Evaluations of health promoting schools: a review of nine studies

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SUMMARY
The concept of ‘health promoting schools’ has been embraced internationally as an effective way of promoting the health of children, adolescents, and the wider school community. It is only recently that attempts have been made to evaluate health promoting schools. This paper reviews evaluations of health promoting schools and draws useful evaluation methodology lessons. The review is confined to school-based interventions that are founded explicitly on the concept of the health promoting school and employ the concept beyond one school domain. We included nine evaluations in this review. Seven of these were published in the peer reviewed scientific literature. Two were unpublished reports. One study was a randomized controlled trial, while a quasi-experimental research design with comparison schools was used in three studies. With three exceptions, combinations of quantitative and qualitative data were collected. There was evidence that the health promoting school has some influence on various domains of health for the school community. It is also possible to integrate health promotion into the school curriculum and policies successfully. However, the evaluation of health promoting schools is complex. We discuss some of the methodological challenges of evaluating health promoting schools and make suggestions for improving future evaluations.

Key words: evaluation design; health promoting school; review

INTRODUCTION
Schools have for many years been recognized as important settings for health education. Traditionally, health education focused on providing information or developing skills and attitudes to help individuals make healthy choices about lifestyle or behaviour (Lynagh et al., 1997). These approaches, however, failed to demonstrate significant reductions in health risk behaviour (Bennett and Hodgson, 1992; Macdonald and Bunton, 1992; Lynagh et al., 1997).

In the 1980s, the World Health Organization (WHO) shifted focus from the behaviour of individuals to the development of healthy ‘settings’. This resulted in the eco-holistic approach of health promotion as defined in the Ottawa Charter (WHO, 1986). The principles of the Ottawa Charter were applied to the school setting, resulting in the concept of the ‘health promoting school’. Within this approach, focus is increasingly shifting from programmes that are specific to certain health aspects, to those that have a holistic approach to health promotion. While the former are important, research has shown that adolescent health is influenced by several interlinked factors (Flisher et al., 2000).

Over the last decade, health promoting schools have been implemented in many countries and regional networks have been established. As with other programmes intended to improve health, a strong case that they are a worthwhile investment can only be made if there is evidence
of a favourable impact on the school environment and the health of school communities. It is only recently that attempts have been made to evaluate health promoting schools. In 1997, Lynagh et al. commented that ‘There has been no attempt to implement and evaluate a programme which has adopted the Health Promoting School completely to date for any of the three health issues of smoking, alcohol and solar protection’ [(Lynagh et al., 1997), p. 56]. We were aware of previous reviews of schools using the health promotion philosophy to address particular health issues, such as smoking (Lynagh, 1997). In addition, Lister-Sharp et al. produced a review of the effectiveness of the health promoting schools approach (Lister-Sharp et al., 1999). A study had to meet the following criteria to be included in their review [(Lister-Sharp et al., 1999), p. 14]:

1. Concerned with explicit health promoting schools or with interventions using the health promoting schools approach with children and young people aged 5–16 years … that is programmes in which there is health promotion activity in the areas of (a) ethos and/or environment of the school, (b) the curriculum and (c) family and/or community; in which there is evidence of active participation by the school and which provided information detailing the components and delivery of the intervention;

2. Controlled studies with a comparison group, or a before–after design with no comparison group; and

3. Include and report health-related outcomes (including health-related behaviour).

The inclusion criteria for the present review overlapped with criterion 1 of Lister-Sharp et al. (Lister-Sharp et al., 1999), except for the age specification. We did not include criteria 2 and 3 for the present review. Also, we excluded studies that addressed only one health outcome. The present review differs further from that of Sharp-Lister et al. (Sharp-Lister et al., 1999) in that it includes all references that could be identified up to August 2002, whereas the most recent reference in the review by Lister-Sharp et al. (Lister-Sharp et al., 1999) was published in 1999 (Moon et al., 1999).

This review emerged out of the need to develop a framework for evaluating health promoting schools in South Africa, where the concept is in an early developmental phase. The paper also draws important evaluation lessons for other countries implementing the health promoting schools approach. Specifically, we aimed to: (i) identify methodology (or methodologies) for evaluating health promoting schools; (ii) identify methodological gaps; and (iii) establish a basis for developing a conceptual and methodological framework for evaluating health promoting schools in South Africa.

**METHODS**

We conducted a series of searches of the following electronic databases: PubMed, AIDSLINE, PsychInfo, Psychlit, ERIC and AEG. We searched for articles in English, using combinations of the following key words: ‘evaluation’, ‘health promotion’, ‘health promoting schools’, ‘school health’, ‘comprehensive school health programme’, ‘comprehensive school health’, ‘school health promotion’, ‘Africa’ and ‘South Africa’. In addition, we used the World Wide Web to identify and obtain unpublished reports and to search online journals. We contacted the authors or publishers of these reports by e-mail, phone or fax. We also contacted a range of professionals and organizations around the world with a view to locating recent publications, reports and work in progress. Finally, we scanned the reference sections of publications in hand to identify further relevant literature.

**RESULTS**

We did not find any evaluations of health promoting schools in Africa. Altogether, we located 18 possible studies. These were reviewed by both authors to establish relevancy for inclusion in the review. Nine studies were excluded; these were brief summaries of either completed evaluations or evaluations in progress. They provided little or no details of the interventions, evaluation methodology or results of the evaluations, which rendered meaningful review impossible. We made efforts to contact authors by fax or e-mail, whichever was available. Our requests for the completed reports were unfruitful.

The studies included in this review had: (i) descriptions of the methodology; (ii) provided details of the interventions; (iii) employed the health promoting school approach in more than
one school domain, extending beyond the classroom to include factors in the school environment; and (iv) involved the school and local communities in planning and implementation. Details of the interventions are summarized in Table 1. The studies were characterized further according to evaluation type (process or outcome) and research design. These are presented in Table 2.

**Description of interventions**

Details of the development of the interventions were provided in all except one study that reported findings from eight health promoting school projects in Scotland (Crosswaite et al., 1996). Intervention activities were selected against the background of the WHO criteria for health promoting schools (WHO, 1986). These were modified to suit the specific contexts of the projects or schools. Schools were encouraged to identify their priority areas, nature and content of their health promoting activities depending on local circumstances, and key health promotion areas in their respective networks.

Activities were implemented around at least one of three main elements of the health promoting schools concept. These are: (i) the health education curriculum; (ii) school ethos and environment; and (iii) interaction with the wider community. Schools were encouraged to take a broad view of health promotion and to include students as participants. Thus, the nature and range of health promoting activities was wide and varied, as the schools had different agendas. Interventions were delivered mainly by teachers, with participation from the school and local communities. Some projects provided schools with implementation funding (Sobczyk et al., 1995; McBride et al., 1996; Jamison et al., 1998; Moon et al., 1999; Wold, 1999).

**Evaluation aims**

Wold (Wold, 1999) and Turunen et al. (Turunen et al., 1999) aimed to document the development of the interventions in their respective networks at both the school and national levels. The overall goal across all other evaluations was to assess both the development and effectiveness of the health promoting interventions. They attempted to focus on a whole school approach by addressing outcomes in broader issues, such as school structures and organization, communication, health-related policies, and school management. One evaluation also aimed at testing a research methodology for replication in other countries and settings (Jamison et al., 1998). Another (McBride et al. 1996) was also interested in identifying an effective model for developing ‘health promoting schools’ in Western Australia.

**Study design**

Descriptions of what was done and who did it were provided in varying degrees of detail across the studies. Six evaluations were conducted by external research, educational or health agencies (Sobczyk et al., 1995; McBride et al., 1996; Jamison et al., 1998; Moon et al., 1999; Wold, 1999; Mitchell et al., 2000). Three of the eight projects reported by Crosswaite et al. (Crosswaite et al., 1996) were conducted by an external agency in collaboration with programme personnel, while Young (Young, 1993) and Turunen et al. (Turunen et al., 1999) did not state the nature of the researchers’ involvement with the health promoting schools.

Young (Young, 1993) and Turunen et al. (Turunen et al., 1999) administered a one-off questionnaire. Mitchell et al. employed a randomized controlled study design (Mitchell et al., 2000). A quasi-experimental research design with comparison schools was used in three studies (McBride et al., 1996; Jamison et al., 1998; Moon et al., 1999) and one of the projects evaluated by Crosswaite et al. (Crosswaite et al., 1996). Three of the projects evaluated by Crosswaite et al. (Crosswaite et al., 1996) and the evaluation by Sobczyk et al. (Sobczyk et al., 1995) employed a pre-test–post-test design. Follow-ups and after-studies were conducted in the process evaluation reported by Wold (Wold, 1999).

The reported evaluation durations ranged from three school terms (Mitchell et al., 2000) to 4 years (McBride et al., 1996; Wold, 1999). However, the projects themselves all lasted several years. In Norway for example, the project has a time span of 10 years (Wold, 1999).

**Data sources**

Original questionnaires and/or modified versions of instruments developed for other studies were employed. With the exception of three evaluations (Sobczyk et al., 1995; Turunen et al., 1999; Mitchell et al., 2000), all other studies also...
<table>
<thead>
<tr>
<th>Authors</th>
<th>Country/region</th>
<th>Publication type</th>
<th>Development and description of the interventions</th>
<th>Health promoting activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crosswaite et al. (1996)</td>
<td>Scotland</td>
<td>Journal</td>
<td>Little detail provided. Funding was provided to the schools.</td>
<td>Tooth brushing; staff well-being; sexual health; breakfast bar.</td>
</tr>
<tr>
<td>Jamison et al. (1998)</td>
<td>England</td>
<td>Report</td>
<td>Schools completed a questionnaire. Forty-eight schools were selected based on their commitment to development of the project aims and willingness to be matched into either pilot or comparison groups. Funding and professional guidance were provided to pilot schools.</td>
<td>Review of school health policies; improvement in physical structures; first-aid courses; staff in-service training.</td>
</tr>
<tr>
<td>McBride et al. (1996); McBride and Midford (1999)</td>
<td>Australia</td>
<td>Report and journal</td>
<td>Establishment of a school health committee in each school. Committee members were trained in school health promotion, health planning and other issues; regular meetings.</td>
<td>Increasing teachers’ health promotion knowledge; modification in time spent on health topics.</td>
</tr>
<tr>
<td>Mitchell et al. (2000)</td>
<td>Australia</td>
<td>Journal</td>
<td>A resource kit was provided to intervention schools. Development of discussion forums between education and health staff. Workshop for school staff, quarterly network meetings.</td>
<td>Establishment of school health communities; provision of health-related material to parents; development of health-related policies.</td>
</tr>
<tr>
<td>Moon et al. (1999)</td>
<td>Wessex</td>
<td>Journal</td>
<td>Schools identified a coordinator and selected at least two health promoting areas. Professional and financial support were provided and varied from school to school.</td>
<td>Smoke-free school; health promoting workplace; equal opportunities and access to health; school–community links; health education curriculum.</td>
</tr>
<tr>
<td>Sobczyk et al. (1995)</td>
<td>KY, USA</td>
<td>Journal</td>
<td>Five-day institute for teachers. A health promotion committee at each school; monthly reports. Financial resources were provided.</td>
<td>Physical activity; cancer control; cardiovascular risk reduction; injury prevention.</td>
</tr>
<tr>
<td>Turunen et al. (1999)</td>
<td>Finland</td>
<td>Journal</td>
<td>The aims of the programme were: to develop local, national and international networks; to develop teaching content in health promotion; and to develop evaluation methods and evaluate the programme.</td>
<td>Provision of nutritious meals; increased safety measures; provision of first-aid kits; training of teachers; national and international collaboration; development of health promotion curricula.</td>
</tr>
<tr>
<td>Wold (1999)</td>
<td>Norway</td>
<td>Report</td>
<td>Schools applied for participation; 10 schools were selected. Schools chose implementation areas and committed to implementing the project over at least 3 years. ‘Start-off’ funds and advice from School Health workers were provided. Reduced teaching hours for participating teachers.</td>
<td>Alcohol, drugs and tobacco education; improvements in social and physical environments; cross-departmental cooperation; school–home cooperation.</td>
</tr>
<tr>
<td>Young (1993)</td>
<td>Scotland</td>
<td>Journal</td>
<td>Parents, teachers, pupils, meal staff and health education staff participated in discussions to develop and implement the programme.</td>
<td>Provision of healthy meals, snacks and drinks; relevant topics were included in the curricula.</td>
</tr>
</tbody>
</table>
Table 2: Description of evaluations of health promoting schools

<table>
<thead>
<tr>
<th>Reference</th>
<th>Participants</th>
<th>Type of evaluation</th>
<th>Study design</th>
<th>Methods and tools used</th>
<th>Outcomes measured/ process evaluation</th>
<th>Findings/outcomes reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crosswaite <em>et al.</em> (1996)</td>
<td>ENHPS schools in Scotland</td>
<td>Process and outcome</td>
<td>Pre-test–post-test in three projects: quasi experimental in one school, with a comparison school of similar catchment and demographic profile.</td>
<td>HBSC questionnaire</td>
<td>Physical activity; staff well-being; health-related behaviour.</td>
<td>Positive development of health promoting activities; high awareness of the project; changes in attitudes and behaviour; establishment of staff in-service training.</td>
</tr>
<tr>
<td>Jamison <em>et al.</em> (1998)</td>
<td>Pupils, parents, teachers, local support agencies [48 schools (primary, secondary and special)]</td>
<td>Process and outcome</td>
<td>Quasi-experimental; one pilot and two comparison groups with an equal number of schools in each group. Regular monitoring.</td>
<td>Longitudinal self-report survey; focus groups; interviews</td>
<td>Attitudes, knowledge, self-esteem, self protective behaviour: school environment.</td>
<td>‘Learning gains’ occurred in both pilot and reference schools. No major difference between pilot and comparison schools. Improvements in school ethos and environment.</td>
</tr>
<tr>
<td>McBride <em>et al.</em> (1996)</td>
<td>Pupils, teachers, parents, support staff and community members (70 schools)</td>
<td>Formative, process, outcome and impact</td>
<td>Quasi-experimental with matched comparison groups. Three points of data collection over 20 months.</td>
<td>Self-completion surveys, observations, discussions, interviews</td>
<td>Knowledge, attitude and behaviour of participants; changes in school organization and community involvement.</td>
<td>A significant increase in teachers’ and non-teachers’ health knowledge; increase in time allocated to health education per week. No significant change in time allocated to integrating health into other subject areas. Widespread knowledge of the programme throughout Western Australia. No significant difference in the direction of change between intervention and comparison schools for school health resources available, but a significant difference in magnitude for this variable. Intervention schools significantly more likely to increase personnel, budget and time to health promotion.</td>
</tr>
</tbody>
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### Table 2: continued

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Mitchell et al. (2000)</td>
<td>Students, teachers, and community organizations</td>
<td>Outcome</td>
<td>RCT with matched comparison schools, 22 intervention and 19 control schools. Follow-up evaluation conducted after two school terms</td>
<td>Self-administered questionnaire</td>
<td>Health-related policies, practices and infra-structure; awareness of the health promoting concept; exposure to literature, workshops and conferences; community involvement.</td>
<td>Little awareness of the health promoting school concept in both groups at pre-test, with no statistically significant difference. Significantly higher awareness in intervention schools at post-test. Few significant changes to health-related policy and practice in intervention schools. Significantly more control schools had a policy on injury sport prevention at both pre- and post-test.</td>
</tr>
<tr>
<td>Moon et al. (1999)</td>
<td>Pupils, teachers, parents and governors</td>
<td>Process and outcome</td>
<td>Quasi-experimental, non-random allocation. Schools were matched on socioeconomic factors. Eleven intervention and five control schools. Fifteen-month evaluation.</td>
<td>Audit and pupil questionnaires; semi-structured interviews and focus groups with teachers, parents and governors</td>
<td>Smoking, alcohol and drug use, healthy eating, physical exercise, healthy environment, curriculum.</td>
<td>High levels of knowledge at baseline, few changes between intervention and control schools. Intervention schools performed better than control schools in all areas except physical exercise and taking responsibility for oneself.</td>
</tr>
<tr>
<td>Sobczyk et al. (1995)</td>
<td>Pupils and teachers (nine elementary, three middle and three high schools)</td>
<td>Process and outcome</td>
<td>Pre-test–post-test. Students and staff were tested at the beginning and at the end of the school year.</td>
<td>Multiple age-appropriate questionnaires and curricular testing tools</td>
<td>Cancer control, injury prevention, physical fitness, cardiovascular risk reduction; teaching strategies.</td>
<td>Improvements in physical fitness, health-related knowledge and attitudes amongst students. No change in behaviour for grades 4–12 or level of risk for grades 9–12. Slight gains in health-related behaviour of teachers.</td>
</tr>
<tr>
<td>Turunen et al. (1999)</td>
<td>Teachers, individually or in groups</td>
<td>Process</td>
<td>One-off questionnaire survey</td>
<td>Questionnaire with Likert-type and open-ended questions</td>
<td>Process evaluation assessing development of health promoting schools.</td>
<td>Health promoting activities were developed in most schools. Student–teacher collaboration in curriculum development. European and national objectives were realized. International and national networks were established. Less networking at local level.</td>
</tr>
</tbody>
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Table 2: continued

| Reference    | Participants                                      | Type of evaluation | Study design                                         | Methods and tools used                                      | Outcomes measured/ process evaluation                                      | Findings/outcomes reported                                                                 |
|--------------|---------------------------------------------------|--------------------|------------------------------------------------------|-------------------------------------------------------------|--------------------------------------------------------------------------|
| Wold (1999)  | Ten schools (grades 5–10)                         | Process            | Based on PRECEDE model                               | Longitudinal questionnaire survey of pupils; in-depth interviews of teachers, school health personnel, school coordinators | Process evaluation. Assessed planning, implementation and development.       | Many activities were planned and implemented. Activities were integrated into the school curriculum. Schools documented their implementation of health promotion and developed policy plans. |
| Young (1993) | One intervention and two comparison schools       | Outcome            | Comparative analysis. One intervention school, two matched control schools. One-off questionnaire. | Questionnaire survey of pupils; structured interview with staff; census data | Knowledge, attitude and behaviour of pupils towards healthy eating           | Percentage of students choosing school meals significantly higher in intervention school; high levels of knowledge in all schools; fewer and healthier snacks taken by pupils in intervention schools. |

ENHPS, European Network of Health Promoting Schools; HBSC, Health Behaviour in School-aged Children.
employed qualitative and/or secondary data collection techniques.

RESULTS

Findings of the evaluations are presented in Table 2. Overall, positive development of health promoting schools was reported in the process evaluations. Changes were made to school policies and organizational structures to facilitate the health promoting activities. In some projects, health promotion was successfully integrated into the school curriculum. Parents and local communities were also involved in various capacities in the planning and implementation of the interventions.

Where implementation funding was provided, it was not equal, even within the networks. In Scotland, for example, the amounts awarded ranged from £2000 to £7000 (Crosswaite et al., 1996). It is therefore difficult to establish whether the difference in developing interventions and in observed outcomes across schools could be attributed to the provision of or lack of funding. Funding had a significant impact on the development of health promoting activities in some schools. In England, the additional funding made it possible for some schools to initiate changes that would otherwise not have occurred (Jamison et al., 1998). For others, however, the external funding did not influence the development of the health promoting activities as these were already in the schools’ developmental plans (Jamison et al., 1998).

The evaluations utilizing a quasi-experimental approach with comparison schools reported better performances in the intervention schools for certain areas, but no differences in others.

DISCUSSION

The evaluations we reviewed employed a range of different methodologies, most of which do not allow a confident direct attribution of the observed outcomes to the interventions. We are thus unable to conclude that there is strong evidence for the efficacy of the health promoting interventions on the health of students, staff and the community, and on the school ethos and environment. However, this review suggests that schools can successfully initiate efforts to transform themselves into health promoting schools. These efforts, however, need to be supported by incorporating appropriate policies within the school. The process of undertaking activities to support such transformation impacted on the general organizational, structural and policy aspects of some of the schools involved, as well as outside communities with whom the schools interacted.

One of the methodological challenges in evaluating health promoting schools concerns how to synthesize process, output and outcome findings from broad areas of health promotion within and between different types of schools. While the small number of evaluations of health promoting schools may indicate that less attention has been paid to evaluation, the complexity of evaluating such a wide range of intervention activities presents methodological challenges that cannot be underestimated. Commenting on the absence of significant differences, for example, Mitchell et al. concluded that ‘… significant differences in health-related policy and practice would only be seen if schools focused on the same issues’ [(Mitchell et al., 2000), p. 245]. As suggested by Speller et al., evaluation is further complicated by the absence of a clear consensus on methods for evaluating health promoting schools (Speller et al., 1997).

The concept of a health promoting school is itself still evolving and the core characteristics that distinguish it need to be understood at the intervention level. There is a need to develop clearly defined, valid, feasible and utilizable indicators to evaluate process, output and outcome. Indicators may differ between schools, networks or regions, depending on the intervention framework adopted and theoretical positions. The measurement instruments employed should be carefully developed to ensure that these are appropriate for the evaluation. Mitchell et al., for example, concede that the measurement tool used ‘provided an incomplete picture of change in schools’ [(Mitchell et al., 2000), p. 245]. The evaluation design adopted should also as much as possible measure outcomes that result from the interventions.

Randomized controlled trials (RCTs) have been widely used in health promotion to measure change at the individual level. However, RCTs present important challenges. First, they are complex, expensive and time consuming. In situations where a limited amount of financial and human resources are available for health promoting schools, it may be difficult to justify
allocation of the resources that are necessary for an RCT. Paradoxically, it could also be argued that in such circumstances it is even more important to be sure that the available limited resources are allocated to interventions for which there is proof of effectiveness.

Secondly, ethical and analytical challenges arise since RCTs necessitate the comparison group either receiving a delayed intervention, a different intervention or no intervention at all. Some of the evaluations reviewed above were conducted over 3–4 years (McBride et al., 1996; Moon et al., 1999). Clearly, it would be unethical to demand that schools in the comparison group refrain from implementing health promotion activities for this duration. However, the existence of such activities in the comparison schools may complicate the interpretation of the findings, even to the extent that an efficacious intervention may be shown to be the opposite. In one evaluation, for instance, participating schools were selected on the basis of two criteria, one of which was a demonstration of enthusiasm for the health promoting schools initiative (Jamison et al., 1996). Enthusiastic schools that were allocated to the comparison group may have sought support elsewhere. This may explain the small differences that were observed between the intervention and comparison schools in that study (Jamison et al., 1996).

Thirdly, health promoting school interventions occur in various school domains. Several authors have argued that RCTs are in most cases inappropriate as some of the areas in which intervention activities are implemented pose difficulty with respect to randomization (Crosswaite et al., 1996; Speller et al., 1997; WHO European Working Group on Health Promotion, 1998). The argument is that it is also difficult to keep the environmental factors constant between the groups. However, the fact that health promoting school interventions are complex and multifaceted should not be a deterrent from employing the RCT design. Indeed, this is part of the rationale for RCTs, as one assumes that subtle factors of which one might not even be aware are also randomly allocated between the groups. As evident in the studies reviewed, it is naïve to think that the evaluation of health promoting schools would be much less complex if RCTs were not used.

The use of RCTs for educational interventions is not a foreclosed debate. Methodological debates should not shy away from the use of experimental designs not characteristic of educational interventions, but rather engage in how best to maximize on the characteristics of these approaches to evaluate health promoting schools. Rather than dismiss RCTs as inappropriate, researchers should select the evaluation design(s) most appropriate for their particular situation. This calls for: (i) identification of the specific outcomes expected from the health promoting school approach; (ii) specification of how these can be achieved; and, more importantly (iii) a selection of indicators, instruments and evaluation techniques with which these can be measured so as to link them directly to the intervention. Different techniques can be employed for different types of evaluation. Often, focus is on outcome evaluation with little information on the implementation of the health promoting interventions.

Process evaluation is thus an important component of a comprehensive approach to health promoting schools, partly because programmes are seldom delivered exactly as designed and planned. Clear accountability and descriptions of what was done, and why, not only provides evidence that the activities did take place, but also informs the evaluation outcomes. For example, one answer to the question ‘Why did the evaluation fail to show any positive intermediate outcomes?’ might be ‘Because it was not implemented properly’. Interventions may therefore fail, not because they are weak, but because the implementation was poor (Flisher et al., 2004). Mitchell et al., for example, mention that a process evaluation of the project showed schools’ support for the health promoting concept (Mitchell et al., 2000). Yet, in the outcome evaluation, the authors concluded that there were no changes in the structures to support the health promoting concept or health-related practices at school level, both of which were aims of the project. Without detailed process evaluation, we can only infer that perhaps the implementation did not occur as expected.

It is important that authors provide detailed information on the designs employed, as well as descriptions of the interventions and implementation. It is evident that the schools involved implemented many diverse activities. However, some of the evaluations fail to do justice to the interventions as results are presented for only a few selected activities. Some of the evaluators also tend to fall back on the traditional
knowledge, attitude and behaviour outcome measures characteristic of paradigms that focus on change at the individual level. These are important, because the long-term goal of any health promoting initiative, and the basis on which its effectiveness is judged, is successfully improving the health of the populations concerned. However, for health promoting schools, it is also important that we know the influence on other school domains (such as policy and organization) and the wider communities involved.

It is clear from the studies reviewed that there has been progress in terms of the sophistication of evaluation methods employed. Compared with earlier evaluations (Young, 1993; Sobczyk et al., 1995), latter outcome evaluations (McBride et al., 1996; Jamison et al., 1998; Moon et al., 1999) employed experimental methods, while the latest evaluation we found (Mitchell et al., 2000) employed a randomized controlled design.

Implications of findings
Evaluation methodology
This review brings to attention the need for further research on evaluation methodologies for health promoting schools. There are few studies that evaluate both the process and outcomes. Yet, process, intermediate, contextual and outcome data are necessary in order to establish the effectiveness of health promoting schools. Rather than try to evaluate all aspects of the intervention using a single methodology, researchers should employ triangulation of the most appropriate methods for answering the evaluation questions for each area of the intervention. This maximizes the strengths of each approach. Experimental designs for example may be most appropriate for measuring changes in school context, policy and practice, as well as knowledge, behaviour and attitudinal outcomes. Qualitative approaches on the other hand may be utilized in evaluating the implementation process as well as obtaining more in-depth information on the efficacy of the intervention.

Implementation of health promoting schools is a multi-level, multi-strategy undertaking, and the evaluation is equally complicated. In developing an evaluation framework for health promoting schools in South Africa and in other regions, quantitative and qualitative methodologies that comprehensively evaluate the process, intermediate and long-term outcomes should be employed. The challenge lies in achieving a balance between scientific rigour and considerations of practical possibilities and needs.

Involving the school and local communities
The question of who conducts the evaluation is important. The philosophy of health promotion emphasizes community participation as integral to the success of health promoting interventions. Promoting health is, however, not an apolitical concept, and schools and the communities in which they are located are not neutral settings either. In all the studies reviewed, implementation was dependent on teachers. This may be convenient because teachers are in daily contact with the pupils and familiar with the organization of the schools, but it cannot be assumed that teachers will readily embrace a concept that implies extra work. As evident in these evaluations, teachers are key to the development, implementation, evaluation and therefore success of the interventions. They have to understand and accept the health promoting school concept in order to integrate it into their curriculum. Support for teachers is important for this to occur. The significance of teachers in school health promotion is discussed in greater detail elsewhere (St Leger, 1998; Kinsman et al., 2001; Gyarmathy et al., 2002; Midford et al., 2002).

We suggest that the ideal approach includes a combination of an external research agency and individuals involved directly with the project. These might include students, parents, teachers and other school staff. This approach accommodates the needs and concerns of various stakeholders, and responds to local needs within an acceptable cultural framework. Involving these stakeholders in the evaluation increases the acceptance of research as integral to the effectiveness of the interventions, and increases the likelihood that evaluation recommendations will be implemented. It also encourages constant monitoring and provides a practical way to cross boundaries between theory and practice (Guba and Lincoln, 1989).

The reviewed evaluations all made efforts to include students and staff in planning and implementing the interventions. Although there is no indication of outright rejection or hostility towards the evaluations, questions around teachers’ commitment and continuity of the health promoting schools’ initiatives were raised.
(Jamison et al., 1998; Samdal, 1999; Turunen et al., 1999).

Duration of interventions and evaluation

It was unlikely that some of the evaluations would detect any long-term change in pupil health-related outcomes, given the short duration of both the interventions and the evaluations (Mitchell et al., 2000). Long-term implementation and evaluation are required if long-term impact is to be measured. Linking interventions to the mid- or long-term goals of the school and involving school communities in the planning, implementation and evaluation can be useful for this end, whilst simultaneously contributing to the capacity of schools and participants to promote health. This is because issues such as funding can be barriers to implementing and sustaining the interventions. Where external evaluators provide funding, there is the threat of project discontinuation once they leave. In all the evaluations reviewed, training and support material costs seem to have come from outside the school. From the information provided, it is difficult to say whether the extra funding impacted on the sustainability of the interventions. However, keeping intervention costs low can contribute to ensuring continuation of the interventions. Consideration should thus be made of the school resources available to sustain the activities.

Reviews and dissemination of findings

The paucity of evaluation research on health promoting schools is evident in that we found only nine studies. As shown in this review, the health promoting schools concept is still grappling to establish the most appropriate approach to evaluation. Reports of evaluations, continued reviews and dissemination of the findings are essential to informing the debate on developing comprehensive, multidisciplinary approaches to evaluating health promoting schools. This is also important for defining indicators of measurement and improving the health promoting school interventions.

The implementation phase of any health promoting school intervention is the longest and most involved, yet some of the studies provided little information in this regard. In addition to outcomes, authors of evaluation reports should also provide details and analysis of inputs, such as number of staff and other resources necessary for the implementation. This information is important in informing reviews such as this one, as findings can be assessed against the backdrop of the inputs that went into the intervention. At the school level, analysis of the inputs is not only useful in informing the development and quality of the intervention, but also for replication. Other schools facing similar social conditions might be interested in adapting the intervention or aspects thereof (Fisher et al., 2004). They would need to know whether they have the resources and capacity to do so and, if not, may very well refrain from implementing the intervention.

CONCLUSION

A systematic search was conducted to identify evaluations of health promoting schools interventions. Every effort was made to obtain evaluations through the use of various search strategies. Nine studies were reviewed. It is possible that we may have missed some evaluations. Of particular note is the over-representation of evaluations from the ENHPS. Given the small number of evaluations we found, it was impossible to employ stringent inclusion criteria based on methodological quality. Rather, we have attempted in this review to: (i) provide an impression of the methodologies being used to evaluate health promoting schools; (ii) identify gaps in evaluation approaches to health promoting schools; (iii) put forth some suggestions with regard to evaluating health promoting schools. In general, the review draws out issues that should be considered in developing appropriate frameworks for effectively evaluating health promoting schools. Overall, the studies suggest positive developments in the evaluation of health promoting schools.

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