

The effectiveness of health promotion and preventive interventions on nutrition, physical activity, obesity, and sexual health in children and adolescents

This is an excerpt from the full technical report, which is written in Norwegian.

The excerpt provides the report's main messages in English.

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Systematic review

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We would like to thank all contributors for their expertise in this project. Norwegian Knowledge Centre for the Health Services assumes final responsibility for the content of this report.

Norwegian Knowledge Centre for the Health Services
Oslo, August 2012

Key messages (English)

The prevention of poor health habits among children and adolescents has the potential to create improved health throughout the life span. In order to be better able to initiate health promotion and preventive interventions, it is important to get an overview of the effectiveness of such initiatives. We included six systematic reviews of high methodological quality. We found no systematic reviews on the effectiveness of social health promotion intervention for children and adolescents that met our inclusion criteria. The reviews were broad (therefore, interventions were described in general terms only).

Based on our synthesis of the results and assessment of the quality of the documentation for long-term effects of the health promotion and preventive interventions in the six included systematic reviews, we can draw the following conclusions:

- School-based initiatives to promote a healthy diet may possibly lead to higher intakes of fruits and vegetables in children and adolescents.
- The documentation was too limited to draw any conclusions about the effectiveness of school-based interventions to promote physical activity in children and adolescents.
- Preventive interventions that focus on physical activity and nutritional education to prevent obesity among 0-5 year-olds may possibly not lead to less obesity.
- The documentation was too limited to draw any conclusions about the effectiveness of preventive interventions that focus on increasing physical activity and healthy eating to prevent obesity in children and adolescents aged 6-18 years.
- Abstinence-only interventions may possibly not be effective in preventing sexually transmitted infections or pregnancy among children and adolescents.
- Abstinence-plus interventions may possibly not be effective in preventing sexually transmitted infections or pregnancy among children and adolescents.

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Executive summary (English)

Background

The prevention of ill health is a key principle in the proposed new Folkehelselov and a new Act on Public Health Services in Norway. Health promotion and disease prevention interventions take as their start point the leading determinants of health - such as physical activity and diet - and interventions target these. Children and adolescents are to a large extent influenced by their environments and today's children and adolescents are facing challenges rarely seen a few decades ago. These include health threats such as the growing epidemic of obesity among children. The health of children is important both in terms of how they experience their childhood and their development and health in adulthood. The prevention of poor health habits among children and adolescents has the potential to provide better health throughout the life span. In order to be better able to initiate health promotion and preventive interventions, it is important to get an overview of the effectiveness of such initiatives, for example when it comes to nutrition and physical activity in children and adolescents.

Objective

We aimed to ascertain the effectiveness of health promotion and preventive interventions on health outcomes in children and adolescents with regard to nutrition, physical activity, sexual health, and social health.

Method

We completed an overview of systematic reviews in accordance with the Norwegian Knowledge Centre for the Health Services' handbook. We searched for systematic reviews in 13 international databases. The search was completed in January 2012. Two people independently screened all titles and abstracts. Potentially relevant articles were ordered in full text and assessed for inclusion. All systematic reviews that dealt with health promotion or preventive interventions concerning nutrition, physical activity, obesity, sexual health, and social health for children and adolescents were included. The quality of the included systematic reviews was assessed with a checklist and we included only systematic reviews of high methodological quality. From the included systematic reviews, we extracted all the results that were relevant. We summarized data in text and created tables where it was relevant. The

quality of the documentation for each main outcome was assessed using Grading of Recommendations Assessment, Development and Evaluation (GRADE).

Results

Among the 4518 records generated by the search, we found no systematic reviews on the effectiveness of health promotion regarding the social health of children and adolescents that met our inclusion criteria. We included six systematic reviews of high methodological quality. These were published between 2009 and 2011. Two of the six systematic reviews described health promotion interventions, healthy nutrition and physical activity in children and adolescents, respectively. The other four systematic reviews concerned preventive interventions; these regarded obesity and sexual ill-health. The reviews were broad, consequently, the interventions were described in general terms only.

Nutrition: We included one systematic review that summarized the effectiveness of school-based interventions to promote healthy eating in children and adolescents. It included only studies from Europe and four met our inclusion criteria. Two of the four studies were from Norway, and they examined the effectiveness of classroom instruction about diet on children's intake of fruits and vegetables. The results suggest that school-based interventions to promote a healthy diet may possibly lead to higher intakes of fruits and vegetables in children and adolescents.

Physical activity: We included one systematic review that summarized the effectiveness of school-based interventions to promote physical activity in children and adolescents. The systematic review included 26 randomized controlled trials (RCT), two of which met our inclusion criteria. The documentation was too limited to draw any conclusions about the effectiveness of school-based interventions to promote physical activity in children and adolescents (the quality of the evidence was very low).

Obesity: We included two systematic reviews, one HTA report and one Cochrane review, which dealt with the effectiveness of preventive interventions for obesity in children and adolescents. We opted to use the results from the Cochrane review because the literature search was more recent and because all studies in the HTA report were included in the Cochrane review. The Cochrane review included 55 studies, of which ten met our inclusion criteria. The review authors organized the results according to age groups. Four studies assessed the effectiveness of interventions to prevent obesity among children 0-5 years. The results suggest that preventive interventions for obesity in children aged 0 to 5 may possibly not lead to significant difference in body mass index compared with no intervention or usual practice. Four studies evaluated the effectiveness of interventions to prevent obesity among children and adolescents 6-12 years. We found that there is insufficient documentation, and the quality of the available evidence is low, to conclude regarding the effectiveness of prevention of obesity in children and adolescents 6-12 years. Two studies examined the effectiveness of interventions to prevent obesity among adolescents aged 13-18 years. We found that there is insufficient documentation to conclude about the effectiveness of interventions to prevent obesity in adolescents aged 13-18 years.

Sexual health: We included two systematic reviews that dealt with the effectiveness of interventions to prevent poor sexual health, such as unwanted pregnancies, HIV and other sexually transmitted infections among adolescents. The two systematic reviews examined two types of interventions: ‘Abstinence-only’ interventions and ‘Abstinence-plus’ interventions. The systematic review about abstinence-only interventions included 13 RCTs, of which 11 met our inclusion criteria, while the systematic review about abstinence-plus interventions included 39 RCTs, of which 22 met our inclusion criteria. The results indicated that neither abstinence-only interventions nor abstinence-plus interventions are effective in preventing sexually transmitted infections or pregnancy. None of the studies that were included in these systematic reviews reported results for HIV infections, therefore we are unable to conclude regarding the effectiveness of abstinence-only interventions and abstinence-plus interventions in preventing HIV infections.

Discussion

The evidence base in this review of systematic reviews is comprehensive and the results vary in strength. The quality of the evidence in the six included systematic reviews ranged from very low to moderate. In most cases, the documentation was downgraded because the included studies were small, the results were inconsistent, and there were methodological weaknesses in the studies.

Conclusion

The six included systematic reviews showed that:

- School-based initiatives to promote a healthy diet may possibly lead to higher intakes of fruits and vegetables in children and adolescents.
- The documentation was too limited to draw any conclusions about the effectiveness of school-based interventions to promote physical activity in children and adolescents.
- Preventive interventions that focus on physical activity and nutritional education to prevent obesity among 0-5 year-olds may possibly not lead to less obesity.
- The documentation was too limited to draw any conclusions about the effectiveness of preventive interventions that focus on increasing physical activity and healthy eating to prevent obesity in children and adolescents aged 6-18 years.
- Abstinence-only interventions may possibly not be effective in preventing sexually transmitted infections or pregnancy among children and adolescents.
- Abstinence-plus interventions may possibly not be effective in preventing sexually transmitted infections or pregnancy among children and adolescents.

Future research should focus on the long-term effectiveness of interventions with follow-up at least half a year after the program has been completed. There is also a need for systematic reviews that deal with the effectiveness of health promotion for social health in children and adolescents, and studies on the effectiveness of non-school based interventions to prevent obesity and physical inactivity.