



postnote

May 2007 Number 283

HEALTH BEHAVIOUR

Behaviours such as stopping smoking, moderation of alcohol intake, healthy eating and physical activity can reduce the risks of developing serious illnesses such as cancer, heart disease and type 2 diabetes. However, promoting the uptake of healthier behaviour presents challenges, both at the individual and population levels. This POSTnote will describe the importance of health behaviour change and the challenges to such change.

Background

As illustrated in Table 1, behaviour contributes to the burden of illness. Treatment of behaviour-related diseases like cancer is expensive, while the cost of behaviour change interventions is low. For example each Quality Adjusted Life Year (QALY) gained via a brief smoking cessation intervention costs £500 compared with £30,000-£40,000 per QALY for treating patients with advanced cancer.

Policy background

In the past, health policy has centred on services to meet the needs of those who are ill. More recently there has been growing interest in preventing illness and promoting good health. The Wanless reports^{1,2} identified the need to engage people in their health and to shift the emphasis of the NHS from cure to prevention of illness. Two papers published in 2004 contributed to the growing interest in behaviour change. First, the Cabinet Office produced a discussion paper on *Personal Responsibility and Changing Behaviour* outlining evidence for the effectiveness of behavioural interventions and the role of the individual in adopting behaviours that aid efficient delivery of public services. Second, the White Paper *Choosing Health* prioritised key areas for improved health behaviour and the provision of resources to enable greater individual responsibility for health. Those applying to physical health are shown in Table 1.

Changing health behaviour

While people may aspire towards a healthier lifestyle, the initiation and maintenance of health behaviours result

from an interaction of social, psychological, biological, and environmental factors. In recent years the emerging discipline of Health Psychology has tried to explain why people engage in unhealthy behaviours and to inform the development of health behaviour interventions. Research suggests that intentions to change a behaviour, while often a prerequisite of change, can be insufficient to produce sustained change. Starting and maintaining behavioural change can be aided by psychological characteristics and processes. These include the belief that one has the psychological resources to undertake the desired behaviour (self-efficacy) and the individual's ability to use self-regulatory strategies (see Box 1). Box 2 shows how these can be translated into practice for quitting smoking and healthier eating.

Table 1: Overarching priorities in health behaviour

Health behaviour	Impact on health	Progress in the UK
Reduction in numbers of smokers.	Smoking causes 1 in 4 cancer deaths in the UK.	Over the last 30 years the number of people who smoke has nearly halved.
Reducing obesity	It is estimated that obesity reduces life expectancy by between 3 and 13 years.	Obesity levels have quadrupled in the last 25 years. If current rates continue 1 in 4 adults will be obese by 2010.
Increasing physical activity	One third of all deaths are due to illnesses whose prevalence could be at least partly reduced by increased physical activity.	Overall levels of physical activity are below those of 30 years ago. But between 1997 and 2003 the proportion of men meeting recommended levels of activity rose slightly from 32% to 35%, and among women rose from 21% to 24%.
Encouraging sensible drinking	Alcohol is estimated to be a factor in about 20-30% of all road accidents.	Over the last 50 years per capita alcohol consumption has doubled. Among 11-15 year olds who drink, average weekly consumption doubled to 10.5 units between 1995 and 2005.
Improving sexual health	About 10% of sexually active young women are infected with Chlamydia which can cause pelvic inflammatory disease and infertility.	Rates of many sexually transmitted diseases are increasing. In 2003 rates of Chlamydia reported to clinics rose by 9%, rates of syphilis by 28% and rates of HIV in heterosexuals by 27%.

Box 1: Psychological factors contributing to successful behaviour change

Self-efficacy

Self-efficacy is the belief that one has the capability to undertake the actions to bring about particular outcomes.

Self-efficacy can be enhanced, for example, by:

- Experience of succeeding at the behaviour. To promote safer sex practices, teenagers might be encouraged to role play asking a partner to use a condom.
- Modelling or observing another successfully undertaking the target behaviour. To promote the self-efficacy of children to eat healthily, they might be encouraged to observe other children eating fruit and vegetables

Self-regulation

Self regulation includes a number of processes which aid implementation of the behaviour.

- Setting and reviewing realistic goals to implement a behaviour. The goal of walking to work to increase physical activity may be more achievable than going to the gym which requires effort and financial outlay.
- Formation of implementation intentions specifying the context in which the person is going to engage in the behaviour. If swimming is the target behaviour then the person might identify the day of the week, the time and the place where they will swim.
- Identifying barriers and ways to overcome them. Someone quitting smoking might identify that they always smoke with a social drink. The smoking cessation charity QUIT advise smokers to overcome this by having a different drink from their usual, and holding it in the hand in which they usually hold their cigarette, along with other practical suggestion.
- Monitoring performance. Tools such as diaries in which to record attempts at the behaviour can be helpful in identifying both successes and failures to reach the goal which can then be used to develop further strategies.
- Feedback on performance from others can contribute to strategies to implement a behaviour.

Research indicates that the impact of psychological interventions is enhanced when supported by legislation that makes healthy choices easier. Findings from one area (smoking research) can be applied to other health behaviour areas (such as obesity management)³.

Issues

Barriers to Health Behaviour Change

Social Deprivation

The government has made tackling health inequalities a major target. More socially deprived groups have poorer health and more difficulty in changing health behaviours. The proportion of the UK population who smoke has dropped from 45% 30 years ago to 24% today. However, in managerial and professional work 18% of men and 16% of women smoke, whereas in routine and manual positions 32% of men and 29% of women smoke⁴. To reduce inequalities and increase population health, improving the health of more socially deprived groups needs to be prioritised. However, there are challenges to implementing such behavioural programmes in these groups. Among these is the belief among health professionals that these groups are “hard to reach”. This belief may reflect the use of inappropriate strategies to try and reach them. For instance, an emphasis on written communication may be less

appropriate for reaching socially deprived groups, who tend to have lower literacy levels.

Box 2: Health promotion tools

Smoking

Population level interventions

- Media information campaigns about the harm of smoking can motivate and support behaviour change. The “get unhooked” campaign tries to raise smokers’ self-efficacy by communicating that they can stop as well as providing information about support to give an immediate way to turn motivation into behaviour.
- Incentives. Smokers are encouraged to quit by tax on cigarettes, while GPs are offered incentives to promote smoking cessation among their patients.

Individual level interventions

- Medical treatments include nicotine replacement therapy to reduce withdrawal symptoms and medicines such as bupropion to reduce cravings.
- Psychological support such as the telephone counselling service provided by QUIT. This aims to: help smokers understand their smoking behaviour and increase consciousness of their smoking; minimise their reasons to continue smoking and maximise reasons to stop; and plan their quit attempt using psychological support from friends and family and medical treatments.

Healthy Eating

Population level interventions

- Food labelling. The Food Standards Agency (FSA) labelling scheme gives fat, saturates, sugars, and salt a traffic light colour coded label indicating its level in the product. Red labels indicate high levels, amber labels medium levels and green labels low levels. Some retailers also colour code calories. Since Sainsbury’s introduced traffic light labels they have identified sales increases of mainly green labelled products and decreases of mainly red labelled products across ranges including sandwiches, ready meals and dairy desserts.
- Advertising bans. Ofcom has announced a ban on adverts for foods high in fat, salt and sugars around children’s programmes. Such advertising affects children’s food preferences and consumption⁵.
- Signalling. Health researchers and pressure groups suggest public institutions should signal what a healthy diet is by providing it for their clients. Fast food outlets in hospitals and machines vending sweets, crisps and fizzy drinks in schools have the opposite effect.

Individual level interventions

“The Food Dudes” intervention is based on modelling of, and rewards for, healthy eating. Children aged 5-7 years see healthy eating modelled in a video in which a group of slightly older children are shown eating and enjoying vegetables while encouraging the viewers to do the same. Rewards include “Food Dudes” lunch boxes and stickers.

Developing programmes specific to the needs of those who are more socially deprived requires their inclusion in research. However researchers suggest that there are barriers to this aim. For instance, Research Ethics Committees may be reluctant to consider alternatives to mailed letters in study recruitment. This may exclude those with lower literacy from participating in research, as such people may prefer a direct personal approach and be less likely to respond to written letters.

Clustering of behaviour-related diseases

Some groups in the population are more likely to experience behaviour-related illness, and those who experience one such illness, frequently experience others. At least part of the cause of such clustering is that the social environments that maintain one unhealthy behaviour will maintain others. This is an issue for those who are more socially deprived and have smaller ranges of healthy options. For instance, more deprived areas are often unsafe and less pleasant environments, reducing the motivation to increase physical activity by walking. Such areas may also lack shops selling healthy foods at competitive prices, reducing healthy dietary choices.

Implementation of health behaviour change

Responsibility for changing health behaviours is divided between different parts of government. Large scale public health media campaigns are the responsibility of the Department of Health (DH). Responsibility for identifying and assessing individual and population level interventions with a good evidence base lies with the National Institute for Health & Clinical Excellence (NICE).

Co-ordination of health behaviour change

Because several government departments have responsibility for health behaviour change, the benefits accruing from investments made by one department may be reaped by another. One reason for implementing public service agreements (PSAs) was to address such co-ordination issues. Thus three government departments - DH; Education and Skills; and Culture, Media and Sport - share responsibility for meeting the 2004 PSA target to reduce childhood obesity by 2010. In 2006, the National Audit Office, the Healthcare Commission and the Audit Commission published a report examining the capacity of arrangements in place to meet this PSA target⁶. It noted that the three lead departments would need to work closely with each other and other national (NICE), regional (strategic health authorities) and local (primary care trusts) agencies.

It further noted that while the target was set in 2004, two key ingredients for effective local plans - local data on the prevalence of childhood obesity and NICE guidance on the prevention and management of obesity - were not available until 2006. This means that most of the progress towards meeting the targets will have to occur in the last three years of the PSA period. Examples like this have led to calls for greater co-ordination of health promotion activities. Bodies like the National Heart Forum suggest that there is a need for a trusted and independent agency to co-ordinate health promotion. The Health Education Authority (HEA) played such a role until it was disbanded in 2000.

Targeting behaviour change programmes.

Social marketing uses techniques from commercial marketing to promote behaviour change. The National Centre for Social Marketing facilitates the use of these techniques. At the population level, social marketing can be used to target campaigns by identifying segments of the population that share traits in relation to the target

behaviour. As regards campaigns to stop smoking, those who smoke and want to stop will require different interventions to those who smoke but do not currently want to stop. Programmes also need to take account of individual differences in the ability to change behaviour. 'Stepped' intervention programmes, currently being developed by the US National Institutes of Health (NIH) could be used to target more costly intensive interventions appropriately. Primary care doctors use a computer programme to assess the behaviour change needs of each patient who attends an appointment and, based on this assessment, recommend a simple behavioural change programme tailored to the patient. Intensive interventions can then be targeted to those who are not able to change their behaviour following a low intensity intervention.

Research into health behaviour change

Implementation of effective behaviour change strategies requires the support of an ongoing research programme. However, there are challenges to conducting and disseminating health behaviour change research.

Communicating research findings

Communicating research evidence to policymakers is problematic. Academic researchers are not rewarded for doing so as the Research Assessment Exercise focuses on rewarding publication of work in academic journals. In contrast, US researchers are encouraged to communicate their research to health policymakers; grants include funds specifically for dissemination and funders organise meetings between policymakers and researchers.

Funding for behavioural medicine research

Most medical research funding is directed at medical interventions for disease. In the UK 0.5% of such funding is spent on developing behavioural interventions to promote health.⁷ In the US the NIH funding for such research is about 4% of the total budget.

Research in socially deprived groups

Behaviour change interventions tend to concentrate on one behaviour at a time rather than addressing the clusters of behaviour to which those who are more socially deprived are vulnerable. For example, eating a healthy diet may have a limited impact on a person's overall well-being, if additional problems of smoking and lack of physical activity are not also addressed. However, research into changing clusters of behaviours is complex and expensive and, to be fully successful, requires that the environmental issues that reduce choices in more deprived areas are also addressed.

Role of industry in health behaviour change

Industry has an important role to play in promoting health behaviours. It would prefer to do this via voluntary agreements with the public sector. Reformulation of processed foods to reduce their fat, salt and sugar content and schemes to provide consumers with more information about the levels of nutrients in products are examples of such agreements. However, as Box 3 outlines, the voluntary nature of food labelling means

that opinions differ over how to present such information. NGOs and consumer groups such as Which? suggest that there is a limit to what voluntary agreements can achieve, and argue for greater regulation of industry. The ban on advertising of certain food products on children's television is a recent example of the sort of stricter regulation that such groups advocate. While the Food and Drink Federation (FDF) agree that there is a need for restrictions on advertising to young children they argue that the ban considers foods in isolation rather than as part of a balanced diet.

Box 3: Food labelling and healthy eating

Food labelling is currently regulated by the European Union so any UK scheme has to be voluntary. The Food Standard Agency (FSA) worked to propose a voluntary scheme that was acceptable to consumers and industry. Ten different signpost labelling formats were tested. These included those indicating the percentage of the guideline daily amount (GDA) of salt, fat, saturated fat and sugars in the product and those colour coding levels of these nutrients (see also Box 2). Testing indicated that consumers found colour coding helpful and straightforward to use, while some found GDAs confusing.

The FSA consulted with all stakeholders including the food industry, consumers and public health groups to produce four core principles to guide signpost labelling while allowing product identity to be maintained:

- Provision of separate information on fat, saturated fat, sugars and salt;
- Use of red, amber and green colour coding to indicate whether levels of a nutrient are high, medium or low;
- Use of nutritional criteria developed by the FSA to determine the colour code
- Information on the levels of a nutrient per portion.

Additional information on GDAs on the label is optional. While some supermarkets and food manufacturers have introduced traffic light labelling, the largest UK supermarket (Tesco) and many food manufacturers have introduced labelling which presents percentage GDAs without colour coding. The Food and Drink Federation (FDF) suggest that GDAs make people think about how each food contributes to their overall diet and allows them to compare levels of key nutrients across different products.

Which? compared understanding of the FSA's traffic light labels with GDA labels without colour coding⁹. Traffic light labels were most effective at promoting understanding of the nutrient levels in a product, in allowing comparison between products and were also more likely to be considered quick and easy to use. The traffic light labels were more successful in enabling those from more socially deprived groups to identify healthier products. An independent study is being set up to evaluate the impact of front of pack labelling on consumer behaviour and understanding. The FSA has made a commitment to stand by the outcome of the independent study. The FDF state that it fully supports the independent evaluation and will take on board what is learnt from it.

The tobacco industry has learned to live with stricter regulation of its products. The Tobacco Manufacturers Association argues that the industry has become more socially responsible and should be included in discussions on future tobacco policy.

Individual responsibility and state intervention

Historically there has been fierce opposition to public health measures. In 1848 the first British Public Health Act which brought water and sewage systems under the control of the government was opposed as 'paternalistic' and 'despotic'. Today many, including industry groups, argue that decisions about engaging in health behaviours should be left to individual choice with regulation against unhealthy choices being condemned as "nanny state-ism". Others, including health researchers and policy organisations, argue for further regulation. They suggest that people live in an environment that is shaped by forces outside their control, including the state and industry and that these forces influence their choices. For instance an Academy of Medical Sciences report suggests that falls in the relative price of alcohol in the UK have driven increases in consumption and that this could be reversed by increases in the price of alcohol⁹. Such groups argue that it is appropriate to implement legislation, such as increases in the price of alcohol, that contribute to providing an environment in which people can, more readily, act upon their preferences in regards to healthy choices.

Overview

- There is a substantial and growing evidence base concerning what works in health behaviour change.
- Some groups find it more difficult to change their health behaviour. These can be constrained by both social deprivation and the tendency to experience clusters of health-related diseases.
- There is a need to ensure that research findings in relation to behaviour change are effectively communicated to policymakers.
- Many of those concerned with health promotion argue that there is a need for a body to coordinate both research and behaviour change activities, a role previously filled by the HEA.

Endnotes

- 1 Wanless D. *Securing our Future Health: Taking a Long-term View* HM Treasury 2002.
- 2 Wanless D. *Securing Good Health for the Whole Population* HM Treasury 2004.
- 3 West R. *Obesity Reviews* 8 (Suppl.1) 145-150, 2007
- 4 ASH *Smoking Statistics: Who smokes and how much* 2007.
- 5 Hastings et al. *Review of the effects of food promotion to children* Centre for Social Marketing University of Strathclyde 2003.
- 6 National Audit Office *Tackling Child Obesity-First Steps* 2006
- 7 UK Clinical Research Collaboration *UK Health Research Analysis*
- 8 Which? *Healthy Signs* 2006.
- 9 The Academy of Medical Sciences *Calling Time* 2004.

POST is an office of both Houses of Parliament, charged with providing independent and balanced analysis of public policy issues that have a basis in science and technology.

POST is grateful to Rachel Crockett for researching this briefing, to the Wellcome Trust Biomedical Ethics Programme for funding her parliamentary fellowship, and to all contributors and reviewers. For further information on this subject, please contact Dr Peter Border at POST.

Parliamentary Copyright 2007
The Parliamentary Office of Science and Technology, 7 Millbank, London SW1P 3JA Tel 020 7219 2840