The two communities in Northern Ireland: deprivation and ill health*

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Abstract

Background The aim of this study was to examine differences in socio-economic standing and ill health between the two communities in Northern Ireland.

Methods This was a descriptive epidemiological study. Deaths from 1991 to 1995 inclusive were used to calculate standardized mortality rates (SMR, under 75 years) at small level using the 1991 Census population estimates. The standardized limiting long-term illness ratios (SIR) were based on the appropriate Census question. Regression models were tested with SMR and SIR as dependent variables and a wide range of socio-economic indicators, including income support and family credit uptake, as independent predictors.

Results Northern Ireland is a very polarized society. More than 60 per cent of the population live in areas which have more than 80 per cent of one religion. Areas with a preponderance of Catholics tend to be more deprived. Unemployment rates, percentage renting, car availability, and education attainment are all worse in Catholic areas. However, there is considerable heterogeneity between areas with similar levels of religious affiliation and the overall pattern varies with the indicator chosen. SMRs rise stepwise with increasing percentage of Catholics. SIRs increase with increasing polarization of areas, but this is much more marked in those with a predominantly Catholic affiliation. Altogether 46.8 per cent of the variance in SMR and 77.9 per cent of that of SIRs could be explained by socio-economic variables alone. Denomination did not have any residual predictive value.

Conclusions Policy-makers should continue to periodically monitor for differences between the two communities including any differences in service accessibility and uptake. Efforts should be directed towards reducing the inequalities in health for all sections of the community.

Keywords: religion, deprivation, ill health

Background

Northern Ireland is one of the most deprived regions of the United Kingdom. It consistently has the highest levels of unemployment with an even greater disparity in the rates of long-term unemployment. Average gross weekly earnings per household and per person are the lowest of any of the four countries, and there is a much greater proportion of the population reliant on social security benefits. The relationships between material disadvantage and ill health are as evident in Northern Ireland as they are in other parts of the United Kingdom. The problems of Northern Ireland, however, are often seen in terms of the differences between Catholic and Protestant, i.e. between the "Two Communities", yet the amount of research into possible differences in health between the "Two Communities" in Northern Ireland is surprisingly meagre.

A random survey of fifth-form school children in Northern Ireland in 1976–1977 found that a greater proportion of children attending Catholic schools had tried smoking and were still smoking compared with those attending Protestant schools. A community health study in the 1970s showed that an excess alcohol consumption, which, at that time, was rare amongst women, was virtually absent amongst Catholic females. In contrast, Catholic males had generally higher prevalence of excess drinking than males of the other combined denominations. More recently, a study of cancer screening practices amongst women in Northern Ireland showed that breast self-examination and attendance for cervical cancer screening were more common amongst Protestant than Catholic women.

An ecological study by Stringer related measures of ill health to data from the 1981 Census following similar work by Townsend in the Northern region of England but extended to include denomination and rurality. That study showed that Protestants had higher mortality rates than Catholics once differences in deprivation were discounted. However, these researchers limited the range of deprivation variables to those in the Townsend index of material deprivation and there were problems related to a significant level of under-enumeration in the 1981 Census in Northern Ireland arising from the levels of civil unrest there at that time.

In a secondary data analysis of the Continuous Household Survey (1990–1991), it was shown that in all aspects of...
lifestyle within the last ten years', was also Census derived. The economic variables were entered as potential explanatory variables. Different models were tried with denomination and range of values. All standardizations were by the indirect method using the overall Northern Ireland rates. In the final section the results of multivariate analysis exploring for any effect of religion on ill health which was independent of socio-economic standing will be reported.

Data sources and methods

The 1991 Census provided the population estimates to produce the standardized ratios used in the analysis. Socio-economic variables were also derived from the 1991 Census, with the exception of the numbers of recipients of family credit and income support, which came from social security benefits data for 1996. Long-term unemployment defined as 'having no paid job within the last ten years', was also Census derived. The income support data had age attached and it was possible to produce standardized estimates in addition to the unstandardized percentage estimates. The denominator for family credit was the Census estimates of the numbers of households in each area. Morbidity data were based on the 1991 Census limiting long-term illness (LTI) question. Only those persons in private households were used, to reduce the influence of large establishments on estimates at small areas as suggested by Carstairs. This was standardized for age and sex. Deaths for the years 1991–1995 inclusive were used to produce standardized mortality ratios (SMRs).

The geographical unit of analysis was derived from the 566 Census wards. To reduce distortion caused by small numbers of events, wards were aggregated with an adjacent one so that none had a population less than 2000 persons. The resulting 498 areas were called Synthetic Electoral Wards (SEW).

SEWs were divided into seven categories according to the overall religious affiliation. The divisions can be seen in Figs 1–3. The distribution of socio-economic and health variables within each of these categories is shown by means of box and whisker plots showing the median, 25th and 75th percentiles and range of values. All standardizations were by the indirect method using the overall Northern Ireland rates. In the final modelling process SMR (<75 years) and LTI ratios (<75 years) were the dependent variables and a much larger range of socio-economic variables were entered as potential explanatory variables. Different models were tried with denomination tested as both a continuous and as a categorical variable.

Denomination in Northern Ireland

The denominational breakdown in Northern Ireland at the time of the last Census was as follows: Roman Catholics 605 639 (38.4 per cent), Presbyterians 336 891 (21.4 per cent), Church of Ireland 279 280 (17.7 per cent), Methodist 59 517 (3.8 per cent), Others 122 448 (7.8 per cent), none 59 234 (3.8 per cent), and not stated 114 827 (7.3 per cent). The vast majority of those in the 'Other' group were various denominations of Protestant.

For the purposes of this exercise all Protestant denominations were taken together. A total of 11.1 per cent of the population provided the answer 'none' or 'not stated' for the religion question. There were numerous possible ways to handle these data; for example, either or both could have been subtracted from the total population denominator. However, these were manipulated made little difference to the religious affiliation characteristics of the ward (correlation between the different measures of religious affiliation at SEW level was of the order of 0.99 or higher). In the end, in true Northern Ireland tradition, the 'none' and 'not stated' groups were apportioned between Catholic and Protestant denominations in correspondence to the ratio of those two groups within that area.

Northern Ireland is a segregated society; 40.8 per cent of the population live in electoral wards which have more than 90 per cent of one religion and 59.9 per cent of the population live in wards which have more than 80 per cent of one religion. As shown in Fig. 4, Northern Ireland is also polarized geographically. Areas with high concentrations of Protestants are found in the Greater Belfast area (with the notable exception of West Belfast) and towards the northeastern quadrant of the province. High proportions of Catholics are found to the South and West of Northern Ireland and in the Border areas.

Denomination and socio-economic standing

There are a great many possible socio-economic indicators that could be used to compare the two denominations, but only a few will be related here for illustrative purposes. These are shown in Figs 1 and 2. It is evident that there is a greater or lesser degree of heterogeneity within all categories of religious affiliation. Within the three categories with a predominantly Catholic affiliation, increasing heterogeneity in socio-economic indicator is evident with increasing concentrations of Catholics. Thus there is generally a smaller amount of variability in socio-economic standing in those areas with 60–80 per cent Catholic than in SEWs with a higher proportion of Catholic. SEWs with a population that is more than 90 per cent Catholic are found throughout the entire range of advantage–disadvantage. This is particularly evident with the unemployment, Townsend (not shown), children in non-earner households and income support variables. Arguably the same pattern is evident, though to a lesser degree, in areas that are predominantly Protestant.
The association between socio-economic indicators and the religious affiliation of the area might also be grouped into three broad groups. In the first group an increasing proportion of Catholics in an area is associated with increasing disadvantage. This is the largest of the three groups. It is those socio-economic indicators that are most closely associated with low income or earning capacity that show the clearest relationship between denomination and disadvantage. Thus for the variables unemployment, long-term unemployment, children in non-earner households, educational attainment and income support there is a clear and positive association between the percentage of Catholics in an area and the level of disadvantage. Family credit follows the same general pattern but levels off at a higher level in the areas of higher Catholic concentration.

Some indicators show little or an anomalous relationship with denomination (Fig. 2). Social class, defined as the

![Box plots comparing socio-economic indicators across religious affiliations.](https://example.com/figure1.png)

**Figure 1** Relationship between religious affiliation and socio-economic standing (I).
percentage of households with a head in the manual classes, shows no overall association with the religious affiliation of an area except for the greater heterogeneity amongst the predominantly Protestant areas. The 'percentage of households that are rented' and the 'do not have access to a car' variables demonstrate a relationship with denomination only in Catholic areas. There was no evidence of a relationship between these indicators and the percentage of Protestants. The proportion of households without central heating is highest in those areas that have a more equitable distribution of Catholics and Protestants. There are some indicators that would suggest greater need or disadvantage is present in Protestant areas. For example, the proportion of elderly living alone is higher in Protestant areas than in Catholic areas (Fig. 2). A similar relationship exists for the proportion of residents that changed address in the year before the 1991 Census.

Denomination and ill health

Figure 3 shows the variations in premature mortality ratios (SMR <75) and morbidity (LTI <75) within each of the seven categories of religious affiliation. There is a 2–7-fold variation

![Figure 2](https://academic.oup.com/jpubhealth/article-abstract/20/2/161/1555584/164)

**Figure 2** Relationship between religious affiliation and socio-economic standing (II).
in mortality ratios within each category; the greatest variation is evident within the most segregated categories, both Catholic and Protestant. There is a clear positive relationship between increasing percentage of Catholics within a category and its overall mortality experience. The medians displayed in the figure are very close to the SMRs calculated for the categories as a whole.

A similar pattern is evident in the LTI ratios, with the greatest variation within denomination category to be found in the over 90 per cent category and increasing average levels of ill health with increasing levels of Catholic affiliation. The association between denomination and ill health is stronger for long-term illness ratios than for mortality.

Disadvantage, ill health and denomination

In the final modelling process SMR (<75 years) and LTI ratios (<75 years) were the dependent variables and 20 different socio-economic measures were entered as potential explanatory variables. The modelling process was repeated with denomination entered as both a continuous and as a categorical variable. The results were unchanged.

Table 1 shows the results of the models derived which best 'explained' the mortality and morbidity variations; 46.8 per cent of the variance in the premature mortality ratios between areas was explained by only three variables (income support, change of address in the last year and the percentage of adults without qualifications). A much greater proportion of the variation in morbidity ratios was explained by the socio-economic variables (77.9 per cent). In both models income support was a particularly strong predictor. The religious affiliation of an area, whether as a categorical or a continuous variable, did not significantly increase the predictive power of the model.

**Figure 3** Relationship between religious affiliation and ill health.
Discussion

For many measures of deprivation that were examined, Catholic areas appeared to be more disadvantaged than equivalent Protestant areas. However, in Northern Ireland it is possible to select an indicator which will support any previously held prejudice. Some of the measures described here require closer scrutiny. All of the Census variables are self reported but are unlikely to be subject to differential bias, though it has been suggested that the LTI variable may itself be confounded by the very factors researchers try to relate it to, such as deprivation, religion, etc.\textsuperscript{14}

The percentage of households that are overcrowded (i.e. more than one person per room), which is one of the four variables in the Townsend index, shows a strong relationship with Catholic affiliation. Whether this represents real disadvantage or a propensity of Catholics to have larger and younger families is debatable.\textsuperscript{15,16} The tendency for Catholics to have larger families has been reported in the United States for the late 1970s.\textsuperscript{17} However, by the late 1980s this had reversed, with Catholic total period fertility rates about one-quarter of a child less than the Protestant rates.\textsuperscript{18}

The proportion of households without central heating is highest in those areas that have a more equitable distribution of Catholic and Protestant. This is probably because these areas are more rural and also have a lower proportion of public sector housing, which generally has central heating.\textsuperscript{19}

The large and continuing differences in employment status between the two communities in Northern Ireland have been well recorded and have resulted in a substantial strengthening of the fair employment law.\textsuperscript{20} Whether the proportion of households which changed address in the year before the Census represents disadvantage is debatable, but it, along with the proportion of elderly living alone, is included in the Jarman index.\textsuperscript{21}

The earlier study by Stringer\textsuperscript{10} showed that those areas with a high proportion of Protestants had higher levels of mortality, even after differences in deprivation had been discounted. Alternatively, Catholic areas still had higher levels of permanent sickness and disability (derived from the 1981 Census), after controlling for differences in deprivation. In that study, deprivation and denomination explained relatively little of the variance in mortality (23.9 per cent) and morbidity (46.9 per cent) rates between electoral wards. The limitation on the indicators of deprivation may account for the low explanatory power of these models and resulted in residual confounding, thereby allowing religion to enter as a significant predictor. The limitations of the Northern Ireland 1981 Census data have already been noted.

The explanatory power of the uptake of income support variable in both models is worth further exploration as a
possible alternative to the more conventional indicators of need. The relationship between social security benefits uptake and religion probably reflects real differences between the two communities. An analysis of the Family Expenditure Survey 1989–1990 showed significant differences between Catholics, who had an average income of £122 a week, and Protestants, whose average income was £136 a week. Although the main difference between the two communities could be ascribed to different socio-economic characteristics (such as employment status), about 18 per cent of the income gap between Catholics and Protestants was due to unequal pay for equal job qualities. Nearly one-third of the income of non-retired Catholics came from social security benefits compared with a fifth for Protestants. However, it was concluded that the heart of the inequity problem in Northern Ireland was that there was much greater inequity within Catholic and Protestant parts of the community than between them.

The results of the present study would echo these conclusions. There is much more variability within Catholic and Protestant areas than between them and efforts should be directed towards reducing the inequalities in health for all sections of the community.

Conclusions

(1) In terms of religion or religious affiliation Northern Ireland is a very segregated society, both within electoral wards and at higher geographical levels.

(2) There was a great amount of heterogeneity associated the socio-economic indicators within each of the seven categories of polarization of religious affiliation, such that even amongst the most polarized categories there were some very affluent and some very deprived areas.

(3) For many socio-economic indicators Catholic areas would appear to be more deprived than their Protestant peers. However, this relationship varies with the indicator chosen and some indicators would suggest greater need in Protestant areas.

(4) Heterogeneity within categories is also present in both of the ill health indicators, but there is an overall positive association between the percentage of Catholics within an area and the morbidity and premature mortality experience of that area.

(5) It was possible to develop models that explained almost 50 per cent of the variance in premature mortality ratios between areas and more than three-quarters of the limiting long-term illness ratios.

(6) Differences in denominational characteristics between areas did not add any additional explanatory power to these models. Thus it can be concluded that, at an ecological level, religious affiliation does not have an independent influence on morbidity or premature mortality ratios, once differences in socio-economic standing have been controlled for.

References


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