

**SECONDARY ANALYSIS OF THE 1997 AND 2001 NORTHERN
IRELAND HEALTH AND SOCIAL WELLBEING SURVEYS**

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INTRODUCTION

Two Northern Ireland Health and Social Wellbeing (NIHSWB) surveys have been conducted, one in 1997 and one in 2001. The Survey Analysis Unit of ARK - Northern Ireland Social and Political Archive – was contracted by the DHSSPS to conduct a comparative analysis of the datasets, as well as an in-depth analysis of the 2001 dataset.

An interim report was produced to detail preliminary results that could be incorporated into the 'Equality and Inequalities in Health and Social Care in Northern Ireland: a Statistical Overview' report. The analyses used in the interim report were largely descriptive. The inclusion of comparative data from the English Health Survey 2000, the Scottish Health Survey 1998, the Welsh Health Survey 1998 and the Irish Survey of Lifestyle and Nutrition (SLAN) 1998 allowed for comment on differences and inequalities in the health and social wellbeing of the population in the different parts of the British Isles.

This final Report begins with a discussion of the design of the Northern Ireland Health and Wellbeing surveys, reporting some basic descriptive sample characteristics. The Report then moves on to more advanced methods of statistical analyses, such as logistic regression models, which have been utilised to determine causal factors that may impact on people's health and social wellbeing. This has enabled us to assess the relative importance of demographic, socio-economic, social and environmental factors for overall health and wellbeing. In this way, some factors that appeared to be significant at the descriptive level of analysis employed in the Interim Report, ultimately emerged as artefacts of the otherwise more hidden aspects of the overall health and wellbeing of respondents.

For this final report multivariate analyses focussed on three key measures of health:

- self-reported general health;
- mental health as quantified through the traditional GHQ12 concept;
- limiting long-standing illnesses.

A stepped approach was used to highlight the effects of single factors or groups of factors as they were included in a more complex model of analysis. This is followed by sections on individual topics such as smoking, drinking and health-related hazards in the workplace and in the home. Finally, we highlight some aspects that should be taken into consideration should the Health and Social Wellbeing survey be repeated in future.

Executive Summary

Introduction

Two Northern Ireland Health and Social Wellbeing surveys (NIHSWB) have been conducted, one in 1997 and one in 2001. The present report comprises a comparative analysis of the two datasets, as well as an in-depth analysis of the 2001 data.

SECTION 1

Section 1 of the report compares the data of the 1997 survey with those of the recent 2001 survey.

Both surveys were designed to yield representative samples of the adult population aged 16 years or over living in private homes in Northern Ireland. Samples were drawn from the most up-to-date Valuation and Lands Agency lists available at the time. 4,236 respondents took part in the 1997 survey, and 5,205 people responded to the 2001 survey.

Questions relating to general and mental health, smoking and drinking habits, stress and selected medical conditions, such as cardio-vascular diseases and joint problems, appear in both surveys. However, the 2001 NIHSWB survey adopted a more holistic approach to health and also included questions on sexual health, social and environmental health hazards, as well as health issues in the neighbourhood.

General health

Self-assessed general health has improved from 1997 to 2001. 53.1 percent of all respondents reported 'good' general health in 2001 compared to 50.5 percent in 1997. Being a member of a more affluent household and being in a non-manual category of employment were found to be the two key independent factors that protect against poor general health.

Smoking and drinking were identified as the two main behavioural factors that impacted on self-assessed general health. High stress levels were also associated with poor general health. Ward-based Noble indicators generally were not found to be related at a significant level to self-reported health, however, respondents who lived in a ward with poor housing conditions were more likely to state that their general health was not 'good'.

Mental Health

Mental health was measured using the GHQ12 scale. Overall, respondents in 2001 had better GHQ12 scores than in 1997. In 2001, over 60 percent of respondents had a GHQ12 score which suggested that their mental health was better than 12 months ago. It was found that men were less likely than women to give responses which would indicate poor mental health. Being a non-manual worker was associated with a better mental health score. Respondents who were physically active and those with more social contacts were also found to be better off in relation to their mental health. High levels of stress

were related to poorer mental health. Aside from Social Environment, none of the Noble indicators had a significant impact on poorer mental health scores.

Disability, Long-standing (Limiting) Illnesses and Infirmities

In 1997, 38.6 percent of respondents reported having a long-standing illness or disability compared to 37.6 percent in 2001. A long-standing limiting illness or disability was reported by 27.5 percent and 27.3 percent of respondents in 1997 and 2001 respectively. 6.4 percent of respondents in 1997 and 6.5 percent in 2001 said they were economically inactive because of a disability or limiting long-standing illness. Age emerged as the strongest predictor for the presence of a disability or long-standing illness, with older respondents more likely to report problems. A number of social factors, such as education, class and relative affluence were significantly related to the presence of a disability or limiting long-standing illness, with those who had a higher household income, higher educational achievement and higher class being less likely to report the presence of a disability or long-standing limiting illness. Respondents who never smoked and did not drink alcohol were also less likely to have a disability or limiting long-standing illness. Social Environment was the only Noble Indicator associated with long-standing limiting illness.

Other Medical Health Indicators

In 2001, 23 percent of respondents said that they were diagnosed with high blood pressure compared to 21.6 percent in 1997. In 2001, 66 percent of those diagnosed had received treatment with medicine and 23.9 percent had received other treatment. The respective figures in 1997 were significantly lower (58.3 and 18.6 percent). Older people were more likely to be diagnosed with high blood pressure than younger people.

Although the percentage of respondents reporting problems with their joints was smaller in 2001 than in 1997 (40.2 percent and 42.8 percent respectively) there was a small increase in the most common joint problems (back and neck). These were most often reported by respondents who experienced stress-related health risks in the workplace.

Smoking

59.9 percent of respondents in 1997 and 60.5 percent of respondents in 2001 said they had smoked at least once. 31.8 percent of all respondents in 1997 and 26.5 of respondents in 2001 were current smokers. The percentage of those respondents who said they had received advice from their GP with regard to smoking was smaller in 2001 (14.7 percent) than in 1997 (16 percent). Manual workers were significantly more likely to be current smokers than non-manual workers.

Drinking

In 1997, 66.8 percent of respondents stated that they drank alcohol compared to 69.6 percent in 2001. Drinking at above the recommended sensible level of

alcohol rose by four percentage points among females (10.2 percent in 1997, 14.1 percent in 2001) and two percentage points among males (23.0 percent in 1997 and 25.0 percent in 2001). The proportion of those who said they had received advice from their GP in relation to their drinking behaviour was also higher in 2001 (8.5 percent compared to 8.1 percent in 1997). Younger respondents were much more likely to drink above the recommended weekly sensible level. In the youngest age group (16-24) 36.6 percent of males and 30.2 percent of females were drinking above the recommended sensible level.

Physical Activity

Questions about levels of physical activity were only asked in 2001. A strong correlation was found between taking exercise and self-reported general health. Compared to respondents who were physically active, five times as many people who were sedentary reported that their general health was not good (8.6 percent and 42.1 percent respectively). Physical activity also had a positive impact on the overall mental health of respondents. Respondents who were sedentary were almost twice as likely as those in the above sedentary group to report deteriorated mental health (32.6 percent and 17.1 percent respectively).

Stress

Stressful life events were found to impact heavily on the mental and physical health of respondents. The percentage of respondents who reported stressful events was higher in 2001 compared to 1997. 16.8 percent of respondents in 1997 compared to 13.8 percent in 2001 reported having had 'no worries or stress' over the past 12 months. In the 2001 survey, only 45 percent of respondents did not report at least one health-related event during the last year. The most often-mentioned event that potentially could lead to higher stress was having had a member of the family or a close friend develop a serious health condition, reported by 24.6 percent of respondents in 2001. This figure was only 15.3 percent in 1997. Older respondents were more likely to report stressful life events.

Parenting Problems

Respondents with children were asked if they had approached a source outside the household for support regarding the upbringing of their children. In 1997, 22.6 percent of parents said they did this compared to 39.3 percent in 2001. Females were more likely than males and younger respondents were more likely than older respondents to report parenting problems. The more children respondents had the more likely they were to report parenting difficulties. Children's health was the greatest worry for parents (29.4 percent in 1997 and 32.7 percent in 2001) followed by their progress in school (15.7 and 15.8 percent respectively).

Health Hazards in the Home

Reported housing conditions were better in 2001 than in 1997. Overall, 70 percent of respondents did not report any risks in relation to their home. Cigarette smoke and water quality were the most frequently mentioned health hazards in the home. Damp conditions and insufficient heating were the next most often mentioned conditions. In the 2001 survey, more respondents lived in houses equipped with central heating. This availability of central heating was found to be positively correlated to the respondents' self-assessed general health.

Health Hazards in the Workplace

Almost 40 percent of women compared to just over a quarter of men reported that they had not experienced health risks at work. Among non-manual workers, stress was the most likely work-related health risk factor reported by both men (58 percent) and women (51 percent). This was followed by long hours (37 percent of men and 20 percent of women). The patterns for those in manual work were quite similar for female respondents, but different for males. Males in manual jobs named the material and equipment they handled as the main health risk factors.

Health Hazards in the Neighbourhood

The 2001 survey shows that respondents who reported a greater number of health hazards in their neighbourhood were significantly more likely to have a poor GHQ12 score. The features named most often as health risks were the lack of facilities for children (79.2 percent) and the lack of leisure facilities generally (63.6 percent). Worries about traffic and transport were the next most important risks identified: poor transport facilities (39.6 percent) and amount of traffic in the area (39.2 percent).

Community Contact

Participation in community activities and good social support positively impacted on the mental health of respondents. The amount of contact for all groups was high, with around 80 percent of respondents reporting being in contact with both relatives and friends through visits and by telephone. Except for going to a leisure centre, women were more involved in all types of activities than men and scored five percentage points higher than men in community contacts overall.

Effects of the Socio-religious Conflict on the Health and Wellbeing

Respondents who said that they experienced 'not very much' violence at all in their neighbourhood were more likely to report good general health and had a better GHQ12 score. Those who said they were affected by the troubles 'a lot' or 'quite a bit' were significantly more likely to report poor mental health when other factors were controlled for. Respondents who said their immediate family had been affected by conflict-related violence 'quite a bit' or 'a lot' were less likely to say their general health was good. Worry about the political situation in

Northern Ireland was associated with significantly higher reports of stress. A smaller proportion of respondents worried about the political situation in Northern Ireland in 2001 than in 1997. Although younger respondents were more aware of Northern Ireland conflict-related violence in their neighbourhood, older respondents' own and immediate families' lives were more affected by the socio-religious conflict.

SECTION 2

Section 2 compares findings from the 2001 Northern Ireland Health and Social Wellbeing Survey with the most recent surveys in England, Scotland, Wales and the Republic of Ireland available at the time. The surveys vary greatly in their question wording and the nature and depth of the topics covered. Furthermore, the sampling methodology used for each survey, including the age range of respondents included varied considerably. However, some cautious comparisons can be made for 18-74 year olds between the five countries.

General Health

Respondents in Northern Ireland are considerably less likely than their counterparts in the other countries to say that their general health was good. Only 53.9 percent of all 18-74 year olds said their general health was good, compared to over 75.8 percent in England, 76.8 in Scotland, 80.0 percent in Wales and 87.5 percent in the Republic of Ireland. Some of the differences may be an artefact of the survey designs which varied considerably between the countries.

Limiting Long-standing Illness

Approximately one quarter of respondents in Northern Ireland, England and Scotland perceived that they had a limiting long-standing illness. The highest rate was in Wales (29.5 percent) and the lowest rate in the Republic of Ireland (11.7 percent).

Cardio-vascular Disease

Respondents in Northern Ireland reported the highest level of cardio-vascular disease (26.0 percent), followed by Scotland (24.4 percent), Wales (18.2 percent) and the Republic of Ireland (14.0 percent). Respondents in England were not asked this question

Asthma

Just over one in ten of respondents in Northern Ireland, Scotland and Wales had been diagnosed or treated for asthma. More women than men and more respondents in the youngest age group (18-24 years) were diagnosed or treated with asthma.

Mental Health

Based on the GHQ12 score, the mental health of respondents was measured in Northern Ireland, England and Scotland. The proportion of respondents with deteriorating mental health over the last 12 months was around one third higher in Northern Ireland (21.1 percent) than in both England (14.3 percent) and Scotland (15.5 percent). Whilst in all three countries, fewer men than women showed signs of a possible mental health problem, no similar clear-cut pattern could be found in relation to age.

Physical Activity

In Northern Ireland, 29.7 percent had taken the recommended level of physical activity. This is lower than the corresponding figure for Scotland (32.3 percent) but higher than the figure for Wales (17.0 percent). Proportions of men and women who take the recommended level of activity were similar in Northern Ireland whereas in Scotland and Wales more men than women exercised to this degree. In all three countries there was a strong link between age and the level of exercise taken. Young women in Northern Ireland, Scotland and the Republic of Ireland were found to be more likely to be sedentary than young men.

Social Support

Respondents in Northern Ireland and England were asked about social support available to them. The results were very similar. Four out of ten respondents experienced a lack of support from family and friends, with men lacking social support more than women. However, lack of social support was higher in England among the older age cohorts.

Smoking

More respondents in Northern Ireland (31.2 percent) said that they smoked than respondents in England (27.9 percent), but fewer than in Scotland (33.6 percent). In the Republic of Ireland, 32.5 percent of respondents said that they were smokers, as did 28.3 percent of respondents in Wales. In Northern Ireland, England, Scotland and Wales, women were slightly more likely to smoke than men.

Drinking

79.0 percent of respondents in Northern Ireland reported that they drank alcohol. This proportion was slightly higher than in Wales (75.2 percent) but considerably lower than in England and Scotland (91.0 percent and 90.3 percent respectively). In the Republic of Ireland over four out of five respondents (85.1 percent) said that they had had a drink within the last year. In all countries, men were more likely to drink than women. Northern Ireland has the highest proportion of respondents who have always been teetotal (14.4 percent).

SECTION 1

THE NORTHERN IRELAND HEALTH AND SOCIAL WELLBEING SURVEYS 1997 AND 2001

Comparison of the two surveys

While the 1997 and 2001 NIHSWB surveys have a number of common variables, they are also very distinctive, especially in relation to their general approach to health and social wellbeing.

Although the 1997 survey included questions about stress and social support, following similar models as those in the Scottish and English surveys, it largely followed a 'medical' approach to health and wellbeing. This was particularly underlined by the fact that measurements of blood pressure, pulse, weight and height, as well as a blood sample were taken by consent from respondents by a nurse. The 1997 survey also included aspects of personal care, disability and ease of access to medical services.

In the 2001 survey, while the core content remained the same and in congruence with the other United Kingdom Health and Wellbeing surveys, the emphasis on social and environmental health was increased substantially. This alteration reflected the policy of remaining a common core of questions while introducing other topics on a cyclical basis. The 2001 survey also included new sections about sexual health as well as health hazards in the workplace and in the home. Some questions regarding the characteristics of the sample were also altered in 2001. Due to the variations between the two surveys, the scope for a comparative analysis of the data was somewhat limited.

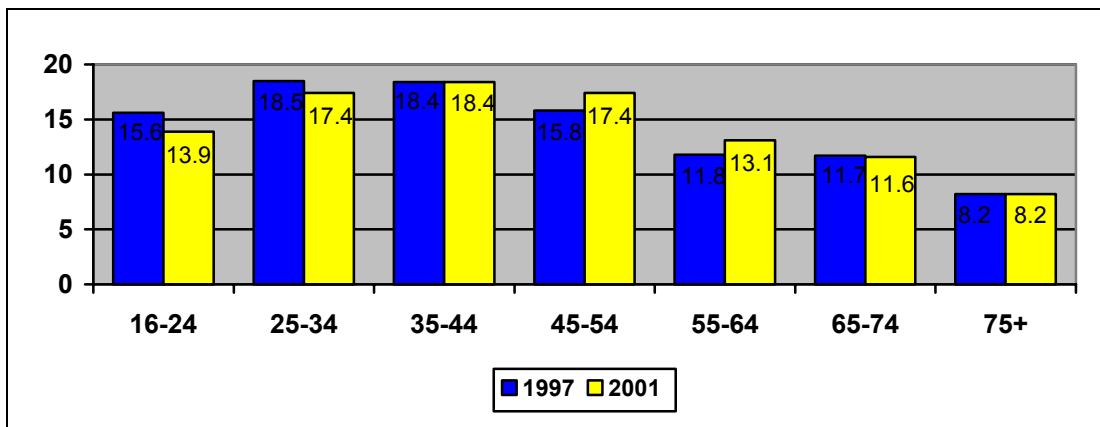
Substantial sections relating to general health and wellbeing, to respondents' mental health, their smoking and drinking habits, stress and some medical conditions (such as joint problems, blood pressure and long-standing illnesses) appear in both the 1997 and the 2001 NIHSWB surveys. Consequently, the comparative secondary analysis has concentrated on these. Finally, data relating to social and environmental health hazards, as well as health issues in the neighbourhood and in the home that only appeared in the 2001 NIHWB were also included in the analysis.

1.1 Sample Characteristics

The surveys were designed to yield representative samples of the adult population aged 16 years or over living in private homes in Northern Ireland. Samples were drawn from the most up-to-date Valuation and Lands Agency lists available (NISRA 2002b). There were 4,236 respondents to the 1997 survey. In order to control for an accurate distribution of respondents among Health and Social Services Board (HSSB) areas, a weighting factor was applied. After application of the weighting factor, N increases to 4,269.¹ In 2001, 5,205 respondents took part in the survey. The distribution among HSSBs was representative and no weighting factor is need.

Table 1 compares sample characteristics for the 1997 and the 2001 surveys. Respondents in the 1997 sample were slightly younger than respondents in the 2001 sample. In 1997, there are about three percentage points more respondents in the 16-44 years age group than in 2001 (see also Figure 1). As a result of the difference in age, a marginally smaller proportion of respondents was in full-time education in 2001.

Figure 1: Age Groups by Year (in %)



The average number of respondents per household was also slightly smaller in 2001. Furthermore, in 1997 the mean number of children in households was 0.82, while in 2001 it was 0.69 children.

Economic conditions had improved by 2001. In 2001, more respondents were in employment than in 1997. The percentage of long-term unemployed people and economically inactive respondents was also smaller in 2001. There were slightly more respondents in the professional/managerial group in 2001 than in 1997 (16.4 percent and 14.9 percent respectively).

Protestants constituted the largest religious group in both surveys. However, in 2001, the proportion of Protestants in the sample was smaller than in 1997,

¹ NISRA's Technical Report of the 2001 survey (ibid) discusses the representativeness of the survey in relation to age and gender. The representativeness of the 1997 survey was addressed in the methodology sections of the Health and Lifestyle Report 2001 and The Informal Carers Report 2001, both published by the Department of Health, Social Services & Public Safety in Northern Ireland. (DHSSPSNI 2001, 2001a).

whereas the proportions of Catholics and those who said they were religiously not affiliated were larger.

Differences in marital status of respondents between both surveys were minimal.

Compared to 1997, in 2001 a smaller proportion of respondents rented the property they were living in, and more respondents owned their houses or had taken out a mortgage.

Table 1: Comparison of Sample Characteristics 1997/2001

		NIHSWB 1997	NIHSWB 2001
Gender	Males	42.2%	44.7%
	Females	57.8%	55.3%
Age	Mean	45.2 years	46.2 years
	Median	43.0 years	45.0 years
Religion	Catholic	38.6%	40.4%
	Protestant	61.2%	56.1%
	Other	0.2%	3.3%
Number of adults in household	Mean	2.47	2.31
	Median	2.00	2.00
Number of children in household	Mean	0.82	0.69
Respondents in full time education		4.3%	3.7%
Employment	In employment	48.2%	49.7%
	Economically inactive	45.2%	44.6%
	Unemployed for more than 5 years	1.1% (n=45)	0.6% (n=32)
Tenure of accommodation	Rented	28.3%	24.1%
	Mortgage	41.5%	43.7%
	Owned	29.4%	31.3%
	Other	0.9%	0.9%

1.2 General Health

The Northern Ireland Health and Wellbeing survey measures general health through respondents' self-assessed health. General health is therefore a subjective variable, which may not necessarily match the professional assessment of a medical doctor. However, recent changes in perceptions about health matters acknowledge that people's self-assessed health may be as important for their overall wellbeing as the existence or absence of medical conditions (DHSSPS, 2002). The choice of questions asked within 2001 NIHSWB survey acknowledges this finding. The subsequent difficulty arising from this for the analysis is that, strictly speaking, factors determining general health that were established through a logistic regression model do not give a direct answer to what determines general health as such. Instead, they simply determine respondents' perceptions about their health. Furthermore, some respondents may have based their perceived general health partly on the state of their mental health, which was measured through the 12-item General Health Questionnaire (GHQ12). These two potential options of data overlap have to be taken into consideration when using the results of this analysis to inform future policy-making in the areas of general and mental health.

Overall, respondents in 2001 reported better health than those in 1997 ($p < 0.023$). In 2001, 53.1 percent of all respondents perceived their health to be 'Good' compared to 50.5 percent in 1997. As one would expect, younger respondents were significantly more likely to report better health than older respondents (Table 2). Note that, because respondents in the 2001 sample were on average older than in the 1997 sample, the improvement in self-reported health is even more significant.

Table 2: General Health Perception by Age Group and Year (in %)

General Health	Year	Age groups							
		16-24	25-34	35-44	45-54	55-64	65-74	75+	All
Good	1997	69.6	63.5	57.5	47.5	39.2	26.6	25.4	50.5
	2000	75.9	65.0	64.0	50.7	38.4	32.2	23.8	53.1
Fairly good	1997	25.5	27.3	30.1	34.4	32.3	44.2	41.3	32.4
	2000	18.9	25.8	25.8	28.6	34.7	40.8	47.0	30.0
Not good	1997	5.0	9.1	12.4	18.1	28.5	29.2	33.3	17.1
	2000	5.3	9.2	10.1	20.7	26.9	27.1	29.2	16.9

At this descriptive level of analysis it was not possible, however, to establish what factors impact on good general health or may contribute to poor general health. A complex multinomial logistic regression model was applied to seek an answer to that question.

A multinomial logistic regression analysis was carried out on respondents' self-assessment of their health as being either 'poor' or 'fair' in comparison to 'good'. The analysis consisted of four models of increasing complexity.

At the first stage of the regression analysis, exclusively social variables were entered into the model. This first model, 'Model A', tests the effects of a set of

'social factors' upon self-assessed 'poor' or 'fair' health. These 'social factors' include:

- 'Section 75' variables: religion and gender
- measures of social status (education, social class, affluence, and room density)
- a set of marital status variables (married, divorced/separated or widowed, all compared to 'always single')
- an interaction of age and marital status
- whether or not the respondent lived alone.

'Model B' includes the 'social factors', plus a set of 'behavioural factors' relating to the respondents' use of cigarettes and alcohol.

'Model C' goes further by adding in the 'risk factors' of the number of risks the respondents reported in their homes and their self-reported level of stress.

Finally, the design of the survey with the availability of post codes provided the opportunity to link respondents' perceptions about their health to 'area factors' based on the Noble indices of deprivation plus an index of 'rurality'.

The results, displayed in Table 3 'Multinomial logistic regression models of self-assessed health', are complex and need interpretation. Initially, one can note that the results for predictors of 'fair' health are an attenuated version of the results for 'poor' health. Considering that both are being compared to respondents who self-assess their health as 'good'; the more extreme comparison would be expected to produce the more pronounced results. Also, respondents with self-assessed poor health can be expected to be more at risk. Consequently, this discussion will concentrate upon the models for 'poor' health.

The best way to make sense of the large table is to concentrate upon the most complete 'Model D' and 'work backwards'. Three of the 'social factors' remain highly significant across all four models: age; social class²; and relative affluence³. Age is the second most significant of all the predictors across all the sets of factors in Model D and social class and affluence come third and fourth most significant, respectively.⁴ Furthermore, the size of the coefficients for all three of these factors remain essentially stable across all the models as types of predictors additional to 'social factors' are added. The interpretation of these results are clear:

- 1) respondents are more likely to self-assess their health as 'poor' as they age;

² The respondent being in a non-manual occupation. A more detailed division in occupational strata was tested but the crucial division was found to be between those in a non-manual category or not.

³ Several more complex measures of 'household affluence' that attempted to take into account household composition, the numbers of persons in a household and categories of income level of the household were carefully tested. However, these produced anomalous results due to the lack of sufficiently detailed information about household composition and income level (including the employment status of household members) and problems of multicollinearity. In the end, the simpler gross measure of whether a household has an income more of than £15,000 per year or not proved most reliable.

⁴ Based upon the Wald coefficients for age, class and affluence; the significance of all three is high ($p < 0.001$).

- 2) being in a non-manual category and being a member of a household with a relatively affluent income level of £15,000 or more annually both independently protect against poor health;
- 3) these predictors of poor or better health exert their effects independently of the other measured factors that might affect level of health.

The fate of the other social factors is also of note. A number of these that could be hypothesised to affect level of health never appear as significant in any model: being married or widowed as opposed to being single; living alone; the interaction of age and marital status; and the index of room density.⁵ A number of social factors, including two 'Section 75' indicators that are initially significant, fade away with the introduction of a wider spread of variables in the more complex models. Gender (being a woman) does appear to raise the chances of 'poor' health until the effect of the respondent's reported level of stress is included in Model C. Religion (being Catholic) is linked with poorer health until the area factors, particularly the index of housing stress in an area, are included in Model D. Educational level verges on statistical significance but eventually fades away. Finally, the statistical significance of being divorced or separated disappears with the introduction of the stress variable in Model C.

The inclusion of 'behavioural factors' linked to cigarette smoking and drinking are significant predictors of poor self-assessed health in their own right. Not smoking - both in terms of having never smoked or having given up smoking - means that a respondent is now less likely to state that their health is poor. Surprisingly, respondents who do *not* drink at present are *more* likely to report their health as being poor. This could reflect the hypothesised health benefits of moderate alcohol consumption. However, since the data do not allow us to discriminate between those in this category who never drank and those who drank previously but have stopped, the result could in part indicate those who have had to stop drinking due to health reasons. These significant results continue to hold up when additional variables are introduced in Models C and D. One should note also that neither heavy smoking nor heavy drinking is consistently associated with poor self-assessed health.⁶

'Risk factors', especially the respondent's self-reported level of stress, are introduced in Model C. Self-reported stress is the single most important predictor of self-assessed poor health. While this result could be in part due to both 'stress' and the dependent health variable being based on respondents' self-reporting, the size of the effect⁷ would seem to indicate that the association should not be considered solely 'artefactual'. That is, stress appears to affect health. In addition, even though the list of 'risks at home' is fairly idiosyncratic,⁸ a count of the number of types of risks at home reported by the respondent exerts a significant effect upon the chances of having poor health.

⁵ Number of people divided by the number of bedrooms in a household. A higher density could indicate crowded living conditions that might impact adversely upon health independently of the 'affluence' of the household.

⁶ However, the portions of respondents who fall into the categories of heavy current smoker and, especially, heavy current drinker are quite small.

⁷ The Wald coefficient for stress is over three times larger than its nearest competitor, age.

⁸ The types of risk a respondent could report were: lack of proper heating; dampness/condensation/mould; cigarette smoke in the home; poor general standard of maintenance; overcrowding; unsafe drinking water; noise.

Finally, 'Model D' includes the effects of six of the seven domains of 'Noble indicators' of area-based deprivation (income, employment, education, access to services, 'social environment' and housing)⁹ plus an area-based index of 'rurality'. With the inclusion of these area variables into the multinomial logistic regression models, we were able to test the hypothesis (at ward level) that simply living in an area of deprivation may contribute to the overall health or ill-health of a respondent. No real evidence was found, except in relation to housing, that area factors in themselves have an impact on the general health of respondents. This result is not surprising since much of the features that they measure are already covered by variables for the individual respondents which presumably would have a more direct effect than the rather 'blunt instrument' of an area index. As far as housing is concerned, respondents who lived in a ward with poor housing conditions¹⁰ are more likely to report poor general health does have a significant effect, albeit at a relatively low level of significance ($p < 0.05$).

In terms of the current equality legislation in Northern Ireland, it must be concluded that other than in relation to the obvious factor of age, we could not find any significant differences in general health perceptions between respondents. Neither is there evidence that females are disadvantaged compared to males (or vice versa), nor did the religious background of respondents have a significant effect on the general health once other factors, such as drinking smoking, stress or housing were taken into account.

⁹ The seventh domain, 'Health deprivation and disability', is based upon five measures of health. It is not included in the model since the respondents' own health could have gone into the making up of this index.

¹⁰ The Noble index of 'housing stress' is a score based upon three indicators: housing in disrepair; houses without central heating; houses lacking insulation (all based on information from the 1996 Northern Ireland House Condition Survey).

Table 3: Multinomial Logistic Regression Models of Self-assessed Health[†]

	Model A		Model B		Model C		Model D	
	Poor	Fair	Poor	Fair	Poor	Fair	Poor	Fair
Social factors								
Age in years	0.042 ^{***}	0.032 ^{***}	0.045 ^{***}	0.033 ^{***}	0.049 ^{***}	0.033 ^{***}	0.052 ^{***}	0.035 ^{***}
Gender ^a	-0.248 ^{**}	-0.138 [*]	-0.268 ^{**}	-0.145 [*]	--	--	--	--
Religion ^b	0.276 ^{***}	0.208 ^{**}	0.284 ^{***}	0.222 ^{**}	0.197 [*]	0.164 [*]	--	--
Education ^c	0.233 [*]	--	--	--	-0.240 [*]	--	--	--
Class ^d	-0.703 ^{***}	-0.277 ^{***}	-0.673 ^{***}	-0.268 ^{***}	-0.740 ^{***}	-0.277 ^{***}	-0.728 ^{***}	-0.271 ^{***}
Relative affluence ^e	-0.793 ^{***}	-0.337 ^{***}	-0.796 ^{***}	-0.298 ^{***}	-0.810 ^{***}	-0.348 ^{***}	-0.740 ^{***}	-0.321 ^{***}
Divorced/Separated ^f	0.630 ^{***}	--	0.557 ^{***}	--	--	--	--	--
Behaviour factors								
Never smoked ^g			-0.708 ^{***}	-0.313 ^{***}	-0.615 ^{***}	-0.372 ^{***}	-0.691 ^{***}	-0.284 ^{***}
Stopped smoking ^g			-0.477 ^{***}	-0.235 ^{**}	-0.449 ^{***}	-0.320 ^{**}	-0.529 ^{***}	-0.230 ^{**}
Heavy smoker ^g			--	--	0.274 [*]	--	--	--
Does not drink ^h			0.558 ^{***}	0.222 ^{**}	0.490 ^{***}	0.206 [*]	0.473 ^{***}	0.203 [*]
Risk factors								
Risks at home ⁱ					0.208 ^{***}	0.148 ^{**}	0.200 ^{***}	0.161 ^{***}
Reported stress ^k					1.610 ^{***}	0.522 ^{***}	1.564 ^{***}	0.528 ^{***}
Area factors								
Access score							--	0.143 [*]
Housing score							-1.972 [*]	-1.601 [*]

^a Male

^b Catholics compared with all others

^c Possessing an A-level or higher qualification

^d Non-manual

^e Living in a household with an income of £15,000 or more.

^g Comparator is 'moderate' (less than 19 cigarettes/day) smoking.

^h Comparator is drinking less than excessive amounts (35 units/week if female, 50 units/week if male).

ⁱ Number of types of risk reported in home.

^j Number of types of risk reported at work.

^k Reporting being under 'a lot' or 'a great deal' of stress in the last 12 months.

[†] A positive sign indicates greater likelihood of self-assessed 'poor' or 'fair' health. The contrasting category is those who assess their health as 'good'.

Figures in **bold** are significant: *** = $p < 0.001$

** = $p < 0.01$

* = $p < 0.05$

NOTE: Variables for: Married as opposed to single; Widowed opposed to single; Living alone; Room density of home; An interaction of age and being married; and Being a heavy drinker were included in these regressions but were not significant in any model. Results of models including the effects of all variables with Wald coefficients are given in Table A1 in the Appendix.

Protestants had a marginally better self-reported general health than Catholics (52.6 per cent and 50.4 percent) in 2001 ($p < 0.153$). The stepped approach of the logistic regression model shows that Catholics were significantly less likely to report good general health than non-Catholic respondents as long as only

social factors were taken into account. The impact of religion decreased to insignificance once other factors were included in the model. Model D leads to the conclusion that there is no difference in the poor health between Catholics and non-Catholics in relation to general health and that it is poverty that impacts on general health most.

We also found very little evidence that marital status impacted on self-reported general health. Divorced or separated respondents were somewhat significantly more likely to say that their general health was poor ($p < 0.05$), but the effect of divorce disappeared once level of stress was included in the modelling. Being married or widowed rather than being single did not have any significant impact on self-reported general health.

Whilst the majority of Section 75 indicators had no significant impact on the general health of respondents, in turn the three most significant social factors that *did* – respondents' age, social class and their relative affluence – do not feature as factors of inequality in Section 75 at all. Figure 2 and Table 4 provide evidence of the correlation between general health perception and socio-economic group.

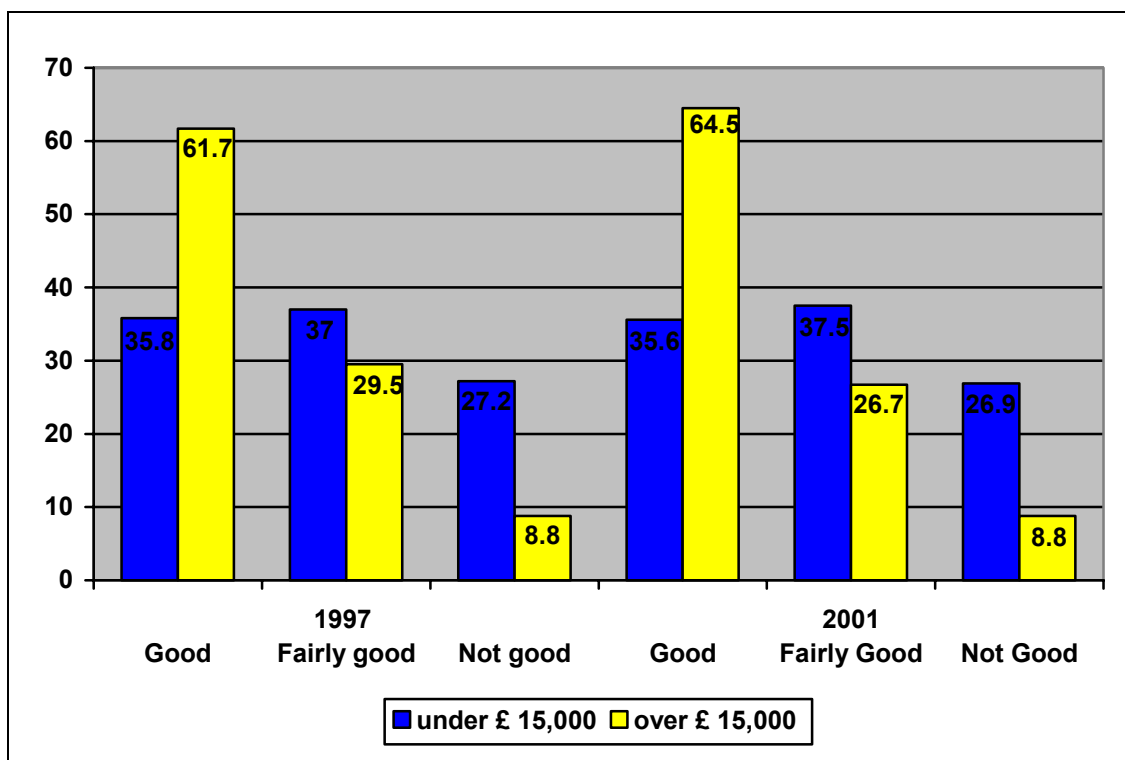
Table 4: General Health Perception by Socio-economic Group (in %)

General Health	Year	Professional /Managerial	Skilled Non-manual	Skilled	Partly Skilled	Unskilled	All
Good	1997	59.7	56.6	46.0	44.3	33.7	50.1
	2001	64.5	60.4	48.8	44.4	42.1	53.9
Fairly Good	1997	28.0	31.1	33.9	35.0	37.3	32.6
	2001	25.0	29.1	33.6	32.8	32.3	30.4
Not good	1997	12.4	12.3	20.1	20.7	28.9	17.3
	2001	10.5	10.6	17.6	22.8	25.6	15.7

In this respect it is worth reporting the data in relation to another indicator that is often associated with increased mobility and economic wealth and thereby a better standard of living: access to a car. The number of respondents reporting the availability of a car or van for personal use was two percentage points higher in 2001 than in 1997, with 78.3 percent of respondents saying they had a car available for use in the most recent NIHSWB survey ($p < 0.017$). 43.2 percent of households reported the availability of two or more cars in 2001 compared to 37.9 percent in 1997.

However, there are also negative implications of an increased amount of road traffic for the health and social wellbeing of people – such as increased CO₂ emission and the increasing number of road traffic accidents. Although this is still often overlooked, the responses in NIHSWB 2001 show that the population is aware of these adverse effects on their health and social wellbeing. This will be reported in more detail below.

Figure 2: General Health Perception by Annual Household Income and Year (in %)



The multivariate analysis also revealed that those who did not smoke were less likely to report poor general health, whereas non-drinking was actually associated with *poorer* health. Stress was the single most significant determinant of self-assessed poor health and health hazards in the home did also determine poorer general health. This will be discussed further in the subsequent sections.

1.3. Mental Health

As with general health, we found that more respondents in 2001 than in 1997 had a better mental health score, as measured using the GHQ12 score. On a descriptive level, this change is statistically insignificant ($p < 0.364$). However, in 2001, respondents in the youngest age group of 16-24 year olds had a lower mental health score than respondents in this age group in 1997.

With the application of a multivariate logistic regression analysis, we attempted to establish what factors had the greatest impact on mental health of respondents.

Before presenting any results, a brief discussion of the measures that go into making up 'GHQ12' indices of mental health is useful. The General Health Questionnaire ('GHQ12') is a widely-accepted measure of mental health that is based upon the responses to twelve items. Respondents are asked:

- 1) Have you recently been able to concentrate on whatever you are doing?

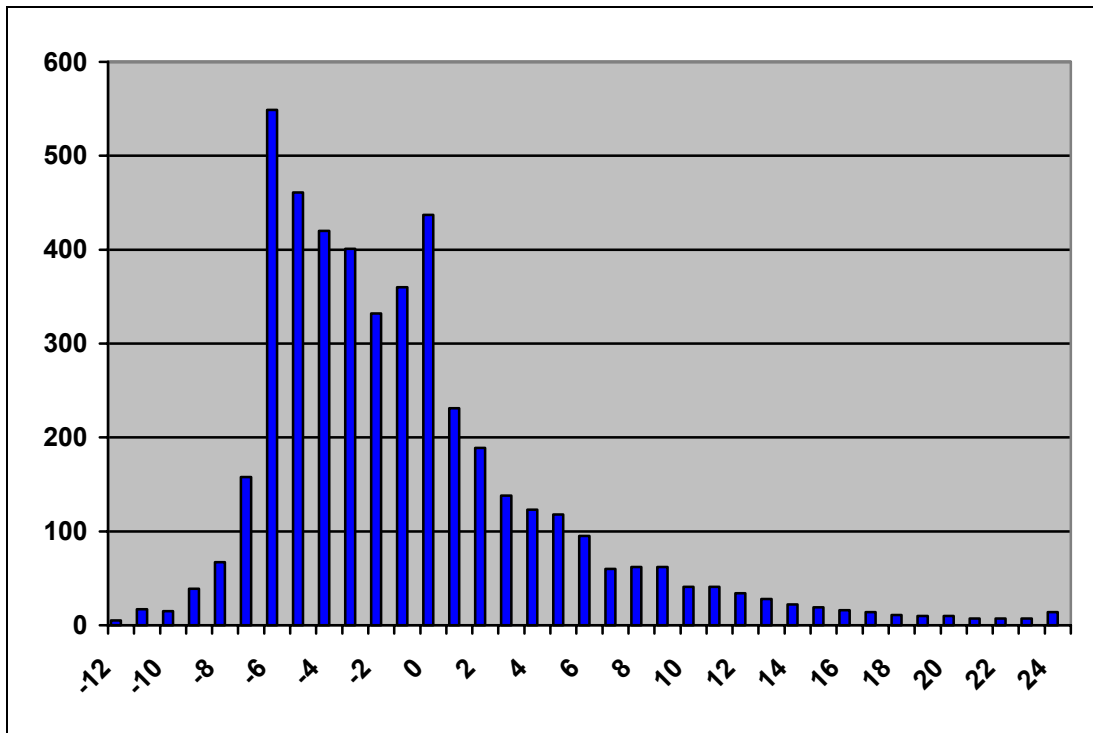
- 2) Have you recently lost much sleep over worry?
- 3) Have you recently felt you are playing a useful part in things?
- 4) Have you recently felt capable of making decisions about things?
- 5) Have you recently felt under constant strain?
- 6) Have you recently felt you couldn't overcome your difficulties?
- 7) Have you recently been able to enjoy your normal day-to-day activities?
- 8) Have you recently been able to face up to your problems?
- 9) Have you recently been feeling unhappy and depressed?
- 10) Have you recently been losing confidence in yourself?
- 11) Have you recently been thinking of yourself as a worthless person?
- 12) Have you recently been feeling reasonably happy, all things considered?

Respondents are given four response options. The exact wording of the options varies depending upon the question wording but, broadly, a response coded '1' indicates the respondent feels 'better' than recently, a response coded '2' indicates the respondent feels 'as usual', '3' that the respondent feels 'rather worse' and '4' that the respondent feels 'much worse'. The conventional way of depicting GHQ12 results is to categorise individuals by the number of items for which they reply with a code '3' or '4', 'rather or much worse'. We will follow this convention in the figures and crosstabulations that follow.¹¹

However, while perhaps suitable as a means of summarising GHQ12 results for tabular depiction, this amalgamation of a detailed set of responses into a few categories does throw away quite a large amount of information. The responses to the twelve GHQ12 items can be summed to give a 'mental pathology score' that ranges across 36 units, with the lowest score indicating someone who answered that they had improved for all twelve questions and the highest score indicating someone who said they had become 'much worse' across all twelve items. If responses for 'better' are coded as '-1', 'as usual' coded as '0', 'rather worse' as '+1' and 'much worse' as '+2', the result is a roughly normal distribution ranging from -12 to +24 with an upward skew and two peaks, one around -6, indicating improvement and another around 0, indicating 'no change'. Over 60 percent of respondents had negative scores, indicating that they considered that their mental states had improved rather than worsened recently. Thirty percent had positive scores, indicating, in sum, some self-assessed worsening of mental health.

¹¹ However, we will not follow the practice of (mis)labelling those who do not report feeling worse on any of the GHQ12 questions as 'happy', those who report feeling worse on 1 to 3 items as 'not depressed' and those who report feeling worse on 4 or more items as 'depressed'. These labels have no clinical validity and can only serve to mislead.

Figure 3: Distribution of GHQ12 scores



One should note also that the GHQ12 questions ask respondents to assess how their mental state on the twelve items has *changed recently* rather than how it is generally. One can understand the reasoning behind this – it being easier to subjectively assess one’s recent change in a mental state rather than reliably to report a chronic or unchanging condition – but this wording does cause problems for interpretation. A respondent who suffered from a severe condition but who recently has had a marginal improvement would be recorded as being mentally healthy if they had chosen to answer the questions literally. Similarly, someone who usually was quite happy and who happens to be going through temporary bad patch could appear as not healthy. While the GHQ12 is generally accepted as a reliable measure of one’s chronic state of mental health as well as acute changes, there probably is some measurement error induced by the question wording.

Table 5 shows the results of four regression models of increasing complexity of hypothetical predictors of General Health Questionnaire scores. Here, since the dependent variable can be considered a scale, the model is a linear regression with the results being standardised beta coefficients. The pattern of results for the same ‘social factors’ that were present in the previous models for self-assessed health is quite different. Particularly once the effects of physical activity and social contact are included, being older, either on its own or in interaction with being married, is associated with *better* mental health. In this model, the Section 75 variable of gender does have a significant effect upon mental health: men give fewer responses to the GHQ12 indicators of poorer mental health. Being in a non-manual strata is associated with better mental health. Marital status appears to be important for a person’s reported level of mental health. Not surprisingly, those who are divorced or separated are found to be less mentally healthy. In addition, being married is associated with poorer

mental health than any other marital state, especially being single or widowed.¹² This result holds for both genders; we explicitly tested for an interaction between gender and being married, but it was found not to have any significant effect.¹³ In the more complex models, religion, educational level and 'relative affluence' were not significant predictors of mental health.

In a second stage of analysis (Model B) we included physical activity and social contact factors. Being sedentary is linked to higher GHQ12 scores of mental pathology and the opposite, being more physically active than average, links to lower GHQ12 scores. Hence, there does appear to be a genuine link between physical exercise and better mental health. Social contact also is important for mental health: both a higher level of social support and a larger number of types of activities in the community link to better mental health. One should note that it is when these effects of physical activity and social support are included in the models that being older becomes significantly associated with *better* mental health; the elderly who remain socially connected and physically active also seem to exhibit less mental pathology.

'Stress-related factors' - experiences that one would expect would raise a person's levels of stress - are associated with poorer GHQ12 scores.¹⁴ In particular, respondents who state that their family has been affected by the Troubles 'quite a bit' or 'a lot' tend to have higher measures of poor mental health, as do respondents who have experienced stress-causing events in the last 12 months.¹⁵ The types of stress-causing events can be health-related (the serious illness or death of a loved one or friend in the last 12 months), related to family disputes, or to general serious stress-causing events.¹⁶ Finally, only the 'social environment' 'area factor' was found to have a significant effect upon GHQ12 scores, replacing the variance explained by the index of reported violence in Model C.¹⁷

¹² This multivariate result reverses that found for the bivariate relationship between GHQ12 score and whether married or not – in a simple comparison of means GHQ12 scores for the married compared to the rest of the sample, the married have a significantly lower mean 'mental pathology' score.

¹³ That is, the effect of marriage upon mental health is not that men benefit while women are driven crazy.

¹⁴ The variable of self-reported level of stress used in the previous model cannot be applied here due to its close resemblance of some of the GHQ12 questions, particularly Question 5.

¹⁵ One should note that, while asking about different things, both the questions about serious events and the GHQ12 questions relate to the respondent's recent past. Their high level of association could partially be an artefact of time period and the high statistical significance of events upon the GHQ12 score should be treated with some caution.

¹⁶ These 'other events' include being assaulted or robbed, experiencing serious financial problems, or experiencing serious problems with officials or the law.

¹⁷ As before, the Noble index for 'Health deprivation and disability' had to be excluded since one of its components relates directly to treatment for mental illness.

Table 5: Regression Models of GHQ12 Scores

	Model A	Model B	Model C	Model D
Social factors				
Age in years	--	-0.114 ^{***}	--	--
Gender ^a	-0.095 ^{***}	-0.112 ^{***}	-0.111 ^{***}	-0.111 ^{***}
Class ^d	--	0.039 ^{**}	--	--
Relative affluence ^e	-0.121 ^{***}	-0.076 ^{***}	-0.058 ^{***}	-0.053 ^{***}
Married ^f	0.166 ^{***}	0.113 ^{***}	0.191 ^{***}	0.194 ^{***}
Divorced/Separated ^f	0.128 ^{***}	0.138 ^{***}	0.051 ^{***}	0.051 ^{***}
Widowed ^f	--	0.055 ^{**}	--	--
Interaction, age & married	-0.110 ^{**}	--	-0.122 ^{***}	-0.122 ^{***}
Health and social contact factors				
Sedentary		0.189 ^{***}	0.179 ^{***}	0.176 ^{***}
Physically active		-0.041 ^{**}	-0.053 ^{***}	-0.052 ^{***}
Social support		-0.184 ^{***}	-0.141 ^{***}	-0.144 ^{***}
Community activities ^h		-0.071 ^{***}	-0.089 ^{***}	-0.088 ^{***}
Stress-related factors				
Affected by troubles ⁱ			0.077 ^{***}	0.075 ^{***}
Local area bad ^j			0.050 ^{***}	0.059 ^{***}
Neighbourhood violent ^k			0.036 ^{**}	--
Health events ^l			0.117 ^{***}	0.119 ^{***}
Stressful family events ^m			0.172 ^{***}	0.173 ^{***}
General stressful events ⁿ			0.162 ^{***}	0.166 ^{***}
Area factors				
Social environment				0.049 ^{***}

^a Male

^d Non-manual

^e Living in a household with an income of £15,000 or more.

^f Comparator is single.

^h Count of the number of different types of activities in the community that the respondent is involved in.

ⁱ Respondent states that their and their family's lives have been affected by the Troubles 'quite a bit' or 'a lot'.

^j Index of reported bad features of local area.

^k Index of reported types of violence or threat in neighbourhood.

^l Serious illness or death of a family member or friend in last 12 months.

^m Count of the number of different types of serious family-related disputes or events in the last 12 months.

ⁿ Other major traumatic events experienced by respondent and not covered by the above.

*** = $p < 0.001$

** = $p < 0.01$

* = $p < 0.05$

NOTE: Variables for: Religion (Catholic opposed to all others); Education (Possessing A-level qualification); Living alone; and an Index of social contacts were included in these stepwise regressions but were not significant in any model. Results of models including the effects of all variables are given in Table A2 in the Appendix.

Table 5 shows that, all factors taken into consideration, the mental health of respondents mainly depends on factors related to social contact and general stress. The three most significant predictors for poor mental health are stressful family events, lack of social support and marriage. Married respondents were significantly more likely to show poorer mental health. This is independent from the gender of respondents.¹⁸ The religious and educational background of respondents did not have a significant impact on respondents' mental health score. Whilst non-manual status emerged as a highly significant predictor for general health, it had no important impact on the GHQ12 score. However, the 'relatively affluent' are significantly better off than the rest in terms of their GHQ12 score.

A notable result can be reported in relation to age. Somewhat unexpectedly, as Tables 5 and 6 show, older people were significantly less likely to be 'depressed'. Based on the analysis, some possible relations could be investigated in further research, for example the degree of social support networks available to people of different ages and the ability of younger people in particular to cope with stressful life events in the family and generally.

Table 6: GHQ12 Scores by Age Group and Year (in %)

GHQ12 Score	Year	Age groups							
		16-24	25-34	35-44	45-54	55-64	65-74	75+	All
Nil	1997	49.1	42.4	48.5	47.5	48.9	51.2	54.3	48.2
	2000	46.0	50.9	46.1	48.8	51.9	56.3	52.1	49.9
1-3	1997	32.2	35.7	30.4	27.7	20.7	30.0	30.5	30.0
	2000	33.0	28.2	33.1	26.4	28.0	25.9	29.6	29.2
4+	1997	18.7	21.9	21.2	24.8	30.4	18.8	15.2	21.9
	2000	21.0	20.9	20.8	24.8	20.1	17.8	18.3	20.9

Gender emerged as a highly significant predictor ($p < 0.0005$) for mental health when measured using a GHQ12 score. Figure 4 shows that males were over ten percentage points more likely than women not to report any changes for the worse in the GHQ12 mental health indicators.

Unskilled, partly skilled and manual workers reported better GHQ12 scores in 2001 than in 1997, but professional/managerial workers and non-manual workers did not. Here the gap between the SEG was smaller in 2001 than in 1997 (Table 7).

¹⁸ Though, as the table shows, there is evidence of an interaction between marital status and age where older married respondents enjoy better indices of mental health.

Figure 4: GHQ12 Scores by Gender and Year (in %)

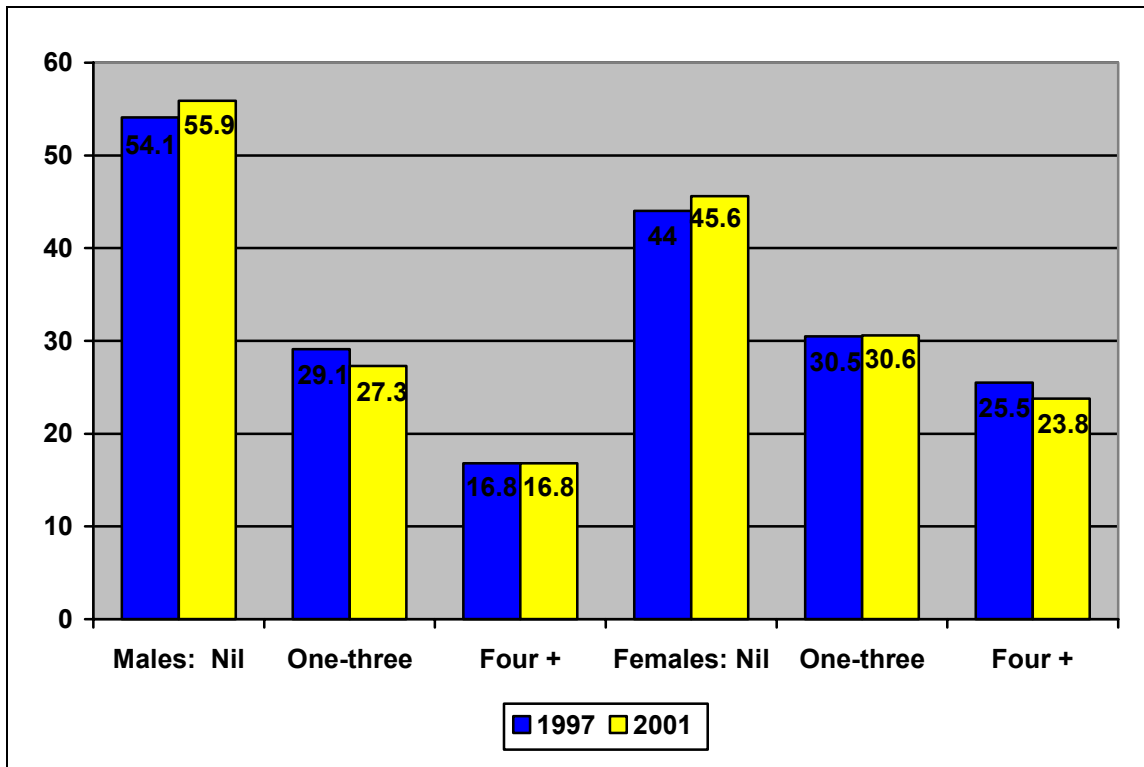


Table 7: GHQ12 Score of Respondents by Socio-economic Group (in %)

GHQ12 Score	Year	Professional /Managerial	Skilled Non-manual	Skilled	Partly Skilled	Unskilled	All
0	1997	53.3	47.4	52.9	45.0	40.4	48.1
	2001	53.2	47.4	55.7	48.4	47.4	50.1
1-3	1997	30.7	31.9	25.0	30.3	32.0	29.9
	2001	29.1	31.4	27.2	27.1	30.0	29.2
4+	1997	16.0	20.7	22.1	24.8	27.5	22.0
	2001	17.6	21.1	17.1	24.6	22.7	20.7

1.4. Disability, Long-standing (Limiting) Illnesses and Infirmities

In 1997, 202 respondents – 4.7 percent of the total – reported that they were registered as disabled. Due to the impact of new anti-discrimination and equality legislation, a similar question did not appear in the 2001 NIHSWB survey. A number of other variables can be used to establish whether or not more respondents had a disability or impairment in 1997 than in 2001. However, none of these variables is entirely conclusive.

Fewer respondents were in receipt of disability-based state benefits in 2001 than in 1997.

Table 8: Total Number and Proportion of Respondents in Receipt of Disability-linked State Benefits by Year (in % and count)

Type of benefit	1997		2001	
	%	n	%	n
Disability Living Allowance	9.1	(387)	5.4	(283)
Incapacity Benefit	5.5	(236)	6.0	(315)
Severe Disablement Allowance	1.0	(41)	0.5	(25)
Disability Working Allowance/ Disabled Person's Tax Credit	0.5	(21)	0.1	(7)
Industrial Injury Disablement Benefit	0.3	(11)	0.2	(12)
War Disablement Pension (and related pensions)	0.5	(23)		n.a
Invalid Care Allowance		n.a	1.4	(75)
Total	16.9	(719)	13.6	(717)

However, Table 8 may yield somewhat misleading results because:

- not every person with a disability/an impairment necessarily receives a state benefit (for example, disabled people working in full-time employment may not be entitled to particular benefits depending on their circumstances and income)
- Invalid Care Allowance is paid out to carers. Also, a person may care for more than one disabled person.

Overall, 6.4 percent of respondents in 1997 (n = 275) and 6.5 percent in 2001 (n = 337) said that they were economically inactive because of a permanent illness or disability. However, this cannot be regarded as a measure for disability because it excludes *per se* those respondents aged 65 years and over and/or in full-time employment.

In 1997 38.6 percent (n=1,646) and in 2001 37.6 percent (n=1,958) of respondents reported a long-standing illness or disability. A long-standing *limiting* illness or disability was reported by 27.5 percent (n=1,173) and 27.3 percent (n=1,420) of respondents in 1997 and 2001 respectively.

As with general health perception and GHQ12 scores, a regression analysis was used to establish the main predictor for a limiting long-standing illness. Again, initially a model was used which just included social factors (Table 9, Model A). At this level of multivariate analysis, age emerged as the key

predictor for the occurrence of a long-standing limiting illness;¹⁹ increasing age is strongly associated with having a long-standing limiting illness. The 'Section 75' variable of gender has no effect upon the likelihood of suffering from a long-standing illness. Despite careful checking, we found no evidence of interactions between gender and the other 'social factors'; so we conclude that the gender of respondents does not significantly impact on the occurrence of a long-standing limiting illness.

The effect of religion (being Catholic) is significant. Many of the rest of the 'social factors' are found to be significant. However, the direction of causality between some of these factors and suffering from a limiting long-standing illness is somewhat problematic. For instance, the second most important variable explaining the chances of a person having a limiting illness is the relative affluence of their household. Respondents who live in a household which has an annual income of £15,000 or more are significantly less likely to report a long-standing limiting illness (Figure 5).²⁰ Hence, less financial resources in the household may be hypothesised to have helped cause the disabling effects of the limiting long-standing illness through mechanisms such as being less financially capable of procuring expensive treatment that would limit the course or severity of the illness, or of providing expensive support that could make the illness less limiting. However, a person whose ability has been limited over a long period of time also is less likely to be capable of paid employment, which could curtail the overall earnings of the household. Similarly, while being separated or divorced hypothetically could reduce a person's ability to cope with an illness or perhaps increase its severity or make it chronic, it is also possible that the partner of a person so afflicted could leave them.²¹ In any case, being divorced or separated is significantly associated with a greater likelihood of suffering from a limiting long-standing illness, and having educational qualifications at A-level or better or being in a non-manual occupation links with not suffering from a long-term disability.

The direction of causality is clearer for the 'behavioural factors' linked to smoking and drinking habits. Those who never smoked cigarettes were significantly less likely to report a limiting long-standing illness. Similarly, not drinking at present links to not having a limiting long-standing illness. (In this latter instance, again however, the direction of causality is problematic; some people may have been forced to stop smoking or drinking due to their illness.) However, we found no significant relationships between excessive drinking and heavy smoking or stopping smoking and long-standing limiting illness.²²

Again, the inclusion of area indicators based on the Noble indices of deprivation changed little in the picture. Only one of the 'area factors', the

¹⁹ The Wald coefficient for age is almost four times greater than its nearest competitor, relative affluence.

²⁰ The difference between more and less affluent respondents who reported limiting long-standing illnesses even increased from 1997 to 2001.

²¹ Note, however, that being married is also (though only at the 0.05 level) associated with having a limiting long-standing illness.

²² These problems with establishing the direction of causality also meant that self-reported stress could not be used as a predictor in these models. While self-reported stress is correlated with suffering from a limiting long standing illness, it is more likely that circumstances associated with the illness raise the level of stress rather than the other way around.

'social environment' index of deprivation, which is largely based on locally-recorded offences such as burglaries, car thefts, assaults, criminal damage, drug offences, but also on local problems such as neglected buildings, rubbish, dumping and vandalism, exerted a significant effect upon limiting long-standing illness. The main effect upon the coefficients of the other variables in the models when 'area factors' are introduced is to reduce the size and significance of the coefficient for religion to the 0.05 level.²³

Table 9: Logistic Regression Models of having a Limiting Long-standing Illness

	Model A	Model B	Model C
Social factors			
Age in years	0.043***	0.043***	0.042***
Religion ^b	0.274***	0.271***	0.160*
Education ^c	-0.362***	-0.344***	-0.327***
Class ^d	-0.368***	-0.333***	-0.318***
Relative affluence ^e	-0.770***	-0.718***	-0.745***
Divorced/Separated ^f	0.413***	0.386***	0.460***
Behaviour factors			
Never smoked ^g		-0.335***	-0.198**
Stopped smoking ^g		-0.218**	--
Does not drink ^h		0.367***	0.357***
Area factors			
Social environment			0.144**

^b Catholics compared with all others

^c Possessing an A-level or higher qualification

^d Non-manual

^e Living in a household with an income of £15,000 or more.

^f Comparator is single.

^g Comparator is 'moderate' (less than 19 cigarettes/day) smoking.

^h Comparator is drinking less than excessive amounts (35 units/week if female, 50 units/week if male).

⁺ A positive sign indicates greater likelihood of having a limiting long-standing illness.

*** = $p < 0.001$

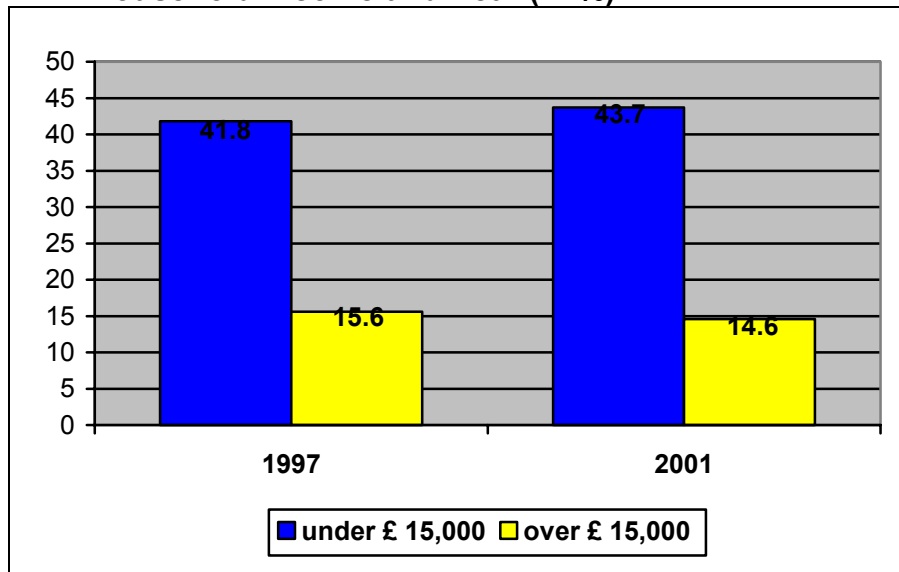
** = $p < 0.01$

* = $p < 0.05$

NOTE: Variables for: Gender; Married as opposed to single; Widowed opposed to single; Being a heavy smoker; and Being a heavy drinker were included in these stepwise regressions but were not significant in any model. Results of models including effects of all variable with Wald coefficients are given in Table A3 in the Appendix.

²³ Note that the introduction of 'area factors' in the previous analysis of self-assessed health also had the effect of lowering the significance of the religion coefficient. The religious geographical segregation of Northern Ireland is well-known and probably is reflected here in the interplay between the religion variable and the area factors.

Figure 5: Respondents Reporting a Limiting Long-standing Illness by Household Income and Year (in %)



Respondents with long-standing illnesses were more likely than those without to either live in rented accommodation or to own their houses outright. This can be partly explained by regulations in the insurance and banking sector. People with long-standing illnesses are often not eligible to apply for a mortgage. On the other hand, the development or occurrence of a disability or a long-standing illness may lead to the remaining loan on a house being paid out by an insurance policy. In addition, older respondents with a long-standing illness may have survived long enough to have paid off their mortgage and become outright homeowners.

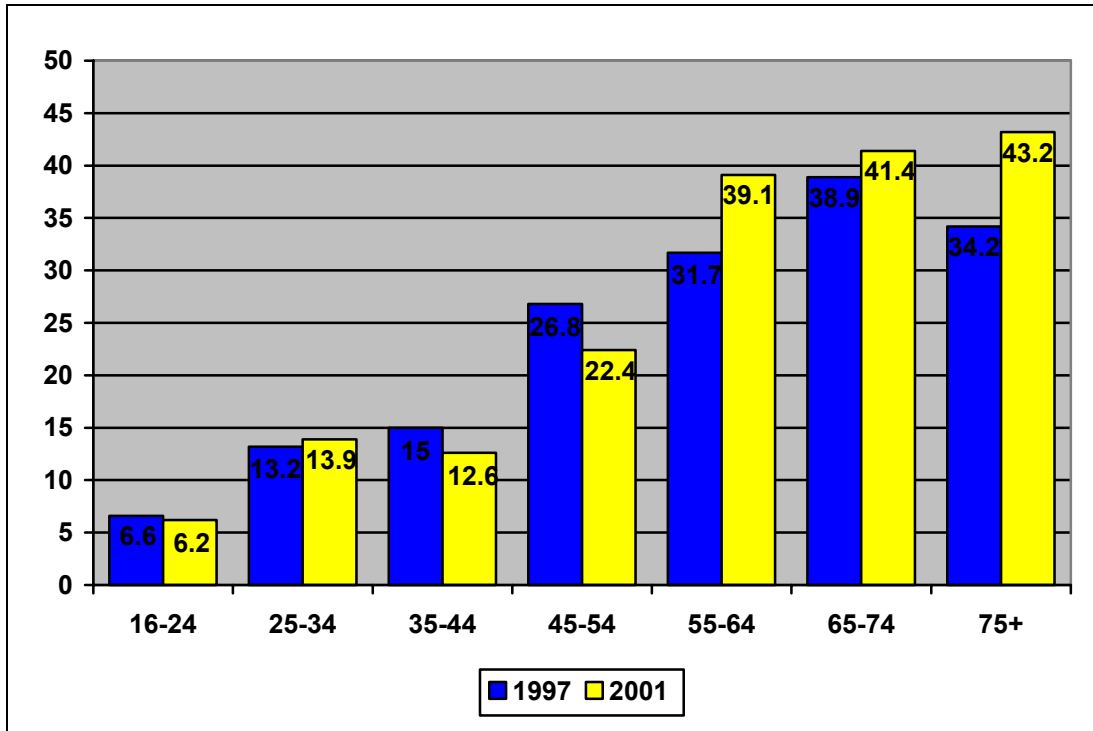
There is an association between the standard of housing – in particular the availability of full central heating – and long-standing illness. Over half of the respondents who live in rented accommodation reported a long-standing illness, but only a minority of those respondents who own their houses or have a mortgage did.

1.5. Other Medical Health Indicators

High Blood Pressure

In 2001, 23 percent of respondents (compared to 21.6 percent in 1997) said that they were diagnosed with high blood pressure by a health professional. Figure 6 shows that there was a strong age bias. Whereas respondents under 54 years of age were less likely in 2001 than in 1997 to report high blood pressure, older respondents were more likely ($p < 0.0005$). Among those who did report high blood pressure, 66 percent in 2001 - compared to just 58.3 percent in 1997 - said they had received treatment with medicine and 23.9 percent compared to just 18.6 percent said they had received other treatment.

Figure 6: Respondents Diagnosed with High Blood Pressure by Age Group and Year (in %)



Trouble with joints

The percentage of respondents complaining about any trouble with their joints was smaller in 2001 than in 1997 (40.2 percent and 42.8 percent respectively). However, around three percentage points more respondents in 2001 than in 1997 reported that their joint troubles limit their day-to-day activities. Complaints about the most common joint problems (back and neck) were slightly higher in 2001. Joint problems in shoulder, back and neck were most often reported by respondents who experienced stress-related health risks in the workplace. There was little change between 1997 and 2001 in other medical conditions and treatments that respondents reported over the past twelve months.

1.6. Smoking

The logistic regression models in Sections 1.2 and 1.4 gave evidence that non-smoking improves the perception of general health and decreases the likelihood that respondents suffer from a long-standing limiting illness. In this section, smoking is explored in more detail.

59.9 percent of respondents in 1997 and 60.5 percent of respondents in 2001 said they had smoked at least once. 31.8 percent of all respondents in 1997 and 26.5 of respondents in 2001 were current smokers ($p < 0.014$). Although the proportion of smokers was smaller in 2001 than in 1997, among those who did smoke the average number of cigarettes smoked per day was higher in 2001 than in 1997. In 2001, slightly fewer respondents than in 1997 reported

having received advice from their GP with regard to smoking (16 percent and 14.7 percent).

In 1997, more male than female respondents (68.9 percent and 53.3 percent respectively) stated that they had smoked at least once ($p < 0.0005$). In 2001 69.1 percent of males and 54.4 percent of females said that they had smoked ($p < 0.0005$). Figure 7 shows the current smoking behaviour by gender.

Figure 7: Smoking Behaviour by Gender (in %)

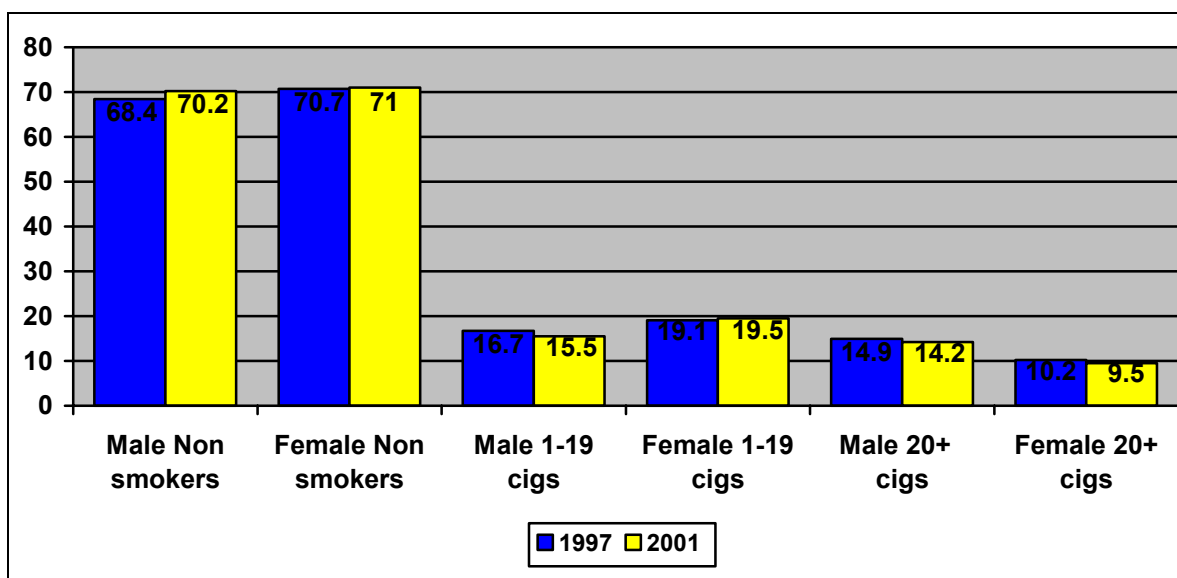


Table 10 shows that there was a less than ten percentage point variation in smoking habits between the different age groups of respondents in both surveys.

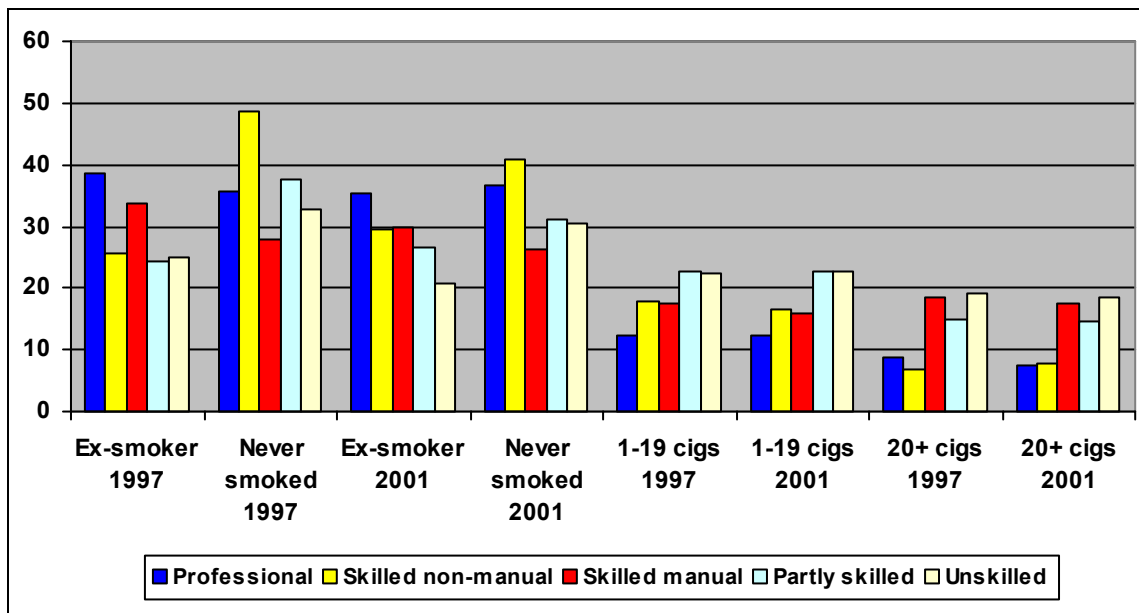
Table 10: Smoking Status by Age Group, Gender and Year (in %)

Age Group	Year of survey	Ex-smoker		Never smoked		1-19 cigs a day		20 cigs or over	
		Male	Female	Male	Female	Male	Female	Male	Female
16-24	1997	21.7	16.4	48.3	48.7	22.8	28.2	7.0	5.9
	2001	24.4	23.3	43.6	42.2	24.4	27.6	7.6	7.0
25-34	1997	26.7	19.8	31.1	40.4	24.3	16.5	24.9	14.8
	2001	28.7	22.5	33.1	40.8	23.3	26.1	14.9	10.5
35-44	1997	28.9	27.6	34.5	38.3	12.7	17.9	21.0	15.6
	2001	35.5	23.0	33.8	42.2	14.2	21.6	16.5	13.2
45-54	1997	37.2	26.1	22.8	43.0	14.8	16.9	20.2	13.8
	2001	38.4	28.7	30.1	35.3	10.1	19.0	21.4	17.0
55-64	1997	39.2	27.7	22.5	46.7	15.4	15.8	17.3	9.5
	2001	49.1	28.5	22.7	47.3	14.4	17.5	13.7	6.8
65-74	1997	46.6	28.6	26.4	53.4	12.9	15.2	11.4	2.4
	2001	55.8	30.5	23.0	55.3	9.1	11.0	12.1	3.1
75+	1997	55.1	20.8	26.1	71.7	7.1	5.7	4.0	1.4
	2001	56.1	24.1	25.2	67.3	12.2	6.2	6.5	2.3

Respondents above the age of 55 years were least likely to smoke, and respondents between 25 and 44 years of age were the heaviest smokers ($p < 0.0005$). The gender gap increased with age. Over half of all male respondents over 75 years of age were ex-smokers, compared to less than a quarter of female respondents in the same age group ($p < 0.0005$). Whereas 25-34 year olds reported less smoking in 2001 than in 1997, the opposite was true for 16-24 year olds, who reported higher incidences of smoking and also a higher average of cigarettes smoked.

Skilled non-manual workers were the most likely socio-economic group to have never smoked, whereas unskilled manual workers and partly skilled workers were most likely to be current smokers (Figure 8). The difference was statistically highly significant for both years ($p < 0.0005$).

Figure 8: Smoking Status by SEG (in %)



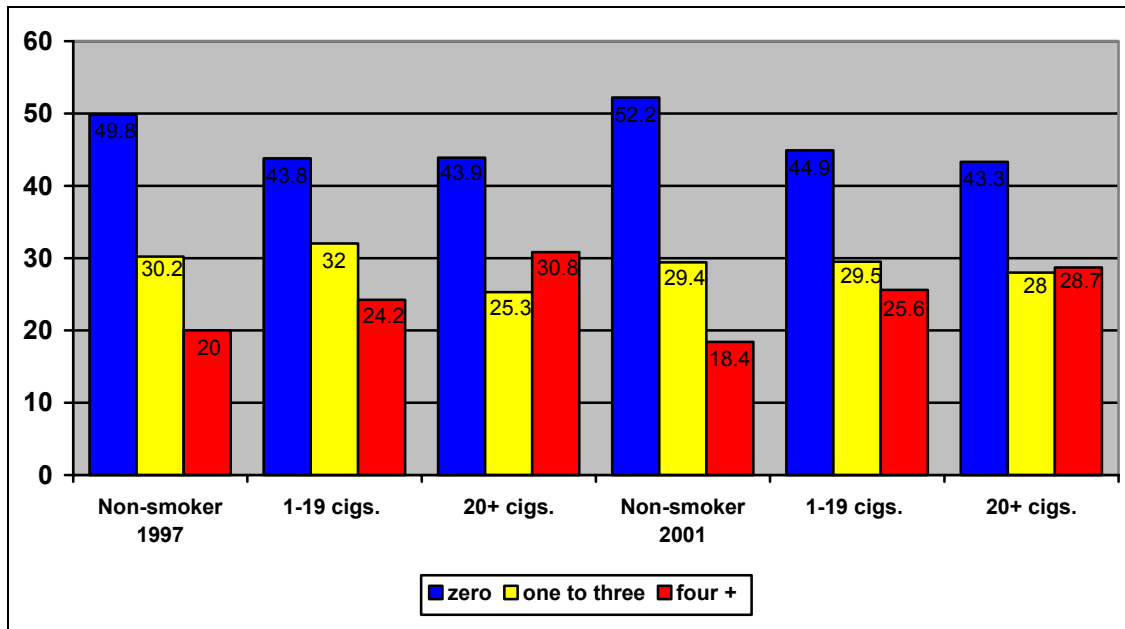
There is a correlation between smoking behaviour and respondents' perception about their general health. Non-smokers were more likely than smokers to say that their general health was good and heavy smokers were least likely to say that their general health was good ($p < 0.0005$). The logistic regression model shows that having never smoked or having stopped smoking remained strong significant predictors for better self-assessed general health even when social factors were included in the model. Respondents who never smoked were also less likely to report a limiting long-standing illness. Once the data related to smoking were included in a logistic regression model, non-smoking emerged as a significant predictor for not having a limiting long-standing illness even compared to moderate smoking (1-19 cigarettes a day). Table 11 shows the descriptive statistics related to smoking behaviour.

Heavy smokers were more likely to state that their feelings had worsened on four or more items on their GHQ12 score of mental health ($p < 0.001$ for 1997 and $p < 0.0005$ for 2001) (Figure 9).

Table 11: General Health Perception and Long-standing Illness by Smoking Status (in %)

	Year	General health perception			Suffers from long-standing illness
		Good	Fairly good	Not good	
Never smoked	1997	54.5	30.9	14.6	36.5
	2001	55.9	29.3	14.7	35.4
Ex-smokers	1997	47.9	33.8	18.2	42.1
	2001	53.0	30.7	16.3	41.5
1-19 cigarettes a day	1997	50.9	32.2	16.8	33.8
	2001	50.2	31.9	17.9	35.6
20 cigarettes or over	1997	42.5	33.6	23.9	44.1
	2001	40.1	36.4	23.4	42.6

Figure 9: GHQ12 Score by Smoking Status (in %)



1.7. Drinking

The logistic regression models in Sections 1.2 and 1.4 of this report investigated the impact of respondents' alcohol consumption on their self-assessed general health and the likelihood that they suffered from a limiting long-standing illness. We found that those who said they did *not* drink were significantly more likely to report poor or fair general health and have a limiting long-standing illness. On the other hand, heavy drinking was not associated with either a perception of poor general health or an increased likelihood of an occurrence of a limiting long-standing illness. These results obviously need further investigation and discussion as – no matter what a survey reveals – it is an established medical fact that heavy drinking does have a deteriorating effect on overall health. In this section, we discuss why drinking did not appear to impact on general health as expected.

One possible explanation relates to the design of the survey. As already discussed above, both variables on general health and limiting long-standing illness rely heavily on self-reporting. Hence it may well be that non-drinkers assess their general health worse than drinkers. Another option to explain the result would be to assume a reversed causality, that is, that respondents who do suffer from a limiting long-standing illness or from poorer general health do not drink or give up drinking.

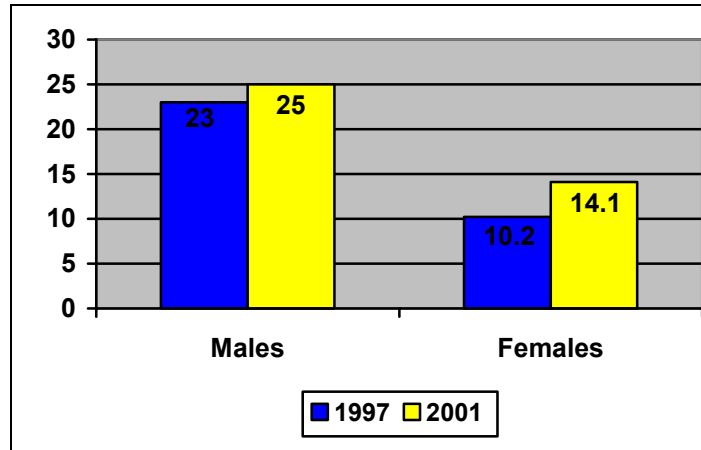
Generally, a comparison of the figures from both surveys shows that alcohol consumption was higher in 2001 than in 1997. In 1997, 66.8 percent of respondents stated that they drank alcohol. In 2001, this figure was around three percentage points higher: 69.6 percent ($p < 0.0005$). Among those who said that they did not drink, approximately three quarters in both surveys stated that they never drank and one quarter said they just drank very occasionally. In 1997 8.1 percent of respondents said they had received advice from their GP in relation to their drinking behaviour compared to 8.5 percent in 2001.

Drinking at above the recommended sensible level of alcohol – which is defined as 14 units of alcohol maximum per week for women and 21 units of alcohol maximum per week for men - rose by four percentage points among females (10.2 percent in 1997, 14.1 percent in 2001, $p < 0.0005$) and two percentage points among males (23.0 percent and 25.0 percent, $p < 0.083$).

More respondents of both genders in the 2001 sample reported drinking above the recommended sensible level than in the 1997 sample (Figure 10).

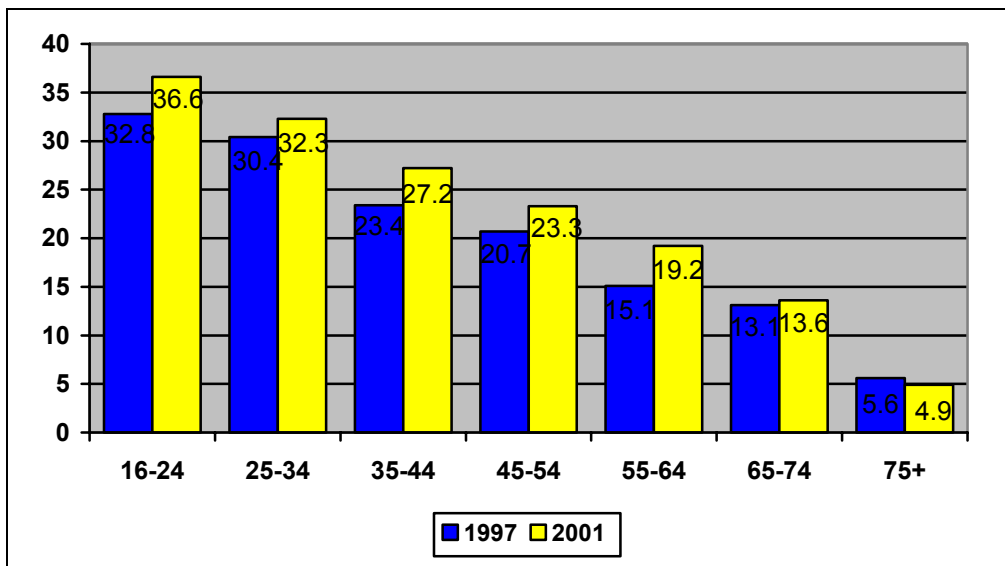
One possible explanation for the fact that heavy drinking was not significantly related to a poorer general health perception is that younger people are more likely to drink heavily than older people. The correlation between age groups and the units of alcohol consumed was highly significant, with younger respondents much more likely to drink above the recommended weekly sensible level ($p < 0.0005$).

Figure 10: Respondents above the Recommended Sensible Drinking Level by Gender (in %)



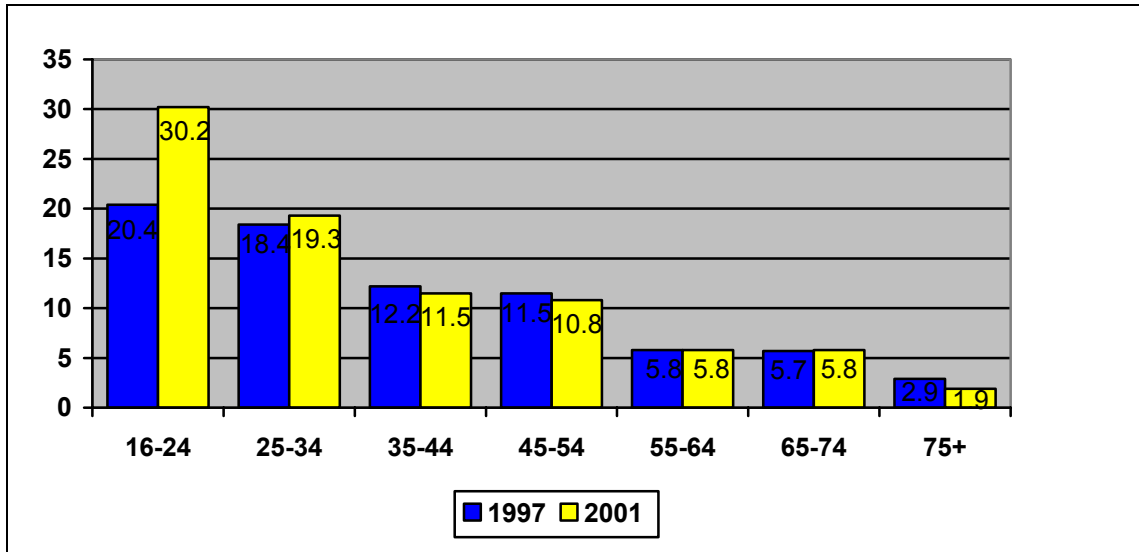
Apart from the oldest respondents, more males in all age groups reported drinking above the recommended sensible weekly level in 2001 than in 1997 (Figure 11). In particular, respondents in the 16-24 year age group were most likely to report higher alcohol consumption in 2001 than in 1997. In this age group over one third of respondents (36.6) in 2001 drank more than the recommended sensible weekly level.

Figure 11: Males above the Recommended Sensible Drinking Level by Age Group and Year (in %)



For females the picture is different. More females reported drinking above the recommended sensible level in 2001 than in 1997 (Figure 12) ($p < 0.0005$). However, whereas fewer women above 35 years drank above the recommended sensible weekly level, women below the age of 35 years, particularly those below the age of 25 years, reported higher levels of alcohol consumption in 2001 ($p < 0.001$). In fact, in 2001, almost as many women (30.2) as men in this youngest age group reported drinking above the level that is recommended as sensible.

Figure 12: Females above the Recommended Sensible Drinking Level by Age Group and Year (in %)



It seems that the appearance of 'alcopops' contributed to the increase of alcohol consumption, especially among young women. Females were over three times more likely than males to consume alcopops. Older respondents were the least likely to say they drank alcopops. Over half of all 16-24 year old respondents who said that they drank alcohol said that they drank alcopops. In addition, 63.5 percent of females had consumed them compared to 35 percent of males. Women in the other age group were more likely to drink wine, beer or liqueurs, and less than five percent of respondents over 54 years of age drank alcopops.

One way of further exploring whether or not health promotion messages about safe levels of drinking are being acknowledged is to look at the relationship between respondents' drinking habits and their perceived general health on a descriptive level. Table 12 reveals that with regard to respondents' perceptions about their general health, there is very little variation between those who consume amounts of alcohol above the recommended sensible level and those who drink less. In fact, respondents who drink more than the recommended sensible amount of alcohol per week were *more* likely to report good general health. This coincides with the results of the logistic regression model in Section 1.2. In 2001 this relationship between high alcohol consumption and good perceptions about general health was even stronger than in 1997.

The GHQ12 score of both male and female respondents who drank above the recommended sensible limit of alcohol would suggest that their mental health in the past 12 months was poorer than that of respondents who drank less alcohol. A cross-tabulation with the reported levels of stress over the past 12 months only, however, showed no consistent association between high levels of stress and high levels of alcohol consumption. Statistically there was only a highly significant relation between males above and below the recommended sensible drinking level in 1997 ($p < 0.005$). It would seem that it is a combination of different factors that may explain high alcohol consumption.

Table 12: Drinking Status, General Health Perception and GHQ12 Score (in %)

Year	Within or above recommended level	General health perception			GHQ12 score		
		Good	Fairly good	Not good	Nil	1-3	4+
1997	Males within limit	55.2	31.6	13.2	58.7	26.5	14.8
	Males above limit	57.9	33.6	8.4	44.3	36.5	19.2
	Females within limit	53.1	31.6	15.3	44.1	30.9	25.0
	Females above limit	57.1	34.3	8.6	36.2	35.1	28.7
2001	Males within limit	55.1	31.4	13.6	56.5	28.4	15.1
	Males above limit	59.3	28.3	12.5	51.9	29.1	19.0
	Females within limit	54.9	30.6	14.5	46.2	30.7	23.1
	Females above limit	65.1	22.3	12.6	39.1	36.2	24.6

The substantive difference between the drinking behaviour of respondents with relation to their religious affiliation was small. Catholics in both samples, however, were more likely to report drinking above the recommended safe level of alcohol consumption, although the gap between Catholics and Protestants in that respect was narrower in 2001 ($p < 0.0005$ in 1997 and $p < 0.002$ in 2001) (Figures 13 and 14).

Figure 13: Males above the Recommended Sensible Drinking Level by Religion and Year (in %)

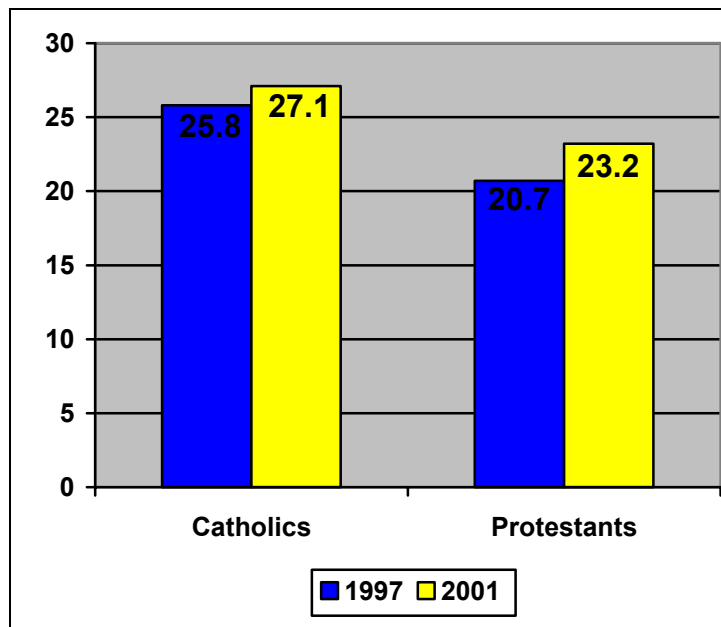
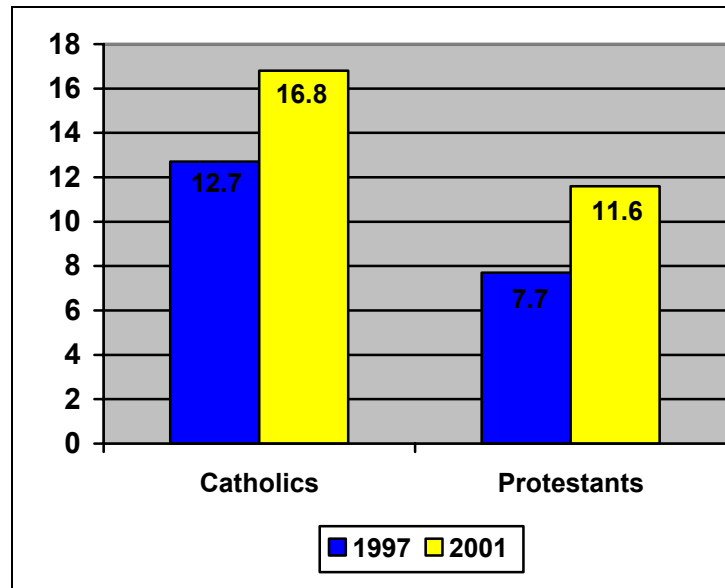


Figure 14: Females above the Recommended Sensible Drinking Level by Religion and Year (in %)



Figures 15 and 16 show that a more accurate picture of the factors that determine heavy drinking can be obtained from an analysis of drinking behaviour and socio-economic status. The increase in female drinking has occurred across all socio-economic strata except for the professional/managerial group, with the increase particularly concentrated in the intermediate skilled groupings ($p < 0.0005$ in both 1997 and 2001).

Figure 15: Males above the Recommended Sensible Drinking Level by SEG (in %)

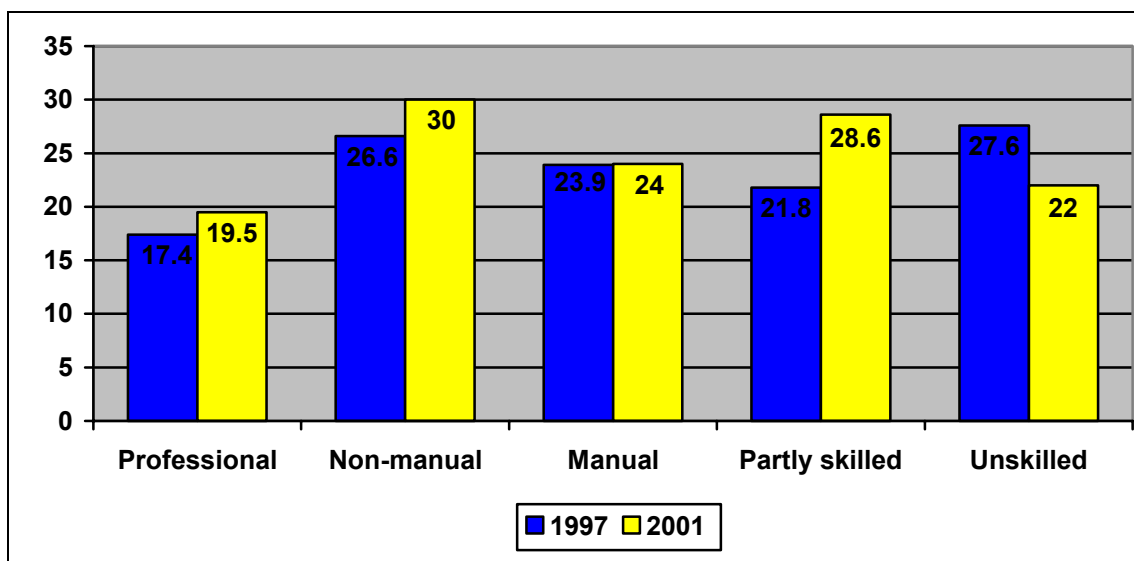
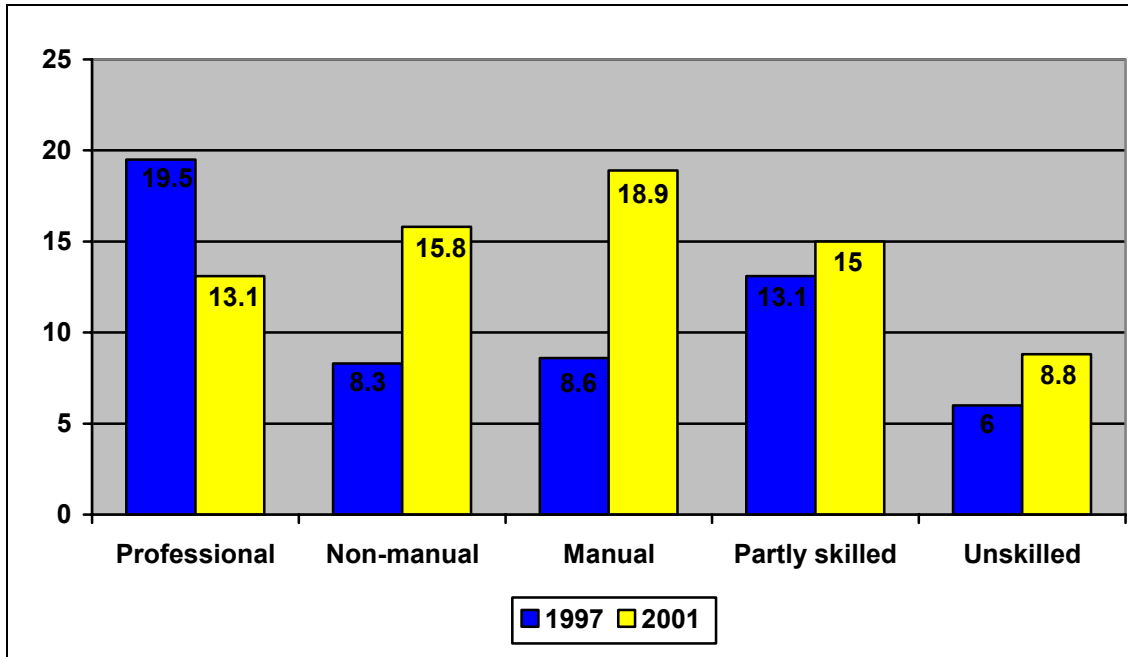


Figure 16: Females above the Recommended Sensible Drinking Level by SEG (in %)



Females who said they had experienced 'a lot' of Northern Ireland (NI) conflict-related violence in their neighbourhood were also approximately twice as likely to drink alcohol above the recommended sensible limit than females who reported only 'a little' violence in their neighbourhood ($p < 0.0005$), though this may be related to their class strata. The relation between males' drinking behaviour and experiences of NI conflict-related violence, where the differences between classes are not so clear-cut, was inconsistent.

1.8 Physical Activity

Bulletin 3 of the Northern Ireland Health and Social Wellbeing Survey 2001 (NISRA, 2002) presents comprehensive findings relating to physical activity. The bulletin focuses on seven main areas:

- walking,
- current physical activity levels,
- sedentary levels,
- recommended physical activity levels,
- motivations to take regular physical activity,
- barriers to regular physical activity and
- intentions regarding regular physical activity.

Analysis was undertaken using a wide range of dependent variables, such as age, sex, socio-economic group (SEG) and employment status.

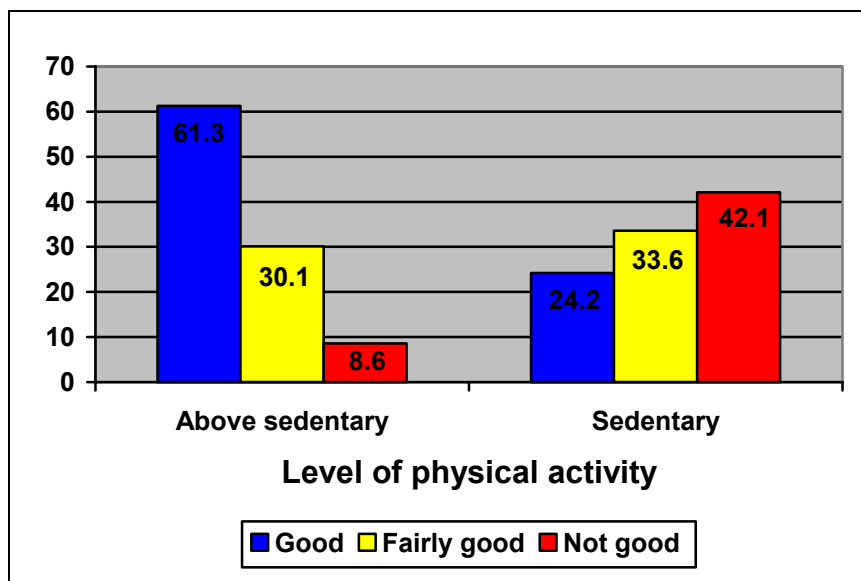
The measurement of current physical activity levels includes all activity taken in the course of work, leisure or around the home. Within Bulletin 3, two such summary measures of activity have been used:

- **Recommended physical activity levels:** the recommended level of physical activity is at least 30 minutes per day of at least moderate exercise, for five days a week.
- **Sedentary levels:** a respondent is classed as sedentary if they have not taken any activity of at least a moderate level, lasting 20 minutes, on one or more occasion in the previous seven days.

There is a strong correlation between taking exercise and self-reported general health ($p < 0.001$). Only 24.2 percent of respondents who are sedentary say that they have good health, compared with 61.3 percent of non-sedentary respondents. As shown in Figure 17, five times as many people in the sedentary category report that their health is not good as those in the non-sedentary group (42.1 percent and 8.6 percent respectively).²⁴

Similar differences apply when looking at the groups who take more than the recommended level of exercise and those who do not. Just under two thirds (63.1 percent) of those in the former category say that they have good health, compared with 48.0 percent of those in the latter category. Three times as many people who take under the recommended level of exercise say that their health is not good compared to those taking over the recommended level (20.5 percent and 7.4 percent respectively).

Figure 17: Self-reported General Health by Level of Physical Activity (in %)



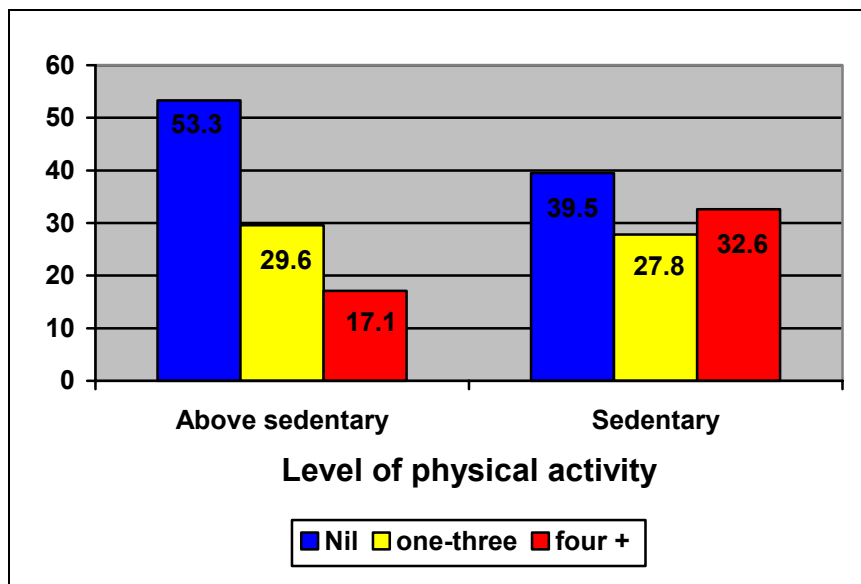
Also, as demonstrated already in the regression analysis, there is an association between respondents' level of physical activity and their GHQ12 scores. As Figure 18 shows, only four in ten respondents (39.5 percent) who are sedentary had not said their feelings had worsened on any of the GHQ12 questions, compared with over half of respondents who were in the 'above sedentary' group (53.3 percent). One third of respondents (32.6 percent) who are sedentary said their feelings had worsened on four or more of the GHQ12

²⁴ However, the direction of causality in the link is unclear. It may be that ill-health forces some respondents to be less active than they would choose.

questions, almost twice the proportion as those in the above sedentary group (17.1 percent) ($p < 0.0005$).

The regression model showed that physical activity had a significantly positive impact on the overall mental health of respondents and this is reflected in the direct comparison of physical activity and GHQ12 items. For example, 54.2 percent of those taking above the recommended level of exercise did feel worse on any GHQ12 items, contrasted to 48.3 percent of those taking below the recommend level of exercise.

Figure 18: GHQ12 Scores by Level of Physical Activity (in %)



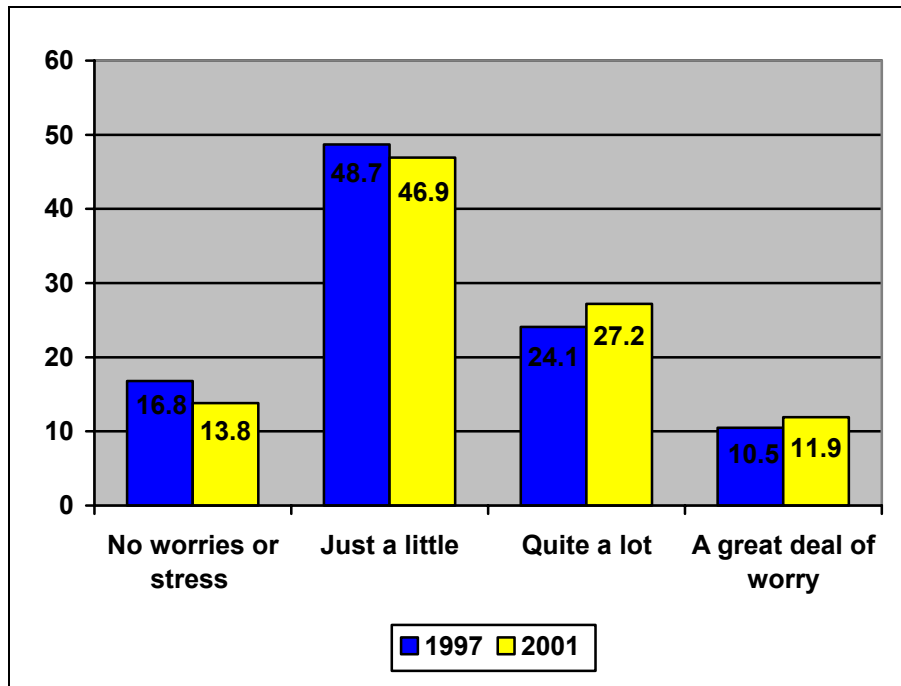
1.9 Stress

The logistic regression model in Section 1.3 gave convincing evidence that stressful life events heavily impact on the mental and physical health of respondents. Stressful family events and general stressful life events were two of the strongest predictors for poor mental health. In this section, the impact of stress on the general health and wellbeing of respondents is explored more fully.

Respondents were asked whether they had experienced any events over the last twelve months in four broad areas that could lead to higher levels of stress:

- health-related events,
- primary relationship events,
- job-related events and
- other major events.

The percentage of respondents who reported such events was higher in 2001 compared to 1997 (Figure 19) ($p < 0.0005$). Especially serious illnesses of family members were reported more often in the latest NIHSWB survey (15.3 percent in 1997 and 24.6 percent in 2001).

Figure 19: Level of Stress over past 12 Months by Year of Survey (in %)

Serious 'legal' problems (financial problems, experiences of robbery or assault, problems with officials) and other serious disappointments were also more often reported in 2001 than in 1997.

In 2001 around five percent more respondents reported stressful changes in the work environment than in 1997. 16.5 percent had changed their jobs within the past twelve months compared to 12.4 percent of respondents in 1997. More respondents worried about losing their job in 2001 (6.6 percent compared to 4.3 percent) or said they experienced a crisis in work (6.1 percent compared to 3.5 percent).

The most often-mentioned event that potentially could lead to higher stress was having had a member of the family or a close friend develop a serious health condition, reported by 24.6 percent of respondents in 2001. Aside from having changed a job in the last year, the majority of potentially stress-causing events all related to health matters:

- death of family member (16.1 percent),
- death of close friend (10.3 percent),
- having an existing medical condition that worsened (15.5 percent),
- having an operation or having to spend a period in hospital (9.3 percent).

Only 45 percent of respondents did not report at least one health-related event during the last year (Figure 20).

Figure 20: Health-related Stressful Events 2001 (in %)

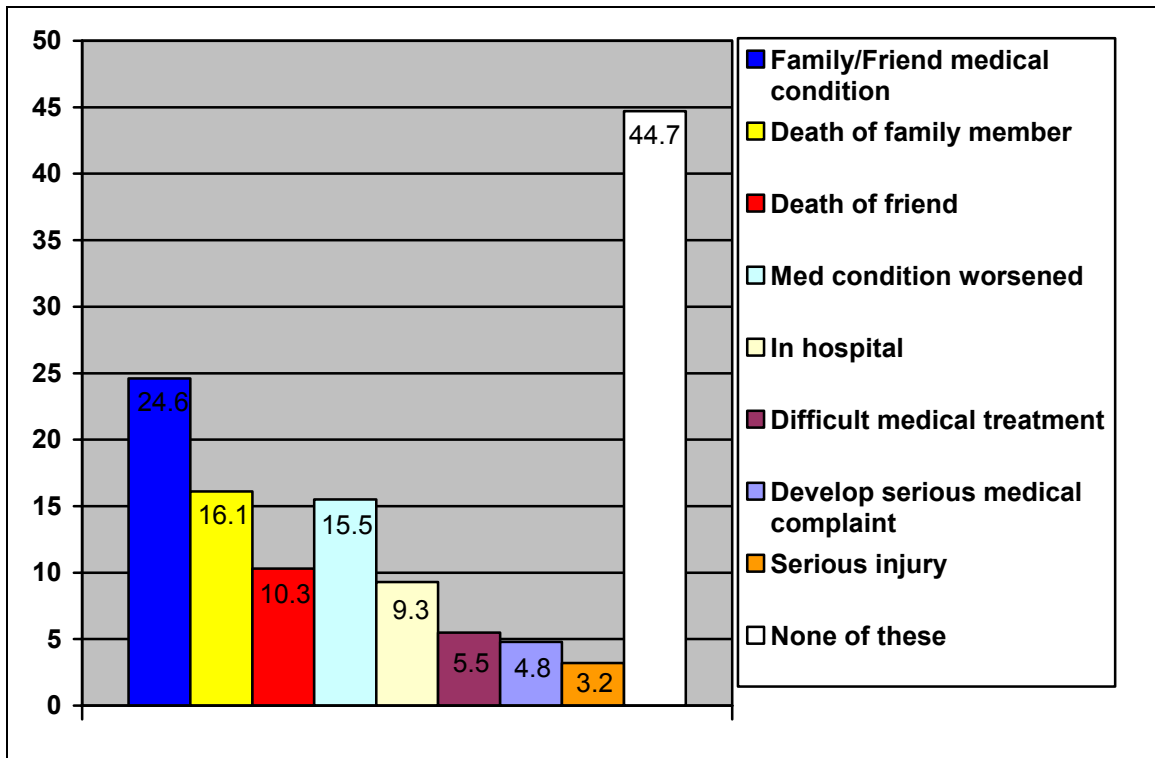
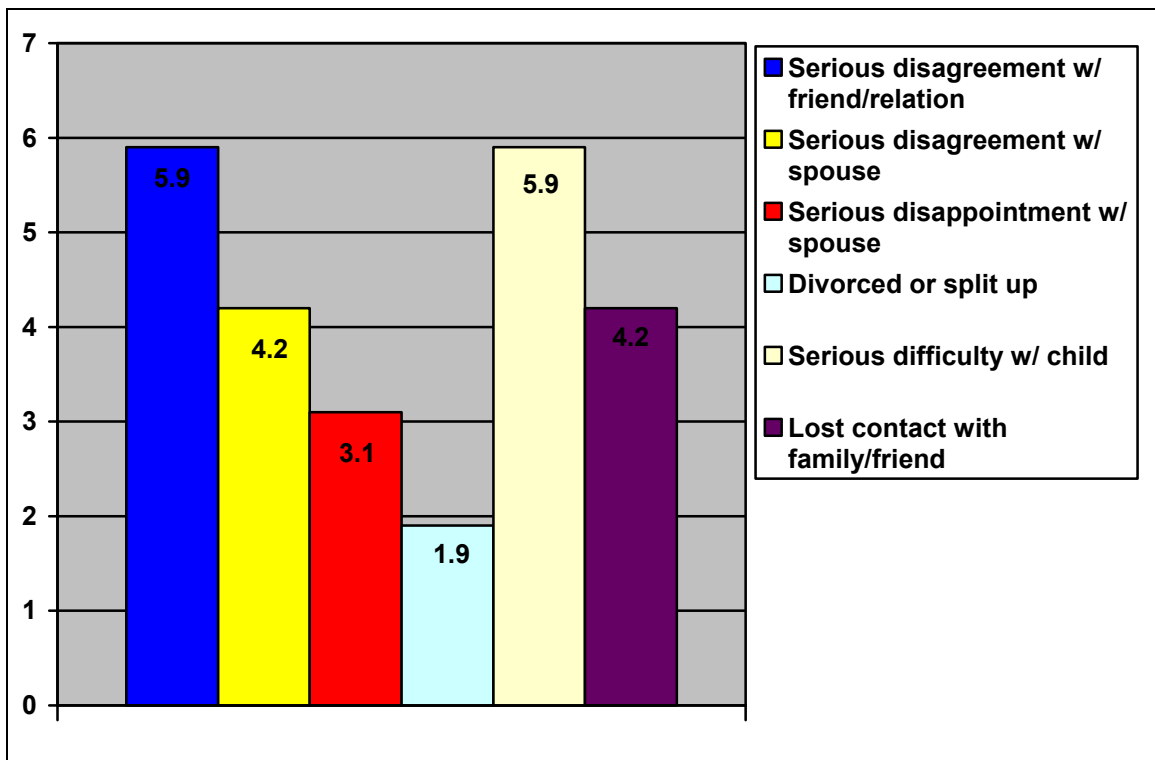


Figure 21: Stressful Primary Relationship Events 2001 (in %)

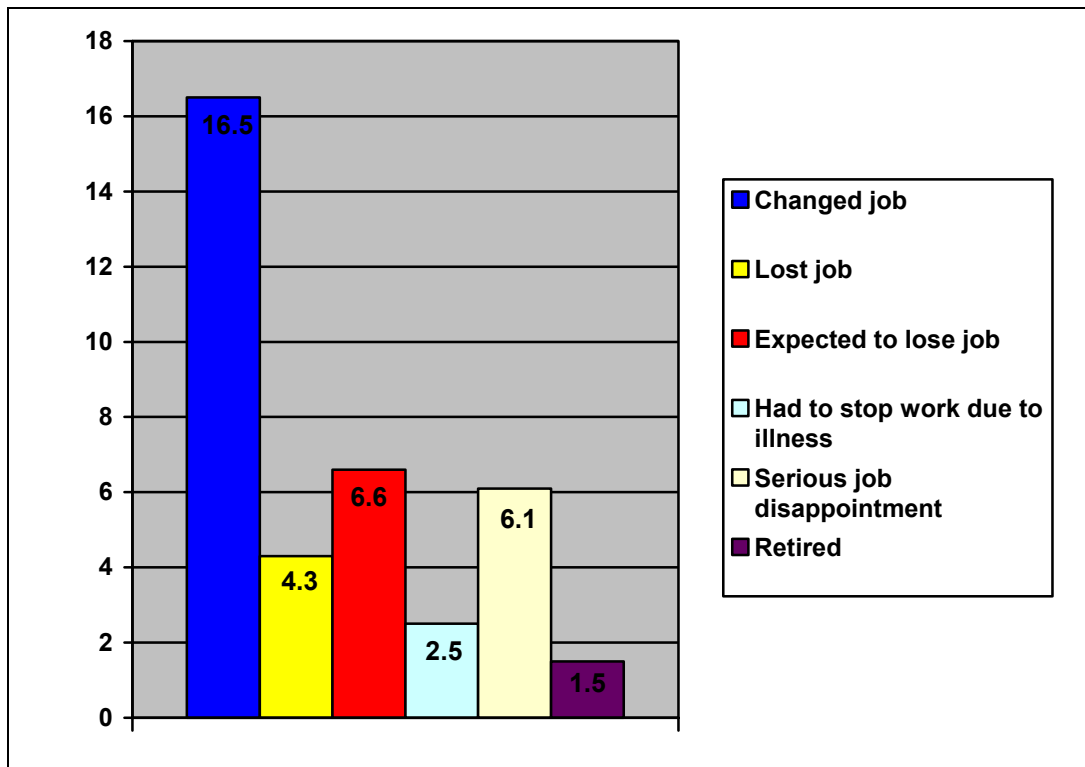


The most commonly-reported 'primary relationship' stress-causing events were having a serious disagreement with one's spouse or partner or having serious difficulty with a child (both reported by nearly six percent). Over 80 percent of respondents did not name any stress-causing primary relationship events

(Figure 21). These stressful life events were the strongest predictors of poor mental health, as the logistic regression model applied revealed.

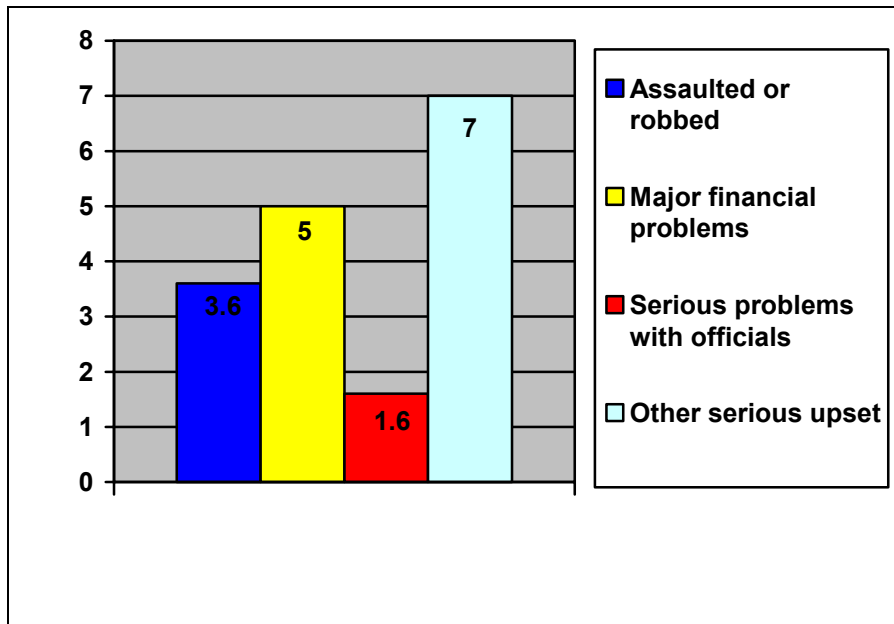
Seventeen percent of economically-active respondents reported having changed their job during the last year. The next most common 'job events' were either expecting to lose a job (6.6 percent) or an unspecified crisis or serious disappointment at work (6.1 percent). Seventy percent of the economically-active did not report any stress-causing job events (Figure 22).

Figure 22: Stressful Job-related Events 2001 (in %)



Respondents also were asked about major stress-causing life events not covered by the other categories (Figure 23). Over 85 percent of respondents did not report anything additional and the most common category among those who did was 'other serious upsets or disappointments' (seven percent).

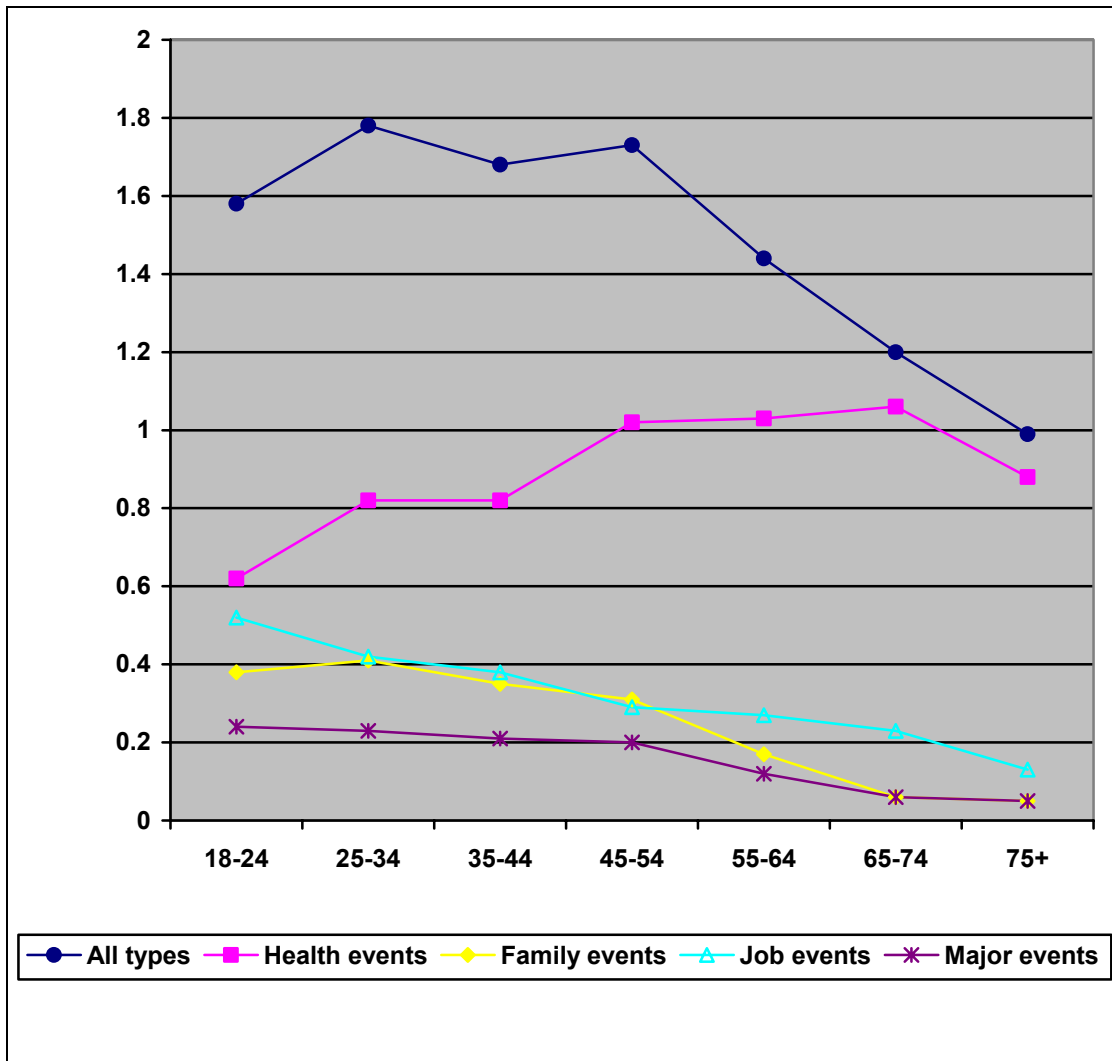
Women reported more potentially stress-causing events in general, particularly among health-related and primary relationship events. Among socio-economic groupings, the 'unskilled' category reported the smallest number of stress-causing events overall, particularly among primary relationship events, while the professional/managerial group was the least likely to report job-related stressful events.

Figure 23: Major Stress-causing Life Events 2001 (in %)

Counter-acting trends can be seen for the number of stress-causing events and increasing age. Reflecting the physical degeneration of respondents with age, the average number of health-related events tends to increase with age (Figure 24). However, the average number of all other types of potentially stress-causing events declines with increasing age, perhaps reflecting initially the movement of individuals beyond the typical ages for parenting young children and then latterly reflecting a gradual disengagement from society with increasing age. The net result is that the overall number of stress-causing events experienced by respondents decreases from those in their 50s onward.

NISRA (2002a) already has reported that self-reported stress is associated with:

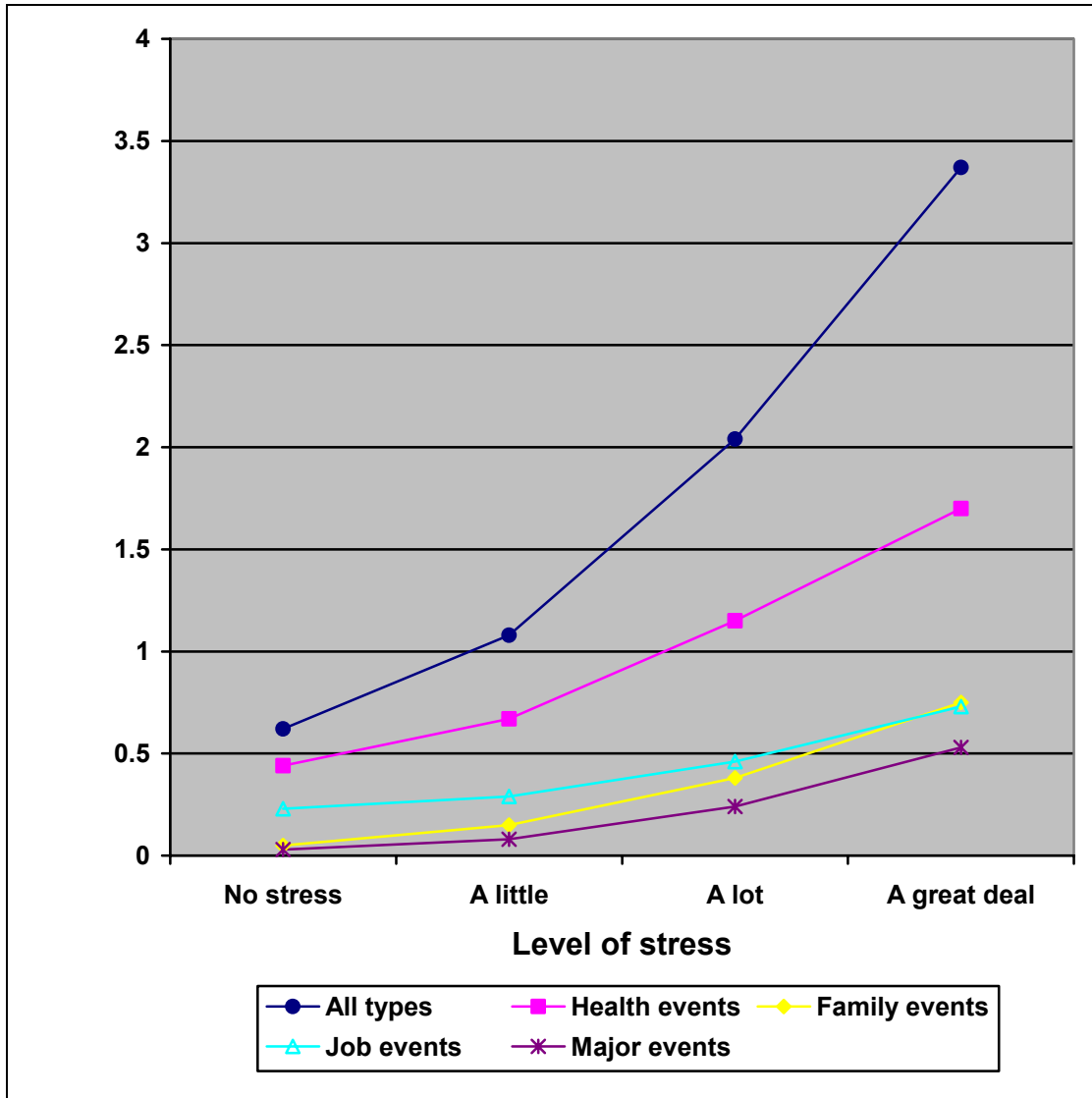
- gender ('women were more likely to have experienced a great deal of worry or stress in the previous twelve months');
- employment status ('unemployed . . . more likely to have experienced . . . stress');
- marital status ('respondents married but separated from their partner most likely to have experienced a great deal of worry or stress in contrast with those who were single');
- general health (those whose 'general health was not good . . . were five times as likely . . . to have experienced a great deal of worry or stress') and limiting long-term illness ('twice as likely');
- being 'affected a lot by the troubles';
- and regular smoking.

Figure 24: Mean Number of Stress-causing Events by Age Group

The Agency also established that self-reported stress is not associated with socio-economic group, religion or level of alcohol consumption. However, increasing age can be shown to be negatively associated with self-reported stress or worry (Kendall's τ_b , $p < 0.001$).

In contrast to 'those who have not experienced any health and family related stress-causing events', NISRA (2002a) found that self-reported stress was linked to some specific life events such as feeling betrayed by spouse or partner, having developed a serious illness or disability in the previous twelve months or having experienced major financial problems. Figure 25 shows that this link between stress-causing events and levels of self-reported stress applies generally. The mean number of stress-causing events increases markedly for all four types of event ($p < 0.001$).

Figure 25: Mean Number of Stress-causing Events by Level of Stress Reported (2001)



1.10 Parenting Problems

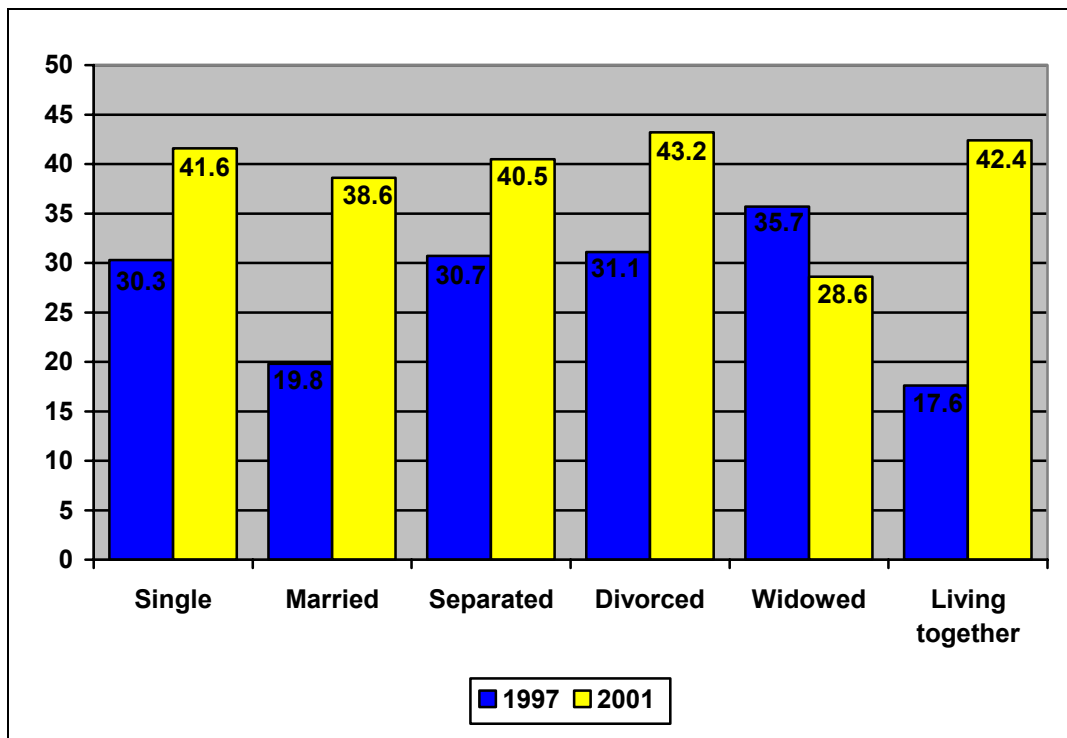
In 1997 22.6 percent of parents in the sample reported parenting problems, that is, having approached a source outside the household for support regarding the upbringing of children. In 2001, the proportion of parents who did record such parenting problems was considerably higher (39.3 percent, $p < 0.0005$). Problems with their children's behaviour at home, with family relationships and experiences of being harmed, however were not reported as often.

Females were more likely than males to have sought outside support in the upbringing of their children ($p < 0.019$ in 1997 and $p < 0.005$ in 2001). Younger respondents were also more likely than older respondents to report parenting problems ($p < 0.0005$ in both 1997 and 2001). The more children respondents had the more likely they were to report parenting difficulties, with 32.5 percent of respondents with four or more children reporting difficulties in 1997 and 46.9 percent in 2001 ($p < 0.0005$ in both 1997 and 2001 and also between years).

The evidence with regard to marital status of respondents and reported problems in the upbringing of children is inconclusive, as Figure 26 shows. Neither single parenthood, nor marriage or cohabitation *per se* appear to have an advantageous or adverse effect on the upbringing of children.

In 1997, the three most frequently recorded worries in relation to children's upbringing were their health (29.4 percent), their progress - or lack of it - in school (15.7 percent) and their behaviour at home (15.4 percent). In 2001 the three greatest worries were the children's health (32.7 percent), their progress in school (15.8 percent) and their behaviour at school (11.6 percent).

Figure 26: Parenting Problems by Marital Status and Year (in %)



1.11 Health Hazards in the Home

Living conditions are generally thought to impact heavily on the general health and social wellbeing of people. The fact that the housing score was the only Noble Indicator which affected general health perceptions of respondents significantly, as the multivariate analysis in Section 1.2 showed, confirms this assumption. Reported health risks at home, which are a measure for poor housing, also affected respondents' self-assessed health significantly. It is therefore worthwhile to note that, in comparison to 1997, respondents reported better housing conditions in NIHSWB 2001. Overall, the reported number of persons living in each household was smaller in 2001 than in 1997, and the average number of bedrooms available was larger. The percentage of accommodation equipped with full central heating was 92.4 percent in 2001, three percentage points higher than in 1997. The percentage of respondents reporting accommodation without any central heating was 6.4 percent in 1997, but only 4.7 percent in 2001 ($p < 0.0005$). Access to telephones was also three

percentage points higher in 2001, with 95.8 percent of respondents reporting that their accommodation was equipped with a phone ($p < 0.0005$). Overall, private housing and outright ownership of houses was slightly higher in 2001 than in 1997 ($p < 0.0005$).

We found a significant difference between SEGs with regard to the tenure of accommodation, the number of available bedrooms and the standard of heating available in the house, all of which impact on the quality of accommodation. Professionals/Managerial workers were more likely to own their houses outright or to have a mortgage, whereas partly skilled and unskilled workers were most likely to live in rented accommodation (Table 13) ($p < 0.0005$).

Table 13: Tenure and Heating Standard of Accommodation, Bedroom-per-person Ratio by SEG and Year

		Socio-economic Group				
		Professional/ managerial	Skilled non manual	Skilled manual	Partly skilled	Unskilled
Tenure of accommodation (in %)						
Owned outright	1997	35.0	30.0	32.6	24.0	21.3
	2001	36.3	29.8	31.1	25.1	25.9
Mortgage	1997	55.1	49.8	36.8	33.0	30.2
	2001	54.2	52.8	46.4	37.2	30.1
Rented	1997	8.6	19.7	29.3	42.0	47.9
	2001	8.2	16.4	22.2	36.7	43.3
Other	1997	1.3	0.4	1.2	1.1	0.6
	2001	0.5	0.9	0.3	1.1	0.8
Availability of full central heating (in%)						
	1997	92.9	92.4	87.7	86.2	86.2
	2001	96.3	94.3	91.1	89.8	88.0
Bedroom per person ratio (means)						
	1997	1.10	1.00	0.95	0.90	0.94
	2001	1.17	1.07	1.06	1.03	1.06

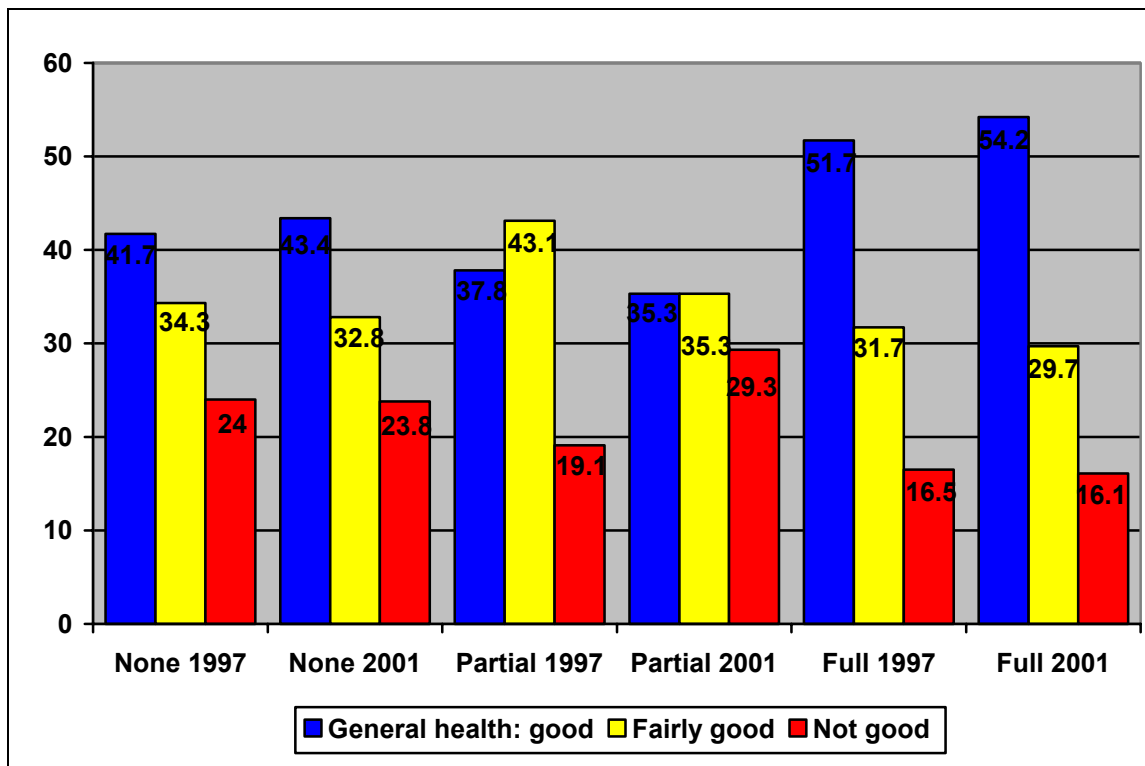
There was also a statistically significant difference between SEGs in respect to the available heating system in the house, with 96.3 percent of professional/managerial workers reporting full central heating compared to less than 90 percent of unskilled and partly skilled workers ($p < 0.0005$ in both 1997 and 2001). Table 13 shows that managerial and professional workers also had on average the biggest houses and the most favourable proportion of people in the household per bedroom. However, whilst it is significant to note that the logistic regression model applied in Section 1.2 showed that those who reported a higher number of health hazards at home were also significantly more likely to report poorer overall health, room density varied between religion and class, but proved not to be a significant predictor for self-assessed general health.

Catholics were slightly less likely than Protestants to have an annual household income above £15,000 ($p < 0.0005$) and slightly more likely to be unemployed ($p < 0.0005$). However, evidence yielded from multivariate analysis clearly shows that once other variables are taken into account, there is no evidence for religious affiliation being a predictor for poor general health. It is this difference in economic prosperity rather than religious affiliation, which is likely to impact on the general health and wellbeing of respondents.

We found that the difference in the affordability of modern, good-sized accommodation is strongly income-related ($p < 0.0005$). Whereas almost 90 percent of managerial and professional workers said their total annual gross household income exceeded £15,000, less than half of the unskilled workers did.

The type of heating provided in the accommodation is closely associated with respondents' perceptions about their general health (Figure 27). Those who lived in accommodation which was fully centrally-heated were more likely to say that their general health was good ($p < 0.0005$ in both 1997 and 2001). The perception of good general health was higher in 2001 than in 1997

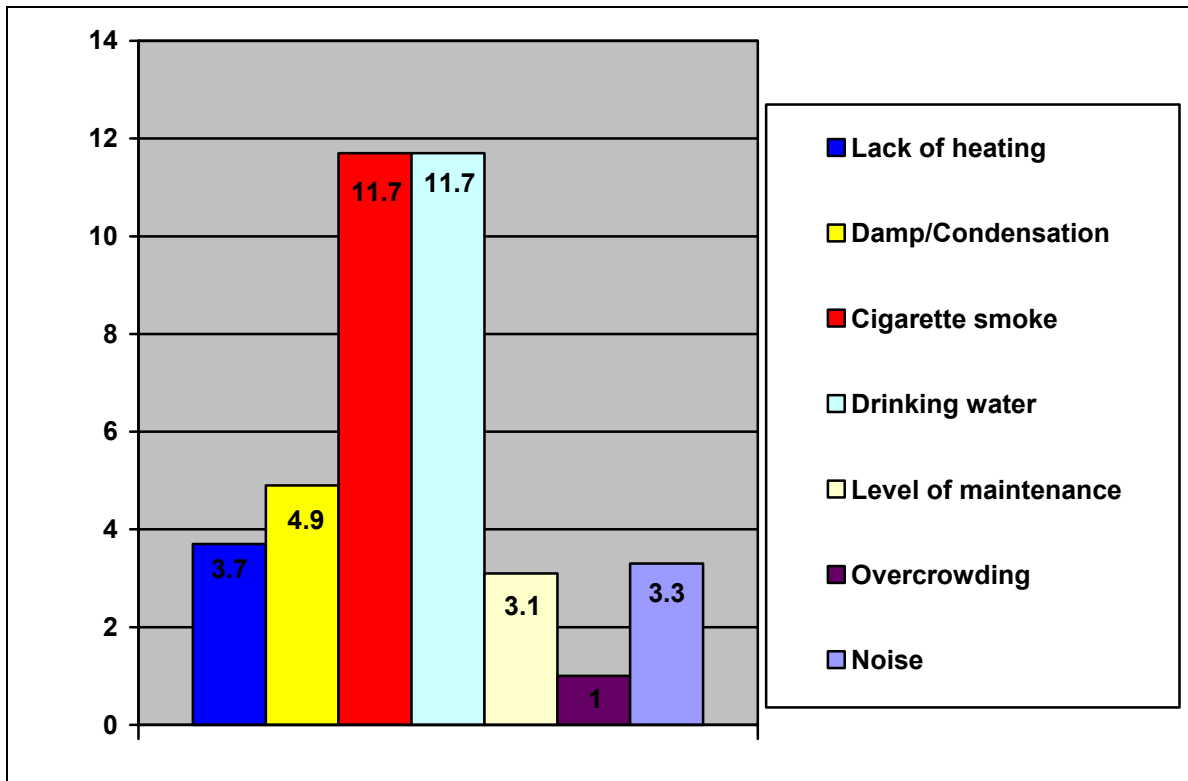
Figure 27: General Health Perception by Availability of Full Central Heating (in %)



Respondents were asked about their perception of risks in the home. The majority, 70 percent, did not name any categories of risk. Among those who did name a risk, over two-thirds named only one category. The most common categories of 'home risk' were cigarette smoke in the home and the quality of

water²⁵ with 12 percent of respondents naming each. Five percent named damp or condensation in the home and four percent mentioned lack of heating. Three percent mentioned either a poor level of general maintenance of the home or noise and one percent complained about overcrowding (Figure 28).

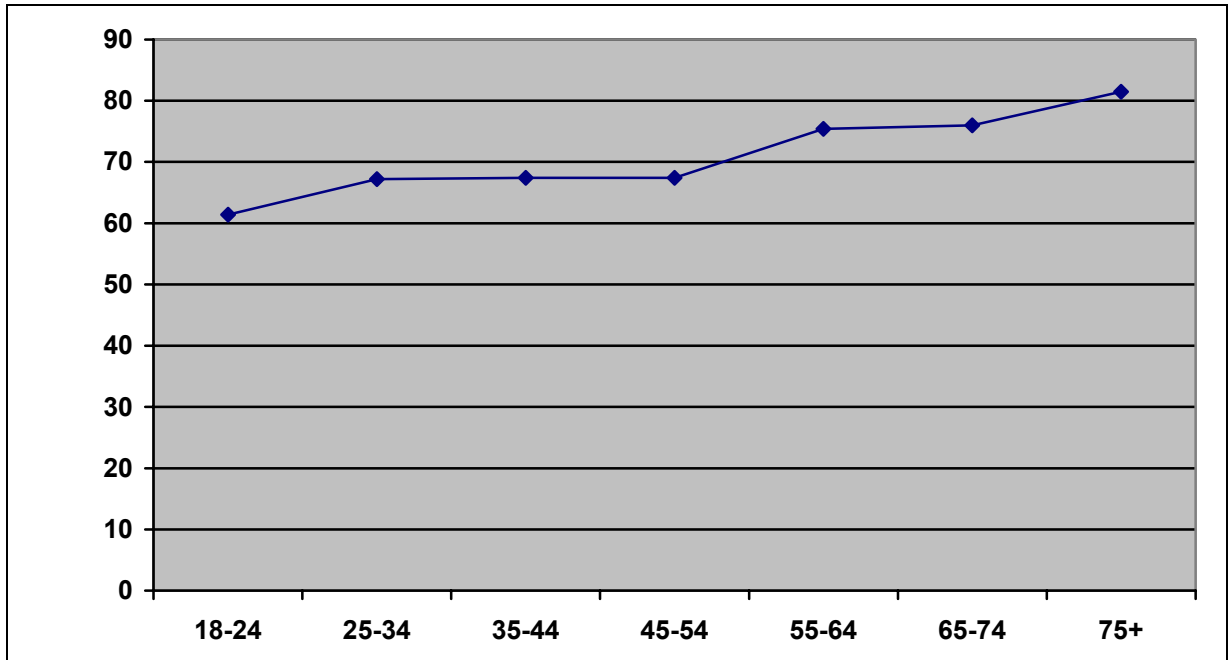
Figure 28: Perception of Risks in the Home (in %)



There were little systematic differences between genders or socio-economic groups in the pattern of responses, however, the percentage perceiving fewer risks in the home rose with age (Figure 29).

²⁵ The 2001 Wellbeing Survey fieldwork coincided with a health scare due to bacteriological contamination of drinking water.

Figure 29: Percentage Perceiving no Risks in their Home by Age Group (in %)



1.12 Health Hazards in the Workplace

When respondents were asked about their perception of risks at work in 2001 a clear interaction between gender and class emerged. In general, women in work reported fewer risks associated with their jobs than men in work; while just over a quarter of men reported no risks at work, for women the figure was almost 40 percent. The patterns of types of risks reported by women and men in non-manual employment mirror each other, only with the amounts reported by the men tending to be higher: 58 percent of men give 'stress' as a work risk contrasted to 51 percent of non-manual women. The contrast is more marked for the second most common category of risk, 'hours of work': 37 percent of non-manual men compared to 20 percent of non-manual women naming this as a risk (Figure 30).

In contrast, the patterns for those in manual work are quite different (Figure 31). For women in manual work, the overall pattern resembles that for non-manual women except that the proportions giving stress (29 percent) and hours of work (15 percent) are lower. The pattern of risks for manual men, however, is different than those for non-manual men and women generally and reflects the physical nature of manual work for men. The perceived risks of the materials manual male workers have to handle, the types of equipment they use, the fumes and emissions, and the levels of noise they are exposed to are all higher than those of any of the other three groups. While the risks of stress and long hours of work are lower than those for non-manual men, the risk reported for stress is still high and on a par with that reported for women manual workers.

The risk posed by the number of hours is larger for men than that reported by women manual workers.

Figure 30: Work Risks by Gender, Non-manual (in %)

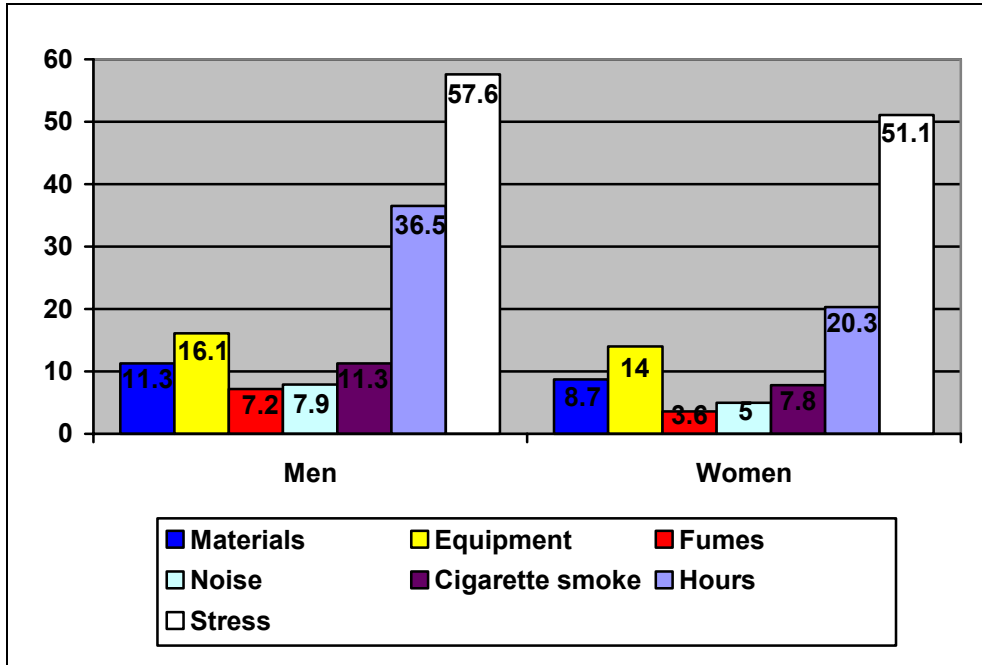
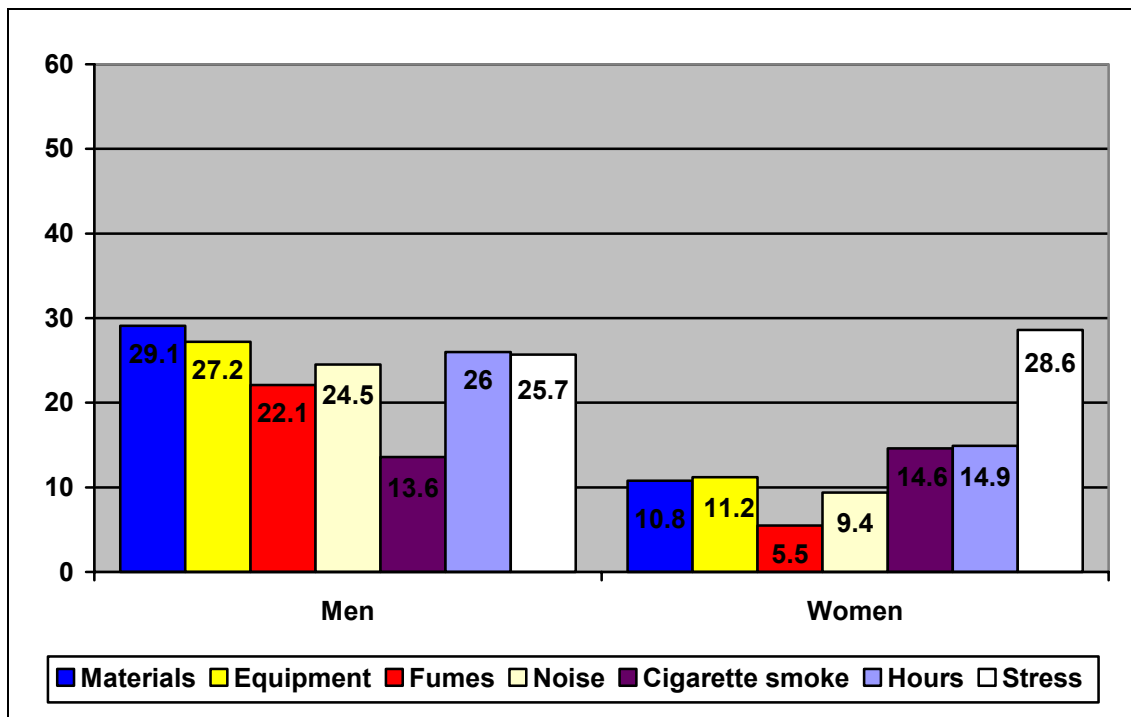


Figure 31: Work Risks by Gender, Manual (in %)

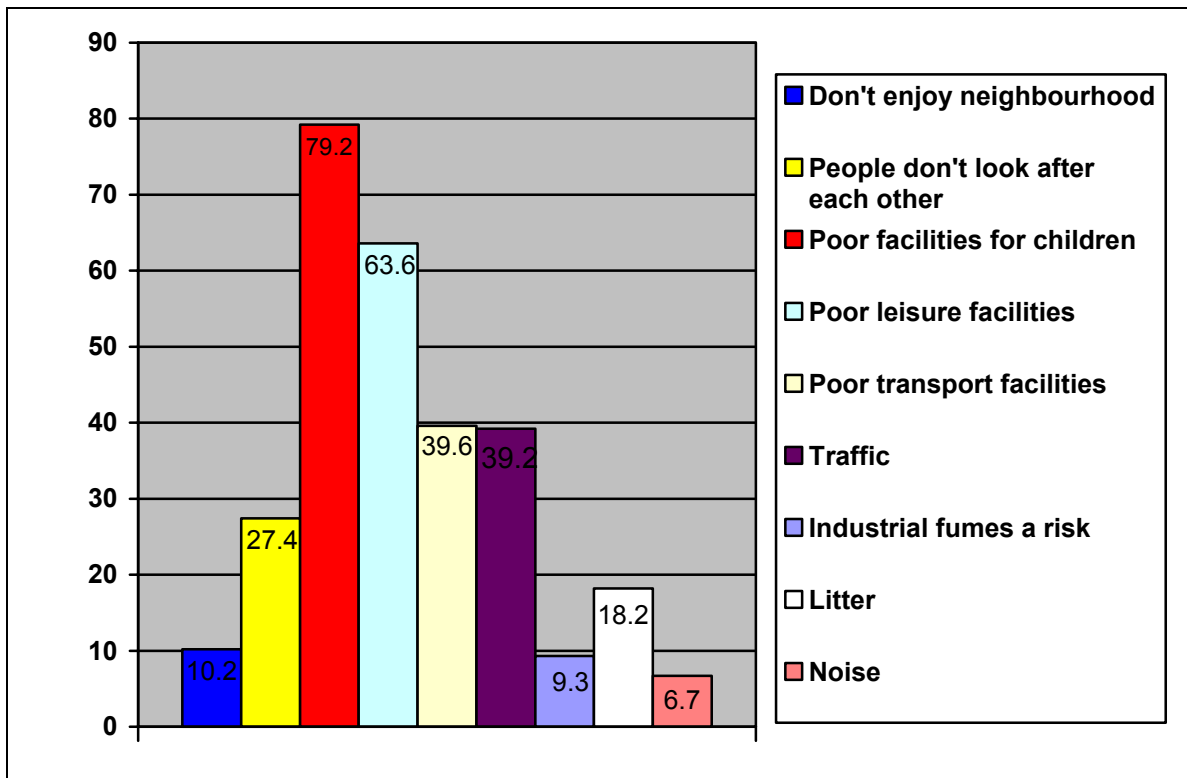


1.13 Health Hazards in Neighbourhood

In NIHSWB 2001 respondents were asked a series of questions about what they did or did not like about their neighbourhood and their perception of risks in their neighbourhood. The lack of local facilities is thought to have some influence on the mental health of people. Multivariate analyses showed that respondents who reported a greater number of health hazards in their neighbourhood were significantly more likely to have a poor GHQ12 score. Furthermore, the social environment indicator of the Noble Index of deprivation was evidently a significant predictor for a higher likelihood of the occurrence of a limiting long-standing illness.

The features named most often by respondents to the NIHSWB survey in 2001 were the lack of facilities for children (79.2 percent) and leisure facilities generally (63.6 percent). Worries about traffic and transport came second: 39.6 percent complained about poor transport facilities and 39.2 percent named the amount of traffic in the area as a risk. Small, but significant, proportions mentioned the social aspects of living in their area, with over a quarter saying that their neighbourhood was a place where people do not look after each other and 10.2 percent saying that they do not enjoy living there. Aside from the risk of traffic, environmental factors were only mentioned by relatively small proportions: 18.2 percent mentioned litter and rubbish; industrial fumes and emissions were named as a risk by 9.3 percent; and noise was mentioned as a nuisance by 6.7 percent (Figure 32). The differences between gender, age groups and socio-economic groupings were small.

Figure 32: Negative Opinion of Neighbourhood (in %)



1.14 Community Contact

Community contact and social support are thought to impact on the mental health and wellbeing of people. We therefore included these indicators in the multivariate analyses in Section 1.3 of this report. We found that participation in community activities and good social support positively impacted on mental health of respondents. However, the amount of primary contacts and community activities in the last two weeks reported by respondents in NIHSWB 2001 indicate that there are few complete social isolates. In general, the amount of contact for all groups was high, with around eighty percent of respondents reporting being in contact with both relatives and friends through visits and by telephone (Figure 33). The rates of contacts for women were about five percentage points higher than those for men. The youngest age group, those aged 16 to 24 years, reported somewhat more contacts with friends and fewer with family than the rest of the sample. The older age groups tended to balance slightly less direct visiting with more telephone contacts. The amount of contacts reported by the non-manual groupings was somewhat higher than that reported by the manual groupings, especially the unskilled group.

Three-quarters of respondents had also been involved in at least one activity in the community during the last two weeks with some sort of social outing being most popular, followed by participation in a religious/community activity (Figure 34). Except for going to a leisure centre, women were more involved in all types of activities than men.

Figure 33: Primary Contacts during the Last Two Weeks (in %)

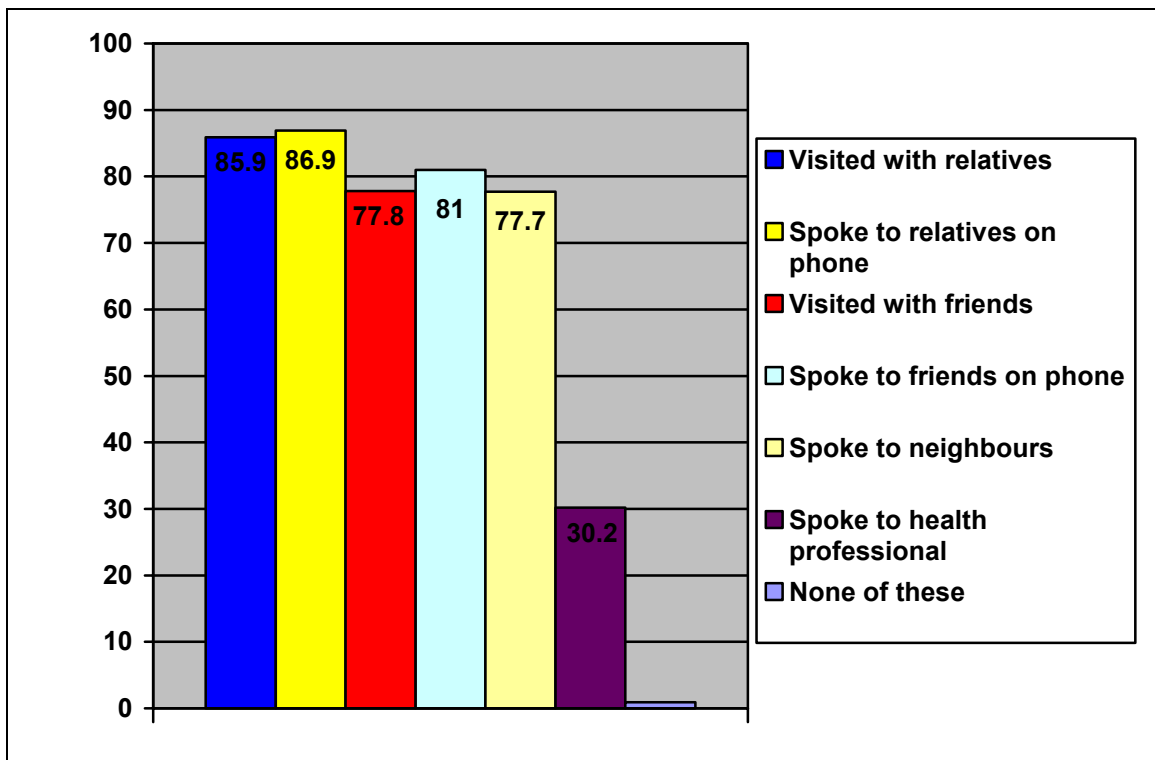
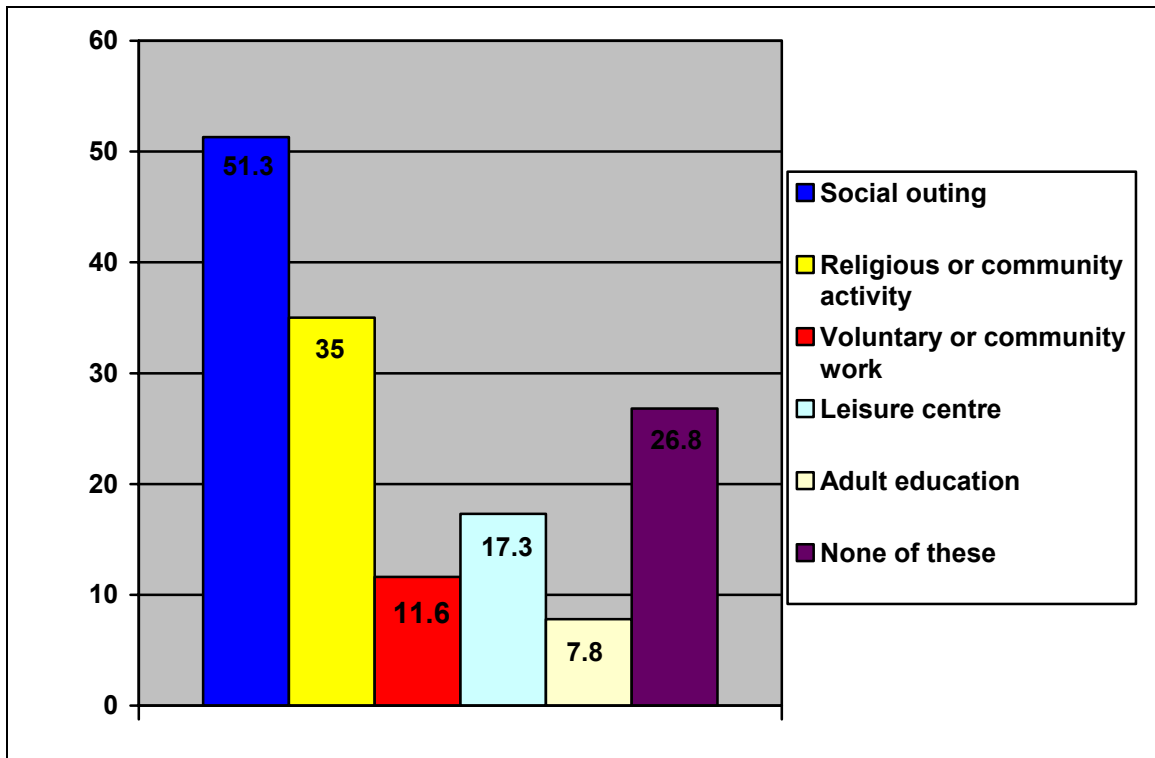
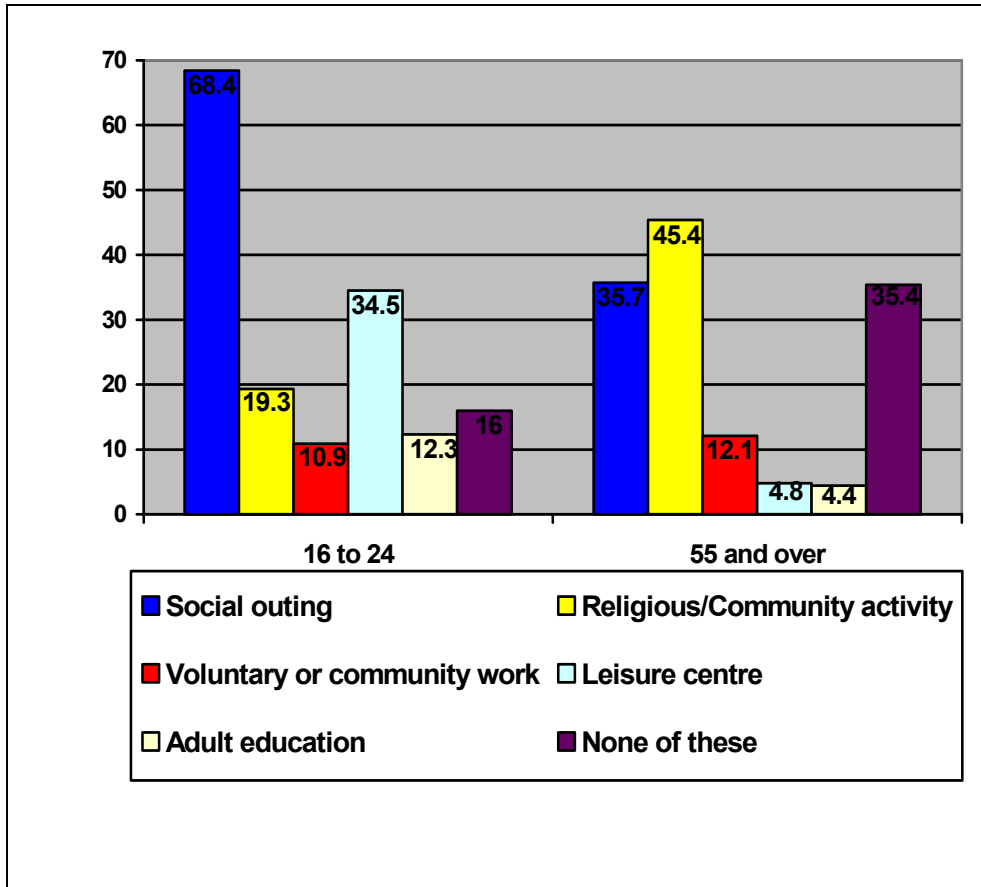


Figure 34: Activities in the Community during the Last Two Weeks (in %)



While all age levels participated in all types of activities, there were quite distinct differences in their distribution by age. The youngest age category aged 16 to 24 years was the most active and was particularly likely to attend adult education or night classes and to go to leisure centres or on social outings (and were least likely of all to participate in religious/community activities). In contrast, the older age groups, those aged 55 years or more, show a negative image compared to the youngest group; for these older groups, participating in a religious/community activity instead of a social outing was the single most popular activity and the level of general inactivity was markedly higher (Figure 35).

Figure 35: Activities in the Community during the Last Two Weeks, Respondents Aged 16 to 24 and 55 or older (in %)



1.15 Effects of the Socio-religious Conflict in Northern Ireland on the Population's Health and Wellbeing

The socio-religious conflict is known to have an impact on people's health and wellbeing. A comparison of respondents' feelings and experiences with regard to the conflict must therefore be an integral part of this report. However, it is also known that people's feelings about the conflict are heavily influenced by the actual political situation in which the survey takes place.

Overall, there is no evidence that being a Catholic or a Protestant in Northern Ireland is associated with poorer general or mental health. Again, it has to be reiterated at this point, that most variables in the NIHSWB surveys are based on self-reporting. Problems arising from that in terms of data accuracy have already been discussed above, but as the Northern Ireland conflict is a particularly sensitive subject area, it is worthwhile stressing that conflict-related violence reported by respondents in the surveys is also entirely based on respondents' perception rather than actual statistics of violent occurrences in the neighbourhood. Nevertheless, these perceptions may have a substantial impact on the general and mental health of respondents. Tables 14 and 15 support this.

Table 14: Perceptions about Northern Ireland Conflict by GHQ12 scores and Self-assessed General Health (in %)

		GHQ12 score			General Health		
		Nil	1-3	4+	Good	Fairly good	Not good
NI conflict-related violence experienced in neighbourhood since 1969							
Not very much at all	1997	53.4	28.3	18.3	51.5	32.1	16.4
	2001	55.1	27.6	17.4	53.8	30.3	15.9
Just a little	1997	49.6	30.4	20.0	51.7	33.4	14.9
	2001	50.0	30.2	19.8	53.0	31.0	16.0
Quite a bit	1997	38.9	33.9	27.1	50.1	32.6	17.3
	2001	45.6	28.3	26.1	50.5	31.9	17.6
A lot	1997	26.5	29.5	43.9	39.1	31.3	29.7
	2001	38.9	32.1	29.0	43.6	31.7	24.6
Total	1997	48.4	29.8	21.8	50.5	32.5	17.0
	2001	50.1	28.9	20.9	51.9	30.9	17.1
NI conflict-related effects on respondents themselves and immediate family							
Not very much at all	1997	53.7	28.3	18.0	54.4	30.2	15.3
	2001	52.8	29.6	17.5	54.0	30.5	15.5
Just a little	1997	46.2	30.6	23.3	49.4	35.8	14.8
	2001	53.0	27.3	19.7	54.9	31.2	13.9
Quite a bit	1997	39.3	33.9	26.8	45.2	33.4	21.4
	2001	44.3	30.3	25.4	47.7	33.0	19.3
A lot	1997	29.4	33.1	37.5	34.9	33.8	31.3
	2001	36.5	29.4	34.1	42.3	30.0	27.7
Total	1997	48.2	30.0	21.8	50.6	32.3	17.1
	2001	49.9	29.1	20.9	52.1	31.1	16.8
How do you feel about political situation in NI?							
It doesn't really worry me	1997	55.4	25.9	18.7	52.1	31.3	16.6
	2001	55.0	27.7	17.2	52.1	30.3	17.7
I am a bit worried about it	1997	53.2	29.3	17.5	53.0	32.8	14.2
	2001	52.2	29.3	18.5	55.3	30.4	14.3
I worry about it quite a lot	1997	34.1	38.4	27.5	47.4	32.1	20.5
	2001	40.0	29.9	30.1	46.6	34.2	19.2
I am very worried about it	1997	31.6	26.2	42.2	40.0	34.7	25.3
	2001	35.1	32.9	32.1	46.5	31.8	21.7
All	1997	48.1	29.9	21.9	50.5	32.4	17.1
	2001	50.0	29.2	20.9	52.2	31.0	16.7

Table 15: Perceptions about Northern Ireland Conflict by Stress Levels Over Past 12 Months (in %)

		Levels of stress over past 12 months			
		No worry or stress	Just a little	Quite a lot	A great deal
NI-conflict related violence experienced in neighbourhood since 1969					
Not very much at all	1997	20.1	49.8	21.3	8.9
	2001	18.4	46.1	25.2	10.2
Just a little	1997	14.8	52.2	23.7	9.3
	2001	12.3	50.3	26.2	11.1
Quite a bit	1997	11.7	46.9	30.7	10.8
	2001	9.2	47.2	30.2	13.4
A lot	1997	10.7	31.2	31.6	26.5
	2001	8.6	40.6	32.0	18.8
Total	1997	16.8	48.8	24.0	10.4
	2001	13.9	47.0	27.2	11.9
NI conflict related effects on respondents themselves and immediate family					
Not very much at all	1997	23.2	49.6	19.6	7.6
	2001	19.4	45.6	24.7	10.2
Just a little	1997	10.9	52.1	27.1	10.0
	2001	9.7	53.6	25.8	10.9
Quite a bit	1997	6.8	44.8	33.6	14.8
	2001	7.5	46.0	33.2	13.1
A lot	1997	8.5	36.3	28.5	26.7
	2001	8.2	36.4	33.8	21.6
Total	1997	16.8	48.7	24.1	10.5
	2001	13.8	46.9	27.3	11.9
How do you feel about the political situation in NI?					
It doesn't really worry me	1997	28.5	45.1	17.8	8.6
	2001	21.6	45.5	21.9	10.9
I am a bit worried about it	1997	15.6	54.7	21.9	7.8
	2001	11.1	51.5	28.2	9.2
I worry about it quite a lot	1997	8.0	45.8	32.9	13.4
	2001	7.5	41.7	36.0	14.8
I am very worried about it	1997	7.8	35.2	34.2	22.8
	2001	9.1	37.2	28.6	25.1
All	1997	16.8	48.7	24.1	10.5
	2001	13.8	46.9	27.3	11.9

Respondents who said they experienced 'not very much' violence at all in their neighbourhood were more likely to report good general health and had a better GHQ12 score ($p < 0.0005$). This is true for both the 1997 and 2001 HWB surveys. The regression model relating to mental health data for the 2001 survey (Section 1.3) gave evidence that respondents who said they were affected by the troubles 'a lot' or 'quite a bit' were also significantly more likely to report poor mental health when other factors were controlled for. Respondents who said they themselves or their immediate families had been affected by NI conflict-related violence 'quite a bit' or 'a lot' were also considerably less likely to report good general health than respondents who were not affected or only a little ($p < 0.0005$). Over half of those who did not worry about the political situation in Northern Ireland reported good general health and had a low GHQ12 score, but only around a third of those who said they worried about the political situation in Northern Ireland had the same ($p < 0.0005$).

Respondents who said they themselves, their immediate family or their neighbourhood had been 'quite a bit' or 'a lot' affected by Northern Ireland conflict-related violence were also significantly more likely to report high levels of stress over the last 12 months. Worry about the political situation in Northern Ireland was also associated with significantly higher reports of stress (Table 15) (all $p < 0.0005$ for both 1997 and 2001).

Overall, a smaller proportion of respondents worried about the political situation in Northern Ireland in 2001. Almost one third of respondents (32.8 percent) said they did not really worry compared to just over one quarter (25.7 percent) saying the same in 1997 ($p < 0.0005$). However, this figure does not reflect the higher percentage of respondents who reported in 2001 that they were affected by conflict-related violence personally or in their neighbourhood (Figures 36 and 37).

Figure 36: Respondents' Perception about the Effects of the Northern Ireland Conflict on their Neighbourhood (in %)

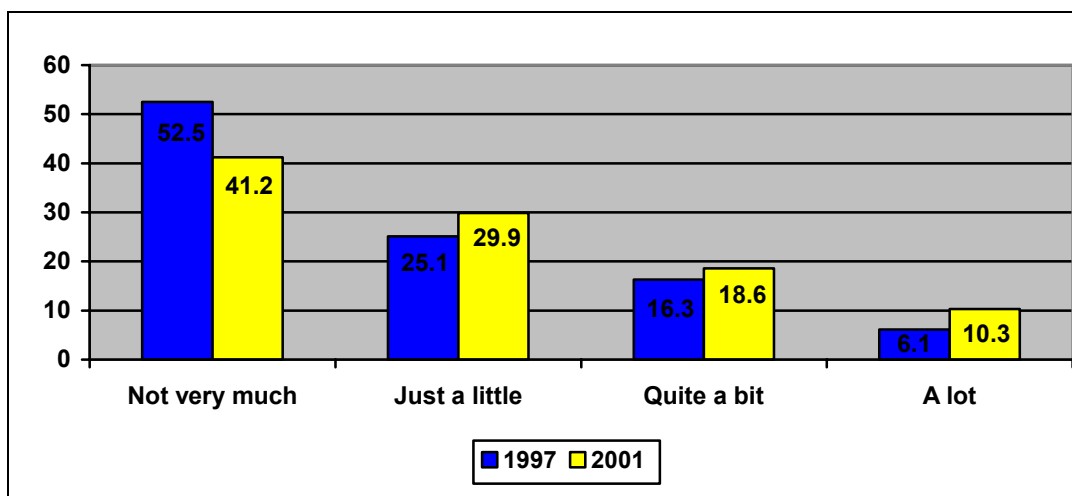
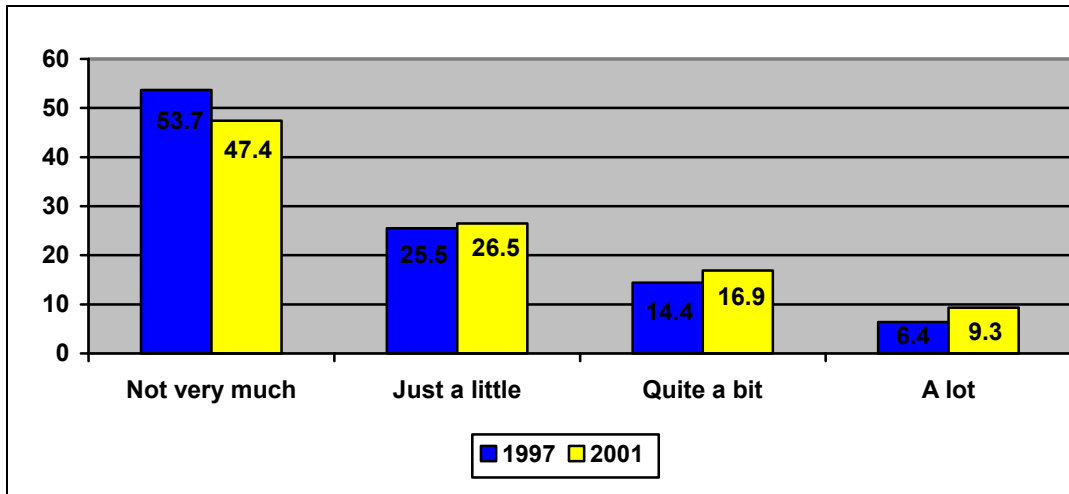


Figure 37: Respondents' Perception about the Effect of the Northern Ireland Conflict on their Immediate Family and Themselves (in %)



The messages from the conflict-related findings are ambiguous. Tables 16-18 show that younger respondents were more aware of Northern Ireland conflict-related violence in their neighbourhood than older respondents, but older respondents' own and immediate families' lives were more affected by the socio-religious conflict than younger respondents' lives and families (all $p < 0.0005$). The oldest and the youngest age groups were most likely to worry about the current political situation in Northern Ireland. Whereas respondents in 2001 were more likely to say that their neighbourhood and their immediate families were affected by conflict-related violence than in 1997, they were less likely to worry about the political situation in Northern Ireland.

Table 16: Respondents' Perception about NI Conflict-related Violence in their Neighbourhood by Age Groups and Year (in %)

Age group	Year of survey	How much violence in your area since 1969?	
		Not very much at all or just a little	Quite a bit or a lot
16-24	1997	72.8	27.2
	2001	63.9	36.1
25-34	1997	72.8	27.2
	2001	66.8	33.2
35-44	1997	76.8	23.2
	2001	72.3	27.7
45-54	1997	79.4	20.6
	2001	70.6	29.4
55-64	1997	77.5	22.5
	2001	72.8	27.2
65-74	1997	84.0	16.0
	2001	74.2	25.8
75+	1997	86.3	13.7
	2001	81.4	18.6

Table 17: Respondents' Perception about NI Conflict-related Violence on their Own Lives and Family by Age Groups (in %)

	Year of survey	Not very much at all or just a little	Quite a bit or a lot
16-24	1997	87.9	12.1
	2001	82.1	17.9
25-34	1997	77.5	22.5
	2001	74.6	25.4
35-44	1997	76.5	23.5
	2001	72.7	27.3
45-54	1997	77.2	22.8
	2001	68.8	31.2
55-64	1997	75.4	24.6
	2001	72.4	27.6
65-74	1997	74.5	25.5
	2001	69.2	31.8
75+	1997	88.2	11.8
	2001	82.6	17.4

Table 18: Respondents' Extent of Worrying about Political Situation in Northern Ireland by Age Groups (in %)

Age group	Year of survey	It doesn't really worry me	I am a bit worried about it	I worry about it quite a lot	I am very worried about it
16-24	1997	29.0	50.2	14.0	6.8
	2001	43.2	40.8	10.3	5.7
25-34	1997	24.5	47.0	21.4	7.1
	2001	29.3	48.9	13.8	8.0
35-44	1997	23.9	44.1	22.4	9.6
	2001	30.5	46.3	16.4	6.8
45-54	1997	21.0	47.4	18.6	13.1
	2001	28.7	43.8	17.9	9.6
55-64	1997	23.6	43.9	23.6	9.0
	2001	29.4	46.0	15.6	9.0
65-74	1997	27.4	45.2	14.5	12.9
	2001	33.6	42.3	14.0	10.1
75+	1997	36.1	39.3	18.6	6.0
	2001	42.7	37.9	13.6	5.8

Figure 38 shows – as already stated above – that respondents to the 2001 survey felt that they were more affected by violence in their neighbourhood. This perception is not gender-related; there was virtually no variation between males' and females' perception about Northern Ireland-conflict related violence in their neighbourhood ($p < 0.073$ in 1997 and $p < 0.453$ in 2001).

Figure 38: Respondents' Perception about Amount of NI Conflict-related Violence in their Neighbourhood by Gender and Year (in %)

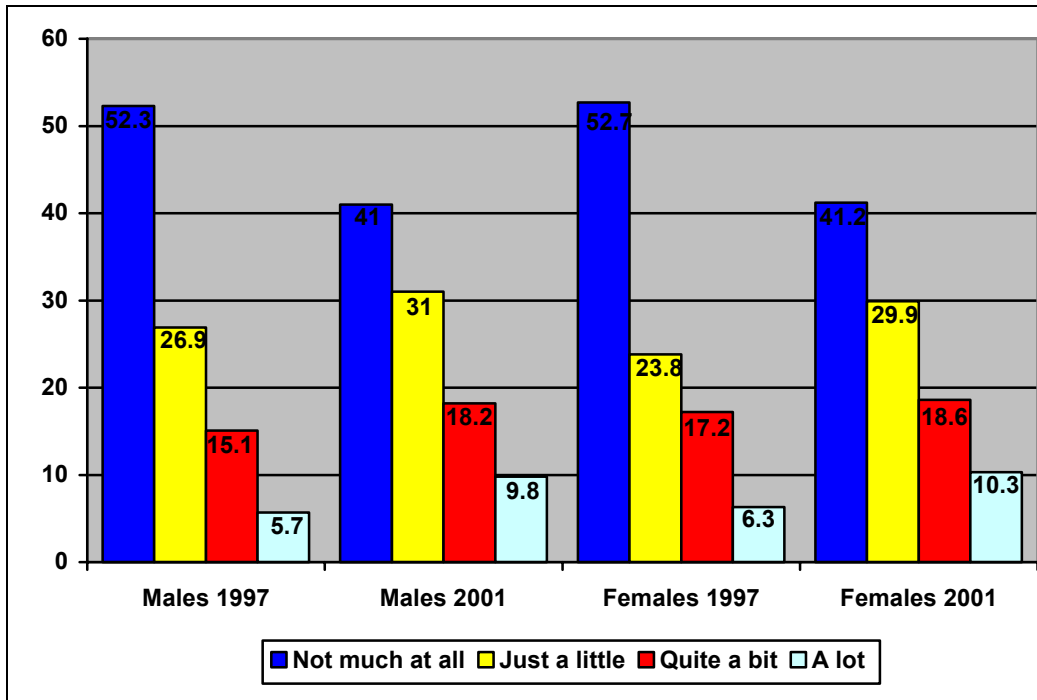
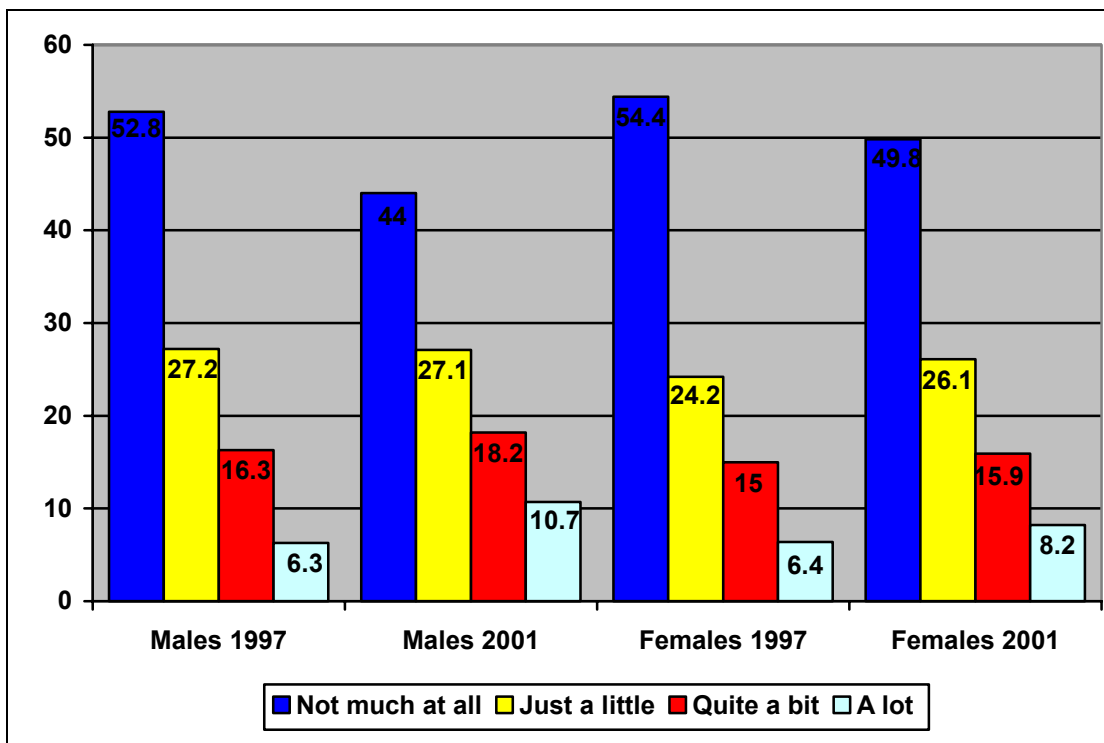


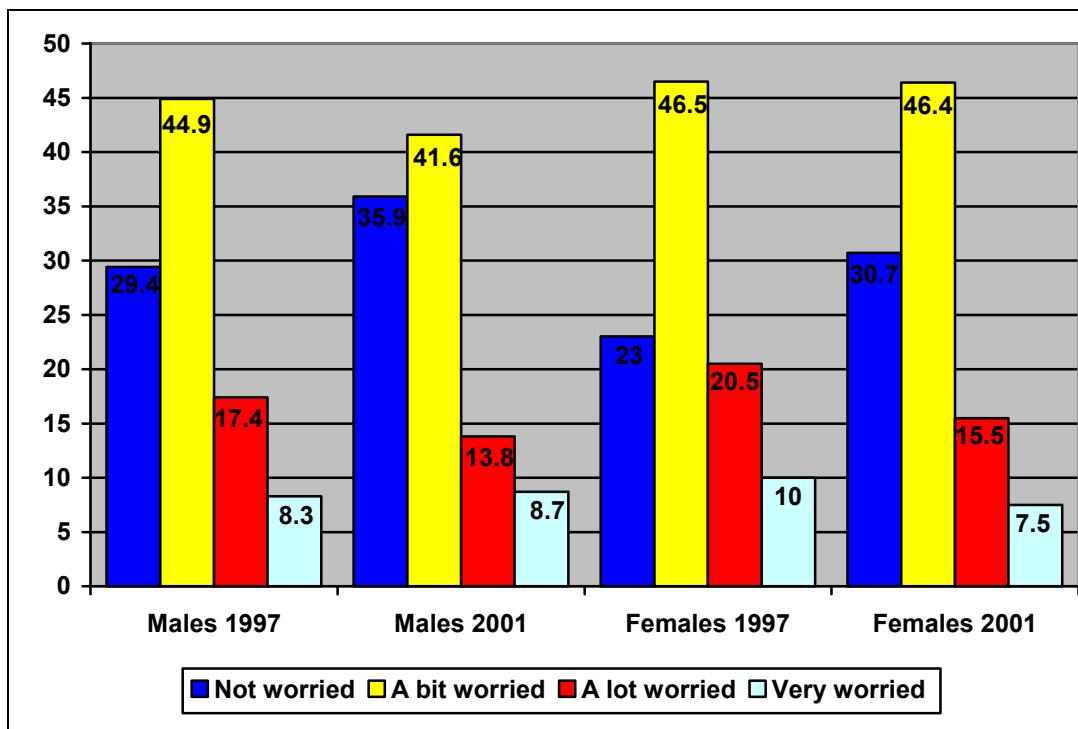
Figure 39: Respondents' Perception about NI Conflict-related Effects on own Lives and Family by Gender (in %)



Males were more likely than females to state that they or their immediate families were affected by Northern Ireland conflict-related violence (Figure 39). This difference was statistically insignificant in 1997 ($p < 0.173$), and highly significant in 2001 ($p < 0.0005$).

However, very little gender difference existed with regard to existing worries about the political situation in Northern Ireland (Figure 40). At this level of analysis, however, even this small difference appears statistically significant for both NIHSWB surveys ($p < 0.0005$).

Figure 40: Respondents' Extent of Worrying about Political Situation in Northern Ireland by Gender (in %)



In 1997 Catholics were significantly more likely than Protestants to say that they experienced Northern Ireland conflict-related violence in their neighbourhood ($p < 0.0005$). This was still the case in 2001, but the difference between Catholics and Protestants had grown smaller (Figure 41) but was still highly significant ($p < 0.0005$).

Protestants were also less likely than Catholics to report adverse effects of Northern Ireland conflict-related violence on their own lives and that of their families. As with violence in their neighbourhood, differences between Catholics and Protestants were smaller in the 2001 NIHSWB survey ($p < 0.0005$ in 1997 and $p < 0.008$ in 2001).

Figure 41: Respondents' Perception about NI Conflict-related Violence in Their Neighbourhood by Religion and Year (in %)

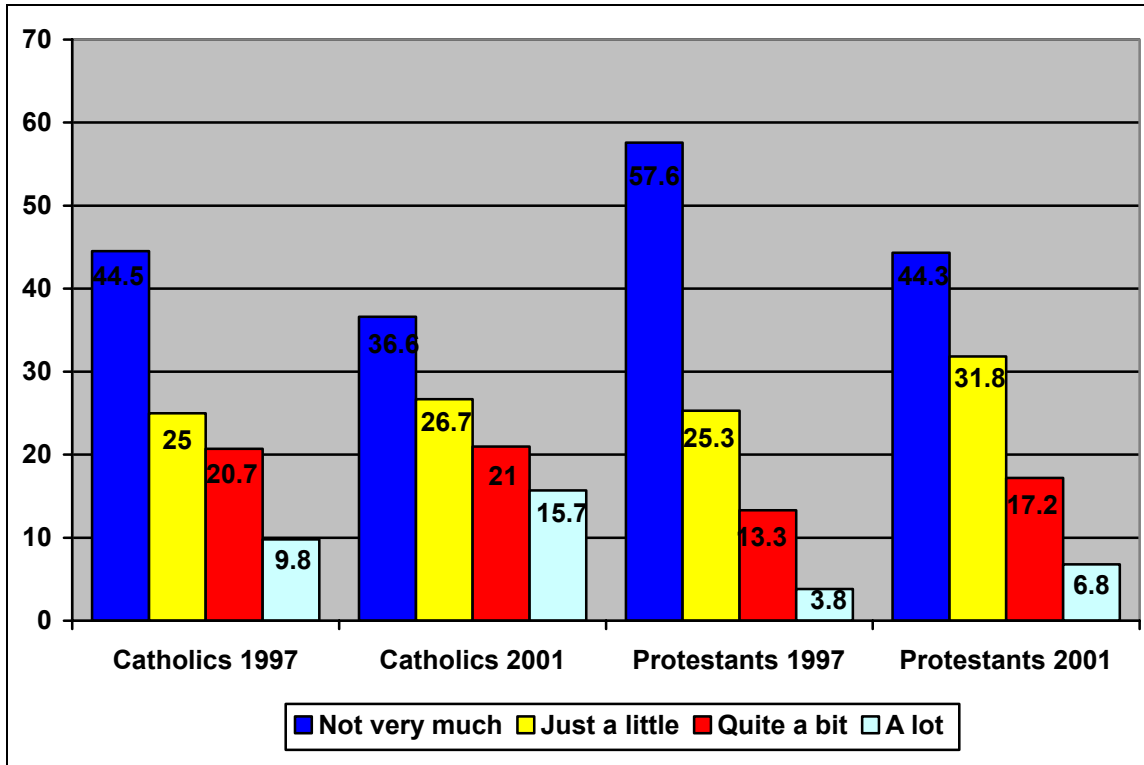
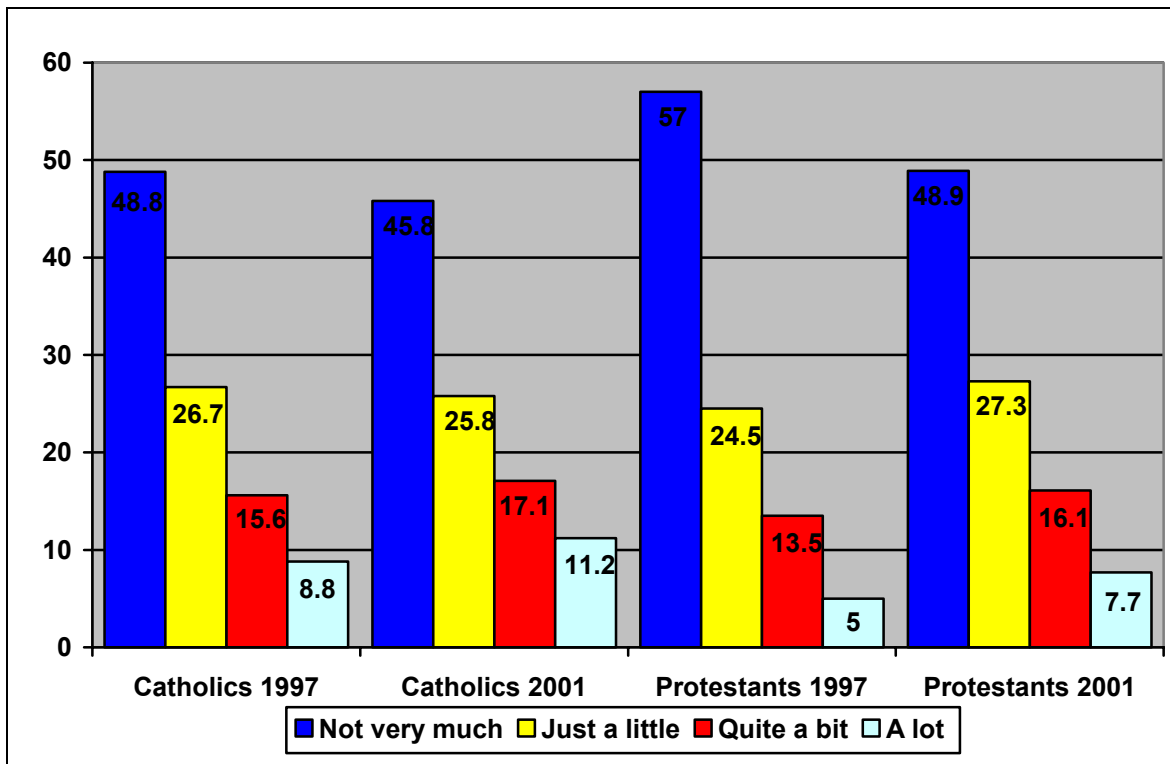
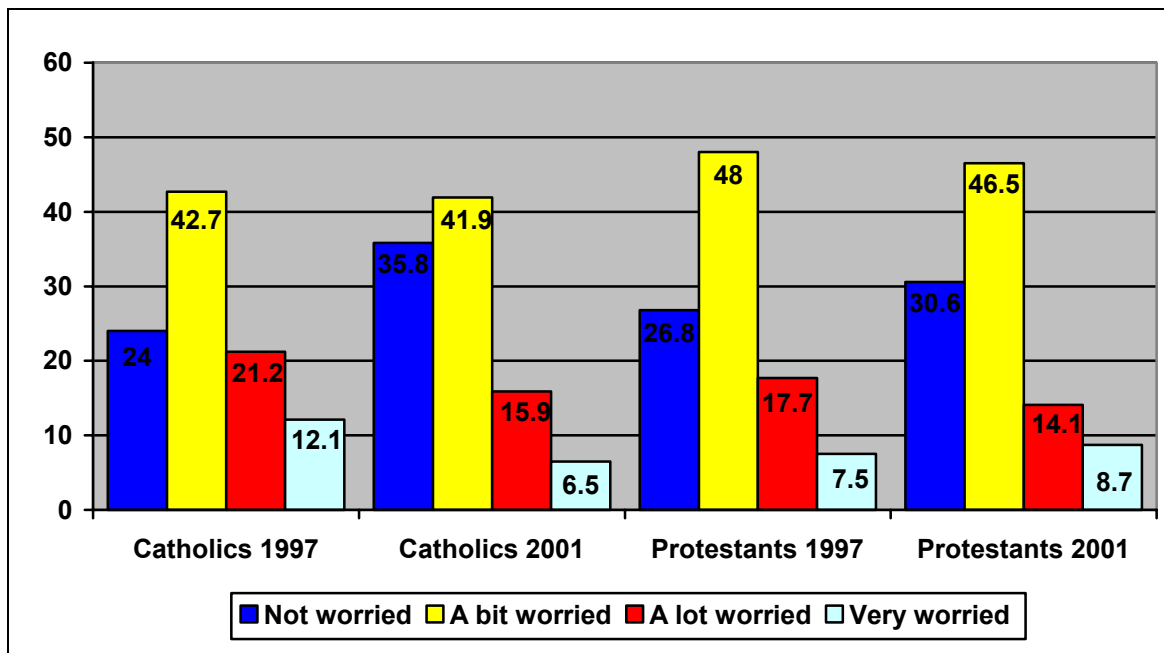


Figure 42: Respondents' Perception about NI Conflict-related Effects on their Own Lives and Family by Religion (in %)



Catholics and Protestants varied least with regard to their worries about the political situation in Northern Ireland. Similar proportions of respondents from both socio-religious backgrounds worried about the political situation. It is noticeable though that whilst in 1997 Catholics were more likely to worry, it was Protestants in 2001 who worried somewhat more (Figure 43). Statistically differences were again highly significant at this level ($p < 0.0005$). As already stated, this difference was insignificant for the general health and wellbeing of either socio-religious group.

Figure 43: Extent of Worrying about Political Situation in Northern Ireland by Gender (in %)



Professional and managerial workers were least likely to report NI-conflict related violence in their neighbourhood whereas unskilled and partly skilled workers reported the most (Table 19). In fact, in 1997 professionals and managerial workers were only half as likely to report the presence of violence in their neighbourhood as unskilled workers. In 2001, partly skilled workers reported most experiences of violence in their neighbourhood ($p < 0.0005$). Not surprisingly class emerged as a main predictor for poor mental health on a multivariate level (Section 1.3), with manual workers significantly more likely to have a poor GHQ12 score.

Table 19: Respondents' Perception of NI-conflict-related Violence in their Neighbourhood, on their own Life and that of their Family by SEG and Year (in %)

	Year of survey	Professional/managerial	Skilled non-manual	Skilled manual	Partly skilled	Unskilled
Perception of conflict-related violence in neighbourhood since 1969						
Not very much or very little	1997	84.8	77.2	77.5	75.4	68.7
	2001	78.4	73.0	68.8	65.0	66.0
Quite a bit or a lot	1997	15.2	22.8	22.5	24.6	31.3
	2001	21.6	27.0	31.2	35.0	34.0
Effects of conflict-related violence on respondents and their family						
Not very much or very a little	1997	76.9	78.7	80.6	79.1	74.5
	2001	71.7	73.3	74.7	71.0	78.8
Quite a bit or a lot	1997	23.1	21.3	19.4	20.9	25.5
	2001	28.3	26.7	25.3	29.0	21.2

As already stated above, fewer respondents worried about the Northern Ireland conflict in 2001 than in 1997. In Table 20 this is evident in the substantially higher numbers of respondents in all SEGs who said they did not worry about the Northern Ireland conflict. Professional and managerial workers were most likely not to worry.

Table 20: Extent of Worrying about the Political Situation in NI by SEG (in %)

	Year	Professional/managerial	Skilled non manual	Skilled manual	Partly skilled	Unskilled
It doesn't really worry me	1997	21.6	18.3	32.2	29.4	29.3
	2001	25.6	26.5	39.0	37.6	41.0
I am a bit worried about it	1997	46.9	49.8	43.9	42.8	41.4
	2001	50.4	48.9	39.9	39.5	39.8
I worry about it quite a lot	1997	22.3	22.4	16.2	17.3	18.1
	2001	14.6	16.6	12.4	15.6	14.1
I am very worried about it	1997	9.2	9.5	7.7	10.5	11.2
	2001	9.4	8.1	8.8	7.4	5.2

SECTION 2

CROSS-NATIONAL COMPARISONS

This section compares findings from the 2001 Northern Ireland Health and Social Wellbeing Survey with surveys in England, Scotland, Wales and the Republic of Ireland. Table 21 outlines the main characteristics of these surveys.

Although reports containing survey findings have been published for all of these surveys, results were not published in similar ways. Therefore, it was necessary to obtain a copy of the datasets so that direct comparisons can be made. The English, Scottish and Welsh datasets were obtained from the UK Data Archive based at the University of Essex (www.data-archive.ac.uk). The Irish data was obtained with the kind permission of the Steering Committee of the Survey of Lifestyle, Attitudes and Nutrition (SLAN). Copyright for the latter data lies with the SLAN investigation team and the Department of Health and Children.

Table 21: Characteristics of National Health Surveys

	Northern Ireland	England	Scotland	Wales	Republic of Ireland
	Health and Social Wellbeing Survey	Health Survey for England	Scottish Health Survey	Welsh Health Survey	Survey of Lifestyle, Attitudes and Nutrition (SLAN)
Year	2001	2000	1998	1998	1998
Sampling frame	Valuation and Lands Agency list	Postal Address File (PAF)	PAF	Electoral register	Electoral register
Sample design	Random sample of addresses	Multi-stage stratified random sample	Stratified, multi-stage random sample	Variable sampling fraction, with oversampling in some unitary authority area	Multi-stage, drawn by district electoral division
Response rate	68%	Not available	76%	59.7%	62.2%
Number of respondents	5205	7984	9047	29874	6539
Age of respondents	16 and over	16 and over	16-74 inclusive	18 and over	18 and over
Method of data collection	CAPI and self completion (laptop or paper)	CAPI and self completion	CAPI and self-completion	Postal questionnaire	Postal questionnaire

The English Health Survey is an annual survey, with a particular focus each year. The data used in this section are from the 2000 survey, which is the latest year for which data is available from the Data Archive. The specific focus in 2000 was the health of older people, and so a booster sample was obtained

of residents of care homes. However, the results presented in this report only focus on respondents living within private households.

The Scottish and Welsh Surveys are undertaken less frequently, and are both going into the field again in 2003. The data in this section come from the 1998 version of each survey.

The Survey of Lifestyle, Attitudes and Nutrition (SLAN) was undertaken in the Republic of Ireland in 1998. SLAN 2 was undertaken in 2001, but data are not yet available.

2.1 Making Comparisons

The nature and depth of the topics covered, as well as the question wording, varies greatly within the different surveys. Overall, the most similar surveys are the Scottish and English health surveys. Northern Ireland has similar sections to both of these. However, the Welsh Health Survey and SLAN are significantly different from the others.

One significant problem concerns the way in which the questions are asked and/or the possible responses. For example, in the 2001 Northern Ireland Health and Social Wellbeing Survey, respondents were asked:

‘Over the last twelve months would you say your health has, on the whole, been ...’

Valid responses are: ‘good’, ‘fairly good’, ‘not good’.

In Scotland and England, the question was:

‘How is your health in general? Would you say it was ...?’

Responses are: ‘very good’, ‘good’, ‘fair’, ‘bad’ ‘very bad’.

However, in the Welsh Health Survey and SLAN, while the question wording is quite similar:

‘In general, would you say your health is ...?’

The responses are: ‘excellent’, ‘very good’, ‘good’, ‘fair’, ‘poor’.

While ‘excellent’ is the best possible option for Wales and the Republic of Ireland, the response ‘very good’ is the best possible option for both England and Scotland, but neither appears as an option for Northern Ireland. These different sets of options may have affected the range of responses independently of the actual health of the respondents to the surveys.

Another major problem relates to the sampling methodology used for each survey. The health surveys for Northern Ireland, England and Scotland used household-based sampling frames, and respondents were all aged 16 years and over. However, in Wales and the Republic of Ireland, the Electoral Register was used, and so respondents were all aged 18 years and over. In addition, the Scottish Health Survey had a maximum age of 74 years. Therefore, in order to make cross-national comparisons, figures only for

particular age groups will be used. **The comparisons in this report are based on respondents aged between 18 and 74 years, unless otherwise stated.**

The content within each health survey also varied, both in terms of topic or the breadth of questioning. As outlined previously, the 2000 Health Survey for England focused on the health of older people, and so restricted the number and nature of topics asked of respondents living in private households. Table 22 shows the topics and relevant countries for which cross-national comparisons are made in this report.

Table 22: Topics for Cross-national Comparisons

	Northern Ireland	England	Scotland	Wales	Republic of Ireland
General health	✓	✓	✓	✓	✓
Limiting long-standing illness	✓	✓	✓	✓	✓
Cardio-vascular disease	✓		✓	✓	✓
Asthma	✓		✓	✓	
Mental health	✓	✓	✓		
Physical activity	✓		✓	✓	✓
Social Support	✓	✓			
Smoking	✓	✓	✓		✓
Drinking	✓	✓	✓	✓	✓

2.2 General Health

All five health surveys asked a question about the self-reported state of respondents' general health. The English and Scottish surveys asked the question in the same way, and presented respondents with a 5 point Likert scale. The Welsh and Irish surveys also presented a 5 point Likert scale, although with different values. As outlined in the introduction to this section, the response 'very good' was the second best response in Wales and the Republic of Ireland, but the best response in England and Scotland. In the Northern Irish survey, a 3 point scale was presented, and a time boundary was placed within the question (over the last twelve months).

To overcome some of the question and response wording issues for making comparisons with Northern Ireland, the responses 'very good and good' have been merged together for England and Scotland, as have the responses 'bad' and 'very bad'. For Wales, the responses 'excellent', 'very good' and 'good' have been merged.

Due to the differences in the age of the sample among the different surveys, the figures presented here relate to 18-74 year olds only. The exceptions to this are figures from SLAN, which has no upper age limit.

As Table 23 shows, the proportion of respondents in Northern Ireland with good self-reported health lags far behind that of the other four countries. However, this may be an artefact of the different question wording.

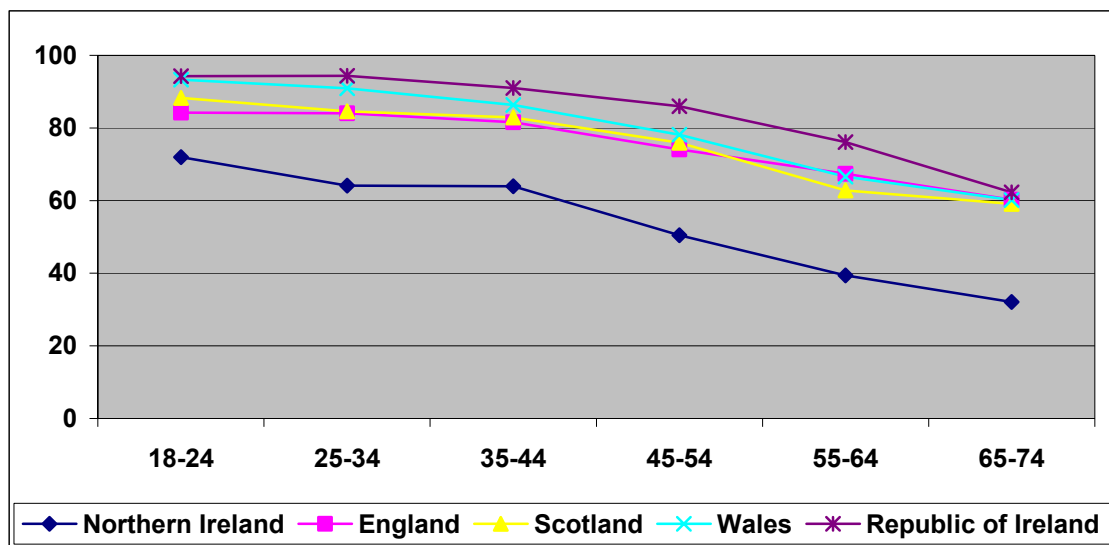
Table 23: Self-reported General Health by Country (in %)

	Northern Ireland	England	Scotland	Wales	Republic of Ireland
Good	53.9	75.8	76.8	80.0	87.5
Fair	29.7	18.2	17.4	15.0	10.9
Poor	16.3	6.0	5.8	5.0	1.6

All countries show similar patterns with regard to gender and age. Men have very slightly better self-reported health than women, except in the Republic of Ireland. Figure 44 shows the strong correlation between decreasing self-reported health and age.

However, the relatively low percentage of Northern Irish respondents who said that their health was good does not necessarily mean a corresponding high percentage of respondents saying that their health is bad. In fact, nearly one third (30 percent) of Northern Irish respondents take the mid-way option, and said that their health was fairly good. Corresponding figures for other countries are 18.2 percent for England, 17.4 percent for Scotland and 15.0 percent for Wales, though again, one must view these differences with some caution due to the variations in the survey's response categories. In terms of having bad health, Northern Ireland comes out worst: 16.3 percent said that their health was poor, compared with only 1.6 percent in the Republic of Ireland.

Figure 44: Self-reported Good General Health by Age (in %)



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Health Survey for England, 2000; Scottish Health Survey, 1998; Welsh Health Survey, 1998; SLAN 1998

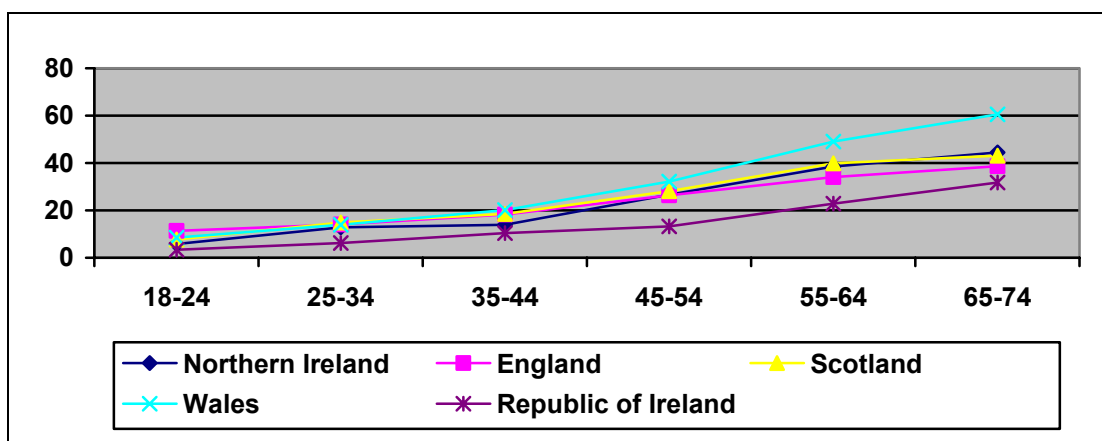
2.3 Limiting Long-standing Illness

There are slight differences in how this question was asked. England and Scotland first asked respondents if they have a long-standing illness or disability. If they had, only then were they asked if this illness or disability limits their activities in any way. In Wales and the Republic of Ireland, the two issues of long-standing illness and limitation were included in one question, although the wording is different. In Northern Ireland all respondents were asked if they have a limiting health problem or disability (not just those who had a long-standing illness, disability or infirmity). However, the responses have been recalculated so that respondents with a limiting long-standing illness can be identified.

Approximately one quarter of respondents in Northern Ireland, England and Scotland perceived that they had a limiting long-standing illness, and, as expected, there is a strong age dimension to these responses. The highest rate was in Wales (29.5 percent). However, this may be due to the way in which the question was asked – the question specifically included any problems that are due to old age. Three out of five (60.6 percent) Welsh respondents aged between 65 and 74 years said that they had ‘a long-term illness, health problem or handicap which limits their daily activities or the work they can do’. The lowest rate of limiting long-standing illness (11.7 percent) was in the Republic of Ireland. Again, this may be due to the more general way in which the question was asked: ‘Is your daily activity or work limited by a long term illness, health problem or disability’.

Northern Ireland has a higher proportion of respondents saying that they do not have a long-standing illness (63.5 percent). This compares favourably with the figure of 58.1 percent in England. For Scotland, this figure was 59.4 percent. Data for Wales and the Republic of Ireland were not available.

Figure 45: Limiting Long-standing Illness by Age (in %)



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Health Survey for England, 2000; Scottish Health Survey, 1998; Welsh Health Survey, 1998; SLAN 1998

However, although England has higher rates of long-standing illness compared with Northern Ireland (41.9 percent compared with 36.5 percent respectively), the day to day activities of respondents are not necessarily limited: England

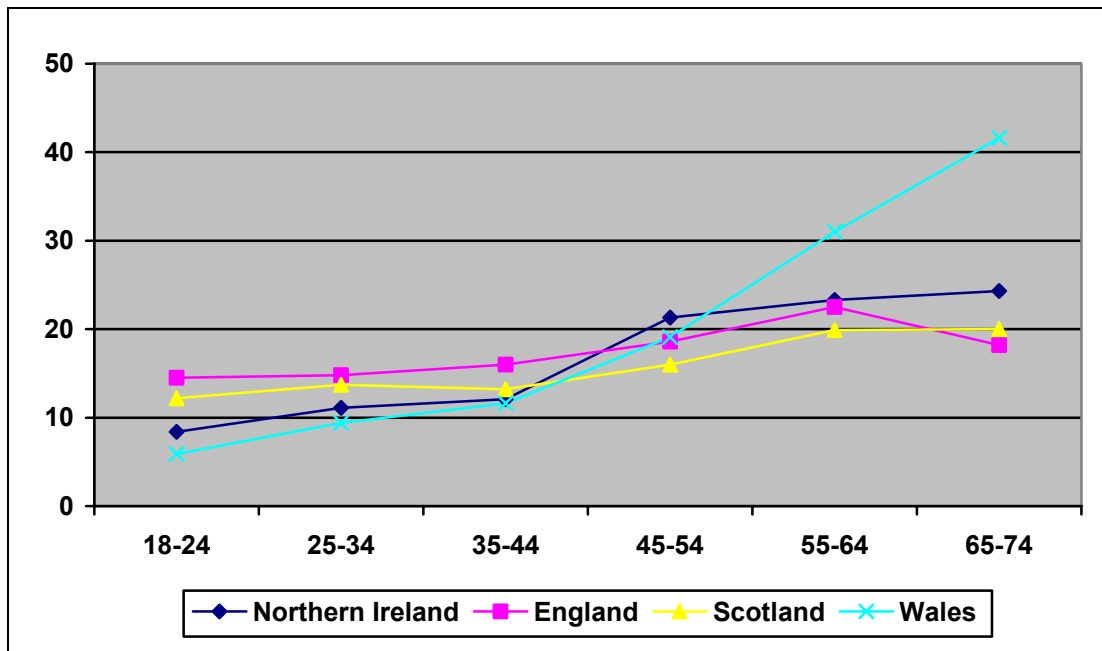
has a higher rate of respondents with non-limiting long-standing illness compared with Northern Ireland (18.3 percent and 13.2 percent respectively).

Respondents (except in the Republic of Ireland) were also asked if they had had to cut down on any of the things that they usually do in the house, at work, in school or in free time, because of illness or injury. The specified time period was the previous two weeks. In Wales, the time period in question was longer (four weeks) and separate questions were asked relating to physical health and emotional problems. However, for this report, only findings relating to physical health were included.

Figures for all countries are similar – approximately one in six respondents had to cut back on their activities. Men cut down on activities less than women did, particularly in Scotland, where 13.0 percent of men had to cut down, compared with 17.9 percent of women. Figure 46 shows the strong positive correlation with age. One anomaly is found in results for England, where the unusually high proportion of 20.9 percent of women aged between 18 and 24 years had to cut down their activities.

Figures were highest in Wales – 17.0 percent of men and 18.9 percent of women. However, this may be due to the longer time-period in the question (four weeks compared with two weeks).

Figure 46: Cut Back on Activities by Age (in %)



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Health Survey for England, 2000; Scottish Health Survey, 1998; Welsh Health Survey, 1998

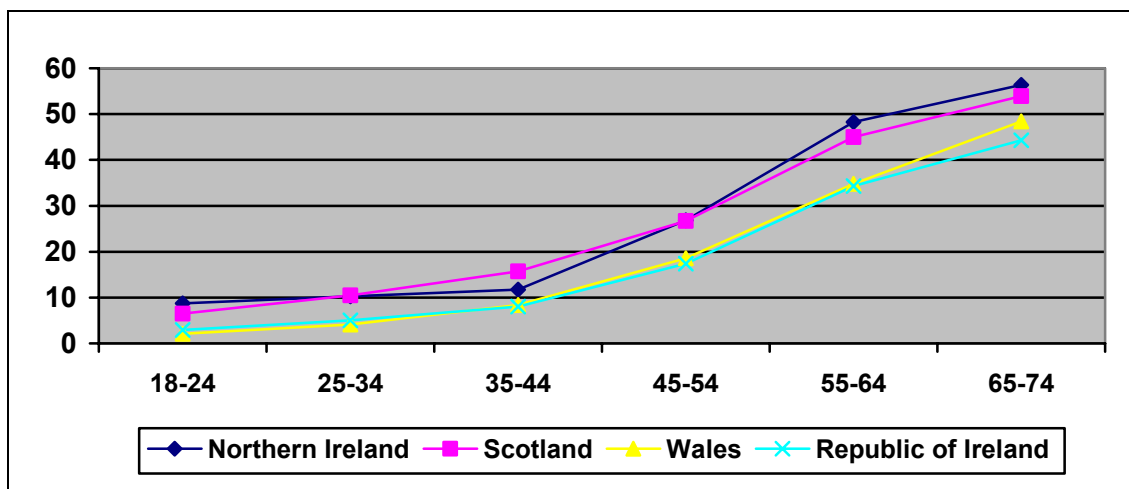
2.4 Cardio-vascular Disease

In Northern Ireland and Scotland respondents were asked if they had ever been diagnosed by a doctor as having any of a set of cardio-vascular diseases. These include angina, heart attack, stroke, hypertension/high blood pressure and diabetes. A cardio-vascular index has been created which records if the respondent has been diagnosed as having any of these conditions. This is based on the index created in Volume 1 of the Scottish Health Survey (Shaw et al, 2000). In the Welsh Health Survey, the question was worded differently, in that respondents were asked if they had ever been treated for these conditions. However, despite this, the relevant responses have been included for comparative purposes. Questions on cardio-vascular diseases were not included in the English Health Survey for respondents in private households.

The defined list of diseases was slightly different between countries. In particular, the Scottish survey was more detailed than the Northern Ireland survey, which in turn was more detailed than the Welsh survey, although all three had a catch-all 'other heart disease' option. In SLAN, there was no 'other heart disease' option, although there was an 'other disease' option, and so easily-identifiable cardio-vascular diseases have been included in this analysis. To help compensate for this, an index was created which recorded the diagnosis of at least one cardio-vascular condition.

Figure 47 shows that Northern Ireland has the highest level of cardio-vascular disease (26.0 percent), followed by Scotland (24.4 percent), Wales (18.2 percent) and the Republic of Ireland (14.0 percent). However, these figures should be treated with caution given the differences in the wording of the questions among the four countries. Despite cross-national differences for the summary index, the prevalence rates for the individual diseases are similar throughout all three countries.

Figure 47: Prevalence of Cardio-vascular Disease by Age (in %)



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Scottish Health Survey, 1998; Welsh Health Survey, 1998; SLAN 1998

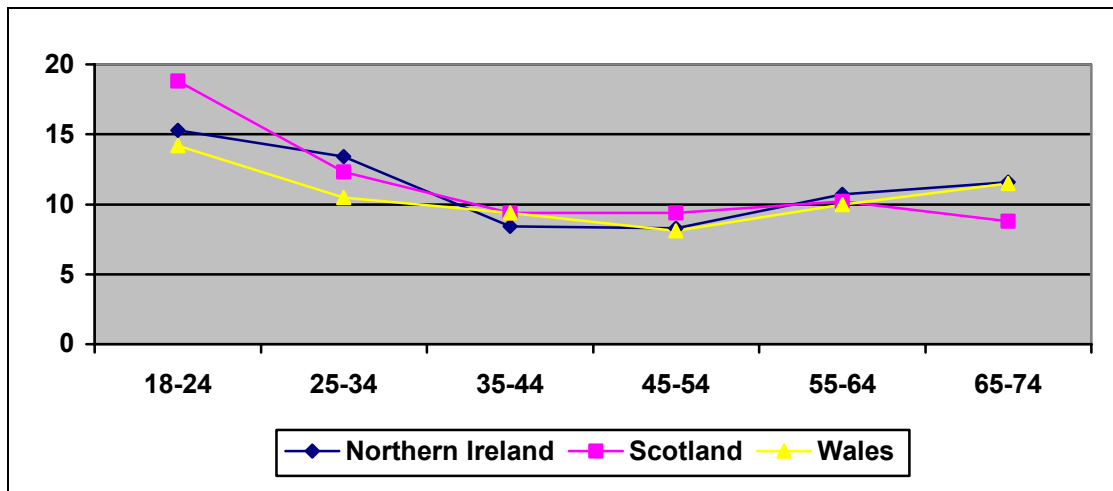
Figure 47 clearly demonstrates the correlation between cardio-vascular disease and age. This is particularly evident for hypertension. For example, in

Northern Ireland, nearly one half of women aged between 65 and 74 years (45.8 percent) say that they have been diagnosed as having hypertension or high blood pressure (other than during pregnancy).

2.5 Asthma

Figures for the diagnosis/treatment of asthma follow similar patterns across Northern Ireland, Scotland and Wales. Just over one in ten of respondents in all three countries have been diagnosed by a doctor (Northern Ireland and Scotland), or treated (Wales) for asthma. Slightly more women than men are sufferers. In all three countries, the youngest age group (18-24 years) is most likely to have been diagnosed or treated (Figure 48).

Figure 48 Prevalence of Asthma by Age (in %)



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Scottish Health Survey, 1998; Welsh Health Survey, 1998

2.6 Mental Health

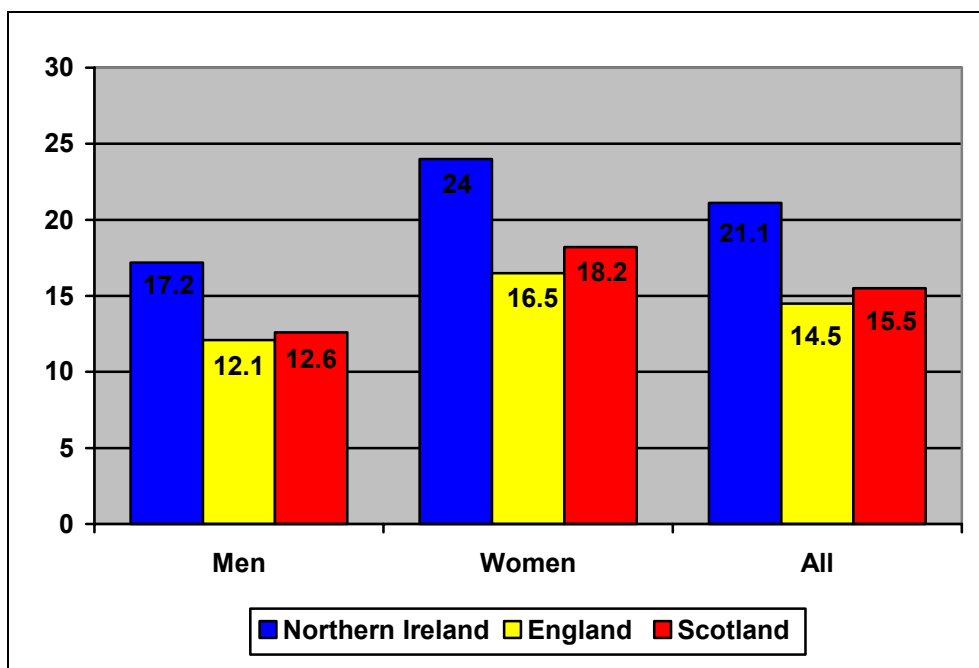
The 12 item General Health Questionnaire (GHQ12) was used in the Northern Ireland Health and Social Wellbeing Survey, the English Health Survey and the Scottish Health survey to identify the possible existence of a mental health problem such as depression. A respondent is deemed to show signs of a possible mental health problem if four or more items are applicable to them in the recent past. The following analysis relates to respondents aged 16-74 years.

Using this threshold, just over one in five respondents (21.1 percent) in Northern Ireland showed signs of a possible mental health problem. More women than men were affected: 24.0 percent of women and 17.2 percent of men scored highly on the GHQ12. The largest gender differential is in the youngest age group (16-24 years): 14.9 percent of men compared with 25.4 percent of women.

Worryingly, the proportion of respondents in Northern Ireland over the GHQ12 threshold is one third higher than in both England and Scotland. As shown in Figure 49, the figures for these countries are 14.5 percent and 15.5 percent respectively. As in Northern Ireland, fewer males showed signs of a possible mental health problem than women in both England and Scotland. For example, 12.6 percent of men and 18.2 percent of women were over the threshold in Scotland.

There is no clear-cut age pattern related to age across the three countries. In Northern Ireland, for both men and women, the rate of possible mental health problems rises with age until the 45-54 years group, and then falls. The oldest age group (between 65 and 74 years) shows the lowest prevalence rate. The age group with the highest scores is the 45-54 years group. However, among female respondents in England, the youngest age group (16-24 years) had the highest proportion over the threshold.

Figure 49: Respondents Scoring 4 or more on GHQ12 by Gender (in %)



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Health Survey for England, 2000; Scottish Health Survey, 1998

In Scotland, the proportion of respondents exhibiting possible mental health problems increased with age, but dropped after age 64 years.

There was variation between the highest and lowest proportion among men and among women in individual countries. For example, among males in Scotland, there was an 11 percentage point range, compared to 5.3 percentage points among women. However, among males in England the range was only 2.1 percentage points.

2.7 Physical Activity

Cross-national comparisons of individual physical activities are difficult, since levels and types of activity were measured in several different ways. For example, in the Northern Ireland Health and Social Wellbeing Survey, respondents are asked about activities during the last seven days. In Scotland, respondents were asked about activity within the last four weeks. For comparative purposes, these latter rates have been divided by four to estimate weekly activity. Questions on physical activity were not asked in England for respondents in private households.

Despite these problems, it is possible to compare levels of activity based on the summary measures, which reflect current and past recommendations on the amount of exercise that should be taken.

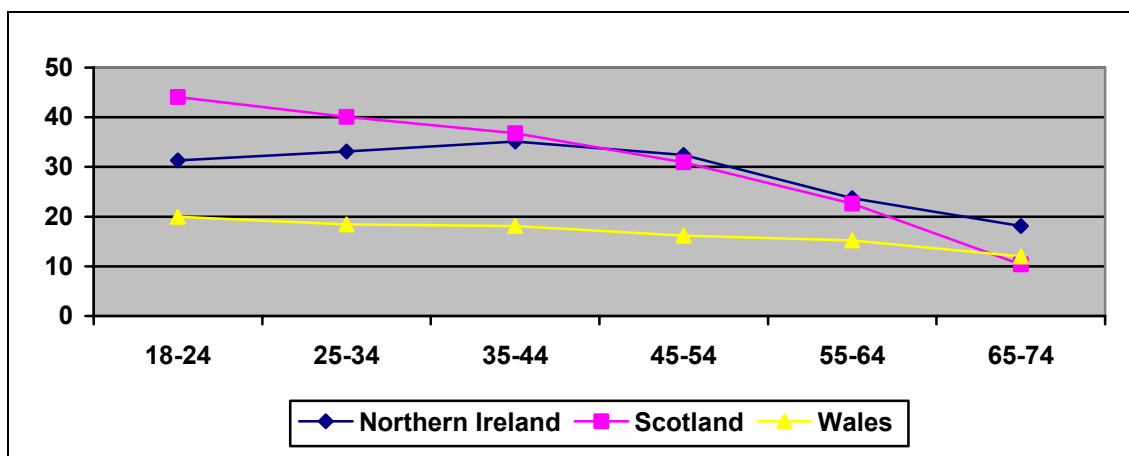
For this report, two such summary measures of activity have been used:

- **Recommended physical activity levels:** the recommended level of physical activity is at least 30 minutes per day of at least moderate exercise, for five days a week.
- **Sedentary levels:** a respondent is classed as sedentary if they have not taken any activity of at least a moderate level, lasting 20 minutes, on one or more occasion in the previous seven days.

In Northern Ireland, 29.7 percent of adults aged between 18 and 74 years and over had taken the recommended level of physical activity. This is lower than the corresponding figure for Scotland (32.3 percent) but higher than the figure for Wales (17.0 percent).

In Northern Ireland, similar proportions of men and women take the recommended level of activity. However, more men than women in Scotland and Wales exercise to this degree. As may be expected, the level of exercise has a correlation with age, with older respondents tending to exercise less (See Figure 50).

Figure 50: Proportion Taking Recommended Level of Exercise by Age



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Scottish Health Survey, 1998; Welsh Health Survey, 1998

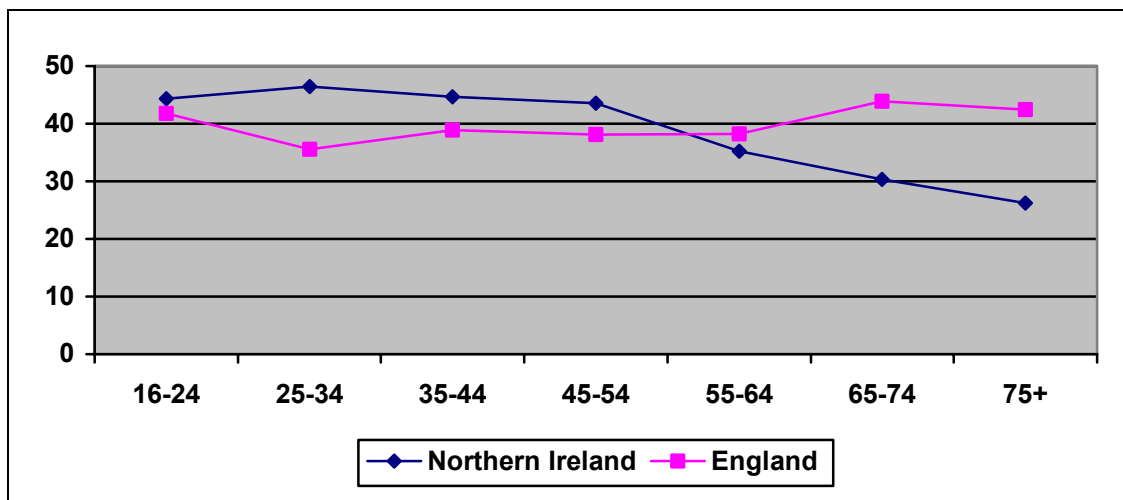
Figures for being sedentary are only available for Northern Ireland, Scotland and the Republic of Ireland, and these figures are similar (21.5 percent, 22.1 percent and 18.9 percent respectively). Younger women (aged 18-24 years) in all three countries are much more sedentary than younger men. For example, in Scotland, 14.4 percent of young women were sedentary, compared with only 5.0 percent of young men.

2.8 Social Support

Both Northern Ireland and England included questions relating to social support. This consisted of seven questions relating to social inclusion/exclusion. Responses to these questions were scored and coded into bands. Due to similar sample characteristics, comparisons in this section are based on respondents aged 16 years and over.

Responses for both countries were very similar. Four out of ten respondents experienced a lack of support from family and friends, with men lacking social support more than women.

Figure 51: Proportion of Respondents Experiencing a Lack of Social Support by Age



Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Health Survey for England, 2000

The main cross-national difference is in the age distribution of support received. In Northern Ireland, there is a fairly consistent decrease in the lack of support by age. However, in England, as shown in Figure 51, the level of lack of support fluctuates, and actually increases towards the older age groups.

For example, only one quarter (26.2 percent) of Northern Irish respondents in the oldest age group (75 years and over) experienced a lack of support. However, in England, this figure was 42.4 percent. Lack of social support is a particular issue for older men. Northern Ireland 10.7 percent of men aged 75 years and over experienced a **severe** lack of social support. The comparable statistic for England was twice this, at 22.0 percent.

2.9 Smoking

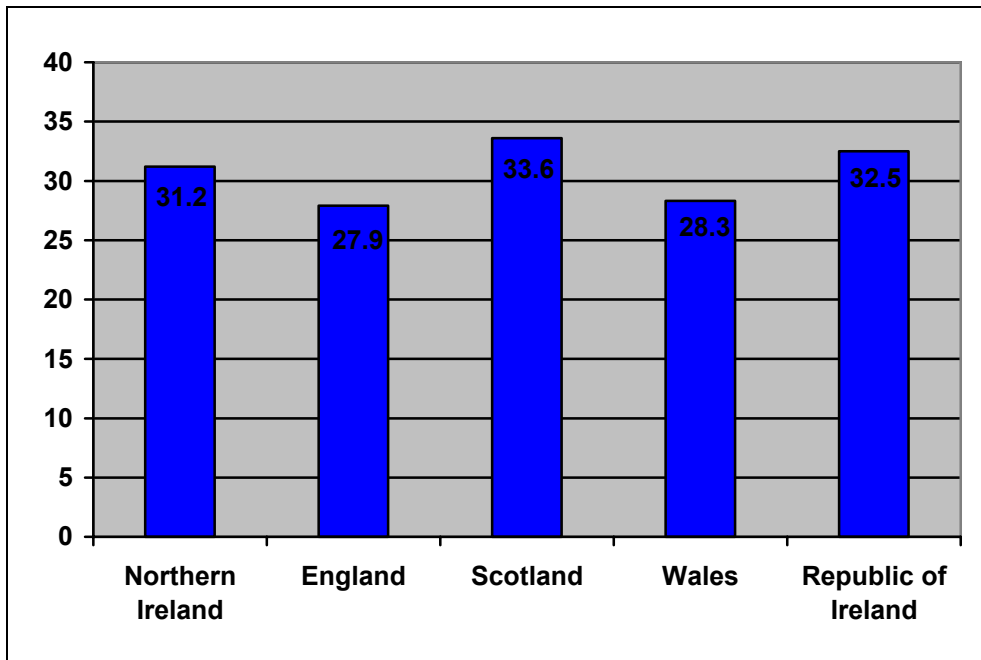
Questions on smoking behaviour were asked in similar ways in Northern Ireland, England and Scotland. Although questions were asked about cigarette, cigar and pipe smoking, this section will concentrate solely on cigarettes. Smoking behaviour was also included in SLAN, but with slightly different wording. Unfortunately, only two questions were asked on this topic in the Welsh Health Survey, and so Wales cannot be included in most of this comparison.

In Northern Ireland, 31.2 percent of respondents said that they smoked cigarettes. This is higher than the corresponding figure for England (27.9 percent), but lower than in Scotland (33.6 percent). In the Republic of Ireland, 32.5 percent of respondents said that they were regular or occasional cigarette smokers, as did 28.3 percent of respondents in Wales. In Northern Ireland, England, Scotland and Wales, women were slightly more likely to smoke than men. In the Republic of Ireland overall, there was no difference by age. However, more young women aged 18-24 years smoked than young men (44.2 percent compared with 38.5 percent). This was reversed for those in the 35-44 years age group.

Interestingly, in Northern Ireland and England, the proportion of smokers decreased from middle age. In the 65-74 years age group, only 17 percent of respondents smoked. In Scotland and the Republic of Ireland, the proportion of smokers was still high in this age group (22.4 percent and 21.7 percent respectively).

In Northern Ireland, England and Scotland, respondents were asked how many cigarettes they smoked daily on weekdays, and also at weekends. From this, we can calculate a daily average number of cigarettes. In SLAN, respondents were asked how many branded cigarettes and hand rolled cigarettes they usually smoked per day. These have been added together to produce a daily total.

Taking a threshold of 20 cigarettes, approximately two in five smokers (40.3 percent) in Northern Ireland smoked heavily. This was broadly similar to the pattern for smokers in Scotland (39.1 percent), but higher than in England (33.4 percent). The highest proportion was in the Republic of Ireland, where 45.4 percent of smokers were in this category. In all four countries, men were heavier smokers than women.

Figure 52: Proportion of Respondents Smoking by Country

Source: Northern Ireland Health and Social Wellbeing Survey, 2001; Health Survey for England, 2000; Scottish Health Survey, 1998; Welsh Health Survey, 1998; SLAN, 1998

2.10 Drinking

Four out of five respondents (79.0 percent) in Northern Ireland aged between 18 and 74 years reported that they drink alcohol. This is slightly higher than in Wales, where 75.2 percent of respondents drink. Levels in England and Scotland are considerably higher (91.0 percent and 90.3 percent respectively). Within SLAN, the question wording was quite different from other surveys. Respondents were asked 'How long ago did you last have an alcoholic drink?'. Over four out of five respondents (85.1 percent) said that they had had a drink within the last year.

Northern Ireland has the highest proportion of respondents who have always been teetotal: 14.4 percent compared with 5.6 percent in England and 5.4 percent in Scotland and 11.1 percent in the Republic of Ireland. This information was not available for Wales.

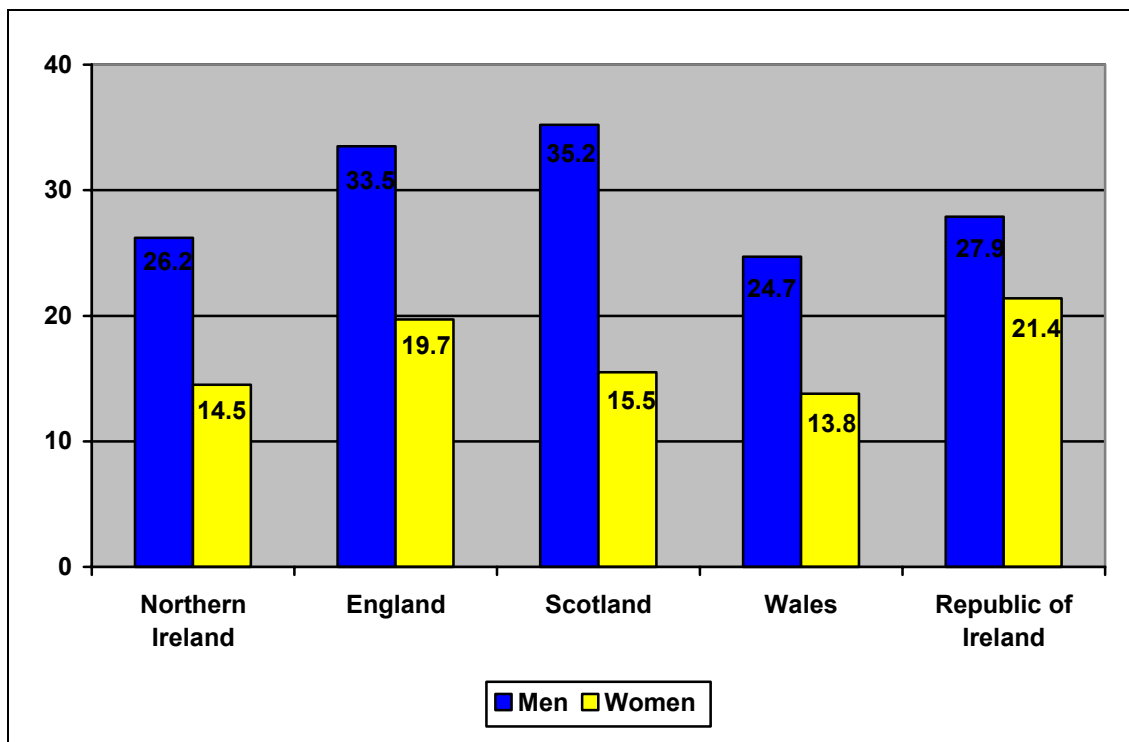
Men were more likely to drink than women. The largest male-female difference was in Wales, where 83.6 percent of men drink alcohol, compared with 66.8 percent of women.

Around one in five respondents who drink in Northern Ireland and in Wales drank over the recommended levels. As shown in Figure 53, this is lower than in England, Scotland and the Republic of Ireland, where one in four respondents who drink alcohol drank more than recommended. Men were more likely to be heavy drinkers than women, and in fact, in Northern Ireland, England, Scotland and Wales, there was a gender differential of at least ten

percentage points. The most marked difference is in Scotland, where 35.2 percent of men drank over the recommended sensible limit, compared with 15.5 percent of women.

The youngest age group (18-24 years) had the highest level of drinking more than the recommended sensible weekly limit, especially in England. For example, one half of young men (50.7 percent) and one third (35.6 percent) of young women in England drink over the recommended sensible drinking level. In Northern Ireland, these figures are 41.0 percent and 30.9 respectively.

Figure 53: Proportion of Alcohol Drinkers Drinking over Recommended Sensible Limit by Country



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APPENDIX

Full Regression Models

Table A1: Multinomial Logistic Regression Modelsof Self-assessed Health, with all independent variables and Wald coefficients⁺

	Model A				Model B				Model C				Model D			
	Poor		Fair		Poor		Fair		Poor		Fair		Poor		Fair	
Social factors	beta	Wald	beta	Wald	beta	Wald	beta	Wald	beta	Wald	beta	Wald	beta	Wald	beta	Wald
Age in years	0.038 ^{***}	31.7	0.029 ^{***}	52.1	0.038 ^{***}	57.2	0.030 ^{***}	51.4	0.047 ^{***}	83.4	0.032 ^{***}	57.6	0.048 ^{***}	85.5	0.032 ^{***}	58.9
Gender ^a	-0.262 ^{**}	8.9	-0.124	3.2	-0.292 ^{**}	10.1	-0.121	2.9	-0.120	1.6	-0.065	0.8	-0.118	1.5	-0.065	0.8
Religion ^b	0.282 ^{***}	10.3	0.205 ^{**}	8.5	0.291 ^{***}	10.4	0.196 ^{**}	7.5	0.192 [*]	4.2	0.155 [*]	4.6	0.053	0.2	0.091	1.2
Education ^c	-0.232 [*]	4.8	-0.143	3.5	-0.200	3.5	-0.137	3.1	-0.240 [*]	4.7	-0.148	3.6	-0.203	3.3	-0.139	3.2
Class ^d	-0.703 ^{***}	55.0	-0.275 ^{***}	14.7	-0.648 ^{***}	45.8	-0.248 ^{***}	11.8	-0.754 ^{***}	56.9	-0.286 ^{***}	15.3	-0.715 ^{***}	50.0	-0.262 ^{***}	12.6
Relative affluence ^e	-0.921 ^{***}	69.1	-0.348 ^{***}	18.3	-0.814 ^{***}	52.0	-0.314 ^{***}	14.4	-0.888 ^{***}	57.5	-0.349 ^{***}	17.6	-0.825 ^{***}	48.4	-0.323 ^{***}	14.6
Married ^f	0.571	3.7	0.117	0.3	0.571	3.6	0.135	0.4	0.503	2.5	0.135	0.4	0.564	3.1	0.102	0.2
Divorced/Sepa rated ^f	0.868 ^{***}	25.8	0.261	3.1	0.821 ^{***}	22.5	0.233	2.4	0.411 [*]	5.2	0.103	0.5	0.368 [*]	4.1	0.076	0.2
Widowed ^f	0.236	1.1	0.139	0.5	0.282	1.6	0.157	0.7	0.124	0.3	0.127	0.4	0.100	0.2	0.114	0.3
Lives alone	0.297	0.2	0.178	1.6	0.273	2.6	0.156	1.3	0.114	0.4	0.090	0.4	0.092	0.3	0.101	0.5
Room density	0.035	0.1	0.038	0.2	-0.009	0.0	0.029	0.1	-0.009	0.0	0.017	0.0	-0.058	0.2	0.006	0.0
Interaction, age & married	-0.002	0.1	0.000	0.0	-0.001	0.0	-0.001	0.0	-0.003	0.2	-0.001	0.1	-0.004	0.3	-0.001	0.0
Behaviour factors																
Never smoked ^g					-0.659 ^{***}	24.4	-0.390 ^{***}	14.4	-0.605 ^{***}	19.1	-0.366 ^{***}	12.4	-0.560 ^{***}	16.2	-0.350 ^{***}	11.3
Stopped smoking ^g					-0.435 ^{***}	10.4	-0.310 ^{**}	8.6	-0.424 ^{**}	9.2	-0.295 ^{**}	7.6	-0.385 ^{**}	7.5	-0.283 ^{**}	7.0
Heavy smoker ^g					0.062	0.2	-0.168	2.2	0.286 [*]	3.9	0.088	0.6	0.256	3.1	-0.103	0.8
Does not drink ^h					0.580 ^{***}	30.3	0.218 [*]	6.0	0.495 ^{***}	20.4	0.203 [*]	5.1	0.485 ^{***}	19.4	0.188 [*]	4.3
Heavy drinker ^h					0.328	1.5	0.205	1.0	-0.075	0.1	0.075	0.1	0.011	0.0	0.115	0.3

Table A1 continued	Model C				Model D				
	Poor		Fair		Poor		Fair		
	beta	Wald	beta	Wald	beta	Wald	beta	Wald	
Risk factors									
Risks at home ^l	0.213 ^{***}	13.0	0.147 ^{**}	9.1	0.204 ^{***}	11.7	0.153 ^{**}	9.7	
Reported stress ^k	1.573 ^{***}	272.1	0.510 ^{***}	47.1	1.565 ^{***}	266.1	0.512 ^{***}	47.1	
Area factors									
Rurality index					-0.001	0.6	-0.001	0.4	
Income score					0.008	1.0	0.005	0.6	
Employment score					0.013	0.4	0.008	0.2	
Education score					0.019	0.1	0.011	0.0	
Access score					0.103	1.3	0.145 [*]	4.6	
Social environment					0.113	1.7	0.016	0.1	
Housing score					-1.909 [*]	4.1	-1.545 [*]	4.5	

^a Male

^b Catholics compared with all others

^c Possessing an A-level or higher qualification

^d Non-manual

^e Living in a household with an income of £15,000 or more.

^f Comparator is single.

^g Comparator is 'moderate' (less than 19 cigarettes/day) smoking.

^h Comparator is drinking less than excessive amounts (35 units/week if female, 50 units/week if male).

ⁱ Number of types of risk reported in home.

^j Number of types of risk reported at work.

^k Reporting being under 'a lot' or 'a great deal' of stress in the last 12 months.

⁺ A positive sign indicates greater likelihood of self-assessed 'poor' or 'fair' health. The contrasting category is those who assess their health as 'good'.

*** = $p < 0.001$

** = $p < 0.01$

* = $p < 0.05$

Table A2: Regression Models of GHQ12 Scores, all variables

	Model A	Model B	Model C	Model D
Social factors				
Age in years	-0.018	-0.130 ^{***}	-0.090 [*]	-0.090 ^{***}
Gender ^a	-0.091 ^{***}	-0.112 ^{***}	-0.099 ^{***}	-0.100 ^{***}
Religion ^b	0.023	0.021	0.007	-0.001
Education ^c	0.002	0.024	0.013	0.012
Class ^d	-0.002	0.037 [*]	0.041 ^{**}	0.040 ^{**}
Relative affluence ^e	-0.116 ^{***}	-0.076 ^{**}	-0.027	-0.026
Married ^f	0.160 ^{***}	0.087	0.128 ^{***}	0.136 ^{***}
Divorced/Separated ^f	0.141 ^{***}	0.138 ^{***}	0.050 ^{***}	0.050 ^{***}
Widowed ^f	0.042	0.057 [*]	0.035	0.035
Interaction, age & married	-0.079	0.053	-0.044	-0.048
Health and social contact factors				
Sedentary		0.188 ^{***}	0.076 ^{***}	0.075 ^{***}
Physically active		-0.041 ^{**}	-0.038 ^{**}	-0.038 ^{**}
Lives alone		0.038	0.012	0.010
Social support		-0.188 ^{***}	-0.140 ^{***}	-0.141 ^{***}
Contact with people ^g		0.026	-0.013	-0.012
Community activities ^h		-0.080 ^{**}	-0.072 ^{**}	-0.074 ^{**}
Stress-related factors				
Affected by troubles ⁱ			0.058 ^{***}	0.056 ^{***}
Local area bad ^j			0.041 ^{**}	0.044 ^{***}
Neighbourhood violent ^k			0.029 [*]	0.023
Health events ^l			0.104 ^{***}	0.104 ^{***}
Stressful family events ^m			0.159 ^{***}	0.159 ^{***}
General stressful events ⁿ			0.130 ^{***}	0.130 ^{***}
Area factors				
Rurality index				0.004
Income score				-0.003
Employment score				0.021
Education score				-0.032
Access score				-0.008
Social environment				0.035
Housing score				-0.019

^a Male

^b Catholics compared with all others

^c Possessing an A-level or higher qualification

^d Non-manual

^e Living in a household with an income of £15,000 or more.

^f Comparator is single.

^g Count of the number of different types of social contacts with relatives or neighbours.

^h Count of the number of different types of activities in the community that the respondent is involved in.

ⁱ Respondent states that their and their family's lives have been affected by the Troubles 'quite a bit' or 'a lot'.

^j Index of reported bad features of local area.

^k Index of reported types of violence or threat in neighbourhood.

^l Serious illness or death of a family member or friend in last 12 months.

^m Count of the number of different types of serious family-related disputes or events in the last 12 months.

ⁿ Other major traumatic events experienced by respondent and not covered by the above.

*** = $p < 0.00$

** = $p < 0.01$

* = $p < 0.05$

Table A3: Logistic Regression Models of having a Limiting Long-standing Illness, with all independent variables and Wald coefficients

Social factors	Model A		Model B		Model C	
	Beta	Wald	Beta	Wald	beta	Wald
Age in years	0.042***	258.4	0.041***	229.8	0.042***	234.7
Gender ^a	-0.075	1.1	-0.087	1.3	-0.080	1.1
Religion ^b	0.270***	13.7	0.269***	13.0	0.189*	4.7
Education ^c	-0.364***	17.2	-0.350***	15.7	-0.321***	13.1
Class ^d	-0.377***	24.3	-0.343***	19.8	-0.324***	17.1
Relative affluence ^e	-0.818***	85.3	-0.763***	71.5	-0.728***	63.1
Married ^f	0.178	3.0	0.201	3.6	0.229*	4.6
Divorced/Separated ^f	0.515***	13.8	0.500***	12.7	0.459***	10.5
Widowed ^f	0.094	0.4	0.113	0.5	0.092	0.4
Behaviour factors						
Never smoked ^g			-0.306***	7.6	-0.277**	6.1
Stopped smoking ^g			-0.178	2.5	-0.155	1.9
Heavy smoker ^g			0.057	0.2	0.029	0.1
Does not drink ^h			0.378***	19.1	0.374***	18.6
Heavy drinker ^h			0.392	3.1	0.431	3.7
Area factors						
Rurality index					-0.001	1.2
Income score					0.007	1.4
Employment score					-0.014	0.6
Education score					0.035	0.3
Access score					0.039	0.3
Social environment					0.148*	4.7
Housing score					-1.008	1.8

^a Male

^b Catholics compared with all others

^c Possessing an A-level or higher qualification

^d Non-manual

^e Living in a household with an income of £15,000 or more.

^f Comparator is single.

^g Comparator is 'moderate' (less than 19 cigarettes/day) smoking.

^h Comparator is drinking less than excessive amounts (35 units/week if female, 50 units/week if male).

⁺ A positive sign indicates greater likelihood of having a limiting long-standing illness.

*** = p < 0.001

** = p < 0.01

* = p < 0.05

All other figures are not significant.