What contribution can health economics make to health promotion?

JANINE HALE

University of Glamorgan Business School, on behalf of the UK Health Promotion and Health Economics Forum, Treforest, Mid Glamorgan CF37 1DL, UK

SUMMARY

Health promotion is an area that has been relatively neglected by health economists. There are a variety of reasons for this, including lack of demand by health promotion specialists, misunderstanding of what health economics has to offer the discipline of health promotion, misunderstanding of what health promotion is trying to do on the part of health economists, and perceived difficulties in applying standard economic appraisal techniques to health promotion programmes. Health Promotion Wales was the first UK Health Promotion Agency to employ a health economist. In February 1998, at a meeting of the research departments of the four territorial agencies at the time (Health Promotion Wales, Health Education Authority, England, Health Promotion Authority for Northern Ireland and the Health Education Board for Scotland), it was decided that a position paper on health economics and health promotion would be useful. A meeting involving seven health economists from six universities and six health promotion researchers representing the then four UK agencies was held to inform this paper. Three broad areas were discussed illustrating the potential role for health economics in health promotion; these were economic evaluation, the role of economics in explaining and predicting individual behaviour, and economic policy and health promotion policy. This paper summarizes the main discussion points from the meeting.

Key words: health economics; economic evaluation; individual behaviour

BACKGROUND

Health promotion is an area that has been relatively neglected by health economists (Buck et al., 1996). There are a variety of reasons for this, including lack of demand by health promotion specialists, misunderstanding by health promotion specialists of what health economics has to offer the discipline of health promotion, misunderstanding by health economists of what health promotion is trying to do, and perceived difficulties applying standard economic appraisal techniques to health promotion programmes.

Much of the work that has been performed in this area has looked at the potential of health promotion to reduce future health care costs through the avoidance of disease—an area which is still debated with little evidence available to support either side (Tolley, 1993). Even those prevention programmes which are shown to be successful may not result in considerable reductions in total costs (Kiiskinen et al., 1997). In the case of smoking for example, Barendregt et al. showed that despite the high cost of treating smoking-related diseases, lifetime health care costs of a longer living population in which no one smoked would be 7% higher for men and 4% higher for women than in the current mixed population of smokers and non-smokers (Barendregt et al., 1997). From a policy perspective, however, this hardly matters. Since the objective of health promotion is to reduce morbidity and mortality...
and not to save money (Bonneux et al., 1998), these programmes ought to be viewed in the same way as other health and social care programmes, i.e. what additional benefits are achieved and at what cost? (Buck et al., 1996).

The ‘better than cure’ logic is also eschewed by economists who argue that because health promotion is not intended to replace treatment, whether or not it is ‘better than cure’ is irrelevant. Rather, attention should focus on the costs and benefits of marginal shifts of resources between health promotion and treatment (Cohen, 1994). At present, however, this is difficult to determine because there is little evidence of the cost effectiveness of the majority of health promotion programmes, with the notable exception of smoking cessation programmes (Buck et al., 1996).

Health economics can be used either prospectively alongside the programme or independently to examine the impact of health promotion and health promotion policies. For example, independent examination of the impact of a policy can be used to assess the impact of tax changes on smoking behaviour amongst different social groups. Grossman and Chaloupka (Grossman and Chaloupka, 1997) examine the likely impact of an increase in the excise tax rate on cigarettes on the number of teenage smokers, suggesting that a 23% increase in the price of cigarettes would result in a reduction of 16% in the number of teenagers who would otherwise smoke, and a reduction in the number of cigarettes smoked by teenagers of 14%.

Attempts to apply economic appraisal techniques in the prospective evaluation of health promotion programmes are often met with criticism, with some suggesting that health economics has a limited contribution to make (Burrows et al., 1995). A common accusation is that applying these techniques to health promotion discriminates against it, making it look ineffective (Barry and DeFriese, 1990; Pelletier, 1991). Some of these criticisms arise from a misunderstanding of the role economics can play, and a misunderstanding of what health economics is all about (Craig and Walker, 1996). There is clearly a need for greater co-operation and understanding between these two disciplines.

In July 1997, Health Promotion Wales appointed a health economist. It was the first (and to date the only) UK Health Promotion Agency to do so. In February 1998, the research departments of the then four agencies held their first inter-agency meeting. One of the aims of this meeting was to identify areas where the agencies could collaborate. The linking of health economics and health promotion was identified as a key area.

A meeting involving six health promotion researchers representing the then four UK agencies, and seven health economists from six universities was arranged. The purpose of this meeting was to discuss economic principles in the context of health promotion and to explore the potential for the two disciplines to work together.

It was decided that the discussion in this first meeting should take place on a broad level, rather than focussing on specific issues, using the Ottawa Charter definition of health promotion (Ottawa Charter for Health Promotion, 1986). Four presentations were given, each introducing an area where economics could make a significant contribution to health promotion. The first introduced the area that health economics is probably best known for—economic evaluation. The second was still within the evaluation framework but concentrated on methods of measuring the outcome of health promotion programmes. The third changed the focus, making the point that health economics is about more than just economic evaluation and showed how economic theories of consumer behaviour can be used to explain and predict individual health-promoting behaviour. The final presentation placed the issues raised in the previous presentations into a policy context.

The aim of each of these presentations was to introduce the economic way of thinking to the health promotion specialists, to obtain feedback as to their initial reaction, and discuss possible ways of taking things further. There was no expectation that the group would be able to resolve the issues at this meeting. This was the start of an ongoing process. As such, the aim of this paper is to present some of the issues that arose.

**ECONOMIC EVALUATION**

Economic evaluation consists of a set of techniques aimed at examining alternative courses of action, in terms of their costs and benefits, with a view to helping make a choice (Drummond et al., 1997). In principle, these techniques can be applied to health promotion in the same way as to clinical or other interventions, but in practice it is not so straightforward. When an economic evaluation is carried out there are many issues
that have to be addressed (e.g. the perspective of the study, the outcome measure to use, etc.), the majority of which can be overcome relatively easily. Some of these, however, are compounded when applied to health promotion. The aim of this section is to highlight these difficulties. Many of the examples covered in this section concern personal development and community development strategies. It is important to remember, however, that health economics can also be used to examine the impact of public policy strategies as stated previously.

What is a cost?

One barrier that needs to be overcome in order for economic appraisal to be used more widely in health promotion is the language barrier created by jargon. For example, the economic notion of cost is very specific. Within economics, resources are those things which contribute to the production of output. Since resources are scarce, a cost is incurred whenever a resource is devoted to any particular use, in the form of the benefit forgone by not having used it in an alternative way. The term ‘opportunity cost’ is used to emphasize this notion of an opportunity forgone. Thus, according to economic principles an hour of labour input in some programme incurs a cost regardless of whether the wages bill is affected or not. This difference has not always been understood in the health promotion literature. For example, a study of recruitment strategies for self-help smoking cessation programmes (Nelson et al., 1989) excluded the cost of the co-ordinators’ time as it was ‘part of their regular job responsibilities’. This type of misunderstanding needs to be overcome as it makes comparisons of the cost effectiveness of health promotion with other health care programmes difficult.

Outcome measures

Arguably the most difficult issue to tackle is the outcome of health promotion activity. As with any programme, the outcome is determined by the objective, but it is apparent that health promotion programmes may have multiple objectives, which may include improving information and helping individuals to make more rational decisions. Nutbeam, e.g. identifies three different levels of outcome: health and social outcomes; intermediate health outcomes; and health promotion outcomes (Nutbeam, 1998). Much of the economic literature in this area has concentrated on health outcomes (Rosen and Lindholm, 1992), and clearly, health promotion can legitimately be viewed as having the objective of health maximization. However, because health promotion programmes are working with people who are essentially healthy at the time, many of the benefits may come in other forms and guises and utility maximization may be a more relevant objective (where utility is the economist’s notion of well being or satisfaction).

Quality adjusted life years (QALYs) (or similar) are being used increasingly in economic appraisals to measure generic health benefits (combining mortality and morbidity) from treatment and cure programmes [for examples see (Sculpher et al., 1996; Forbes et al., 1999)]. The use of such measures in health promotion is problematic and hence rarely seen. There are two reasons for this. First, they are likely to be too insensitive to pick up changes resulting from a health promotion programme (Cribb and Haycox, 1989). Secondly, QALYs are not going to capture the full range of benefits of health promotion which arguably can be wider and broader than those from treatment programmes. Health promotion has the additional disadvantage of not having a ‘condition-specific’ measure that can be used alongside the generic measures.

In addition to benefits arising to individuals, there may be other consequences of health promotion programmes. Rosen and Lindholm identified factors such as social diffusion, effects on diseases other than the one being targeted, changes in anxiety and changes in self esteem as effects that had been neglected from consideration, but that might not be insignificant (Rosen and Lindholm, 1992).

Techniques such as willingness to pay (where individuals are asked hypothetically the maximum they would be willing to pay for a good or service) allow individuals to include both health and non-health-related benefits in their valuation (Rosen and Lindholm, 1992). These monetary valuations of the benefits can then be directly compared to the costs. This approach, however, is not without its difficulties, but there is scope for its use in evaluating health promotion.

The perspective of the study

Where relevant, economic evaluation normally advocates a social welfare approach (i.e. including all costs and benefits regardless to whom they
When undertaking applied research it is not unusual for economists to have difficulty in persuading individual agencies to accept a societal perspective as they normally have fixed budgets and their performance may be assessed against indicators which are not captured by improvements in social efficiency. This can be an especially difficult problem in the case of health promotion because of the wide range of interventions—and agencies—which often make up a health promotion programme. The role of the health promotion unit in urging other agencies to undertake the work needs to be understood more clearly. This has implications for the costing of health promotion programmes. An issue that economists may want to consider is the extent to which social welfare is an appropriate approach given that in reality policy is rarely based on the social perspective. Commissioners may only be concerned about the outcomes for which they have responsibility, although an increasing emphasis on Health Impact Assessment and collaborative working may mean that the societal perspective becomes more relevant.

Consideration also needs to be given to the boundaries of any study. Again, while this is an issue that is not unique to health promotion, it can be more significant here. Thought needs to be given to the inclusion of lifetime costs and benefits. For example, a successful physical activity programme aimed at reducing the risk of heart disease may also effect the risk of diabetes, osteoporosis and some forms of cancer; a decision needs to be taken as to whether the beneficial effects on the other illnesses are included, or benefits are restricted to heart disease alone.

Choice of comparator

Economic evaluation is about helping to make choices between competing alternatives. Assessing the cost effectiveness of programme A thus requires identification of comparator programme B. This can be a cause of conflict between economists and other researchers which may pose particularly difficult problems in the case of health promotion.

Within the area of pharmaceuticals, for example, clinical researchers will often want to compare new drug A with old drug B, while the economist, by virtue of his/her focus on broader health-related objectives, may argue for inclusion of a non-drug alternative if one exists. This conflict is normally kept within bounds, however, because given the clinical problems being addressed, the range of possible comparators is rarely that large. This is not the case with health promotion, however, where there is often a wide range of different methods that can be used to pursue a particular goal and extra care will be required to ensure that appropriate comparators are chosen.

Efficiency versus equity

Equity is now firmly on the political agenda in the UK. The rhetoric of the current government puts a burden on health authorities to look at the distribution of health in the population and to set local targets for the reduction of inequalities (Whitehead et al., 1998). A recent report on inequalities in health suggests that health promotion programmes may actually be compounding the problem (Acheson, 1998). The first recommendation arising from the aforementioned report is that ‘all policies likely to have a direct or indirect effect on health should be evaluated in terms of their impact on health inequalities, and should be formulated in such a way that by favouring the less well off they will, wherever possible, reduce such inequalities’ (Acheson, 1998).

If the main criterion upon which policies and programmes are to be based is to be equity, where does this leave economic evaluation? Whilst equity has long been an issue of interest to economists (Culyer, 1988; Mooney, 1989), the criterion on which economic evaluation tends to be based is efficiency (i.e. maximizing the benefit to any resource expenditure). This, however, takes no account of equity and says nothing about who gains the benefits achieved or who bears the cost. The pursuit of equity and efficiency may not lead to the same programme being chosen, i.e. the most equitable programme may not be the most efficient option (Mooney, 1992). In this instance, however, economic evaluation can be used to explicitly illustrate the amount of benefit forgone in the pursuit of a more equitable distribution.

Attribution of the output to the inputs

Any form of evaluation needs to be confident that the observed outcomes are attributable to the intervention in question. The use of a randomized control trial in most cases solves this difficulty. This design is, however, not suitable for
the majority of health promotion interventions as it is very difficult to find and control the control group (Rosen and Lindholm, 1992). Furthermore, the long time delay between the intervention and the final health outcomes also makes attribution difficult.

**Discounting**

Costs and benefits do not always occur at the same point in time. Discounting is a technique used within economic appraisals to adjust costs and benefits to take account of any differences in timing. In conventional economic appraisal in the UK, this is normally done using a rate recommended by the Treasury, currently 6%. While there is little disagreement with this in the case of monetary benefits and costs, there remains much controversy over whether the future intangible health benefits yielded by programmes in health care should be discounted at some different rate, if at all (Maynard, 1997).

Some economists have argued for a zero or near zero rate for health benefits (Parsonage and Neuberger, 1992), while others have defended use of a common rate for health and wealth (Williams, 1981; Keeler and Cretin, 1983) and most things in between.

This issue is of particular relevance to health promotion because the majority of the health benefits will not be observed for several years. Some health promotion specialists argue that to discount the future benefits would discriminate against health promotion programmes (West, 1996). Whilst not necessarily wishing to advocate the use of a zero rate for future health benefits, it cannot be disputed that the higher the discount rate used, the less favourably health promotion programmes are going to be viewed when compared with treatment programmes providing almost immediate benefits.

One suggested way of dealing with this problem is to discount in the usual way, but to repeat the analysis using a range of rates including zero (Tolley, 1993). Whilst this illustrates the effect of discounting, it is not really a solution. No conclusions can be reached regarding the cost-effectiveness of a programme without a decision being made as to which discount rate to apply. The conclusion of the study may be highly dependent on whichever rate within the range is chosen as the ‘appropriate’ rate, and there is a danger that this may be determined by whichever rate gives the desired result.

**Interpretation of results**

Many published economic evaluations are carried out in a very specific context. Care therefore needs to be taken over the generalizability of any results to other contexts and/or situations. Cribb and Haycox (Cribb and Haycox, 1989) argue that generalizations of results from health promotion programmes are particularly difficult because of the nature of health promotion itself; the success of any programme is likely to be determined by local factors and situations, which are difficult to model and replicate. The underlying assumptions in any study need to be carefully considered before generalizations can be made.

**Community versus individual**

To be in line with their health promotion colleagues, economists need to take account of community development. Economics tends to come from an individualistic basis, while many health promotion programmes are now focussing on community development. Economists tend to adopt a utilitarian approach wherein the benefits to a community are viewed as the sum of the benefits to the individuals within that community; this may, however, not be the most appropriate definition to use for community health promotion programmes (Shiell and Hawe, 1996). The Health Education Authority (as it was then) was particularly interested in the concept of social capital—how are the benefits of this to be evaluated? The social welfare perspective would suggest that these benefits should be included in the appraisal, but would policy makers agree? There is little, if any, evidence about the cost-effectiveness of community health promotion programmes involving multiple strategies (Dunt et al., 1995; Buck et al., 1996).

**INDIVIDUAL BEHAVIOUR**

One of the aims of the meeting was to illustrate the range of roles that health economics has
the potential to play in health promotion. One message that was important to demonstrate was that there is more to health economics than economic evaluation. Economics is a behavioural science and can be used to explain and predict individual behaviour in a similar way to other, mainly psycho-social, models [e.g. the Health Belief Model (Becker and Maiman, 1975)].

One way that economists can try to predict individual’s health-promoting behaviour is to look for relationships in large datasets using econometric techniques [for examples, see (Hu et al., 1995; Rice et al., 1998)]. This, however, simply identifies relationships, rather than explaining what is going on.

Conjoint analysis is a technique increasingly being used by economists that allows the assessment of the relative importance of the characteristics (including cost) of a good or service to the users of that good or service (Spoth, 1989). It can be used both within the economic evaluation framework and within the framework of attempting to explain individual behaviour. It is at this level in health promotion that this technique could be potentially useful. This technique could be used to forecast what the likely uptake would be if a new health promotion programme was introduced. There are some examples in the literature of how this technique can be used in health promotion (Spoth, 1989; Spoth, 1991; Spoth, 1992; Spoth and Redmond, 1993; van der Pol and Ryan, 1996).

Economists can also use basic principles, considering individuals as consumers and producers, to try and explain health-promoting behaviour. Maximizing health and maximizing utility can lead to different decisions being taken. Many health-damaging behaviours which appear to be irrational from a health-maximizing perspective can be explained by identifying that the utility loss from forgoing some well-loved behaviour may not be compensated for by the expected value of the health gain.

A health promotion programme that is actually going to influence individual’s behaviour requires some understanding of why individuals behave in the way they do. In one behavioural economic model (Cohen, 1984), health-effecting behaviour is viewed in terms of the consumption of ‘prevention goods’ (which reduce risk) and ‘hazard goods’ (which increase risk). The utility derived from these goods is of two distinct types; that from their direct use (+ve or –ve) and that from the peace of mind—or anticipation—accompanying the knowledge that consumption alters risk (again +ve or –ve). The model suggests that there are three elements that health promotion programmes can target: the utility in anticipation; the utility in use; and the cost. This model may provide one way of identifying the most appropriate to target for a given group. For example, if it can be determined that utility in anticipation is a (potentially) major determinant of behaviour, then the ‘normal’ health promotion focus on the likelihood and severity of the unwanted outcome might be most effective, whereas if utility in use is the major determinant of behaviour then other forms of messages addressing utility in use (e.g. the ‘kiss a non-smoker’ campaign) may be more effective.

This model provides just one example of how economics can be used to explain and predict individual health-promoting behaviour. Consideration should also be given to other theories such as regret theory which argues that choices are not influenced by expected utility alone but also by the regret or rejoicing that we would experience if the choice is proved wrong or right. Alternatively, we may want to consider the satisficing behaviour models which argue that people do not try to maximize anything, rules of thumb are adopted because decisions are too complex.

It was agreed that although there is an apparent shift towards looking at community interventions and community development, there is still merit in developing the economic models of individual behaviour.

DISCUSSION

Health promotion programmes make claims on resources and therefore need to be subject to the same evaluation requirements as other health care methodologies, however, this is not without its problems. The difficulties encountered need to be acknowledged and addressed to ensure that inappropriate generalizations are not drawn from the small number of studies that are carried out and published. The limitations of completed studies need to be recognized and the conclusions considered with those in mind.

Health economics should not be seen as a threat, it can be used either prospectively or retrospectively to examine the impact of health promotion and health promotion policies. Prospective examination would consist of using economic
evaluation techniques to help decide which policy should be implemented, giving health promotion a voice when resources are being allocated. The problems associated with doing this have already been discussed and are not easily overcome, but this should not rule out any further work in this area.

Economic models of behaviour and econometric techniques can be used to explain change and lack of change in knowledge/behaviour of different groups, showing how health promotion works or why it is easy to fail. There is much scope for techniques such as conjoint analysis to be used to see what people value about their health and how they view health behaviours. This can then be used to refine health promotion policy and improve targeting to certain groups.

For health economics to be more relevant to health promotion and health promotion policy, more training needs to be undertaken, both of health economists in health promotion, and health promotion specialists in health economics (Tolley et al., 1996). Methods of disseminating relevant research also need to be looked at.

Health economics has an important role to play in health promotion, but this can only be furthered if the two disciplines work together. The meeting that informed this paper was a first step in this process.

ACKNOWLEDGEMENT

This paper is the outcome of the first meeting of the UK Health Promotion and Health Economics Forum, funded by the then four UK Health Promotion Agencies. I am grateful to the participants at that meeting, especially Christine Godfrey, Mandy Ryan, David Cohen and Dave Buck who made presentations on the day, on which this paper is based. My thanks also go to colleagues who have commented on earlier drafts of this paper. Any remaining errors are solely my responsibility.

Address for correspondence:
Janine Hale
University of Glamorgan Business School
Treforest
Mid Glamorgan
CF37 1DL
UK

REFERENCES


Ottawa Charter for Health Promotion (1986).


