Health promoting schools and health promotion in schools: two systematic reviews
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Authors’ objectives
There were two objectives.

1. To investigate the evidence that health promoting schools are effective in improving health-related outcomes.

2. To determine whether health promoting schools are more effective than other ways of delivering health promoting interventions and to determine the relative costs.

Searching
The following databases were searched: ERIC (1980 to 1997), PsycINFO (1980 to 1997), MEDLINE (1966 to 1997), CINAHL (1982 to 1997), ASSIA (1980 to 1997), Sociofile (1974 to 1997), EMBASE (1980 to 1997), and the British Education Index (1980 to 1997). No time or language restrictions were applied. The following databases were searched for ‘grey’ literature: SIGLE (1980 to 1997), DHSS Data (1980 to 1997), and Dissertation Abstracts (1980 to 1997). The MEDLINE strategy was adapted for use with other databases. Relevant web pages were scanned, including those of the European Network of Health Promoting Schools. Reference lists of retrieved papers were examined to identify further relevant studies. Requests for unpublished data were made to individuals and organisations in the field of health promotion. Bibliographies of identified reviews were scanned for relevant studies. Search terms were listed in an appendix to the main report.

Study selection
Study designs of evaluations included in the review
Controlled studies with a comparison group, or before-and-after studies with no comparison group, which provided information about the components and delivery of the intervention, and reporting all evaluated outcomes, were included.

Specific interventions included in the review
The criteria for inclusion were school-based interventions involving health promoting activity in each of three areas, in which there was evidence of active participation by the school:

1. The school ethos and/or environment.

2. The curriculum.

3. The family and/or community.

The interventions in the included studies focused on the following: health promoting school, healthy schools award scheme, Health Promotion Schools of Excellence programme, healthy eating as part of a whole school approach, cardiovascular health, multiple topics, mental health and safety (anti-bullying), skin cancer, dental hygiene, and sexual health/pregnancy preparation.

Participants included in the review
Children and young people aged from 5 to 16 years, including those attending special schools.

Outcomes assessed in the review
The criteria for inclusions were health related outcomes, including health-related behaviour. The actual outcomes assessed in the included studies were as follows:

1. For interventions in schools meeting criteria for health promoting schools, changes in the following were assessed:
self-esteem, health-related knowledge and/or attitudes, self-reported behaviour (eating habits, physical activity, leisure activities, smoking, drinking, drug use), physical fitness, and risk behaviour.

2. For studies using a health promoting schools approach, changes in the following were assessed: provision and quality of school lunches, staff training and involvement of students, aspects of health-related behaviour such as dietary intake (assessed by self-report, observed choices, plate waste, uptake of school meals, school lunch content analysis), cardiovascular risk factors (assessed by a variety of physiological measures), physical fitness, dental health (plaque, gingivitis, and caries assessed by clinical examinations), pregnancy rates, self-reports of self-esteem, experience of bullying and aggression, associated knowledge and attitudes, substance abuse, and exposure to the sun.

How were decisions on the relevance of primary studies made?
Titles and abstracts of identified studies were assessed independently by two reviewers. If either reviewer considered the paper relevant, it was obtained. Obtained papers were independently examined against the review inclusion criteria and any disagreements or queries were resolved by discussion, or if necessary, by recourse to a third reviewer.

Assessment of study quality
Studies were assessed with reference to school selection, study design, outcomes measured and tools used, and time between intervention and post-test(s). Study validity was assessed by one reviewer and checked by a second reviewer.

Data extraction
Data were extracted on the following: name of intervention, study objective, study design, outcomes measured and tools used, time between intervention and post-test(s), participant details, intervention details, setting, theory base, programme development, content, provider of activities, intensity and duration of intervention, resources, results, social/psychological effects, effects on the organisation, and costs. Data were extracted by one reviewer, using a pro-forma, and checked by a second reviewer.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative summary.

How were differences between studies investigated?
Each study was summarised and discussed separately.

Results of the review
Twelve studies were included overall. This included five RCTs, three matched non-randomised controlled trials, two before-and-after studies, one using schools assigned to matched triads and randomised to intervention or reference conditions, and one using matched schools. Four studies were evaluations of interventions in schools meeting criteria for health promoting schools and eight were studies using a health promoting schools approach. The exact number of schools included in the review was unclear but appeared to be around 200.

Descriptions of interventions and methodological quality varied greatly across the included studies. Most of the studies were underpowered; two out of the 12 studies were adequately powered RCTs. Although the interventions tested in the included studies clearly drew implicitly on a number of health promotion theories, the theory base was explicitly stated for only two interventions. None of the schools involved in the studies had implemented all the components of the health promoting schools approach. Overall, the evidence available to support the health promoting schools approach was limited but promising.

Substance use and misuse (3 studies):
Findings were not conclusive.

Sex and family life education (2 studies):
A sexual health and pregnancy preparation programme was effective in terms of reducing pregnancy rates among 14-18 year olds, but rates rose again after the intervention. Knowledge gains on human sexuality were found among grades 4-8 in another study.

Food and nutrition (5 studies):

Benefits were seen in terms of healthier food choices at school lunch-time and school snack-time as a result of a healthy eating policy. However, improvements were not observed outside of school. Results from three RCTs focusing on nutrition interventions showed some improvements in lipid profiles, healthier food intake, and knowledge gains. Findings were not uniform, however, across the trials.

Health-related exercise (3 studies):

Some favourable results were seen from programmes promoting health related exercise, but findings were not uniform across the three studies involved.

Safety (1 study):

Knowledge gains were reported in the area of safety and first aid among grades 4-8.

Psychological aspects of health (6 studies):

Three studies showed improvements in self esteem occurring as a result of simple changes such as involving students in planning, and there was also a decrease in bullying. Two out of three studies assessing aspects of psychological health relating to heart disease prevention goals showed improvements in attitudes and social reinforcement.

Personal hygiene (2 studies):

One study on personal hygiene reported knowledge and attitude gains in the areas of disease prevention and healthy body respectively among grades 4-8. A second study focusing on a dental hygiene promotion programme found no significant between-group differences.

Environmental aspects of health (2 studies):

One study reported gains in the area of healthy environment and knowledge gains in consumer health and community health, respectively, among grades 4-8. An evaluation of a sunshine and skin health programme found positive changes in knowledge and attitudes in the intervention school.

Effects on the school (3 studies):

One study reported that although many schools broadened their concepts of health promotion, only a minority of project schools developed general health promotion policy documents. Another study reported small, but non-statistically significant gains in smoke-free environment, health food choices, health workplace, stimulating clean healthy environment and equal opportunities for health. A study of anti-bullying activities acknowledged the importance of good communication between staff and the full involvement of all those concerned.

Cost information

Insufficient information was given to be able to comment on relative costs, but in a UK study of health promoting schools a small financial investment in schools was considered important for success.

Authors' conclusions

The health promoting schools initiative is a new, complex, developing initiative, and the optimum method of evaluation is currently under debate. There are indications that this approach is promising. The development of programmes to promote mental and social well-being would be likely to improve overall effectiveness and the impact of staff health
and well-being needs more consideration. The development of measures of mental and social well-being is important for future evaluation. Continued investment and ongoing evaluation are necessary to provide evidence about the effectiveness of this approach.

CRD commentary
Overall, this is a well-conducted and thorough review of the topic. Good details are provided of the selection criteria for primary studies and the search strategy is comprehensive and rigorous. Good details of each included study are provided in a structured text summary. Appropriate criteria for validity assessment are used, and results of the appraisal are presented with other details of the individual studies. The use of a narrative summary for data synthesis is appropriate, given the varied nature of the research in this area. The review process was rigorous, with two reviewers involved in study selection, validity assessment, and data extraction. Considering the conflicting nature of some findings, and the methodological and reporting problems encountered, the authors' conclusions are appropriate.

The same document also reports a systematic review of existing reviews of the effectiveness of health promoting interventions in schools in the following areas: nutrition, exercise, safety, psychological aspects of health, sexual health, substance use, personal hygiene, environmental issues, and family life education. Since reviews of reviews do not meet the criteria for inclusion in DARE, it has not been summarised in this abstract.

Implications of the review for practice and research
Practice: The authors state the following as implications for practice in the UK.

Evidence would support:

1. Continuing experimentation with the health promoting school initiative, taking into account the potential importance of the health and well-being of school staff and ensuring that experimentation is accompanied by evaluation.

2. Where schools are still providing meals and commercial considerations permit, improving the content of school meals and promoting healthy options.

3. Encouraging and supporting physical activity in schools, but not on a compulsory basis.

4. Experimenting with school-based clinics providing advice on contraception and safe sex, and coordinating with sex education in the classroom.

5. Experimenting with involving parents in school health promotion initiatives.

6. Experimenting with programmes which make use of peers.

7. Establishing school injury prevention programmes particularly those covering cycle helmets.

8. Encouraging debate and developing consensus on the mental and social goals of health promoting schools.

9. Developing methods to improve mental and social well-being within the context of the health promoting school initiative.

10. Investing small amounts of finance in schools which are interested in developing health promotion initiatives.

Research: The authors made the following recommendations.

Recommendations for commissioners of research:

1. Invest in primary UK-based studies of health promoting school initiatives giving priority to those which aim to promote the social and mental well-being of staff and pupils.

2. Commission the development of new outcome measures for school health promotion interventions (see Database of Abstracts of Reviews of Effects (DARE))

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recommendations for research below).

3. Commission a review of primary studies of school-based family life education programmes and a further review of school mental health promotion programmes.

4. Encourage and enable further debate on the value of including studies using observational and qualitative methodologies in reviews of effectiveness of health promotion interventions.

5. Commission a further review in this area in two years time, taking into account the outcome of the debate proposed in the fourth point in recommendations for research below.

Recommendations for researchers:

1. Ensure that process evaluation which describes the way in which programmes have been implemented is undertaken and reported in all studies of health promotion in schools.

2. Develop valid and reliable measures for evaluating the outcome of the health promoting school initiatives, particularly those measuring mental and social well-being for children and adults. Incorporate these in all studies of health promotion in schools.

3. Investigate the relationship between staff health and well-being and that of pupils taking account of research which has been conducted on staff morale and the social ethos of schools.

4. Research the impact of randomisation on participation in health promotion intervention studies and continue the debate on methods of evaluating school health promotion interventions. Investigate costs and benefits of very large trials of health promotion programmes.

5. Ensure that future reviews of school health promotion programmes include a systematic search and critical appraisal of studies and that they describe the development of interventions, and their content and implementation as well as the design and implementation of the studies.

Recommendations for journal editors and peer reviewers:

1. Ensure, in publications of studies of school health promotion interventions, that the following are reported: the theoretical basis or assumptions underpinning the interventions; the content of the interventions; and the process of delivery.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.