(2.59)****	-44.43(5.60)****	- 23.43(4.18)****	- 23.27(3.81)****	-11.58(3.50)**	24.70(3.63)****	- 24.83(5.25)****	-12.80(3.28)***
Employment Status:								
full-time or (ft&pt)	-	-	-	-	-	-	-	-
part-time	-	-	-	-	-	-	-	-
unemployed/not in labour force	-	-	-	-	-	-	-	-
Educational Attainment								
at most some secondary	-	-	-	-	-	-	-	-
year 10 only	-	-	-	-	-	-	-	-
year 12 (and/or) trad	-	-	-	3.49(1.36)*				
degree/postgraduate/RN	-	-	-	-	-	-	-	
Household Composition:								
single w child	^	^	^	^	^	^	^	^
mar/de fact w child	4.36(0.97)****	-	-	4.62(1.37)***	-	-	-	-
mar/de fact w/o children	5.81(2.69)*	-	-4.36(1.99)*	-	-	-	-	-
single w/o child		-	-	-	-	-	-	-
other		-	-	-	-	-	-	-
Usual Area of Residence:								
Central Canberra		^	^	^	^	^	^	^
Woden Valley		-	-	-	-	-	-	-
Belconnen		-	-	-	-	-	-	-
Tuggeranong	-3.02(0.96)***	-	-	-	-	-	-	-
Weston		-	-	10.71(4.85)*	-	-	-	13.67(4.56)**
Year of Interview:								
1994		^	^	^	^	^	^	^
1995		-5.30(2.40)*	-5.66(1.80)*	-	-	-6.17(1.88)**	-	-
1996		-	-	-	-	-6.32(1.85)***	-	-
1997		-	-	-	-	- 15.27(1.91)****	-4.51(2.19)*	-7.76(1.50)****
Intercept	78.49(5.42)	-7.09(11.20)	10.77(8.37)	65.75(2.40)	44.71(7.15)	26.92(7.8)	31.87(11.44)	61.77(7.07)
R-squared	0.4	0.17	0.15	0.1	0.12	0.22	0.1	0.1

^ refers to reference groups * p<0.05 ** p<0.01 *** p<0.005**** P<0.0001 Source: 1994-1997 quality of life data (weighted)

Appendix C

Mean, standard deviation & ANOVA for sample size for the eight SF-36 scales by socio-demographic variables, recent hospitalisation status, year of interview and disability status. (Using weighted data set)

Variables	PF				RP				BP				GH				MH				RE				SF				VT			
	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig
Age	90.77	16.55	925	****	82.23	33.35	936	***	78.61	24.20	935	**	73.44	20.44	921	*	76.63	18.29	932	****	86.42	28.72	930	**	82.42	21.85	933		66.90	18.82	933	
18-44	94.03	11.28	608		84.62	31.09	614		80.38	22.46	613		74.57	19.78	601		76.64	17.28	612		84.36	30.52	615		82.45	21.48	611		66.06	18.33	611	
45-64	87.38	19.95	259		78.81	36.40	263		75.63	26.95	262		70.82	21.76	263		74.49	20.78	263		89.79	25.46	257		81.96	22.60	263		67.98	19.44	264	
65+	71.91	27.39	58		72.61	38.99	59		73.44	26.94	59		73.56	20.34	57		86.36	12.89	57		93.41	18.66	58		84.03	22.62	59		70.94	20.57	58	
Gender	90.64	16.52	949	***	82.16	33.54	959		78.64	24.17	959		73.45	20.40	944	***	76.62	18.15	956	****	86.61	28.51	954	***	82.48	21.88	957	****	66.78	18.98	957	****
male	92.29	13.95	435		83.45	33.19	442		78.19	23.63	440		71.04	20.34	437		79.70	16.65	440		90.28	23.38	434		85.84	18.46	442		70.95	16.57	439	
female	89.25	18.31	514		81.07	33.83	518		79.02	24.63	519		75.52	20.23	508		74.00	18.95	516		83.54	31.88	519		79.61	24.08	515		63.25	20.16	518	
Hospitalisation Status:	90.54	16.66	954	****	82.16	33.50	965	****	78.60	24.18	964		73.41	20.38	950		76.69	18.13	961	***	86.67	28.46	959	****	82.55	21.86	963	****	66.83	18.96	962	****
Hospitalised within last month	68.76	29.34	34		31.28	35.55	34		44.41	35.68	34		67.96	26.78	33		64.37	25.00	32		58.35	45.64	30		48.00	33.19	34		51.11	29.81	34	
Not hospitalised within last month	91.34	15.45	920		84.02	31.94	931		79.85	22.72	930		73.60	20.10	917		77.12	17.71	929		87.60	27.27	929		83.82	20.27	929		67.40	18.21	928	
Disability Status:	90.54	16.66	954	****	82.16	33.50	965	****	78.60	24.18	964	****	73.41	20.38	950	****	76.69	18.13	961	****	86.67	28.46	959	****	82.55	21.86	963	****	66.83	18.96	962	****
No disability	93.05	12.17	847		85.84	30.01	851		80.69	21.78	851		75.21	19.01	841		77.58	16.98	848		88.46	26.19	851		83.88	19.76	851		67.97	17.65	852	
Some (or unspecified) disability	78.51	24.05	69		68.70	39.66	73		67.74	31.10	72		60.96	23.54	73		72.67	20.91	72		75.34	38.43	70		78.88	25.04	71		60.38	21.41	72	
Moderate or extreme diability	56.68	32.89	38		29.40	40.28	41		54.32	36.86	41		56.59	27.33	37		65.32	28.91	41		67.81	41.93	38		61.33	39.66	41		53.43	31.44	38	
Employment Status:	90.51	16.69	950	****	82.14	33.56	961		78.51	24.19	960		73.37	20.41	946		76.65	18.16	957		86.62	28.51	955		82.51	21.89	958		66.73	18.93	958	*
full-time or (ft&pt)	91.89	15.65	448		84.46	31.69	456		79.52	23.51	455		73.39	19.93	452		79.05	14.90	454		88.37	26.81	450		83.86	19.67	454		68.50	16.49	454	
part-time	93.70	9.46	228		81.69	33.46	230		77.94	23.19	230		74.75	20.87	221		75.34	19.53	229		85.31	27.82	229		81.92	22.46	229		65.28	21.46	229	
unemployed/not in la	85.61	21.36	274		78.65	36.35	274		77.31	26.08	274		72.21	20.81	273		73.79	21.17	275		84.84	31.54	276		80.77	24.65	275		65.02	20.24	275	
Educational Attainment	90.52	16.67	953	****	82.13	33.52	963	*	78.56	24.18	963	***	73.38	20.38	948	*	76.69	18.15	960		86.77	28.40	958		82.60	21.85	961		66.81	18.97	961	
at most some seconda	78.69	29.07	53		72.62	39.55	53		66.31	28.80	53		67.00	24.79	52		80.41	20.35	53		81.53	34.85	53		78.01	28.33	53		64.43	23.67	53	
year 10 only	89.56	18.25	118		80.83	36.67	119		78.29	26.58	119		70.80	21.40	116		74.59	21.13	119		88.22	26.86	119		80.86	22.83	119		67.87	18.21	116	
year12 (and/or) trad	91.25	13.84	511		81.13	33.89	518		78.71	23.56	518		74.64	20.63	509		77.04	18.49	516		86.60	27.91	514		82.16	22.23	518		67.74	19.21	520	
degree/postgrad/RN	91.87	16.74	271		86.45	29.47	273		80.77	22.67	273		73.33	18.23	271		76.22	15.38	271		87.47	28.63	272		85.11	18.90	270		65.06	17.70	272	

Appendix C (Continue)

Mean, standard deviation & ANOVA for sample size for the eight SF-36 scales by socio-demographic variables, recent hospitalisation status, and disability status. (Using weighted dataset)

Variables	PF				RP				BP				GH				MH				RE				SF				VT			
	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig	Mean	SD	n	sig
Household Composition:	90.54	16.66	954		82.16	33.50	965		78.60	24.18	964		73.41	20.38	950		76.69	18.13	961	****	86.68	28.46	959	***	82.55	21.86	963	**	66.83	18.95	962	***
single w child	88.35	18.08	68		78.98	34.97	76		76.30	26.92	76		71.69	22.95	76		65.06	23.05	74		75.29	40.46	76		73.75	25.11	72		59.28	20.67	76	
mar/de fact w child	91.16	16.29	445		83.40	32.87	443		79.79	24.44	443		75.38	19.66	430		76.53	17.39	443		88.11	28.25	442		83.63	22.27	443		66.64	18.22	440	
mar/de fact w/o chil	88.47	16.32	177		81.62	34.19	179		75.78	24.10	179		72.25	19.54	176		79.69	18.19	179		86.71	26.30	175		83.06	22.35	179		67.44	20.15	179	
single w/o child	91.68	16.98	233		82.17	32.92	235		79.57	22.85	237		71.94	21.51	237		77.93	17.26	235		88.39	23.15	235		83.23	18.96	237		69.26	18.63	236	
other	89.61	17.62	32		75.47	39.39	32		75.71	23.24	30		68.20	17.59	32		79.82	9.27	30		80.99	37.79	32		79.54	22.32	32		65.79	16.17	32	
Usual Area of Residence:	90.58	16.91	**889**		82.45	33.38	**899**		78.23	24.47	**899**		73.34	20.45	**886**	*	76.69	18.54	**896**		86.82	28.24	**894**		82.50	21.96	**897**		66.83	19.19	**897**	
Central Canberra	87.79	21.10	22		79.81	33.95	22		76.59	25.13	22		71.22	23.15	22		74.86	18.73	22		82.52	32.84	22		80.93	24.84	22		65.05	20.86	22	
Woden Valley	90.52	15.85	169		83.87	32.20	168		78.93	22.78	170		73.47	20.52	169		76.67	19.42	168		89.68	24.35	170		85.52	18.57	169		65.98	19.62	170	
Belconnen	92.61	13.73	125		81.97	30.44	125		76.45	24.18	125		69.84	23.84	123		76.25	17.78	125		87.96	28.40	125		81.40	21.79	125		65.15	17.44	125	
Tuggeranong	90.07	17.88	552		81.63	34.82	563		78.24	25.28	560		73.71	19.62	550		76.56	18.68	559		85.63	29.38	555		82.02	23.09	559		67.12	19.54	558	
Weston	95.21	8.51	22		98.25	6.53	22		84.34	16.48	22		85.14	11.36	22		84.70	8.62	22		93.01	18.71	22		79.02	10.59	22		77.70	10.29	22	
Year of Interview:	90.54	16.66	954		82.16	33.50	965		78.60	24.18	964		73.41	20.38	950		76.69	18.13	961	****	86.67	28.46	959	*	82.55	21.86	963	****	66.83	18.96	962	**
1994	89.81	17.94	231		84.52	32.53	236		79.96	25.38	238		76.66	20.65	228		79.74	14.03	236		90.92	24.47	229		88.13	19.67	236		69.56	16.25	235	
1995	91.72	17.50	215		79.53	35.86	217		74.98	25.12	215		72.34	18.83	215		77.49	19.19	215		86.30	29.36	217		84.01	23.69	217		68.64	17.81	217	
1996	89.71	15.58	278		81.42	32.96	276		78.97	21.96	278		72.52	19.78	271		77.96	16.31	278		87.20	26.42	278		84.05	23.01	277		64.62	19.72	275	
1997	91.16	15.76	230		83.10	32.83	236		80.09	24.39	234		72.25	21.87	236		71.33	21.57	232		82.29	32.73	236		73.75	17.97	233		65.02	21.05	236	

Source: 1994-1997 quality of life data

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Health Series Publications

The Epidemiology Unit of the Department of Health and Community Care has developed an on-going health series of publications to inform health professionals, policy developers and the community on health status in the Territory. Information contained therein will assist in the development of appropriate policy and service delivery models, the evaluation of programs, and an understanding of how the ACT compares with Australia as a whole with regard health status.

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Carol Gilbert, Ursula White, October 1995

Number 2: *The Epidemiology of Injury in the ACT*
Carol Gilbert, Chris Gordon, February 1996

Number 3: *Cancer in the Australian Capital Territory 1983-1992*
Norma Briscoe, April 1996

Number 4: *The Epidemiology of Asthma in the ACT*
Carol Gilbert, April 1996

Number 5: *The Epidemiology of Diabetes Mellitus in the ACT*
Carol Gilbert, Chris Gordon, July 1996

Number 6: *Developing a Strategic Plan for Cancer Services in the ACT*
Kate Burns, June 1996

Number 7: *The First Year of The Care Continuum and Health Outcomes Project*
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Number 17 *Health Related Quality of Life in the ACT*
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