

EDITORIAL

The role of theory in evidence-based health promotion practice

The recent emphasis on evidence-based practice must be welcomed as part of the general move to improve the quality and cost-effectiveness of health promotion interventions. This Editorial aims to re-focus attention on the role of theory in the context of evidence-based practice. It argues that empirical evidence alone is insufficient to direct practice, and that recourse to the explanatory and predictive capability of theory is essential to the design of both programmes and evaluations.

The response to the current need for evidence has been two-fold. On the one hand, we have witnessed an increase in the number of published systematic reviews [e.g. by the Cochrane Collaboration, NHS Centre for Reviews and Dissemination, and International Union for Health Promotion and Education (IUPHE)], together with a call for more robust evaluations from the field. On the other hand, there has been considerable debate about the nature of evidence and how we can assess effectiveness. Concerns about the possible dominance of a positivist methodological agenda and its limited applicability to health promotion have been more fully discussed elsewhere [see, e.g. (Green and Tones, 1999)]. Signs are emerging that these concerns are beginning to be addressed. There is increasing recognition of the broad epistemological basis of health promotion research, the value of methodological pluralism and the particular capacity of qualitative methods to provide an illuminating perspective. Indeed the 51st World Health Assembly urged all member states 'to adopt an evidence-based approach to health promotion policy and practice, using the full range of quantitative and qualitative methodologies' (WHO, 1998a). Furthermore, WHO recommendations to policymakers on health promotion evaluation (WHO, 1998b) also state strongly that 'the use of randomized control trials to evaluate health promotion is, in most cases, inappropriate, misleading and unnecessarily expensive' and advocate the use of multiple methods.

The principal focus of much of the discussion about evidence-based practice has been on the appropriate measurement of effectiveness. The role of theory has received comparatively little attention in this debate. It is also noteworthy that guidelines on undertaking systematic reviews tend to side-step the issue. For many, theory is equated with a reductionist position, and therefore judged to be incompatible with both holism and empowerment—the central tenets of health promotion. However, the accumulation of empirical evidence about effectiveness is of limited value to the practitioner unless accompanied by general principles which might inform wider application. Without reference to these theoretical principles we risk being submerged by a post-modern morass of empirical evidence, which, on its own, can do little to guide practice. Buchanan (Buchanan, 1994) attributes scepticism about the value of theory and the so-called *theory practice gap* to a restricted view of theory shaped by the natural sciences and positivism. He advocates a broader conceptualization of theory based on *praxis*—recognizing that 'knowledge is contingent and contextual rather than universal, determinate and invariable'. This broader interpretation of theory is central to the discussion here. The purpose of theory is seen not as offering universal explanations or predictions, but rather as enhancing understanding of complex situations. Such understanding will inevitably need to be sensitive to specific contextual factors, and would necessarily draw on the experience of practitioners and communities.

Theory into practice

The US National Cancer Institute's monograph *Theory at a Glance* (National Cancer Institute, 1997) distinguishes two types of theory of relevance to the health promotion planning cycle—explanatory theory and change theory. Explanatory theory sheds light on the nature of the *problem* and helps to identify the range of factors that the health promoter might seek to modify. In contrast, change theory informs the development and imple-

mentation of intervention strategies. Without a full, rational appraisal of the problem and possible solutions, interventions might easily:

- Address wrong or inappropriate variables (i.e. miss the target completely).
- Tackle only a proportion of the combination of variables required to have the desired effect (i.e. hit only a few of the total number of possible targets).

Theory also provides the basis for judging whether all the necessary elements of a programme are in place. For example, a programme designed to encourage a particular behaviour, such as condom use, could not be expected to succeed unless it addressed the known determinants of that behaviour. Providing young people with information about condoms will have little effect unless they also have the skills to obtain and use condoms, they are able to be assertive in negotiating condom use with their partner, condoms are available, and so on. Theory can consequently make a major contribution to improving the design of programmes and maximizing potential effects.

There are numerous theories to draw on. It would be invidious to attempt to provide a comprehensive list. Theories range from behaviour theory through change theory (at individual, organizational and community levels), to community development and policy theory. Reference has already been made to the National Cancer Institute's monograph. Nutbeam (Nutbeam, 1998) also provides a succinct overview. Any difficulty arises not so much from an insufficiency of theory, but rather the capacity to select relevant theory and apply it in practice. In an earlier Editorial, McLeroy (McLeroy, 1993) was critical of the 'theory a week' mode of teaching theory on health education courses, leading to problems with using theory constructively to tackle specific health issues. He further contended that single theories cannot cope with the complexity of ecological views of health and that multiple theories might be required. However, there are no guidelines on the selection of individual theories let alone combinations. It is noteworthy, in this context, that relatively few

research and evaluation reports document fully the theoretical analysis underpinning the development of programmes and exactly how that analysis was translated into action. Even fewer provide a rationale for the selection of theoretical models. Greater transparency about these issues in publications would be of immediate relevance to practitioners, and also contribute to a more general understanding of the process of theory selection and utilization.

Theory and evaluation

As we have noted above, reference to theory allows an assessment to be made of whether all the necessary elements of a programme are in place. In the context of evaluation, this type of analysis can be used to identify type III error, i.e. the rejection of the effectiveness of a programme when the programme itself was inadequate in terms of design or delivery. Clearly, programmes developed on an *ad hoc* basis—which we might refer to as the 'suck it and see approach'—are extremely vulnerable to type III error.

It is somewhat surprising that systematic reviews tend to pay scant regard to type III error. Inclusion and exclusion criteria generally focus on the design of the actual evaluation component of studies rather than the quality of the intervention itself. The principal concern is generally with establishing criteria to ensure the avoidance of unjustified claims for success, typically because there are inadequate controls—usually referred to as type I error. The quality of studies is therefore judged in relation to the evaluation methodology, frequently overlooking the adequacy of the programme itself.

Numerous authors have commented on the failure of a simple input–output model of evaluation to address the complexity of the health promotion endeavour. It is well recognized that evaluation should be concerned with both process and outcome indicators. The key question revolves around how these indicators are both identified and selected. A thorough theoretical analysis can serve to identify a whole range of potential outcomes as a basis for making a selection of those judged

to be most relevant. Furthermore, a theoretical framework allows these indicators to be ordered in relation to an anticipated time sequence—effectively constructing a proximal–distal chain of events. Without such recourse to theory, the process of selecting indicators can be rather like plucking straws out of the air. Concerns that using theory in this way might lead to a restricted, deterministic view of events are unfounded provided an appropriate theoretical analysis is undertaken. Ideally this should open up an array of possible indicators and direct attention to those which are essential to the needs of the evaluation—in essence sharpening the focus of the evaluation. Moreover, distinguishing between proximal and distal indicators allows some assessment to be made of the relative magnitude of anticipated change—generally greater in proximal indicators, such as change in beliefs, than in more distal indicators, such as change in behaviour. Inclusion of proximal indicators may therefore enhance the capacity of evaluation to demonstrate some effect and thus minimize the risk of type II error—the failure to demonstrate change which has actually occurred as a result of the intervention. Such error generally arises when the research design is insufficiently sensitive to detect change or even focuses on inappropriate variables. The use of theory to inform the design of evaluation strategies is relevant to all types of programme. It is worth emphasizing that recourse to theory in identifying indicators need not be restricted to those programmes that have a pre-determined agenda. The argument applies equally to interventions based on community development principles, where the possible outcomes are more open. In this instance relevant community development theory allows the various stages in the process to be recognized and indicators appropriate to each stage to be selected. Furthermore, theoretical insight into processes such as group building, project development, inter-sectoral collaboration and organizational change can highlight appropriate process indicators.

It is perhaps important to re-iterate the point that evaluation should be enhanced *not restricted* by theoretical analyses. Clearly, openness to wider,

often unanticipated effects is also important in evaluation design. Pawson and Tilley (Pawson and Tilley, 1997) note that ‘realistic evaluation’ requires understanding of contextual factors and the mechanisms by which interventions work in addition to measuring outcomes. Such understanding is particularly pertinent in the case of multifaceted community interventions. The simple question ‘Does it work?’ needs to be supplemented by a whole range of further questions to address the full complexity of most intervention scenarios—questions such as ‘How does it work?’, ‘What components are necessary to success?’, ‘What components are redundant?’, ‘Why does it work in this context?’ (or equally importantly *not* work), ‘Can it be replicated?’, ‘Is this an appropriate and acceptable way of tackling the problem?’.

Building theory—an evolving cycle

We have argued above that the selection and use of appropriate theory should be integral to the design of health promotion programmes and evaluation strategies. The predictive capacity of theory contributes to the quality of programmes by identifying the necessary elements for inclusion. Similarly this predictive capacity can serve to identify a range of possible evaluation indicators (without precluding unanticipated outcomes). The explanatory capability of theory allows generalizations to be made and enhances understanding. However, context-specific factors will also have some impact. It is therefore essential to gain insight into the conditions under which any observed relationship holds true. As we noted earlier, considered reflection on the outcome of programmes can serve to corroborate theory or identify the need for modification or refinement either in a general sense or in relation to specific contextual factors. In effect a continuous cycle of evolution is established (see Figure 1) in which theory is used to direct practice, but is also exposed to the scrutiny of practitioners with regard to assessing its general utility in the field and in a range of different contexts.

Following on from recognition that evaluation

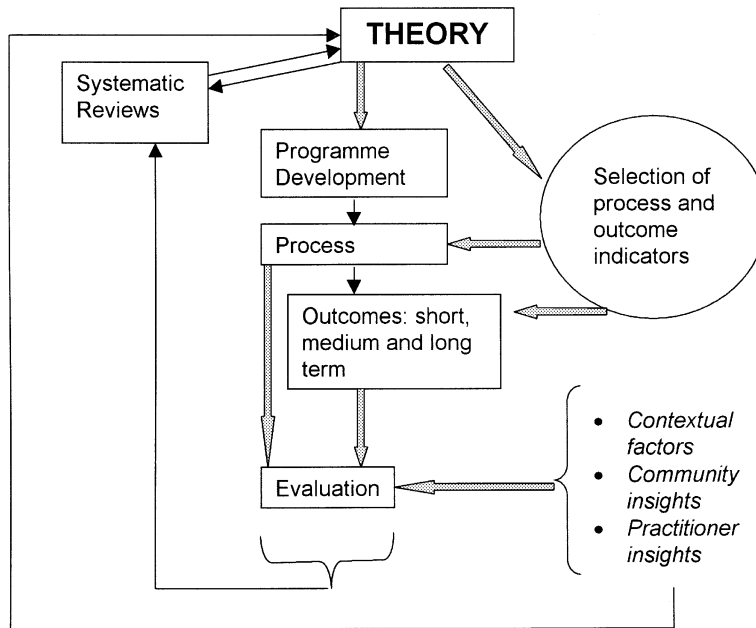


Fig. 1. Theory, health promotion programme planning and evaluation.

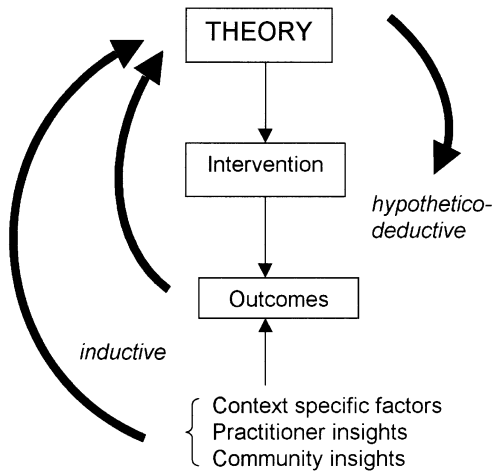


Fig. 2. The development and application of theory—hypothetico-deductive and inductive approaches combined.

strategies should not be restricted by positivist perspectives, but should use both quantitative and qualitative methods, the conceptualization of the nature of theory and theory development should be equally broad. We have already noted that hypothetico-deductively driven approaches have

been criticized on the basis of being reductionist. Their limited capacity to address all the concepts and variables pertinent to complex situations may be a source of some scepticism—particularly when missing variables are immediately apparent to experienced practitioners or communities. Inductively derived theory may serve to overcome these shortcomings by providing explanatory insights, which are firmly grounded in experience. Furthermore, it can define the conditions under which theory holds true.

The move towards evidence-based practice has triggered the publication of a series of systematic reviews. What, then, is the place of systematic reviews in this argument? The selection criteria for studies to be included in systematic reviews should recognize the importance of programme design based on sound theoretical principles. Reviews should not focus exclusively on outcome measures of effectiveness, but also take account of both the process and contextual factors. This was recognized in the recent review of health-promoting schools (Lister-Sharp *et al.*, 1999), which recommended that journal editors and peer

reviewers should 'ensure, in studies of school health promotion interventions, that the following are reported: the theoretical basis or assumptions underpinning the interventions; the context of the interventions; and the process of delivery'.

Concluding remarks

It is undeniable that health promotion requires a strong evidence base. However, if this derives solely from the accumulation of empirical evidence of effectiveness, there is a very real danger of ending up with little more than a menu of *proven* interventions from which to select and without a rational base to guide that selection. Of more relevance to the practitioner are general principles together with an understanding of context-specific factors, which will allow adaptation to suit different situations.

The accumulation of empirical evidence *per se* and development of theory need not be seen as alternative and competing approaches. Rather, as Wallace (Wallace, 1979) proposed a seamless web incorporating hypothetico-deductive and inductive elements into the scientific process, the two should be inextricably linked as shown in Figure 2.

Theory needs to be developed and tested not only in controlled situations, but also in the real world where inductive insights can shape the development of theory and its relevance in specific contexts. However, in order for this to happen studies need to document fully their theoretical base and their rationale for the selection of theory. Similarly, published accounts of how theory is translated into practice together with refinement

of theory in the light of empirical findings and awareness of context-specific factors could contribute to a progressive narrowing of the *theory practice gap*. We may live in post-modern times, but would be wise to take heed of Kurt Lewin's dictum that 'there is nothing so practical as a good theory'.

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