Report of South Eastern Population Health Survey 2001

A Survey of Self-Perceived Health and Quality of Life of People Living in the South Eastern Region of Ireland

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Design & Print by Modern Printers: 056 7721739

This report has been produced by the Public Health Department-South East,
Population Health Directorate, Health Service Executive (HSE)

Report available at www.hselibrary.ie

Publication Date: December 2006

ISBN: 1-874218-53-6
Reference No: 06-06-0026

Authors

Dr. Patricia Mc Donald	Specialist Registrar in Public Health Medicine Public Health Department - South East[a]
Dr. Orlaith O'Reilly	Director of Public Health Public Health Department - South East
Dr. Julie Heslin	Specialist in Public Health Medicine Public Health Department - South East
Ms. Rhoda Sohun	Research Officer, Public Health Department - South East

Acknowledgements

The authors would like to thank Professor Ivan Perry, University College Cork for statistical advice, Ms. Mairead Fennessy, Ms. Gemma Leane and the staff of the Public Health Department South East for their help and support with the study. We would also like to thank the people of the South East for taking the time to complete and return the questionnaire.

This report has been produced by the Public Health Department-South East,
Population Health Directorate, Health Service Executive (HSE)

Publication Date: December 2006

[a] The Public Health Department - South East was formally the Public Health Department, South Eastern Health Board, which incorporated the counties; Carlow, Kilkenny, South Tipperary, Waterford and Wexford.

Report of South Eastern Population Health Survey 2001

A Survey of Self-Perceived Health and Quality of Life of People Living in the South Eastern Region of Ireland

Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Foreword

Improving the health of the population is the overall aim of the health services. However, measuring this at population level is a difficult task. A meaningful baseline measure, that uses validated scales with a large enough sample to allow application to the whole population, is needed.

This large survey of Health and Quality of Life of the people resident in the South East of Ireland is the first such large scale survey carried out in Ireland. While representing the population of the South East, the results could also be seen to be representative of the population of Ireland as a whole.

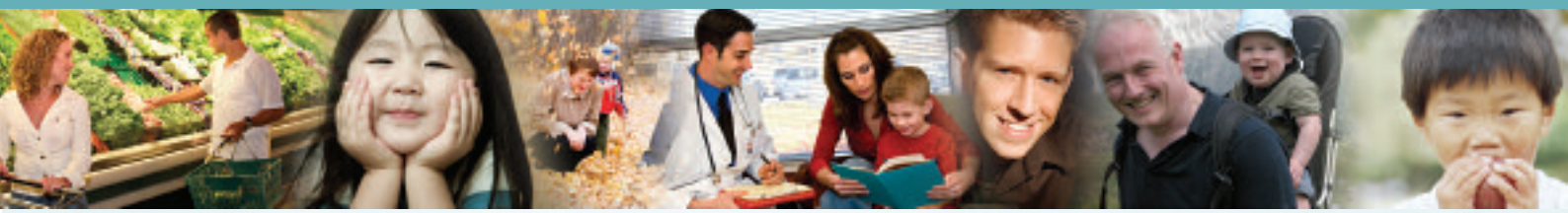
The survey was carried out just after the millennium, after approximately 30 years of Health Board delivered services and prior to the introduction of the Health Service Reforms. It provides a valuable source of baseline and comparative data for the future measurement of health improvement.

Dr. Orlaith O'Reilly
Director of Public Health
Public Health Department South East

Contents

List of Tables

List of Figures



Synopsis

The South Eastern Population Health Survey was conducted in 2001. A random sample of all those over 18 years of age on the Electoral Register from the South East were invited to complete a postal questionnaire. The questionnaire included two standard instruments, the Short Form 36 Health Survey Questionnaire (SF-36) and the EuroQol (EQ-5D) to record general health status. In addition to two questions on long lasting disability from the 2002 Census, the General Health Questionnaire (GHQ-12), which measures psychological well-being, was included.

Over 4,000 persons completed the questionnaire, giving a response rate of 60%. In general the demographics of the respondents were similar to that of the general population in the South East. There were some differences, which should be taken into account when interpreting the results of the survey. Among the respondents, women were slightly over represented, younger adults were underrepresented and social classes 4 and 5 were over represented.

The results of the study provide normative Irish data, by age group and gender, for the SF-36, the EQ-5D and the GHQ-12. For international comparisons, the results can be used to calculate age and sex standardised Irish norms. Standardised normative Irish data are presented for the SF-36.

A decrease in health status with increasing age and with falling socio-economic status (as indicated by GMS status, social class, education level and employment status) was detected with the SF-36 and the EQ-5D. No significant differences in general health status were found in relation to gender and county of residence.

Significant differences in psychological well-being were found between population sub-groups. Women, those of lower social class, those entitled to free medical care, the unemployed and those with a low level of education, all had poorer mental health on the GHQ-12. No significant differences in psychological well-being were found in relation to age and county of residence.

The percentage of respondents reporting a long lasting disability increased significantly with increasing age, falling social class, lower educational level, unemployment and eligibility for free medical care.

A comparison of the SF-36 scores with those found in Northern Ireland and England showed that self-assessed health in Ireland is more similar to that of England than to self-assessed health in Northern Ireland. Northern Ireland has poorer self-assessed health scores and in particular has poorer mental health scores than Irish or English persons. In the older age groups, although Ireland is better than Northern Ireland, Irish persons had poorer physical functioning than the older English person.

Inequalities in health have been persistent over the years and although the overall health of the population has improved consistently, some population sub-groups continue to have poor health. This survey has identified those of older age and those of lower socio-economic status as having poorer health status and quality of life than the rest of the population. To move the mean health status of the population to a higher level, services and interventions (including health care) need to be targeted to those of older age and those of lower socio-economic status.

Evaluating the effectiveness of health services requires evidence of changes in health status. The results of this large population health survey can be used as a baseline against which future activity to raise health status and improve quality of life can be evaluated.

Chapter 1

Survey Methodology and Population Demography

1.1 South Eastern Region of Ireland

The South Eastern Population Health Survey was carried out in 2001 in the South Eastern region of Ireland. The area had a population of 415,941 in 2001 and is divided into five counties (Carlow, Kilkenny, South Tipperary, Waterford and Wexford).

The South Eastern region has approximately 11% of the total population of Ireland. Its demographics are similar to that of the country as a whole (Table 1.1)[1].

Table 1.1: Percentage of population by sex and age group in the South East and Ireland (2001)

		Age Groups				
		0-19	20-39	40-59	60+	All Ages
Male	South East	32%	29%	25%	15%	50%
	Ireland	31%	31%	24%	14%	50%
Female	South East	30%	28%	24%	17%	50%
	Ireland	29%	31%	24%	17%	50%
Total	South East	31%	29%	24%	16%	
	Ireland	30%	31%	24%	15%	

In 2001, the South Eastern Health Board[b] (SEHB) was responsible for the delivery of health services to this region. The Public Health Department of the SEHB was responsible for conducting the survey.

1.2 Aims and Objectives

The aims and objectives of the study were:

1. To gather health status data on a representative sample of adults living in the South Eastern region of Ireland.
2. To identify population sub-groups or areas within the South East who had a greater need for health services.
3. To compare the health status of the South East to other regions, the country as a whole and to that of other countries.
4. To establish a baseline of health status data against which further interventions, including health services, could be evaluated.

[b] As part of the health services reform, health services for the area previously covered by the South Eastern Health Board (SEHB) are now provided by the Health Service Executive (HSE) – South (i.e. counties: Carlow, Kilkenny, South Tipperary, Waterford and Wexford).

1.3 Publicity

Prior to the launch date of the survey, the survey was advertised in a number of South Eastern regional newspapers and on regional radio stations.

Representatives from the Public Health Department were interviewed on local radio and posters advertising the survey were distributed to G.P. surgeries, pharmacies, citizen information bureaus, churches, libraries and colleges (Figure 1.1).

Based on initial feedback from respondents to the first mailing of the survey, publicity was tailored to improve the response rate. All those who returned their questionnaire were entered into a prize draw.

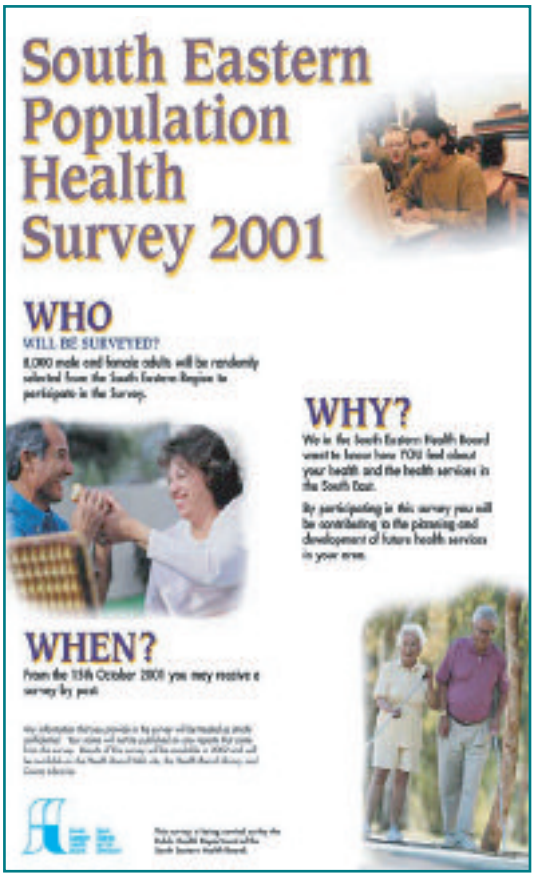


Figure 1.1: South Eastern Population Health Survey poster

1.4 Survey Questionnaire

In addition to demographic details, the questionnaire (Appendix 1) included three standard instruments to record the health related quality of life of respondents and two questions relating to long lasting disability.

The Short Form 36 (SF-36)

The Short Form 36 health survey questionnaire (SF-36) defines health using the following eight dimensions: physical function, role limitation (physical), bodily pain, general health, energy and vitality, social function, role limitation (emotional) and mental health [2]. Each component of the SF-36 has a scale, which ranges from 0-100 with higher scores indicating better function in that dimension.

EuroQol (EQ-5D)

The EQ-5D questionnaire defines health in terms of mobility, self-care, pain or discomfort, anxiety or depression and ability to perform usual activities (e.g. work, study, housework, family or leisure). Respondents had to indicate whether they experienced either no problem, a moderate problem, or an extreme problem on each of the 5 dimensions. The EQ-5D questionnaire is a generic measure of health status developed by the EuroQol Group, an international research network established in 1987 [3].

The General Health Questionnaire (GHQ-12)

The General Health Questionnaire (GHQ-12) is an instrument used to measure psychological well-being in a population[4]. The instrument includes 12 questions and each can be scored with a zero (individual is doing better or same as usual on the mental health components) or a 1.0 (individual is doing less well or much less well on the mental health components). Research has shown that a score of 3 or more may be indicative of poor mental health (probable case of mental ill health)[4, 5, 6, 7].

Disability

In addition to the three instruments described above, respondents were asked two questions relating to long lasting disability. The same questions are used in the national five yearly Census. Respondents were asked if they have a long lasting sensory condition and/or physical condition and if certain activities and abilities in their lives were reduced due to a physical, mental or emotional condition lasting 6 months or more.

The final section of the questionnaire asked respondents to list the best things about the health services and the main issues/concerns with the health services in the South East[c].

c Results for this section are presented in "The Health of the South East – Re-Learning the Lessons, 1999-2002 Report of the Director of Public Health, Department of Public Health, South Eastern Health Board, 2002."

1.5 Survey Sample

All those aged 18 years and older were eligible to be included in the survey. The sample size was calculated to ensure sufficient numbers in sub-groups to allow detailed analysis based on sex, age and social class. For a continuous variable such as a SF-36 score, with a standard deviation of 20 units, 300 persons in each sub-group will allow the detection of a difference of 5 units between two groups at the 5% significance level (0.9 power to detect the difference)[8]. To detect a difference of 10 units at the 5% significance level, 80 persons in each sub-group are needed.

The sample was randomly selected from the Electoral Register. It was stratified to include proportional representation of males and females in the South Eastern region. Precision Marketing Information (PMI) Ltd. performed the sampling and supplied the survey list.

Prior to the main survey the questionnaire was piloted on 250 persons. The main survey was carried out between October and December 2001. A questionnaire (Appendix 1) was posted out to each name on the list. A total of 7,850 questionnaires were posted. A Freepost return envelope was included and a contact number for any assistance needed. Three weeks after the initial mailing all non-responders were sent a second questionnaire. Three weeks after the second mail shot all non-responders were sent a reminder letter to return the completed questionnaire as soon as possible.

All those who responded to the main survey were entered into a prize draw. Responder confidentiality was guaranteed by not putting the person's name anywhere on the questionnaire.

A number of questionnaires (373) were returned unanswered. A small number of persons (28/7,850 questionnaires posted) informed the research team that they were unable to complete the questionnaire because of a disability problem and 20 additional persons indicated that the questions were too personal. These 48 responders were however included in calculating the response rate. Table 1.2 gives the reasons for the non-response as supplied on the returned unanswered questionnaires.

Table 1.2: Reasons for non-response on returned unanswered questionnaires

	Number	Percent
No longer living at that address	172	46.1%
Deceased	91	24.4%
Wrong address	62	16.6%
Disability problem	28	7.5%
Questions too personal	20	5.4%
Total	373	100%

As 28 persons could not complete the questionnaire because of a disability this finding suggests that any quality of life questionnaire will miss a small number of people who may have a very poor quality of life.

1.6 Response Rate

The overall response rate was 60% (4,506/7,525)[d], with a greater proportion of females than males responding. The response rate for females was 68%. Table 1.3 shows the total response rate and the response rate by gender.

Table 1.3: Overall survey response rate

	Survey sample	Number responding	Response rate
Male	3808	1984	52%
Female	3717	2522	68%
Total	7525	4506	60%

Data entry and analysis was carried out in the Public Health Department using the statistical package SPSS[e].

1.7 Demographics of Survey Responders[f]

Two percent of those over 18 years of age in the South Eastern region were invited to take part in the survey and 1.2% responded, with a response rate of 60%.

Sex distribution

Fifty six percent (2,522/4,506) of the responders were female and 44% (1,984/4,506) were male. This compares with 50% female and 50% male in the total population of the South East in 2001 (Table 1.1).

A higher response rate among females meant that females were over represented in the responders.

Age distribution

Only those who were 18 years of age and older were invited to take part in the survey. All responders were over 18 years of age and large numbers responded in all age groups (Table 1.4).

Compared to the general population of the South East, 18 to 39 year olds were under represented among the responders (Table 1.4). It is likely that a number of people in this age group were living away from home, while still using their home address as their place of residence.

Table 1.4: Age distribution of responders

	Age Group			
	18-39	40–59	≥ 60	Adult Total
Survey responders	37% 1652	37% 1617	26% 1163	100% 4432*
South East population [1]	44%	34%	22%	100%

* Age missing for 74 respondents

[d] 7525 = original survey sample (7850) minus those whom we know have deceased, have a wrong address or no longer live at that address.

[e] Statistical Package for Social Sciences.

[f] Data presented in the tables is that available from returned questionnaires. In some tables there may be missing data.

County Distribution

Table 1.5 shows the distribution of responders by county and compares the distribution to that of the South East. Approximately one percent of the population in each county responded to the survey.

Compared to the general population of the South East, Waterford is under represented and Kilkenny and South Tipperary are over represented among the responders.

Table 1.5: County of residence of responders

	Wexford	Kilkenny	South Tipperary	Waterford	Carlow
Survey responders ≥ 18 years of age	27.7% 1249	23% 1035	20% 905	19% 849	10.4% 468
South East population [1] ≥ 18 years of age	27.4% 99012	19% 68384	19% 67789	24% 87172	10.8% 39072

Type of Medical Cover

In Ireland persons on low incomes are granted a General Medical Services (GMS) card for full eligibility for all health services. The survey was conducted prior to the introduction of medical cards for all persons over 70 years of age.

One third of the responders had a GMS card. This compares with 34% of the South East population (2001) and 31% of the national population (2001)[9].

Social Class

Each respondent was assigned to a social class based on his/her present occupation (or past occupation if currently not working). The classification system used is the same as that used by the Central Statistics Office. The social class groupings were defined on the basis of occupation:

1 Professional workers
2 Managerial and technical
3 Non-manual
4 Skilled manual
5 Semi-skilled
6 Unskilled
7 All others gainfully occupied and unknown

Among the responders, social classes 5 and 6 were over represented (Table 1.6).

Table 1.6: Social class of responders

	Social class 1 & 2	Social class 3 & 4	Social class 5 & 6	Social class 7	Total
Survey responders	32.2% 1450	30.5% 1376	20.4% 920	16.9% 760	100% 4506
South East population [10]	34.6%	34.4%	14.8%	16.2%	100%

Level of Education

The level of education among the respondents is similar to that of the South East as a whole (Table 1.7).

Table 1.7: Level of education of responders

	Survey responders	South East (2002) [10]	Ireland (2002) [10]
No schooling or primary only	23.8% (1071)	23%	21.1%
Some secondary schooling	25.5% (1148)	25.6%	21.6%
Completed secondary schooling	31.6% (1425)	28.3%	27.6%
Completed third level	17.6% (792)	19%	24.7%
Not stated	1.5% (70)	4.2%	5.1%
Total	100% (4506)	100%	100%

1.8 Conclusions

The demographics of the responders were similar to that of the general population in the South East. However, there were some differences which should be taken into account when interpreting the results of the survey. Among the survey responders (and compared to the population of the South East in 2001):

- Women were over represented
- 18 to 39 year olds were under represented
- Waterford county was under represented and Kilkenny county was over represented
- Social classes 5 and 6 were over represented.

Chapter 2

SF-36 and Health Status

2.1 The Short Form 36 (SF-36)

The Short Form 36 health survey questionnaire (SF-36) provides an 8-scale profile of a person's self-rated health and well-being. It consists of one question asking respondents about changes in health over the last year and thirty-five questions that measure eight dimensions of health (Figure 2.1). Scores for each of the eight dimensions of health range from 0 (for worst possible state of health) to 100 (for the best possible state of health).

A judgement of 'healthiness' or 'unhealthiness' on the basis of the scores on a health scale, such as the SF-36, requires a comparison with some norm. Thus one can say that the scores from the sample or group under study are above or below those for the national population, or some other groups/ comparison population. Population norms provide a standard with which scores from other study populations can be compared.

In this chapter a series of tables are presented, detailing the SF-36 scores for the South East as a whole and for sub-groups within the South East (sex, age group, social class, employment status, educational status). The results are compared with previous population studies in the South East and in Ireland. In addition comparisons are made with population studies and normative data from other countries.

2.2 South Eastern Population Health Survey SF-36 Scores

Tables 2.1 to 2.11 present the SF-36 scores for the South East by sex, age group, county of residence, social class, GMS status, education level and employment status. The tables show a number of trends between sub-groups within the South East.

- Although women tended to have lower mean scores than men, the difference between men and women was never more than five points across all of the dimensions of health in the SF-36 (Tables 2.1, 2.4 and 2.5).

- Seven out of the eight dimensions declined with age (Tables 2.2 and 2.3). The Mental Health (MH) score showed very little change with age. The largest decline was seen in the Physical Functioning (PF) and Role Physical (RP) scores, with a drop of over 40 points in both dimensions between the 18 to 24 year age group and those 75 years of age and older (Table 2.3).

- Table 2.6 shows the variation in SF-36 health scores by county of residence. There was no real variation in the scores by county.

- Table 2.7 shows a decrease in SF-36 scores from social classes 1 and 2 to social class 7. Social class 7 is a residual category where no precise allocation is possible. It includes persons for whom an occupation was not known (missing values). The largest decline in score, a difference greater than or equal to 10, was seen in Role Physical (RP), Physical Functioning (PF) and Role Emotional (RE).

- In Ireland, persons on low incomes are granted a General Medical Services (GMS) card for full eligibility for all health services. One third of the survey population said they had a GMS card. Table 2.8 presents the SF-36 scores by GMS status. Those with a GMS card had markedly lower SF-36 scores than those who did not have a GMS card.

  An exploration of GMS status by age shows that those with a GMS card are older (57% over 59 years) compared to those without a card (11% over 59 years of age). As it is expected that older people have poorer health than younger persons, the relationship between GMS status and health needs to be explored controlling for the effect of age. Table 2.9 looks at the SF-36 health scores by GMS status within each age group. The decrease in health status associated with holding a medical card persists within each age group. This suggests that a person's health is related to their GMS status and that this effect is independent of the effect of age.

- Table 2.10 shows the SF-36 scores by the education level achieved at the time of the survey (all respondents were over 18 years of age). Overall there is a positive relationship between increasing level of education and SF-36 health scores. The differences are particularly marked for the physical dimensions of health: Physical Functioning (PF), Role Physical (RP), Bodily Pain (BP) and General Health (GH).

- Table 2.11 shows the SF-36 scores by employment status at the time of the survey. Unemployed persons had the lowest scores on all eight of the SF-36 health dimensions. The largest difference was seen for Role Physical (RP) where the difference between unemployed persons and employed persons was 45 units.

2.3 Conclusions

Self-assessed health was recorded using the SF-36 questionnaire. The results show a decrease in health status with increasing age and with falling socio-economic status (as indicated by GMS status, social class, education level achieved and employment status). There was no real variation in the health status scores by sex or by county.

Figure 2.1: SF-36 eight dimensions of health

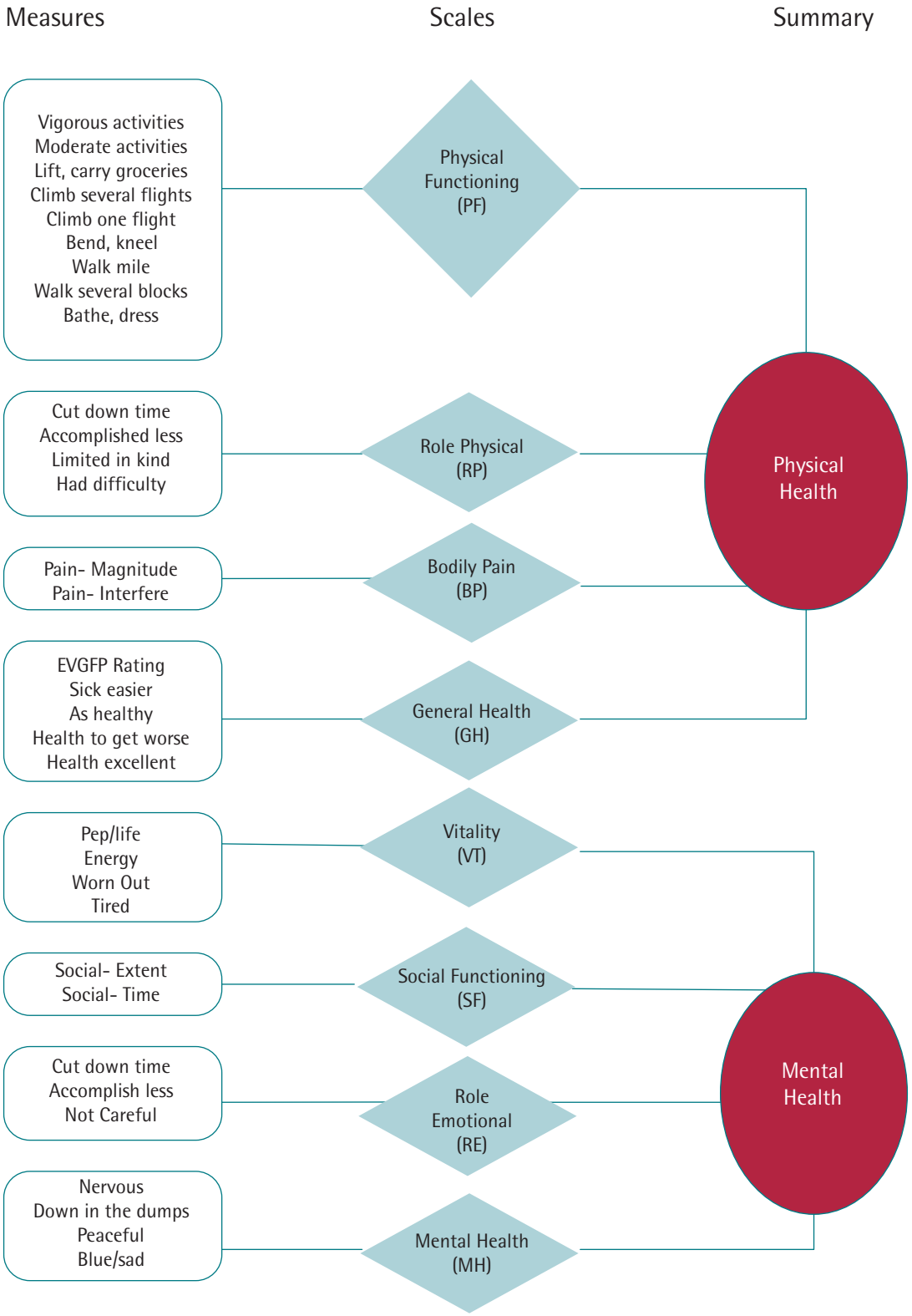


Table 2.1: SF-36 mean scores for the 8 dimensions of health by sex

		PF	RP	BP	GH	VT	SF	RE	MH
Male	Mean	**84.2**	**80.4**	**78.4**	**72.4**	**66.8**	**85.8**	**86.5**	**80.7**
	SD	23.9	35.2	25.4	21.7	20.7	22.8	29.7	17
	Number	1619	1755	1909	1789	1840	1904	1746	1835
Female	Mean	**81.5**	**79.2**	**75.7**	**73.4**	**62.2**	**82.6**	**84.2**	**77.8**
	SD	24.9	36	26.1	21.6	21	24.1	31.9	17
	Number	2043	2245	2441	2218	2306	2426	2233	2324
Total	Mean	**82.7**	**79.7**	**76.9**	**73**	**64.3**	**84**	**85.2**	**79.1**
	SD	24.5	35.6	25.8	21.7	20.9	23.6	31	17
	Number	3662	4000	4350	4007	4146	4330	3979	4159

PF: Physical Functioning; RP: Role Physical; BP: Bodily Pain; GH: General Health;
VT: Vitality; SF: Social Functioning; RE: Role Emotional; MH: Mental Health

Table 2.2: SF-36 mean scores for the 8 dimensions of health by approx 20 year age groups

		PF	RP	BP	GH	VT	SF	RE	MH
18-39	Mean	**90.7**	**88.7**	**82.3**	**78.1**	**65.6**	**86.1**	**88.5**	**78.2**
	SD	18.1	26.9	22.2	18.9	19.6	20.7	26.6	16.4
	Number	1505	1579	1613	1570	1592	1612	1566	1598
40-59	Mean	**84.7**	**82.1**	**76.8**	**73**	**65.2**	**84.8**	**86.3**	**79.4**
	SD	21.2	33.8	25.6	21.5	21.1	23.2	30.4	17.1
	Number	1371	1474	1582	1465	1520	1579	1465	1521
≥ 60	Mean	**62.9**	**59.9**	**68.8**	**64.2**	**60.7**	**79.5**	**77.8**	**80**
	SD	30	43.6	29	23.6	22.5	27.3	37.2	17.8
	Number	735	892	1092	918	978	1074	893	981
Age missing	Mean	**77.3**	**79.5**	**79.7**	**74.9**	**63.6**	**84.4**	**84.8**	**79.7**
	SD	26.3	34.7	24.6	23	21.4	23.8	32.6	16.8
	Number	51	55	63	54	56	65	55	59

Table 2.3: SF-36 mean scores for the 8 dimensions of health by 10 year age groups

		PF	RP	BP	GH	VT	SF	RE	MH
18-24	**Mean**	**91.2**	**90.3**	**83.7**	**78.2**	**67**	**86.5**	**87.9**	**78.3**
	SD	17.9	25	21.1	19.3	19.8	20.3	26.9	17
	Number	420	440	446	435	442	443	435	445
25-34	**Mean**	**90.9**	**88.6**	**82.6**	**78.7**	**65.7**	**86.2**	**89.5**	**78.9**
	SD	18.7	27	22.3	18.6	19.6	20.7	25.1	15.7
	Number	702	737	750	731	739	754	730	739
35-44	**Mean**	**88.7**	**87.6**	**79.5**	**77.1**	**65.1**	**86**	**87.7**	**78.3**
	SD	18.3	28.2	23.1	18.7	19.4	21	28.2	16.7
	Number	785	828	860	818	839	859	814	850
45-54	**Mean**	**84.1**	**81.3**	**76.8**	**71.9**	**64.8**	**85**	**86.2**	**79.3**
	SD	21.5	34.6	25.9	21.7	21.6	23.5	30.6	17.5
	Number	690	749	805	746	766	802	749	761
55-64	**Mean**	**79.2**	**72.5**	**72.9**	**69.1**	**63.7**	**83.1**	**83.2**	**79.6**
	SD	2.7	39.1	27.4	22.7	22	24.5	33.2	18
	Number	480	534	594	529	570	593	539	565
65-74	**Mean**	**65.1**	**63.2**	**70.6**	**64.6**	**62.6**	**82.6**	**78.8**	**80.4**
	SD	28.3	42.8	28.8	23.3	21.5	25.6	35.9	17
	Number	321	397	485	406	433	476	395	430
≥ 75	**Mean**	**46.8**	**47.8**	**64.5**	**60.1**	**56.4**	**72.3**	**71.6**	**79.1**
	SD	31.7	45.6	30.2	24.8	23.4	30.8	41.6	18
	Number	213	260	347	288	301	338	262	310
Age	**Mean**	**77.6**	**79.5**	**79.7**	**74.9**	**63.6**	**84.4**	**84.8**	**79.7**
missing	**SD**	26.3	34.7	24.6	23	21.4	23.8	32.6	16.8
	Number	51	55	63	54	56	65	55	59
All ages	**Mean**	**82.7**	**79.7**	**76.9**	**73**	**64.3**	**84**	**85.2**	**79.1**
	SD	24.5	35.6	25.8	21.7	20.9	23.6	31	17
	Number	3662	4000	4350	4007	4146	4330	3979	4159

Table 2.4: SF-36 mean scores for the 8 dimensions of health for females by 10 year age groups

		PF	RP	BP	GH	VT	SF	RE	MH
18-24	**Mean**	**91.2**	**90.1**	**81.7**	**76.9**	**62.2**	**83.8**	**85.7**	**75**
	SD	16.6	25.7	21.5	19.6	20.4	20.3	27.7	17.3
	Number	230	234	234	230	233	232	230	233
25-34	**Mean**	**91.5**	**86.7**	**82.6**	**79.8**	**64.1**	**84.6**	**88.9**	**77.9**
	SD	17	29.3	21.5	18.3	19.6	21.6	26	15.4
	Number	392	411	413	403	407	415	405	408
35-44	**Mean**	**87.9**	**85.6**	**78.2**	**77.5**	**63**	**83.9**	**85.4**	**76.8**
	SD	19	30.5	24.3	19.4	19.9	22.1	30.4	17.1
	Number	479	502	527	496	514	526	498	518
45-54	**Mean**	**81.9**	**79.9**	**75**	**72.7**	**63.5**	**83.2**	**85.8**	**78.4**
	SD	22.1	35.6	26.4	21.3	20.9	24.1	31.2	17.1
	Number	362	403	435	397	406	434	404	407
55-64	**Mean**	**77.4**	**72.8**	**72.1**	**69**	**61.4**	**82.4**	**82**	**79**
	SD	23	38.6	27	22.8	22.3	24.7	34.6	17.8
	Number	245	282	318	274	301	316	287	298
65-74	**Mean**	**62.2**	**66.8**	**69.2**	**65.2**	**62.4**	**83.3**	**80.3**	**79.9**
	SD	28.1	42.2	28.8	22.7	21.3	25.1	35.6	16.4
	Number	180	226	278	222	239	273	222	243
≥ 75	**Mean**	**43.8**	**49**	**62.5**	**59.4**	**53.9**	**70.7**	**70.1**	**77.6**
	SD	31.4	44.8	30.5	25.1	24	31.7	42.5	18.2
	Number	124	154	198	163	173	191	154	182
Age	**Mean**	**76.5**	**84.1**	**81.1**	**79.2**	**63.2**	**82.4**	**86.9**	**78.2**
missing	**SD**	28.5	34.1	23.4	20.6	18.3	25.4	30	18.1
	Number	31	33	38	33	33	39	33	35
All ages	**Mean**	**81.5**	**79.2**	**75.7**	**73.4**	**62.2**	**82.6**	**84.2**	**77.8**
	SD	24.9	36	26.1	21.6	21	24.1	31.9	17
	Number	2043	2245	2441	2218	2306	2426	2233	2324

Table 2.5: SF-36 mean scores for the 8 dimensions of health for males by 10 year age groups

		PF	RP	BP	GH	VT	SF	RE	MH
18-24	**Mean**	**91.2**	**90.5**	**85.8**	**79.6**	**72.3**	**89.5**	**90.4**	**81.9**
	SD	19.3	24.3	20.4	19	17.8	19.9	25.8	15.9
	Number	190	206	212	205	209	211	205	212
25-34	**Mean**	**90.2**	**90.9**	**82.6**	**77.3**	**67.7**	**88.2**	**90.4**	**80.2**
	SD	20.6	23.7	23.3	19	19.5	19.5	23.9	16
	Number	310	326	337	328	332	339	325	331
35-44	**Mean**	**90.4**	**90.6**	**81.4**	**76.5**	**68.5**	**89.2**	**91.4**	**80.8**
	SD	17	24	21	17.7	18	18.6	24	15.7
	Number	306	326	333	322	325	333	316	332
45-54	**Mean**	**86.6**	**82.9**	**78.9**	**71**	**66.2**	**86.5**	**86.7**	**80.4**
	SD	20.5	33.4	25.2	22.2	22.3	22.6	29.8	18
	Number	328	346	370	349	360	368	345	354
55-64	**Mean**	**81.1**	**72.1**	**73.7**	**69.3**	**66.3**	**83.8**	**84.5**	**80.3**
	SD	22.3	39.8	27.8	22.6	21.4	24.3	31.5	18.3
	Number	235	252	276	255	269	277	252	267
65-74	**Mean**	**68.9**	**58.5**	**72.6**	**63.9**	**62.9**	**81.5**	**76.9**	**80.9**
	SD	28.1	43.4	28.6	24.1	21.9	26.3	36.4	17.8
	Number	141	171	207	184	194	203	173	187
≥ 75	**Mean**	**51.1**	**46**	**67.3**	**60.9**	**59.8**	**74.2**	**73.8**	**81.3**
	SD	31.8	46.9	29.6	24.4	22.1	29.5	40.5	17.5
	Number	89	106	149	125	128	147	108	128
Age	**Mean**	**78.5**	**72.7**	**77.7**	**68.1**	**64.1**	**87.5**	**81.8**	**82**
missing	**SD**	23.2	35.3	26.8	25.4	25.7	21.2	36.7	14.7
	Number	20	22	25	21	23	26	22	24
All ages	**Mean**	**84.2**	**80.4**	**78.4**	**72.4**	**66.8**	**85.8**	**86.5**	**80.7**
	SD	23.9	35.2	25.4	21.7	20.7	22.8	29.7	17
	Number	1619	1755	1909	1789	1840	1904	1746	1835

Table 2.6: SF-36 mean scores for the 8 dimensions of health by county of residence

		PF	RP	BP	GH	VT	SF	RE	MH
Carlow	**Mean**	**83.9**	**81.5**	**77.1**	**72.0**	**63.2**	**83.1**	**83.5**	**78.5**
	SD	22.8	34.0	25.9	21.7	20.8	22.9	32.2	17.4
	Number	375	416	446	409	419	447	410	427
Kilkenny	**Mean**	**82.8**	**81.1**	**78.2**	**73.3**	**65.5**	**85.4**	**88.0**	**80.1**
	SD	24.3	34.6	24.8	21.1	20.3	23.1	28.2	16.0
	Number	844	923	998	931	959	993	925	959
South	**Mean**	**81.1**	**77.8**	**75.5**	**71.9**	**63.1**	**82.5**	**83.2**	**78.2**
Tipperary	**SD**	26.1	37.1	26.5	22.4	21.4	24.5	33.2	17.4
	Number	724	793	875	792	830	869	789	827
Waterford	**Mean**	**82.8**	**80.7**	**77.6**	**73.4**	**65.2**	**85.0**	**85.5**	**79.6**
	SD	24.0	35.1	25.8	21.7	20.2	23.6	30.3	16.7
	Number	692	755	815	761	784	815	748	785
Wexford	**Mean**	**83.1**	**78.7**	**76.2**	**73.5**	**63.8**	**83.4**	**84.7**	**78.7**
	SD	24.4	36.2	26.1	21.6	21.7	23.4	31.5	17.6
	Number	1027	1113	1216	1114	1154	1206	1107	1161
Total	**Mean**	**82.7**	**79.7**	**76.9**	**73.0**	**64.3**	**84.0**	**85.2**	**79.1**
	SD	24.5	35.6	25.8	21.7	20.9	23.6	31.0	17.0
	Number	3662	4000	4350	4007	4146	4330	3979	4159

Table 2.7: SF-36 mean scores for the 8 dimensions of health by social class

		PF	RP	BP	GH	VT	SF	RE	MH
Social Class 1 & 2	Mean	**84.8**	**82.5**	**78.3**	**75.4**	**65**	**84.9**	**87.7**	**80.1**
	SD	23	33.5	24.7	20.5	20.3	23.3	28.3	16.2
	Number	1257	1351	1414	1340	1363	1414	1344	1369
Social Class 3 & 4	Mean	**84.6**	**81.8**	**78.5**	**74.2**	**64.5**	**84.8**	**86.8**	**78.8**
	SD	22.6	33.5	24.3	20.5	20.8	22.4	29.4	16.8
	Number	1181	1270	1337	1251	1295	1332	1252	1296
Social Class 5 & 6	Mean	**82.5**	**79.9**	**76.3**	**71.7**	**64.1**	**84.6**	**84.3**	**79**
	SD	24.2	35.6	26.4	22.5	21.1	22.9	31.8	16.8
	Number	735	802	892	823	856	889	805	864
Social Class 7	Mean	**72.8**	**68.6**	**71.8**	**66.8**	**62.2**	**79.8**	**77.7**	**77.4**
	SD	30.1	42.2	29.1	24.1	22.2	26.6	37.5	19.1
	Number	489	577	707	593	632	695	578	630
Total	Mean	**82.7**	**79.7**	**76.9**	**71**	**64.3**	**84**	**85.2**	**79.1**
	SD	24.5	35.6	25.8	21.7	20.9	23.6	31.0	17.0
	Number	3662	4000	4350	4007	4146	4330	3979	4159

Table 2.8: SF-36 mean scores for the 8 dimensions of health by GMS status

		PF	RP	BP	GH	VT	SF	RE	MH
GMS card	**Mean**	**67**	**61.4**	**67.2**	**62.4**	**57.9**	**76.4**	**75.7**	**75.9**
	SD	30.7	43.6	29.7	25.1	22.9	28.3	38.4	19.3
	Number	983	1134	1362	1179	1232	1347	1132	1245
No GMS card	**Mean**	**88.5**	**87.1**	**81.3**	**77.4**	**66.8**	**87.4**	**89.0**	**80.4**
	SD	18.7	28.8	22.5	18.3	19.4	20.1	26.5	15.7
	Number	2619	2804	2911	2766	2847	2908	2785	2847
Total	**Mean**	**82.6**	**79.7**	**76.8**	**72.9**	**64.1**	**83.9**	**85.2**	**79.0**
	SD	24.5	35.7	25.8	21.7	20.9	23.6	31.0	17.0
	Number	3602	3938	4273	3945	4079	4255	3917	4092

Table 2.9: SF-36 mean scores for the 8 dimensions of health by GMS status (controlling for age)

Age Group	GMS card		PF	RP	BP	GH	VT	SF	RE	MH
18-39	**Yes**	**Mean**	**84.6**	**78.1**	**73**	**68.9**	**59.4**	**78.4**	**82.9**	**71.4**
		SD	23.3	34.5	27.5	23.2	20.8	26.2	32.4	20.2
		Number	191	202	220	209	210	219	203	212
	No	**Mean**	**91.5**	**90.3**	**83.7**	**79.5**	**66.5**	**87.4**	**89.4**	**79.3**
		SD	17.2	25.3	20.8	17.7	19.2	19.4	25.5	15.5
		Number	1299	1361	1375	1344	1365	1375	1347	1369
40-59	**Yes**	**Mean**	**74.5**	**66.1**	**66.2**	**60.9**	**56.4**	**75.2**	**73.9**	**72.9**
		SD	26.6	42.9	30.6	26.9	24.7	28.5	39.5	20.5
		Number	293	317	361	323	335	360	316	339
	No	**Mean**	**87.5**	**86.5**	**79.8**	**76.2**	**67.4**	**87.6**	**89.7**	**81.1**
		SD	18.3	29.5	22.9	18.3	19.2	20.7	26.4	15.4
		Number	1047	1124	1184	1111	1151	1182	1117	1148
≥ 60	**Yes**	**Mean**	**55.6**	**53.3**	**65.9**	**61**	**58.2**	**76.3**	**74.2**	**78.8**
		SD	31	45	29.7	24.4	22.7	28.9	39.6	17.9
		Number	483	598	762	630	671	747	596	677
	No	**Mean**	**76.8**	**73.9**	**76**	**71.3**	**66.4**	**87.2**	**84.8**	**82.6**
		SD	22.2	36.9	25.7	20	20.9	21.2	30.5	17
		Number	241	283	314	278	296	313	286	293

Table 2.10: SF-36 mean scores for the 8 dimensions of health by education level

		PF	RP	BP	GH	VT	SF	RE	MH
No schooling or prim ary only	Mean	**67.9**	**64.6**	**69.4**	**63.0**	**61.2**	**79.0**	**76.8**	**77.8**
	SD	30.6	43.0	29.4	24.4	23.1	27.1	38.3	18.9
	Number	688	818	1008	860	911	998	821	915
Some secondary schooling	Mean	**82.2**	**79.6**	**77.0**	**72.3**	**64.4**	**85.0**	**86.5**	**79.5**
	SD	23.6	35.4	25.3	21.5	20.5	22.2	30.0	16.5
	Number	942	1019	1114	1029	1069	1113	1011	1059
Completed secondary schooling	Mean	**86.2**	**83.9**	**79.0**	**76.3**	**64.9**	**85.1**	**87.0**	**79.2**
	SD	21.1	32.0	24.3	19.6	20.7	22.6	28.7	16.9
	Number	1259	1354	1399	1327	1361	1394	1343	1377
Completed third level	Mean	**91.1**	**88.7**	**82.6**	**79.4**	**66.5**	**86.6**	**89.1**	**80.0**
	SD	17.6	27.4	21.5	17.8	18.8	21.3	25.5	15.2
	Number	741	774	779	755	766	779	769	768
Total	Mean	**82.7**	**79.8**	**76.9**	**73.0**	**64.3**	**83.9**	**85.2**	**79.1**
	SD	24.5	35.6	25.8	21.7	20.9	23.6	31.0	17.0
	Number	3630	3965	4300	3971	4107	4284	3944	4119

Table 2.11: SF-36 mean scores for the 8 dimensions of health by employment status

		PF	RP	BP	GH	VT	SF	RE	MH
Not working but not unemployed*	Mean	**75.9**	**72.6**	**74.4**	**70.5**	**63.1**	**83.2**	**80.9**	**79.0**
	SD	27	39.7	26.8	21.7	20.9	23.9	35.2	16.9
	Number	1266	1435	1628	1440	1514	1609	1445	1514
Unem ployed/ disability preventing work	Mean	**59.3**	**44.8**	**56.2**	**48.4**	**46.8**	**60.8**	**61.9**	**66.0**
	SD	34.3	45	32.1	27.9	24.0	32.7	43.9	23.9
	Number	235	243	299	263	282	305	240	284
Employed	Mean	**90.2**	**89.0**	**81.9**	**78.0**	**67.6**	**88.1**	**90.9**	**80.9**
	SD	16.9	26.3	21.9	17.8	19.2	19.2	23.5	15.1
	Number	2000	2150	2225	2127	2165	2218	2124	2175
Total	Mean	**83**	**80.1**	**77.1**	**73.1**	**64.4**	**84.2**	**85.3**	**79.1**
	SD	24.3	35.4	25.7	21.6	20.9	23.4	23.5	15.1
	Number	3501	3828	4153	3830	3961	4132	3809	3973

* Includes students, retired persons, homemakers and those looking for their first job

2.4 Previous Population Studies of Self-Assessed Health in the South East

In 1997 the SF-36 was used to measure the health status of a random sample of the GMS population aged 65 years and over[11]. This was part of the Tipping the Balance network study of health and social care in the elderly across Europe (TPP)[12]. An interviewer administered the questionnaire and there were 617 respondents (all over 64 years of age and holding a medical card).

Table 2.12 compares the results from the Tipping the Balance SEHB study in 1997 with the results of the South Eastern Population Health Survey 2001 for those aged 65 or older and holding a medical card.

Table 2.12: SF-36 mean scores for aged 65 years and over; GMS persons only. Tipping the Balance SEHB Study (1997) and South Eastern Population Health Survey (2001)

	PF	RP	BP	GH	VT	SF	RE	MH
Tipping the Balance (617 respondents)	58	65	72	64	61	80	75	78
SE Population Health Survey – GMS only (726 respondents)	54	53	66	61	58	76	74	79

A comparison of the results of the two studies, for those aged 65 years and over, with a medical card shows that:

- Although the health scores obtained in both studies are very similar there is a suggestion that elderly persons in the South East in 2001 had a poorer physical health and more bodily pain than in 1997.

2.5 Previous Population Studies of Self-Assessed Health in Ireland

2.5.1 Irish normative data

Normative data for the SF-36 for the general Irish population was published in 2000[13]. The published norms were based on 295 responders [37% (295/800) response rate; 129 males and 166 females]. This national sample was randomly selected from the Electoral Register and consisted of persons over 18 years of age.

This compares with the South Eastern Population Health Survey which had 4,506 responders [60% (4,506/7,525) response rate; 1,984 males and 2,522 females].

Table 2.13 gives the overall results and the breakdown by gender for each of the studies.

A comparison of the results of the national Irish norms study with the South Eastern Population Health Survey shows that:

- The overall scores for the two studies are surprisingly similar, with very minor differences in the gender sub-groups. This similarity between the scores in the two studies supports the use of the South East data as Irish norms.

- The published Irish norms are based on very small numbers (295 responders) and sub-group analysis (in terms of variables such as social class and age) was not possible. In contrast, the South Eastern Population Health Survey was very large (4,506 responders) and sub-group analysis in terms of age and social status was possible.

Table 2.13: SF-36 mean scores by sex. South Eastern Population Health Survey (2001) and Irish Normative Data (2000)[13]

		PF	RP	BP	GH	VT	SF	RE	MH
Male	**SE Pop Survey**	84.2	80.4	78.4	72.4	66.8	85.8	86.5	80.7
	Irish Norms	81.7	82.1	78.8	73.6	66.9	84.2	85.7	79.7
Female	**SE Pop Survey**	81.5	79.2	75.7	73.4	62.2	82.6	84.2	77.8
	Irish Norms	84.3	79.3	76.6	74.0	63.2	84.0	81.4	76.5
Total	**SE Pop Survey**	82.7	79.7	76.9	73.0	64.3	84.0	85.2	79.1
	Irish Norms	83.2	80.5	77.6	73.8	64.8	84.1	83.2	77.8

- The South East results can be used as Irish normative data for different age groups (Tables 2.2-2.5) and different socio-economic categories (Tables 2.7-2.11).
- In addition, age and sex standardised scores for the total Irish population and for Irish males and Irish females can be calculated using the 2002 Census population age/sex breakdown and the age and sex specific mean scores from the South Eastern Population Survey (Table 2.14).

Table 2.14: Age and sex standardised normative SF-36 scores for the Irish population*

	PF	RP	BP	GH	VT	SF	RE	MH
Male	84.9	82.2	79.6	73.5	67.4	86.5	87.3	80.8
Female	81.2	79.5	76.4	73.6	62.2	82.6	84.2	77.6
Total	83.0	80.8	77.9	73.6	64.8	84.5	85.7	79.2

*See Appendix 2 for the formula and calculation.

2.5.2 All-Ireland social capital and health survey

The All-Ireland Social Capital and Health Survey (2001)[14] was an all island study of 1,000 adults (aged 18 years of age and over) from the Republic of Ireland and 1,000 from Northern Ireland. Face to face interviews were conducted and the questionnaire had a number of measures of perceived health including the multi-item scale for Mental Health from the SF-36 questionnaire. The indicator of good health was taken to be the percentage of respondents whose score was 'high', in the sense that it fell within the highest third of all scores on the island of Ireland.

In order to compare the results with that of the South Eastern Population Health Survey, respondents in the current survey would need to be grouped into those having a good mental health score and those not having a good mental health score. The cut-off point in the All-Ireland Social Capital and Health Survey[14] was not provided and thus cannot be used to classify the South East respondents.

Consideration was given to classifying respondents by indicating the top one third scores as good mental health. However, this would mean that only those with a score of 92 or over were considered to have good mental health. The mean score in the South Eastern Population Health Survey was 79.1. For these reasons a comparison of the results from the two studies was considered inappropriate.

2.6 International Population Studies of Self-Assessed Health

The applicability of the results of the South Eastern Population Health Survey to the national population has been discussed. The study provides Irish normative SF-36 data for different age groups. This data can be compared to similar data from the Northern Ireland Health and Social Well Being Survey 1997 [15] and data from the Health Survey for England 1996 [16].

A comparison of SF-36 scores for Ireland (South Eastern Population Health Survey), Northern Ireland and England by ten year age groups (Table 2.15) shows that:

- Overall, self-assessed health in Ireland is more similar to that of England (than to self-assessed health in Northern Ireland)
- Northern Ireland has poorer health than Ireland (a SF-36 score five or more units below the Irish score) on a number of SF-36 health dimensions in each age group
- In every age group Irish persons have similar Mental Health (MH) scores to English persons and better Mental Health scores than the Northern Irish
- In every age group Irish persons have similar Energy/Vitality (VT) scores to English persons and better Energy/Vitality scores than the Northern Irish
- In the older age groups, although better than their Northern Irish counterparts, Irish persons seem to have poorer Physical Functioning (PF) than the older English person.

Table 2.15: SF-36 mean scores for Ireland (South Eastern Population Health Survey), Northern Ireland [15] and England [16] by age groups

Age Group	Health Dimension	Ireland (SE Population Health Survey)	Northern Ireland	England
16-24/18-24 (16-24 yr olds for Northern Ireland and England surveys, 18-24 yr olds for South East survey)	PF	91.2	92.1	92
	RP	90.3	91.3	92
	BP	83.7	85.1	82
	GH	78.2	76.3	74
	VT	67.0	64.6	69
	SF	86.5	89	89
	RE	87.9	90	90
	MH	78.3	72.3	70
25-34	PF	90.9	88.8	94
	RP	88.6	83.9	91
	BP	82.6	79.8	84
	GH	78.7	74.3	74
	VT	65.7	57.4	68
	SF	86.2	83.1	90
	RE	89.5	80.6	90
	MH	78.9	70.2	78
35-44	PF	88.7	86.7	91
	RP	87.6	83.0	89
	BP	79.5	80.0	82
	GH	77.1	71.0	73
	VT	65.1	55.2	66
	SF	86.0	82.9	88
	RE	87.7	80.4	89
	MH	78.3	68.3	77
45-54	PF	84.1	77.6	87
	RP	81.3	72.7	84
	BP	76.8	72.0	78
	GH	71.9	65	69
	VT	64.8	54.2	66
	SF	85.0	80.1	87
	RE	86.2	77.1	86
	MH	79.3	69.2	77
55-64	PF	79.2	61.9	76
	RP	72.5	63.3	75
	BP	72.9	61.4	74
	GH	69.1	57.4	64
	VT	63.7	48.1	64
	SF	83.1	75.4	84
	RE	83.2	77.4	84
	MH	79.6	68.2	78
65-74	PF	65.1	50.5	70
	RP	63.2	56.7	68
	BP	70.6	55.8	75
	GH	64.6	53.4	62
	VT	62.6	49.1	64
	SF	82.6	71.5	83
	RE	78.8	84.4	81
	MH	80.4	68.9	78
≥ 75	PF	46.8	37.3	58
	RP	47.8	57.7	57
	BP	64.5	57.7	73
	GH	60.1	51.1	61
	VT	56.4	41.9	58
	SF	72.3	67.6	79
	RE	71.6	85.2	77
	MH	79.1	66.7	79

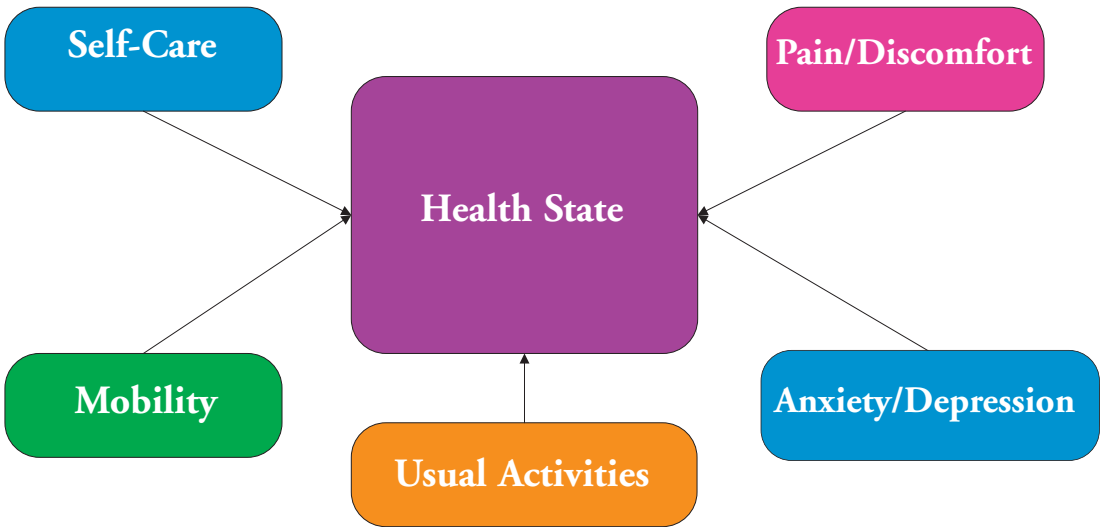
Chapter 3

EuroQol (EQ-5D) and Self-Related Health

3.1 Introduction

In addition to the SF-36 health survey questionnaire, the South Eastern Population Health Survey gathered data on self-reported health using the EuroQol (EQ-5D) set of questions. The EQ-5D questionnaire is a generic measure of health status developed by the EuroQol Group, an international research network established in 1987 [3]. Health is defined in terms of five dimensions; mobility, self-care, usual activities, pain or discomfort, and anxiety or depression (Figure 3.1). Respondents had to indicate whether they experienced no problem (Level 1), a moderate problem (Level 2), or an extreme problem (Level 3) on each of the five dimensions.

Figure 3.1: Five Dimensions of EuroQol Health State



The EQ-5D responses from the South Eastern Population Health Survey are presented in four distinct formats, as described below.

1. Responses are presented for each of the five dimensions individually, providing a health status profile across all of the dimensions for each person or population group (section 3.2).

2. A single health state index score (EQ-5D INDEX) was calculated for each respondent, depending on the answers to the five dimensions of health[17]. This standardisation attributed different weightings to each of three possible answers for each of the five dimensions of health. Full health on all five dimensions received an EQ-5D INDEX of 1. A moderate or an extreme problem on any of the dimensions lead to an EQ-5D INDEX less than 1 (section 3.3).

3. Respondents rated how good or bad their current health state was on a visual analogue scale (VAS), where 0 represented their worst imagined health state and 100 represented their best imagined health state. Respondents "self-rated health status" is expressed as their score on the visual analogue scale (EQ-5D VAS) (section 3.4).

4. Each health state is referred to in terms of a 5-digit code. For example, state 11111 indicates no problem on any of the five dimensions. A total of 243 possible health states are defined in this way (section 3.5).

The Tables and Figures to support the above are presented in section 3.7

3.2 Self-Reported Health Status Profile Across the Five Dimensions of Health

- A moderate or extreme problem on at least one dimension was reported by 48% of respondents. Table 3.1 and Figure 3.2 show the health status profile of the survey respondents as a whole for each of the five EuroQol health dimensions.

  Extreme problems in any dimension were rare, ranging from 0.2% in the Mobility dimension to 2.8% in the Pain/Discomfort dimension. The absolute number of respondents reporting an extreme problem was small and for most of the analysis this group was combined with those reporting a moderate problem.

- The percentage reporting health problems (moderate or extreme on any dimension) was unrelated to gender.

- Table 3.2 and Figure 3.3 present the number and percentage of respondents reporting a problem in any dimension by age group. The percentage reporting health problems (moderate or extreme) increased significantly (χ^2 = 261; p<0.000; 6 df; 95% confidence level) with increasing age.

- Of the five health dimensions, there was a particularly high level of reported problems with Pain/Discomfort (Tables 3.1 and 3.4).

  A moderate or extreme problem in the Pain/Discomfort dimension of health was reported by 38% overall, rising to 57% in those 60 years of age and over (Table 3.3). This increase with age was statistically significant (χ^2 = 296; p<0.000; 2 df; 95% confidence level).

- The percentage reporting health problems (moderate or extreme on any dimension) was not related to county of residence.

- The percentage reporting any problem increased significantly with decreasing social class category (Figure 3.4). However, this statistically significant relationship disappeared when the effect of age was controlled for.

- Table 3.4 presents the percentage of respondents reporting a problem in each dimension by age group and GMS status. Overall, respondents with a medical card were significantly more likely to report a health problem than those who did not have a medical card (χ^2 = 218.7; p=0.00; 1 df; 95% confidence level). This significant relationship remained after controlling for the effect of age (Table 3.5).

- The percentage reporting any problem increased significantly (χ^2 = 152; p<0.000; 3 df; 95% confidence level) with decreasing level of education achievement (Figure 3.5). When the effect of age was controlled for, reporting a problem remained significantly related to educational achievement only for those under 60 years of age.

- Unemployed persons were significantly (p= 0.000) more likely than working persons to report a problem (Table 3.6). When the effect of age was controlled for, reporting a problem remained significantly related to employment status.

3.3 EQ-5D as a Weighted Health Status Index

- The mean weighted health status (EQ-5D$_{INDEX}$) for the population was 0.85 (CI: 0.845, 0.858).

- There was no significant difference between males and females. The mean EQ-5D$_{INDEX}$ for males was 0.856 (CI: 0.846, 0.865) and for females was 0.848 (CI: 0.839, 0.857).

- The mean EQ-5D$_{INDEX}$ by age group decreased from 0.917 (CI: 0.903, 0.932) in 18 to 24 year olds to 0.685 (CI: 0.652, 0.717) in those 75 years of age and older (Table 3.7). This decrease was statistically significant at the 95% confidence level (F=70.048; p<0.000; 95% confidence level).

- A decrease in health status with increasing age was seen for both males and females, for medical card holders and non-medical card holders, for each county of residence in the region and for lower levels of educational achievement (Figures 3.6.-3.10).

- There was no statistically significant difference in the mean EQ-5D$_{INDEX}$ by county of residence (Figure 3.8).

- Overall there was a statistically significant lower mean EQ-5D$_{INDEX}$ with falling social class (Figure 3.9). However, when the effect of age is controlled, there is no statistically significant difference between the respondents by social class.

- The mean EQ-5D$_{INDEX}$ was significantly lower for medical card holders compared to non-medical card holders (F=463.6; p<0.000; 95% confidence level).

  Table 3.8 and Figure 3.7 show the variation in reported health by GMS status within each age group. The differences are statistically significant except in those aged 75 years and over, where the numbers were too low to detect a significant result (only 12 respondents without medical cards in this age group compared to 327 with medical cards).

- Overall there was a statistically significant lower mean EQ-5D$_{INDEX}$ with lower levels of educational achievement (Figure 3.10). However, when the effect of age and GMS status are controlled for, there was no statistically significant difference between respondents by educational status.

- Table 3.9 presents the EQ-5D$_{INDEX}$ by employment status. Persons in employment had a mean EQ-5D$_{INDEX}$ of 0.908 (CI: 0.902, 0.914) compared to unemployed persons who had a mean EQ-5D$_{INDEX}$ of 0.597 (CI: 0.558, 0.637).

  The mean EQ-5D$_{INDEX}$ was significantly lower in persons who were unemployed or suffering a disability that prevented them working (F=361.113; p<0.000; 2 df; 95% confidence level).

- When the effect of age was controlled for the mean EQ-5D$_{INDEX}$ remained significantly lower among those who were unemployed (Table 3.9).

3.4 EuroQol Self-Rated Health on the Visual Analogue Scale

- The mean score on the Visual Analogue Scale (EQ-5D VAS) for the population of responders was 80.27 (CI: 79.72, 80.82).

- The mean score for males was 80.44 (CI: 79.63, 81.26) and for females was 80.13 (CI: 79.39, 80.87). There was no significant difference between males and females.

- The mean score on the EQ-5D VAS by age group decreased from 84.97 (CI: 83.5, 86.43) in 18 to 24 year olds to 65.87 (CI: 63.29, 68.45) in those aged 75 years and older (Table 3.10 and Figure 3.11). This decrease was statistically significant at the 95% confidence level ($F=76.05$; $p<0.000$; 95% confidence level).

- A decrease in self-rated health status with increasing age was seen for both males and females, for medical card holders and non-medical card holders, for each county of residence in the region and for lower levels of educational achievement and falling social class category.

- There was no statistically significant difference in the mean EQ-5D VAS by county of residence.

- Overall, there was a statistically significant lower mean EQ-5D VAS with falling social class category. When the effect of age was controlled for social class status was no longer statistically significant in those under 40 years of age, but remained significant for those over 40 years of age.

- The mean score on the EQ-5D VAS by GMS status was significantly lower for medical card holders compared to non-medical card holders ($F=533.8$; $p<0.000$; 1 df; 95% confidence level).

  Figure 3.12 shows the variation in self-rated health status (EQ-5D VAS) by GMS status within each ten year age group. The differences by GMS status were statistically significant within all of the age groups.

- Overall, there was a statistically significant lower mean EQ-5D VAS with lower levels of educational achievement. When the effect of age was controlled for educational achievement remained statistically significant for all age groups.

- Unemployed persons had a significantly lower mean EQ-5D VAS than other respondents (Table 3.11). Respondents in work had a mean EQ-5D VAS of 85.13 (CI: 84.56, 85.7), while respondents who were unemployed had a mean EQ-5D VAS of 61.04 (CI: 58.23, 63.84). When the effect of age was controlled for unemployed persons continued to have a significantly lower mean EQ-5D VAS within each age group (Table 3.11).

3.5 Five Digit Codes Used as a Description of Health Status

- Table 3.12 presents the distribution of EQ-5D health states for males and females. Self-reported health states among males and females, although not identical, were very similar.

- Table 3.13 presents the distribution of EQ-5D health states for different age groups. There are distinctly different distributions between the young, middle-aged and elderly.

3.6 Conclusions

The EuroQol (EQ-5D) questionnaire found significant differences in self-assessed health between population sub-groups with respect to age, social class, GMS status, educational level and employment status. No differences were found with respect to gender and county of residence.

3.7 Tables

3.7.1 Self-reported health status profile across the five dimensions of health

Table 3.1: EQ-5D self-reported health status for the five EQ-5D health dimensions

Health Dimensions	No problem	Moderate problem	Extreme problem	Total	Missing data
Mobility	85.7% (3779)	14.1% (621)	0.2% (9)	4409	97
Self-care	94.7% (4144)	4.8% (211)	0.5% (23)	4378	128
Usual activities	78.9% (3466)	18.6% (817)	2.5% (111)	4394	112
Pain/Discomfort	61.9% (2726)	35.4% (1559)	2.8% (122)	4407	99
Anxiety/Dep ression	78.3% (3429)	20.1% (879)	1.6% (69)	4377	129

Figure 3.2: EQ-5D self-reported health status for the five EQ-5D health dimensions

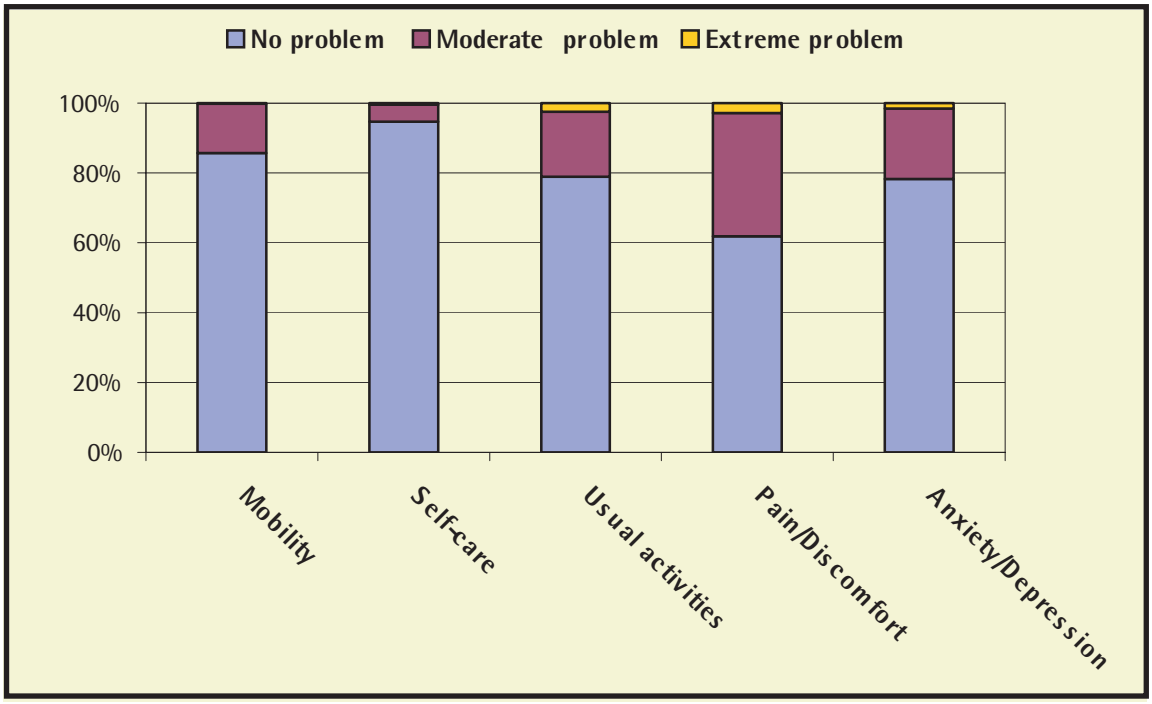


Table 3.2: EQ-5D self-reported health status by age group

	EQ-5D Health Dimensions		
	No problem	At least one problem	Total
18-24	69% (308)	31% (138)	446
25-34	65% (488)	35% (261)	749
35-44	55% (472)	45% (385)	857
45-54	52% (408)	48% (382)	790
55-64	42% (247)	58% (346)	593
65-74	38% (181)	62% (298)	479
≥ 75	36% (90)	64% (252)	342
Total	52% (2194)	48% (2062)	4256*

*Data missing for 250 respondents

Figure 3.3: EQ-5D self-reported health status by age group

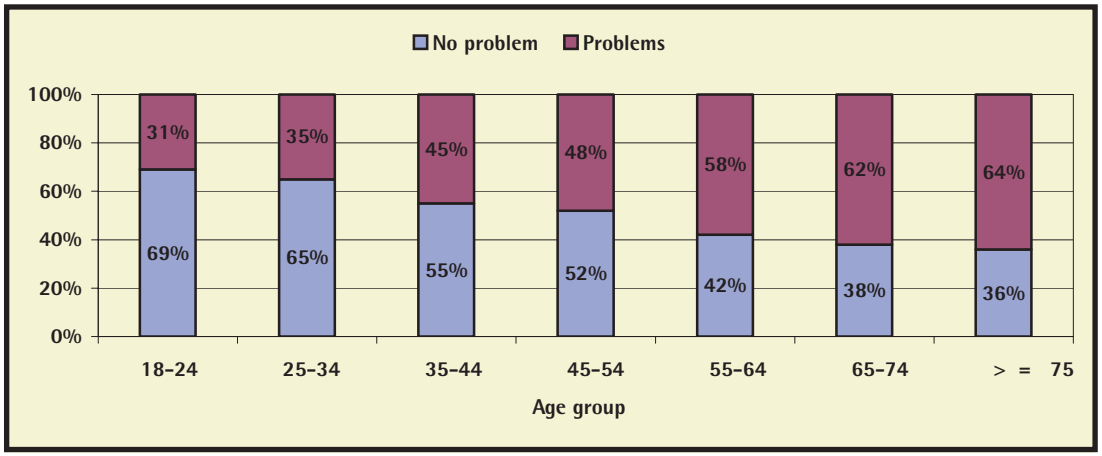


Table 3.3: Pain/Discomfort health dimension by age group

	Age Group			
	18-39	40-59	≥ 60	Total
No problem	75.5% (1229)	61% (966)	43% (486)	62% (2681)
Moderate/extreme problems	24.5% (398)	39% (624)	57% (640)	38% (1662)
Total	100% (1627)	100% (1590)	100% (1126)	100% (4343)*

*Data missing for 163 respondents

Figure 3.4: EQ-5D self-reported health status by social class

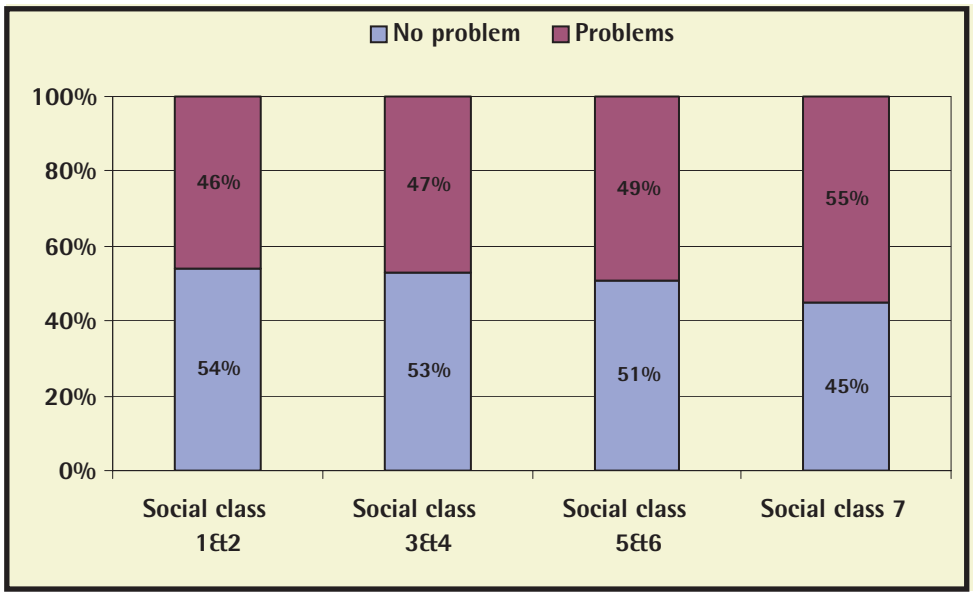


Table 3.4: EQ-5D self-reported health status (problems) by age group and GMS status

	Age Group							
	18-24	25-34	35-44	45-54	55-64	65-74	≥ 75	Total
Mobility								
Yes-GMS	14%	10%	9%	28%	29%	30%	47%	30%
No-GMS	3%	4%	5%	7%	16%	18%	39%	7%
Total	4%	5%	6%	12%	20%	27%	47%	**14%**
Self-care								
Yes-GMS	5%	0.9%	4%	11%	11%	13%	24%	13%
No-GMS	0.5%	0.8%	2%	1%	4%	7%	8%	2%
Total	1%	0.8%	2%	4%	6%	11%	24%	**5%**
Usual Activities								
Yes-GMS	27%	22%	28%	44%	42%	33%	48%	38%
No-GMS	8%	9%	13%	15%	22%	21%	33%	13%
Total	10%	11%	15%	22%	28%	30%	47%	**21%**
Pain/Discomfort								
Yes-GMS	46%	38%	43%	52%	64%	56%	63%	55%
No-GMS	17%	22%	31%	33%	46%	46%	31%	31%
Total	21%	24%	33%	38%	51%	53%	62%	**38%**
Anxiety/Depression								
Yes-GMS	33%	26%	30%	35%	30%	23%	30%	29%
No-GMS	16%	17%	20%	20%	21%	9.6%	15%	18%
Total	19%	18%	21%	24%	24%	20%	30%	**22%**

Table 3.5: EQ-5D self-reported health status by age and GMS status (controlling for age)

Age Group	GMS Card		No GMS Card		
	No problems	Yes problems	No problems	Yes problems	χ^2 test; 1 df; 95% confidence level
18-39	105	113	917	458	$\chi^2 = 28$; $p < 0.000$
40-59	133	223	641	533	$\chi^2 = 33$; $p < 0.000$
≥ 60	220	528	139	179	$\chi^2 = 20.4$; $p < 0.000$
Total*	467	873	1722	1184	

*Columns do not add up to the total numbers due to missing age values

Figure 3.5: EQ-5D self-reported health status by educational achievement

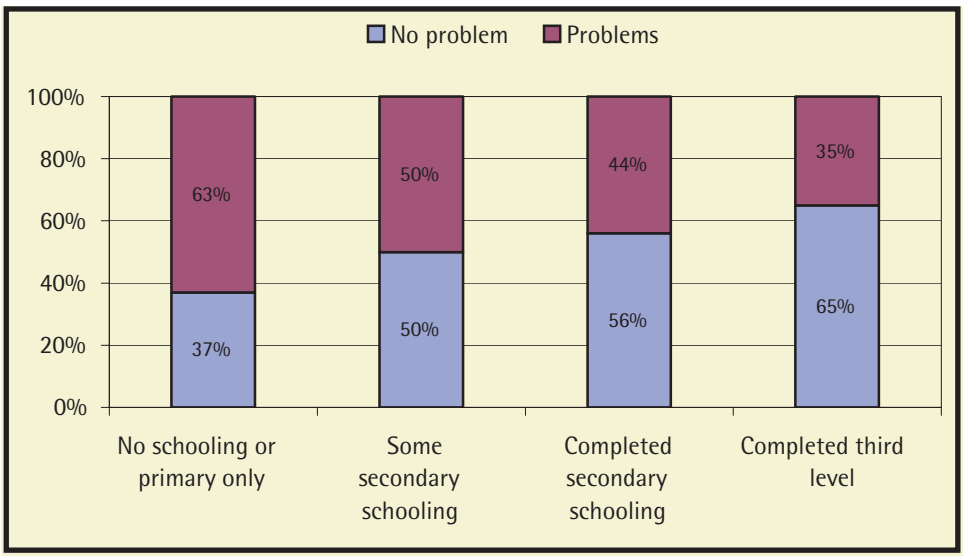


Table 3.6: EQ-5D self-reported health status (problems) by employment status

Age Group	Not working but not unemployed*	Unemployed/disability preventing work	Employed	χ^2 test; 95% confidence level
18-39	39.3% 128/326	67.6% 48/71	32.3% 368/1141	$\chi^2 = 39.288$; $p = 0.000$
40-59	47.9% 219/457	79.9% 119/149	43% 380/883	$\chi^2 = 69.286$; $p = 0.000$
≥ 60	64.6% 519/804	96.3% 77/80	58.3% 91/156	$\chi^2 = 37.489$; $p = 0.000$
Total**	54% 870/1604	81.4% 249/306	38.5% 853/2213	$\chi^2 = 240.8$ $p = 0.000$

*Includes students, retired persons, homemakers and those looking for their first job

**In each column the numbers do not add up to the total figures due to missing age values

3.7.2 EQ-5D as a weighted health status index

Table 3.7: Mean EQ-5D INDEX and confidence intervals by age group

Age Group	Mean EQ-5D INDEX	Confidence Intervals	Number respondents
18-24	0.917	0.903, 0.932	446
25-34	0.911	0.900, 0.922	749
35-44	0.886	0.875, 0.896	857
45-54	0.853	0.838, 0.869	788
55-64	0.815	0.797, 0.833	592
65-74	0.795	0.774, 0.817	478
≥ 75	0.685	0.652, 0.717	342
Total			4252*

*Data missing for 254 respondents

Figure 3.6: Mean EQ-5D INDEX by age group and sex

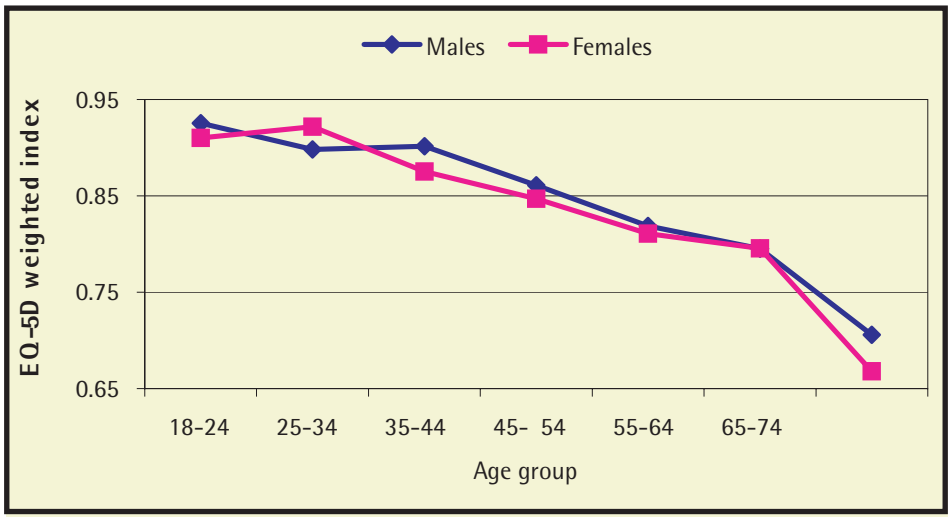


Figure 3.7: Mean EQ-5D INDEX by age group and GMS status

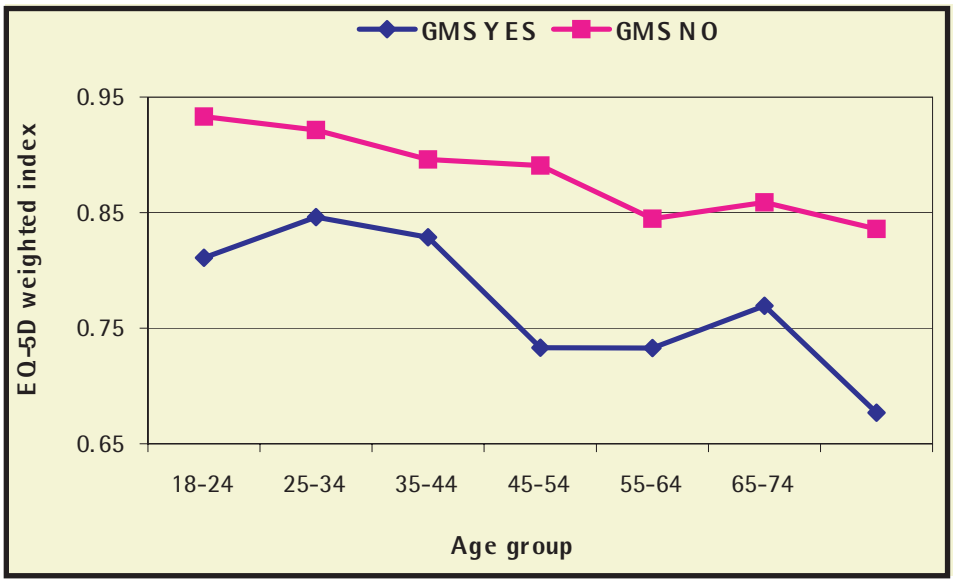


Figure 3.8: Mean EQ-5D INDEX by age group and county of residence

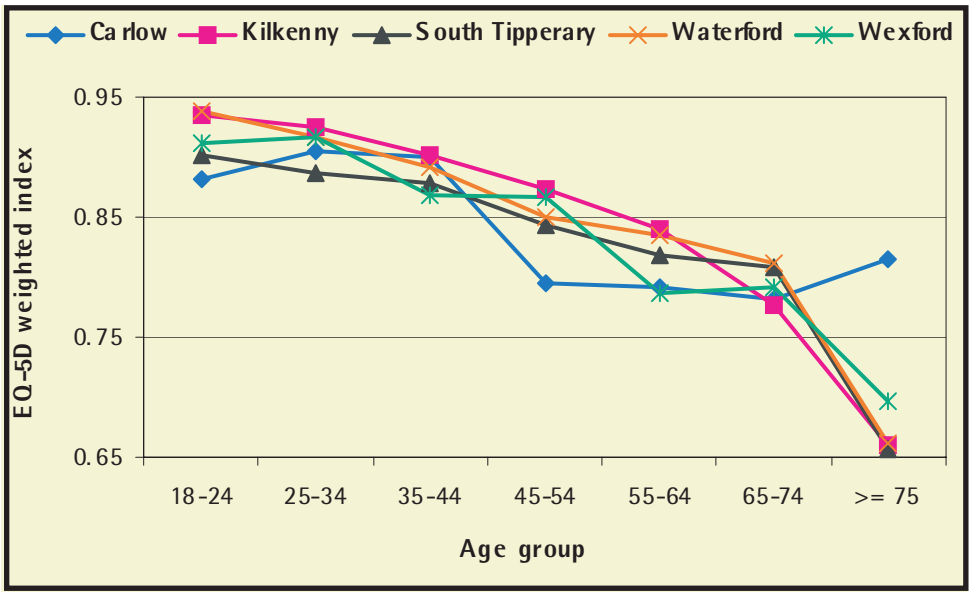


Figure 3.9: Mean EQ-5D INDEX by age group and social class

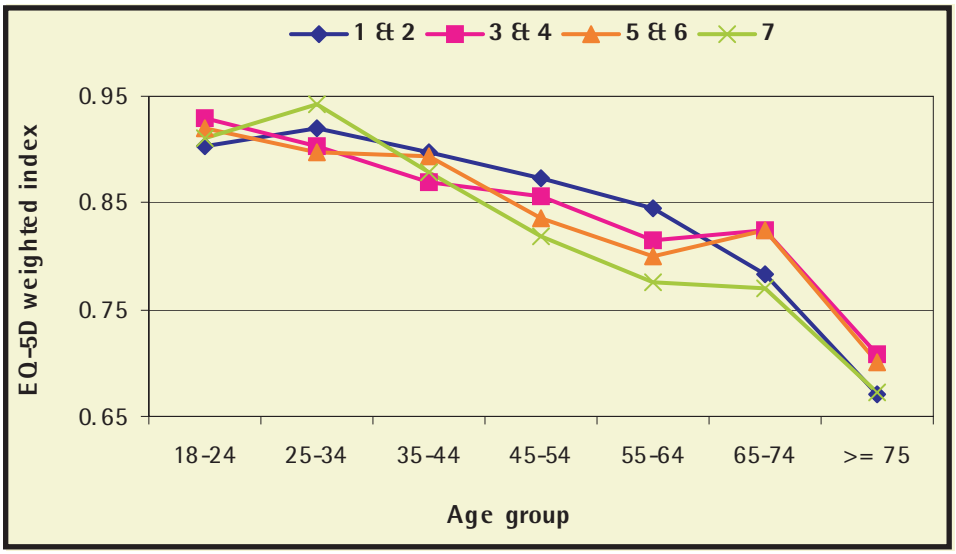


Figure 3.10: Mean EQ-5D INDEX by age group and educational level

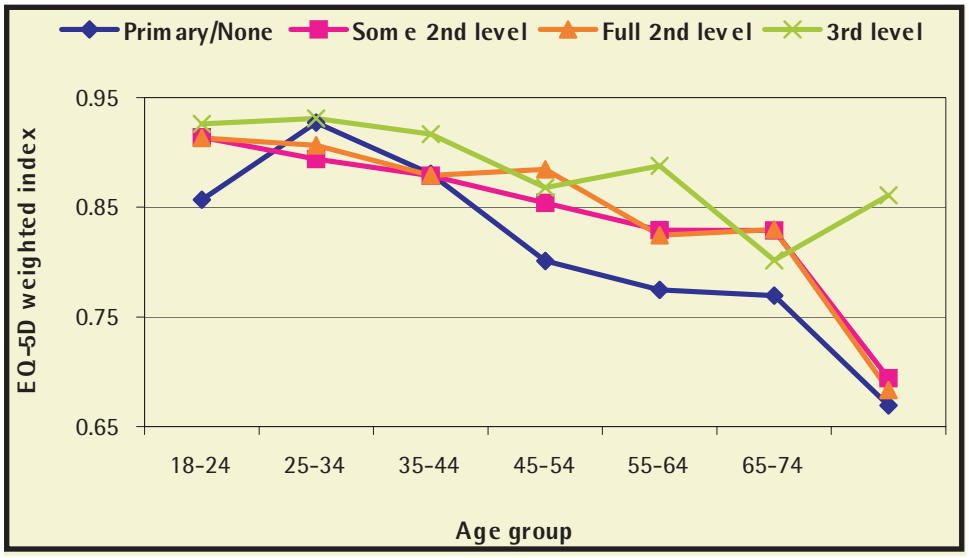


Table 3.8: Mean EQ-5D INDEX by age group and GMS status

Age Group	Mean EQ-5D INDEX				ANOVA Test	
	GMS - Yes		GMS - No		F	Significance
18-24	0.811	n=56	0.933	n=385	32.05	0.000
25-34	0.846	n=104	0.922	n=638	23.147	0.000
35-44	0.827	n=142	0.896	n=704	21.11	0.000
45-54	0.733	n=191	0.891	n=579	84.166	0.000
55-64	0.733	n=161	0.845	n=413	29.784	0.000
65-74	0.769	n=339	0.859	n=134	13.605	0.000
≥ 75	0.677	n=327	0.836	n=12	3.061	0.081
Total	0.751	n=1338	0.896	n=2904	463.629	0.000

n = number of respondents

Table 3.9: Mean EQ-5D INDEX by employment status and age group

Age Group	Not working but not unemployed*		Unemployed/disability preventing work		Employed		χ^2 test; 95% confidence level
	Mean (CI)	No.	Mean (CI)	No.	Mean (CI)	No.	
18-39	0.902 (0.884, 0.919)	326	0.711 (0.639, 0.782)	71	0.926 (0.9192,0.9332)	1141	F=78.253; p <0.000
40-59	0.862 (0.845, 0.88)	456	0.6123 (0.558, 0.668)	148	0.895 (0.886, 0.905)	883	F=143.826; p <0.000
≥ 60	0.775 (0.758, 0.792)	804	0.475 (0.396, 0.554)	79	0.852 (0.825, 0.879)	156	F= 64.325; p <0.000
Total	0.827 (0.817, 0.838)	1603	0.597 (0.558, 0.637)	304	0.908 (0.902, 0.914)	2213	F=361.113; p <0.000

* Includes students, retired persons, homeworkers and those looking for their first job

3.7.3 EuroQol self-rated health on the visual analogue scale

Table 3.10: Mean EQ-5D VAS and confidence intervals by age group

Age Group	Mean EQ-5D VAS	Confidence Intervals	Number of respondents (n)
18-24	84.97	83.5, 86.43	437
25-34	85.95	84.98,86.93	744
35-44	83.78	82.76, 85.32	835
45-54	80.62	79.39, 81.85	786
55-64	77.54	76.03, 79.05	584
65-74	73.93	72.11, 75.74	480
≥ 75	65.87	63.29, 68.45	339
Total			4205*

*Data missing for 301 respondents

Figure 3.11: Mean EQ-5D VAS by age group

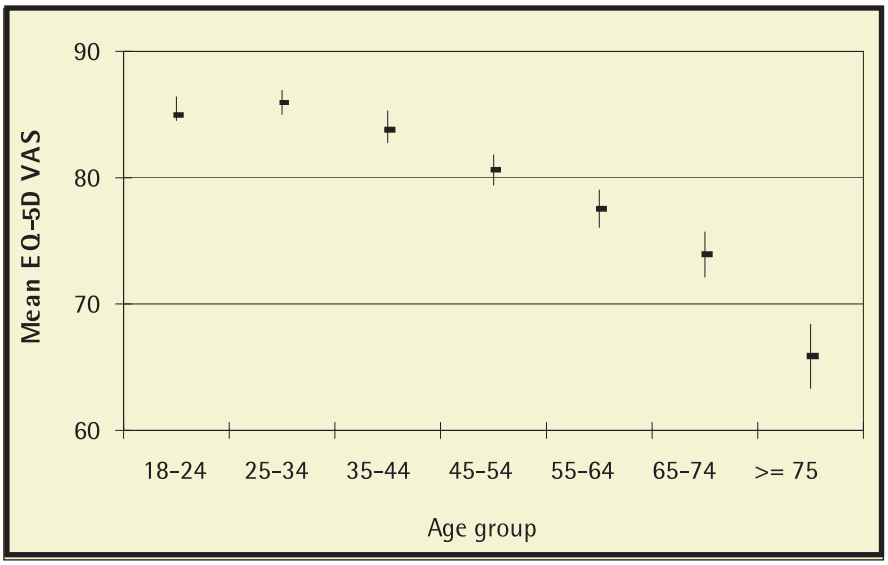


Figure 3.12: Mean EQ-5D VAS by age group and GMS status

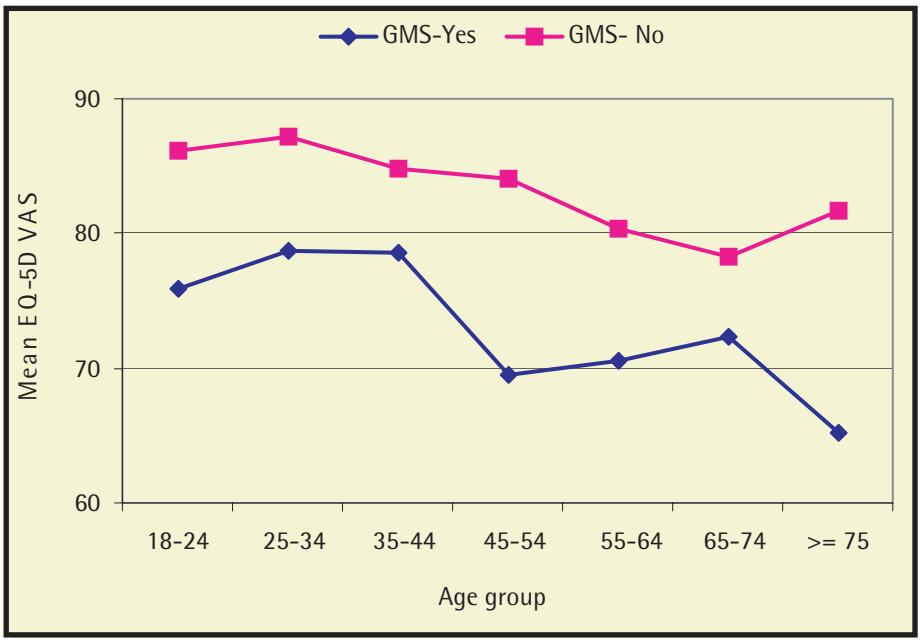


Table 3.11: Mean EQ-5D VAS by age group and employment status

Age Group	Not working but not unemployed*		Unemployed/disability preventing work		Employed		χ^2 test; 95% confidence level
	Mean (CI)	No.	Mean (CI)	No.	Mean (CI)	No.	
18-39	85.11 (83.53, 86.69)	322	68.41 (62.2, 74.6)	63	86.38 (85.6, 87.14)	1127	F=50.137; p <0.000
40-59	81.32 (79.8, 82.83)	458	61.17 (57.29, 65.06)	145	84.4 (83.5, 85.32)	870	F=134.073; p <0.000
≥ 60	72.13 (70.66, 73.6)	800	55.31 (49.89, 60.73)	80	71.89 (76.63, 82.1)	151	F=34.885; p <0.000
Total	77.47 (76.51, 78.42)	1598	61.04 (58.23, 63.84)	294	85.13 (84.56, 85.7)	2180	F=296.692; p <0.000

* Includes students, retired persons, homemakers and those looking for their first job

3.7.4 Five digit codes used as a description of health status

Table 3.12: Distribution of EQ-5D health states for males and females

EQ-5D Responses	Male (%)	Female (%)
11111	52.7	50.9
11121	14.8	11.7
11112	5.4	7.2
11122	3.9	4.8
11221	3.2	3.6
21221	3.3	3.4
11222	2.3	2.9
21222	1.8	2.5
21121	1.4	1.5
11211	0.9	1.2
22221	1.1	1.0
11212	0.6	0.9
22222	0.5	0.8
21122	0.5	0.7
21111	0.6	0.4
21211	0.6	0.2
	93.6	**93.7**

Table 3.13: Distribution of EQ-5D health states for different age groups

EQ-5D Responses	18-39 (%)	40-59 (%)	≥ 60 (%)
11111	64.1	51.0	33.7
11121	10.0	13.5	17.1
11112	8.3	7.0	2.8
11122	4.3	4.9	3.8
11221	2.4	4.2	4.0
21221	1.6	3.1	6.4
11222	2.3	3.3	2.1
21222	1.0	2.0	4.2
21121	0.5	1.2	3.2
11211	**94.5**	1.2	1.3
22221		0.6	3.2
11212		0.9	0.6
22222		0.5	1.8
21122		0.6	1.1
21111		0.1	1.3
21211		0.3	1.2
21231		**94.4**	0.6
22322			1.0
11223			0.1
22232			0.7
22321			0.7
12222			0.4
22231			0.6
11213			
12111			0.3
11113			
11232			0.3
21232			0.1
22331			0.6
22332			0.3
21322			0.5
22333			0.5
11131			**94.5**

Chapter 4

The General Health Questionnaire (GHQ-12)

4.1 Introduction

The General Health Questionnaire (GHQ-12) is a short questionnaire of twelve questions designed to detect cases of mental ill health in a population[18]. Unlike general health measures, such as the SF-36 and EuroQol, the GHQ-12 is specific to mental health. It has been used extensively as a screening test in both general population surveys and in clinical populations. Although it measures the current state of the individual, it has been shown to demonstrate significant predictive validity in terms of the future use of mental health care.

The rationale behind the GHQ-12 is that, although there are many different psychiatric disorders, they nevertheless share a common underlying element. GHQ-12 was not designed to place individuals on a scale of severity of disturbance, but merely to identify cases as opposed to non-cases.

The GHQ-12 items consist of statements about behavioural and psychological functioning (e.g. feelings of unhappiness and depression). Respondents are asked to compare their current state with their normal state. As such, it may underestimate the incidence of chronic psychiatric illness.

Individuals end up with a score of 0 to 12. A high score indicates that the respondent is experiencing distressing symptoms similar to those reported by cases of non-psychotic disorders seen by the specialist mental health services.

The threshold for identifying a case varies depending on the aims of the individual study and the population being studied. A high threshold will increase the number of false negatives and a low threshold will increase the number of false positives.

The GHQ-12 has been included in the Health Survey for England series, in the Scottish Health Surveys and in the Northern Ireland Health and Social Well-being Survey[15, 16, 19]. A score of 4 or more was used as a standard threshold for identifying individuals with possible mental health problems.

4.2 South Eastern Population Health Survey GHQ-12 Results

- 17.4% of respondents (726/4171) had a GHQ-12 score of 3 or more and 13.6% of respondents (568/4171) had a GHQ-12 score of 4 or more (Tables 4.1 and 4.2).

  The data was examined to see if there were any major differences in the results when a case of poor mental health was defined by a score of 4 or higher rather than a score of 3 or higher. Although the percentage of cases was greater for the lower cut-off point the patterns between different sub-groups (e.g. age groups, gender, social class etc.) were the same.

  In order to facilitate international comparisons the data presented here defines cases of mental ill health as those having a score of 4 or more.

- A significantly higher percentage of women compared to men had a GHQ-12 score of 4 or higher (Table 4.3). Of the women, 15.6% had poor mental health compared to 11.1% of men (p = 0.000).

  Examining the effect of age, by dividing the population of respondents into three age groups of approximately twenty years each, there was no significant difference in the percentage for each age group reporting mental ill health (Tables 4.1 and 4.2).

  Examining the influence of age for males and females separately, there was no significant difference in the percentage for each age group reporting mental ill health (Table 4.3).

- Table 4.4 explores the effect of age by dividing the population of respondents with a GHQ-12 score of 4 or higher into ten-year age groups. Although a statistically significant variation by age (p = 0.003) was found, this result should be interpreted with caution as the number of respondents in individual ten year age groups was as low as 44.

  Overall there is an upward trend with increasing age, with elderly persons, 75 years of age and older reporting the highest percentage (19.9%) with mental ill health. It is interesting to note that in those aged 65 to 74 years of age there was a lower percentage (9.9%) with poor mental health compared to all of the other age groups. It is also interesting that young adults aged 18 to 24 had a higher percentage with poor mental health compared to adults aged 25 to 34 years.

  Looking at males and females separately, the significant variation in mental health with ten-year age groups remained significant (p = 0.003) only for males (Table 4.4). Females did not have a significant variation by ten-year age group. However, these results should be interpreted with caution as the number of respondents in each age group was as low as 16 for males and 28 for females.

- Table 4.5 shows the variation in GHQ-12 scores by county of residence. Although there was a small degree of variation between the counties, Kilkenny having the lowest percentage (12.1%) with poor mental health compared to the highest percentage (15.8%) in Wexford, the difference between the counties was not statistically significant (p = 0.95).

- There was very little difference in the GHQ-12 scores between social classes 1 to 6 (Table 4.6). However, social class 7 (all others gainfully occupied and unknown) had a greater number of respondents (17%) falling into the mental ill health group. This difference across the social class groupings was statistically significant (χ^2 = 8.025; p=0.046; 3 df; 95% confidence level).

- A higher percentage of persons with a GMS card, compared to those without a GMS card, scored in the mental ill health range on the GHQ-12. Nineteen percent of persons with a medical card were mentally ill compared to only 11% of non-medical card holders (Table 4.7). This difference was statistically significant (χ^2 = 50.5; p = 0.000; 1 df; 95% confidence level).

  Exploring the effect of GMS status by gender, both men and women who had a medical card were more likely to have mental ill health than those that did not have a medical card. These differences were statistically significant (p = 0.000) (Table 4.7). For women, 19.5% of those with medical cards had a GHQ-12 greater than or equal to 4 compared to 13.6% of those without medical cards. For men it was 18.9% versus 8.2%.

  As already shown above, GHQ-12 scores did not show a significant variation by age, although there was a general upward trend with age.

- Table 4.8 gives the breakdown of GHQ-12 results by level of education completed at the time of the survey. The differences in GHQ-12 scores by level of education achieved were statistically significant (χ^2 = 8.007; p = 0.046; 3df) at the 95% confidence level.

  Those with no schooling or just primary education had the highest percentage of respondents (16.2%) scoring in the mental ill health range. Persons with some second level education had the lowest percentage (12.2%).

  Third level education was not protective against mental ill health as 14% of persons with third level education had poor mental health.

- Table 4.9 presents the GHQ-12 results by employment status. Working persons had the lowest percentage of persons (9.7%) with poor mental health. This compares with 40.6% of those who were unemployed or unable to work because of disability. Unemployed persons were significantly more likely to report poor mental health than the rest of the responders ($\chi^2 = 210$; $p = 0.000$, 2 df, 95% confidence level). See Table 4.10.

  Looking at males and females separately, the significant variation in GHQ-12 scores with employment status remains (Table 4.10). Poor mental health was reported in 41.7% of unemployed women ($p = 0.000$) and 39.7% of unemployed men ($p = 0.000$).

  The possible compounding effect of GMS status was controlled by examining the relationship between employment status and mental health within each GMS category. The significant relationship between employment and mental health remained for both medical card holders ($p = 0.000$) and non-medical card holders ($p = 0.000$) (Table 4.10).

4.3 Conclusions

The General Health Questionnaire (GHQ-12) was used to record self-assessed mental health. Significant differences in mental health status were found between population sub-groups with respect to gender, social class, GMS status, employment status and level of education achieved. No statistically significant differences were found with respect to age and county of residence.

Table 4.1: GHQ-12 scores by age group with a case score of 3 or higher

	18-39	40-59	≥ 60	Total	χ^2 test; 95% confidence level
Good mental health	82.8% (1324)	82.8% (1280)	82% (841)	82.6% (3445)	$p = 0.868$
Mental ill health	17.2% (276)	17.2% (266)	18% (184)	17.4% (726)	No significant difference by age group
Total	100% (1600)	100% (1546)	100% (1025)	100% (4171)*	

GHQ-12 score < 3 suggests good mental health

GHQ-12 score ≥ 3 suggests mental ill health

* Data missing for 335 respondents

Table 4.2: GHQ-12 scores by age group with a case score of 4 or higher

	18-39	40-59	≥ 60	Total	χ^2 test; 95% confidence level
Good mental health	86.6% (1385)	86.3% (1334)	86.2% (884)	86.4% (3603)	$p = 0.964$
Mental ill health	13.4% (215)	13.7% (212)	13.8% (141)	13.6% (568)	No significant difference by age group
Total	100% (1600)	100% (1546)	100% (1025)	100% (4171)*	

GHQ-12 score < 4 suggests good mental health

GHQ-12 score ≥ 4 suggests mental ill health

* Data missing for 335 respondents

Table 4.3: GHQ-12 scores of 4 or higher by gender and approximately 20 year age groups

	18-39	40-59	≥ 60	Total	χ^2 test; 95% confidence level
Male	9.4% (65/693)	11.8% (82/694)	12.5% (56/449)	11.1% (206/1860)	$p = 0.192$ Not significant for males by age group
Female	16.5% (150/907)	15.3% (130/852)	14.8% (85/576)	15.6% (370/2371)	$p = 0.61$ Not significant for females by age group

Table 4.4: GHQ-12 scores of 4 or higher by gender and 10 year age groups

	18-24	25-34	35-44	45-54	55- 64	65-74	≥ 75	Total	χ^2 test; 95% level
Male	9.5%	9.6%	7.6%	12.8%	13.6%	8.4%	19%	11.1%	*p*=0.003
	20/210	32/332	25/329	46/360	37/273	16/190	27/142	203/1836	
Female	17.1%	13.3%	17.7%	15.6%	15.1%	10.9%	20.7%	15.6%	*p*=0.069
	40/234	55/414	91/513	66/422	47/312	28/256	38/184	365/2335	
Total	13.5%	11.7%	13.8%	14.3%	14.4%	9.9%	19.9%	13.6%	*p*=0.003
	60/444	87/746	116/842	112/782	84/585	44/446	65/326	568/4171	

Table 4.5: GHQ-12 scores by county of residence

	Carlow	Kilkenny	South Tipperary	Waterford	Wexford
Good mental health	87.4%	87.9%	86.2%	87.4%	84.2%
	383	857	743	694	978
Mental ill health	12.6%	12.1%	13.8%	12.6%	15.8%
	55	118	119	100	184
Total	100%	100%	100%	100%	100%
	438	975	862	794	1162

GHQ12 score < 4 suggests good mental health

GHQ12 score ≥ 4 suggests mental ill health

Data missing for 275 respondents

Table 4.6: GHQ-12 scores by social class

	Social class 1 &2	Social class 3 & 4	Social class 5 & 6	Social class 7
Good mental health	87%	86.6%	87.6%	83%
	1211	1140	757	547
Mental ill health	13%	13.4%	12.4%	17%
	181	176	107	112
Total	100%	100%	100%	100%
	1392	1316	864	659

GHQ-12 score < 4 suggests good mental health

GHQ-12 score ≥ 4 suggests mental ill health

Data missing for 275 respondents

Table 4.7: GHQ-12 scores of 4 or higher by gender and GMS status

	GMS Card		χ^2 test; 95% confidence level
	Yes	No	
Male	18.9% (94/498)	8.2% (109/1325)	$p = 0.000$ Significant difference for males by GMS status
Female	19.5% (155/793)	13.6% (210/1546)	$p = 0.000$ Significant difference for females by GMS status
Total	19.3% (249/1291)	11% (319/2871)	$p = 0.000$ Significant difference for all respondents by GMS status

Table 4.8: GHQ-12 scores by level of education achieved

	No schooling or primary only	Some secondary schooling	Completed secondary schooling	Completed third level	Total
Good mental health	83.8%	87.8%	87.2%	86%	86.4%
	782	956	1209	668	3615
Mental ill health	16.2%	12.2%	12.8%	14%	13.6%
	151	133	177	109	570
Total	100%	100%	100%	100%	100%
	933	1089	1386	777	4185*

GHQ-12 score < 4 suggests good mental health

GHQ-12 score ≥ 4 suggests mental ill health

* Data missing for 321 respondents

Table 4.9: GHQ-12 score of 4 or higher by gender and employment status

	Student*	Unemployed #	Retired	Homemaker	Working	Total
Male	15.8%	39.7%	10.7%	7.1%	7.2%	10.9%
	9/57	62/156	33/307	1/14	91/1259	196/1793
Female	17%	41.7%	16.9%	12.8%	13.1%	15.3%
	16/94	55/132	48/284	102/796	123/942	344/2248
Total	16.6%	40.6%	13.7%	12.7%	9.7%	13.4%
	25/151	117/288	81/591	103/810	214/2201	540/4041

* Student or first time looking for work

Unemployed or suffering a disability that means unable to work

Table 4.10: GHQ-12 score of 4 or higher by gender and employment status (cont'd)

	Not working but not unemployed*	Unemployed/disability preventing work	Employed	χ^2 test; 2 df; 95% confidence level
Male	11.4%	39.7%	7.2%	$\chi^2 = 150.82$;
	43/378	62/156	91/1259	$p = 0.000$
Female	14.1%	41.7%	13.1%	$\chi^2 = 75.678$;
	166/1174	55/132	123/942	$p = 0.000$
Non- GMS persons	11.4%	38.7%	9.3%	$\chi^2 = 79.626$;
	83/727	36/93	182/1954	$p = 0.000$
GMS card holder	15.1%	41.1%	14.8%	$\chi^2 = 71.056$;
	121/802	79/192	31/210	$p = 0.000$
All responders	13.5%	40.6%	9.7%	$\chi^2 = 210$;
	209/1552	117/288	214/2201	$p = 0.000$

* Includes students, retired persons, homemakers and those looking for their first job

Chapter 5

Disability

5.1 Introduction

The South Eastern Population Health Survey asked two questions on disability (Section D of questionnaire, Appendix 1). These questions were identical to the questions asked in the 2002 Census of population. Respondents were asked about a long lasting physical or sensory disability and any interference in the activities of daily living.

5.2 Disability in the South East

- Table 5.1 shows the percentage of respondents answering in the affirmative for each of the disability questions. This table also gives the results of the 2002 Census for those 18 years of age and older.

  Twenty percent of respondents indicated that they had a long lasting disability in the South Eastern Population Health Survey compared to only 10.4 % of those 18 years of age and older, in the 2002 Census.

  On examination of the Census results by region, the South Eastern area has similar results to the rest of the country and does not have a higher percentage reporting disability. Approximately 8% of persons (all ages) in the South Eastern area reported a disability, the same percentage as in the national population in the 2002 Census.

  One possible explanation for the high percentage reporting a disability in the South Eastern Population Health Survey is the Hawthorn effect – when people know you are measuring something, they try to make the measurement turn out right. The South Eastern Population Health Survey consisted of a series of questions, completed by the respondent on his/her own behalf, which try to record 'bad health'. The disability questions are in the last section of the questionnaire. In contrast the Census is seen as a head count of the population, is filled out by the head of the household for all of the members of the household, and is not seen as measuring 'bad health'.

- Table 5.2 shows the percentage of respondents reporting a disability by age group. For all age groups and all types of disability, individually and collectively, older age was associated with a significant increase in the percentage reporting disability.

  The results for the 2002 Census are also shown in Table 5.2. The national percentage reporting disability increases with age, but even in the older age group (those 60 years of age and older), the South Eastern Population Health Survey respondents continued to report a higher percentage with disability, 39.7% versus 27.2% in the national 2002 Census.

- Overall, there was no significant difference between males and females in terms of the percentage reporting any type of disability.

  Looking at each type of disability, males (142/1924) were significantly more likely than females (140/2404) to report a sensory disability ($\chi^2 = 0.039$; 1 df; $p = 0.04$).

  Females (347/2392) were significantly more likely than males (216/1901) to report a difficulty in learning, remembering and concentrating ($\chi^2 = 9.2$; 1 d.f.; $p = 0.002$).

  Females (173/2381) were also significantly more likely than males (98/1894) to report difficulty in going outside the home alone, or to a shop to visit the GP ($\chi^2 = 7.8$; 1df.; $p=0.005$).

- Overall there was a statistically significant difference ($\chi^2 = 95$; $p < 0.000$; 3 df; 95% confidence level) in the percentage reporting any type of disability by social class grouping (Table 5.3). The lower the social class the higher the percentage reporting a disability and social class 7 had the highest percentage for each type of disability and for disability overall.

  Controlling for the influence of age by looking at the relationship between social class and disability, the difference is only statistically significant at middle age (40 to 59 year olds), where the lower social classes have a higher percentage reporting a disability.

- Table 5.4 shows the relationship between GMS status and disability. Thirty eight percent of persons holding a medical card reported a disability, while only 11.5% of those who did not have a medical card reported a disability ($p < 0.000$).

  This significant relationship remained after controlling for the effect of age by looking at social class and disability within each twenty year age group.

- Respondents, who were unemployed or unable to work because of a disability, were significantly more likely to report a disability (Table 5.5). Fifty nine percent of those who were in this category had a disability compared to 9.6% of those who were employed ($p<0.000$).

  This significant relationship remained after controlling for the effect of age by looking at employment status and disability within each twenty year age group (Table 5.5).

- Respondents with only primary schooling or no schooling at all had a significantly higher percentage reporting a disability, 37% versus 8.6% of those who had achieved third level education (Table 5.6).

  Controlling for the effect of age, education level remains significantly associated with disability for those over 39 years of age. At the younger ages, educational status is not significantly associated with disability ($p = 0.3$) (Table 5.6).

5.3 Conclusions

In the South Eastern Population Health Survey the percentage of respondents reporting a disability increased significantly with age, social class, lower educational level, unemployment and GMS status.

This is a similar picture to that provided by each of the other measures of self-assessed health used in this survey, the SF-36, EuroQol (EQ-5D) and the GHQ-12.

Table 5.1: Respondents indicating a long lasting disability compared to the 2002 Census (national)

	Blindness, deafness, severe vision, hearing impairment	Substantial limitation of 1 or more physical activity	Difficulty in learning, remembering, concentrating	Difficulty in dressing, bathing, getting around	Difficulty in going outside the home	Difficulty in working at a job/ business	Total persons with disability
SE Population Health Survey	6.5%	16.5%	13.1%	4.8%	6.3%	12.8%	**20%**
	282/4328	712/4312	563/4293	196/4065	271/4275	529/4135	880/4397*
Census 2002≥ 18 yrs	2.5%	5.8%	3.4%	2.8%	4%	6%	**10.4%**

* Data missing for 109 respondents

Table 5.2: Respondents indicating a long lasting disability compared to the 2002 Census (national) by age group

Age Group		Blindness, deafness, severe vision, hearing impairment	Substantial limitation of 1 or more physical activity	Difficulty in learning, remembering, concentrating	Difficulty in dressing, bathing, getting around	Difficulty in going outside the home	Difficulty in working at a job/ business	Total persons with disability
18-39	SE Population Health Survey	1.8%	5.8%	8.3%	0.9%	2.0%	6.5%	**7.3%**
	Census 2002 ≥ 18 yrs	0.8%	1.5%	1.6%	0.7%	1.2%	2.3%	**4.1%**
40-59	SE Population Health Survey	5.5%	15.5%	12.9%	3.0%	3.8%	10.8%	**19.1%**
	Census 2002 ≥ 18 yrs	1.7%	4.6%	2.4%	1.5%	2.1%	5.7%	**9.0%**
≥ 60	SE Population Health Survey	14.9%	33.6%	20.5%	12.3%	16.2%	26.7%	**39.7%**
	Census 2002 ≥ 18 yrs	7.8%	17.95	7.9%	9.8%	13.5%	15.8%	**27.2%**
χ^2	SE Population Health Survey	$\chi^2 = 185$ $p < 0.000$	$\chi^2 = 365$ $p < 0.000$	$\chi^2 = 83.4$ $p < 0.000$	$\chi^2 = 202$ $p < 0.000$	$\chi^2 = 244$ $p < 0.000$	$\chi^2 = 225$ $p < 0.000$	$\chi^2 = 437$ **p <0.000**

Table 5.3: Respondents indicating a long lasting disability by social class

Any type of disability	Social class 1 &2	Social class 3 & 4	Social class 5 & 6	Social class 7
Yes	16.6% (236/1424)	16.1% (216/1345)	21.3% (193/905)	32.5% (235/723)
No	83.4% (1188/1424)	83.9% (1129/1345)	78.7% (712/905)	67.5% (488/723)

Data missing for 109 respondents

Table 5.4: Respondents indicating a long lasting disability by GMS status and age group

Age Group	GMS Card		χ^2 test; 1 df; 95% confidence level
	Yes	No	
18-39	14.5% (32/221)	6.5% (85/1302)	$\chi^2 = 19$; $p < 0.000$
40-59	37.1% (136/367)	13.8% (163/1185)	$\chi^2 = 98$; $p < 0.000$
≥ 60	45.3% (353/780)	25.9% (83/320)	$\chi^2 = 35$; $p < 0.000$
All ages	38.2% (530/1389)*	11.5% (336/2930)*	$\chi^2 = 419$; $p < 0.000$

* Missing data for age means that totals from individual age groups does not add up to the totals for 'All ages'. The overall total does not add up to 4506 (the total number in the survey) because of missing data for medical card status.

Table 5.5: Respondents indicating a long lasting disability by employment status and age group

Age Group	Unemployed/disability preventing work	Not working but not unemployed	Employed	χ^2 test; 2 df; 95% confidence level
18–39	33.3% (24/72)	5.5% (18/328)	5.6% (65/1152)	$\chi^2 = 205$; $p < 0.000$
40–59	59.1% (91/154)	18.8% (87/463)	11.5% (103/896)	$\chi^2 = 197$; $p < 0.000$
≥ 60	78.8% (67/85)	38.8% (321/828)	24.3% (38/156)	$\chi^2 = 70$; $p < 0.000$
All ages	58.9% (186/316)	26.1% (428/1637)	9.6% (215/2240)	$\chi^2 = 492$; $p < 0.000$

Table 5.6: Respondents indicating a long lasting disability by educational level and age group

Age Group	No schooling or primary only	Some secondary schooling	Completed secondary schooling	Completed third level	χ^2 test; 3 df; 95% confidence level
18–39	7.9% (5/63)	8.9% (29/326)	7.5% (53/705)	5.6% (29/519)	$\chi^2 = 6$; $p = 0.3$
40–59	28.3% (98/346)	18.3% (94/515)	15.9% (81/511)	12.7% (26/205)	$\chi^2 = 28$; $p < 0.000$
≥ 60	44.9% (271/604)	34.6% (93/269)	33.1% (56/169)	24% (12/50)	$\chi^2 = 18$; $p < 0.000$
All ages	37% (383/1035)	19.3% (216/1122)	13.9% (195/1401)	8.6% (67/783)	$\chi^2 = 286$; $p < 0.000$

Chapter 6

Discussions and Conclusions

6.1 The Need for Health and Quality of Life Measurement

The Department of Health and Children in the national health strategy (Quality and Fairness. A Health System for You)[20] have adopted the World Health Organisation's definition of health

> *Health is a complete state of physical, mental and social well-being and not merely the absence of disease or infirmity.*

The strategy aims to provide a system of healthcare that supports and empowers the individual, the family and the community to achieve their full health potential. Thus the health services are concerned with improving the population's general health and quality of life.

A large number of survey instruments have been developed to measure health. Some of the better known general measures are the SF-36 and the EuroQol (EQ-5D) [21]. These measures are not disease specific and can be used across different patient populations and measure several aspects of health (physical, mental, social etc). In contrast, the General Health Questionnaire (GHQ-12) is a dimension specific instrument which focuses on one aspect of health, an individual's mental well-being.

These measures of health status and quality of life can be used at national and local level to monitor the population's health and to assess the effectiveness of healthcare. They can be used to estimate the likely demand for health care and services. Health service utilisation data on its own is not sufficient to measure health need as it does not measure unmet need. There is a large body of literature that suggests that some population sub-groups, such as the socially deprived, may be systematically under utilising the health services[22]. The inverse care law states that medical care is inversely related to need.

Inequalities in health have been a persistent problem over the years and although the overall health of the population has improved consistently some population sub-groups continue to have poor health. Four principles guided the government's health strategy: equity, people centeredness, quality and accountability. Equity means that health inequalities are targeted and that people are treated according to need. Health status and quality of life measurement at population level allows the identification of population sub-groups with unmet need. Health services can then be designed to meet this need and thus deliver health care in an equitable manner.

There is an increased emphasis on functional status and quality of life outcomes for healthcare. Advances in medical research and therapy have shifted health care from the simple diagnosis and treatment of disease to the prevention and control of chronic disease. Modern treatments can have undesirable aspects and the consequences of treatment and treatment-related side effects may affect all of a patient's life, e.g. being on a restricted diet, being tied to a machine 12 hours out of 24, drug side-effects such as sexual dysfunction or sleep disturbance.

The aim of healthcare must be to move the mean health status and quality of life of the population to the highest level. The person accessing healthcare should feel that they have benefited from the service in terms of an improved health status and quality of life. Health status and quality of life instruments such as the SF-36, EuroQol (EQ-5D) and GHQ-12 can be used before and after treatment to assess the impact of treatment on the quality of life. The results can also be compared to the mean and median value for the general population.

6.2 South Eastern Population Health Survey 2001

The South Eastern Population Health Survey provides health status data for the South East of Ireland. It was a large, random survey of the whole population of the region with over four thousand persons completing the questionnaire. Health status and quality of life was measured by including four survey instruments in the questionnaire:

- SF-36
- EuroQol EQ-5D
- GHQ-12
- Census 2002 disability questions.

The Electoral Register was used as the sampling frame. Among the survey respondents, 18 to 24 year olds were underrepresented. This Register is the closest to the ideal sampling frame, but inclusion on the register is voluntary and young adults in particular may not have registered. In addition, this age group tend to be a very mobile group and may not be living at the permanent address supplied to the register.

Females had a better response rate than males and consequently were over represented among the survey respondents. Researchers have generally found that women are more likely to respond to surveys than men.

The results of this large population survey can be used in a number of ways:

- The data can be extrapolated to the whole of the country to provide Irish age and sex specific normative data.
- This age and sex specific data can be used to provide age and sex standardised normative data for the Irish population and for Irish males and Irish females. Such data facilitates international comparisons between Ireland and other countries.
- The results of this study provide a baseline against which health service policy and future interventions can be evaluated.
- The results of this study have identified a number of sub-groups within the population of the South East and Ireland who have poorer health than the rest of the population. Services can now be targeted at these sub-groups and the effectiveness of the interventions can be evaluated by future health status surveys.
- The results of this survey will add to the body of international knowledge on health status measurement, as it allows a comparison of the four different survey instruments for self-assessed health.

6.3 Normative Irish Health Status Data

A judgement of 'good health' or 'bad health' on the basis of instruments such as the SF-36, EuroQol (EQ-5D) and GHQ-12 require a comparison with some norm. Normative data is the key to determining whether a group or an individual scores above or below the average for their country, age, sex or disease group.

Published norms exist for a number of countries including the United States, the United Kingdom, Canada and Australia. This study provides Irish normative data for different age groups and gender for the SF-36, the EuroQol (EQ-5D) and the GHQ-12.

Age and sex standardised normative data are necessary for international comparisons of health status. No previous Irish study has been large enough to provide age and sex standardised Irish normative data. The similarity of the population of the South East and the scale of the study (over 4,000 respondents) allows the calculation of age and sex standardised normative data for the Irish population. In this report, the standardised normative data for the SF-36 are presented in Table 2.14, section 2.5.1.

6.4 Inequalities in Health Status and Quality of Life

All four survey instruments found that mean self-assessed health was lower in persons of older age, of lower social class, of lower income as measured by GMS eligibility, of lower educational status and in those of unemployed status. Unemployment, GMS status and older age were the greatest predictors of poor health status.

Although there were some differences in health status between men and women, in general the differences were small and not statistically significant. Mental health (GHQ-12) was the only health dimension where women had significantly poorer health than men.

In contrast to self-rated general health, self-rated mental health (GHQ-12 and the mental health dimension of the SF-36) did not vary significantly with age.

There were no statistically significant differences in self-reported health status by county of residence within the South East.

6.5 Addressing Health Inequalities

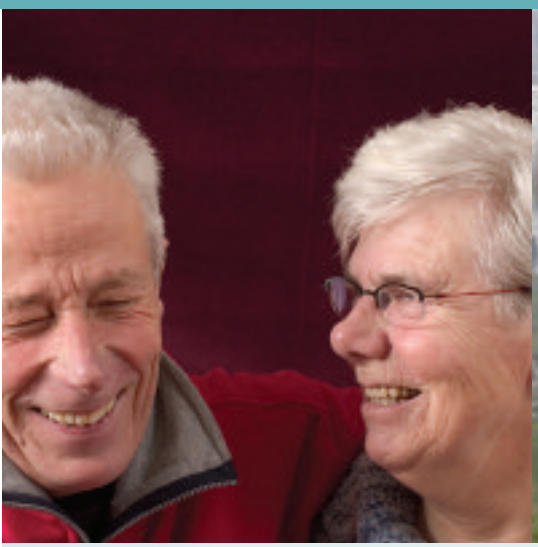
The health of the population in the South East was determined by asking a large number of individuals to assess their own health. Population sub-groups who were experiencing poorer health and quality of life than the rest of the population were identified, namely older persons and those of lower socio-economic status. These findings are consistent with the national and international body of evidence on the health experiences of different groups within a population.

Health status and quality of life is influenced by many factors including environmental conditions, genetic factors, personal behaviour, societal factors and medical care. While addressing inequalities in health status is not just the function of the health services, health services have a significant impact on population health. The results of this study show that to move the mean health status/quality of life of the population to a higher level, services and interventions need to be targeted to those of older age and those of lower socio-economic status.

Evaluating the effectiveness of services requires evidence of changes in health status. The analysis of the South Eastern Population Health Survey is the largest of its kind ever conducted thus far in Ireland. The results can be used as a baseline against which future activity to raise health status and improve quality of life can be evaluated.

References

1. Public Health Information System [CD ROM]. Version 7. Department of Health and Children.
2. Ware, J.E., Snow, K.K., Kosisnki, M. and Gandek, B. (1993). *SF-36 Health Survey Manual and Interpretation Guide*. Boston, MA: New England Medical Center, The Health Institute.
3. Brooks, R. (1996). EuroQol: the current state of play. *Health Policy,* 37 (1), 53-72.
4. Goldberg, D. and Williams, P. (1988). *A user's guide to the general health questionnaire*. Windsor: NFER-Nelson.
5. Finlay-Jones, R.A. and Murphy, E. (1979). Severity of psychiatric disorder and the 30-item general health questionnaire. *British Journal of Psychiatry,* 134, 609-16.
6. Goldberg, D. (1985). Identifying psychiatric illness among general medical patients. *British Medical Journal,* 291 (6489), 161-3.
7. Donath, S. (2001). The validity of the 12-item General Health Questionnaire in Australia: a comparison between three scoring methods. *Australian and New Zealand Journal of Psychiatry,* 35 (2), 231-5.
8. Altman, D.G. (1991). *Practical Statistics for Medical Research*. London, UK: Chapman and Hall.
9. Central Statistics Office. *Quarterly National Household Survey – Third Quarter 2001*.
10. Central Statistics Office. *Census 2002*.
11. South Eastern Health Board. (1998). *Towards the Golden Years. A strategy for services to and for the older person 1998 – 2011*. Report of Committee on Review of Services for the Elderly. Kilkenny: South Eastern Health Board.
12. Buttanshaw, C. (Ed). Tipping the Balance Towards Primary Healthcare Network. *Proceedings of the 10th Anniversary Conference*, 13-16 November 1997. NHV Report 1999:1. Goteborg, Sweden: Nordic School of Public Health.
13. Blake, C., Codd, M.B. and O'Meara, Y.M. (2000). The Short Form 36 (SF-36) Health Survey: normative data for the Irish population. *Irish Journal of Medical Science*, 169 (3), 195-200.
14. Balanda, K. and Wilde, J. (2003). *Inequalities in Perceived Health. A report on the All-Ireland Social Capital & Health Survey*. Dublin: The Institute of Public Health in Ireland.
15. O'Reilly, R. and Browne, S. (2001). *Health and Health Service Use in Northern Ireland: Social Variations*. A report from the Health and Social Wellbeing Survey 1997. Belfast: Department of Health, Social Services and Public Safety.
16. Department of Health. (1998). *Health Survey for England 1996*. London: Stationery Office.
17. Kind, P., Hardman, G. and Macran, S. (1999). *UK population norms for EQ-5D*. York: Centre for Health Economics, University of York.
18. Sturgis, P., Thomas, R., Purdon, S., Bridgwood, A. and Dodd, T. (2001). *Comparative review and assessment of key health state measures of the general population*. Department of Health, UK.
19. Braunholtz, S., Davidson, S. and King, S. (2004). *Well what do you think [2004]: The second national Scottish survey of public attitudes to mental health, mental well-being and mental health problems*. Edinburgh: Scottish Executive.
20. Department of Health and Children. (2001). *Quality and Fairness. A Health System for You*. Dublin: Stationery Office.
21. Garratt, A., Schmidt, L., Mackintosh, A. and Fitzpatrick, R. (2002). Quality of life measurement: bibliographic study of patient assessed health outcome measures. *British Medical Journal*, 324, 7351, 1417-1421.
22. Deloitte & Touche. (2003). *Inequalities in Health and social care use: the implications for resource allocation in the HPSS*. HPSS Commissioned Research.



Appendix 1
South Eastern Population Health Survey 2001 Questionnaire

South Eastern Health Board

POPULATION HEALTH SURVEY 2001

Return your Completed Questionnaire to the South Eastern Health Board and you could Win £250

Dear Sir/Madam,

This questionnaire is part of an important project to develop and improve our information about people and their health in the South East. You have been selected as a resident of the South Eastern community to complete this questionnaire. It will probably take a little time to complete the questionnaire, but your views and experiences are needed in order to meet the information needs of health planners and providers of services in the South East.

If, for any reason, you would like help in completing the questionnaire, or have any particular difficulties, please telephone the Public Health Department on (056) 84528 during working hours and ask for our Research Assistant. When you have completed the questionnaire, please return it in the pre-paid envelope provided by 9th November 2001. The results of this survey will be published in a report by the South Eastern Health Board in 2002.

The questionnaires have been numerically coded for the purpose of entering respondents who complete and return the questionnaire into a prize draw for £250. The prize-winner will be notified in November, 2001.

ANY INFORMATION YOU PROVIDE IN THE QUESTIONNAIRE WILL BE TREATED AS STRICTLY CONFIDENTIAL. YOUR NAME WILL NOT BE PUBLISHED OR IDENTIFIED IN ANY REPORTS THAT COME FROM THIS SURVEY. YOUR PARTICIPATION IN THIS SURVEY WILL NOT AFFECT YOUR RECEIPT OF SERVICES IN ANY WAY.

Thank you for taking the time to complete the questionnaire.

Yours sincerely,

Dr. Orlaith O'Reilly
Director of Public Health

SECTION A: GENERAL INFORMATION

1. What is your age in years?
(Please write in the boxes) ☐ ☐

2. Are you:
(Please tick one box) male ☐ female ☐

3. Are you:
(Please tick one box)

A current smoker ☐ An ex-smoker ☐ A never smoker ☐

4. Which of the following best describes your usual daily activity?
(Please tick one box)

Seeking Work for the first time	☐	Retired	☐
Unemployed	☐	Homemaker	☐
At school, student	☐	Employee	☐
Unable to work due to permanent disability/illness	☐	Self-Employed	☐

Other (please specify) _____

5. What is your job title? (If you are not in a paid job at the moment give title of last job)

_____

If you are a farm owner, can you indicate the farm acreage that you own
(Please tick the appropriate box)

Owning 200 or more acres	☐	Owning 30-49 acres	☐
Owning 100-199 acres	☐	Owning less than 30 acres	☐
Owning 50-99 acres	☐		

6. If you are not the principal wage earner, please answer the following about the principal wage earner in your household:

What is his/her job title?
(If they are not in a paid job at the moment give title of last job)

_____

7. What did your education include?
(Please tick one box)

No schooling	☐	Complete Secondary Education	☐
Primary School Education Only	☐	Complete Third Level Education	☐
Some Secondary Education	☐	(e.g. Certificate or diploma or degree or higher)	☐

8. What is your County of residence? (Please tick one box)

Carlow ❒ Kilkenny ❒ South Tipperary ❒ Waterford ❒ Wexford ❒

9. Do you have a medical card? (Please tick one box) yes ❒ no ❒

10. Do you have V.H.I. Insurance/BUPA? (Please tick one box) yes ❒ no ❒

Some of the questions in the following sections might sound a bit similar to one another - Please answer ALL questions.

SECTION B:

This survey asks for your views about your health. This information will help us understand how you feel and how well you are able to do your usual activities. Answer every question by marking the answer as indicated. If you are unsure about how to answer a question, please give the best answer you can.

1. In general, would you say your health is:

(Circle one answer)

Excellent 1
Very good 2
Good 3
Fair 4
Poor 5

2. Compared to one year ago, how would you rate your health in general now?

(Circle one answer)

Much better now than one year ago 1
Somewhat better now that one year ago 2
About the same as one year ago 3
Somewhat worse now than one year ago 4
Much worse now than one year ago 5

3. The following questions are about activities you might do during a typical day.

Does your health NOW limit you in these activities? If so, how much?

(Circle one number on each line)

ACTIVITIES	Yes, Limited a Lot	Yes, Limited a Little	No, Not Limited at All
(a) **Vigorous activities**, such as running, lifting heavy objects, participating in strenuous sports	1	2	3
(b) **Moderate activities**, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	1	2	3
(c) Lifting or carrying groceries	1	2	3
(d) Climbing **several** flights of stairs	1	2	3
(e) Climbing **one** flight of stairs	1	2	3
(f) Bending, kneeling or stooping	1	2	3
(g) Walking **more than a mile**	1	2	3
(h) Walking **half a mile**	1	2	3
(i) Walking **one hundred yards**	1	2	3
(j) Bathing or dressing yourself	1	2	3

4. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of your physical health? (Circle one number on each line)

	YES	NO
(a) Cut down on the **amount of time** you spent on work or other activities	1	2
(b) **Accomplished less** than you would like	1	2
(c) Were limited in the **kind** of work or other activities	1	2
(d) Had **difficulty** performing the work or other activities (for example, it took extra effort)	1	2

5. During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

(Circle one number on each line)

	YES	NO
(a) Cut down on the **amount of time** you spent on work or other activities	1	2
(b) **Accomplished less** than you would like	1	2
(c) Didn't do work or other activities as **carefully** as usual	1	2

6. During the past 4 weeks, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbours, or groups?

(Circle one answer)

Not at all 1
Slightly 2
Moderately 3
Quite a bit 4
Extremely 5

7. How much bodily pain have you had during the past 4 weeks?

(Circle one answer)

None 1
Very mild 2
Mild 3
Moderate 4
Severe 5
Very severe 6

8. During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

(Circle one answer)

Not at all 1
A little bit 2
Moderately 3
Quite a bit 4
Extremely 5

9. These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give an answer that comes closest to the way you have been feeling.

How much of the time during the past 4 weeks –

(Circle one number on each line)

	All of the Time	Most of the Time	A Good Bit of the Time	Some of the Time	A Little of the Time	None of the Time
(a) Did you feel full of life?	1	2	3	4	5	6
(b) Have you been a very nervous person?	1	2	3	4	5	6
(c) Have you felt so down in the dumps that nothing could cheer you up?	1	2	3	4	5	6
(d) Have you felt calm and peaceful?	1	2	3	4	5	6
(e) Did you have a lot of energy?	1	2	3	4	5	6
(f) Have you felt downhearted and low?	1	2	3	4	5	6
(g) Did you feel worn out?	1	2	3	4	5	6
(h) Have you been a happy person?	1	2	3	4	5	6
(i) Did you feel tired?	1	2	3	4	5	6

10 During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?

(Circle one answer)

All of the time..... 1
Most of the time.....2
Some of the time.....3
A little of the time..... 4
None of the time.....5

11. How TRUE or FALSE is <u>each</u> of the following statements for you?

(Circle one number on each line)

	Definitely True	Mostly True	Don't Know	Mostly False	Definitely False
(a) I seem to get ill more easily than other people	1	2	3	4	5
(b) I am as healthy as anybody I know	1	2	3	4	5
(c) I expect my health to get worse	1	2	3	4	5
(d) My health is excellent	1	2	3	4	5

SECTION C: Your own health state TODAY

1. By placing a tick in one box in each group below, please indicate which statement best describes your own health state today. Tick ONE box only in each group.

(a) Mobility

I have no problems in walking about ☐
I have some problems in walking about ☐
I am confined to bed ☐

(b) Self-Care

I have no problems with self-care ☐
I have some problems washing or dressing myself ☐
I am unable to wash or dress myself ☐

(c) Usual Activities (e.g. work, study, housework, family or leisure activities)

I have no problems with performing my usual activities ☐
I have some problems with performing my usual activities ☐
I am unable to perform my usual activities ☐

(d) Pain/Discomfort

I have no pain or discomfort ☐
I have moderate pain or discomfort ☐
I have extreme pain or discomfort ☐

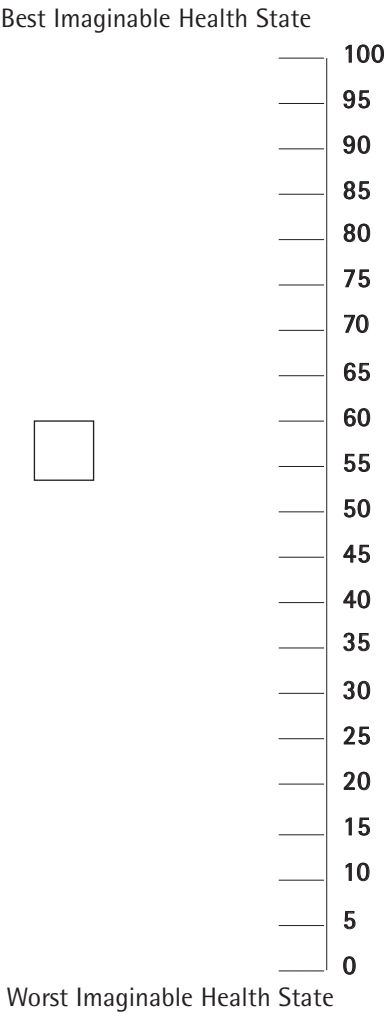
(e) Anxiety/Depression

I am not anxious or depressed ☐
I am moderately anxious or depressed ☐
I am extremely anxious or depressed ☐

To help people say how good or bad a health state is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.

We would like you to indicate on this scale how good or bad your own health is today, in your opinion.

Please do this by drawing a line from the box opposite to whichever point on the scale indicates how good or bad your health state is.



SECTION D:

1. Do you have any of the following long lasting conditions?
(Please tick appropriate box)

(a) Blindness, deafness or a severe vision or hearing impairment	yes	❒	no	❒
(b) A condition that substantially limits one or more basic physical activities such as walking, climbing stairs, reaching, lifting or carrying?	yes	❒	no	❒

2. Because of a physical, mental or emotional condition lasting 6 months or more, do you have any difficulty in doing any of the following activities?

Answer (a), (b), (c) and (d)

(a) Learning, remembering and concentrating	yes	❒	no	❒
(b) Dressing, bathing or getting around inside the home	yes	❒	no	❒
(c) Going outside the home alone to shop or visit a Doctor's surgery	yes	❒	no	❒
(d) Working at a job or business	yes	❒	no	❒

SECTION E:

Please read this carefully. We should like to know if you have had any medical complaints and how your health has been in general, **over the last few weeks**.

Please answer ALL the questions simply by underlining the answer which you think most nearly applies to you.

Remember that we want to know about present and recent complaints, not those that you had in the more distant past. It is important that you try to answer ALL the questions.

HAVE YOU RECENTLY:				
1. Been able to concentrate on whatever you're doing?	Better than usual	Same as usual	Less than usual	Much less than usual
2. Lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
3. Felt that you are playing a useful part in things?	More so than usual	Same as usual	Less useful than usual	Much less useful
4. Felt capable of making decisions about things?	More so than usual	Same as usual	Less so than usual	Much less capable
5. Felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
6. Felt you couldn't overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
7. Been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less so than usual	Much less than usual
8. Been able to face up to your problems?	More so than usual	Same as usual	Less able than usual	Much less able
9. Been feeling unhappy and depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
10. Been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
11. Been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
12. Been feeling reasonably happy, all things considered?	More so than usual	About same as usual	Less so than usual	Much less than usual

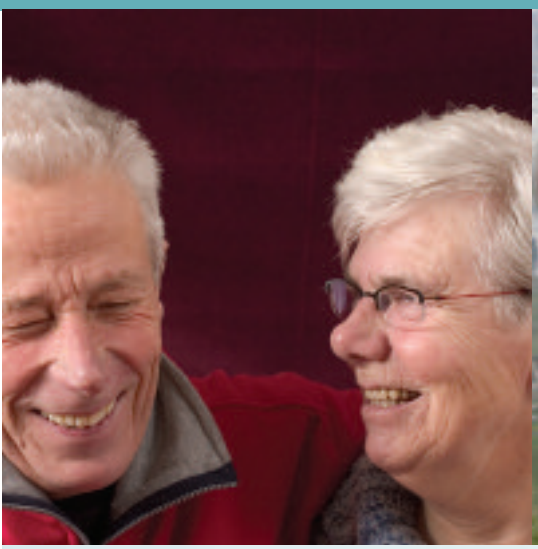
SECTION F:

1. What in your opinion, are the best things about our health services in the South East?

---

2. What in your experience, are the main issues/concerns with the health services in the South East?

Thank you for taking the time to complete this questionnaire.



Appendix 2
Age and Sex Standardised Normative Data Calculation

Age and Sex Standardised Normative Data

Calculation using age and sex specific and population numbers from the 2002 Census of Population

$Mean^P$ = [($Mean^S$ for age group 1 x no. in age group 1)/ Total no. in pop.) +
[($Mean^S$ for age group 2 x no. in age group 2)/ Total no. in pop.) +
[($Mean^S$ for age group 3 x no. in age group 3)/ Total no. in pop.) + ----------

$Mean^P$ = Standardised population mean score
$Mean^S$ = Survey population mean score
No. = number of persons
Pop. = Irish population from Census 2002
Age group 1, age group2, age group3 -------- = ten year age groups in Irish population 2002 Census