

INEQUALITIES IN HEALTH BEHAVIOURS

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Centre for Ageing Research
and Development in Ireland

RESEARCH BRIEF



Research brief

This research brief represents findings from a project funded under CARDI's 2013 data-mining funding programme. The paper includes findings from the funded research team and additional information collated by CARDI. The full report can be downloaded from www.cardi.ie

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Inequalities in health behaviours

Several studies in Northern Ireland (NI) and the Republic of Ireland (ROI) have shown substantial inequalities in health on the grounds of social class, income or area deprivation. Some of these have produced evidence specifically related to inequalities within the older population. One issue which has received less attention is whether inequalities in health behaviours, specifically smoking, low physical activity and high alcohol consumption, continue into older age. CARDI funded Dr Eibhlin Hudson Trinity College Dublin to explore this issue in NI and ROI (Hudson et al., 2014).

Key Findings

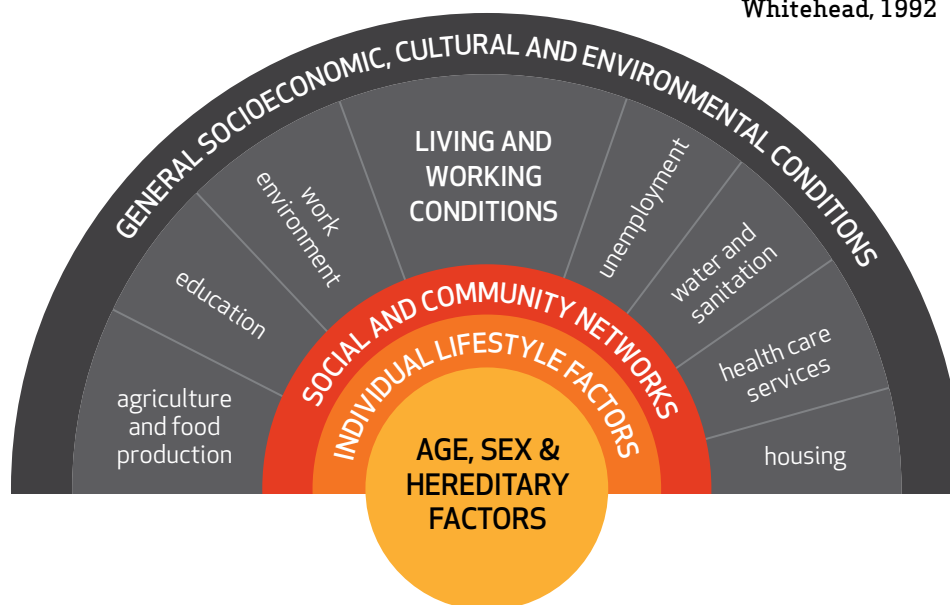
- ▶ Rates of smoking among people aged 50+ are similar in NI (18%) and ROI (17%).
- ▶ Low levels of physical activity are more common among people aged 50+ in NI (54%) than in ROI (30%).
- ▶ The proportion of older people who drink 5-7 days per week is higher in ROI (10%) than in NI (6%).
- ▶ In the population aged 50+ smoking rates are higher in both NI and ROI among those on low incomes.
- ▶ Low physical activity is more common in both NI and ROI among people aged 50+ on low incomes.
- ▶ Regular alcohol consumption is more common among those on high incomes.
- ▶ People aged 50+ who are widowed, separated/divorced or never married are more likely to smoke and to have low levels of physical activity, particularly in NI.
- ▶ Being unemployed/disabled is a major factor in both smoking and low physical activity in both ROI and NI.

Health behaviours

In the 'rainbow' model (below) based on work by Dahlgren and Whitehead (1992) health inequalities are caused by a range of factors. These include broad socio-economic conditions like food production, employment and housing; social and community networks; individual factors such as age, sex and heredity; and individual lifestyle factors.

The Determinants of Health

Dahlgren and Whitehead, 1992



Dahlgren and Whitehead argued that: "There are considerable differences in behavioural risk factors between social groups, with more disadvantaged groups tending to adopt more health-damaging behaviour in terms of smoking, diet, lack of exercise in leisure time and lower uptake of preventive health care for themselves and their children... In this context, inequities in health arise when a person's lifestyle is restricted by socio-economic factors outside his or her direct control" (Dahlgren and Whitehead, 1992, p. 33).

Health behaviours among older people in Ireland

In Ireland there is evidence that a social gradient in health behaviours exists within the older population. A north-south study of approximately 2,000 people aged 65+ found that those in lower social classes were more likely to smoke than people of the same age in higher social classes (20% v 14% in ROI and 21% v 15% in NI) (McGee et al., 2005). A CARDI-funded study in 2011 estimated that in NI low income households allocate 11.7% of their budgets to snacks and confectionery compared with 7.7% for high earners (Bantry-White et al., 2011). By contrast high income families spend a greater share of their food budgets on fruit than lower income households. In both NI and ROI there is an income gradient in spending on both fruit and vegetables (Bantry-White et al., 2011).

Two data-mining projects using data from The Irish Longitudinal Study on Ageing (TILDA) (2011) and the Health Survey Northern Ireland 2010/11 found low levels of physical activity among older people, notably those in low social classes, despite the physical (Morgan et al., 2011) and mental (Kelleher et al., 2014) health benefits to be gained from exercise. Another study drawing on Trinity, Ulster and Department of Agriculture data on more than 5,100 older people in Ireland, North and South, found

that people from the most deprived areas had significantly higher body mass index, lower rates of exercise and higher smoking rates than those from the least deprived areas (McNulty et al., 2014).

Smoking

Hudson et al (2014) examine three types of health behaviour among people aged 50+: smoking, physical activity and alcohol consumption. They note that smoking has serious health and mortality consequences and is the single most important preventable cause of illness and death and causing a loss of 10-15 years of life expectancy in the average smoker. The disease burden falls disproportionately on older people because of the cumulative effects of smoking over the life course. Smoking rates among people aged 50+ are 18% in NI and 17% in ROI (Hudson et al., 2014).

The study uses a concentration index (CI) (see panel below) to indicate the extent to which a health behaviour is concentrated among the poor or the rich. In the case of smoking, the CI is around -0.1 in both NI and ROI meaning it is more likely among those on low incomes.

Concentration Index

A concentration index (CI) is a single measure of inequality which can be decomposed to analyse the factors lying behind such inequality, as well as the contribution of such factors to inequality. The index summarises the degree to which the distribution of a health outcome or behaviour differs according to income or some other measure of household resources. It can take a value from -1, where the health behaviour is totally concentrated among the poor to +1, where it is totally concentrated among the rich (Hudson et al., 2014, p. 15 and 25).

The CI has been used in several international studies e.g. to compare inequality in child mortality in developing countries (Wagstaff and Van Doorslaer, 2000). In Ireland Madden used the technique to examine inequalities in obesity among adults and inequalities in low birth weight among nine-month-old children (Madden, 2012) (Madden, 2013).

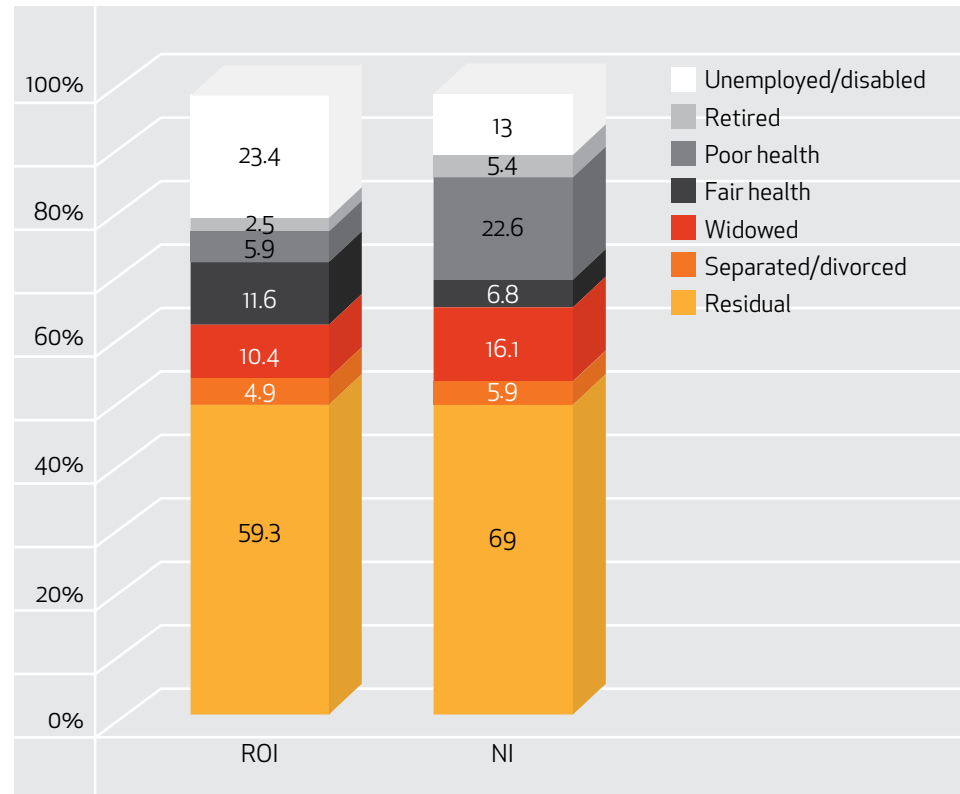
Statistical analysis suggests that smoking among the older poor would need to be reduced by 14% in ROI and 16% in NI in order to eliminate income-related inequality i.e. for poorer people to have the same health outcomes as better off people.

In NI and ROI the probability of people aged 50+ being a smoker is higher for men, younger people, those in poor health and people not married and not in employment¹. Poor health, for example, is associated with smoking and also with older age. Hudson et al., 2014 estimate that poor health accounts for 17% of income-related smoking inequality in ROI and 29% in NI (see Figure 1, which shows individual factors explaining 5% or more of inequality in smoking). Living alone is also associated with a high probability of smoking and contributes 18% of inequality in ROI and 24% in NI. Being unemployed or disabled contributes 13% of income inequality in NI but almost twice as much in ROI (23%).

1. The decompositions of the CI indicate statistical association, not causality. For example people who smoke may be more likely to become unemployed or disabled than those who do not smoke; or people who are unemployed or disabled may be more likely to smoke than those in employment. It is also possible that unobserved factors influence both smoking and economic inactivity.

Figure 1: Factors contributing 5% or more to income-related inequality in smoking (%)

Hudson et al., 2014



Note to Figures 1 and 3 (p.7): other factors can reduce income-related inequality e.g. being aged 65+ reduces smoking inequality in ROI and being in good health reduces physical activity inequality in NI.

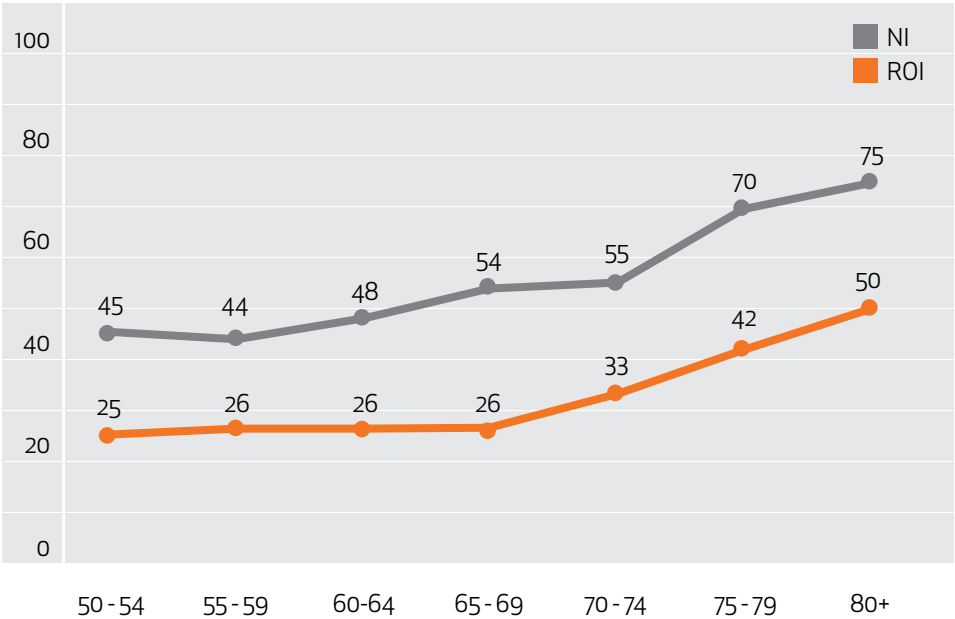
Physical activity

Low levels of exercise are associated with greater risk of premature death. They are also linked with cardiovascular disease, hypertension, type two diabetes, obesity, osteoporosis, anxiety and depression. The benefits of physical activity are stronger for older people because the outcomes related to inactivity are more common in older adults. In addition older people with high levels of activity have lower rates of all-causes mortality than those with low levels of inactivity (World Health Organization, 2010).

Hudson et al., 2014 used a metric for physical activity which multiplies the intensity of the activity by the number of minutes devoted to it producing a score expressed in MET minutes (metabolic equivalent task). Scores are then divided into three categories:

- ▶ High: 1,500 MET minutes per week or more.
- ▶ Medium: 600-1,500 MET minutes per week.
- ▶ Low: less than 600 MET minutes per week.

Figure 2: Low physical activity rates by age group in NI and ROI (%) Hudson et al., 2014



Very many older people have low levels of activity, especially in NI, as shown in Figure 2. In ROI the CI is -0.08 but in NI it is considerably higher at -0.2. Low physical activity is concentrated among the poor especially in NI. Statistical analysis in this case suggests that low physical activity rates among the poor would need to decline by about 12% in ROI and 30% in NI in order to eliminate income-related inequality in physical activity.

Figure 3: Factors contributing 5% or more to income-related inequality in low physical activity (%)

Hudson et al., 2014

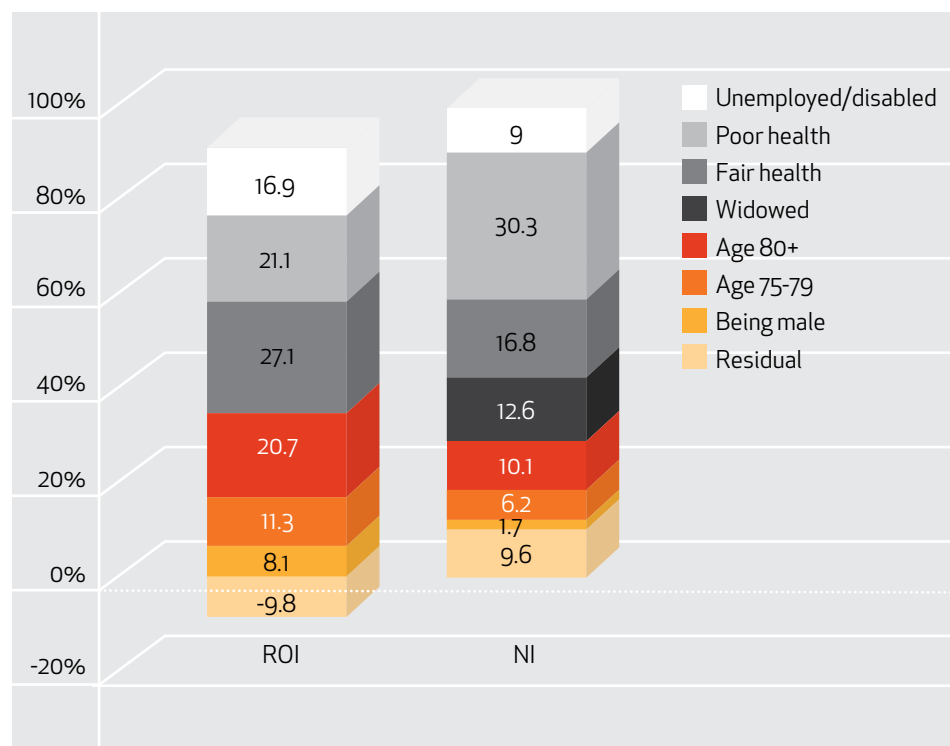


Figure 3 shows fair or poor health explains almost half of income-related inequality in low physical activity in NI and ROI and the causes are likely to go in both directions i.e. poor health means people exercise less and low levels of activity mean people are more ill. Being married is positively associated with higher levels of physical activity especially in NI and widows have low levels of activity in NI. Being unemployed or economically inactivity brings a higher risk of low physical activity especially in ROI.

Alcohol consumption

Unlike the other two health-related behaviours the CI for alcohol consumption is positive (which means it is more common among people who are better off) and slightly higher in ROI (0.052) than in NI (0.045). However, this finding must be treated with caution for the following reasons:

1. Data are available only on frequency of alcohol consumption and not on amount.
2. Alcohol can be a problem for some older people as they are less able to break it down in the body than younger people. Moderate consumption, however, is associated with some positive outcomes including lower levels of cardiovascular risk (Castelnuovo, et al., 2010).
3. The CI explains only about one quarter of the income related inequality and most individual factors make only modest contributions.

Policy on health behaviours

ROI

Goal 4 of the *Healthy Ireland Framework* refers to individuals making positive lifestyle choices. 'This means informing people and communities about how to improve their health and wellbeing and empowering and motivating them to do so, whilst working to remove or at least minimise any legislative or practical barriers that impede their ability to make healthy choices' (Government of Ireland, 2013, p. 14). The framework reinforces targets in existing policies to reduce smoking prevalence among adults by 1% per year, reduce the amount of alcohol consumed and to increase by 20% the proportion of the population undertaking regular physical activity. The ROI government is currently preparing a *National Plan for Physical Activity*. Targets for Goal 2 of the *Healthy Ireland Framework* include specific groups such as Travellers and people at risk of poverty and refer to the *National Anti-Poverty Strategy 2002* and the *National Action Plan for Social Inclusion 2007*.

The Positive Ageing Strategy argues that lifestyle factors, including tobacco, alcohol usage and physical inactivity, are key risk factors in many chronic diseases, which are largely preventable. 'It has been reported that the cumulative lifetime disability for those who smoke, are obese and do not exercise is four times as great as for those who are a healthy weight, exercise and do not smoke... While there is evidence that it is difficult to change the behaviour patterns of older people, research has also found that changes in lifestyle, even in later years can bring health benefits (Department of Health, 2013, pp. 29-30).

NI

The Northern Ireland Executive's health strategy, published in June 2014, recognises that a social gradient of health exists across the whole population with the most profound differences in health seen between the most and least disadvantaged. It adopts a 'proportionate universalism' approach i.e. pursuing actions that are universal but implemented with a scale and intensity proportionate to the level of social and health needs. It also notes that that health promotion initiatives (such as reducing smoking) and improvements in technology and service delivery can increase inequalities because people in higher social classes are more likely to avail of them. 'It is therefore important to distinguish between the overall level and the social distribution of health determinants and interventions, and to seek to avoid public health interventions increasing inequalities' (Department of Health, Social Services and Public Safety, 2014, p. 23).

The strategy also states that:

People's behaviours – whether they smoke, how much they drink, what they eat, whether they take regular exercise – are widely recognised as affecting their health and risk of dying prematurely... This trend is more common in some groups than others - several studies have found a consistent socio-demographic gradient in the prevalence of multiple risk factors, with men, younger age groups and those in lower socio economic groups and with lower levels of education being more likely to exhibit multiple lifestyle risks (Department of Health, Social Services and Public Safety, 2014, p. 66).

Consequently, the actions and commitments of *Making Life Better* include strategies, action plans and targeted programmes to reduce the number of people who smoke; are overweight or obese; drink above the recommended alcohol limits; or misuse drugs (Department of Health, Social Services and Public Safety, 2014, p. 69).

The strategy to reduce obesity in NI (Department of Health, Social Services and Public Safety, 2012) also recognises that deprivation is a key determinant in health and obesity status and sets out plans to promote improved diet and increased physical activity including among older people.

Policy implications

The social determinants of health as well as genetic and biological factors have greater impact on health and health inequalities than behavioural factors (Dahlgren and Whitehead, 1992). A ranking of different counties in the USA estimates that social and economic factors account for 40% of health outcomes, clinical care for 20% and the physical environment for 10% (see <http://www.countyhealthrankings.org/about-project/rankings-background>). Health choices (alcohol/drugs, diet and exercise, tobacco and sexual behaviour) account for 30% of health outcomes and are therefore an important part of the equation.

A social gradient exists within the older population in smoking and physical activity. Since the older population is increasing this may become a growing problem. 'One possible implication of these findings is that it may be important to ensure that health professionals and voluntary organisations are aware that inequalities **do not** disappear with age [emphasis added] when assessing and helping older people, both in the North and in the South' (Hudson et al., 2014, p. 36).

One issue that arises is identifying and meeting the needs of the most disadvantaged. The research carried out by Hudson et al., shows that smoking is more common among poorer people in both NI and ROI. The same is true of low physical activity especially in NI. The statistical relationship does not imply causation but the breakdown of the CI suggests that interventions to reduce smoking and increase physical activity might best be targeted at widows in NI and people who are unemployed or economically inactive, especially in ROI, or those who are in fair or poor health.

A related issue is how best to influence health behaviours especially in low-income groups. One long-standing argument is that educational initiatives based on the principle that a single approach works equally well with everyone is misguided. For example: 'Practical demonstrations of the effects of smoking on lung performance have been shown to be more effective with less educated smokers than the usual advice containing statistical argument' (Dahlgren and Whitehead, 1992, p. 34). A more recent approach is to tackle health inequalities using a community development approach. *Healthy Ireland*, which talks about empowering people and communities, and *Making Life Better*, which has a focus on empowering healthy living, suggest movement in this direction.

Conclusion

Previous research has indicated that NI fares worse than ROI in the health outcomes of older people and that people in lower social groups or living in deprived areas have considerably worse health than better off people of the same age. This report shows that, while smoking rates among people aged 50+ are similar in NI and ROI; levels of physical activity are much lower in NI. It also indicates that older people on low incomes are more likely to smoke and to have insufficient exercise than those on higher incomes.

A technique known as a concentration index shows that men, younger people, people who are not married or living with a partner, people not in employment and those in poor health are more likely to be smokers. Marital status is less important for physical activity than for smoking but widows, particularly in NI, appear to have low levels of activity. Being unemployed or inactive, as opposed to being in work, also plays a role especially in ROI. The research indicates that that people who are single, unemployed, disabled or in poor health, and particularly vulnerable groups like widows, might gain most from interventions to cut smoking and to increase physical activity.

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