



REPORT

OCTOBER 2002

Barriers to, and Facilitators of, the Health of Young People

**A systematic review of evidence on young people's
views and on interventions in mental health,
physical activity and healthy eating**

Volume 2: Complete Report

The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) is part of the Social Science Research Unit, Institute of Education, University of London



This report should be cited as:

Shepherd J, Garcia J, Oliver S, Harden A, Rees R, Brunton G, Oakley A (2002) *Barriers to, and Facilitators of the Health of Young People: A systematic review of evidence on young people's views and on interventions in mental health, physical activity and healthy eating*. Volume 2: Complete Report. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

A searchable database including the studies in the reviews, alongside this report, is available on the EPPI-Centre website (<http://eppi.ioe.ac.uk>)

Acknowledgements

We would like to acknowledge the invaluable help of Amanda Nicholas, Salma Master, Elaine Hogan, Kat Allen and James Thomas at the EPPI-Centre throughout this series of reviews and of Chris Bonell, and Dina Kiwan in extracting data from some studies reviewed in depth.

The Department of Health, England, funds a specific programme of health promotion work at the EPPI-Centre.

ISBN: 0-9548415-5-7

TABLE OF CONTENTS

PREFACE	iv
EXECUTIVE SUMMARY	1
1. BACKGROUND	13
<i>Outline of Chapter</i>	13
1.1 Young people, health and health promotion	14
1.1.1 Why promote mental health?	14
1.1.2 Why promote physical activity and healthy eating?	16
1.2 Current policy framework for promoting the health and well-being of young people	18
1.2.1 'Joined-up' policy	19
1.2.2 Policy initiatives specific to mental health, physical activity and healthy eating	21
1.3 Approach taken in this series of reviews	25
1.3.1 Barriers and facilitators: a conceptual framework	25
1.3.2 Review methods: being systematic	26
1.3.3 Review methods: integrating different study types	27
1.3.4 Stages of the review	28
1.3.5 Defining a sub-set of studies for in-depth review	29
2. METHODS	32
<i>Outline of Chapter</i>	32
2.1 Mapping the topic	33
2.2 From mapping the literature to in-depth review: refining the scope	33
2.3 In-depth reviews: studies of young people's views	35
2.4 In-depth reviews: intervention studies	36
2.5 Synthesising results within the in-depth reviews	37
2.6 Methods for this report	38
3. THE EVIDENCE BASE	40
<i>Outline of Chapter</i>	40
3.1 An overview of the field - results of the mapping and quality screening exercises	42
3.1.1 Mapping and quality screening results – mental health review	42
3.1.2 Mapping and quality screening results – physical activity review	42
3.1.3 Mapping and quality screening results – healthy eating review	43
3.2 Young people's views - results of the in-depth reviews	44
3.2.1 Study findings	44
3.2.2 Study characteristics and methodological quality	51
3.2.3 Strengths and limitations in the research on young people's views	52
3.3 Effectiveness of interventions - results of the in-depth reviews	53
3.3.1 Interventions to promote mental health	53
3.3.2 Interventions to promote physical activity and healthy eating	57
3.3.3 Strengths and limitations in the intervention research	60
4. IMPLICATIONS FOR RESEARCH	63
<i>Outline of Chapter</i>	63
4.1 Matching barriers and facilitators to evaluated interventions: 'the school'	65
4.1.1 Choice and autonomy	66
4.1.2 School environment/ structure	66
4.1.3 Teacher-student relations	67
4.2 Matching barriers and facilitators to evaluated interventions: 'families and friends'	69

4.2.1 The role of friends	69
4.2.2 The role of family.....	72
4.3 Matching barriers and facilitators to evaluated interventions: 'the self'	75
4.3.1 Control, competence and achievement.....	76
4.3.2 Personal preferences	78
4.3.3 Appearance.....	78
4.3.4 Coping strategies	79
4.4 Matching barriers and facilitators to evaluated interventions: 'practical and material resources'	81
4.4.1 Economic issues	81
4.4.2 Access to resources and facilities	83
4.4.3 Safety.....	83
4.4.4 Time constraints and convenience.....	84
5. IMPLICATIONS FOR POLICY AND PRACTICE	86
<i>Outline of Chapter</i>	86
5.1 Matching barriers and facilitators to policy and practice: 'the school'	88
5.1.1 Teacher-student relations	89
5.1.2 School facilities	90
5.1.3. Choice	91
5.1.4 Achieving and succeeding	92
5.2 Matching barriers and facilitators to policy and practice: 'friends and family' ..	93
5.2.1 The role of friends	94
5.2.2 The role of family.....	95
5.3 Matching barriers and facilitators to policy and practice: 'the self'	97
5.3.1 Confidence, motivation and achievements	98
5.3.2 Worries and fears.....	99
5.3.3 Coping strategies	100
5.3.4 Knowledge	100
5.4 Matching barriers and facilitators to policy and practice: 'practical and material resources'.....	101
5.4.1 Economic issues	102
5.4.2 Access to resources and facilities	103
5.4.3 Safety	104
6. CONCLUSIONS AND RECOMMENDATIONS	106
<i>Outline of Chapter</i>	106
6.1 Recommendations for health promotion with young people	108
6.1.1 Cross-cutting recommendations	109
6.1.2 Recommendations specific to the promotion of mental health.....	109
6.1.3 Recommendations specific to the promotion of physical activity and healthy eating	110
6.2 Recommendations for the future development and evaluation of interventions to promote health with young people	111
6.2.1 Interventions related to the school	111
6.2.2 Interventions involving family and friends	112
6.2.3 Interventions involving the self.....	113
6.2.4 Interventions involving practical and material resources.....	113
6.3 Recommendations for involving young people in the development of interventions.....	114
6.4 Recommendations for conducting and reporting research	115
6.4.1 Outcome evaluation research	115
6.4.2 Research on young people's views.....	116
REFERENCES.....	117

PREFACE

Who needs to read this report?

This report synthesises the results of three systematic reviews on the barriers to, and facilitators of, mental health, physical activity and healthy eating amongst young people, with a view to making recommendations about how their health can be promoted. There are many useful messages for policy-makers, commissioners, practitioners, young people and their parents, and researchers who are involved in health promotion for young people. In particular, the key messages of this review can help:

- **policy-makers**, by highlighting where current policy relevant to promoting young people's health is supported by research evidence and where there are contradictions or gaps;
- **health authorities and other services** involved in implementing the National Service Frameworks for mental health and cardiovascular disease, to examine the evidence-base for action within this population group;
- **health and education partnerships** involved in the National Healthy Schools Standard to advise schools on which school-based interventions can be effective (and which interventions are ineffective or harmful and which do not yet have evidence of effectiveness); and
- **services**, to gain an insight into what young people think should be done to promote their health and thus support the NHS's commitment to involving the public in the development and delivery of services.

Since part of the reviewing process involved assessing the amount and quality of the evidence available to services to help them promote health, this review also:

- outlines a future research agenda for promoting young people's health; and
- makes recommendations for how this research may best be conducted.

The topics of mental health, physical activity and healthy eating were chosen as they represent key areas to be addressed in the government's strategy for health. Mental health in particular is a very broad term which encompasses a huge variety of states of being. To divide each topic into manageable and relevant sections, the reviews were conducted in two stages. The first stage was a mapping and quality screening exercise, which was followed by a second stage of in-depth review of quality and findings. The specific topic areas prioritised for in-depth assessment in the mental health review, for example, included the prevention of suicide, self-harm and depression and the promotion of positive self-esteem, and coping.

Although there are links between topics (e.g. participating in physical activity can generate positive benefits for mental health), the three reviews were conducted separately with their own inclusion and exclusion criteria. For example, we did not aim specifically to locate studies that encouraged eating certain (healthy) foods as a way of feeling better emotionally. However, some of the links between healthy

eating, physical activity and mental health did emerge in the process of identifying cross-cutting themes and are therefore discussed in this report.

The three reviews are form 'discrete' products and should be consulted individually by readers requiring specific information on the studies reviewed or detailed recommendations for policy, practice and research.

How to read this report

This report, in two volumes, summarises three systematic reviews, each using explicit rigorous methods to synthesise the evidence across the three topic areas. Therefore, it is necessarily lengthy. Complexity and length have also been increased because each review synthesises evidence from 'qualitative' research together with experimental evaluations of interventions, something that traditional systematic reviews usually do not do. Some readers will be interested in the whole report to get an overall picture of, not only the findings of the reviews, but about how we came to those findings. Others will want to be directed to the parts most relevant to their needs. Because of these differing needs, information has been repeated in some sections. The following guide will help readers make these decisions.

All readers are advised to read **Volume 1: Overview**. This gives an overall picture of the findings of the reviews and ends with explicit recommendations for:

- the types of interventions which have been demonstrated (through high quality evaluations) to have positive effects for promoting health amongst young people (and the types which have NOT been shown to be effective);
- involving and listening to the views of young people;
- the development of future interventions (i.e. those interventions which look promising but which need to be developed and tested further; gaps in the kinds of interventions which have been evaluated); and
- how best to evaluate interventions.

Taken together, these recommendations emphasise the need for different readers to work in partnership with each other to build on the current evidence-base.

The individual chapters of **Volume 2: Complete Report** flesh out the above sections in more detail and are fully referenced. **Readers who want:**

- **information on effective interventions and how to implement them** (e.g. practitioners, service commissioners, policy specialists) may be most interested in **chapter 3** (particularly section 3.3) which provides details of the types of interventions shown to be effective by high quality evaluations and **chapter 4** which illustrates whether/how these interventions match young people's views on the barriers to, and facilitators of, their health.
- **details of the views of young people on their health and how it might be promoted** (e.g. practitioners, service commissioners, policy specialists, researchers) may be most interested in reading **chapter 3** (especially section 3.2) which describes the findings of studies which elicit young people's views,

and **chapter 4** which compares young people's views to the interventions that have been evaluated.

- **guidance on the kinds of interventions they should be developing and testing further and why** in partnership with a range of stakeholders (e.g. practitioners, service commissioners, policy specialists, researchers, research commissioners) may be most interested in reading **chapters 4 and 5**.
- **a discussion of how the findings of the review relate to current policy and practice** may be interested in reading **chapter 4**.
- **recommendations on how best to involve young people in the development of interventions** may be most interested in reading section 6.3 of **chapter 6**.
- **recommendations on how to best to evaluate the effectiveness of interventions, and how to seek the views of young people** may be most interested in section 6.4 of **chapter 6**.
- **details about the methods used in the systematic reviews** should read **chapter 2**.

EXECUTIVE SUMMARY

This is a composite report which brings together the main findings and issues from a series of three systematic reviews from the health promotion stream of work at the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre)¹ at the Social Science Research Unit, Institute of Education, University of London. The series on the barriers to, and facilitators of, the health of young people aged 11 to 16 years comprises reviews in the area of the promotion of mental health (Harden *et al.*, 2001); physical activity (Rees *et al.*, 2001) and healthy eating (Shepherd *et al.*, 2001). The work has been commissioned by the Department of Health (England) because of the high priority given to the current and future health of young people.

BACKGROUND

The main goal of health promotion is to prevent ill-health and to enhance positive health, through encouraging people to adopt healthier lifestyles, and devising strategies to enable them to increase the control they have to influence their own health. Young people are often a target group for health promotion because they are considered to be susceptible or vulnerable to ill-health (e.g. DoH, 1991; Gillies and McVey, 1996).

Many young people have sophisticated understandings of health, their behaviour and the wider socio-economic environment in which they live. To assume they all need to be targeted as passive recipients of a professionally-driven health promotion agenda is to deny their role as active agents in their own lives. The agenda should be more aligned with understanding their needs and motivating them to adopt and maintain healthy lifestyles at a time of their lives when they are facing any number of new experiences and situations.

Whilst young people need support during this time of intense change, there are particular reasons why it is important to address specific health issues. Mental health is one such priority area as it underpins many other aspects of health.

Mental health problems are a considerable cause of morbidity and mortality amongst young people. Mental health can also be seen as a 'resource' for reaching one's full potential. Promoting mental health may have the potential to not only help prevent mental illness but to deliver a wide range of health and social benefits. Prevalence of mental health problems among young people is high, with suicide a significant cause of mortality. There is a clear rationale for promoting mental health at a time when young people are experiencing profound changes.

Physical activity and healthy eating are influenced by, and in turn have influence on, mental as well as physical health. Evidence suggests increasing levels of inactivity and failure to follow healthy diets in young people. It is imperative to develop effective interventions to promote healthy eating and physical activity to tackle increases in conditions such as obesity. Initiatives need to address the many

¹ The EPPI-Centre was previously known as the Centre for the Evaluation of Health Promotion and Social Interventions (EPI-Centre)

influences on diet and exercise including age, gender, family, culture and socio-economic circumstances.

There have been calls for a more co-ordinated approach to health promotion with young people, particularly to address health inequalities. Cross government initiatives are in place, which emphasise joint working between agencies. Key policy strategies include Our Healthier Nation, the NHS Plan, and the National Service Frameworks for Mental Health and Coronary Heart Disease. Key initiatives include the National Healthy Schools Programme and the Health, Education, and Sports Action Zones.

AIMS

The overall series of reviews was guided by the following overarching research questions:

- What is known about the factors that promote or hinder young people's healthy behaviour across a number of health topics and settings?
- How well do these factors explain the health behaviour or behaviour change of young people?
- Which factors best explain young people's attitude to risk-taking and the relationship between these and health behaviour or behaviour change?
- How can we use the conclusions of this research to improve the efficacy of health promotion interventions for young people?
- What gaps in the research evidence exist, and how might these best be filled?

This series of reviews builds on previous work on systematic reviews of the effectiveness of health promotion (Oakley *et al.*, 1996; Peersman *et al.*, 1996, 1998, see also France-Dawson *et al.*, 1994; Oakley *et al.*, 1994a; Oakley and Fullerton 1994; Oakley *et al.*, 1994b; Oakley and Fullerton, 1995; Oakley *et al.*, 1995a; Oakley *et al.*, 1995b; Oakley *et al.*, 1995c). The series includes a wider range of study types than are normally included in systematic reviews of health promotion effectiveness. One of the central objectives of the reviews is to take further methodological work on identifying criteria for assessing the reliability of evidence from non-intervention research. The work builds on a previous descriptive mapping of health promotion research and young people (Peersman, 1996), and on previous attempts to include non-intervention research in systematic reviews (Harden *et al.*, 1999a; Oakley, 2000).

The aims of the three reviews summarised in this report were:

- To undertake a *systematic mapping* of research undertaken on the barriers to, and facilitators of, good mental health, physical activity and healthy eating amongst young people, especially those from socially excluded groups.
- To select a sub-set of studies to review *in-depth*.

- To *synthesise* what is known from these studies about mental health, physical activity and healthy eating barriers and facilitators amongst young people.
- To identify gaps in existing research evidence.

METHODS

This series of systematic reviews has a number of distinctive features that make it different from ordinary (non-systematic) reviews of the literature, and also from traditional systematic reviews of effectiveness. Research findings about the barriers to, and facilitators of, healthy lifestyles amongst young people can help in the development of potentially effective intervention strategies. Interventions can aim to modify or remove barriers and use or build upon existing facilitators. Barriers and facilitators in this series of reviews were categorised according to whether they reside at the individual, community or society levels. In evaluating barriers and facilitators to healthy lifestyles amongst young people, a range of research designs could be used. The reviews include a wide range of research types including both intervention research and 'non-intervention' research that describes factors influencing young people's health without introducing and evaluating an intervention. It was anticipated that by integrating findings about barriers and facilitators across different study types, guidance could be provided around effective interventions for current policy and practice. Recommendations for future development and evaluation would then follow on from this.

All three reviews were carried out in two stages: a descriptive mapping and quality screening exercise of all studies meeting the scope of the review, and an in-depth review of a sub-set of these studies. The in-depth review topics were set after consultation with policy specialists and representatives from health promotion practitioner and researcher communities. Consultations suggested a focus on interventions that make changes at the community or society level to support young people in healthy lifestyles, as well as seeking young people's views related to their mental health, physical activity and healthy eating.

This report summarises the key findings of the three reviews with a view to **identifying overarching themes**. It seeks to identify common trends in the effectiveness of interventions and the views of young people in order to establish some of the key barriers to, and facilitators of, the health of young people, and any core approaches which have successfully addressed them. As a document that pulls together key findings from three reviews, it is inevitably more experimental in places than the three reviews upon which it draws. However, the creation of a composite report on mental health, healthy eating and physical activity promotion may facilitate the development and implementation of interventions which benefit young people in many aspects of their lives, thus reducing the need for numerous, separate, fragmented strategies which may present inconsistent messages to young people, and may potentially be ineffective or even harmful.

RESULTS

The synthesis, which integrated young people's views and evaluated health promotion interventions across the areas of mental health, physical activity and healthy eating was discovered to be framed around four themes: the school; family and friends; the self; and material and physical resources.

The **school** provided both barriers and facilitators. Some of these barriers and facilitators have been addressed by soundly evaluated interventions, but gaps remain. The main issues were:

- Having a good selection of healthy options in the canteen. Two sound outcome evaluations found that interventions to increase availability of healthy foods throughout the school could be effective at increasing consumption.
- Having the opportunity to take part in more contemporary activities during physical education (PE) classes. Interventions which introduce new forms of exercise have been implemented but require more rigorous evaluation.
- Lack of adequate bicycle storage facilities. No evaluated initiatives were identified. However, 'whole school' approaches to health promotion may at least raise awareness of the status of facilities, which may prompt positive action to be taken.
- Inadequate changing and showering facilities; and uncomfortable gym kits. No evaluations of interventions to improve facilities were found.
- Teachers not always considered approachable for discussing health issues or obtaining information. Some teachers were perceived to have insensitive attitudes, particularly during PE. A systematic review which included some studies to promote better relationships between teachers and students found they could be effective, although to a limited degree.

Family and friends were likewise identified as both barriers to, and facilitators of, health. Some of the barriers and facilitators in this area have been taken into account by good quality evaluations of interventions, but these interventions have not always been effective, and some issues have yet to be adequately covered at all. The main issues were:

- Young people value confidentiality and often turn to their friends for emotional support. They also value the social aspects of leisure pursuits and physical activity. Two soundly evaluated interventions employed young people acting as peer educators to promote healthy eating and physical activity. There was less evidence favouring peer education/support in the area of mental health.
- Dysfunctional peer relationships, including exclusion, victimisation, and bullying impacted negatively on mental health. Evidence from previous systematic reviews shows that social skills training interventions can be effective. A reduction in bullying was one of several outcomes of a multi-component intervention included in one of these reviews.

- Parents sometimes discouraged participation in physical activity, and imposed constraints on freedom during leisure time on grounds of safety, culture, and gender. None of the soundly evaluated interventions addressed the root causes of parental concerns.
- Parents seemed to be supportive of healthy eating, particularly in the home, at least from the perspective of young people. Soundly evaluated interventions have been effective at encouraging healthy eating at home. Whilst some of the soundly evaluated interventions based in schools involved parents as much as possible, securing their participation was sometimes problematic.
- Young people cited parents and family as sources of emotional support. However, the evidence for the effectiveness of interventions to promote better family relations is mixed.

In relation to the theme of the **self** the issues raised by young people were complex, and only some have been dealt with in research:

- Young people expressed a raft of concerns, including worries about the future, security, their appearance, confidence and self-esteem. There has been some attention to improving self-esteem with two soundly evaluated interventions effective for outcomes such as knowledge and awareness. No interventions were found which attempted to build confidence specifically to take part in physical activity.
- Young people were motivated to take part in physical activity because of the sense of achievement it engenders, particularly when doing well in sports. Likewise getting good marks at school gave them a sense of pride. Willpower was seen as something that might help them to follow a healthy diet. In contrast, some young people spoke about their apathy in relation to leading healthy lifestyles, and others felt pressured to compete and achieve, leading to stress. Initiatives to motivate young people to achieve personal goals are generally lacking. However, interventions included in previous systematic reviews have attempted to modify classroom curricula, student ability and increase a sense of personal competence.
- Young people, particularly young women, were concerned about their appearance and body image, which had implications for their diet and engagement in physical activity. Dieting may be considered both a barrier and a facilitator, and studies addressing eating disorders were identified, but not reviewed in-depth. Sensible approaches to dieting were a feature of one soundly evaluated effective programme. Interventions to promote self-esteem, as mentioned above, may also have the potential to allay concerns over appearance.
- A range of strategies to deal with stress are employed by young people including listening to music, socialising, taking part in sport and exercise, as well as getting enough rest, or crying to release tension. Negative strategies included self-harm and drugs. There was at least one soundly evaluated intervention that encouraged young people to use positive methods of coping, although this was generally not effective. Initiatives to tackle self-harm and

drug taking have also been evaluated, although for the former effectiveness is limited.

- Many of the barriers to, and facilitators of, health were underpinned by the practical and material resources available to young people. Disappointingly, few initiatives which tackle structural issues have been evaluated.
- Young people, particularly older teenagers, were worried about financial security and employment prospects. Money and financial security were a source of emotional well-being.
- Participation in physical activity was sometimes prohibited by the cost of transport to amenities. Moreover, 'fast foods' were relatively cheap and easy to access. No evaluated initiatives were identified which addressed these issues.
- A lack of opportunities to participate in leisure activities was a cause of frustration, particularly for young men. Interventions to increase free opportunities to participate in leisure activities need further and more rigorous evaluation.
- In the area of nutrition, healthy food was not always easy to access (e.g. in school), whereas outlets providing fast foods were plentiful. Well designed evaluations have illustrated the effectiveness of increasing availability of healthy foods in schools and youth club settings.
- Poor transport infrastructure (e.g. lack of cycle paths) and socio-cultural tensions (e.g. racial prejudice, violence) were two of the root causes of concerns about safety. These impinge upon young people's freedom and opportunities for leisure. No evaluated initiatives were found which tackled these problems.
- Constraints on young people's time were identified which may have negative consequences for their health (e.g. large amounts of home work or responsibilities for domestic chores diverting time away from active pursuits). No evaluated initiatives were identified which aimed to achieve a more balanced curriculum, or culturally sensitive approaches to reducing young people's domestic responsibilities.
- Young people, when given the responsibility to prepare their own food, often relied on convenience foods, valuing their spare time for socialising and leisure pursuits. One soundly evaluated intervention encouraged young people to prepare healthy foods at home, but it is not clear how convenience can be achieved without a negative impact on nutrition.

CONCLUSIONS

Recommendations for policy and practice and future research are organised below into: recommendations for health promotion with young people, recommendations for future development and evaluation; recommendations for ways of involving young people in the development of interventions; and recommendations for conducting and reporting research. Readers are advised to refer to chapter 6 for detail supporting each recommendation.

Recommendations for health promotion with young people

This set of recommendations is based on the findings from the three reviews about interventions which have been demonstrated to have *positive*, *harmful* or *no effects* by well-designed outcome evaluations.

Cross-cutting recommendations

- There is a need to develop and evaluate separate interventions for young men and young women, given the differences in effectiveness between genders in some of the interventions included in the reviews.
- Multi-component interventions are recommended wherever possible to promote young people's health. Such interventions were associated with benefits and appear to be an effective way to reinforce the health promotion message in the many different settings in which young people live.

Recommendations specific to the promotion of mental health

- Given that evidence for effectiveness was conflicting, a critical perspective should be adopted when intervening, and questions such as 'Is this the right intervention? In the right population? In the right setting?' should be posed.
- There is currently insufficient evidence to recommend school-based suicide prevention. Effects are limited and there is some evidence to suggest harm. It may be more appropriate to frame interventions in terms of helping young people cope with stress and anxiety rather than focusing explicitly on suicide. The potential for doing harm as well as benefit should always be taken into account.
- Future efforts to prevent mental illness or promote mental health should not rely on the presentation of information alone but should include skill development using behavioural techniques, and should be reinforced by support at different levels (e.g. classroom, school, home, community, society).

Recommendations specific to the promotion of physical activity and healthy eating

- Based on a UK based evaluation study, a 'whole school' approach (i.e. one involving all members of the school community in developing and implementing

health-promoting changes in school organisation and structure) may be effective for increasing physical activity and healthy eating, primarily for young women aged 15 to 16 years.

- Multi-component school-based initiatives, as evaluated in one study, which promote healthy eating and physical activity involving classroom activities, parental involvement and risk factor assessment may be effective in some populations of young people.
- Increasing the availability of healthy foods in the school alongside classroom activities and media campaigns may be an effective way of promoting healthy eating.
- Peer-led interventions which involve young people educating each other and lobbying for health-supporting environmental changes in the school may be beneficial, particularly for young women and mostly in terms of promoting healthy eating.
- Interventions which employ teachers to deliver interventions should allocate sufficient time for training, as this may be crucial to effectiveness.

Recommendations for the future development and evaluation of interventions to promote health with young people

Interventions related to the school

- Research is needed to ascertain how interventions to promote better teacher-student relationships can be more effective.
- Interventions to improve the school environment (e.g. better PE facilities) need to be complemented by evaluation of approaches to PE which help young people to feel comfortable about participating.
- Specific programmes to promote health within a whole school approach require evaluating (e.g. fruit only tuck shops).
- More research is needed into the effects of incorporating young people's views into the planning of health-promoting initiatives.
- There is a need systematically to review the evidence on the effects of interventions which encourage young people to achieve and succeed in school.
- There is also a need for methodological research to establish effective ways of evaluating interventions in school settings.

Interventions involving family and friends

- Interventions which combine socialising with physical activity need to be developed and evaluated as there appears to be a gap in the evidence base for this kind of initiative.

- There is a need to collate the evidence for the effectiveness of interventions which utilise peer counselling techniques.
- Interventions to promote better relationships within the family need further, more rigorous, outcome and process evaluation.
- Methodological research is required to establish how to maximise the involvement of parents in health promotion interventions.

Interventions involving the self

- Further, more rigorous, evaluation is required of interventions to address dieting within the context of promoting healthy eating (e.g. how to identify nutritious low fat meals; how to critique diets; 'sensible' approaches to weight loss).
- Interventions which build on coping strategies that young people use to deal with stress, depression and anxiety need to be developed and evaluated.
- Future interventions need to make sure that their content and presentation is relevant to young people's own perspectives, and the context of their everyday lives, particularly in the area of mental health.

Interventions involving practical and material resources

- Multi-agency collaborations to promote mental health (e.g. Health Action Zone partnerships) should be evaluated for their potential to prevent self-harm and suicide.
- Interventions to help young people gain employment should be assessed in terms of their ability to allay their fears and worries about their security and future.
- More rigorous evaluation is needed of interventions which make leisure and sports facilities and healthy foods more affordable to young people.
- Current programmes to make leisure and sports facilities and healthy foods more accessible to young people should be evaluated.
- Strategies to encourage greater uptake of free school meals should be tested.
- The evidence for the effectiveness of interventions to promote safer environments (*e.g in terms of violence, crime, road safety*) should be collated.

Recommendations for involving young people in the development of interventions

- Young people's views should be the starting point or any future developments of efforts to promote health.

- Young people should always be consulted on matters concerning the promotion of their health.
- Young people should be involved as equal stakeholders in future agenda-setting for health promotion.
- The views of socially excluded groups such as those from households on low incomes, from minority ethnic groups, those excluded from school and those with disabilities need to be sought.

Recommendations for conducting and reporting research

Outcome evaluation research

- When possible, outcome evaluations should be conducted using the design of a randomised controlled trial and with individuals, families, schools, geographical areas or local authorities as units of allocation.
- Outcome evaluations should assess the impact of interventions in the long term, following up young people as they enter adulthood.
- Outcome evaluations should always attempt to conduct integral process evaluations.
- Key aspects of the methodology and results of outcome evaluations need to be reported in a detailed and consistent manner to promote confidence in their rigour.

Research on young people's views

- Studies examining young people's views need to engage young people in a dialogue that is meaningful to them, avoiding inappropriate language.
- Studies examining young people's views need to seek informed consent and assure confidentiality/anonymity of responses.
- The reporting of studies of young people's views and process evaluations also need to be more complete, as basic data are often missing.

AIMS

This is a composite report which brings together the main findings and issues from a series of three systematic reviews from the health promotion stream of work at the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre)² at the Social Science Research Unit, Institute of Education, University of London. The series, on the barriers to and facilitators of the health of young people, comprises reviews in the area of the promotion of mental health (Harden *et al.*, 2001); physical activity (Rees *et al.*, 2001) and healthy eating (Shepherd *et al.*, 2001).

The overall series of reviews is guided by the following overarching research questions:

- What is known about the factors which promote or hinder young people's healthy behaviour across a number of health topics/settings?
- How well do these factors explain the health behaviour/change of young people?
- Which factors best explain young people's attitude to risk-taking and the relationship between these and health behaviour/change?
- How can we use the conclusions of this research to improve the efficacy of health promotion interventions for young people?
- What gaps in the research evidence exist, and how might these best be filled?

This series of reviews builds on previous work on systematic reviews of the effectiveness of health promotion (Oakley *et al.*, 1996; Peersman *et al.*, 1996, 1998, see also France-Dawson *et al.*, 1994; Oakley *et al.*, 1994a; Oakley and Fullerton 1994; Oakley *et al.*, 1994b; Oakley and Fullerton, 1995; Oakley *et al.*, 1995a; Oakley *et al.*, 1995b; Oakley *et al.*, 1995c). The series includes a wider range of study types than are normally included in systematic reviews of health promotion effectiveness. One of the central objectives of the reviews is to take forward methodological work on identifying criteria for assessing the reliability of evidence from non-intervention research. The work builds on a previous descriptive mapping of health promotion research and young people (Peersman, 1996), and on previous attempts to include non-intervention research in systematic reviews (Harden *et al.*, 1999a; Oakley, 2000).

The aims of the three reviews summarised in this report were:

- To undertake a *systematic mapping* of research undertaken on the barriers to, and facilitators of, good mental health, physical activity and healthy eating amongst young people, especially those from socially excluded groups.
- To select a sub-set of studies to review *in-depth*.

¹ The EPPI-Centre was previously known as the Centre for the Evaluation of Health Promotion and Social Interventions (EPI-Centre)

- To *synthesise* what is known from these studies about mental health, physical activity and healthy eating barriers and facilitators amongst young people.
- To identify gaps in existing research evidence.

This report summarises the key findings of the three reviews with a view to identifying overarching themes. It seeks to identify common trends in the effectiveness of interventions and the views of young people in order to establish some of the key barriers to, and facilitators of, the health of young people, and any core approaches which have successfully addressed them. This may facilitate the development and implementation of interventions which benefit young people in many aspects of their lives, thus reducing the need for numerous, separate, fragmented strategies which may present inconsistent messages to young people, and may potentially be ineffective or even harmful.

1. BACKGROUND

Outline of Chapter

This chapter sets out the context for this series of reviews by outlining a rationale for promoting young people's health in general and in relation to mental health, physical activity and healthy eating. Current UK policy initiatives relevant to health inequalities and the three topic areas are also reviewed. In addition, the chapter lays out the scope and the approach taken in this series of reviews. In particular a description of the conceptual framework for classifying and identifying the barriers to, and facilitators of, health is provided; a rationale for conducting the reviews in two stages (mapping exercise followed by an in-depth review) is outlined; and the approach taken to integrate intervention research with non-intervention research is discussed.

*This chapter will therefore be of interest to **all readers** of this report.*

Key Messages:

- *Mental health problems are a considerable cause of morbidity and mortality amongst young people. Mental health can also be seen as a 'resource' for reaching one's full potential. Promoting mental health may have the potential not only to help prevent mental illness but to deliver a wide range of health and social benefits.*
- *Prevalence of mental health problems among young people is high, with suicide being a significant cause of mortality. There is a clear rationale for promoting mental health at a time when young people are experiencing profound changes.*
- *Physical activity and healthy eating are influenced by, and in turn have influence on, mental health. Evidence suggests increasing levels of inactivity and failure to follow healthy diets. It is imperative to develop effective interventions to promote healthy eating and physical activity to tackle increases in conditions such as obesity. Initiatives need to address the many influences on diet and exercise including age, gender, family, culture and socio-economic circumstances.*
- *There have been calls for a more co-ordinated approach to health promotion with young people, particularly to address health inequalities. Cross-government initiatives are in place which emphasise joint working between agencies. Key policy strategies include Our Healthier Nation, the NHS Plan, and the National Service Frameworks for Mental Health and Coronary Heart Disease. Key initiatives include the National Healthy Schools Programme and the Health, Education, and Sports Action Zones.*

1.1 Young people, health and health promotion

The main goal of health promotion is to prevent ill-health and to enhance positive health, through encouraging people to adopt healthier lifestyles, and devising strategies to enable them to increase the control they have to influence their own health. Young people are often a target group for health promotion because they are considered to be vulnerable to ill-health (e.g. DoH, 1991; Gillies and McVey, 1996). A variety of risk behaviours increasingly occur in the teenage years (Brannen *et al.*, 1994), including sexual risk-taking, experimentation with alcohol, tobacco and drugs, increased likelihood of accidental injury, physical inactivity, and adoption of unhealthy eating habits. Young people are also considered to be vulnerable at a time of their life when health-related habits become routine, potentially being carried into adulthood. Young people may believe that they are not susceptible to the kind of health problems that adults deal with as they get older. In addition, young people are facing potentially health-damaging social and economic conditions such as unemployment and low paid jobs, as they make the transition to adulthood (West and Sweeting, 1996).

Focusing on young people as a 'special group' for health promotion need not necessarily endorse the view that they are pathologically susceptible to taking risks and thus are in need of being 'treated'. In the field of HIV prevention, for example, Davies *et al.* (1992) critique a number of studies which claim, erroneously in their opinion, that younger gay and bisexual men constantly put themselves at risk of HIV infection due to a sense of invulnerability, inclination for risk-taking and experimentation. Many young people have sophisticated understandings of health, their behaviour and the wider socio-economic environment in which they live. To assume they all need to be targeted as passive recipients of a professionally driven health promotion agenda is to deny their role as active agents in their own lives. The agenda should be more aligned with understanding their needs and motivating them to adopt and maintain healthy lifestyles at a time of their lives when they are facing any number of new experiences and situations.

Whilst young people need support during this time of intense change there are particular reasons why it is important to address specific health issues. Mental health is one such priority area as it underpins many other aspects of health.

1.1.1 Why promote mental health?

The fact that young people engage in so many new experiences during their teenage years (e.g. forming relationships, beginning their sexual careers, becoming more independent, mobile and autonomous) has profound effects on their health in general, but particularly on the way they feel, and their mental health. Mental health is increasingly being recognised as fundamental to concepts of health, and there is a general shift away from viewing 'mental health' as 'mental illness' to thinking about mental health as also encapsulating the notion of 'positive mental health' or 'mental well-being' (e.g. Trent and Herron, 1999). Good mental health does not only involve the absence of mental illness but can be seen as a resource for reaching one's full potential.

Although precise rates of mental-ill health are difficult to calculate, it has been estimated that the overall prevalence of diagnosable mental health problems can be up to 25% at any one time amongst children and young people (Health Advisory Service, 1995; Mental Health Foundation, 1999). Some of the problems faced by young people include concerns about appearance, difficulty in forming friendships, loneliness and isolation, low self-esteem, victimisation, and bullying. Such problems may manifest themselves in the form of eating disorders, social withdrawal, self-harm and suicide. Rates of suicide, in particular, have been identified as a major cause of mortality in this age group. Suicide rates in young men have shown an overall upward trend since the early 1970s and deliberate self-harm is increasing amongst young women (Kerfoot, 2000). In 1997, there were 493 suicides in the UK amongst 15 to 24 year olds - 411 young men and 82 young women (WHO, 1999a).

The effects of mental health problems cannot be overstated: they create enormous distress and suffering for the young people and those who share their lives; they place increased demands on health, social, education and juvenile justice systems; and they increase the risk of continuing or additional mental health difficulties in adult life. The potential benefits of preventing mental health problems are therefore huge.

Whilst promoting young people's mental health and preventing mental illness are important goals in their own right, they may also be a key strategy in the prevention of other health problems. There is increasing evidence to support a role for poor mental health in the aetiology and prognosis of physical illness. Studies have shown that emotional distress can lead to increased susceptibility to physical illnesses such as viral infections and cardiovascular disease and that social and emotional support can protect against premature death through preventing illness or aiding recovery (Stewart-Brown, 1998). For example, in a systematic review of prospective cohort studies, Hemingway and Marmot (1999) found evidence to support aetiological roles for social support, depression and anxiety, and work characteristics (e.g. low control over work) and prognostic roles for social support and depression in coronary heart disease. In addition, psychosocial factors have been proposed as playing a mediating role in the relation between mortality and income inequalities (e.g. Kawachi *et al.*, 1997; Marmot *et al.*, 1997; Marmot and Wilkinson, 2001). Although the majority of these studies have been conducted with adult samples, it seems plausible that preventing mental health problems before they occur and promoting emotional and social support, as well as tackling structural determinants of health, may also help to prevent physical illness and have far reaching benefits in all aspects of young people's lives.

Although clustering of health risks may not represent an enduring unhealthy lifestyle (Aggleton *et al.*, 1996), factors which lead young people to take multiple health risks are likely to be intertwined with general risk factors for mental health problems (e.g. unemployment) and/or barriers to positive mental health and well-being (e.g. lack of opportunity, social networks). In a mapping of health promotion research for young people in a number of different areas, Peersman (1996) concluded that different risk and health behaviours are significantly interlinked and that these tend to cluster amongst vulnerable young people at highest risk of adverse outcomes. These findings highlight the need to look in particular at these groups of young people.

A related issue is whether mental health underlies risk-taking in other health areas. For example, poor self-esteem and depression have been linked to alcoholism, drug abuse, and eating disorders, and may be one influence on unsafe sexual behaviour.

Thus, effective mental health interventions may well enhance health-related behaviours in other areas. For example, feeling confident and happy might motivate young people to take part in physical activity. This in turn is likely to have beneficial effects on their mental health (Salmon, 2001). Feeling good about oneself may be a likely factor in the decision to eat healthily, which in turn will lead to a positive feeling of wellness. Physical activity and healthy eating are therefore two health behaviours which have a reciprocal relationship with mental health.

1.1.2 Why promote physical activity and healthy eating?

Healthy eating and physical activity contribute to an overall sense of well-being, and are cornerstones in the prevention of a number of health conditions, including heart disease, diabetes, high blood pressure, stroke, atherosclerosis, cancer, asthma and dental caries (DoH, 2000a; WHO, 1990). In a recent systematic review of studies on adult populations, Wannamethee and Shaper (2001) concluded that being physically active is associated with a 40 to 50 per cent reduction in the risk of a stroke and coronary heart disease.

Although young people are aware of the benefits of healthy eating and physical activity, evidence suggests that this is not being translated into action. The UK 'National Diet and Nutrition Survey' of children and young people aged 4 to 18 (Gregory, 2000) found that most commonly consumed foods were white bread, savoury snacks, potato chips, biscuits, mashed and jacket potatoes and chocolate confectionery. These were consumed by more than 80% of respondents who participated in the seven-day dietary record. Twenty per cent did not consume any fruit and 4% did not consume any vegetables. Consumption of fruit and vegetables was also below World Health Organisation guidelines for adults.

The survey also found high levels of inactivity. Although the majority of young people achieved at least half an hour of moderate intensity physical activity per day, fewer achieved at least an hour a day of at least moderate physical activity (61% of young men and 42% of young women). These proportions declined with age such that the 15 to 18 years age group showed the lowest levels of activity. Armstrong *et al.* (2000) found decreasing levels of physical activity from ages 11 to 13, with more young women than young men becoming inactive.

One of the consequences of having a poor diet and being physically inactive is an increase in overweight and obesity. Evidence is mounting regarding increased prevalence of obesity and inactivity amongst young people in the UK. A recent study examined trends in weight and obesity among primary school children in England and Scotland over a 20 year period. It found a noticeable increase between 1984 and 1994 (Chinn and Rona, 2001). Obesity is increasingly being recognised as a threat to the health of the nation (National Audit Office, 2000) and it is therefore important to develop and evaluate effective interventions to halt these worrying trends. However, it is first necessary to understand the key factors influencing young people's lifestyles in order to plan how best to intervene.

The key influences on physical activity and healthy eating can be viewed as operating at the level of the individual (e.g. age, gender), the community (family, friends), and society (economic and environmental factors).

In terms of the individual, age is a key influence, with increased mobility, independence from home, and greater financial autonomy enabling young people to purchase or prepare foods of their own choice and spend their leisure time in many different ways. Gender is also an important influence, with young women generally more receptive than young men to healthy eating messages (Dennison and Shepherd, 1995; Miles and Eid, 1997; Sweeting *et al.*, 1994). Personal preferences may govern, to an extent, choice of foods. There is a widespread preference for sweet and salty foods (Birch, 1999; Logue, 1991).

Psychological influences include self-esteem and concerns about appearance, which may prompt young people to turn to dieting, although more positively may also encourage them to exercise more. Poor self-esteem has been shown to predict unhealthy eating attitudes amongst young women (Wood *et al.*, 1994), although dieting amongst young men is not uncommon (Edmunds and Hill, 1999). A feeling of perceived competence or self-efficacy in being able to participate in physical activity is an important motivator (Biddle and Mutrie, 2001). Theories which have been used to explain participation in physical activity include the Theory of Reasoned Action and the Theory of Planned Behaviour, which emphasise the role of individual decision-making processes such as weighing up the consequence of actions and considering their value (Biddle and Mutrie, 2001; Bourdeaudhuij, 1998). Other theories which have been applied include the 'transtheoretical' or 'stages of change model' (e.g. Marcus and Simkin, 1994), and the 'natural history model' (Sallis and Hovell, 1990) which posit stages or transition phases which an individual may move through towards regular participation in physical activity.

Family and friends also exert considerable influence on diet and activity. In a study of nutrient intakes of young people, the largest source of energy and nutrients came from foods consumed in the home (Adamson *et al.*, 1996). Sallis *et al.* (2000), in a systematic review of studies examining the predictors of physical activity, found that parental support, support from 'significant others' and the level of activity of siblings are all consistently associated with participation in physical activity. Cultural beliefs also play a part in what young people eat and what forms of exercise they do. For example, whilst in most Western countries being slim is viewed as a positive body image, in some cultures the opposite is true, with fatness considered to symbolise power and happiness.

In terms of socio-economic factors, a great deal of evidence links poverty with poor eating habits and inactivity. For example, poor housing can result in inadequate and unhygienic food storage facilities and poor access to sources of fresh food; unemployment or low wages can affect the ability to afford leisure facilities or good quality healthy foods; and lack of own transport and poor public transport can limit access to amenities. The influence of socio-economic status on levels of activity was highlighted in a longitudinal survey of young people and sport, conducted by Sport England and MORI (Sport England, 2000). In between 1994 and 1999 there was a general increase in young people taking part in extra curricular sport (from 37% to 45%) as well as an increase in the proportion who were members of an organised sports club independent of school (from 42% to 46%). However, the authors point out that opportunities for extra curricular sport might be more appealing to enthusiastic and skilled young people, as well as those who have better access to facilities (e.g. able to afford leisure centre costs, equipment and kit, and have parents with flexible working hours).

Whilst there is good reason for promoting mental health, physical activity and healthy eating as *specific* health issues, there is also a need to look *across* health topics to identify cross-cutting issues which may apply to more than one area. This may help in the development of common approaches to health promotion with young people. This series of reviews therefore approaches young people's health holistically, recognising that there are links between the way young people feel (i.e. their mental health), and what they do (i.e. the food they eat, the physical activity they do). Priorities for promoting young people's health cannot neatly fit into discrete topics to be addressed by initiatives working in isolation from each other (Aggleton *et al.*, 1998). Rather, there are complex relationships between all aspects of health. Efforts to promote young people's health cannot act in isolation, but must work in partnership in a 'joined-up' way.

1.2 Current policy framework for promoting the health and well-being of young people

'Our Healthier Nation', the government's strategy for health (DoH, 1998), set the aim to reduce the risk from chronic and preventable disease and the promotion of positive health across all population groups, including young people. 'Saving Lives', which came out a year later (DoH, 1999c), set specific targets for the prevention of deaths from cancer, coronary heart disease, stroke, accidents and mental illness across all population groups, including young people. For example, one of the targets for mental health is to reduce the death rate from suicide and undetermined injury by at least a fifth by 2010 (DoH, 1999c).

Recent UK health policy has emphasised a firm commitment to addressing the needs of socially excluded groups, in recognition of evidence that such groups are at an elevated risk of ill-health. Social exclusion has been defined as, 'a shorthand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime, bad health and family breakdown'. Young people who are considered to be more at risk of social exclusion include those from some ethnic minority communities, those in care, those in low-income households, those who experience family conflict and those who have problems at school (Social Exclusion Unit, 2001). The Acheson report (Acheson, 1998), based on an independent inquiry, makes 39 recommendations for action to reduce ill-health due to poverty and socio-economic disadvantage. This is to be achieved through building healthy communities, provision of better housing, promotion of better educational attainment (including health-promoting schools), improvement in employment opportunities, reduction of crime, and better public infrastructures (e.g. improved and affordable transport). Interventions to promote healthier lifestyles, termed 'downstream' interventions, are also advocated, linking in with the goals set in 'Our Healthier Nation'. This is in contrast to prior initiatives which focused, more narrowly, on improving the health of individuals without necessarily tackling their wider socio-economic circumstances.

The importance of tackling inequalities was re-affirmed in 2000 with the publication of the NHS Plan (DoH, 2000b) which sets out a strategy for modernising and reforming the National Health Service. Key principles include breaking down professional boundaries and partnership between agencies. The plan also emphasised a clear commitment to tackling some of the biggest causes of morbidity and mortality, including poor mental health, cancer and coronary heart disease. Priorities for

nutrition, for example, included increased consumption of fruits and vegetables; tackling poverty through ensuring children from poorer backgrounds have access to healthy foods; collaboration between the Department of Health and the food catering industries to increase provision of healthy foods (e.g. establishing local food co-operatives), as well as recommendations to food manufacturers to modify the constituents of food products (e.g. reductions in the use of salt and sugar).

The UK Government has also established a series of National Service Frameworks designed to set national standards and define health service models for a specific service or group, and to put in place programmes to support implementation and evaluation. These frameworks have been established to meet the aims of 'Our Healthier Nation' and the NHS Plan through standardising health service models to achieve greater consistency in the availability and quality of services across health and social services. Each service framework sets explicit standards and principles for the pattern and level of services required. Although there are national standards to work towards and overall frameworks to work within, provision and delivery of specific interventions are to be determined on the basis of local needs assessments and evidence of 'what works'. Thus, the frameworks take into account specific socio-economic and socio-cultural variations. A National Service Framework specifically for children and young people is to be published in 2003, with a particular emphasis on the socially excluded.

All of these 'macro-level' strategies emphasise the importance of co-ordination between sectors and agencies. This raises the question of how such cohesiveness can best be achieved.

1.2.1 'Joined-up' policy

The Acheson report emphasised the need for cross-government initiatives to tackle inequalities, in recognition that these cannot be achieved by the DoH alone. There have been calls for 'joined-up' policy and practice rather than fragmented and haphazard initiatives which are likely to be ineffective and lead to duplication (Coles, 2000). The Policy Action Team for Young People, set up by the Social Exclusion Unit to make recommendations for a national strategy for neighbourhood regeneration, suggested that there are at least eight government departments which have an interest in policies and services for young people (Cabinet Office, 2001a).

To this end a number of collaborative ventures have been planned to build on shared goals of different departments and to encourage thinking beyond the remit of each individual department in the development of policies.

For example, the Social Exclusion Unit (1998) recommended the need for a '**Neighbourhood Renewal Strategy**' which was subsequently launched in January 2001. The strategy aims to narrow the gap between deprived neighbourhoods and prosperous areas (Cabinet Office, 2001b). The Neighbourhood Renewal Unit will implement the strategy, focusing on key areas which include safety, crime, housing and education. The aim is to tackle the root causes of deprivation such as economic disadvantage and poor educational facilities. Eighteen cross-cutting Policy Action Teams were set up to develop the strategy, each concentrating on a different topic area, headed by a Champion Minister, a lead government department, and a chair. One of the Policy Action Teams, headed by the Social Exclusion Unit, looks

specifically at the needs of young people and has made 24 recommendations which require collaboration across departments.

Consequently, the '**Children and Young People's Unit**' (CYPU) was set up in response to the recommendations of the Policy Action Teams for young people (CYPU, 2001). The unit is responsible for ensuring coherent policy-making across departments, with the aim of achieving coherence at national and local levels. It also aims to promote active dialogue and partnership with children and young people, and with the voluntary sector. The unit has responsibility for administering the Children's Fund which tackles poverty and disadvantage amongst children and young people aged 0 to 19.

Also tackling social disadvantage and poverty are '**Health Action Zones**'. These have been set up in areas of deprivation and poor health, to improve services for all members of the community through partnerships between the NHS, local authorities, voluntary and private sectors, and community groups. The programme emphasises a 'whole systems approach' and aims to base initiatives upon evidence of effectiveness. Specific projects have included food clubs, exercise projects, transport improvements, and crime prevention. A national evaluation is underway which will monitor and map the activities taking place in all Health Action Zones, with a detailed case study investigation in selected zones. The design of the evaluation will focus on the interventions adopted within some of the zones to tackle inequalities, with a particular emphasis on employment and on health, coronary heart disease and early childhood interventions.

Alliances have been made between Health Action Zones and other programmes such as the '**National Healthy Schools Standard**' part of the 'Healthy Schools Programme' (DfEE, 1999) run jointly by the Department for Education and Skills (DfES) (formerly the Department for Education and Employment) and the DoH and managed by the Health Development Agency (HDA). The programme provides an accreditation process for education and health partnerships and has set a target for all local education authorities to be involved in an accredited education and health partnership by March 2002. The programme is an example of joined-up policy, in that each local programme must be linked to other relevant initiatives such as 'Education Action Zones', and Drug Action Teams. Through the provision of local support for schools, the scheme aims to ensure that education on health issues (e.g. nutrition, physical activity, emotional health and well-being), is provided within the curriculum. For example, schools must present consistent messages regarding foods, ensuring healthy options are available in school canteens and tuck shops, so as to reinforce education on nutrition provided in the curriculum. Local programmes must include young people in planning to ensure responsiveness to needs, and must support a whole school approach to education and health.

Evaluation is also a key component of the National Healthy Schools Standard. The scheme was piloted in eight areas, and tackles issues such as improving teaching and addressing social exclusion (Rivers *et al.*, 2000). Evaluation of the pilots was by a case study approach using interviews with key people (e.g. education and health professionals, school staff, governors, young people, parents). Recurrent themes included the acknowledgement that participating schools should involve a greater number of partners (e.g. the private sector); place greater emphasis on ways of involving young people in planning; and that schemes should be flexible and acknowledge local differences.

Another example of cross government collaboration, this time in relation to safety, is the DfES, the Department for Transport Local Government and the Regions (DTLR) and DoH guidance for local authorities, schools and parents on building a **safe environment for pupils to walk or cycle to school** (e.g. enhancing footpaths and cycle lanes). In an attempt to identify the evidence base for active forms of travel to school the DTLR commissioned a systematic review from the EPPI-Centre of the impact of mode of travel to school on children's social and cognitive functioning (Gough *et al.*, 2001). The review mapped out the literature on the effects of different modes covering a number of topic areas (physical activity, diet, environmental issues), and conducted interviews and focus groups with individuals concerned with travel to school, including children and young people themselves. A number of likely benefits, and possible harms, of active forms of transport were proposed by those interviewed, yet the evidence in support of these assertions was either of poor quality or lacking altogether. High quality primary research and systematic reviews on the effects of physical activity, the environment, diet, social experiences, and cognitive experiences on social and cognitive functioning were recommended.

The DfES have also launched the '**Safe and Sound Challenge**' which will provide financial support for schools to develop ideas for safe travel to school. One such idea is the 'walking bus' scheme, evaluated in Staffordshire by Bickerstaff and Shaw (2000).

All these examples illustrate a co-ordinated approach to promoting the health of young people in all spheres of their lives at home and at school.

1.2.2 Policy initiatives specific to mental health, physical activity and healthy eating

There are a number of policy initiatives particular to each of the three topic areas covered by this series of reviews.

Mental health

To promote young people's mental and emotional well-being the DoH, the DfES and the Department for Culture, Media and Sport (DCMS) have all introduced their own policy initiatives, some in collaboration with one other.

- The DoH has published a **National Service Framework for Mental Health** (DoH, 1999a). This sets seven national standards. Most emphasize the importance of improving service provision and treatment for those with mental health problems. Standard one is for health and social services (and their partner organisations such as schools and local authorities) to 'promote mental health for all, working with individuals and communities; combat discrimination against individuals and groups with mental health problems and promote their social inclusion' (DoH, 1999a:14). Although the framework covers adults of working age only, it does touch on the needs of young people, particularly through its emphasis on action in settings such as schools and local neighbourhoods and on vulnerable groups or those who are most at risk.

- There are a number of programmes that address the educational needs of young people, to promote attainment in school, to inspire those at risk of dropping out, and to engineer an overall sense of achievement and well-being. '**Education Action Zones**' (DfES) which comprise clusters of two to three secondary schools have been set up in a number of areas. Schools work in collaboration with local education authorities, parents, businesses and the community. Some Education Action Zones have been set up as part of the '**Excellence in Cities**' scheme (DfES) whose aim is to raise the aspirations of pupils and to address social exclusion, truancy and disaffection. The goal is to improve educational standards in major cities through provision of learning mentors, and learning support units. The new **Personal Social Health Education** framework has been devised to give greater status and recognition in the curriculum to the importance of helping pupils lead confident, healthy and responsible lives as individuals and members of society. One of the key features of the curriculum is its aim to develop pupils' well-being and self-esteem, encouraging belief in their ability to succeed. Furthermore, '**Citizenship Education**', set to be a compulsory subject in secondary schools from September 2002, aims to equip young people with the knowledge, skills and understanding to play an effective role in society; and to develop their confidence.
- Initiatives are also in place to support young people in transition between school and employment to develop skills, inspiration and enthusiasm. For example, the DfES '**Connexions**' service for young people (13 to 19) was introduced in 2001, as a collaborative venture between education, health, youth justice, employment and voluntary agencies as well as local learning and skills councils. The goal is to facilitate a smooth transition to adulthood and employment for every young person. Similarly, the '**New Deal for Young People**' scheme specifically aims to help the unemployed into work by matching their skills with those required by employers. Initiatives designed to stimulate young people's creative interests include the DCMS's '**Creative partnerships**' between schools, and professional cultural organisations so that actors, writers and musicians can act as mentors to inspire young people. Sixteen areas across England will be targeted for a pilot scheme in 2002. Another project, the '**Millennium Volunteers Initiative**' (DfES), encourages young people to volunteer for activities within their community that match their own interests (e.g. sports refereeing, supporting people with HIV, helping disabled people). There are also projects to appeal to young people coming to the end of their compulsory education and lacking in commitment to continue. The '**Summer Activities for 16 Year Olds Scheme**' (DfES) aims to re-engage these young people through activities designed to raise self-esteem, confidence, and team skills, with a view to encouraging them to further their education. The scheme is being piloted with a national roll out planned between 2002 and 2004.
- The HDA is involved in a number of initiatives committed to reducing health inequalities which will likely have positive implications for promoting mental health. The Agency has commissioned an '**Evidence Briefing**' paper on the promotion of mental health, one of a series of Briefing papers across a number of topic areas that will bring together evidence from existing systematic reviews with a view to making recommendations for policy, research and practice.

Physical activity and healthy eating

In this area specific policy initiatives include:

- The **National Service Framework on Coronary Heart Disease** (DoH 2000a). The framework sets out 12 service standards covering a number of areas including reducing heart disease in the population, preventing coronary heart disease in high risk patients, and heart attack and other acute coronary syndromes. There is a particular focus on prevention of smoking, tackling inequalities, and community development, to be addressed through multi-agency partnerships. The promotion of healthy eating is encouraged in targets to be reached by a number of milestones. For example, by April 2001 all NHS bodies in collaboration with local authorities should have agreed, and be contributing towards, a local programme of effective policies on promoting healthy eating, physical activity, and reducing overweight and obesity, as well as reducing the prevalence of smoking. By April 2002 every local health community should have quantitative data less than a year old on the implementation of these policies.
- The HDA has published **guidance for implementing the preventive aspects of the National Service Framework on Coronary Heart Disease** (HDA, 2000). The purpose is to assist health authorities, primary care groups/trusts, and local authorities in developing strategies for achieving the standards set out in the National Service Framework, covering smoking, physical activity and diet. For each suggested intervention, evidence is cited regarding its demonstrated effectiveness, details of potential collaborators, the skills and resources needed, hints to take into consideration, and where to seek further information.
- The DCMS launched in April 2000 its strategy for sport in the 21st century, '**A Sporting Future for All**' (DCMS, 2000). The strategy sets out a five part plan to increase young people's participation in physical education, including rebuilding sports facilities in schools; creating new specialist sports colleges; appointing schools sports co-ordinators; and establishing a national advisory council for playing fields.
- To ensure access to sporting facilities for the disadvantaged, the DCMS has also established 12 '**Sports Action Zones**' in the most deprived areas and aims to establish a further 18. Initiatives include refurbishing school sports facilities and opening them up to the wider community so that whole families can participate; encouraging and supporting schools to provide a range of after school sporting activities; creation of more specialist sports colleges; provision of sports co-ordinators to develop inter-school competition in sport and develop the coaching and leadership skills of teachers and older pupils; and a 'Green Space' initiative to create spaces for play and recreation where none currently exist.
- The DfES's programme has developed **nutrition standards for school lunches** (DfEE, 2000). Compulsory regulations stating minimum standards for school lunches came into place in April 2001. These stipulate that at least two items from the following should be available every day during lunch: starchy foods (bread, potatoes, pasta); vegetables and fruit; milk and dairy foods; meat, fish and alternative sources of protein (non-dairy). Guidance for implementing these regulations has been issued. Interestingly, the guidance encourages schools that have delegated budgets for school meal provision to try to modernise the image

of school meals. It is suggested that this might be achieved through lively packaging of products such as sandwiches or baguettes, and more importantly, offering an 'attractive price' for healthy meals.

- The '**Five a day Community Projects**', also specified in the NHS Plan were established to increase provision of fruit and vegetables, particularly in deprived communities. The scheme was piloted in five communities across England with a view to launching the initiative in 2002. Evaluation will consist of dietary surveys to assess fruit and vegetable consumption. One of the communities, Sandwell in the West Midlands, is promoting fruit and vegetables within the context of sports activities (e.g. football coaching schemes), as well as preparing a 'food map' that illustrates price and availability of foods in local shops.
- The '**Breakfast Clubs**' scheme has been set up to ensure that children and young people eat sufficiently before going to school. Breakfast clubs are usually open for about one hour before school starts and are located in school premises or community settings (e.g. churches, community centres). An evaluation is currently in progress using a cluster randomised controlled trial design. Outcomes include a range of social, education and psychological indicators, and assessment of impact will be accompanied by evaluation of the processes associated with implementation of the initiative.
- The **Child Poverty Action Group** has worked in partnership with the DfES to ascertain why some children decline to claim free school meals. Recently published evidence suggests that one in five children do not claim their meals (Story and Chamberlin, 2001). Reasons for this include parental concerns over their children being stigmatised or embarrassed to be seen receiving free meals; negative perceptions of quality and choice of the food on offer; and parents not being aware of their child's entitlement to free meals. Recommendations include collaboration between schools, Local Education Authorities and benefits agencies to raise awareness of entitlement of free meals, and practical initiatives in the school canteen, such as cashless systems and swipe cards, so that children receiving free meals are not readily identifiable.
- The DfES/DoH '**Cooking for Kids**' initiative was launched in 1999 in association with the Food Foundation, the Royal Society of Arts, and the Food Federation. The aim of the programme is to teach practical cookery skills to school pupils (in years 6 and 7), making use of facilities outside of school hours. Celebrity chefs visit schools all over England to emphasise the benefits of healthy eating and that cooking can be fun.
- The DfES/DoH '**Food in Schools**' initiative was launched in 2001 as a mechanism for bringing together all of the various initiatives for promoting nutrition and healthy eating in and around the school environment. The initiative incorporates key existing schemes such as the National School Fruit Scheme, Breakfast and After School Clubs, and fruit tuck shops. The initiative pays particular attention to enabling pupils to choose a healthy balanced diet, to develop cooking skills, and to develop food growing and handling skills, as well as to improve teachers' professional development.

There are thus a number of programmes specific to different areas of young people's health, some of which link in to each other, and all of which relate to the

government's broader strategy for health. It will be important to monitor and evaluate their progress to see whether they are meeting their objectives, and are making a real impact to the lives of young people (DfEE, 1999).

1.3 Approach taken in this series of reviews

This series of reviews has a number of distinctive features which make it different, from ordinary (non-systematic) reviews of the literature, and also to traditional systematic reviews of effectiveness. This section lays out the general principles adopted in terms of: a framework for conceptualising barriers and facilitators; the stages in which the reviews were conducted; the rationale for the methods used (including our 'novel' attempt to integrate the findings from intervention and non-intervention research); the two-stage process by which the reviews were carried out (descriptive mapping followed by in-depth review); and defining a sub-set of studies for in-depth review.

1.3.1 Barriers and facilitators: a conceptual framework

For the purposes of this review, we are using the terms 'barriers' and 'facilitators' to refer to factors which either hinder or promote the health of young people. Research findings about the barriers to, and facilitators of, healthy lifestyles amongst young people can help in the development of potentially effective intervention strategies. Interventions can aim to modify or remove barriers and use or build upon existing facilitators. We have categorised barriers and facilitators according to whether they reside at the *individual, community or societal* levels. Within each of these levels we have made further distinctions to capture different aspects of the three broad groups of factors.

Our conceptual framework is supported by various definitions and models of health promotion which incorporate the determinants of health in general and how it may be promoted (e.g. Green and Kreuter, 1991; Hawe *et al.*, 1990; Tones and Tilford, 1994). For example, Tones and Tilford (1994) emphasise environmental influences, individual choice and lifestyle and the provision of health services (p 6-7). Social networks and support at the community level feature as important influences in a model of the dynamics of self-empowerment outlined in Tones and Tilford (1994:26). Similarly Hawe *et al.* (1990), in their framework for assessing the factors associated with health problems or behaviour to aid in planning health promotion programmes, emphasise factors which can be classified according to whether they reside at the individual (e.g. attitudes, knowledge), community (e.g. role models, social support) or society level (e.g. policies on health and equity; health services). As Lister-Sharp *et al.* (1999) note, an increased understanding of the determinants of health and health behaviours has led to the recognition that health promotion needs to develop multi-faceted approaches which tackle barriers and foster facilitators at all levels. Such a framework also fits in with the strategies outlined for improving mental health outlined in 'Saving Lives' (DoH, 1999c), which emphasises what individuals, communities and governments can do.

The interrelationship between the three levels clearly needs to be acknowledged. For example, barriers and facilitators arising out of individual psychological factors may be dependent on an individual's interpersonal relationships or status in society.

Similarly, social support may be achieved by changes to structural factors at the society level, but may also be fostered at the individual level by strengthening a person's social skills.

1.3.2 Review methods: being systematic

A systematic review is a *piece of research* which uses certain methods in order to produce valid and reliable results. The tasks involved in systematic reviewing, from applying inclusion criteria and extracting data to critical appraisal, are all liable to bias. The main ways in which bias can be minimised involve: trying to identify as much as possible of all the relevant research; using standardised coding procedures, ideally applied independently by more than one reviewer to all studies included in the review; and assessing the methodological quality of the studies so that conclusions and recommendations are based on the most rigorous studies (Mulrow and Oxman, 1997; NHS Centre for Reviews and Dissemination, 2001). Explicit reporting of how the review was conducted allows others to assess potential sources of bias in the review and thus the validity of its findings (Peersman *et al.*, 2001). This series of reviews adopts such principles. For example, all studies were coded using standardised keywording and data extraction forms, with quality assessment and data extraction of the majority of primary studies assessed in-depth done by two reviewers independently. Results were compared and disagreements resolved through discussion. Such discussion is important also for clarifying important conceptual definitions.

As noted above, a systematic review aims to synthesise only those studies which are judged to have been carried out in such a way as to produce reliable conclusions. There is currently much debate about the use of randomised controlled trials (RCTs) to evaluate the effectiveness of health promotion and other social or 'behavioural' interventions (see e.g. Macdonald, 1997; Oakley, 1998; Oakley and Fullerton, 1996; Stephenson and Imrie, 1998). This debate is part of a wider discussion about what constitutes 'evidence' in relation to both social and healthcare interventions. However, well-designed prospective experimental studies, which include RCTs, provide good quality data which increase the validity and reliability of inferences about which 'treatments' or interventions work (Kleijnen *et al.*, 1997; Sibbald and Roland, 1998). Including an integral process evaluation in trials provides information on how and why interventions work (or not).

There is a considerable lack of rigorous evaluation of effectiveness in the area of health promotion. Of particular concern is the lack of any soundly evaluated outcome evaluations from the UK. This suggests that either well-designed evaluations are not being undertaken in this country, or that they are not publicly accessible.

Common problems with outcome evaluations assessed in our reviews have included differences between study groups in socio-demographic or outcome measures at the start of the study, and failure to report data for all measures before the intervention began. Random allocation should facilitate study groups that are comparable on both known and unknown factors that influence outcome (Stephenson and Imrie, 1998). However, this might not always be achieved, particularly if the method of randomisation is not truly random (e.g. alternate allocation based on odd or even dates of birth).

There have also been few attempts to evaluate the impact of interventions which tackle the wider determinants of health. Such interventions are likely to be multi-faceted, combining, for example, education with legislation and environmental modification. There are inherent problems in evaluating these types of initiatives, prompting suggestions that RCTs are not an appropriate evaluation method (Nutbeam, 2001), and pointing to the possibility of making the best use of before-and-after assessments of 'naturally occurring experiments' (Macintyre, 2001). A crucial challenge is to reach some consensus on the issue of the feasibility of using RCTs to evaluate the impact of such interventions.

Macintyre and Petticrew (2000) explore some of the misconceptions about evidence-based policy and practice, including the assumption that the real world is too complex to evaluate using experimental methods and that social and public health interventions cannot do harm (see also Oakley and Fullerton, 1996; Oakley, 2000). Examples have been provided of commonly used 'popular' interventions which are exposed as being ineffective or even harmful when the evidence from sound evaluations is taken into account (Macintyre, 2001). For example, the 'Scared Straight' intervention which aims to deter young people from crime, is widely used in the US, but evidence from seven RCTs found that it actually increased delinquency rates (Petrosino *et al.*, 2000). Rather than adopting a defeatist attitude to evaluation using experimental methods, Macintyre argues that ingenuity should be employed to resolve some of the difficulties in assessing the impact of efforts to tackle the wider determinants of social and health problems. This ingenuity is evident in several UK and international initiatives, which are systematically reviewing the effectiveness of social interventions in fields such as education, criminology and social policy (e.g. Davies and Boruch, 2001; Oakley and Gough, 2000; Oliver and Peersman, 2001).

This series of reviews endorse these principles, but also recognises the need to develop an understanding of the role of observational and 'qualitative' research in evidence-based health promotion. The following describes how the series attempted to include such research.

1.3.3 Review methods: integrating different study types

Although these reviews are systematic, they differ from traditional systematic reviews of effectiveness in two main ways. Firstly, with the emphasis of our review question on identifying barriers to, and facilitators of, healthy lifestyles, they aimed to address in a much broader way the question of 'which interventions are effective?'. We hypothesised that barriers and facilitators could be identified in the following ways:

- (i) by examining the barriers and facilitators targeted by interventions shown to be effective in promoting young people's participation in healthy lifestyles (i.e. which barriers did they aim to reduce/remove? which facilitators did they build upon/show synergy with?);
- (ii) by examining the barriers and facilitators of interventions shown to be harmful; and

(iii) by examining research which did not aim to evaluate specific interventions, but aimed to describe which factors influence young people's health in a positive or negative way.

The research designs employed by studies in this third category range from large scale surveys and epidemiological analyses of large datasets, to 'qualitative' studies which use in-depth interviews or focus groups. Examples of such studies are those seeking to identify barriers and facilitators by examining which of young people's social characteristics (e.g. age, social class, gender, attitudes, self-efficacy) predict or are associated with health. These studies often involve testing hypotheses generated from a particular theoretical model and produce a description of young people's lives according to the conceptual and analytical framework of that model. Alternatively, some studies directly present young people's *own* descriptions of their lives. These studies may use young people's own analytical observations about barriers and facilitators.

The reviews presented in this report therefore include a wide range of research types; both intervention research and 'non-intervention' research describing factors influencing young people's health without introducing and evaluating an intervention.

Few systematic reviews have attempted to synthesise evidence from diverse study designs: most have been restricted to experimental outcome evaluations. Thus integrating findings from different study types presents a challenge (Egger *et al.*, 1998; Light and Pillemer, 1984). For example, whilst there is considerable consensus about the quality criteria that intervention studies need to meet to produce reliable answers to questions of effectiveness, there is little consensus about how to judge the quality of non-intervention research (including qualitative research) or which questions it can reliably answer (Oakley, 2000).

Whilst our reviews follow the methodological principles for carrying out systematic reviews outlined above, they also use specific methods for integrating different study designs which have previously not been documented. This builds on recent work by Oakley (2000) and Rogers *et al.* (1997) on developing a set of possible quality criteria for judging the soundness of the methods used in 'qualitative' studies. It also carries further attempts to integrate experimental studies with observational and qualitative studies in systematic reviews of effectiveness carried out at the EPPI-Centre. This work includes two systematic reviews which aimed to integrate studies evaluating processes and outcome evaluations in the area of smoking cessation for pregnant women (Oliver *et al.*, 1999a; see also Oliver, 2001) and peer-delivered health promotion for young people (Harden *et al.*, 1999a; see also Harden *et al.*, 1999c).

1.3.4 Stages of the review

All three reviews were carried out in two stages: a descriptive mapping and quality screening exercise of all studies meeting the scope of the review, and an in-depth review of a sub-set of these studies. The rationale for these stages is outlined below.

Previous systematic reviews carried out at the EPPI-Centre and elsewhere have tended to uncover large amounts of research to be considered for inclusion in the review (e.g. Peersman *et al.*, 1998; Tilford *et al.*, 1997). This is partly as a result of

improvements in searching techniques (see Harden *et al.*, 1999b) and attempts to make evidence more accessible. However, another important reason is that the questions of interest to health promotion and public health tend to be very broad and encompass a wide-range of possible interventions (e.g. what is the effectiveness of sexual health promotion?); and/ or health topics (e.g. what is the effectiveness of peer-delivered health promotion?); and/or outcomes (e.g. how does health promotion affect knowledge, attitudes, behaviour, environmental changes?). This can be contrasted with systematic reviews within other areas of healthcare which address much narrower questions, focusing on, for example, the effects of one intervention on one particular outcome. Whilst this ensures that the reviewer's tasks are manageable within given time and resource constraints, it also means that it is much more difficult to piece together the results of narrow reviews to illuminate broader questions (Oliver *et al.*, 1999a). There is therefore a dilemma in balancing the need for reviews of health promotion to address broad questions against the need to ensure the review workload is manageable.

In their work on methodological issues in systematic reviews of effectiveness within health promotion, Peersman *et al.* (1999) proposed a solution to this dilemma in the form of a two-stage process. Stage one should involve identifying and descriptively mapping relevant studies; and stage two a detailed review of studies following discussion between researchers, commissioners and potential users of the review to determine the criteria for choosing which studies to include.

Following the two stage model, we met after each mapping exercise with policy-specialists to help us determine criteria for selecting a sub-set of studies to review in-depth. We also took advice on which study types to focus on in the in-depth review from our health promotion Steering Group consisting of representatives from practitioners, research commissioners and researchers. Consultations suggested a focus on interventions which make changes at the community or society level to support young people in healthy lifestyles. These types of interventions were considered to be most relevant to current policy.

1.3.5 Defining a sub-set of studies for in-depth review

It is important to note that, although we restricted the focus of our in-depth reviews to particular types of interventions and to particular groups of studies, this does not mean that other types of interventions or other groups of studies were not considered to be important. Furthermore, because we have systematically searched and catalogued this research, we have a bibliography which is available for in-depth examination in the future.

(i) Prioritising studies seeking young people's own views alongside intervention studies

As indicated above, the reviews aimed to include a wide range of study designs, including those that did not aim to evaluate specific interventions, but aimed to describe which factors influence young people's health in a positive or negative way. This type of research traditionally makes a contribution to 'needs assessment'. 'Need', defined by Hawe *et al.* (1990, p.17), is 'those states, conditions or factors . . . which, if absent prevent people from achieving the optimum of physical, mental and social well-being'. In assessing need, priority areas are determined and an analysis

of the health problem is undertaken (Hawe *et al.*, 1990). Although needs can be assessed through a variety of different ways, including seeking expert opinion ('normative' need); reviewing epidemiological data and/or use of services ('expressed' need and 'comparative' need), increasing importance has been attached to assessing 'felt' need (based on what people themselves say).

This is reflected in the current commitment of the NHS to involve the public in the development and delivery of services (DoH, 1999b). In line with this, we proposed to privilege those non-intervention studies which sought *young people's own descriptions of their lives* rather than those which sought to infer their experiences primarily through *researcher description and characterisation of young people*. As indicated earlier, these studies often involve testing hypotheses derived from theoretical models and provide a description of young people's lives within the terms of the conceptual and analytical framework of the researcher or the theoretical model used. These studies can be seen as producing 'expert-driven' descriptions. Whilst this does not mean that they are not important for illuminating barriers and facilitators, justifications for focusing on studies reporting young people's own descriptions can be made on ethical, practical and epistemological grounds.

From an ethical perspective, it is only recently that children and young people have been given basic rights to make their voices heard in matters that affect them. Giving a voice to these traditionally silenced groups is now enshrined in the UN convention on the Rights of the Child (1990) (Alderson, 2000). Hennessy (1999:153) notes that eliciting the views of children and young people gives them the opportunity to take part in decision-making; gives them a sense of ownership over their lives; and lets them know that they are valued and respected.

Practically, Hennessy (1999) argues that we should seek children's and young people's views because they have a great deal of valuable information about themselves to contribute and what they say can help in understanding the effects of interventions which aim to improve some aspect of their lives. Similarly, in contrasting educational research on the views of young people with research which infers their experience, Lloyd-Smith and Tarr (2000:60) note that 'young people are capable of producing analytical and constructive observations and react responsibly to the task of identifying factors that impede their learning'.

The above practical reasons link into the justification of privileging young people's views on epistemological grounds. It has been argued that the reality experienced by young people cannot be fully understood through research which makes inferences about them. The subcultures they inhabit and the meanings they attach to different aspects of their lives and social worlds may not always be accessible to adults (Lloyd-Smith and Tarr, 2000). Research for young people therefore needs to put young people's own voices at the centre of analysis (Mayall, 1996). This perspective has been reflected in recent recommendations for the planning and development of health promotion interventions. These suggest that it is only by taking into account young people's own views about their health needs and the factors which influence their health, that the most effective and appropriate strategies for promoting health will be developed (Brannen *et al.*, 1994; Moore and Kindness, 1998; Peersman, 1996; Shucksmith and Hendry, 1998).

Synthesising what is known about young people's own beliefs, ideas and experiences complements what is known from mainly 'expert-driven' research about

barriers and facilitators. Comparing young people's views with expert-driven research may raise important issues for policy, practice and research.

(ii) Countries in which studies were carried out and publication date

Prior to retrieving studies for our mapping and quality screening exercise, decisions were made about restricting inclusion of studies by country. Previous systematic reviews in health promotion have been criticized because they have not focussed on studies carried out in the UK because of the dearth of well-designed outcome evaluations undertaken here (Peersman *et al.*, 1999; Peersman and Oakley, 2001). Consultation with the EPPI-Centre's health promotion Steering Group concluded that a focus on UK studies should be a priority. For intervention studies it was noted that such a strategy may lead to excluding the learning to be gained from good quality outcome evaluations. However, restricting inclusion of non-intervention studies to those carried out in the UK was felt to be more acceptable for the following reasons. Firstly, the strength of non-intervention studies in illuminating barriers and facilitators may lie in their ability to describe the specific contextual factors influencing young people in the UK. Secondly, there is much more of this 'descriptive' research available in the UK. Thirdly, examining barriers and facilitators amongst young people in the UK would allow us to judge to what extent the barriers and facilitators targeted in intervention studies from other countries might be transferable to a UK context.

For the in-depth review, a publication date cut off point of 1990 was set for non-intervention research. Because the strength of non-intervention studies in illuminating barriers and facilitators lies in their ability to describe the specific contextual factors influencing young people in the UK, it was considered important to prioritise studies which would identify currently relevant barriers and facilitators. These contemporary studies would allow us to judge to what extent the barriers and facilitators targeted in earlier intervention studies might be transferable to the current context.

2. METHODS

Outline of Chapter

This chapter describes the methods used in the three reviews, as well as those used to compile this report. Each review was conducted in two stages:

(i) A mapping and quality screening exercise

- *highly sensitive **search strategies** retrieved a large number of references*
- ***inclusion criteria** were developed and applied to these references*
- *a classification system was devised and descriptive **keywords** applied to included studies*
- *a **map** of the methodological and substantive characteristics of the studies was then produced*

(ii) An in-depth review

- ***inclusion criteria** were developed for the in-depth reviews based on priority areas identified by the mapping exercise, and from suggestions made by the project's Steering Group and the Department of Health*
- ***two main types of studies** were included in the in-depth reviews: outcome evaluations of interventions, and studies examining the views of young people about their health*
- *all reports underwent detailed **data extraction** and **critical appraisal** according to standardised guidelines and criteria*
- ***separate narrative syntheses** were conducted for the two study types. A synthesis **between** study types was also performed, with the results of the studies of young people's views **integrated** with the findings of studies measuring the effectiveness of interventions.*

*This chapter is relevant to all audiences as it describes the basic scope of the reviews. **But this chapter will be of particular interest to:***

- ***any readers** who want to evaluate in detail how the reviews were conducted in order to assess the **reliability** and **validity** of the findings.*
- ***researchers or others** interested in how the results of a mapping and quality screening exercise can be applied within a systematic review; how different study types can be included in a systematic review; and how different study types can be integrated in a synthesis.*

***This chapter may be skipped** by readers who are primarily interested in the **findings** of the reviews.*

2.1 Mapping the topic

Figure 1 provides an overview of the stages and methods of the three reviews.

Highly sensitive search strategies were developed and applied to a number of electronic databases. Reference lists were scanned and contacts made with relevant experts to identify relevant literature.

Very large numbers of references were retrieved. In the mental health review a total of 11,638 references were identified of which 345 were eventually included in the mapping exercise. In the physical activity and healthy eating reviews the total number of combined references was 7048, of which 186 were included.

To be included in the respective mapping exercises, studies had to meet *all* of the following criteria:

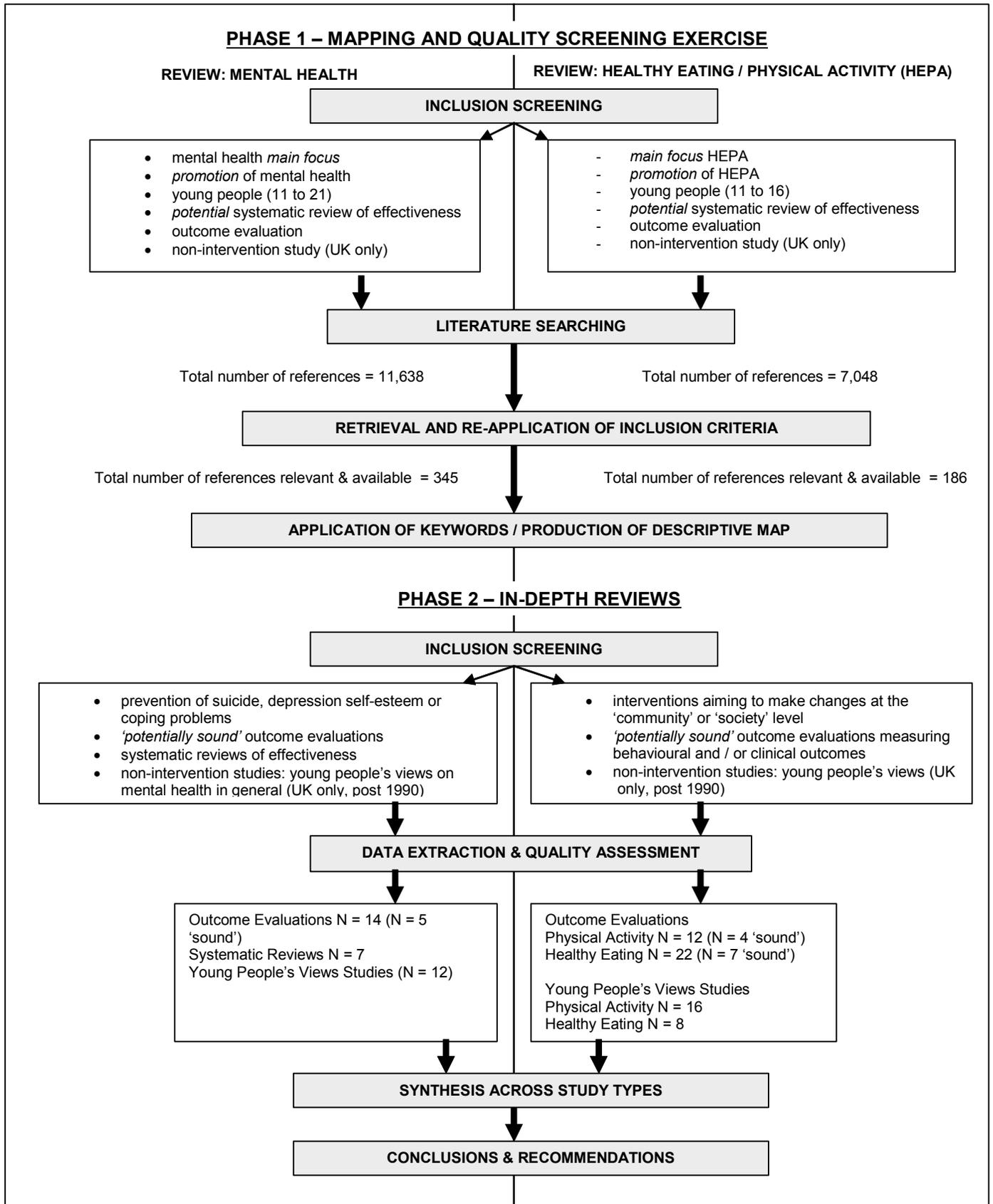
1. have as their main focus mental health; or healthy eating; or physical activity;
2. focus on young people with a mean age in the range of 11 to 21 (for the mental health review) or 11 to 16 (healthy eating and physical activity);
3. be about the *promotion* of mental health, healthy eating or physical activity, or the barriers to, or facilitators of, good mental health, healthy eating or physical activity.
4. be of one of three study types:
 - a) a review (from any country) which, at first sight, may appear to be systematic.
 - b) an outcome evaluation (designed to establish whether an intervention works or not, whether or not the intervention changes the outcomes) from any country.
 - c) A non-intervention study (e.g. cohort study, case control study, cross sectional survey) conducted in the UK only.
5. be published in English.

Studies were classified using a standard keywording system that describes the methodology, population, country, and type of intervention with additional terms tailored to each of the three review areas.

2.2 From mapping the literature to in-depth review: refining the scope

The mapping exercises identified areas within the three topics where there had been the greatest and the least amount of research activity. They also generated ideas for the most appropriate types of interventions and other types of study to review in depth. The results of the mapping exercises were presented to the project Steering Group and the DoH who advised on areas to prioritise for the next stage of the reviews.

Figure 1. Process of conducting the three reviews



The scope and inclusion criteria for the three reviews were generally similar, although there were some specifics depending on the topic.

For the mental health review the specific areas chosen for in-depth focus were:

- the prevention of suicide/self-harm,
- the prevention of depression, self-esteem and coping problems.

These areas were chosen for their relevance to current health policy and because the mapping exercises identified considerable research available for review.

The types of studies to be included were:

- outcome evaluations (including those with integral process evaluations) that were judged to be 'potentially sound' (used a comparison/control group; reported pre- and post-intervention data). In order to avoid duplication of effort, we only included outcome evaluations that had not already been included in systematic reviews of effectiveness existing systematic reviews of effectiveness.
- non-intervention studies which examined the views of young people about their mental health *in general* (as opposed to suicide, depression, self-esteem etc for outcome evaluations) published after 1990 in the UK only.

The in-depth reviews of the promotion of physical activity and healthy eating were not defined by health sub-topics. It was decided to focus specifically on issues around social exclusion and inequalities in health, in accordance with UK health policy. To this end these two reviews concentrated specifically on interventions aiming to make changes at the 'community' or 'society' level (e.g. school-wide initiatives to foster healthy eating; development of community leisure and exercise facilities) as opposed to interventions that focused on change at the 'individual' level (e.g. provision of knowledge about the benefits of nutrition).

The healthy eating and physical activity reviews included the same types of study as in the mental health review except that *all* relevant outcome evaluations were assessed, including those found in existing systematic reviews. In contrast, in the mental health review, relevant systematic reviews themselves underwent data extraction and critical appraisal. We only assessed outcome evaluations in-depth which had not been included in relevant systematic reviews. This was done for the mental health review because of the larger volume of literature in that area, reducing the time and resources necessary to conduct the review. The findings of the mental health systematic reviews were used to support recommendations and conclusions alongside those of the additional outcome evaluations we had included.

A further way in which the healthy eating and physical activity reviews differed from the mental health review was that we restricted the outcome evaluations in the first two of these review to those which measured a behavioural and/or physical health status outcome, as opposed to those that just assessed changes in knowledge, attitudes, intentions and behaviour. This was not done for the mental health review.

2.3 In-depth reviews: studies of young people's views

The same approach to data extraction and critical appraisal of the non-intervention studies was followed across the three reviews. A standardised data extraction and quality assessment framework was used, adapted specifically for this series of

reviews from the EPPI-Centre's review guidelines for assessing outcome and process evaluations (see below) and piloted in a previous EPPI-Centre review of peer-delivered health promotion for young people (Harden *et al.*, 1999a).

Each study was assessed according to the following seven quality criteria:

1. Explicit account of theoretical framework and/ or inclusion of a literature review.
2. Clearly stated aims and objectives.
3. A clear description of context.
4. A clear description of sample.
5. A clear description of methodology, including data collection and data analysis methods:
6. Evidence of attempts made to establish the reliability and validity of data analysis:
7. The inclusion of sufficient original data to mediate between data and interpretation

The criteria were applied to each study by two independent researchers, who compared their results and resolved disagreements between them.

The resulting quality descriptions were used to provide the reader with a synthesis, within an explicit framework of methodological quality, of the findings of the studies examining young people's views and their implications for barriers and facilitators and the development of interventions to promote health.

2.4 In-depth reviews: intervention studies

As with the studies of the views of young people, the intervention studies underwent data extraction and critical appraisal in a structured way across all three reviews.

For systematic reviews of effectiveness (included only in the mental health review) data were extracted using a standardised template (e.g. the characteristics of the intervention, the target group, results). The methodological attributes of each review were assessed according to the comprehensiveness of the sources used for literature searching; the criteria used to assess quality of primary studies; the application of quality assessment and inclusion criteria; and the methods used to analyse study data. This process was based on the criteria employed by the NHS Centre for Reviews and Dissemination for assessing studies included in the Database of Abstracts of Reviews of Effectiveness.

For outcome evaluations, two reviewers using standardised guidelines independently extracted data on the development and content of the intervention evaluated, the design and results of the outcome evaluation, details of any integral process evaluation and data on the methodological quality of the outcome evaluation (Peersman *et al.*, 1997). Data were entered onto a specialised computer database

(EPIC). Again, reviewers compared their results and resolved disagreements in discussion.

Studies were appraised according to eight methodological qualities:

1. Clear definition of the *aims* of the intervention.
2. A description of the study design and content of the intervention sufficiently detailed to allow *replication*.
3. Use of *random allocation* to the different groups including to the control or comparison group(s).
4. Employment of a control/comparison group equivalent to the intervention group on socio-demographic and outcome variables at the start of the study.
5. Provision of data on *numbers of participants* recruited to each condition.
6. Provision of *pre-intervention data* for *all* individuals in each group (An exception was made for those studies using the Solomon four-group design (Campbell and Stanley, 1966)).
7. Provision of *post-intervention data* for each group.
8. *Attrition* reported for each group.
9. *Findings reported for each outcome measure* indicated in the aims of the study.

Studies meeting the 'core' criteria 4, 6, 7, and 9 comprised the sub-set of studies considered of sufficient methodological quality to be able to generate potentially reliable results about the effectiveness of health promotion interventions (termed 'sound' outcome evaluations).

2.5 Synthesising results within the in-depth reviews

Having extracted detailed information from the included studies it was necessary to develop a framework for combining the results. Again, a similar approach was adopted in all the reviews, with synthesis performed qualitatively rather than quantitatively.

In each review two types of synthesis were performed: synthesis *within* study types, and synthesis *between* study types.

For the former, key features of studies which had been collated were expressed in tabular form. For the outcome evaluations, data were presented on the characteristics of the intervention (e.g. setting in which it took place; provider), as well as methodological attributes (numbers assigned to each study group; attrition rates). These characteristics were plotted against conclusions about effectiveness. Tabular data were also generated for the studies assessing young people's views (e.g. on the methods used and characteristics of the young people studied). The results of these studies were analysed in terms of their ability to answer questions

about barriers and facilitators (in each case specific to the topic area), including what do young people think influences their health in a positive/negative way, what do they do to feel better about themselves, and what ideas do they have for ways of improving their health? For both types of study, tables also noted when authors described sampling so as to focus on socially excluded young people using the following indicators: being part of an ethnic minority community; life in care; low family income; family breakdown; problems at school; unemployment; mental illness. Structured summaries were produced for all studies, providing a qualitative description of the design and results of each.

A synthesis between study types was conducted to ascertain to what extent the barriers and facilitators identified by young people had been addressed by evaluated interventions. A matrix was constructed which plotted the barriers and facilitators against the results of the evaluated interventions to identify matches (where the intervention has been shown to reduce/eliminate the barrier or build on the facilitator) and gaps (where no interventions had tackled barriers or facilitators). The matrix was stratified by four themes in which the barriers and facilitators appeared to be operating: the school, relationships with family and friends, the self, and practical and material resources.

2.6 Methods for this report

Compiling the evidence for the effectiveness of interventions to promote mental health, physical activity and healthy eating provides an opportunity to identify overarching themes across these three areas. These include how effectiveness varies according to gender and age; how life events and transitions might be taken into account by interventions, and effective ways of promoting health in schools and the community.

However, identifying cross-cutting themes is problematic as the reviews had slightly different foci. As mentioned earlier, the physical activity and healthy eating reviews were primarily concerned with identifying interventions aiming to make a change at the community or society level (e.g. 'structural' interventions to modify the school environment) whereas the mental health review also considered interventions delivered at the level of the individual (e.g. cognitive self-instruction). Of the five outcome evaluations judged methodologically sound in the mental health review, four had been classified as addressing 'psychological factors', with none addressing 'structural factors'.

Methods were devised to bring the barriers and facilitators identified in the three reviews alongside the evidence for the effectiveness of interventions which may or may not address these. The 'meta synthesis' presented in chapter 4 was constructed following a similar approach to synthesising the different types of evidence used in the respective reviews, but with the emphasis on identifying *common* barriers or facilitators and *generic* ways of addressing these.

These barriers and facilitators were then matched to current initiatives in policy and practice in chapter 5. Key governmental documents and websites were searched to identify legislation, policy and practice relating to the issues young people expressed as either promoting or hindering their health. Particular attention was paid to the methodology and results of any evaluation of schemes in order to assess the quality

of the evidence to support them, and thus the likelihood that they might have a real impact on young people's lives. We also systematically sought evidence that might support these initiatives from outcome evaluations or existing systematic reviews. This enabled recommendations to be made, where necessary, for further, more rigorous evaluation.

Our search for policy and practice initiatives was by no means exhaustive and there may be other relevant schemes that we have not identified. It is unusual to combine three comprehensive systematic reviews in one report, so the structure of the report is somewhat experimental.

3. THE EVIDENCE BASE

Outline of Chapter

This chapter presents the main results from the three reviews.

- *Section 3.1 gives a brief overview of the characteristics of the studies included in the mapping and quality screening exercises. Details include: the specific topic areas covered; the barriers and facilitators addressed, the characteristics of the young people studied; and the methodological attributes of the studies.*
- *Section 3.2 focuses on the substantive findings of the non-intervention research that was assessed in-depth, that is, the studies of young people's views. These are discussed in terms of the barriers and facilitators that young people identified, as well as their general perceptions of, and attitudes towards their health. This is followed by a brief overview of the strengths and weaknesses in the methodology of the studies.*
- *Section 3.3. looks at the effectiveness of the intervention research that was reviewed in-depth. Brief details of the interventions are provided, followed by a summary of the main results of the evaluation and an appraisal of the strengths and weaknesses of the evaluation methodology.*

In all sections details of the mental health review are presented first, followed by details from the physical activity and healthy eating reviews.

*This chapter will be of interest to **all readers** as it provides an overview of the research that has been conducted with young people in the three topic areas, an outline of the barriers and facilitators that young people have identified, and a summary of the effectiveness of interventions designed to promote their health. Readers specifically interested in the nature of the research that has been conducted with young people may wish to prioritise reading Section 3.1. Those primarily interested in the findings may want to go straight to Sections 3.2 - 3.3.*

Key messages:

- *The mapping and quality screening exercises revealed a substantial amount of research activity, particularly in the area of mental health. Most studies focused on young people in general, with relatively fewer on those considered socially excluded. Studies most often targeted barriers and facilitators at the level of the individual, rather than at the level of the community or society, indicating a lack of research on the wider determinants of health. Most of the interventions took place in schools, and were most commonly evaluated in the USA, with only a minority in the UK. The reporting of the methods employed in the non-intervention research was variable. Most outcome evaluations in the healthy eating and physical activity reviews used a controlled trial design.*
- *The studies which sought the views of young people found that they had clear opinions about their health. Barriers to mental health included school workload, pressure to achieve, dysfunctional relationships with family and friends, worries*

about money and the future, and boredom. Facilitators included support from friends and family, and indulging in pleasurable activities as a way of coping with problems. Some of these barriers and facilitators were common to physical activity and healthy eating, with family and friends acting in both positive and negative ways.

- *Young people's views studies were of variable methodological quality. One of the main problems was poor reporting of socio-demographic characteristics, and procedures for obtaining informed consent.*
- *Interventions to promote mental health were assessed in-depth if they focused specifically on the prevention of suicide, self-harm, depression and the promotion of self-esteem. Evidence for effectiveness was mixed. Short-term interventions to prevent depression were generally not effective, as was the case for school-based suicide prevention programmes which were sometimes associated with harm. Initiatives to promote self-esteem have been associated with modest effects.*
- *Interventions to promote physical activity and healthy eating were assessed in depth if they aimed to make a change at the community or society level and assessed behavioural or health status outcomes. All the interventions were based in schools, mostly in the USA, and combined classroom education with activities throughout the school, the home, and the wider community. Interventions were more effective at encouraging healthy eating than increasing participation in physical activity. Some favourable changes were observed in clinical risk factors (e.g. blood pressure, cholesterol levels). In general, interventions were more effective for young women than young men.*
- *Around a third of the mental health, physical activity and healthy eating outcome evaluations reviewed in depth were judged to be methodologically sound. The most common problems were lack of equivalent study groups at the start of the studies, and incomplete reporting of data.*

3.1 An overview of the field - results of the mapping and quality screening exercises

3.1.1 Mapping and quality screening results – mental health review

Of the 11,638 citations identified from searching, a total of 345 met the inclusion criteria developed for the mental health review, and were available within the relevant time frame. These 345 comprised the mapping and quality screening exercise. They included 187 outcome or process evaluations, 133 reports of non-intervention research, and 25 systematic reviews.

The studies were classified in terms of whether they were about the prevention of mental ill-health or the promotion of positive mental health. Less than half the studies (43%) were concerned with the former. Their most common focus was the prevention of suicide or self-harm or behaviour problems; with fewer studies on the prevention of depression, anxiety problems or eating disorders.

The remaining studies (57%) were focused on promoting positive mental health. These tended to adopt a general approach, dealing with a range of issues such as self-esteem and self-concept or coping skills. Around half (54%) of the studies focused on young people in general, with 32% examining mental health issues in socially excluded groups, and 14% focusing on young people considered to be 'at risk' for mental ill-health. Barriers and facilitators addressed factors evenly spread across the levels of: the individual, such as psychological factors (34%); the community, such as interpersonal and family factors (30%); and society, such as socio-cultural or structural factors (32%).

A total of 11% of intervention evaluations focused on structural factors, compared to 20% of non-intervention studies. A total of 36% of intervention evaluations focused on individual level factors compared to 19% of non-intervention studies.

Most of the intervention studies were carried out in the USA with only 5% taking place in the UK. Most (72%) were undertaken in educational settings. The quality of the studies was very variable. Half of the outcome evaluations (49%) were judged to have 'potentially sound' methodological attributes and thus to yield reliable conclusions about effectiveness. The reporting of sampling procedures and sample characteristics in the process evaluations and non-intervention research ranged from 98% for reporting the age of the sample to only 27% for ethnic group.

3.1.2 Mapping and quality screening results – physical activity review

The searches for physical activity and healthy eating research identified 7048 citations. Overall, 186 reports met our inclusion criteria for the two topics and were available within the time frame set for the review. A total of 90 individual studies focused on physical activity. All these studies were included in the mapping and quality screening exercise. There were 42 intervention studies (outcome and process evaluations), 41 reports of 'non-intervention' research, and 7 systematic reviews.

Only 28% (18) of the 90 physical activity studies identified in the mapping appeared to address issues of social exclusion, with all but one of the studies involving participants from ethnic minorities or with low incomes conducted outside the UK. Teachers in school settings implemented almost three-quarters of evaluated interventions. Due to the nature of the setting, a large proportion of socially excluded young people could have been missed.

Just under a quarter of the 42 intervention studies identified in the mapping evaluated interventions that addressed barriers to, and facilitators of, physical activity solely at an individual level. The remainder were split evenly into those studies that addressed community level factors (factors working at the family or inter-personal level), those that addressed societal factors, such as socio-cultural influences or structural circumstances, and those in which it was not possible to identify the authors' conceptualisation of influential factors.

Thirty-eight of the 42 intervention studies were outcome evaluations. Over 80% of these had a controlled trial design. Just over half were randomised controlled trials. Using the reporting of equivalent intervention and control groups and both pre- and post-test data as measures of methodological soundness, just under three-quarters were judged to be potentially sound. The reporting of study methods was highly variable for the non-intervention studies, with details of sample numbers, age and sex each provided in over 80% of cases, but ethnic group or socio-economic background each reported in less than a quarter.

3.1.3 Mapping and quality screening results – healthy eating review

Of the 186 reports which met our inclusion criteria for either physical activity or healthy eating, and were available within the relevant time frame, a total of 135 reports focused on healthy eating. These reports described 116 studies (some studies were described in more than one report). There were 75 intervention studies (64 outcome evaluations and 11 outcome and process evaluations combined), 32 reports of non-intervention research (e.g. surveys), and nine potentially systematic reviews.

Only 22% (N=25) of the 116 healthy eating studies identified in the mapping exercise addressed issues of social exclusion, and most of these were not carried out in the UK. Just over 70% of evaluated interventions were implemented in school settings, primarily by teachers, thus again potentially missing a large proportion of socially excluded young people.

Most of the barriers and facilitators addressed by the studies were at the level of the individual (e.g. 'life event factors', 'physical factors', 'psychological factors'). Almost a quarter of studies evaluating interventions focused solely on factors at this level.

Over 80% of the outcome evaluations had a controlled trial design and just over half were randomised controlled trials. Using the criteria for methodological soundness (reporting of equivalent intervention and control groups and both pre- and post-test data) almost three quarters were judged 'potentially sound'.

3.2 Young people's views - results of the in-depth reviews

3.2.1 Study findings

There were 12 studies which looked at the views of young people in the mental health review, 16 in the physical activity review, and eight in the healthy eating review.

Mental health

Table 1 shows the 12 studies of young people's views included in the mental health review.

Table 1: Studies of young people's views included in the mental health review (N=12)

Author and year of publication	Quality criteria met	Aims	Study type and main target group
Aggleton <i>et al.</i> (1995)	B, C, D, G	*To explore factors that contribute to, and protect against, psychosocial disorders among young men	Focus groups and individual semi-structured interviews. Young men at high risk of developing psychosocial disorders (included unemployed, homeless, those with history of mental health problems), age 16-20, England (N=160)
Armstrong <i>et al.</i> (1998)	A, B, C, D, E, F, G	*To explore children's views about mental and emotional health problems	Focus groups and individual interviews. Young people from schools, minority ethnic communities, mental health service user and carer groups, age 12-24, Scotland, ethnic minority young people included. (N=169)
Balding <i>et al.</i> (1998)	B, C, D, E, G	*To look at young people's mental health in the context of their social relationships and aspects of their physical health	Structured self-completion questionnaire (the Health-related Behaviour Questionnaire). Secondary school students from 21 areas of England and Scotland, age 12-15 (N=16,732).
Bowen (1997)	B, C	*To identify the mental health concerns of teenagers to inform the development of a teacher's resource pack.	Questionnaire, probably including closed and open questions, used as self-completion and also to generate discussion in group settings. Secondary school students from one school in NE England, age 14-15 (N=80)
Derbyshire (1996)	B, C, E	*To explore stressful life events and daily hassles, depression and physical symptoms.	Questionnaire, probably self-administered, with various scales and checklists. Secondary school students from one school in NW England, age 11-14 (N=112)

Table 1: Studies of young people's views included in the mental health review (N=12) **cont'd**

Friedli and Scherzer (1996)	B, C	*To examine the extent to which young people are affected by and are aware of mental health problems and to describe how young people tackle problems and anxieties	Interviews of unspecified administration. North and South of England, age 11-24 (N=1853)
Gallagher <i>et al.</i> (1992)	A, B, C, D, E, G	*To discover the self expressed, self-determined needs/concerns of young people so that guidance might be made more relevant and effective	Researcher-administered scaled questionnaire for anonymous completion by students. Students from two further education colleges, five secondary schools and three grammar schools from the western area of Northern Ireland, age 15-18 (N=446)
Gallagher and Millar (1996)	A, B, C, D, E, G	*To determine the personal and social concerns of young people in order to provide those working with young people a greater understanding of their needs	Structured questionnaire of scales, probably self-administered and anonymous. Students from 24 secondary and grammar schools across Northern Ireland, age 15-19 years (N=3983)
Gordon and Grant (1997)	A, B, C, D, E, F, G	*To examine the emotional and mental health of young people in order to inform how best to address their mental health needs.	Administered by teachers, self-completion questionnaire with selection of words to describe feelings, open reflection of feelings, and open response questions. Students from 13 state and three independent schools across different areas of Glasgow, Scotland, age 13-14 (N=1634)
HEA (1995)	C	*To examine what young people worry about and what makes them feel good about themselves in order to find out what adults need to do help young people achieve their potential in later life	Structured questionnaire, no information on administration. Students from the South of England, the North of England and the Midlands, age 13-14 (N=1054)
Porter (2000)	B, C, E, G	*To reflect on what mental health means to young people; to map out existing strategies to maintain well-being; to identify the best way to communicate possible coping strategies to young people	Moderator-conducted focus group interviews of friendship pairs. Focus groups from unknown settings in Edinburgh, Glasgow, Kirriemuir and the Borders, age 12-16 (N=9 focus groups)

Table 1: Studies of young people's views included in the mental health review (N=12) **cont'd**

Tolley <i>et al.</i> (1998)	B, C, D, G	*To discover what the concerns and worries of young people are; to find out how to make people listen to them	Group and individual interviews using open questions. Students from two secure units, four comprehensive schools, one grammar school, two youth projects, one residential school and one scout group in different towns and cities throughout England, age 10-17 (N=70)
-----------------------------	------------	---	---

* Key

- A. Does the study give an explicit account of theoretical framework and/ or include a literature review?
- B. Did the report explicitly and clearly state the aims of the study?
- C. Did the report adequately describe the context of the study?
- D. Did the report provide clear details of the sample used and how the sample was recruited?
- E. Did the report provide a clear description of the methods used in the study including methods used to collect data and methods of data analysis?
- F. Are there attempts made to establish the reliability and/or validity of the data analysis?
- G. Were sufficient original data included to mediate between data and interpretation?

Three of the studies looked at young people's underlying attitudes to mental health. The findings were interesting and useful for those planning health promotion, suggesting that young people might recognise that they, or their friends, experienced sadness and other negative emotions, but be unwilling to use the labels 'mental health' or 'mental illness'. Authors of one study reported that the phrases 'mental health', 'mentally healthy' and 'mental well-being' were either misunderstood or interpreted extremely negatively. Young people did not see terms like these as relating to the everyday problems or coping strategies that affect their lives. Rather, they seemed to associate terms like 'mental health' with more extreme illness.

All twelve studies addressed the question of what young people think influences their mental health in a negative way. Some used self-completion questionnaires with pre-set lists of topics; others asked open-ended questions. Although young people report being worried about a huge range of different things, the ones that they are most frequently worried about or that seem to result in most negative feelings are school work (e.g. having too much work to do, pressure to do well, exams); physical appearance (particularly for young women); relationships with friends and peer groups; family discord, or lack of family support; and for older teenagers, choosing and finding a job, unemployment, lack of material resources and feelings of boredom and powerlessness.

Positive influences on mental health were identified in fewer studies and results were more diverse. Some of the facilitators that emerged were the key role of families - to provide love and support - and the value placed on friends both as people to talk to and as sources of 'respect'. Other positive things were satisfaction gained from achievements in school and in sport, and feeling financially secure.

Some of the studies asked what young people did to make themselves feel better about themselves and who, if anyone, they found it helpful to talk to. A range of coping strategies was mentioned. Listening to music was important for many, as was sport and dancing, relaxing and 'indulging' oneself (for young women in one study).

Negative coping strategies were mentioned by some young people in the context of stress and anxiety. These included physical aggression and damage to property, and the use of drugs and alcohol. The findings on whether talking about problems was useful, and who to talk to, were diverse – partly because of the differences between

the studies in the ages and backgrounds of young people surveyed. Overall the studies suggested that: 1) there are some young people who feel that there is no-one they can talk to; 2) talking about problems can be difficult, even if a suitable person exists, because of issues like confidentiality and trust; 3) teachers were rarely seen as appropriate people with whom to discuss problems; 4) friends were the preferred people to talk to; and 5) some young people report negative experiences with people such as General Practitioners (GPs), social workers and counsellors.

There was evidence from some studies of differences in the coping strategies identified by young women and young men, though it is difficult to distinguish actual gender differences in beliefs and behaviour from differences in what it is acceptable to admit to in the research setting. It is probable, though, that talking about problems is a more usual strategy for young women than young men.

Only four studies directly encouraged respondents to talk about how mental health could best be promoted. Again the findings differed, in this case because of differences in the questions posed. Suggestions included more support for services like Childline; advice that is relevant, appropriate and designed in consultation with young people; and being listened to and taken seriously.

Overall, the task for health promotion is made more difficult by differences in young people's preferences. Some reported that they wished to be sought out and helped when in trouble while others wanted to be left alone.

Healthy eating and physical activity

Table 2 shows the 23 studies included in the reviews of healthy eating and physical activity. Eight studies were specifically about healthy eating and 16 focused on physical activity. One study (Harris, 1993) was included in both reviews.

Table 2: Studies of young people's views included in the reviews of healthy eating and physical activity

Author and year of publication	Quality criteria met	Study aims	Study type and main target group
Balding <i>et al.</i> (1997)	B,C	To examine the travel patterns and aspirations of young people on the home to school journey	Self-completion questionnaire. Secondary school students in W England, age 11-15 (N=3447)
Birtwistle and Brodie (1991)	A,B,C, D,E,F, G	To investigate the perceptions of PE held by UK school children in both primary and secondary education	Questionnaire including the CAPTA Scale (Children's Attitudes Towards Physical Activity) and with some open questions. Primary and secondary school students from one UK Local Education Authority, age 10 to 14 (N=607)
Coakley and White (1992)	A,B,C, D,E,F, G	To explore how young people make decisions about participating or not participating in sport	Tape-recorded interviews. Young people, age 13 to 23, identified through teachers and sports programmes in SE London (N=60)

Table 2: Studies of young people's views included in the reviews of healthy eating and physical activity **cont'd**

Dennison and Shepherd (1995)	A,B,C, E,G	To increase understanding of the factors affecting food choice decisions	Self-completion psychometric questionnaire relevant to the Theory of Planned Behaviour. Secondary school students (age 11 to 12, 14 to 15) at eight schools selected because they used the same catering company (N=675)
Gentle <i>et al.</i> (1994)	B,C,E, G	To investigate factors associated with the motivations to exercise	Self-completion questionnaire, closed questions. Secondary school students from two schools in a small town in Devon (SW England), age 14 to 15 (N=426)
Harris (1993)	A,B,C, E,F	To explore young people's attitudes, views and beliefs with respect to health, fitness and exercise	Fourteen focus groups, some mixed, some single sex, with secondary school students, age 11 to 13, from two large schools in W. Midlands (N=61)
Hopwood and Carrington (1994)	A,B,C, E,G	To investigate claims that young women attitudes to PE might be becoming more positive, and look at young women' perceptions of their femininity in relation to sport participation	Self-completion questionnaires with both open and closed questions. Secondary school students in two urban schools in N England, age 11,13, 15 (N=280)
Kincey <i>et al.</i> (1993)	B,C,E, G	To examine the interrelationships between self-esteem and motivation for, and barriers to, sports and exercise participation	Self-completion questionnaire with both open and closed questions (including a self-esteem scale) Secondary school students, age 14 to 15, from Manchester (NW England) (N=485)
McDougall (1998)	A,B,C, D,E,G	To examine awareness of, and attitudes towards, nutrition among year 11 pupils in a local comprehensive school	Self-completion questionnaire with a mixture of open and closed questions. Students at one secondary school in NE England, age 15 to 16 (N=165)
Mason (1995)	B	To explore young people's views on participation in physical activity	Individual interviews with a topic guide, at home. Young people from all over England, not clear how selected, age 11 to15. (N=21)
Miles and Eid (1997)	B	To compare young people's knowledge of healthy eating with their behaviour.	Self-completion questionnaire (few details given). Students at one comprehensive school in unspecified part of England, age not stated (N=109).
Miller (1993)	B, C	To assess the extent of conflicts or ambiguities between perceptions of femininity and a commitment to an active lifestyle	Eleven group interviews with young women interested in dance or sports attending two secondary schools in a town in S. England. Age not stated, sample size estimated to be between 44 and 66.

Table 2: Studies of young people's views included in the reviews of healthy eating and physical activity **cont'd**

Mitchell (1996)	B,C,D, E	To explore the role of teenage magazines in shaping attitudes to physical activity amongst young women	Four focus groups. Year 10 young women at one secondary school in SE London, age 14 to 15 (N=21).
Mulvihill <i>et al.</i> (2000a)	A,B,C, D,E,G	To explore what constitutes physical activity / beliefs about physical activity	Ten focus groups in school settings, plus four in out-of-school settings, plus some ad hoc interviews. Purposive recruitment to achieve mix in social background and activity level. Across UK, age 11 to 15 (N=96)
Orme (1991)	B,C	To identify the influences and constraints on participation in physical activity amongst 14 year old young women	Semi-structured group interviews with secondary school students age 14 at two schools in W England (N=10)
Roberts <i>et al.</i> (1999)	C,G	To examine the general dieting behaviour and characteristics of young women in the UK	Self-completion questionnaire with mainly closed questions about dieting behaviour (few details). Girls aged 11 to 15 at six secondary schools in NW England (N=569)
Rogers <i>et al.</i> (1997)	B, C, D, E, G	To examine in detail the effects of ethnicity on the health behaviours, knowledge and attitudes of young people from different ethnic groups	Tape recorded, semi-structured interviews. Secondary school students, age 12, at 20 schools in N London. Ethnic minority focus: 25% Bangladeshi, 25% Black African, 17% Afro-Caribbean. (N=158)
Ross (1995)	A,B,C, D,E,G	To explore the attitudes and beliefs which underpin health-related behaviour to increase understanding young people's food choices	Seven focus groups with pupils aged 10 to 12 in one Edinburgh primary school (N=46)
Sports Council Wales (1994) (SCW 1)**	A, B, C, E, G	To investigate issues of availability of opportunities, access to facilities, attitudes towards sport and influences on decisions to participate for secondary school children	Self-completion questionnaire with pen and closed questions. Sample of school students, age 11 to 16, from across Wales (N=2873)
Sports Council Wales (1994) (SCW 2)**	A, B, C, D, G	To examine young people's feelings towards and attitudes about sport	In-depth interviews with a sample drawn from the previous study with some extra respondents by snowballing. Age 11 to 16 (N=60)
Warburton (1998)	Did not meet any of the criteria	To inform the development of an intervention to promote participation in physical activity	Focus groups with secondary school students, age 14 to 15, at two schools in Manchester, NW England. No information on sample size

Table 2: Studies of young people's views included in the reviews of healthy eating and physical activity
cont'd

Watt and Sheiham (1996) Watt (1997)	A,B,C, D,E,G	To assess dietary patterns and experiences of change of a sample of 469 young people aged 13 to 14 in inner city London and to determine applicability of stages of change model	Self-completion questionnaire Students aged 13-14 at four secondary schools in N London (N=479)
Watt and Sheiham (1997)	A,B,D, E,F,G	To assess the meanings of food-associated concepts for young people, and how these fit into their lives	Individual interviews involving a card sorting task used to elicit views about food. Purposively selected sub-set of respondents to larger study (Watt and Sheiham 1996) (N=81)

* Key

- A. Does the study give an explicit account of theoretical framework and/ or include a literature review?
 - B. Did the report explicitly and clearly state the aims of the study?
 - C. Did the report adequately describe the context of the study?
 - D. Did the report provide clear details of the sample used and how the sample was recruited?
 - E. Did the report provide a clear description of the methods used in the study including methods used to collect data and methods of data analysis?
 - F. Are there attempts made to establish the reliability and/or validity of the data analysis?
 - G. Were sufficient original data included to mediate between data and interpretation?
- ** This report contains two separate studies.

Nearly all the studies asked about young people's attitudes to physical activity, healthy eating or both. Attitudes to physical activity varied depending on the current level of activity of the young person, and attitudes to both topics were influenced by gender. There were some links between ideas about healthy eating and physical activity. For example, a cluster of negative images emerged linking fatness and spots with 'laziness' and fatty foods. Appearance was more important for young women in these studies, and they emphasised that as a reason for eating healthily, and in some studies, for taking part in physical activity.

Studies which offered young people attitude checklists and knowledge tests about healthy eating and physical activity tended to find that attitudes and beliefs were mainly favourable to healthy lifestyles. More in-depth studies of their views provided some understanding of why those views were not always translated into healthy behaviour.

One theme that came up in a number of studies was the perception that fitness was equivalent to slimness and also that sporting skills and achievement were necessary for fitness. Seeing physical activity as limited to a narrow range of organised sports was also mentioned in some studies. These views can all work against wider participation in activity. Gender differences emerged in some studies in the importance of sport for self-image. Young women tended to identify less often with sports personalities and to see participation in sport as part of a phase which they had grown out of.

Looking specifically at the barriers to, and facilitators of, healthy eating and physical activity, a number of key findings emerged. These were grouped under four headings - the school; practical and material resources; family and friends; and the self.

A number of aspects of school provision for physical activity were identified as important. Young people in many of these studies held negative perceptions of physical education. Some of the problems identified were lack of choice in activities; embarrassment about appearance and unsuitable PE kit (particularly for young women); criticism or lack of interest by PE teachers; and lack of skill at games. For a few, the presence of good PE teachers was mentioned as a facilitator. This theme was linked to that of resources, since staff time, buildings and space limited the choices available to young people both in and out of school.

In relation to healthy eating, poor school meal provision was raised by some young people, who criticised the quality of the food and particularly the lack of choice. The cost of healthy options was also raised in some studies.

The linked themes of the self and relationships with family and friends were crucial as facilitators and barriers for both healthy eating and physical activity. The two key issues were personal autonomy and the high value placed by young people on their friends. In relation to both sport and food young people emphasised their preferences – for food that they liked, for activities that were interesting and fun and for opportunities to be with friends. Fast food was recognised as being less healthy but tasted good and was associated with leisure and being with friends. Acting in the other direction was the desire to look good which, particularly for young women, was an important motivator to healthy eating and activity. For those active in sports, the social benefits were emphasised, but young people also talked about their reluctance to show themselves up in front of friends when they were not skilled, and about embarrassment concerning their appearance.

Family support was important for some young people in their pursuit of physical activity, but there were also some family constraints arising from concerns about safety. Some young Muslim women commented on restrictions on the type of activity they could pursue or the timing and venue. In terms of food, many young people saw the home as a place where healthy meals were provided. Barriers related to the individual - relevant to both healthy eating and physical activity - were laziness and conflicting interests. Willpower was suggested as something which helps young people to eat more healthily.

Young people's ideas about how physical activity and healthy eating should be provided were only solicited directly in six studies. Key recommendations for physical activity were about increased choice and facilities. Young women, particularly, wanted access to a wider range of sports including aerobics, and dance. There was an emphasis on the need to develop the social side of physical activity and provide more opportunities for activities that were fun, with space and time for both single-sex and mixed activities. Ideas put forward by young people for increasing healthy eating were limited and tended to conflict with strong preferences for food that they liked.

3.2.2 Study characteristics and methodological quality

The research which assessed the views of young people varied in terms of methods and was patchy in terms of both methodological quality and coverage of sub-topics and categories of young people. Methods ranged from short structured

questionnaires, with responses presented using descriptive and inferential statistics, through to informal interviews, focus groups or observation with responses summarised and analysed using young people's own words.

The majority of studies were conducted in school settings. Some reports included only limited information about the characteristics of the young people taking part. For example, the social background was not always clear and so it is difficult to assess the extent to which the research as a whole covers young people of different social and ethnic backgrounds.

Methodological quality was assessed using criteria covering seven areas, including factors such as the adequacy of sampling and recruitment procedures, and reliability and validity of the data analysis. Only four of the 35 studies of young people's views in the three reviews met all seven criteria. Often key details about the research methods were missing from the reports. For example, ways of identifying the sample, of inviting participation and of obtaining consent were poorly described in a number of reports.

3.2.3 Strengths and limitations in the research on young people's views

There is no doubt that some very important and illuminating research on young people's views was found in all three in-depth reviews. The research focuses on the experiences and feelings of young people and draws attention to the social contexts within which barriers and facilitators operate. Studies in the field of mental health and physical activity were more numerous and generally richer than in the area of healthy eating in terms of the data provided.

There were relatively fewer studies reporting young people's views on healthy eating. A considerable amount of information was presented on gender differences but there were topics that appeared to be missing, or to have limited research available. It would be valuable to have more research which explores the links between food, physical activity and mental well-being, or, to frame it in negative terms, studies to investigate links between unhappiness, bullying, self-image and being either overweight or having an eating disorder. These topics also relate to worries about sport and having an 'acceptable' body. Research about young people's physical activity also needs to take account of lifestyle trends (e.g. growth of computer games and internet use, increasing reliance on cars) that lead to increases in sedentary activity and reductions in outdoor play, walking or cycling to school and active leisure pursuits. The scope of the three reviews was such that studies including young people with existing illness or disability were excluded. Their views could be included in more detailed reviews of specific topics like bullying or dieting.

The socio-economic characteristics of the young people taking part in these studies were not always clearly described, raising a number of questions about what we can conclude about their relevance to inequalities. For example, to what extent do studies of young people's views address inequality or social exclusion? Do some categories of young people identify different underlying views about, say, physical activity, and different barriers and facilitators? How are young people's views related to their wealth or poverty? Are there special issues for young people from particular minority ethnic groups, or those living in city centres or remote rural areas? Some of the studies did provide data on the social and ethnic background of participants, but

these data were often very limited and were rarely used in analysing the findings. Specific studies to fill these gaps should be commissioned in the light of evidence about the health needs of particular communities or categories of young people. At the same time it would be helpful if researchers were clearer in the description of the social and demographic characteristics of the young people in their studies.

In terms of methodology, the studies varied a great deal. Studies which offered young people the opportunity to present information in their own way, as opposed to providing pre-set, researcher-defined, categories, were usually more informative. Young people's own accounts of their views on health and on what helped them behave in a healthy way, were informed by the social and financial context in which they lived. For example, food choices were not just about taste or nutrition but were strongly influenced by the need to be with friends and to behave in ways acceptable to their peers. Studies which use more structured questionnaires may be better suited for outcome assessment in intervention studies, particularly if these build on earlier open-ended approaches in other studies or at a pilot phase.

3.3 Effectiveness of interventions - results of the in-depth reviews

This section summarises the results of the evaluations of interventions included in the three in-depth reviews. Common themes to emerge relating to the effectiveness of interventions in the three areas are identified and discussed.

3.3.1 Interventions to promote mental health

The evidence for the effectiveness of interventions to promote mental health comes from seven systematic reviews of effectiveness, and five additional outcome evaluations.

Characteristics of the 'sound' outcome evaluations and systematic reviews

A total of 47 outcome evaluations fell within the scope of the in-depth review, focusing on suicide, depression, self-esteem or coping. Of these, 30 met the methodological inclusion criteria for in-depth review (employing a comparison or control group, pre- and post- test data reported, and for non-randomised trials, baseline measures equivalent), and were thus deemed to be 'potentially sound'. Sixteen of these had already been included in one or more of the seven good quality systematic reviews and were therefore not assessed further. The remaining 14 'potentially sound' outcome evaluations underwent full data extraction and critical appraisal. Following this, five were considered to be methodologically 'sound' (Bredehoff and Hey, 1985; Clarke *et al.*, 1993, which described two separate outcome evaluations; Haldeman and Baker, 1992; and Silbert and Berry, 1991).

Table 3 provides details of the five sound outcome evaluations. Two of the five studies focused on promoting self-esteem, two aimed to prevent depression and one was about suicide prevention. Secondary education was the setting for four of the five sound studies. The setting for one study was not described. Teachers or

lecturers were the intervention providers in three studies. Interventions were provided by a counsellor and a psychologist in the remaining two studies. For each study, a variety of intervention types were employed, using multiple methods of delivery. No study used one intervention type alone, nor one particular method of delivery. This may explain the disparity in effectiveness, with different combinations of interventions producing differing results.

Table 3 - Outcome evaluations judged methodologically sound included in the in-depth review of mental health (not already included in existing reviews)

Author, year and country	Objectives and description of intervention	Design
Bredehoft and Hey (1985) USA	*To strengthen self-esteem, family togetherness/flexibility, and conflict resolution * Eight structured classes to build self-esteem through modelling, and to teach communication skills	RCT
Clarke <i>et al.</i> (1993) USA (Clarke 1)	*Three structured lectures on symptoms and causes of depression, encouraging young people to seek help and increase their daily rates of pleasant activities to prevent depression	RCT
Clarke <i>et al.</i> (1993) USA (Clarke 2)	*Behavioural skills training to increase participation in pleasant activities to prevent depression *Five structured classes on symptoms and causes of depression	RCT
Haldeman and Baker (1992) USA	*Cognitive instruction versus cognitive self instruction to reduce irrational thoughts *Six weekly classes to recognise self-defeating thoughts, and reinforce positive thoughts, using role playing and instructional booklets	RCT
Silbert and Berry (1991) USA	*To reduce stress, anxiety and hopelessness *One month of health classes on understanding and coping with suicide and depression, and ways to help suicidal friends	CT

RCT = randomised controlled trial

CT= controlled trial (non-randomised)

Table 4 provides details of the seven systematic reviews. Four looked at the promotion of mental health in general, two focused on preventing suicide and one examined interventions to promote self-efficacy and self-concept. Whilst all of the reviews considered young people, two were reviews of interventions targeting all ages, with specific sections for different age groups (Hodgson and Abassi 1995, Tilford *et al.*, 1997). There was huge variability in the number of primary studies included in the reviews, from nine to 177. Most of the interventions discussed in the reviews were delivered in the USA.

These systematic reviews make a substantial contribution to the evidence base for health promotion with young people since their methodological quality was generally good. All stated their aims, search strategy, inclusion criteria, and provided directives for future research and practice. Only one study failed to provide any details about critical appraisal of primary studies, and two did not state whether standardised data extraction had been used.

Table 4: Systematic reviews included in the in-depth review of mental health

Author and year of publication	Coverage of review	Number of relevant studies included*
Tilford <i>et al.</i> (1997)	Mental health promotion interventions	2
Haney and Durlak (1998)	Promotion of self-esteem or self-concept	1
Ploeg <i>et al.</i> (1996; 1999)	School-based suicide prevention programmes	9
Hodgson and Abassi (1995), Hodgson <i>et al.</i> (1996)	General mental health promotion	0
Nicholas and Broadstock (1999)	Prevention of mental illness in young people	2
Hider (1998)	Youth suicide prevention programmes by primary healthcare professionals	14
Durlak and Wells (1997; 1998) Durlak (1998)	Primary prevention mental health programmes aimed at behavioural and social problems in children and young people	1

* These are outcome evaluations which met the inclusion criteria for the in-depth review but did not undergo data extraction and critical appraisal as they had already been included in an existing systematic review. Thus the review by Tilford *et al.* (1997), for example, included two outcome evaluations that were eligible for our in-depth review.

Mental health: main findings

The evidence for the effectiveness of mental health promotion with young people was mixed. Some of the systematic reviews came to positive, yet sometimes vague, conclusions, stating that mental health promotion can be efficacious, whilst others were more explicit in their findings, outlining specific components as being effective or ineffective, together with likely explanations. The results of the sound outcome evaluations correspond to some extent with those of the systematic reviews. For example (as discussed below) the limited effectiveness of the intervention to prevent suicide we reviewed was mirrored by the results of the systematic review on that topic.

Both Tilford *et al.* (1997) and Hodgson and Abassi (1995) concluded that, overall, mental health promotion interventions are effective. Similarly, Durlak and Wells (1997) found that most types of primary prevention interventions, including those aimed at preventing depression, produced statistically significant benefits to young people. Their meta-analysis detected medium to large effect sizes. The authors concluded that the average participant in a primary prevention programme surpasses the performance of 59 to 82% of those in a control group. However, Nicholas and Broadstock (1999) argued that mental health interventions are limited in their effectiveness, particularly in promoting behaviour change.

Interventions to promote positive self-esteem have been limited in their effectiveness, with the meta-analysis by Haney and Durlak (1998) generating modest effect sizes. The review concluded that interventions which have the promotion of self-esteem and self-concept as a primary focus are more effective than broader interventions designed to address a number of issues.

One of the sound outcome evaluations reported that short-term information and skills development interventions aimed at young people and their families are effective at improving knowledge about self-esteem, recognising conflict, and improving family cohesion and adaptability, although reviewers judged there were no clear effects. Another outcome evaluation found that short term cognitive self-instruction for young women aimed at identifying self-defeating, and affirming self-reinforcing, thoughts, increased knowledge of cognitive self-instruction, but its effect was unclear for self-referrals for private counselling.

The results of interventions to prevent depression in young people were also mixed. Bearing in mind limitations in methodological quality, and the diverse nature of some of the interventions (in terms of length, setting etc), it is difficult to draw firm conclusions.

A systematic review of early interventions for preventing mental illness in young people included studies whose aim was to prevent depression (Nicholas and Broadstock, 1999). Of the three studies of young people at high risk for depression, two were methodologically weak, with the strongest study suggesting that classroom-based skills development interventions can be effective. A Swedish community-wide public health intervention provided activities to reduce depression, suicidal thoughts, and bullying, and to increase satisfaction with school and life, as well as reducing drug and alcohol use. Conducted over a 15 year period, greater benefits were identified in the community which received these activities, in comparison to communities which did not (Berg-Kelly *et al.*, 1997). Evaluation of an eight session school-based coping skills group intervention showed decreased depressive symptoms in both the study and control groups, although the effects were more pronounced for young women in the study group (Lamb *et al.*, 1998). Similarly, the results of the meta analysis by Durlak and Wells suggested that most interventions significantly reduced problems such as anxiety and depression.

The two sound outcome evaluations that tackled depression found that knowledge-based sessions of short duration were not effective in improving long-term depressive symptoms, risk factors, knowledge, attitudes or intentions (Clarke *et al.*, 1993).

The evidence for the prevention of suicide and self-harm was limited, with some indication of their potential even to do harm (particularly amongst young men). Harmful effects included the arousal of feelings of hopelessness, and acceptance of suicide as a potential solution to problems.

Most of the school-based studies reviewed by Ploeg *et al.* (1996; 1999) were rated methodologically weak to moderate. Whilst positive effects on suicide potential, depression, stress and anger were identified, effects on knowledge and attitudes towards suicide were small.

The review of youth suicide prevention interventions by primary healthcare professionals (Hider, 1998) came to similar conclusions. Few controlled evaluations of school-based suicide prevention were found, including those provided by primary care practitioners. School-based interventions provided by school personnel have not found consistent improvement in young people's attitudes towards suicide. Very few studies evaluated impact on actual suicide behaviour and ideation, and where

this research has been conducted, results have shown ineffectiveness or mixed results.

The one sound outcome evaluation on suicide prevention (Silbert and Berry, 1991) was associated with increased knowledge about causes, symptoms and prevention of suicide in young people and their peers but not with reductions in stress, anxiety and hopelessness.

3.3.2 Interventions to promote physical activity and healthy eating

Characteristics of 'sound' outcome evaluations

A total of 38 outcome evaluations on the topic of the promotion of physical activity and 75 outcome evaluations on the topic of the promotion of healthy eating were located. Of the 38 physical activity studies, 12 met the inclusion criteria for in-depth review, and of the 75 healthy eating studies, 22 met the criteria. These studies subsequently underwent data extraction and critical appraisal. Following this, four physical activity and seven healthy eating outcome evaluations were considered to be methodologically sound, forming the sub-set of studies upon which conclusions and recommendations in this report are based.

Table 5 provides details of the sound physical activity and healthy eating outcome evaluations. Four outcome evaluations were common to both reviews, that is, they assessed the effectiveness of interventions to promote both nutrition and exercise. Therefore, there are four outcome evaluations that addressed both topics, and three that consider only healthy eating.

All of the programmes were delivered and evaluated in secondary schools. In two cases the intervention began whilst students were in primary school and continued as they progressed to secondary school (Walter 1989: this report contains two studies). All of them were multi-component interventions, that is, they sought to intervene in different settings, such as the classroom, the school as a whole, and the home, whilst using different methods, such as didactic education, group discussions and mass media.

Table 5 - Outcome evaluations judged methodologically sound included in the in-depth physical activity and healthy eating reviews

Author, year, country, and review(s) study is included in	Objectives and description of intervention	Design
Klepp and Wilhelmsen (1993) USA Healthy Eating	To increase the consumption of fresh fruits, vegetables, whole wheat bread and low fat dairy products, and decrease the consumption of high sugar and high fat snack foods. Multi component intervention involving classroom discussion, peer education, visits to local food outlets, involvement of local youth groups, and food preparation at home and school.	CT
Moon <i>et al.</i> (1999a) UK Healthy Eating & Physical Activity	To help promote health throughout the school. The 'Wessex Healthy Schools Award Scheme' provides structured frameworks, health-related targets and external support to help schools become health-promoting. The 15 month intervention covers 9 key areas including healthy food choices and physical activity.	CT
Nicklas <i>et al.</i> (1998) USA Healthy Eating	To promote changes in knowledge, attitudes and behaviours in relation to daily consumption of fruit and vegetables. 3 year multi-component intervention incorporating a school-wide media marketing campaign, classroom activities, parental involvement, and changes to the content of school meals.	RCT
Perry <i>et al.</i> (1987) USA Healthy Eating & Physical Activity	To establish positive eating and physical activity patterns and behavioural goals. The 'Slice of Life programme', a 10 session high school curriculum designed to promote health eating and physical activity patterns amongst young people. Intervention covered knowledge about benefits of fitness and nutrition, weight control and social and environmental influences.	RCT
Vartiainen <i>et al.</i> (1991) FINLAND Healthy Eating	To prevent smoking and abuse of alcohol, to improve nutrition, to promote physically active lifestyles, to promote positive social relations with peers and adults, and to improve problem solving and coping skills. The second 'North Karelia Youth Programme', a multi-component intervention featuring: classroom educational activities, media campaign changes to the nutritional content of school meals, health screening activities, and a health education initiative in the workplaces of the parents.	RCT
Walter (1989) (Walter 1) USA Healthy Eating & Physical Activity	Favourably to modify the population distributions of risk factors for CHD and cancer through changes in behavioural antecedents of the risk factors (e.g. diet, physical activity). The 5-year 'Know Your Body' programme, featuring classroom education, parental involvement, risk factor examination component with bio-feedback and setting of behavioural goals. Evaluation conducted, in the Bronx, a low income borough of New York, involved a 'mostly black and Hispanic' student population.	RCT

Table 5 - Outcome evaluations judged methodologically sound included in the in-depth physical activity and healthy eating reviews **cont'd**

Walter (1989) (Walter 2)	Same intervention as for Walter 1 above.	RCT
USA	Evaluation conducted on different population (Westchester County, New York)	
Healthy Eating & Physical Activity		

RCT = randomised controlled trial

CT = controlled trial (non randomised)

Given the general multi-component nature of the interventions, there were differences in terms of scope and content between them. For example, three studies evaluated the effects of interventions which sought to make school-wide changes in addition to classroom activities (Moon *et al.*, 1999; Nicklas *et al.*, 1998; Vartiainen *et al.*, 1991).

By way of contrast, the other three interventions focused on classroom activities in which information was provided and skills were taught (Klepp and Wilhelmsen, 1993; Perry *et al.*, 1987; Walter I (1989) and Walter II (1989).

Physical activity and healthy eating: main findings

The results of interventions to promote exercise and good nutrition show that some favourable changes in reported behaviour, physical health status, and school health promotion functioning have been achieved. However, there are marked variations according to age and gender, with young women, particularly in older age groups, being more receptive to initiatives.

The effectiveness of interventions to promote both healthy eating and physical activity is summarised below.

The 'Wessex Healthy Schools Award Scheme' by Moon *et al.* (1999a, 1999b) was more effective with older participants, particularly young women in the higher year groups (aged 15 to 16 years). Amongst these participants it was more effective for promoting physical activity and healthy eating practices than for younger participants (aged 12 to 13 years). There was little change in knowledge (which was reported to be high anyway), but the most marked changes were amongst young women in the older age group. Another outcome was changes in health promotion organisation within schools measured through the calculation of audit scores on the health promotion activity, organisation, and functioning of participating schools. The intervention schools generally out-performed the control schools on this measure.

The 'Slice of Life' intervention by Perry *et al.* (1987) was effective in promoting increased participation in physical activity for both sexes, but more effective in promoting healthy eating behaviour among young women. Increases in knowledge about exercise were found only for young women, but there were increases in knowledge about nutrition for both sexes. Young women were also more likely than young men to express intentions to eat healthy foods and take exercise, and to demonstrate skills such as reading and interpreting food labels correctly.

The 'Know Your Body' programme, which lasted for five years, was effective in changing cholesterol levels, blood pressure and dietary intake only in the evaluation which took place in the Bronx area of New York (Walter, 1989). The effects of the evaluation in the more advantaged area of Westchester County, New York (Walter, 1989), were unclear.

In terms of interventions to promote healthy eating only:

The intervention evaluated by Klepp and Wilhelmsen (1993) which lasted approximately four months was judged to be effective for young men reporting healthy eating behaviour at the five month follow-up, and effective for both sexes after one year. In terms of knowledge, it was effective for young men but not young women.

The three year long 'Gimme 5' programme (Nicklas *et al.*, 1998) was effective in increasing consumption of fruits and vegetables, primarily in the first two years of intervention, and was successful in increasing knowledge, particularly among young women.

The second 'North Karelia Youth Programme' (Vartiainen *et al.*, 1991) was most effective in encouraging healthy eating behaviour at two year follow-up for the groups which received the higher intensities of the intervention. It was ineffective in reducing cholesterol levels, and changing diastolic blood pressure, but effective for reducing systolic blood pressure. The intervention was also judged to be successful in facilitating changes in school food provision, with the fat proportion of food decreasing in the schools which received the highest intensity intervention. Furthermore, the polyunsaturated/saturated fat ratio increased in the groups receiving the intervention compared to the control group.

3.3.3 Strengths and limitations in the intervention research

One common feature across the three reviews was the lack of methodologically sound studies, particularly from the UK. Only around a third of the outcome evaluations meeting the inclusion criteria for each of the three in-depth reviews were judged to be of sufficient methodological quality to enable judgements about effectiveness to be made, and therefore support conclusions and recommendations. The most common reason for studies failing to be judged sound included intervention and comparison groups that were not comparable at the start of the study on socio-demographic characteristics and outcome measures, and failure to report data for all outcomes. These shortcomings have the potential to confound the results of the evaluation, generating misleading conclusions about effectiveness.

A second common finding was that the interventions were often limited in their effectiveness. All the sound outcome evaluations we assessed in-depth were judged to be partially effective, that is, effective for some outcomes only. There are a number of potential explanations for variability in effectiveness.

One possibility is that interventions are far too brief to have an impact. Clarke *et al.* (1993), who evaluated two interventions to prevent depression, speculate that the relatively brief nature of the interventions (between three and five 50 minute sessions) was a likely reason why favourable changes were not observed for all

outcomes, and why some positive effects dissipated over time. They cite the results of a review of school-based health promotion programmes which recommended that 30 to 40 hours may be the minimum time necessary to achieve sustained benefits (Connell *et al.*, 1985). However, the level of intensity required for effectiveness is likely to vary according to the topic. Interventions to promote self-esteem, for example, may need to be longer than, say, interventions to prevent depression. Bredehoft and Hey (1985), who evaluated an intervention to promote self-esteem and family cohesion, suggest that one of the outcomes measured, self-concept, is a relatively stable concept and may require a more powerful degree of intervention to influence. This is echoed by Silbert and Berry (1991), in the evaluation of a suicide prevention programme, who suggest that one of the outcomes they measured, young people's feelings about hope and lack of hope in the future, is likely to require more extensive intervention to produce significant change. Furthermore, the duration and intensity necessary for effective interventions to promote mental health may not necessarily be appropriate for programmes aimed at promoting physical activity or healthy eating. Interestingly, one of the longest programmes subjected to in-depth review in this series, the five year cardiovascular health 'Know Your Body' programme, was only partially effective (Walter, 1989). However, the authors of this study suggest other explanations, apart from duration, which may have influenced the outcomes. Therefore, it is not possible to be too prescriptive about the length of time, and frequency necessary to promote young people's health. However, it is reasonable to suggest that shorter, 'one-off' initiatives are less likely than longer, regular, programmes to generate sustained benefits. This is supported by theories of health-related behaviour which stress the importance of maintaining behaviour change (Prochaska and Diclemente, 1984; Prochaska *et al.*, 1994).

Other explanations for lack of effectiveness centre on further shortcomings in evaluation methodology. Despite having passed criteria to be judged methodologically sound, some of the studies suffered from additional problems, which the authors sometimes discuss in relation to their findings. For example, the instruments used may not have been sensitive enough to reflect changes in outcomes, or may simply have been inappropriate for the types of outcome being measured. Bredehoft and Hey (1985: 416) suggest that the 'global nature' of the instrument they used meant it was not able to detect the 'subtle nuances' the intervention may have generated. This points to the need for instruments designed specifically to register changes in certain outcomes. Clarke *et al.* (1993) posit that the instrument they used to measure knowledge of depression was insufficient, since it only contained three questions, and these were too easy to answer. They also suggest that use of a diagnostic instrument to measure depression would have yielded more positive results than the instrument they used which was more appropriate for detecting symptoms.

Other explanations for the limited effectiveness of the interventions included the possibility that sample sizes may not have been large enough to detect changes, particularly given the fact that statistical power calculations were rarely reported. Also, in some studies there was little 'room for improvement' with young people scoring favourably on outcomes at the start of the intervention. This was the case in the study by Clarke *et al.* (1993), where young people were high in self-concept at baseline. Similarly, the general lack of effect on knowledge scores in the evaluation of the Wessex Healthy Schools Award was explained by the fact that levels of knowledge were already high at the start of the study (Moon *et al.*, 1999a). Another issue related to effectiveness is the timing of outcome measurements. Both Silbert

and Berry (1991) and Bredehoft and Hey (1985) suggest that the period of time between baseline measures and post-intervention measures needs to be long enough in order to allow changes to occur, particularly the development of new skills.

A third common finding was that effectiveness varied according to gender. For example, young men in the first of the two interventions to prevent depression evaluated by Clarke *et al.* (1993) tended to benefit more than young women. This is explained by the authors in terms of the likely 'mechanistic' nature of the intervention being more relevant to the ways that young men cope with their problems. However, similar gender differences were absent in the second intervention, which they described as being even more mechanistic, suggesting other influences. Interestingly, one of the studies included in the systematic review by Nicholas and Broadstock (1999), which evaluated an intervention to prevent depression, found that it was more effective for young women (Lamb *et al.*, 1998). Another interesting finding was that harmful effects of suicide prevention programmes were more likely for young men than young women (Ploeg *et al.*, 1996; 1999), again perhaps reflecting their different coping styles.

In the area of healthy eating and physical activity favourable changes were more common for young women than young men. For example, the 'Slice of Life' intervention by Perry *et al.* (1987) was more effective in encouraging practical skills, awareness, intentions and reported healthy eating behaviour for young women (although it was not effective for increasing participation in physical activity for either sex). Process evaluation indicated that young women enjoyed the intervention more than young men which may account for the differences in the findings. Other explanations, as discussed by the authors, include the fact that young women tended to eat more healthily at the start of the study, that healthy eating may be more of an issue for young women than young men, and that the issues around weight management and physical appearance explored during the intervention may be more relevant to young women. They suggest that the intervention might have more impact on young men if the content was modified to appeal to both genders. For young men the focus could be on healthy eating within the context of physical activity, specifically to play sport. A potential recommendation therefore is to deliver separate interventions for young men and women.

4. IMPLICATIONS FOR RESEARCH

Outline of Chapter

The preceding chapters of this report have summarised the findings of the studies which examined the views of young people about barriers and facilitators to mental health, physical activity and healthy eating; and the results of the 'sound' outcome evaluations of interventions. This chapter 'synthesises' the evidence from these different types of research.

For each of the three reviews a synthesis was constructed to ascertain:

- In what ways the barriers identified by young people are similar to, or differ from, those addressed by interventions developed to promote their health*
- The extent to which the facilitators identified by young people have been used to develop such interventions.*

*This chapter provides a 'meta-synthesis', across the three topic areas, examining the extent to which interventions, soundly evaluated or otherwise, have been designed **in accordance** with young people's views. The aim is to outline **cross-cutting themes** relating to the realms in which the barriers and facilitators appeared to be: the school; family and friends; the self; and practical and material resources. The chapter identifies barriers and facilitators that operate across more than one of the topic areas, and the evaluated interventions that may have dealt with these. Where gaps exist between barriers and facilitators and interventions to address these recommendations are made for further research.*

*This chapter will be relevant to **all readers** as it draws together the evidence from the mapping exercise, and the in-depth reviews of the intervention and non-intervention studies to provide a composite picture of how the barriers to, and facilitators of, mental health, physical activity and healthy eating have been addressed by evaluated interventions. However,*

- **researchers and policy specialists** are likely to be most interested in the implications for further research, flagged up throughout the chapter, which have arisen in the light of gaps or matches between barriers and facilitators and the existing evidence base. For example, young people's concerns over their physical appearance in relation to healthy eating were only addressed in one of the soundly evaluated interventions (section 4.3). There were, however, three evaluations of interventions which dealt with dieting and appearance that were not judged to be sound, suggesting the need for further, more rigorous, evaluation.*
- **practitioners, health care consumers, and policy specialists** as well as **researchers** may find useful the examples of the evaluated interventions provided throughout the chapter, which are discussed in the context of their relevance to the barriers and facilitators identified by young people. For example, effective initiatives to prevent bullying are described in section 4.2, in terms of their capacity to address directly one of the barriers that young people identified. As*

these programmes took place in a non-UK setting it is suggested they could be adapted and replicated in the UK. The research implication here is the need for monitoring and evaluation to examine programme transferability across different cultural contexts.

Key messages

- *The **school** was both a barrier and a facilitator. Some school barriers and facilitators have been addressed by soundly evaluated interventions, but gaps remain. The main issues were: having a good selection of healthy options in the canteen, addressed by two soundly evaluated and effective interventions; having the opportunity to take part in more contemporary activities during PE, taken up in one intervention that was not soundly evaluated; and lack of adequate bicycle storage facilities, which was generally not addressed although 'whole school' approaches to health promotion may be one way of improving facilities.*
- ***Family and friends** were likewise identified as both barriers and facilitators to health. Some of the barriers and facilitators in this area have been taken into account by good quality evaluations of interventions, but they have not always been effective, and some issues have yet to be adequately covered at all. The main issue identified by young people was that they value confidentiality and often turn to their friends for emotional support. This was addressed by two soundly evaluated interventions which employed young people to act as peer educators to promote healthy eating and physical activity. There was less evidence for peer education/support in the area of mental health. Parents seemed to be considered supportive of healthy eating at least in the sample of studies reviewed, and soundly evaluated interventions in the home have been effective in encouraging healthy eating. Young people cited parents and family as sources of emotional support. But the evidence for the effectiveness of interventions to promote better family relations is mixed.*
- *In relation to the theme of the **self** the issues raised by young people were complex, and only some have been dealt with in well-designed evaluations of health promotion interventions. There has been some attention to improving self-esteem with two soundly evaluated interventions effective for outcomes such as knowledge and awareness. Young people described feeling motivated to take part in physical activity because of the sense of achievement it engenders, particularly when doing well in sports. They described getting good marks at school producing a sense of pride. In terms of interventions, initiatives to motivate young people to achieve personal goals are generally lacking. However, interventions included in previous systematic reviews have attempted to modify classroom curricula, and enhance students' ability and sense of personal competence. Young people coped with their problems in a variety of ways, some positive and some negative. There was at least one sound outcome evaluation which encouraged young people to use positive methods of coping, although this was generally not effective.*
- *Few evaluated initiatives addressing **practical and material resources** were identified. Participation in physical activity was sometimes prohibited by the cost of transport to amenities. Moreover, 'fast foods' were relatively cheap and easy to access. No evaluated initiatives were identified which tackled these barriers. In the area of nutrition, healthy food was not always easy to access (e.g. in*

school), whereas outlets providing fast foods were plentiful. Well designed evaluations have illustrated the effectiveness of increasing availability of healthy foods in schools and youth club settings. Poor transport infrastructure (e.g. lack of cycle paths) and socio-cultural tensions (e.g. racial prejudice, violence) were two of the root causes of concerns about safety. No evaluated initiatives were found which tackled these problems.

4.1 Matching barriers and facilitators to evaluated interventions: 'the school'

One of the most important influences on young people's health is the school. In the three reviews, school was identified by young people as being both a barrier to, and a facilitator of, health. Table 6 shows the main barriers and facilitators identified by young people in each of the three reviews. It also indicates which have, and which have not, been addressed by soundly evaluated interventions. The overarching issues that emerged relating to the school included the value young people placed on having choice and autonomy (e.g. over what sports they participate in; what foods they eat); the importance of good school facilities (e.g. adequate changing facilities for PE); and the effects of teacher-student relations (e.g. insensitivity in PE lessons). Some of the barriers and facilitators that related to the school have been addressed by soundly evaluated interventions, but significant gaps remain.

Table 6. Main barriers and facilitators identified by young people across all three reviews.

	Mental health	Physical activity	Healthy eating
BARRIERS			
Choice and autonomy			
Lack of consultation in activities and arrangements for PE		• x	
Lack of choice of healthy foods			• ✓
Lack of respect from teachers	• ✓		
School environment/structure			
Poor facilities for PE		• x	
Poor provision of healthy foods			• ✓
Lack of storage space for bicycles		• x	
Stress from exams or heavy workload	• x		
Teacher student relations			
One of least cited sources for information			• ✓
Not seen as a good source of advice or support	• x		
'Insensitive' teachers or teachers showing a lack of respect	• ✓	• x	
FACILITATORS			
Choice and autonomy			
Choice of 'non-traditional' activities		• x	
Healthy food choices in canteen			• ✓
Teacher student relations			
Respect for PE teachers		• x	

Key:

- – indicates in which review(s) the barrier or facilitator was identified
- ✓ – Indicates where the particular barrier or facilitator *has* been addressed by a soundly evaluated intervention

x – Indicates where the particular barrier or facilitator *has not* been addressed by a soundly evaluated intervention

4.1.1 Choice and autonomy

From the studies of young people's views it was clear that choice and autonomy are factors they value in all spheres of their lives, but especially so in school. Young women, in particular, were dissatisfied with PE activities, preferring to take part in more contemporary forms of exercise including aerobics, ice skating or cycling. The evidence also showed that young people value the ability to choose what they eat, with some remarking that there is often little choice of foods on the menu in the school canteen. In one of the studies of young people's views, suggestions were made for healthy options such as, salads, pasta, and sandwiches with salad, which could be made available in school canteens.

The extent to which these issues have been translated into changes within the school is very limited. Although we identified studies which evaluated interventions attempting to increase the variety of physical activities in which young people can participate, methodological problems meant that reliable conclusions could not be drawn about whether these were effective (Flores, 1995; Hopper *et al.*, 1992; Vandongen *et al.*, 1995). For example, one study assessed the effectiveness of a dance curriculum set to 'rap' music in a US school, chosen specifically because it would appeal to the pupils (Flores, 1995). Further, more rigorous, evaluation is appropriate, given that this is an approach that young people want.

In terms of nutrition the picture was more optimistic, with some good quality evidence for the effectiveness of interventions to promote healthy choices in school catering environments. In particular, the 'Gimme 5' programme evaluated by Nicklas *et al.* (1998) instigated a number of school-wide initiatives to encourage greater acceptance and consumption of fruits and vegetables, including increasing the availability of healthy foods in the school canteen and increasing portion sizes. The intervention was effective at increasing consumption of these foods. Interestingly, in the 'Slice of Life' intervention (Perry *et al.*, 1987) pupils were encouraged to survey their peers to elicit their views on the factors in their day-to-day lives that may inhibit their ability to lead healthy lifestyles. They then presented their findings to their teachers and school administration with recommendations for change (e.g. that school meals conform to nutritional guidelines). This would appear to be an appropriate method of enabling young people to put forward their own views about health-related issues, and is an important way of enabling them to exercise autonomy and choice; to feel valued; and to take 'ownership' of the issues that affect their health. However, it is not clear whether such changes were actually implemented in the school taking part in the intervention. If young people's recommendations are not going to be implemented, there is a danger of merely paying lip service to their views. Future research should investigate effective ways of building views and recommendations into school policy and practice.

4.1.2 School environment/ structure

The issue of inadequate school facilities/amenities arose as a significant perceived barrier to health, particularly in relation to taking exercise and eating healthy foods. For example, young people said that a lack of adequate bicycle storage facilities

prevented them from cycling to and from school, and for young women inadequate changing and showering facilities, lack of time for changing, and uncomfortable gym kits were identified as problematic. In terms of nutrition, the problems were similar to those discussed above, namely poor availability of healthy and interesting foods in school catering settings.

Improvement of health promotion facilities in schools has been addressed to some extent in the pool of soundly evaluated interventions, but there are issues which have yet to be considered. For example, the 'Wessex Healthy Schools Award' Scheme in the UK aimed to enable schools to become more health-promoting through adopting a whole school or 'holistic' approach (Moon *et al.*, 1999a). There are nine key areas covered: the health education curriculum; links with the wider community; a smoke free school; healthy food choices; physical activity; responsibility for health; health-promoting workplace; environment; and equal opportunities and access to health. As well as measuring changes in pupils' knowledge, attitudes and behaviours (effective mostly for young women in the older year groups), changes in school health promotion activity, organisation and functioning were also assessed. The intervention was effective on these measures, although not in the specific area of physical activity, or the outcome 'taking responsibility for oneself'. To assist with implementing the whole school approach, Local Education Authorities were able to provide some support for health education resources. However, it is doubtful whether the intervention included making 'structural' changes to the school environment along the lines of providing better bicycle storage or changing facilities as suggested by young people (structural interventions are discussed more fully under 4.4 'practical and material resources', below). It is therefore appropriate to develop and evaluate interventions which physically improve the school environment, providing a structure within which young people can lead healthy lifestyles.

Again, the picture as regards promoting nutrition in schools was more positive, with two of the soundly evaluated interventions showing evidence for the effectiveness of increasing the provision of healthy foods. One of these was the 'Gimme 5' programme, as described above, which concentrated specifically on the promotion of fruits and vegetables (Nicklas *et al.* 1998). The other was the second 'North Karelia Youth Programme' which successfully instigated changes to the menu, including promotion of vegetables and fresh salads and skimmed milk (Vartiainen *et al.*, 1991). Replication of these interventions could be accompanied by evaluation to gauge to what extent they are effective in a UK setting.

4.1.3 Teacher-student relations

Another cross-cutting issue was the role teachers play in the lives of young people. One of the most consistent findings from the three reviews is that young people generally do not consider teachers approachable to discuss health issues or as sources of health information. This was particularly so for discussing emotions and feelings. For example, one study which examined young people's worries and self-esteem, found that whilst parents were an important source of self-esteem, teachers were seldom identified as having the same role (HEA, 1995). In another study only 6% of respondents said they could talk to teachers about their problems, compared with 64% who would talk to friends, or, 26% who would talk to their mothers (Gordon and Grant, 1997). Difficulties with teachers were also identified in the area of physical activity, with young women in particular mentioning negative and insensitive

behaviour from school PE teachers, specifically their use of scolding and criticism. Furthermore, in the area of nutrition, teachers were reported to be one of the least cited providers of information about healthy foods.

Negative perceptions of teachers in relation to health is remarkable given the fact that the majority of interventions identified in the three reviews were delivered by them. Although interventions delivered by teachers can be effective, using teachers is not straightforward. An interesting example is the evaluation of the 'Know Your Body' programme in two geographically diverse localities in New York, the Bronx, and Westchester County (Walter, 1989 respectively). The intervention lasted for five years and aimed to promote nutrition, physical activity and prevent smoking. It included a classroom component, with two hours a week of education about health issues, parental involvement activities (e.g. family exercise days); and a risk factor screening component in which students received feedback on their blood pressure and cholesterol levels and then set goals for behaviour change. Although the intervention was found to be effective for some of its outcomes, it was reported that teachers were not always able to deliver the curriculum effectively, and that they sometimes lacked enthusiasm and skill. It was suggested that their training was not of sufficient duration to motivate and equip them with the necessary skills. The risk factor examination, one of the staple features of the intervention, was considered to have created considerable disruption of regular school activities, and it was felt that its potential as an educational tool was not fully realised.

Furthermore, Moon *et al.*, (1999a) reported a number of problems experienced through in the delivery and evaluation of the 'Wessex Healthy Schools Award Scheme', including teachers' misconceptions about the research process, suspicion of evaluation as a means of teacher assessment, and general time and resource pressures related to effective school functioning. In some of the study schools it was doubtful whether a whole school approach was completely achieved, since some teachers and support staff were not aware that the scheme had taken place despite their school receiving the award. This is an issue that has more to do with the practicalities of implementing initiatives within schools, but it may nevertheless shed light on why young people have negative perceptions of teachers and schools. This points to the need for further research into effective ways of evaluating interventions in school settings. Teachers themselves could be asked what potential strategies would encourage them to engage with the evaluation process. These strategies could then be tested for their effectiveness.

There were some initiatives that promoted better teacher-student relations in the classroom. One of the conclusions of the meta-analysis of mental health programmes carried out by Durlak and Wells (1997) was that interventions to modify psychosocial aspects of the classroom (15 of which were included in their review) could be effective, although to a limited degree. These interventions are described within the review as promoting supportive relationships between students and teachers, social skills and cognitive development. The goal for future research would be to establish why these interventions were only partially effective. Any primary evaluation of new or existing approaches to promote better relations in the classroom should conduct process evaluation to establish which factors influence effectiveness (e.g. whether or not the approach is acceptable to/appropriate for teachers and students).

Although there is a large body of literature examining the way PE is taught and organised in schools we did not identify any studies for our in-depth review which

evaluated the effect on subsequent participation in physical activity of changing the way PE is taught. An example is the study reported by Marsh and Peart (1988). This was a physical fitness training programme for Australian eighth grade young women (aged 13 to 14) which contrasted a competitive approach to PE (e.g. with an emphasis on winning) with a co-operative approach (e.g. with an emphasis on encouragement and improvement) to ascertain effects on self-concept and fitness. As this study did not go on to examine the effect on subsequent participation in physical activity we did not include it in our in-depth review. Without a critical appraisal of its methodology it is difficult to interpret its findings with confidence, but the authors reported that both styles of teaching increased levels of fitness, and the co-operative approach was more effective in increasing self-concept. There is a gap, therefore, in the literature evaluating approaches to PE which help young people to feel comfortable about participating.

4.2 Matching barriers and facilitators to evaluated interventions: 'families and friends'

Significant others, that is parents, family and friends, were found to be greatly influential in young people's accounts of the factors affecting their health. Table 7 shows these types of barriers and facilitators in each of the three reviews. It also indicates which have, and which have not, been addressed by soundly evaluated interventions. Family and friends were identified as both barriers *and* facilitators to health. Whilst some parents restricted the activities their children took part in during their leisure time for cultural/religious reasons or issues of safety, others positively encouraged active pursuits and provided their children with material, financial and emotional support. This reflects the diversity of socio-demographic backgrounds and cultures of the young people taking part in the studies. Contradictory remarks about friends and family being both a source of support and pressure illustrated the complexities of inter-personal relationships, and highlighted the challenges facing health promoters in addressing this. Some of the barriers and facilitators in this area have been taken into account by interventions which have been soundly evaluated, but they have not always been effective, and some issues have yet to be adequately covered at all.

4.2.1 The role of friends

Friends were considered to be a facilitator of health in all the reviews, although less so in the area of healthy eating. For example, one of the attractions of taking part in sport was the fact that it is a social activity, and young people can use it as a way to make new friends. For young women in particular, social support from friends was important motivator. Similarly, talking to friends was a prominent source of information on nutrition for young women.

Table 7 Barriers and facilitators related to families and friends.

	Mental health	Physical activity	Healthy eating
BARRIERS			
Friends One of least cited sources for information or help in behaviour change (except for young women) Boyfriends/ girlfriends changing priorities for physical activity Falling out with friends	• x	• x	• ✓
Peers Being rejected by peers Bullying	• ✓ • x		
Family Conflict between and with parents Parental restriction on freedom and choice	• ✓ • x	• ✓	
FACILITATORS			
Friends Social support Social aspects of physical activity important motivators Combine sport and leisure facilities to emphasise socialising and fun	• ✓	• ✓ • ✓ • x	• ✓
Family Parental support Family most common source of information on nutrition Healthy foods associated with home	• ✓	• ✓	• ✓ • ✓ • ✓

Key:

• – indicates in which review(s) the barrier or facilitator was identified

✓ – Indicates where the particular barrier or facilitator *has* been addressed by a soundly evaluated intervention

x – Indicates where the particular barrier or facilitator *has not* been addressed by a soundly evaluated intervention

One of the ways young people felt they could cope with emotional problems was through talking about them, and taking comfort in the fact that there were people who could listen to them. Again, this was particularly an issue for young women, whereas young men preferred other ways of coping with problems, such as taking part in sport (this is discussed more fully below under 4.3. 'Matching young people's views to evaluated interventions: "the self"'). As discussed in the previous section, it was more common for young people to talk to their friends than adults (e.g. teachers) as adults were not viewed as appreciating the issues facing young people. Confidentiality also emerged as an important issue, which may explain why young people turn to each other for support rather than to adults who they feel they may not be able to trust.

The ability of friends to act as health facilitators has only been built upon by initiatives which involve young people acting as peer educators. The informal peer education and support that exists in young people's everyday lives has been 'formally' harnessed by health promoters in the design and evaluation of interventions. Perry *et al.* (1987) and Klepp and Wilhemsen (1993) both evaluated a similar multi-component school-based peer-led intervention to promote healthy eating (and in the case of Perry *et al.*, physical activity as well). Popular pupils were elected to become peer leaders and deliver part of the classroom health education curriculum, which

included examination of social influences on diet and exercise. In both of these evaluations positive effects on knowledge, attitudes and behaviour were identified - more so for young women. In the case of the study by Perry *et al.* (1987), the 'Slice of Life' intervention, it is not clear whether the peer educators promoted the social advantages of participating in physical activity, thus capitalising on this facilitator. The intervention had more of an impact on nutrition than physical activity outcomes. This intervention could be adapted to accentuate the social aspects of taking part in physical activity, and then evaluated in a UK setting to establish its effectiveness.

Given young people's hesitance about approaching adults with their problems, initiatives that employ peers to listen, support, and if necessary refer them to 'trusted' sources of help seem appropriate. These are often referred to as 'peer counselling'. Although evaluations of peer counselling programmes are likely to exist, we did not identify any soundly evaluated effective interventions which used this technique to promote mental health and emotional well-being. Such interventions were not included in our earlier systematic review of the effectiveness of peer-delivered health education (Harden *et al.* 1999a) because peer counselling was thought to be different from peer education. A systematic review specifically on peer counselling is therefore needed, with particular emphasis on the impact of this approach on mental health.

A randomised controlled trial is currently underway to evaluate interventions delivered by peers within the field of sex education, again, a topic young people are likely to talk to each other about given the sensitivities around growing up, identity and sexual behaviour. The RIPPLE trial (Randomised Intervention of Pupil-Peer Led sex Education) is examining the effectiveness of peer-led sex education in English secondary schools (Strange *et al.*, 2001).

Friends were not always considered to be supportive, however. Whilst personal relationships with girl- and boy-friends were cited as being important source of emotional support, in other ways these acted against healthy lifestyles by reducing young people's participation in sport and exercise. For example, young women in one study reported, on occasion, not taking part in sport because their boyfriends wanted to spend their leisure time in other ways. The issue of girlfriends/boyfriends being both a barrier and a facilitator has received little attention in the literature on evaluated interventions.

Barriers were also identified in the area of healthy eating, where peers were not considered to be a primary source of information about nutrition. It is not clear why this is so, however. Whilst there was little evidence of peer pressure to eat unhealthy foods, in one study young people were nevertheless observed to eat very similar foods at lunchtime, suggesting a more implicit form of pressure. There is also the notion that young people's 'social space' promotes consumption of foods lacking in nutritional value. As will be discussed below, whilst the home was associated with healthy foods and nutritious meals, life outside the home, particularly during social time, was characterised by eating snacks and 'fast foods', particularly for older teenagers with greater autonomy.

The fact that young people perceive links between healthy foods and the home, and between unhealthy foods and life outside the home, was not widely addressed by the outcome evaluations included in this review. The school-based multi-component intervention evaluated by Klepp and Wilhemsen (1993) was successful in securing

the participation of a local youth group which was motivated to increase the availability of healthy snacks. This may be a step in the right direction for encouraging young people to eat nutritious foods in their leisure time, although there is little evidence on effective approaches to young people who are not inclined to attend youth groups, but who spend their spare time in groups 'hanging round' places such as shopping centres where fast food outlets are plentiful. There is a place, therefore, for the evaluation of schemes which increase the availability of healthy foods in a range of environments where young people are likely to socialise. These may be part of wider schemes to increase community access to healthy foods.

Other barriers included dysfunctional peer relationships, particularly the fact that some young people find it difficult to make friends at all, and are thus excluded from social groups which may, potentially, be a source of support for health. In extreme cases bullying emerged as a serious threat to emotional well-being.

The barriers relating to peer exclusion and bullying have only been partly addressed. Two outcome evaluations in the review by Hodgson and Abassi (1995) found that a social skills training intervention (Bierman, 1986) and an academic and social skills intervention (Coie and Krehbiel, 1984) were both effective for short-term improvements in conversation skills and responses to peers and for cognitive competence and reducing peer rejection respectively. A reduction in bullying was one of several outcomes in the outcome evaluation by Berg-Kelly *et al.* (1997) which was included in the systematic review by Nicholas and Broadstock (1999) of early interventions to prevent young people's mental illness. The intervention, which took place in Sweden, was described as a package of community-wide public health activities that aimed to reduce depression, suicidal thoughts, bullying, and dissatisfaction with school and life and drug and alcohol use. The programme was reported to be effective³. Again, this initiative could be replicated and evaluated to examine its effectiveness in a UK context. The content of the intervention may have to be modified to appeal to young people in a different cultural setting

4.2.2 The role of family

Again, the evidence from the three reviews revealed that young people identified the family to be both a barrier to, and a facilitator of health. Barriers relating to the family were identified primarily in the areas of mental health and physical activity, but positive family influences were identified across all topics.

A common issue for young people was parental constraints on freedom and choice, including restrictions on going out, questions on where they had been, and having their privacy invaded. For young women constraints centred around worries for their safety, for some cultural traditions meant that they had to stay at home after school. Some young men felt constrained because of threats of violence they had received and possible intervention by the police (Aggleton *et al.*, 1995). These factors are likely to have implications for mental health in that young people value the opportunity to socialise and make new friends (e.g. through taking part in sports),

³ There is a wider literature on bullying and violence. Ten outcome evaluations described in the mapping exercise of the mental health review but excluded from the in-depth review focused on crime, bullying or violence and three of these were classified as 'potentially sound' (Bosworth *et al.*, 1996; Farrell *et al.*, 1996; Wiist *et al.*, 1996). These could be a source of further information on effective or ineffective approaches to address these issues.

and mention boredom and 'having nothing to do' as factors causing stress and anxiety.

Some young people (particularly young women) reported that they were discouraged by their parents from taking part in sports and physical activity on grounds of safety, and also culture. For example, one of the themes to arise in a study of young people's participation in sport (Coakley and White, 1992) was that some parents preferred their daughters to spend their leisure time in the home in order to contribute to household chores. Travelling to and from facilities such as after school clubs or leisure centres was viewed as compromising their safety. Specific safety concerns included inadequate cycle paths, poor street lighting, and proximity to neighbourhoods considered to be dangerous (safety as an influence on health is discussed more fully below in 4.4). There were also cultural concerns, with young Bangladeshi men reporting that their parents were concerned they might be bullied when participating in physical activity, and young Bangladeshi and Muslim women reporting family disapproval of certain forms of exercise (e.g. dancing).

None of these issues were directly addressed by the soundly evaluated interventions assessed in-detail in the three reviews. Safety, particularly in the context of young people's leisure time, has generally not been a focus of research interest. Schemes to enable young people to access sports or leisure facilities without fear for their personal security or risk of accidents may go some way in allaying both parents', and young people's safety concerns. As yet, well-designed evaluations of such initiatives are lacking, highlighting the need for more research.

Addressing cultural concerns about young people's freedom and leisure is a complex endeavour, given sensitivities over appropriate forms of physical activity and behaviour. This may require tailored approaches, such as the initiative evaluated by Schinke *et al.* (1996), in a cancer risk reduction intervention for younger American Indians in the North-eastern United States. This programme was designed to prevent tobacco use and modify dietary habits. The intervention was planned to respect Native American heritage through employing community representatives (who were consulted throughout the design of the programme) to share their cultural knowledge with young people and answer questions about ancestral life, within the context of promoting healthy lifestyles. Unfortunately, the evaluation was judged not to be methodologically robust enough for its findings to be interpreted with confidence. However, such an approach, if subjected to rigorous evaluation, could usefully be adapted for specific cultures in different countries.

Some of the facilitators relating to the family are the opposites of the barriers. For example, whilst young people stated that family problems (e.g. divorce, parent-child conflict, parental stress/coping) caused them anxiety and stress, they also identified their families as a source of emotional support, self-esteem, and encouragement for healthy lifestyles. To some extent these issues have been dealt with by interventions that have been soundly evaluated, albeit with mixed results. For example, the study by Bredehoff and Hey (1985) evaluated an intervention directed toward young people aged 11 to 19 and their parents, designed to teach and improve self-esteem, family cohesion and flexibility, and conflict resolution within families. The authors concluded that the intervention was effective for mothers' recognition of actual conflict within the family, whilst young people in the intervention group perceived less family dissonance and less dissonance with fathers than young people in the control group. Despite the study being judged methodologically sound, a number of potential

confounding factors were identified, and, curiously, changes in self-esteem were not actually measured, despite the fact that this was one of the study's aims, suggesting the need for more rigorous evaluation using more appropriate outcome measures.

Less encouraging findings were reported by Durlak and Wells (1997) in their meta-analysis of mental health promotion interventions. Interventions combined under the category of 'parent training', such as initiatives to educate parents about child development (of which there were 10) were found to have low effect sizes. Furthermore, the seven interventions focusing on helping children and young people through a period of parental divorce (mostly brief group based interventions) yielded small effects. Further work needs to be done to ascertain what might make these interventions more effective. If the relatively short nature of the programmes significantly limits effectiveness, then a trial could be conducted comparing different intensities of the intervention. Integral process evaluation should be conducted to isolate other specific factors influencing the outcomes.

In contrast to the restrictive attitudes of some parents towards their children's leisure activities, some young people said they received support from their parents and family, and this was a motivational factor for leading healthy lifestyles. This was a feature in the physical activity review where encouragement in terms of material resources (e.g. provision of sports equipment, transport to amenities) was considered to be an important facilitator. Positive parental influences were also identified in the area of nutrition, with young people associating home life with healthy foods, although they did not always report enjoying eating them.

Facilitators such as these have been incorporated into a number of the outcome evaluations judged to be methodologically sound. Four of the interventions evaluated in the physical activity and healthy eating reviews (all of which were based in schools) included a parental component to reinforce healthy lifestyles in the home (Klepp and Wilhemsen, 1993; Nicklas *et al.*, 1998; Vartiainen *et al.*, 1991; Walter, 1989). A notable example is the second 'North Karelia Youth Programme' (Vartiainen *et al.*, 1991) which complemented school activities with mass media campaign, involving the production of a television programme in which volunteer parents took part in studio discussions. This was accompanied by publicity in local newspapers and a health education initiative in the workplaces of the parents.

However, involving parents can be problematic. Nicklas *et al.*, (1998) reported that parental attendance at open evenings was high but attending parents were likely to be those who were most committed to health and nutrition anyway. Walter (1989) found that enthusiasm of parents and students taking part in the 'Know Your Body' intervention (which lasted for 5 years) waned as they progressed into junior high school. Further investigation is necessary to ascertain the best way of securing parent participation in health promotion interventions. This could take the form of a trial comparing different incentives to encourage participation (e.g. free transport, redeemable leisure centre vouchers) or examining the impact of using social influence (e.g. peer encouragement amongst parents). Such a trial would have to be designed to overcome one of the problems encountered by Baranowski *et al.* (1990a), who found that some families wanted to attend the intervention with other families they knew, but were not able to do so because some had been randomised to the control group. Therefore a cluster randomised trial is likely to be more appropriate, with whole communities being allocated to a particular intervention.

4.3 Matching barriers and facilitators to evaluated interventions: 'the self'

The third theme is about the barriers and facilitators to health governed by the thoughts, experiences, attitudes and knowledge of young people as individuals. As with the previous section on family and friends, the issues are complex, interrelated and at times conflicting. For example, some strategies used by young people to cope with stress or anxiety appear to have detrimental effects on other aspects of health.

Table 8 shows these types of barriers and facilitators in each of the three reviews.

Table 8 Barriers and facilitators related to self.

	Mental health	Physical activity	Healthy eating
BARRIERS			
Control, competence and achievement			
Feelings of powerlessness and not being in control	• x		
Feelings of not achieving/ lack of confidence in school work or sport	• x	• x	
Personal preferences			
Preference for 'fast foods'			• ✓
Preference for other activities over physical activity		• x	
Personal appearance			
Concerns over appearance can make young people feel bad, lead to dieting, or to not taking part in physical activity	• ✓	• x	• ✓
FACILITATORS			
Control, competence and achievement			
Achievement or competence in school work and sport	• ✓	• ✓	
Ability to cope	• ✓		
Willpower cited as major factor that helps in changing eating patterns			• ✓
Personal appearance			
Concerns over appearance may prompt young people to moderate intake of certain foods or participate in physical activity		• ✓	• ✓

Table 8 Barriers and facilitators related to self **cont'd**

Coping strategies			
Physical activity used to relieve stress and increase confidence (e.g. sport or dance)	● ✓	● x	
Pleasurable activities (e.g. listening to music, baths)	● ✓ ● x		
Creative activities	● ✓		
Pleasurable activities			
'Negative release' strategies (e.g. drug use, self-harm)	● ✓		
Keeping busy	● x?		
Sleeping or resting	● ?		
Crying	● ?		

Key:

● – indicates in which review(s) the barrier or facilitator was identified

✓ – Indicates where the particular barrier or facilitator *has* been addressed by a soundly evaluated intervention

x – Indicates where the particular barrier or facilitator *has not* been addressed by a soundly evaluated intervention

4.3.1 Control, competence and achievement

A number of issues emerged across the reviews which could be broadly grouped under the heading of control, competence and achievement. The common factor in many is low self-esteem.

Choice and autonomy are highly valued by young people, but interventions which seek to facilitate young people's independence are lacking. However, there is more literature about improving young people's confidence and self-esteem. Two good quality outcome evaluations were included in the mental health review, one of which, as discussed earlier, was a family based intervention designed to teach and improve self-esteem, cohesion, flexibility, and conflict resolution (Bredehoft and Hey, 1985).

The other was a cognitive theory-based programme designed to improve self-esteem through cognitive self-instruction training in young women aged 16 to 19 in the US (Haldeman and Baker, 1992). The intervention was judged by the reviewers to be effective for improving knowledge of cognitive self-instruction, but unclear in its ability to enable the young women to self-refer for private counselling. The intervention thus did not fulfil its full potential, that is, to enable young people to recognise irrational thoughts and take action themselves to overcome these. The authors suggest more research into how young people can be better trained in the skills needed to overcome low self-esteem.

Willpower was mentioned as being a major factor in helping to change diet. Only one of the soundly evaluated interventions could be considered to have capitalised on this, the 'Know Your Body' programme (Walter, 1989). In this, young people set themselves behavioural goals based on the results of risk factor assessment (e.g. to reduce their cholesterol levels by the next risk factor assessment through eating healthily and taking more exercise). The way in which willpower was exercised and maintained in this study is not clear. But the multi-component nature of this programme, involving both school and home, may have reinforced motivation.

Another issue influencing young people's health was their ability to feel competent at performing tasks (e.g. school work, sports) and being driven to compete and achieve (e.g. passing exams). This was something which was both a barrier and a facilitator. For some, taking part in sports provided the opportunity to practice and show off their skills, with winning providing a sense of achievement. Likewise, doing well in school and obtaining good grades also had positive benefits for overall self-esteem. However, the downside to this was that some young people felt pressured to achieve, and said that this was a considerable cause of stress and anxiety. Not feeling that they were achieving in sport was something that was particularly problematic for young men.

Interventions to promote self-esteem may, to an extent, resolve the problems associated with lack of perceived competence to succeed. As described above, the interventions we reviewed aimed to improve self-esteem in general rather than in the context of building competence and skills, although the effects may permeate all areas of life. Initiatives to motivate young people to achieve personal goals are similarly lacking, although, again, the goal-setting and endurance exercises to build skills and strength undertaken in the 'Know Your Body' programme might be a useful approach. Interventions which encourage young people to set themselves aims and objectives to achieve goals in school and life in general should be devised and evaluated. Young people could be supported to do better at school, or in physical activity, in relationships, employment, and health in general.

In terms of tackling stress and anxiety caused by heavy workload and pressure to achieve in school, two relevant studies were included in the systematic review by Durlak and Wells (1997), and assessed in our review of mental health promotion. Weinstein *et al.* (1991) evaluated a high school intervention to modify classroom curricula, student ability, and teacher-student relationships and promote parental involvement in school activities. This produced benefits in terms of scholastic achievement, absenteeism, and school dropouts. A school-wide intervention at teacher, administrator, mental health professional and parental level was effective in reducing serious behaviour problems, and improving students' sense of personal competence (Comer, 1985).

Some young people said that a lack of confidence inhibited them from taking part in physical activity. A particular worry was self-consciousness about appearance, and the fact that they might look stupid in front of their friends if they performed badly or participated in an activity of which friends disapproved. Whilst we found soundly evaluated interventions to build self-esteem in general, no interventions were identified which attempted to build confidence specifically to take part in physical activity. Paradoxically, as sport and exercise is one strategy young people use to feel good about themselves, a lack of confidence may stop them from participating in the very activities that could raise their self-esteem. Further work is needed in this area to develop and test interventions. Where interventions have already been evaluated, a systematic review would be appropriate to establish their overall effectiveness and set an agenda for further research.

4.3.2 Personal preferences

Personal preference was an important factor in young people's discussions about their health, and particularly so for being motivated to take part in physical activity. Factors that spurred them into participation included social benefits (e.g. making friends) and the fact that it can be fun and enjoyable, helping them to feel good. However, factors mitigating against this included feelings of inertia and lack of enthusiasm, particularly for young women. This was partly to do with having conflicting interests, and preferring to do other things in their spare time (e.g. socialising with friends, watching television). Characterising themselves as 'lazy' was offered as another reason.

The fact that young people are motivated to take part in physical activity because of its social benefits, and some are less inclined to participate because of conflicting interests such as the desire to socialise in other ways, suggests the need for initiatives which combine sport and leisure activities to maximise opportunities for socialising. No such interventions were identified in our reviews, suggesting the need for development and evaluation of what could be a promising approach.

4.3.3 Appearance

An issue pertinent across the three reviews was young people's concerns about their physical appearance and feelings of self-consciousness. Sensitivities about body image, which may be particularly common amongst young people, may prompt unhealthy eating behaviour, and inhibit them from taking exercise (in some cases it may even prompt over-exercise). In the physical activity review self-consciousness about body image was a significant barrier for young women, and this was partly related to what they considered to be inappropriate or uncomfortable school sports wear. Young women's worries about their physical appearance also emerged as problematic in the studies included in the mental health review.

Self-consciousness within the context of PE in schools suggests the need to adopt a more sensitive approach to teaching so that it is more in tune with the needs of less confident young people. This relates to the perceived insensitive attitudes of some PE teachers, a barrier that does not yet seem to have been addressed by soundly evaluated interventions. However, there has for some time been an awareness of this issue in the field and calls have been made for relevant initiatives.

In the area of nutrition, young women were, predictably, more concerned than young men about the effect of what they ate on their appearance. This could be construed as both a barrier and a facilitator. In one study a major reason for dieting was weight concerns, with a large proportion of the young women surveyed believing that this was good for their health. Desire to achieve and maintain an attractive appearance may be dangerous if dieting results in eating the wrong balance of foods. However, young people's pre-occupation with their appearance can also be construed as a facilitating factor, in that they often saw 'fast foods' as being 'greasy', causing spots and leading to weight gain (Ross 1995; Watt and Sheiham 1997). This may prompt them to reduce their consumption of such foods, although it is not clear whether these are replaced with healthy alternatives, or with dieting.

There have been some efforts to evaluate interventions that take into account young people's concerns over appearance and body image. In the mental health in-depth review there were no specific evaluations of interventions to address concerns around appearance, but there were some studies dealing with self-esteem in general, which may help to improve feelings about appearance. In the mapping and quality screening exercise of the mental health review, studies relating to eating disorders were identified, but these were not reviewed in-depth, since this was not the main focus of that review. However, one of the studies included in both the in-depth reviews of physical activity and healthy eating devoted some attention to issues around weight and appearance. The 'Slice of Life' intervention, which took the form of 10 classroom-based sessions, included one session in which commercial diets were analysed and criteria for a sensible approach to weight control were generated (Perry *et al.*, 1987). The intervention was found to be effective for reported behaviour, practical skills, and awareness (mainly for young women) and effective for increasing knowledge (for both sexes). Three interventions which were not soundly evaluated also addressed dieting issues in the context of nutrition, including: teaching young people how to identify lower fat meals in fast food restaurants (Fitzgibbon *et al.* 1995); small group projects to examine how body image is related to healthy eating and exercise, with analysis of commercials for contradictory messages between smartness, healthiness and sweet foods (Holund, 1990a); and high school classroom activities devoted to nutrition, obesity and unhealthy weight regulation practices (Flores, 1995). As these studies were not soundly evaluated, it is not clear whether or not they were effective. Further high quality evaluation is therefore needed.

4.3.4 Coping strategies

In some of the surveys included in the review of mental health promotion, young people mentioned strategies they use to deal with problems like stress, anxiety and worries, and activities they take part in to enjoy themselves and generally feel good. These included indulging in pleasurable activities such as eating chocolate, taking baths, listening to music, reading magazines, socialising, and taking part in sport and exercise. Pragmatic strategies to cope with stress were also identified, such as keeping busy, resting and sleeping, and crying to release tension. A minority of young people, mostly young men, also engaged in what can be interpreted as negative coping strategies, such as self-harm, stealing cars, physical aggression against others, and taking drugs. Although these appear to be barriers to health young people nevertheless used them to deal with their problems and in this respect they may consider them to be facilitators.

Some attempts have been made to evaluate initiatives that utilise positive coping strategies, although with limited effectiveness. For example, two soundly evaluated interventions included in the mental health in-depth review aimed to prevent the onset of depressive symptoms in ninth and tenth grade pupils (aged 14 to 16) attending health classes in high schools in the US (Clarke *et al.*, 1993). The first intervention comprised structured lectures on symptoms and causes of depression; encouraged young people to seek help if necessary; and encouraged them to increase their daily rates of pleasant activities to prevent depression. The second intervention added a skills training component. Neither was effective at improving long-term depressive symptoms, encouraging self-referral to counselling, or changing knowledge and attitudes. The authors posit that the intervention may have

been poorly delivered or too brief to register an effect; that sample sizes were too small; and/or that instruments used to measure outcomes were not sophisticated enough. This suggests the need for a longer, more intensive and carefully planned intervention with rigorous outcome and process evaluation.

Efforts have also been made to address some of the negative coping strategies that young people, particularly young men, employ to deal with stress. Hains and Szyjakowski, (1990) evaluated a cognitive stress reduction intervention developed to help young people overcome anger as a response to stress. The intervention was effective at decreasing anxiety and anger, and improving self-esteem. In terms of self-harm and suicide, the review of school-based suicide prevention programmes by Ploeg *et al.* (1996; 1999) identified beneficial effects for suicide potential, depression, perceived stress, and anger; however, limited effects were found for knowledge and attitudes and some harmful effects were identified, particularly among young men. The conclusion was that there is insufficient evidence to support school-based curriculum suicide prevention programmes for young people. The authors propose multi-strategy programmes across different agencies/sectors addressing high-risk behaviour rather than narrowly focused interventions.

Few interventions were identified which addressed drug use as a way of coping with problems. However, our literature searches were not developed to identify interventions in the area of substance abuse, and this was not the main focus of the mental health in-depth review. That said, there is a body of evidence on the effectiveness of interventions to prevent drug use, although not necessarily in the context of the use of drugs as a coping strategy. The systematic review by Hodgson and Abassi (1995), included in the mental health review, assessed several studies which aimed to prevent use of drugs and alcohol through education (Ellickson and Bell, 1990; Hansen and Graham, 1991) and through education combined with skills training in social influence resistance (Pentz *et al.*, 1989). These were generally associated with reductions in substance use, in one case sustained up to two years. Other systematic reviews which may shed light on this issue (though not assessed by in this series of reviews) include the review of alcohol misuse prevention by Foxcroft *et al.* (1997), and the review of substance misuse with young people by White and Pitts (1997).

Few studies were identified which used physical activity as a way of promoting mental health. One potentially relevant initiative was an Australian outward-bound training intervention included in the systematic review by Tilford *et al.* (1997). This was effective for improving young people's self-concept and locus of control (Marsh *et al.*, 1986). Another intervention, included in the same review, used aerobic exercise to promote self-esteem and prevent depression (amongst pregnant young women) and was found to be effective (Koniak-Griffin, 1994). There is likely to be a wider evidence base of interventions that use exercise and sport in the promotion of mental health, including therapeutic activities for young people diagnosed with a mental health disorder. But these would not have met our inclusion criteria of being about the primary prevention of mental health disorders. It is also likely that interventions to promote greater participation in physical activity, including the programmes described in this report, have benefits for mental health, although studies do not necessarily measure this as an outcome. Future evaluation of primary prevention interventions which aim to increase participation in exercise and sport may usefully measure mental health-related outcomes such as self-esteem and depression in order to assess the wider impact of such initiatives.

4.4 Matching barriers and facilitators to evaluated interventions: 'practical and material resources'

The wider socio-economic environment influences many of the issues that have been discussed so far in this chapter. The root causes of poor health are numerous and often interrelated, including economic disadvantage (e.g. unemployment, low wages); poor access to facilities (e.g. shops selling affordable nutritious foods); poor environment and infrastructure (e.g. deprived housing conditions, poor transport, inadequate street lighting); and social exclusion (e.g. delinquency, racism). Changes in levels of unemployment, say, are likely to have an impact on the health of young people, and are the target of government policies, but such policies are unlikely to be the subject of evaluations that would meet the inclusion criteria for systematic reviews. 'Joined-up thinking' in government should mean that, in the future, changes in one area of policy, such as transport, will be evaluated in terms of their wider impact, for example on health.

There are also social trends that affect all, or most, young people and which may be taken for granted. For example, increased television viewing and computer use and changes in societal attitudes towards the safety of being outdoors will affect young people's levels of physical activity, but is unlikely that young people would be aware of, and comment on, such trends. Young people in the studies we reviewed drew attention to some important structural factors but not others. The next section explores these issues in more detail. Table 9 shows these types of barriers and facilitators in each of the three reviews.

4.4.1 Economic issues

Concerns about money permeated all three reviews. Young people, particularly older teenagers, expressed worries about their financial security and their employment prospects. Money and financial security were identified as sources of well-being in two of the studies examining young people's views in the mental health review. In terms of what would improve the quality of their lives, common themes were financial security, academic achievement and increased employment opportunities. Another study which focused exclusively on the mental health of young men found several common sources of stress and distress, including worries about unemployment; not having a stable home; having nothing to do; fears for the future (especially when few aspects of their lives were certain in terms of, for example, getting a job or having somewhere to live).

Table 9 Barriers and facilitators related to practical and material resources.

	Mental health	Physical activity	Healthy eating
BARRIERS			
Economic issues Fears for future employment/unemployment Lack of money to get on with tasks of everyday living Healthy food options/ facilities for physical activity expensive or lack of money to buy/ access them	• x • x	• x	• x
Access to resources and facilities Lack of or inappropriate facilities for physical activity Having nothing to do Lack of support for those not living in parental home	• x • x	• x	
Safety and restrictions on freedom Police harassment Violence and racism	• x • x	• x	
Time constraints and convenience Healthy food not always convenient (e.g. takes too long to prepare) Fast food cheap and easy to buy at or around school premises			• x • ✓
FACILITATORS			
Economic issues Financial security Increased employment opportunities Reduction in the price of healthy snacks and sports/ physical activity facilities	• x • x	• x	• x
Access to resources and facilities More money for services such as ChildLine Materials for young people should be designed by them Increasing access to more appropriate and diverse leisure facilities Creation of more cycle lanes Food labelling	• x • x • x	• x • x	• x
Time constraints and convenience Healthier snacks in vending machines and healthier options on take-away menus			• x

Key:

- – indicates in which review(s) the barrier or facilitator was identified
- ✓ – Indicates where the particular barrier or facilitator *has* been addressed by a soundly evaluated intervention
- x – Indicates where the particular barrier or facilitator *has not* been addressed by a soundly evaluated intervention

Young people's concerns about the future are valid and understandable, and we would not expect interventions to be targeted at completely eliminating these. On the other hand, as mentioned above, it may be helpful for policy makers and researchers to bear in mind that changes in the economic environment will have far reaching consequences. Initiatives in the field of benefits, training and employment directed at school leavers may have an impact on the views and behaviour of those still at school.

In the area of healthy eating and physical activity cost and affordability became significant issues. In one of the studies of views about physical activity, which sampled young people predominantly from lower socio-economic groups, cost was cited as a barrier to exercise, particularly in terms of transport (Mulvihill *et al.*, 2000a;

2000b). One of the main suggestions the young people had was to make activities more affordable. In the area of nutrition, young people said that one of the attractions of 'fast foods' was the fact that, in comparison to healthy foods, they are cheap and easy to buy. Healthier snacks in vending machines and healthier options on the menu at take-aways were mentioned as factors that would facilitate healthier diets, as well as a reduction in the price of healthy snacks. As discussed earlier, healthy foods were often associated with the home, with parents generally providing their children with nutritious meals. However, most studies which assessed views on nutrition did not, sample young people from disadvantaged socio-economic backgrounds. It is highly likely that not all parents have the means to provide their children with regular nutritious meals.

Disappointingly, none of the outcome evaluations included in the healthy eating and physical activity in-depth reviews, whether methodologically sound or not, examined the effect of lowering the price of healthy foods or that of exercise facilities. The only outcome evaluation which addressed anything remotely concerning monetary aspects of healthy eating was the 'Gimme 5' programme (Nicklas *et al.*, 1998) in which, as part of a multi-component intervention, parents received healthy eating brochures, recipes and coupons. This is therefore a priority issue for evaluation.

4.4.2 Access to resources and facilities

Related to cost and affordability is access to health-promoting resources. Having to travel significant distances to access vital services has implications for transport costs. Again, this impacted on health across the three areas. In the mental health review a lack of material resources, and boredom were significant concerns for young people. In one particular study of the mental and emotional health of young men a lack of opportunities to participate in leisure activities and not being able to get on with the tasks of everyday life were causes of frustration and anger (Aggleton *et al.*, 1995). In the physical activity review, transport was an issue, particularly for those living in rural areas where a lack of late buses meant that young people could not access facilities such as leisure centres in the evenings after school. In the area of nutrition, young people suggested that there was a lack of healthy food choices in schools, particularly in the canteen and in vending machines. Although young people did not mention that shops selling healthy foods were lacking where they lived, they did say that outlets providing fast foods were plentiful.

Initiatives to address these issues have only been addressed to any extent in the realm of nutrition. As discussed in section 4.1, there have been at least two soundly evaluated interventions that have effectively enhanced the provision of healthy foods in schools. The mapping and quality screening exercise identified four studies evaluating initiatives to increase access to exercise facilities. These all involved the provision of free opportunities to participate in a diverse range of activities through 'after school clubs' or through community based programmes (e.g. Colchico *et al.*, 2000; Hickmann, 1994). However, their evaluations were all judged to be not sound. More rigorous evaluation is called for, as these are interventions that seem to match what young people want.

4.4.3 Safety

Restrictions in freedom and movement due to concerns about safety, and subsequent implications for health were touched upon earlier in section 4.2. These stem from two main problems: poor infrastructure, and crime and racial intolerance. None of the interventions assessed in the three reviews were relevant to these issues.

There was evidence from the studies assessing the views of young people that increased opportunities for more 'active' forms of travelling would encourage less use of cars as a mode of transport. For example, a study of young people's modes of transport to and from school, the 'Travelwise' survey (Balding *et al.*, 1997) found that around a quarter of those who travelled to school by car would prefer to walk or cycle instead. Only a minority said they never felt safe when travelling to and from school, although just over half were in favour of creating more cycle lanes. It is also claimed that those who do not travel by car, but want to, are less likely to feel safe travelling to school.

Interventions to promote safer environments were not within the scope of this series of reviews, but there are a number of relevant systematic reviews planned, in progress or published by the Cochrane Injuries Collaborative Review Group⁴.

Safety is also a cultural issue in that some young people do not have the freedom to socialise and exercise securely in their environment due to crime, racial prejudice, bullying etc. This is exacerbated by wider socio-economic problems such as urban decay fostering violence and crime. In one study of factors contributing to variations in health-related behaviours among a sample of 12 year old young people living in London (Rogers *et al.*, 1997), one fifth of Bangladeshi boys reported that their parents disliked them going out after school due to concerns about bullying, and the presence of 'rough' people near their homes. Parents expressed similar concerns over racism, racial violence and bullying, and reported applying restrictions on their children, especially their sons, in some cases confining them to their homes. Similarly, young men in the study by Aggleton *et al.* (1995) spoke of their anxiety about violence in terms of receiving threats and getting into fights. Restrictions on freedom were also mentioned, particularly from parents, occasionally from the police, and from societal attitudes and structure (in terms of, for example, lack of support and intolerance for those not living within a family unit or for those who had 'dropped out' of society). Racism was a source of anger and frustration for some young men in minority ethnic communities.

Initiatives to promote safety through tackling issues such as racism, violence and urban decay were not within the scope of this series of reviews. The evidence in this area is likely to be assembled by the Campbell Collaboration⁵ whose remit covers areas including delinquency, criminal justice, welfare, housing, and employment and training.

4.4.4 Time constraints and convenience

An issue that could be considered a barrier to health that does not seem to have been tackled is the lack of time to lead healthy lifestyles. This is as much a structural

⁴ For more information see the Cochrane Injuries Collaborative Review Group's module on the Cochrane Library (via CD-ROM or the internet for subscribers - <http://hiru.mcmaster.ca/cochrane/cochrane/cdsr.htm>)

⁵ <http://www.campbellcollaboration.org>

issue as it is an educational and social issue, and it highlights the overlap between the four main themes discussed in this chapter. For example, a main concern for young people was the pressure to achieve in school, with much of their spare time being taken up with homework. Evaluation of educational policy changes seems appropriate to address the best ways of balancing the taught curriculum with provision of 'free time' to enable young people to engage in active pursuits, which may of course help to reduce the academic stress some of them experience, as well as engineering an overall sense of well-being. Examples of evaluated interventions to achieve these goals were not found in the searches conducted for the three reviews.

A lack of time was something that prevented young people from eating healthily in that they said they did not have time to prepare healthy foods for themselves, and had to rely on convenience snacks instead. However, this was not always because they had too much homework to do; rather, they wanted to spend the time socialising with their friends. Young men, in particular, valued their free time to play sports such as football. As young people had conflicting priorities, it may be a sensible approach to increase opportunities for them to purchase or prepare healthy foods in settings where they spend their leisure time. One initiative that addresses part of the problem was the intervention reported by Klepp and Wilhemsen (1993) which was successful in securing the participation of a local youth group in increasing the availability of healthy snacks to the young people attending. The programme was found to be effective in increasing consumption of healthy foods.

In terms of providing young people with the inclination to prepare nutritious foods, and thus perhaps changing their perception that they lack time, interventions could usefully try to inspire them to try cooking for themselves. Again, the Klepp and Wilhemsen (1993) study taught cooking skills to motivate young people to prepare nutritious meals at school as well as in the home. It seems appropriate to develop and test interventions that adopt a co-ordinated approach to helping young people to make the best, and most health-enhancing use, of their time.

5. IMPLICATIONS FOR POLICY AND PRACTICE

Outline of Chapter

The previous chapter matched the barriers to, and facilitators of, mental health, physical activity or healthy eating to the evaluated interventions identified in the reviews. It highlighted the kinds of interventions which have been evaluated, the types of interventions which need to be developed and tested, and those which need to be refined and evaluated more rigorously. This chapter focuses on the implications for policy and practice of the evidence base synthesised in this series of reviews.

The following sections map the evidence for barriers and facilitators alongside policy and practice. Using the barriers and facilitators identified by young people as a starting point, it looks for current government policy initiatives which could address them and then examines whether there is any evidence to support their effectiveness. Evidence was sought from the pool of studies included in our mapping exercises and in-depth reviews, and from details of any on-going or completed evaluation of initiatives that were identified in the course of compiling an inventory of initiatives. Like the previous chapter the discussion is laid out according to the four themes: the school, relationships with family and friends, the self, and practical and material resources.

There is some overlap between the issues discussed in each of the themes. For example, young people's confidence, self-esteem and motivation to achieve in their everyday lives are discussed in relation to 'the self' but are also discussed in relation to another theme, 'the school' as they are inextricably linked to issues like educational attainment, disaffection and inclusion/exclusion. Finally, within each theme attention is paid to action to meet the needs of all young people, but there is particular emphasis on those who are especially vulnerable or at risk of ill-health.

*This chapter will be relevant to **all readers** as it draws together the evidence from the mapping exercise, the in-depth reviews of the intervention and non-intervention studies, and current policy and practice. The aim is to provide a composite picture of how the barriers to, and facilitators of, mental health, physical activity and healthy eating are being addressed. However,*

- ***policy specialists, practitioners and health care consumers** are likely to be interested in the gaps and matches between barriers and facilitators, the evidence base and current policy. These gaps and matches are highlighted throughout the chapter. For example, there are a number of current initiatives which aim to help young people achieve. Thus young people's views that doing well or badly at school can make them feel good or bad about themselves (Section 5.2) are directly addressed. Those responsible for implementing standard one of the National Service Framework for Mental Health, for example, could link into such initiatives for promoting mental health.*
- ***researchers and policy specialists** will be interested in the areas where further evidence is required to support current policy initiatives. These are again, flagged up throughout the chapter. For example, a range of programmes were identified which could be appropriate ways of promoting better relations between*

teachers and pupils, something that young people identified as being a barrier to their health (Section 5.1). However, the evidence for the effectiveness of interventions to promote the psychosocial aspects of the classroom was limited and suggested only moderate benefits. Evaluation of current programmes needs to assess carefully their impact on relationships between teachers and pupils.

Key messages

- *There are several key policy initiatives which are relevant to young people, some of which are wholly or partly related to the topic areas for this report. These include the **National Service Frameworks (NSFs)** specifically in the areas of mental health and coronary heart disease, and the **National Healthy Schools Standard (NHSS)**, part of the '**Healthy Schools Programme**'. These provide national standards to work towards and overall frameworks to work within, but provision and delivery of specific interventions are to be determined on the basis of local needs assessments and evidence of 'what works'. Other 'core' initiatives which are applicable to many of the barriers and facilitators, include, **Health Action Zones (HAZs)** and the **Personal, Social and Health Education (PSHE)** school curriculum.*
- *Many initiatives are applicable to school-based barriers and facilitators. Many of these are headed by the DfES, in collaboration with other government departments. Many of the schemes also relate to the barriers and facilitators concerned with **friends and family**. Fewer initiatives were found which were applicable to **the self**, although many of the issues that worry young people (e.g. financial concerns, employment, safety) might be dealt with by schemes relating to **practical and material resources**. There are more of these reflecting the current policy focus on inequalities and the wider determinants of health.*
- *There is evidence of effectiveness from the in-depth reviews to support schemes in some areas (e.g. whole school approaches as part of the NHSS), but less so in others (e.g. specific initiatives using a whole school approach).*
- *Whilst some current schemes are being evaluated (e.g. the Breakfast Clubs scheme), in other cases it is not clear that any formal assessment is being undertaken (e.g. initiatives within Sports Action Zones). In some cases (e.g. initiatives in Health action Zones), there is lack of clarity about evaluation methodology.*

5.1 Matching barriers and facilitators to policy and practice: 'the school'

Table 10 illustrates the main issues to arise in relation to the school and the policy initiatives which appear to address these. The left hand column shows the barriers and facilitators common to at least two or more of the three reviews.

Table 10: Policy and practice relevant to 'the school'

Barriers and/or facilitators	Relevant policy initiatives
Student-teacher relations	<p>The <i>'Healthy Schools, Healthy Teachers'</i> component of the <i>'Healthy Schools Programme'</i> (DfES/DoH) – guidance on coping with teachers' stress, with a confidential help line for teachers.</p> <p>The <i>'National Healthy Schools Standard'</i> (DfES/DoH, managed by HDA) - emphasis on staff professional development, health and welfare needs, within a whole school approach.</p> <p>The <i>'Healthy Workplace Initiative'</i> (DoH) A collaboration with the Health and Safety Executive to contribute to the four-key areas for action from Saving Lives (Cancer, Coronary Heart Disease, Accidents and Mental Health).</p> <p><i>'Education Action Zones'</i> (DfES) – improving the quality of teaching and learning (e.g. improving recruitment and retention of teachers).</p>
School facilities / infrastructure / provision	<p><i>'National Healthy School Standard'</i> (DfES/DoH) - Education is provided within the curriculum on health issues, including nutrition. For example, schools must present consistent messages regarding foods, thereby ensuring healthy options are available in school canteens and tuck shops, reinforcing education on nutrition provided in the curriculum.</p> <p><i>'Education Action Zones'</i> (DfES) – Clusters of schools receive up to £750, 000.</p> <p><i>'A sporting future for all'</i> (DCMS) - £150m to improve sports and arts infrastructure in schools. 'Sport England' to devote 20% of funds to youth sport mostly in schools.</p> <p><i>'Food in Schools Initiative'</i> (DfES/DoH)' – To bring together under one umbrella all food related initiatives in schools and after school clubs to improve health and learning. It will embrace existing schemes such as Breakfast Clubs, the National School Fruit Scheme.</p> <p><i>Guidelines for compulsory nutritional standards for school meals</i> (DfES) – at least two items from the following foods must be provided every day: starchy foods; fruit and vegetables; milk/dairy products; meat, fish and other sources of protein.</p> <p><i>'Schools Nutrition Action Group (SNAG)'</i> - aims to bring together all members of the school community to devise and implement a school nutrition policy.</p> <p><i>'Safe and Sound challenge'</i> (DTLR) - to promote safer, healthier travel to and from school – e.g. the 'Walking Bus' scheme.</p>

Table 10: Policy and practice relevant to 'the school' **cont'd**

Choice (PE lessons/ school meals)	<p>'National Healthy School Standard' (DfES/DoH, managed by HDA) - Pupil's views influence teaching and learning in PSHE and citizenship. Opportunities are provided for pupils' views to inform policy and practice.</p> <p><i>Guidelines for nutritional standards for school meals</i> (DfES) e.g. modernising the image of school meals with lively packaging etc.</p>
Achieving/succeeding	<p>'Education Action Zones' (DfES)/ 'Excellence in Cities'/ 'Connexions' service (DfES) – all aim to enable young people to do well in school, and beyond.</p> <p>'National Healthy School Standard' (DfES/DoH, managed by HDA) - addresses emotional health and well-being, building confidence to learn. Schools must assess and celebrate pupils' achievement.</p> <p><i>New PHSE framework</i> (DfES) - to develop pupil's well-being, Self-esteem, encouraging belief in their ability to succeed.</p> <p>'Citizenship education' (DfES) - promotes spiritual, moral, social and cultural development to enable young people to be informed, thoughtful and responsible and confident citizens.</p> <p>'Creative partnerships' (DCMS) - partnerships between schools and professional cultural organizations. Actors, writers, musicians act as mentors to inspire young people.</p>

5.1.1 Teacher-student relations

Young people viewed the school as both a barrier to, and facilitator of, health. Poor student-teacher relations, a lack of good facilities (e.g. for physical education), the importance of choice (e.g. in what they eat), and the benefits and advantages of achieving/succeeding were the key issues to emerge. The fact that these issues are interrelated lends support for a 'whole school approach' as advocated by the National Healthy Schools Standard (DfEE, 1999). Efforts to raise academic achievement need to be balanced against young people's concerns about stress and workload and possible pressures on teachers to privilege academic progress rather than pastoral support. The systematic review by Tilford *et al.* (1997) recommended that the promotion of self-esteem should be integrated into a whole school approach as well as through specialist activities in personal, social and health education classes. This fits in with one of the overall conclusions of a recent systematic review of health promotion in schools that a multi-faceted approach is more likely to be effective. The aim would be to adapt the general ethos of the school, including parental involvement, in combination with initiatives at the classroom level (Lister-Sharp *et al.*, 1999). Whilst the 'whole school approach' seems likely to be effective and success has been documented (e.g. Rivers *et al.*, 2000), it must be noted that there is currently little evidence which reliably links such an approach to improvements in mental health or other outcomes (e.g. Lister-Sharp *et al.*, 1999).

Young people's concerns about teachers not always being a good source of emotional support or self-esteem are addressed, indirectly, by the 'Healthy Schools, Healthy Teachers' component of the 'Healthy Schools Programme', and by the

National Healthy Schools Standard and the 'Healthy Workplace Initiative' all of which emphasise the need to take action to meet the professional development, health (including emotional health) and welfare needs of teachers. The six 'Healthy Teachers Conferences' implemented in 1999 were an example of efforts undertaken to enable teachers to play an active part in developing plans to promote their health, by identifying projects which have contributed to teacher well-being (DfEE, 1999). In addition, the criteria for assessing school achievements in the National Healthy Schools Standard include showing that schools have taken such action. Education Action Zones (EAZs), which aim to raise educational standards in disadvantaged areas, may also meet the needs of teachers. One of the four key issues for Education Action Zones to address is the improvement of the quality of teaching and learning through strategies designed to improve the recruitment and retention of teachers. Such strategies should be successful in raising morale in the classroom with benefits for both teachers and pupils. Concerns about the insensitive attitudes of physical education teachers could, potentially, be addressed within the DCMS strategy for sport (DCMS, 2000) which proposes a framework for the continuing professional development of physical education teachers, as well as ensuring that the physical education needs of initial teacher trainees are met. These could be appropriate vehicles for encouraging a less authoritarian style of teaching specifically to appeal to young people who find physical education traumatic.

All of these initiatives are mechanisms for acting on young people's views about teachers being both barriers to, and facilitators of, their health. There is, however, currently little evidence from high quality intervention studies that these types of initiatives are effective. We did not identify any intervention studies (of high quality or otherwise) which examined the impact of these kinds of interventions on pupil mental health outcomes. The systematic review by Durlak and Wells (1997) found that interventions to modify psychosocial aspects of the classroom, including supportive relationships between students and teachers, could have a modest impact on a range of outcomes. This lends support to pursuing this line of action within the context of further rigorous evaluations.

It is noteworthy that evaluation is a key component of the National Healthy Schools Programme, which has produced guidance on monitoring and evaluation for local programme co-ordinators (DfEE, 1999). The guidance discusses the rationale for evaluation to be an integral part of each initiative, and outlines the various phases of the evaluation cycle, including the collection of baseline data in order to measure impact. The need to attribute change to the initiative (as opposed to other competing influences) is stressed. However, experimental methods are eschewed in favour of other methods in which a variety of data are collected (e.g. outcomes, processes, context) and critically analysed.

5.1.2 School facilities

Poor school facilities and infrastructure were common concerns for young people. These included inadequate bicycle storage facilities; outmoded physical education changing and showering facilities; uncomfortable gym kits; and poor availability of healthy and interesting foods in the school canteen.

Action is being taken to improve school facilities through strategies such as 'A sporting future for all' (DCMS, 2000), to increase participation in physical education.

One aspect of the programme is to rebuild sports facilities with funds provided to improve the sports infrastructure in schools. Specialist sports colleges will be created, schools sports co-ordinators will be appointed, and for young people exhibiting talent special coaching and support will be provided. Finance will also come from the 'New Opportunities Fund' which uses money raised by the National Lottery for health, education and environment programmes. However, it will be important for projects to take into account the specific needs of young people doing physical education at school. This means, not just offering better facilities, but providing these in a sensitive manner, taking into account young people's comments about changing facilities, sports kits and the attitudes of teachers. For some, physical education at school is traumatic and it would be pointless providing new facilities if they do not feel empowered to use them.

Steps have also been taken to raise the nutritional standards of foods provided in schools. New legislation came into place in 2001 requiring school lunches to meet minimum nutritional standards (DfEE, 2000). Those schools participating in the National Healthy Schools Standard which choose to focus on the promotion of healthy eating must present consistent messages regarding foods, and ensure that healthy options are available throughout the school (e.g. canteens, tuck shops, vending machines), thus reinforcing education on nutrition provided in the curriculum. Schools Nutrition Action Groups (SNAGs) have been formed to ensure a whole school approach to healthy eating, bringing together all members of the school community to devise and implement a school nutrition policy (Passmore and Harvey, 1994). The evidence from this series of reviews supports these schemes, indicating that whole school approaches can be effective in encouraging healthy eating in school. Healthy tuck shops providing fruit snacks might be a specific component of a whole school approach to nutrition, reinforcing the curriculum and complementing modifications made to the nutritional content of lunchtime school meals (HDA, 2000). There is some evidence to suggest benefits from this approach (Bowker *et al.*, 1998), although the quality of its evaluation has not been assessed in this series of reviews.

Many of these initiatives have been brought together under one umbrella as part of the DfES/DoH 'Food in Schools Initiative', which aims to engender a whole school approach to healthy eating by promoting clear and consistent messages about food and nutrition within the classroom and throughout the school, as well as providing opportunities to learn about food and nutrition after school.

5.1.3. Choice

The fact that young people value the chance to express choice at school is reflected by initiatives that aim to provide them with an input into decision making. Again, the National Healthy Schools Standard is a relevant example as it provides opportunities for pupils to inform policy and practice. For example, young people must be involved in the planning of education and health partnerships, and a whole school approach to education and health improvement must be adopted, involving all members of the school community. Another important indicator of the whole school approach includes the provision of internal pupil support services, such as academic mentoring and counselling (DfEE, 1999).

As discussed earlier, evaluation of this approach has produced mixed results. The school-based, peer-led, 'Slice of Life' intervention (Perry *et al.*, 1987) in which pupils

presented recommendations for change (e.g. in the type of foods provided in school) to their teachers and school administration was only effective in encouraging healthy eating amongst young women, and did not lead to increases in physical activity in either sex. But it was not clear whether young people's recommendations were ever put into place. Not feeling they are being listened to can be a disincentive for behaviour change. Input from young people about their preferences, when taken seriously, may be an important factor in the success of interventions.

In relation to food, young people commented on the lack of choice in the school canteen, particularly of healthy options. The general perception that school meals are unappealing might be overcome by the guidance issued to help schools implement the new regulations on school meals, with suggestions on how to improve the attractiveness of school meals, such as lively packaging and reasonable pricing (DfEE, 2000). This type of approach has been found to work, with the 'Gimme 5' intervention (Nicklas *et al.*, 1998) reporting an increased consumption of fruits and vegetables as the result of a school-wide campaign to make healthy foods look as colourful and appealing as possible. Again, this re-affirms the value of a whole school approach to health promotion.

5.1.4 Achieving and succeeding

The final issue in relation to the school was the sense of pride young people have when succeeding and achieving. Things that made young people feel good about themselves included passing their exams, and doing well at sport. But pressure to achieve can cause stress and anxiety. It is both a barrier and a facilitator.

There are many current policy initiatives which aim to address achievement in school. These may spur those who are already motivated to achieve, as well as re-engage young people who are disaffected, especially the socially excluded.

Coming mainly from the DfES, these include programmes which make extra resources available to the most disadvantaged areas of the country (e.g. Education Action Zones, Excellence in Cities); initiatives which are specifically focused on young people excluded from school or at risk of school exclusion (e.g. Learning Mentors, programmes for pastoral and academic support); and programmes are universal for all young people (e.g. the new Connexions Service). The National Healthy Schools Standard is also relevant with its emphasis on assessing, recording and celebrating achievements, which should inspire pupils further. The new Personal Social and Health Education framework encourages young people to believe they can succeed in life. Another scheme which may appeal specifically to those who lack enthusiasm to engage with school is 'Creative Partnerships', headed by DCMS, which seeks to establish collaboration between schools and professional cultural organisations so that actors, writers and musicians can act as mentors to inspire young people. This may be especially attractive to bored pupils at risk of dropping-out. Taking part could allow them to pursue their own interests, and may act as a catalyst for re-engaging them with their academic studies. Evaluation of this approach could measure this as an outcome.

These initiatives therefore directly address young people's views that doing well or badly at school can make them feel good or bad about themselves. Those

responsible for implementing standard one of the National Service Framework for Mental Health could link into such initiatives for promoting mental health.

Interventions to increase academic achievement were beyond the scope of this series of reviews, so it is not clear to what extent they are supported by evidence of effectiveness, or whether they are acceptable to young people. An important consideration for evaluations will be to assess the impact of these interventions on a range of outcomes (e.g. mental and emotional health) as well as academic achievement.

This links in with the issue of stress and anxiety arising from school workload and examinations. We did not identify any specific policy initiatives which address these concerns, and it is possible that the above strategies to raise academic achievement could result in increased stress and anxiety for young people. As indicated above, the 'whole school' approach adopted by the National Healthy Schools Standard is important here and could be used to address young people's concerns about examinations and heavy workloads. For example, the criteria for assessing school achievement in standard one of the National Service Framework for Mental Health include listening to the views of pupils and the need for schools openly to address issues of emotional health and well-being (DoH, 1999a). Interventions to help young people cope with stress were not within the scope of our in-depth review but we did identify several potentially high quality outcome evaluations in our mapping and quality screening exercise which will be a good starting point for examining 'what works' in this area. This could be a priority topic for a further systematic review, perhaps jointly commissioned by the DoH and DfES.

5.2 Matching barriers and facilitators to policy and practice: 'friends and family'

Table 11 illustrates the main issues to arise in relation to the young people's relationships with their friends and family and the policy initiatives which appear to address these.

Table 11: Policy and practice relevant 'friends and family'

Barrier/facilitator	Relevant policy initiatives
Friends/peers as barriers: Exclusion Bullying Least likely to share information	' <i>National Healthy School Standard</i> ' (DfES/DoH, managed by HDA) - accredited schools have a policy and a code of practice for tackling bullying. <i>Schools Standards and Framework Act</i> (1998) – Head teachers have a legal duty to prevent bullying.
Friends/peers as facilitators: Trustworthy/ confidential Socialising Supporting	<i>New Personal Social Health Education framework</i> (DfES) - to understand and manage responsibility for a wider range of relationships as they mature; to show respect for the diversity of, and differences between, people. ' <i>Citizenship education</i> ' (DfES) - to equip young people with the knowledge, skills and understanding to play an effective role in society; to be thoughtful and responsible citizens aware of duties and rights; promotes spiritual, moral, social and cultural development.
Family as barriers Discord Constraints on freedom	' <i>Education Action Zones</i> ' (DfES) – one of the three themes is 'family and pupil support', to involve parents in their children's learning as early as possible, for example 'parents as educators' schemes.
Family as facilitators Support and encouragement	' <i>Health Action Zones</i> ' (HAZs) (DoH) – e.g. Merseyside Health Action Zone 'Building bridges in minority ethnic communities' to provide better services for children/young people and their families, with emphasis on preventing mental health problems. ' <i>National Healthy School Standard</i> ' (DfES/DoH, managed by HDA) – partnerships encouraged between parents, the school, and the wider community, through Parent Teachers Associations, working with business partnerships in developing healthy schools activities and other aspects of school life

5.2.1 The role of friends

One of the key findings common to the three reviews was that friends and family can act in both supportive and negative ways. For example, socialising with their peers is something young people enjoy, particularly at a time in their lives when they often relate more to one another than to adults. Socialising can enhance health; some young people take part in sports specifically to make new friends. However, the downside is that friends can also exert influence to dissuade young people taking part. The young women in one study reported that their boyfriends discouraged them from participating in sport, preferring to spend time together in other ways.

Relationships with friends and peers also have profound influences on young people's emotional well-being. For example, having a personal relationship was suggested to be a source of emotional support and was something which helped young people to feel good about themselves. Some young people had no-one to turn to and felt lonely and excluded from friendship circles. In other cases, they reported victimisation and bullying.

The new Personal Social Health Education framework has been designed specifically to address these types of issues. The overall aim is to enable young people to understand and manage responsibility for a wider range of relationships as they mature, and to show respect for differences between people. Citizenship education as part of the curriculum aims to promote social and cultural development and equip young people with knowledge and skills as citizens, encouraging them to be thoughtful and responsible. These initiatives may help young people to be more socially aware, more tolerant of diversity and generally conscious of the feelings of others. There is some evidence to suggest the effectiveness of this approach, such as the findings of the systematic review by Hodgson and Abassi (1995). Programmes which train young people in social skills have been shown to be effective in reducing peer rejection. The second North Karelia Youth Project also taught citizen skills and social relations within the context of resisting peer pressure to start smoking.

There are specific policy initiatives to tackle bullying. Under the Schools Standards and Framework Act (1998) head teachers have a legal duty to prevent bullying, and schools have been given guidance on how this policy can be drawn up and implemented. Also, schools accredited to the National Healthy Schools Standard are required to have a policy and a code of practice for tackling bullying.

As this review was not concerned with examining the effectiveness of strategies to prevent bullying *per se*, we only expected to identify intervention studies which evaluated the impact of such strategies on mental health outcomes. We did not identify any of these kinds of studies. This could be considered a priority area for a further systematic review which would include studies evaluating the impact of anti-bullying strategies on a wide range of outcomes.

5.2.2 The role of family

Despite the fact that young people often preferred to talk to their friends about their thoughts and feelings, they also cited family as a source of comfort. Families can offer emotional support, encouragement for physical activity and provide healthy foods at home.

Schemes such as Education Action Zones may encourage parental support even further, particularly in areas of socio-economic disadvantage. One of the three themes is 'family and pupil support' to involve parents in their children's learning as early as possible, for example in 'parents as educators' schemes. This could be extended to incorporate the teaching by parents of health education. There is evidence to support the effectiveness of this as many of the outcome evaluations included in this series of reviews involved the family in their children's health education, with generally positive results.

In contrast, parents could also be restrictive of young people's free time, discouraging them from doing sports, although this was primarily influenced by cultural norms and concerns about safety. Furthermore, family discord (e.g. divorce, abuse) was a significant problem for some young people.

We identified far fewer specific policy initiatives in this area, although some of the broader initiatives outlined earlier under 'the school' are a way of addressing these

identified barriers and facilitators. For example, concerns about parental conflict could be dealt with in the Personal Social Health Education curriculum or through pupil support services. Indeed, those responsible for implementing the National Healthy Schools Standard or delivering the Personal Social Health Education curriculum might want to use young people's views as a way of prioritising issues to address. For example, they could easily take up young people's suggestion that schools should provide interventions which could help them deal with 'loss'.

The National Service Framework for Mental Health is likely to have an impact here through enhancing the standards of mental health services for young people and their families, with the aim of resolving problems within the family. Specific initiatives within Health Action Zones may also be beneficial. For example, the Merseyside Health Action Zone supports an initiative entitled 'Building bridges in minority ethnic communities' to develop a model for multi-agency management of child mental health services for black and minority ethnic families experiencing, or at risk of, mental health difficulties. The main aim is to provide a service that is accessible to children and their families, with emphasis on preventing mental health problems. To this end links are being made between health promotion and health education services focusing on drugs, alcohol, domestic violence and mental health. The expected outcomes from the scheme include effective multi-agency communication and collaboration; increases in the number of children accessing services; and decreases in the number being excluded from school or in care.

Other interventions which may support parents experiencing conflict with either their partners or their children include 'ParentLine Plus' which is being developed as a national free helpline, and an increase in financial support to organisations which provide advice and support to those experiencing relationship difficulties.

We identified few studies for this review which examined the effectiveness of interventions to facilitate support within the family. A systematic review concluded that both interventions designed to train parents in child development and interventions to help young people cope with parental divorce were limited in their effectiveness in bringing about positive changes in the mental health of children and young people (Durlak and Wells, 1997). It is therefore not yet clear whether these kinds of current policy initiatives are able to impact positively on young people's mental health, and further primary research is required.

5.3 Matching barriers and facilitators to policy and practice: 'the self'

Table 12 illustrates the main issues to arise in relation to young people as individuals, and the policy initiatives which appear to address these.

Table 12: Policy and practice relevant to 'the self'

Barriers and facilitators	Relevant policy initiatives
Achieving/ succeeding Confidence Motivation	<p><i>'National Healthy School Standard'</i> (DfES/DoH, managed by HDA) – emphasis on student empowerment.</p> <p><i>New Personal Social and Health Education framework (DfES)</i> - to develop self-esteem, and confidence to succeed.</p> <p><i>'Citizenship education'</i> (DfES) - to enable young people to be informed, confident citizens.</p> <p><i>'Millennium Volunteers'</i> (DfES) – enables young people to volunteer for community activities that they are interested in.</p> <p><i>Summer activities for 16 year olds (DfES)</i> - for young people coming to the end of compulsory education, to raise their self-esteem, confidence, and team skills.</p> <p><i>'Creative partnerships'</i> (DCMS) - Actors, writers, musicians act as mentors to inspire young people.</p>
Fears/worries about the future	<p><i>Connexions Service (DfES)</i> - to facilitate a smooth transition to adulthood and employment for every young person.</p> <p><i>Education Action Zones'</i> (DfES) – to raise educational standards in disadvantaged areas.</p> <p><i>Excellence in Cities'</i> (DfES) – to raise the aspirations of pupils and to address social exclusion, truancy and disaffection.</p> <p><i>'New Deal for Young People'</i> (DfES) - to help young people into work by matching their skills with those required by employers.</p> <p>All of the above aim to increase the likelihood of all young people securing meaningful employment, giving greatest priority to socially excluded young people or those at risk of social exclusion.</p>

Table 12: Policy and practice relevant to the 'Self' cont'd

Coping strategies	<p><i>'National Service Framework for Mental Health'</i>/<i>'National Healthy School Standard'</i> (DfES) – Provides an overall framework for helping young people cope with mental and emotional problems.</p> <p><i>'Health Action Zones'</i> (DoH) – e.g. Merseyside Health Action Zone <i>'Building bridges in minority ethnic communities'</i> to provide better services for children/ young people and their families, with emphasis on preventing mental health problems.</p> <p><i>'A sporting future for all'</i> <i>'Sports Action Zones'</i> (DCMS) – Will provide greater opportunities for young people to deal with problems and stress through taking part in physical activity; the focus is particularly on young people in disadvantaged areas.</p>
Knowledge	<p><i>'National Healthy Schools Standard'</i> (DfES/DoH, managed by HDA) –to ensure that education is provided on health issues within the curriculum.</p>

5.3.1 Confidence, motivation and achievements

The first set of factors have been grouped together around confidence and motivation to achieve and succeed in all aspects of life. For example, one of the most significant motivating factors for maintaining a healthy diet was willpower. Motivators for doing physical activity included satisfaction from competing and winning, and the overall positive feeling from being active. On the other hand some young people lacked confidence to take part, and/or had little motivation, prioritising their spare time in other ways. Linked to this are issues around self-consciousness and body image. Some young people were less inclined to take part in exercise for fear of being judged not only on their performance but also the way they look. In terms of other pursuits, being bored, and not having anything else to do made young people feel bad, whereas being occupied and having a sense of purpose had positive benefits.

Many of the policy initiatives discussed earlier in this chapter in relation to the school (e.g. National Healthy Schools Standard, Education Action Zones) are relevant here as they can have a far reaching impact on young people's lives beyond school. For example, if schemes such as the National Healthy Schools Standard are able to empower young people to engage in healthier activities at school, young people may also be inspired to do so in their spare time. However, similar frameworks and schemes are needed for the school to reinforce health promotion messages and provide opportunities for young people to engage in activities to raise their levels of confidence, esteem and motivation. Community based projects may play a part in occupying young people who might otherwise be bored, some of whom may be at risk of social exclusion and disaffection. An example is the 'Millennium Volunteers Programme' (DfES) which gets young people involved in community projects, as well as the 'Summer Activities for 16 Year Olds Scheme' (also from the DfES) which has been set up to involve young people in activities to raise self-esteem, confidence, and team skills. Pilot evaluation of the scheme indicated a modest but significant increase in the number of young people (particularly those who most often missed school) who said that they intended to continue their education, and a high percentage said the programme made them more determined to achieve their future goals (Hutchinson *et al.*, 2001). However, in the absence of a control or comparison

group it is not possible to isolate other influences which may have provided young people with such confidence. It is not clear why a controlled design was not used. However, the authors of the report mention the fact that there was a short lead-in time to the evaluation which meant that some projects had begun before a baseline measurement could be taken. Future implementation of this approach should allow sufficient time for careful planning of evaluation, preferably using a controlled trial design.

Health Action Zones may also provide the means to enable young people to take part in activities that can boost their self-esteem and confidence. For example, the Nottingham Health Action Zone has launched a project entitled 'Changing faces and places', a partnership between a number of agencies including the city council and the local health service, to reshape the provision and use of leisure and community services. Specific initiatives include organised swimming sessions with supervision and support to improve confidence in the water, as well as motivator-led walks in local parks.

These programmes may provide benefits to young people in many ways. They may engineer a sense of purpose and achievement, thus promoting good mental health; help young people to be more active, thereby having positive benefits for cardiovascular health; and enable young people to develop new skills and experiences, providing them with better chances of gaining employment. In short, they may play a part in shaping young people to be confident and motivated young adults.

Current research evidence suggests the helping young people to gain confidence, motivation and self-esteem can be effective, although to varying degrees. It is important to assess, through rigorous evaluation, the wider effects of these interventions on all aspects of young people's health including long-term follow-up to establish whether, any benefits are maintained into adulthood.

5.3.2 Worries and fears

A second issue to be addressed through policy initiatives is young people's worries and concerns about their security and their future. Paramount amongst these were worries about employment prospects. To some extent, these are linked to broad trends in society and the economy, both nationally and internationally, and which require long term, high level policy and legislation. However, there are a number of 'on the ground' strategies which aim to prepare young people for entering the job market. These include the 'New Deal for Young People', and the 'Connexions' service both of which aim to ensure a smooth transition into adult working life, giving greatest priority to young people at risk. These may all have the effect of reducing young people's worries about their future. They may also reassure young people that employment and thus prosperity is within their reach, which may have positive impact on their mental health, particularly for young men who are at an increased risk for self-harm and suicide. But despite there being evidence for the effectiveness of interventions to promote self-esteem and confidence in general, there is little evidence from our series of reviews which sheds light on whether initiatives to facilitate employment have a reassuring effect on young people. This points to the need for evaluations to measure a range of outcomes, including the psychological impact of helping young people into the world of work.

5.3.3 Coping strategies

The third issue relating to the 'self' is the way in which young people deal with their problems. Whilst some of these strategies were positive (i.e. taking exercise, resting, talking with friends) others were less so (e.g. taking drugs, violence). A great many policy initiatives could be applied to help young people to deal with stress, and many of these have been discussed already in this chapter. The National Service Framework for Mental Health is a key framework for co-ordinating approaches to supporting young people through difficult periods of their lives. Likewise, the National Healthy Schools Standard is an important initiative addressing young people's needs at school. In the community at large the Health Action Zone partnerships could provide opportunities for young people to deal with their problems constructively. Projects such as the Merseyside Health Action Zone 'Building bridges in minority ethnic communities' scheme could be beneficial, with its emphasis on preventing mental health problems and focus on tackling issues such as drugs, alcohol, and domestic violence. Here there is the potential to embrace a wide range of matters and directly tackle some of the negative coping strategies used by young people.

Schemes to encourage young people to undertake physical activity include the various initiatives proposed as part of the DCMS 'Sporting Future for All' strategy, including the aforementioned plan to rebuild school sports facilities. The establishment of Sports Action Zones (SAZs) which aim to provide community facilities in deprived areas will also go some way to helping young people channel their energies constructively into active pursuits.

As discussed previously, interventions which promote exercise as a way of dealing with problems were not in the scope of this series of reviews and as such we cannot make judgements about the effectiveness of this approach. Likewise interventions to tackle negative coping strategies (e.g. drugs and alcohol) were not a main feature of the reviews. Interventions to utilise positive coping strategies (e.g. taking time to do pleasurable activities) were included. These were limited in their effectiveness, although this might be due to the relative brief nature of the interventions tried, suggesting further evaluation of programmes of greater intensity.

5.3.4 Knowledge

The final issue relevant to young people as individuals is the role that health-related information plays in their lives. Knowledge about the benefits of doing exercise, or eating healthily was mentioned by some young people as something which might encourage them to lead healthier lifestyles. In relation to their emotional needs, young people called for better information and advice, with resources such as leaflets written in a more direct and appealing way. Whilst it is widely recognised that knowledge of risk factors is not sufficient on its own to motivate behaviour change, it is nevertheless a necessary pre-requisite for action.

An increased emphasis on tackling the wider determinants of health should not neglect the need for young people to be provided with high quality relevant information about health issues. Current approaches to meeting this need include the National Healthy Schools Standard with its emphasis on ensuring education is provided within the curriculum on a range of health issues. Importantly, this must be consistent with other health-promoting activities in the school to reinforce the

message. Thus, if fruits and vegetables, for example, are promoted as being good for health then pupils should at least be able to access them in the school. The development of knowledge is more likely to lead to changes in behaviour when supported by school-wide activities.

The results of the outcome evaluations included in this series of reviews generally support this approach, with interventions combining classroom-based education with other school-wide initiatives leading to increases in knowledge, particularly amongst young women.

5.4 Matching barriers and facilitators to policy and practice: 'practical and material resources'

The final theme is about the barriers and facilitators related to the wider determinants of health, summarised in table 13. A number of specific issues emerged which had implications for young people's health.

Table 13: Policy and practice relevant to 'Practical and material resources'

Young people's views	Relevant policy initiatives
Socio-economic issues (e.g. unemployment / lack of money/ expense)	<p><i>'Connexions Service' / 'Education Action Zones' / 'Excellence in Cities' / 'New Deal for Young People' (all from DfES) – All designed to enable young people to find employment.</i></p> <p><i>'Child Poverty Action Group' - DfES have worked in collaboration with CPAG to promote the availability of free school meals amongst eligible children.</i></p>
Lack of amenities/boredom	<p><i>'Health Action Zones' (DoH) – regeneration of deprived areas through partnerships could provide leisure facilities for young people – e.g. Nottingham Health Action Zone outreach pre-school gymnastics sessions, to organised swimming sessions with supervision and support to improve confidence in the water, to motivator-led walks in local parks.</i></p> <p><i>'Creative partnerships' (DCMS) – stimulating young people's interest in arts and cultural pursuits.</i></p> <p><i>'A sporting future for all' Sports Action Zones' (DCMS) – Greater opportunities for young people to take part in physical activity, particularly in disadvantaged areas.</i></p> <p><i>'Millennium Volunteers Initiative' (DfES) - encouraging young people to volunteer for activities within their community that match their own interests.</i></p> <p><i>Summer activities for 16 year olds (DfES) - for young people who are not involved in any other activities during the summer break to develop self-esteem confidence; team and leadership skills; and broaden their horizons.</i></p>

Table 13: Policy and practice relevant to 'Practical and material resources' **cont'd**

<p>Poor availability (e.g. of healthy foods)</p>	<p><i>'Health Action Zones' (DoH)</i> - e.g. the East London and City Health Action Zone coronary heart disease prevention programme has developed community initiatives to increase access to foods including food clubs; community lunches and cooking skills development; and breakfast club places for children.</p> <p><i>The 'Breakfast Clubs' scheme (DoH/DfES)</i> - to ensure that children and young people eat sufficiently before going to school.</p> <p><i>'Community Food Co-operative Schemes'</i> - Recommended in the NHS Plan to improve access to fruit and vegetables in localities where supplies of inexpensive food are lacking.</p> <p><i>"Five a day programme"</i> (DoH) - to increase provision of fruit and vegetables, particularly to those in deprived communities, with practical resources such as 'food maps'.</p>
<p>Safety</p>	<p><i>'Neighbourhood Renewal Strategy'</i> <i>'Neighbourhood Renewal Unit'</i> (DTLR) – to deliver economic prosperity, safe communities, high quality education, decent housing, and better health to the poorest parts of the country. Specific schemes include 'New Deal for Communities, and Neighbourhood and Street Wardens Programme.</p> <p><i>'Hedgehog scheme'</i> (DTLR)- to raise road safety awareness among young people.</p>
<p>Better services (e.g. listening services)</p>	<p><i>'Health Action Zones' (DoH)</i> – 'Building Bridges in Minority Ethnic Communities' (Merseyside Health Action Zone) to provide a service that is accessible to children and their families, with emphasis on preventing mental health problems.</p>

5.4.1 Economic issues

Not only were young people worried about being unemployed, as discussed earlier, but in some cases either they or their parents actually experienced unemployment. The consequences of this may be far reaching, affecting mental health, as well young people's ability to eat healthily and enjoy active leisure pursuits.

Opportunities for employment are governed by national and international trends in the economy and society. However, initiatives are in place to enable young people to take advantage of job opportunities. These initiatives include the Connexions Service, Education Action Zones, Excellence in Cities, and the New Deal for Young People. Studies evaluating interventions to facilitate young people's employment were not within the remit of this series of reviews, so there might be a wider literature on this issue which we do not discuss in this report. But studies would have been included if they had been concerned with preventing suicide, self-harm, or depression or increasing self-esteem, and none of these were identified. This is therefore a priority for future evaluation. A systematic review, co-ordinated by the EPPI-Centre, is currently being conducted on the impact of financial circumstances on engagement with post 16 learning under the evidence-informed policy and practice initiative in education.

Related to unemployment are issues such as poverty and affordability, which came up in relation to buying foods and paying for leisure amenities. Young people recommended that amenities and healthy foods be made less expensive. This has not been tackled by evaluated interventions. There are, however, schemes in practice to ensure that the less well off can access healthy foods, or leisure amenities. Initiatives such as Sports Action Zones may provide more affordable opportunities for young people to take part in physical activity. Unfortunately the studies which have assessed the impact of interventions to provide free or reduced price leisure activities have suffered from methodological problems. More rigorous evaluation is thus required in the future.

Free or subsidised school meals are also available. The Child Poverty Action Group has looked into why not all eligible children and young people claim their free meals. Significant barriers included parental concerns over their children being stigmatised or embarrassed to be seen receiving free meals; negative perceptions of quality and choice of the food on offer; and parents not being aware of their child's entitlement to free meals. Recommendations include raising awareness of entitlement of free meals, and initiatives such as cashless systems and swipe cards in school canteens, so that children receiving free meals are not readily identifiable. Recent legislation to improve the nutritional quality of school meals should hopefully facilitate greater take up of the right kind of foods. In addition, the NHSS has provided funding for drinking water facilities at schools.

We found no evaluations of interventions of this type. Implementation of these recommendations would require careful evaluation to assess their impact.

5.4.2 Access to resources and facilities

Initiatives are also in place to address what young people perceived to be a general lack of amenities available for their free time. Health Action Zones may go some way to ensuring that young people have the opportunity to take part in sports and exercise. The Nottingham Health Action Zone, as mentioned earlier, aims to improve the provision and use of its leisure and community services. Boredom, which young people, particularly young men, mentioned as making them feel bad about themselves, may be overcome by the range of schemes launched to stimulate interest in voluntary, educational and cultural pursuits, including the 'Creative Partnerships' scheme; the 'Millennium Volunteers Initiative', and the 'Summer Activities for 16 year olds Programme'.

Whilst a lack of leisure amenities prevented young people from doing physical activity and they felt this had negative consequences for their mental health, they also commented on the lack of availability of healthy foods in their immediate social environment. Although they remarked on how easy it was to purchase fast foods in the settings where they mixed with their friends, healthy foods may also have been available, but less attractive than the unhealthy alternatives.

If better provision of healthy foods is indeed the issue, which in some localities it certainly is, then schemes such as the 'Five a day Programme' which strive to increase the availability and thus greater consumption of fruit and vegetables hopefully will make a difference. The programme, initiated in line with recommendations laid out in the NHS Plan (DoH, 2000b) is currently being piloted in

five sites across England. Two of the communities taking part are mapping food outlets in the local area to illustrate price and availability of foods in local shops. One of these communities is also promoting fruit and vegetables within the context of sports activities (e.g. football coaching schemes), as well as preparing a 'food map' that illustrates price and availability of healthy foods in local shops. The utility of the programme lies in its emphasis on working together with retailers, food producers and caterers who undoubtedly exert great influence on the type of food available to young people. In addition, the 'Food in Schools' initiative was launched in 2001 as a mechanism for bringing together all of the various initiatives for promoting nutrition and healthy eating in and around the school environment. The initiative incorporates key existing schemes such as the National School Fruit Scheme which aims to provide fruit to children in schools.

Community food co-operative schemes are also recommended in the NHS Plan to improve access to fruit and vegetables in localities where supplies of inexpensive food are lacking. Results of the evaluation of schemes in East London are reported to be encouraging (HDA, 2000). Such programmes may enable young people in deprived areas to afford healthy snacks, particularly if co-operatives are located in settings where they socialise.

Health Action Zones are likely to increase the availability of healthy foods in areas with inadequate shopping and transport facilities and with high density housing. An example is the East London and the City Health Action Zone which has developed a number of initiatives to improve access to healthy foods, including community lunches with cooking skills development. There are also links to other relevant initiatives such as the Breakfast Club scheme.

Despite searching for *any* evaluated interventions to increase access to leisure amenities and/or healthy foods for young people, the only programmes we found took place in school settings, although at least one of these also did this in the context of a youth group. There may have been initiatives delivered in the community in general which would not have met our inclusion criteria as being specifically about young people. These may shed light on the effectiveness of approaches which may have brought positive benefits for young people. Current initiatives of this type nevertheless require assessment. The East London Health Action Zone is to be evaluated through a prospective longitudinal study which will specifically look at the impact it has on young people's lives. It is not clear whether a controlled trial design will be used.

5.4.3 Safety

Concerns about safety, stemming from a range of interrelated issues including crime and racial intolerance, particularly in deprived areas, are being addressed through the work of the Neighbourhood Renewal Unit which will implement the action plan set out in the Neighbourhood Renewal Strategy (Cabinet Office, 2001b). The Unit aims to tackle some of the root causes of neighbourhood decay, with specific aims to promote prosperity, and better education and housing through initiatives such as the 'New Deal for Communities' and the 'Neighbourhood and Street Wardens Programme'. The latter provides uniformed officers in residential areas to promote community safety. Some of the locations for existing schemes include Northumberland, Lambeth, Stockport and Merthyr Tydfil. There is a particular

emphasis on tackling racism in the community through positive action to recruit people from ethnic minorities to be wardens. This is reinforced by statutory regulations such as the Race Relations (Amendment) Act 2000 which provides legislation for public authorities to overcome racial discrimination and to promote equal opportunities.

The Wardens scheme is not just concerned with preventing crime and racial intolerance, but also with enhancing the environment in order to prevent injuries. This was a concern for parents of the young people in the studies we looked at who worried about the safety of their children in their leisure time. The neighbourhood wardens assist with environmental improvements and keep an eye on potentially hazardous incidents involving road safety. This links in with other initiatives such as the DTLR 'Hedgehogs' campaign which aims to raise awareness among children and younger teenagers of the dangers of being out near busy roads.

Initiatives such as these should be complemented by efforts to make the environment generally safer. To this end a number of schemes to create more cycle paths, and introduce traffic calming, and better street lighting are being put in place. Systematic reviews are planned or in progress to assemble the evidence to support these interventions. For example, a systematic review is currently being prepared looking at the evidence for the effectiveness of safety education for pedestrians of all ages (Duperrex, 2001). Studies will be included if they evaluate education in comparison to no intervention, as well as in comparison to, or conjunction with, interventions to promote a safer environment (e.g. physical measures to limit traffic speed). Another review is looking specifically at the impact of traffic calming techniques (Bunn *et al.*, 2001). These reviews form part of a much wider evidence base on the prevention of accidents and promotion of safety, which covers a range of issues including safety in the home (Thompson and Rivara, 1997), social safety (Bevill and Gast, 1998), and community based injury prevention (Klassen *et al.*, 2000; Towner *et al.*, 2001).

6. CONCLUSIONS AND RECOMMENDATIONS

Outline of Chapter

This chapter comments on the evidence available about young people's views and about interventions designed to promote their health. It lists effective interventions that could be implemented more widely; interventions needing rigorous evaluation; ways in which young people can be more involved; and recommendations for conducting and reporting research.

*The chapter will be useful to **all audiences** (practitioners, policy specialists, researchers, young people, their families and friends). More specifically:*

***Policy specialists** may particularly like to consider the effective interventions listed in section 6.1. They may also like to consider encouraging practitioners and researchers to take up the recommendations for future development and evaluation of interventions (section 6.2), involving young people in this work (section 6.3), and conducting and reporting research (section 6.4).*

***Practitioners** may be particularly interested to read about the effective interventions (section 6.1), and the recommendations for future development and evaluation of interventions (section 6.2), as well as involving young people in this work (section 6.3).*

***Researchers** will find information relevant to their work about future development and evaluation of interventions (section 6.2), involving young people in this work (section 6.3), and conducting and reporting research (section 6.4).*

***Young people, their families and friends** might be most interested in section 6.3 which supports the case for actively involving young people in services and research for their benefit.*

Key Messages

- *There has been a significant amount of research activity in the three topic areas of mental health, physical activity and healthy eating, but relatively little good quality evaluation, particularly in the UK.*
- *Whilst young people have clear views on the barriers to, and facilitators of, their health, these have not always been addressed, particularly in relation to the wider determinants of health.*
- *Little of this research has focused on the health of socially excluded groups.*

We recommend:

- *Separate interventions, where appropriate, for young men and young women, tailored to the specific needs of each.*

- *School-based initiatives to be integrated within multi-component interventions involving the home and family, community youth groups, and, where appropriate, health services, local authorities and other agencies.*
- *Careful implementation of mental health interventions: framing suicide prevention initiatives in terms of avoiding stress and anxiety; complementing information provision with skill development using behavioural techniques to prevent depression; and ensuring that content and presentation of interventions fits with the language and context relevant to young people.*
- *Multi-component interventions to promote healthy eating and physical activity, particularly following 'whole school' approaches that involve all members of the school community. Increasing the availability of healthy foods throughout the school has been found to be effective, and peer-led approaches are associated with some benefit.*
- *Rigorous evaluation on: promoting better teacher-student relationships; improving school facilities; empowering young people to take part in physical activity at school; specific initiatives within a whole school approach; the effects of implementing young people's views into initiatives; interventions to integrate socialising with physical activity; interventions to promote better relationships within the family; interventions to address dieting within the context of promoting healthy eating; interventions which build on young people's coping strategies; multi-agency collaborations to promote mental health; the mental and emotional benefits of interventions to help young people to gain employment; interventions which make leisure and sports facilities and healthy foods more affordable and accessible; and strategies to encourage greater uptake of free school meals.*
- *Systematic reviews on: interventions which encourage young people to achieve and succeed in school; the effects of peer counselling programmes on mental health; interventions to promote safer environments.*
- *Methodological research to establish and disseminate effective ways of evaluating interventions in school settings; and to maximise the involvement of parents in health promotion interventions.*
- *Young people's views as the starting point for interventions to promote their health, particularly those from socially excluded backgrounds.*
- *Interventions to be evaluated wherever possible using randomised controlled trials, with long term follow-up, integral process evaluation, and detailed reporting of methods and findings.*
- *Studies assessing young people's views to seek informed consent, assure confidentiality/anonymity of responses, engage young people in a dialogue which is meaningful, and be reported in detail, particularly the socio-demographic details of participants.*

The aim of this series of reviews was to assess the barriers to, and facilitators of, young people's health in three specific topic areas with a view to drawing out the implications for policy and practice. The reviews have mapped and quality assessed the extant research in this area, and brought together the findings from evaluations of interventions aiming to promote mental health, physical activity and healthy eating, as well as studies which have elicited young people's views.

A first major finding is that, whilst there has been a significant amount of research activity in the three topic areas, there is relatively **little good quality research** evaluating the effectiveness of interventions, particularly in the UK. In both the healthy eating and physical activity in-depth reviews only around a third of outcome evaluations were judged to be methodologically sound and so able to provide a reliable evidence base. Only one of these studies was conducted in the UK.

We also identified relatively **few studies examining the views of young people**, particularly in the area of healthy eating. Often these were hard to locate, necessitating the use of personal contacts to identify studies. Nevertheless from the studies we did find it was apparent that young people have clear views on the barriers to, and facilitators of, their health. These provide an important source of information which needs to be considered in any attempts to promote their health. When considered in conjunction with findings about the effectiveness of interventions, such views highlight a number of promising ways in which to develop and test future interventions. Currently, interventions evaluated by good quality research do not always target what young people themselves see as the main barriers and facilitators. A major discrepancy in this respect is that, whilst practical and material resources are seen by young people as having a major influence on their health, there are few evaluated interventions which have targeted such structural factors at the wider societal level.

A third major finding is that there is currently **little soundly evaluated research** on the health of **socially excluded groups**. This is a significant research gap, since current health policy in the UK has a clear commitment to tackling the wider determinants of health and inequalities in health.

Whilst the evidence base is limited, a number of specific conclusions and recommendations for policy and practice and the future development of interventions to promote mental health, physical activity, and healthy eating with young people can be spelt out. It is also possible to suggest improvements in evaluation studies in this area, and ways of involving young people in research.

6.1 Recommendations for health promotion with young people

This set of recommendations is based on the findings from the three reviews about interventions which have been demonstrated to have *positive, harmful or no effects* by well-designed outcome evaluations.

It is important to acknowledge that many of these interventions were delivered and evaluated outside of the UK. The majority were in the US (some with African American young people), with one in Finland, one in Norway and only one in the UK. The generalisability of these interventions to the UK needs to be considered

carefully. It may be necessary to adapt their content, and this should be accompanied by thorough evaluation and monitoring to assess the extent to which they are acceptable to young people.

6.1.1 Cross-cutting recommendations

- A common theme was differences in effectiveness according to gender. For example, healthy eating and physical activity interventions tended to be more effective for young women than young men. Healthy eating seems to be a more salient topic for young women who are more likely to be concerned about their weight, whereas endurance and fitness are more salient for young men. **There is a need to develop and evaluate separate interventions for young men and young women given the differences in effectiveness between genders in some of the interventions included in the reviews.**
- **Multi-component interventions are recommended wherever possible to promote young people's health.** The majority of the outcome evaluations included in the reviews were conducted in school settings, addressing classroom activities combined with school-wide initiatives, sometimes with the involvement of parents, community groups and the media. One notable example from the UK was the 'Wessex Healthy Schools Award' which adopted a whole school approach to health promotion, involving all members of the school community. All such interventions were associated with benefits and appear to be an effective way to reinforce the health promotion message in the many different settings in which young people live.

6.1.2 Recommendations specific to the promotion of mental health

- The current evidence on whether interventions to promote young people's mental health or prevent their mental illness are effective is conflicting. Findings from the systematic reviews were inconsistent, and the outcome evaluations tended to be effective only for outcomes such as knowledge and awareness, rather than for symptoms of depression or measures of self-esteem. Effects also tended to be short lived and in some cases harmful effects were detected. **Given that evidence for effectiveness was conflicting, a critical perspective should be adopted when intervening, and questions such as 'Is this the right intervention? In the right population? In the right setting?' should be posed.**
- There is currently insufficient evidence to recommend school-based suicide prevention. Effects are limited and there is some evidence to suggest harm. **It may be more appropriate to frame interventions in terms of helping young people cope with stress and anxiety rather than focusing explicitly on suicide. The potential for doing harm as well as benefit should always be taken into account.**
- In terms of preventing depression, school-based sessions which provide information on recognising the symptoms of depression have not been effective. Interventions using skill development or behavioural techniques (e.g. modelling, role-playing, feedback and reinforcement) were more effective than non-behavioural techniques. Combinations of approaches are likely to be more

effective. The impact of interventions might be strengthened if they are multi-component, with classroom-based activities complementing, for example, school ethos and functioning, as well as involving parents, youth groups, health services, and other agencies. **Future efforts to prevent mental illness or promote mental health should not rely on the presentation of information alone but should include skill development using behavioural techniques, and should be reinforced by support at different levels (e.g. classroom, school, home, community, society).**

6.1.3 Recommendations specific to the promotion of physical activity and healthy eating

- An intervention which aimed to support a 'whole school' approach to promoting health by encouraging schools to make changes in their organisational structure and philosophy was found to be effective for increasing self-reported healthy eating and physical activity in young women in one rigorous study carried out in the UK. **Based on a UK based evaluation study, a 'whole school' approach (i.e. one involving all members of the school community in developing and implementing health-promoting changes in school organisation and structure) may be effective for increasing physical activity and healthy eating, primarily for young women aged 15 to 16 years.**
- A five year intervention which included a health screening initiative (with results fed back to pupils to set behavioural goals) alongside classroom-based educational activities, as well as initiatives to involve parents, led to increases in reported healthy eating and reductions in cholesterol and blood pressure in low-income African-American and Hispanic young people in the USA. **Multi-component school-based initiatives, as evaluated in one study, which promote healthy eating and physical activity involving classroom activities, parental involvement and risk factor assessment may be effective in some populations of young people.**
- Interventions which increase the availability of healthy foods in secondary schools, complemented by classroom activities on the benefits of nutrition and school and community wide initiatives, were demonstrated to be effective for increasing reported healthy eating behaviour in two rigorous studies in the USA. **Increasing the availability of healthy foods in the school alongside classroom activities and media campaigns may be an effective way of promoting healthy eating.**
- Two rigorous evaluations in the USA of peer-led interventions in which young people educated each other and lobbied for health-supporting environmental changes in the school were generally effective at increasing reported healthy eating, particularly among young women. One of them also measured participation in physical activity as an outcome, but found no effect of the intervention. **Peer-led interventions which involve young people educating each other and lobbying for health-supporting environmental changes in the school may be beneficial, particularly for young women and mostly in terms of promoting healthy eating.**

- Whilst classroom activities to promote physical activity and healthy eating have been associated with benefits for young people, in some cases it was reported that teachers lacked the enthusiasm and skills necessary to deliver the interventions adequately. In particular, there was not always enough time for sufficient training and motivation. **Interventions which employ teachers to deliver interventions should allocate sufficient time for training, as this may be crucial to effectiveness.**

6.2 Recommendations for the future development and evaluation of interventions to promote health with young people

This set of recommendations is derived from the implications for research, policy and practice discussed in chapters 4 and 5. It aims to target the gaps between barriers and facilitators as identified by young people, and interventions which have been implemented to promote their health. The gaps have arisen either because there have been no attempts to evaluate interventions which tackle barriers and facilitators, or because such interventions have been poorly evaluated. The recommendations are of particular relevance to researchers as they outline where further research is required. However, they will also be relevant to policy makers and practitioners as they identify where initiatives need to be developed or modified. These all clearly highlight *the need for researchers, practitioners and policy makers to work in partnership.*

6.2.1 Interventions related to the school

- **Research is needed to ascertain how interventions to promote better teacher-student relationships can be more effective.** A number of current policy initiatives are in place to improve relationships through better teacher support and pupil empowerment. However, previously evaluated initiatives have only been partially successful in modifying psychosocial aspects of the classroom. Any evaluation of new or existing approaches should conduct a process evaluation to establish which factors influence effectiveness, including whether or not the approach is acceptable to teachers and students.
- **Interventions to improve the school environment (e.g. better PE facilities) need to be complemented by evaluation of approaches to PE which help young people to feel comfortable about participating.** Schemes are in place to improve PE school facilities. But some young people report that PE is taught in an insensitive way that discourages them from taking part.
- **Specific programmes to promote health within a whole school approach require evaluating** (e.g. fruit only tuck shops). The whole school approach was found to be effective at increasing healthy eating and physical activity, mostly amongst young women. A variety of different initiatives can take place within the school and these need thorough evaluation.
- **More research is needed into the effects of incorporating young people's views into the planning of health-promoting initiatives.** Current initiatives

such as the National Healthy Schools Standard seek young people's input into planning and policy. However, in previous interventions where young people were encouraged to make suggestions for a more health-promoting school it is not clear whether changes were subsequently implemented. This may be an important factor in effectiveness.

- **There is a need systematically to review the evidence on the effects of interventions which encourage young people to achieve and succeed in school.** Achieving was something young people identified as a health facilitator, although the pressure to achieve could also cause stress. There are policy initiatives in place to empower young people to do well, but we did not search specifically for evaluations and interventions developed to promote young people's school achievement. Any existing evidence for effectiveness should therefore be appraised and summarised. Any future primary evaluation should also focus on the mental and emotional effects of such programmes.
- **There is also a need for methodological research to establish effective ways of evaluating interventions in school settings.** Researchers have encountered a number of practical and philosophical problems when conducting research and evaluation in schools, including misconceptions by teachers about the purpose of evaluation. Teachers themselves could be asked about potential strategies that would encourage them to engage with the evaluation process. These strategies could then be tested for their effectiveness.

6.2.2 Interventions involving family and friends

- **Interventions which combine socialising with physical activity need to be developed and evaluated** as there appears to be a gap in the evidence base for this kind of initiative. Young people value the opportunity to spend time with their friends. However, they sometimes forfeit being active in order to spend time with their friends. Our searches did not find any interventions which attempted to integrate socialising with active pursuits. This is a promising area in need of investigation.
- **There is a need to collate the evidence for the effectiveness of interventions which utilise peer counselling techniques.** Young people often turn to each other for support or to discuss their problems. However, counselling approaches are considered distinct from education and have not been included in previous systematic reviews of peer education interventions, so a systematic review in this area is needed.
- **Interventions to promote better relationships within the family need further, more rigorous, outcome and process evaluation.** Evidence is required to back current initiatives to support parents experiencing conflict with partners and children, and multi-agency collaborations to promote family mental health. Existing evaluated interventions have been limited in their effectiveness, although this may be due to the relatively short duration of programmes.
- **Methodological research is required to establish how to maximise the involvement of parents in health promotion interventions.** This is recommended, where appropriate, to harness the influence that parents have over their children's lifestyles. Interventions which have attempted parental

involvement have tended only to attract the most committed and health conscious parents.

6.2.3 Interventions involving the self

- **Further, more rigorous evaluation is required of interventions to address dieting within the context of promoting healthy eating (e.g. how to identify nutritious low fat meals; how to critique diets; 'sensible' approaches to weight loss).** Young people's concern over their appearance may prompt them to participate in physical activity, but may also encourage them to diet. Four of the outcome evaluations that we reviewed in-depth addressed dieting, but only one was judged to be methodologically sound.
- **Interventions which build on coping strategies that young people use to deal with stress, depression and anxiety need to be developed and evaluated.** These include physical activity and other pleasurable activities. Schemes are in place to provide more leisure and sports facilities and evaluation could measure the extent to which these are used by young people as a way of dealing with their problems.
- Young people do not relate to medically or professionally defined concepts such as 'mental illness', 'depression' or 'positive mental health' and they associate negative meanings with the term 'mental health'. Most of the interventions in this review, however, used these concepts in their intervention materials. **Future interventions need to make sure that their content and presentation is relevant to young people's own perspectives, and the context of their everyday lives, particularly in the area of mental health.**

6.2.4 Interventions involving practical and material resources

- **Multi-agency collaborations to promote mental health (e.g. Health Action Zone partnerships) should be evaluated for their potential to prevent self-harm and suicide.** School-based suicide prevention initiatives were found to be limited in their effectiveness and multi-strategy programmes across different agencies/sectors are recommended in place of narrowly focused interventions.
- **Interventions to help young people gain employment should be assessed in terms of their ability to allay their fears and worries about their security and future.** Such concerns emerged as one of the most common issues troubling young people.
- **More rigorous evaluation is needed of interventions which make leisure and sports facilities and healthy foods more affordable to young people.** Evaluations of such initiatives were thin on the ground and the few initiatives which did address this issue suffered from methodological problems.
- **Current programmes to make leisure and sports facilities and healthy foods more accessible to young people should be evaluated.** Young people found it easy to access fast foods in their social environment, although it was unclear whether sources of healthy foods were necessarily lacking. In disadvantaged areas that accessibility is clearly a problem. Likewise, leisure and

sports facilities were lacking in some areas, and the problem was compounded by inadequate transport facilities. Current schemes to increase access need to be tested carefully for their effectiveness.

- **Strategies to encourage greater uptake of free school meals should be tested.** Recent research has identified reasons why some pupils do not claim the meals to which they are entitled. Suggestions have been made for ways to overcome this which could be assessed for their effectiveness.
- **The evidence for the effectiveness of interventions to promote safer environments (e.g in terms of violence, crime, road safety) should be collated.** Young people cited things like racism, violence, crime, and road safety as issues which impinged upon their freedom and mobility. Schemes have been in place for some time to address some of these, although any evaluation would not necessarily have been included in this series of reviews. There is likely to be potential for systematic reviews to gather existing evidence on these topics and there is support for this by groups within the Cochrane and Campbell Collaborations. Where there are gaps in evaluation, controlled trials, preferably randomised, should be conducted, wherever possible.

6.3 Recommendations for involving young people in the development of interventions

This set of recommendations gives guidance for how practitioners and researchers can work in partnership with young people to develop interventions to promote their health:

- **Young people's views should be the starting point or any future developments of efforts to promote health.** In particular, there needs to be more investigation into the barriers to, and facilitators of, health. Young people need to be asked to specify, in their own words, the factors which inhibit or help them to lead healthy lifestyles.
- **Young people should always be consulted on matters concerning the promotion of their health.** This is not only an ethical imperative but also crucial in the development of potentially effective and acceptable interventions. Currently, from the information provided about the majority of evaluated interventions, young people have generally not been consulted either in intervention development or in the evaluation of intervention processes.
- **Young people should be involved as equal stakeholders in future agenda-setting for health promotion.** Young people have valuable knowledge about the barriers to, and facilitators of, health and require relevant, correct information and advice delivered in an appropriate and acceptable manner.
- **The views of socially excluded groups such as those from households on low incomes, from minority ethnic groups, those excluded from school and those with disabilities need to be sought.** Poor reporting of socio-economic characteristics in the young people's views studies meant that it was difficult to gauge the extent to which the young people studied were socially excluded. The

fact that so many of the studies were conducted in schools using written questionnaires means that the views of those excluded, or persistently absent, from school or with poor literacy were not likely to have been sought.

6.4 Recommendations for conducting and reporting research

6.4.1 Outcome evaluation research

- **When possible, outcome evaluations should be conducted using the design of a randomised controlled trial and with individuals, families, schools, geographical areas or local authorities as units of allocation.** Whilst it is recognised that there are circumstances when this might not be possible, there are currently many missed opportunities for employing this design to evaluating effectiveness. Researchers need to work with practitioners (e.g. teachers, health promoters, Local Education Authority officials) to make use of opportunities to evaluate interventions in this way, and policy-makers and research commissioners could do more to support and fund this.
- **Outcome evaluations should assess the impact of interventions in the long term, following up young people as they enter adulthood.** Although long-term evaluation might be costly, and present practical difficulties for researchers to maintain contact with participants, there is currently little evidence that programmes to promote mental health, physical activity and healthy eating with young people in their teens can have a lasting effect (beyond two years following intervention).
- **Outcome evaluations should always attempt to conduct integral process evaluations.** Only 10% of the outcome evaluations included in the mental health and healthy eating mapping and quality assessment exercises did this, whilst in the physical activity review the figure, at 4%, was even lower.
- **Key aspects of the methodology and results of outcome evaluations need to be reported in a detailed and consistent manner to promote confidence in their rigour.** Outcome evaluations did not consistently report pre-test and post-test data of all participants as recruited into the study; establish the equivalence of intervention and control groups; or report the impact of the intervention for all outcomes targeted. These key aspects need to be reported as a minimum benchmark of quality. Authors should include information on the aims of the study and on the method of randomisation where used; should report the of numbers of participants assigned to intervention and control groups, should describe interventions and evaluation sufficiently to allow replicability, and include attrition rates. Concise writing styles, companion papers and the World Wide Web should allow full reporting.

6.4.2 Research on young people's views

- **Studies examining young people's views need to engage young people in a dialogue that is meaningful to them, avoiding inappropriate language.** . Studies often used checklists of pre-determined statements for young people to respond to, with no details of whether these were derived from what young people see as important or whether they found the language appropriate.
- **Studies examining young people's views need to seek informed consent and assure confidentiality/anonymity of responses.** It was often unclear as to whether or not consent had been sought from young people or their parents in these studies. Aside from being an ethical imperative, such actions may encourage young people to provide more honest responses and thus increase the validity of the findings.
- **The reporting of studies of young people's views and process evaluations also need to be more complete, as basic data are often missing.** The socio-demographic characteristics of young people who took part in studies were often poorly reported, making it difficult to judge the relevance and generalisability of the study findings. Detailed descriptions of the selection and recruitment of the sample, the methods used to collect and analyse data, and sample characteristics should always be presented. In addition, attempts to ensure the reliability and validity of the data collection and data analysis methods need to be made. An outline of how the study's findings contribute to the existing knowledge base should also be included.

REFERENCES

- Acheson D (1998) *Independent Inquiry into Inequalities in Health: Report*. London: The Stationery Office.
- Adamson AJ, Rugg Gunn AJ, Appleton DR (1996) The contribution of foods from outside the home to the nutrient intake of young adolescents. *Journal of Human Nutrition and Dietetics* **9**: 55-68.
- Aggleton P, McClean C, Taylor-Laybourn A, Waller D, Warwick I, Woodhead D, Youdell D (1995) *Young Men Speaking Out*. London: Health Education Authority.
- Aggleton P, Whitty G, Knight A, Prayle D, Warwick (1996) *Promoting Young People's Health: the Health Concerns and Needs of Young People*. London: Health Education Authority.
- Alderson P (2000) *Young Children's Rights: Exploring Beliefs, Principles and Practice*. London: Jessica Kingsley Publishers.
- Armstrong C, Hill M, Secker J (1998) *Listening to Children*. London: Mental Health Foundation.
- Armstrong N, Welsman JR, Kirby BJ (2000) Longitudinal changes in 11 to 13- year-olds physical activity. *Acta Paediatrica* **89**: 775-780.
- Balding J, Gimber P, Regis D, Wise A (1997) A quarter of year 7 young men want to cycle to school. *Education and Health* **15**: 49-52.
- Balding J, Regis D, Wise A (1998) *No Worries? Young People and Mental Health: A Study of the Worries and Concerns that Affect Young Teenagers in Our Society*. Exeter: School Health Education Unit.
- Baranowski T, Henske J, Simons-Morton B, Palmer J, Tiernan K, Hooks PC, Dunn JK (1990a) Dietary changes for cardiovascular disease prevention among Black-American families. *Health Education Research* **5**: 433-443.
- Berg-Kelly K, Alven B, Erdes L, Emeholm T, Johannisson I, Mattsson Elofson E (1997) Health habits and risk behavior among youth in three communities with different public health approach. *Scandinavian Journal of Social Medicine* **25**: 149-155.
- Bevill AR, Gast DL (1998) Social safety for young children: a review of the literature on safety skills instruction. *Topics in Early Childhood Special Education* **18**: 222-234
- Bickerstaff K, Shaw S (2000) *An Evaluation of the Walking Bus at Pirehill First School*. Staffordshire University: CAST (Centre for Alternative and Sustainable Transport).
- Biddle SJH, Mutrie N (2001) *Psychology of Physical Activity: Determinants of Well-Being and Interventions*. London: Routledge.

- Bierman KL (1986) Process of change during social skills training with preadolescents and its relation to treatment outcomes. *Child Development* **57**: 230-240.
- Birch L (1999) Development of food preferences. *Annual Review of Nutrition* **19**: 41-62.
- Birtwistle GE, Brodie DA (1991) Children's attitudes towards activity and perceptions of physical education. *Health Education Research* **6**: 465-478.
- Bosworth K, Espelage D, DuBay T, Dahlberg LL, Daytner G (1996) Using multimedia to teach conflict resolution skills to young adolescents. *American Journal of Preventive Medicine* **12**(5 Suppl.): 65-74.
- Bourdeaudhuij I (1998) Behavioural factors associated with physical activity in young people. In: *Young and Active? Young People and Health Enhancing Physical Activity: Evidence and Implications*. London: Health Education Authority.
- Bowen C (1997) School survey highlights teenage problem area. *Nursing Times* **93**: 54-55.
- Bowker S, Crosswaite C, Hickman M, McGuffin S, Tudor-Smith C (1998) The healthy option – a review of activity on food and nutrition by UK schools involved in the European Network of Health Promoting Schools. *Health Education* **4**: 135-141.
- Brannen J, Dodd K, Oakley A, Storey P (1994) *Young People, Health and Family Life*. Buckingham: Open University Press.
- Bredehoft DJ, Hey RN (1985) An evaluation of self-esteem: a family affair. *Family Relations: Journal of Applied Family and Child Studies* **34**: 411-417.
- Bunn F, Roberts I, Kwan I, Wentz R (2001) Traffic calming for preventing traffic related injuries (Protocol for a Cochrane Review). In: *The Cochrane Library*, Issue 3, 2001. Oxford: Update Software.
- Cabinet Office (2001a) *National Strategy for Neighbourhood Renewal: Policy Action Team Audit*. London: The Stationery Office.
- Cabinet Office (2001b) *A New Commitment to Neighbourhood Renewal: National Strategy Action Plan*. London: The Stationery Office.
- Campbell DT, Stanley JC (1966) *Experimental and Quasi-experimental Designs for Research*. Boston: Houghton-Mifflin.
- Children and Young People's Unit (2001) *'Tomorrow's Future: Building a Strategy for Children and Young People'*. London: Department for Education and Skills, The Stationery Office.
- Chinn S, Rona RJ (2001) Prevalence and trends in overweight and obesity in three cross sectional studies of British children. *British Medical Journal* **322**: 24-26.

Clarke GN, Hawkins W, Murphy M, Sheeber L (1993) School-based primary prevention of depressive symptomatology in adolescents: findings from two studies. *Journal of Adolescent Research* **8**: 183-204.

Coakley J, White A (1992) Making decisions – gender and sport participation among British adolescents. *Sociology of Sport Journal* **9**: 20-35.

Coie J, Krehbiel G (1984) Effects of academic tutoring on the social status of low-achieving, socially rejected children. *Child Development* **55**: 1465-1478.

Colchico K, Zybert P, Basch CE (2000) Effects of after-school physical activity on fitness, fatness, and cognitive self-perceptions: a pilot study among urban, minority adolescent young women. *American Journal of Public Health* **90**: 977-978.

Coles B (2000) Slouching towards Bethlehem: youth policy and the work of the Social Exclusion Unit. In Dean H, Sykes R, Woods R (eds) *Social Policy Review* **12**. Newcastle, Social Policy Association.

Comer JP (1985) The Yale-New Haven primary prevention project: a follow-up study. *Journal of the American Academy of Child Psychiatry* **24**: 154-160.

Connell D, Turner R, Mason E (1985) Summary of findings of the School Health Education Evaluation: health promotion effectiveness, implementation, and costs. *Journal of School Health* **55**: 316-321.

Davies PM, Weatherburn P, Hunt AJ, Hickson FCI, McManus TJ, Coxon APM (1992) The sexual behaviour of young gay men in England and Wales. *AIDS CARE* **4**.

Dennison CM, Shepherd R (1995) Adolescent food choice: an application of the theory of planned behaviour. *Journal of Human Nutrition and Dietetics* **8**: 9-23.

Department for Culture, Media and Sport (2000) *A Sporting Future for All, Department for Culture, Media and Sport*. London: The Stationery Office.

Department for Education and Employment (1999) *National Healthy School Standard: Guidance*. London: DfEE.

Department for Education and Employment (2000) *National Standards for School Lunches, England Regulations 2000*. London: The Stationery Office.

Department of Health (2000a) *National Service Framework on Coronary Heart Disease*. London: The Stationery Office.

Department of Health. (2000b) *The NHS Plan: A Plan for Investment, A Plan for Reform*. London: The Stationery Office.

Department of Health (1999a) *National Service Framework for Mental Health: Modern Standards and Service Models*. London: The Stationery Office.

Department of Health (1999b) *A First Class Service: Quality in the new NHS*. London: The Stationery Office.

Department of Health (1999c) *Saving Lives: Our Healthier Nation*. London: The Stationery Office.

Department of Health (1998) *Our Healthier Nation*. London: The Stationery Office.

Department of Health (1991) *Dietary Reference Values for Food Energy and Nutrients for the United Kingdom. Report on Health and Social Subjects 41*. London: The Stationery Office.

Derbyshire J (1996) The feel-bad factor. *Young People Now* **October**: 20-21.

Duperrex O (2001) Safety education of pedestrians for injury prevention (Protocol for a Cochrane Review). In: *The Cochrane Library*, Issue 3, 2001. Oxford: Update Software.

Durlak J (1998) Primary prevention mental health programmes for children. *Journal of Mental Health* **7**: 463-469.

Durlak JA, Wells AM (1998) Evaluation of indicated preventive intervention (secondary prevention) mental health programmes for children and adolescents. *American Journal of Community Psychology* **26**: 775-802.

Durlak JA, Wells AM (1997) Primary prevention of mental health programmes: the future is exciting [comment] *American Journal of Community Psychology* **25**: 233-243.

Edmunds H, Hill AJ (1999) Dieting and the family context of eating in young adolescent children. *International Journal of Eating Disorders* **25**: 435-440.

Egger M, Schneider M, Smith GD (1998) Spurious precision? Meta-analysis of observational studies. *British Medical Journal* **316**: 140-144.

Ellickson PL, Bell RM (1990) Drug prevention in junior high: a multi-site longitudinal test. *Science* **247**: 1299-1305.

Farrell AD, Meyer AL, Dahlberg LL (1996) Richmond youth against violence: a school based program for urban adolescents. *American Journal of Preventive Medicine* **12**(5 Suppl.): 13-21

Fitzgibbon ML, Stolley MR, Kirschenbaum DS (1995) An obesity prevention pilot programme in African-American mothers and daughters. *Journal of Nutrition Education* **27**: 93-97

Flores R (1995) Dance for health: improving fitness in African American and Hispanic adolescents. *Public Health Reports* **110**: 189-193.

Foxcroft DR, Lister-Sharp D, Lowe G (1997) Alcohol misuse prevention for young people: a systematic review reveals methodological concerns and lack of reliable evidence of effectiveness. *Addiction* **92**: 531-537.

- France-Dawson M, Holland J, Fullerton D, Kelley P, Arnold S, Oakley A (1994) *Review of the Effectiveness of Workplace Health Promotion Interventions*. London: Social Science Research Unit.
- Friedli L, Scherzer A (1996) *Positive Steps: Mental Health and Young People: Attitudes and Awareness Among 11-24 Year Olds*. London: Health Education Authority.
- Gallagher M, Millar R (1996) A survey of adolescent worry in Northern Ireland. *Pastoral Care in Education* **14**: 26-32.
- Gallagher M, Millar R, Hargie O, Ellis R (1992) The personal and social worries of adolescents in Northern Ireland: results of a survey. *British Journal of Guidance and Counselling* **20**: 274-290.
- Gentle P, Caves R, Armstrong N, Balding J, Kirby B (1994) High and low exercisers among 14- and 15- year-old children. *Journal of Public Health Medicine* **16**: 186-194.
- Gillies P, McVey D (1996) *Research for Health Promotion. A Research Strategy for the Health Education Authority for England 1996-1999*. London: Health Education Authority.
- Gordon J, Grant G (eds) (1997) *How We Feel: an Insight into the Emotional World of Teenagers*. London: Jessica Kingsley Publishers.
- Gough D, Oliver S, Bruton G, Selai C, Schaumberg H (2001) *The effect of travel modes on children's mental health, cognitive and social development: a systematic review*. London: EPPI-Centre.
- Green L, Kreuter M (1991) *Health Promotion Planning: An Educational and Environmental Approach*. Mountain View, California: Mayfield Publishing Company.
- Gregory J (2000) *National Diet and Nutrition Survey Young People Aged 4-18 Years. Vol. 1 Report of the Diet and Nutrition Survey*. Great Britain Office for National Statistics Social Survey Division, London: The Stationery Office.
- Hains A, Szyjakowski M (1990) A cognitive stress reduction intervention program for adolescents. *Journal of Counselling Psychology* **37**: 79-84.
- Haldeman DE, Baker SB (1992) Helping female adolescents prepare to cope with irrational thinking via preventive cognitive self-instruction training. *Journal of Primary Prevention* **13**: 161-169.
- Haney P, Durlak JA (1998) Changing self-esteem in children and adolescents: a meta-analytic review. *Journal of Clinical Child Psychology* **27**: 423-433.
- Hansen WB, Graham JW (1991) Preventing alcohol, marijuana, and cigarette use among adolescents: peer pressure resistance training versus establishing conservative norms. *Preventive Medicine* **20**: 414-430.

Harden A, Peersman G, Oliver S, Oakley A. (1999b) Identifying relevant primary research on electronic databases to inform decision-making in health promotion: the case of sexual health promotion. *Health Education Journal* **58**: 290-301.

Harden A, Rees R, Shepherd J, Brunton G, Oliver S, Oakley A (2001) *Young People and Mental Health: A Systematic Review of Research on Barriers and Facilitators*. London: EPPI-Centre, Social Science Research Unit.

Harden A, Weston R, Oakley A (1999a) *A Review of the Effectiveness and Appropriateness of Peer-Delivered Health Promotion for Young People*. London: EPI-Centre, Social Science Research Unit.

Harden A, Weston R, Oliver S, Oakley A (1999c) *Including Process Evaluations in Systematic Reviews of Health Promotion: the Utility of Quality Criteria to Assess Qualitative Research*. Paper presented at the VII Cochrane Colloquium, Rome 6th to 9th October 1999.

Harris J (1993) Young people's perceptions of health, fitness and exercise. *Physical Education Research Supplement* **13**: 5-9.

Hawe P, Degeling D, Hall J (1990) *Evaluating Health Promotion*. Sydney: MacLennan and Petty.

Health Advisory Service (1995) *Child and Adolescent: Mental Health Services*. London: The Stationery Office.

Health Development Agency (2000) *Coronary Heart Disease: Guidance for Implementing the Preventive Aspects of the National Service Framework*. London: HDA.

Health Education Authority (1995) *Expectations for the Future: An Investigation into the Self-Esteem of 13 and 14 Year Old Girls and Boys*. London: Health Education Authority.

Hemingway H, Marmot M (1999) Psychosocial factors in the aetiology and prognosis of coronary heart disease: systematic review of prospective cohort studies. *British Medical Journal* **318**: 1460-1467.

Hennessy E (1999) Children as service evaluators. *Child Psychology and Psychiatry Review* **4**:153-159.

Hickmann SA (1994) Research briefs... Say YES to sports and NO to tobacco: a fun and effective community outreach programme for high risk youth in San Diego. *Journal of Health Education* **25**: 316-317.

Hider P (1998) *Youth Suicide Prevention by Primary Healthcare Professionals*. New Zealand: New Zealand Health Technology Assessment (NZHTA).

Hodgson R, Abbasi T, Clarkson J (1996) Effective mental health promotion: a literature review. *Health Education Journal* **55**: 55-74.

Hodgson R, Abbassi T (1995) *Effective Mental Health Promotion: Literature Review*. Wales: Health Promotion Wales, Technical Report 13.

Holund U (1990a) The effect of a nutrition education programme, 'Learning by Teaching', on adolescents' knowledge and beliefs. *Community Dentistry and Oral Epidemiology* **18**: 1861-1865.

Hopper CA, Gruber MB, Munoz KD, Herb RA (1992) Effect of including parents in a school-based exercise and nutrition programme for children. *Research Quarterly for Exercise and Sport* **63**: 315-321.

Hopwood T, Carrington B (1994) Physical education and femininity. *Educational Research* **36**: 237-246.

Hutchinson J, Henderson D, Francis S, (2001) *Evaluation of Pilot Summer Activities for 16 Year Olds: Summer 2000, Department for Education and Skills*. London: The Stationery Office.

Kawachi I, Kennedy BP, Lochner K, Prothrow-Stith D (1997) Social capital income inequality and mortality. *American Journal of Public Health* **87**: 491-498.

Kerfoot M (2000) Youth suicide and deliberate self-harm. In: Aggleton P, Jarry J, Warwick I (eds) *Young People and Mental Health*. London: John Wiley and Sons.

Kincey J, Amir Z, Gillespie B, Carleton E, Theaker T (1993) A study of self-esteem, motivation and perceived barriers to participation in sport and exercise among secondary school pupils. *Health Education Journal* **52**: 241-245.

Klassen TP, MacKay JM, Moher D, Walker A, Jones AL (2002) Community-based injury prevention interventions. *Future of Children* **10**: 83-110.

Kleijnen J, Gotzsche P, Kunz RA, Oxman AD, Chalmers I (1997) So what's so special about randomization? In: Maynard A, Chalmers I (eds) *Non-Random Reflections on Health Services Research*. London: BMJ Publishing Group.

Klepp KI, Wilhelmsen BU (1993) Nutrition education in junior high schools: incorporating behavior change strategies into home economics courses. *Health Education Research* **8**: 547-554.

Koniak-Griffin D (1994) Aerobic exercise, psychological well-being and physical discomforts during adolescent pregnancy. *Research in Nursing and Health* **17**: 253-263.

Lamb JM, Puskar KR, Sereika SM, Corcoran M (1998) School-based intervention to promote coping in rural teens. *American Journal of Maternity and Child Nursing* **23**: 187-194.

Light RJ, Pillemer DB (1984) *Summing Up: The Science of Reviewing Research*. Cambridge, Mass.: Harvard University Press.

Lister-Sharp D, Chapman S, Stewart-Brown S, Sowden A (1999) Health promoting schools and health promotion in schools: two systematic reviews. *Health Technology Assessment* **3**.

Lloyd-Smith M, Tarr j (2000) Research children's perspectives: a sociological dimension. In: Lewis A, Lindsay G (eds) *Researching Children's Perspectives*. Buckingham: Open University Press.

Logue A (1991) *The Psychology of Eating and Drinking: An Introduction*. New York: WH Freeman.

MacDonald G (1997) Social work: beyond control? In: A Maynard, I Chalmers (eds) *Non-Random Reflections on Health Services Research*. London: BMJ Publishing Group.

McDougall P (1998) Teenagers and nutrition: assessing levels of knowledge. *Health Visitor* **71**: 62-64.

Marcus BH, Simkin LR (1994) The transtheoretical model: applications to exercise behavior. *Medicine and Science in Sport and Exercise* **26**: 1400-1404.

Marmot M, Bosma H, Hemingway H, Brunner E, Skinsfield S (1997) Contribution of job control and other risk factors to social variations in coronary heart disease incidence. *Lancet* **350**: 235-239.

Marmot M, Wilkinson RG (2001) Psychosocial and material pathways in the relation between income and health: a response to Lynch *et al*. *British Medical Journal* **322**: 1233-1236.

Marsh HW, Peart Naida D (1988) Competitive and cooperative physical fitness training programmes for young women: effects on physical fitness and multidimensional self-concepts. *Journal of Sport and Exercise Psychology* **10**: 390-407.

Marsh HW, Richards GE, Barnes J (1986) Multidimensional self-concepts: the effects of participation in an outward bound programme. *Journal of Perspective Social Psychology* **50**: 195-204.

Mason V (1995) *Young People and Sport in England, 1994: The views of teachers and children*. London: Sports Council.

Mayall B (1996) *Children, Health and the Social Order*. Buckingham: Open University Press.

Mental Health Foundation (1999) *Bright Futures: Promoting Children and Young People's Mental Health*. London: Mental Health Foundation.

Miles G, Eid S (1997) The dietary habits of young people. *Nursing Times* **93**: 46-48.

Miller B (1993) Femininity, physical activity and the curriculum. In: McFee G, Tomlinson A (eds) *Education, Sport and Leisure: Connections and Controversies*. Eastbourne: University of Brighton.

Mitchell K (1996) *Encouraging Adolescent Young Women to Participate in Physical Activity: Can Teenage Magazines Play a Role?* London: London School of Hygiene and Tropical Medicine.

Moon AM, Mullee MA, Rogers L, Thompson RL, Speller V, Roderick P (1999a) Helping schools to become health-promoting environments - an evaluation of the Wessex Healthy Schools Award. *Health Promotion International* **14**: 111-122.

Moon AM, Mullee MA, Thompson RL, Speller V, Roderick P (1999b) Health-related research and evaluation in schools. *Health Education* **99**: 27-34.

Moore H, Kindness L (1998) Establishing a research agenda for the health and well-being of children and young people in the context of health promotion. In: *Promotion the Health of Children and Young People: Setting a Research Agenda*. London: Health Education Authority.

Mulrow C, Oxman A (1997) *How to Conduct a Cochrane Systematic Review*. San Antonio: Cochrane Collaboration.

Mulvihill C, Rivers K, Aggleton P (2000a) *Physical Activity 'At Our Time'*. London: Health Education Authority.

Mulvihill C, Rivers K, Aggleton P (2000b) Views of young people towards physical activity: determinants and barriers to involvement. *Health Education* **100**: 190-199.

National Audit Office (2000) *Tackling Obesity in England*. London: The Stationery Office.

NHS Centre for Reviews and Dissemination (2001) *Undertaking Systematic Reviews of Research on Effectiveness CRD's Guidance for those Carrying Out or Commissioning Reviews. CRD Report Number 4* (2nd Edition). York: NHS Centre for Reviews and Dissemination, University of York.

Nicholas B, Broadstock M (1999) *Effectiveness of early interventions for preventing mental illness in young people*. New Zealand: New Zealand Health Technology Assessment Clearing House (NZHTA).

Nicklas TA, Johnson CC, Myers L, Farris RP, Cunningham A (1998) Outcomes of a high school programme to increase fruit and vegetable consumption: Gimme 5 – a fresh nutrition concept for students. *Journal of School Health* **68**: 248-253.

Oakley A (1998) Experimentation in social science: the case of health promotion. *Social Sciences in Health* **4**: 73-89.

Oakley A (2000) *Experiments in Knowing: Gender and Method in the Social Sciences*. Cambridge: Polity Press.

Oakley A, Fullerton D (1995) *Young People and Smoking: A Report for North Thames Regional Health Authority*. London: Social Science Research Unit.

- Oakley A, Fullerton D (1996) *The lamppost of research: support or illumination? Evaluating Social Interventions*. Ilford, Essex: Barnardos.
- Oakley A, Fullerton D, Holland J, Arnold S, France-Dawson M, Kelly P, McGrellis S, Robertson P (1994a) *Reviews of Effectiveness: Sexual Health Interventions for Young People*. London: Social Science Research Unit.
- Oakley A, Fullerton D, Holland J, Arnold S, Hickey D, Kelley P, McGrellis S, Robertson P (1994b) *Reviews of Effectiveness: HIV Prevention and Sexual Health Education Interventions*. London: Social Science Research Unit.
- Oliver S (2001) Making research more useful: integrating different perspectives and different methods. In: Oliver S, Peersman G (eds) *Using Research for Effective Health Promotion*. Buckingham: Open University.
- Oliver S, Peersman G, Harden A, Oakley A (1999a) Discrepancies in findings from effectiveness reviews: the case of health promotion for older people. *Health Education Journal* **58**: 78-90.
- Orme J (1991) Adolescent young women and exercise: too much of a struggle? *Education and Health* **9**: 76-80.
- Passmore S, Harvey J (1994) The need for school-based nutrition action groups. *Journal of Human Nutrition and Dietetics* **7**: 69-71.
- Peersman G (1996) *A Descriptive Mapping of Health Promotion Studies in Young People*. London: EPI-Centre, Social Science Research Unit.
- Peersman G, Harden A, Oliver S (1998) *Effectiveness of Health Promotion Interventions in the Workplace: A Review*. London: Health Education Authority.
- Peersman G, Harden A, Oliver S (1999) *Effectiveness Reviews in Health Promotion*. London: EPI-Centre, Social Science Research Unit.
- Peersman G, Oakley A (2001) Learning from research. In: Oliver S, Peersman G (eds) *Using Research for Effective Health Promotion*. Buckingham: Open University Press.
- Peersman G, Oakley A, Oliver S (2001) Systematic reviews of effectiveness. In Oliver S, Peersman G (eds) *Using Research for Effective Health Promotion*. Buckingham: Open University Press.
- Peersman G, Oliver S, Oakley A (1997) *EPI-Centre Review Guidelines: Data Collection for the EPIC Database*. London: EPI-Centre.
- Pentz MA, Dwyer JH, Mackinnon DP (1989) A multi-community trial for primary prevention of adolescent drug abuse. *Journal of the American Medical Association* **261**: 3259-3266.
- Perry CL, Klepp KI, Halper A, Dudovitz B, Golden D, Griffen G, Smyth M (1987) Promoting healthy eating and physical activity patterns among adolescents: a pilot study of 'Slice of Life'. *Health Education Research* **2**: 93-103.

Ploeg J, Ciliska D, Brunton G, MacDonnell J, O'Brien M (1999) *The Effectiveness of School-Based Curriculum Suicide Prevention Programmes for Adolescents*. Ontario: Ontario Ministry of Health.

Ploeg J, Ciliska D, Dobbins M, Hayward S, Thomas H, Underwood JA (1996) A systematic overview of adolescent suicide prevention programmes. *Canadian Journal of Public Health* **87**: 319-324.

Porter (2000) Scott Porter Research and Marketing Ltd. *Young People and Mental Well Being*. Edinburgh: Health Education for Scotland.

Prochaska JO, DiClemente CC (1984) *The Transtheoretical Approach: Crossing Traditional Boundaries of Therapy*. Dow Jones-Irwin: Illinois.

Prochaska JO, Redding CA, Harlow LL, Rossi JS, Velicer WF (1994) The transtheoretical model of change and HIV prevention: a review. *Health Education Quarterly* **21**.

Rees R, Harden A, Shepherd J, Brunton G, Oliver S, Oakley A (2001) *Young people and physical activity: a systematic review of research on barriers and facilitators*. London: EPPI-Centre, Social Science Research Unit.

Rivers K, Aggleton P, Chase E, Downie A, Mulvihill C, Sinkler P, Tyrer P, Warwick I (2000) *Setting the Standard: Research Linked to the Development of the National Healthy School Standard (NHSS)*. London: Department of Health and Department for Education and Employment.

Roberts SJ, McGuinness PJ, Bilton RF, Maxwell SM (1999) Dieting behavior among 11-15 year old girls in Merseyside and the Northwest of England. *Journal of Adolescent Health* **25**: 62-67.

Rogers A, Adamson JE, McCarty M (1997) Variations in health behaviours among inner city 12-year olds from four ethnic groups. *Ethnicity and Health* **2**: 309-316.

Ross S (1995) 'Do I really have to eat that?': A qualitative study of schoolchildren's food choices and preferences. *Health Education Journal* **54**: 312-321.

Sallis JF, Prochaska JJ, Taylor WC (2000) A review of correlates of physical activity of children and adolescents. *Medical Science of Sports and Exercise* **32**: 963-975.

Sallis JF, Hovell M (1990) Determinants of exercise behavior. *Exercise and Sport Sciences Reviews* **18**: 307-330.

Salmon P (2001) Effects of physical exercise on anxiety, depression, and sensitivity to stress: a unifying theory. *Clinical Psychology Review* **21**: 33-61.

Schinke SP, Singer B, Cole K, Contento IR (1996) Reducing cancer risk among native American adolescents. *Preventive Medicine* **25**: 146-155.

- Shepherd J, Harden A, Rees R, Brunton G, Garcia J, Oliver S, Oakley A (2001) *Young People and healthy eating: a systematic review of research on barriers and facilitators*. London: EPPI-Centre, Social Science Research Unit.
- Shucksmith J, Hendry L (1998) *Health Issues and Adolescents: Growing Up, Speaking Out*. London: Routledge.
- Sibbald B, Roland M (1998) Understanding controlled trials: Why are randomised controlled trials important? *British Medical Journal* **316**:201.
- Silbert KL, Berry GL (1991) Psychological effects of a suicide prevention unit on adolescents' levels of stress, anxiety and hopelessness: implications for counselling psychologists. *Counselling Psychology Quarterly* **4**: 45-58.
- Social Exclusion Unit (1998) *Bringing Britain Together: A National Strategy for Neighbourhood Renewal* London: The Stationery Office.
- Social Exclusion Unit (2001) *Preventing Social Exclusion*. London: The Stationery Office.
- Sports Council for Wales (1994) *A Matter of Fun and Games: Children's Participation in Sport*. Cardiff: Sports Council for Wales.
- Sport England (2000) *Young People and Sport, National Survey 1999*. London: Sport England.
- Stephenson J, Imrie J (1998) Why do we need randomised controlled trials to assess behavioural interventions? *British Medical Journal* **316**: 611-613.
- Stewart-Brown S (1998) Emotional wellbeing and its relation to health. *British Medical Journal* **317**: 1608-1609.
- Storey P, Chamberlin R (2001) *Improving the Take-up of Free School Meals*. London: Thomas Coram Research Unit, Institute of Education.
- Strange V, Forrest S, Oakley A, and the RIPPLE study team (2001) A listening trial: 'qualitative' methods within experimental research. In: In Oliver S, Peersman G (eds) *Using Research for Effective Health Promotion*. Buckingham: Open University Press.
- Sweeting, H, Anderson A, West P (1994) Sociodemographic correlates of dietary habits in mid to late adolescence. *European Journal of Clinical Nutrition* **48**: 736-748.
- Thompson DC, Rivara FP (1997) The evaluation of the effectiveness of pool fencing to prevent drowning in children. In Alderson P, Fleminger S, Klassen T, Rivara F, Roberts I, Taricco M, Teasdale G (eds) *Injuries (formerly Brain and Spinal Cord Injury) Module of the Cochrane Database of Systematic Reviews. The Cochrane Collaboration Issue 1, 1998*. Oxford: Update Software.
- Tilford S, Delaney F, Vogels M (1997) *Effectiveness of Mental Health Promotion Interventions: A Review*. London: Health Education Authority.

Tones K, Tilford S (1994) *Health Education, Effectiveness, Efficiency and Equity*. Second edition. London: Chapman Hall.

Tolley E, Girma M, Stanton-Wharmby A, Spate A, Milburn J, The Young Researchers (1998) *Young Opinions*. London: National Children's Bureau.

Towner E, Dowse T, Simpson G, Jarvis S (1996) *Health promotion in childhood and young adolescence for the prevention of unintentional injuries*. London: Health Education Authority.

Trent D, Herron S (1999) Operationalising mental health: a theoretical basis. *International Journal of Mental Health Promotion* **1**: 22-26.

Vandongen R, Jenner DA, Thompson C, Taggart AC, Spickett EE, Burke V, Beilin LJ, Milligan RA, Dunbar DL (1995) A controlled evaluation of a fitness and nutrition intervention programme on cardiovascular health in 10- to 12-year-old children. *Preventive Medicine* **24**: 9-22.

Vartiainen E, Tossavainen K, Viri L, Niskanen E, Puska P (1991) The North Karelia Youth Programmes. In Williams CL, Wynder EL (eds). *Hyperlipidemia in Childhood and the Development of Atherosclerosis*. New York: Annals of the New York Academy of Science.

Walter HJ (1989) Primary prevention of chronic disease among children: the school-based "know your body" intervention trials. *Health Education Quarterly* **16**: 201-214.

Wannamethee SG, Shaper AG (2001) Physical activity in the prevention of cardiovascular disease: an epidemiological perspective. *Sports Medicine* **31**: 101-114.

Warburton S (1998) Catch 'em young... Fit for Life Project .. NT/3M National Nursing Awards. *Nursing Times* **94**: 46-47.

Watt RG (1997) Stages of change for sugar and fat reduction in an adolescent sample. *Community Dental Health* **14**: 102-107.

Watt RG, Sheiham A (1996) Dietary patterns and changes in inner city adolescents. *Journal of Human Nutrition and Dietetics* **9**: 451-461.

Watt RG, Sheiham A (1997) Towards an understanding of young people's conceptualisation of food and eating. *Health Education Journal* **56**: 340-349.

Weinstein RS, Soule CR, Colins F, Cone J, Mehlhorn M, Simontacchi K (1991) Expectations and high school change: Teacher-researcher collaboration to prevent school failure. *American Journal of Community Psychology* **19**: 333-363.

West P, Sweeting H (1996) Nae job, nae future: young people and health in context of unemployment. *Health and Social Care in the Community* **4**: 50-62.

White D, Pitts M (1997) *Health Promotion in Young People for the Prevention of Substance Misuse*. London: Health Education Authority.

Wiist WH, Jackson RH, Jackson KW (1996) Peer and community leader education to prevent youth violence. *American Journal of Preventive Medicine* **12**(5 Suppl.): 56-64.

Wood A, Waller G, Gowers S (1994) Predictors of eating psychopathology in adolescent girls. *European Eating Disorders Review* **2**: 6-13.

World Health Organisation (1999a) *Figures and Facts About Suicide*.
http://www.who.int/mental_health/Topic_Suicide/suicide1.html.

World Health Organisation (1990) Diet, Nutrition and the Prevention of Chronic Diseases. *WHO Technical Report Series (797)*. Geneva: World Health Organisation.

First produced in 2002 by:

Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre)
Social Science Research Unit
Institute of Education, University of London
18 Woburn Square
London WC1H 0NR
Tel: 020 7612 6367

<http://eppi.ioe.ac.uk/>

<http://www.ioe.ac.uk/ssru/>

The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) is part of the Social Science Research Unit (SSRU), Institute of Education, University of London.

The EPPI-Centre was established in 1993 to address the need for a systematic approach to the organisation and review of evidence-based work on social interventions. The work and publications of the Centre engage health and education policy makers, practitioners and service users in discussions about how researchers can make their work more relevant and how to use research findings.

Founded in 1990, the Social Science Research Unit (SSRU) is based at the Institute of Education, University of London. Our mission is to engage in and otherwise promote rigorous, ethical and participative social research as well as to support evidence-informed public policy and practice across a range of domains including education, health and welfare, guided by a concern for human rights, social justice and the development of human potential.

The views expressed in this work are those of the authors and do not necessarily reflect the views of the funder. All errors and omissions remain those of the authors.

This report is available to download from:

<http://eppi.ioe.ac.uk/>

ISBN 0-9548415-5-7

This document is available in a range of alternative formats.
Please contact the Marketing and Development Office for assistance.

Telephone 020 7947 9556 Email info@ioe.ac.uk

