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Benefits of developing a whole-school approach to health promotion

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This chapter examines the school experience as a determinant of future health, including discussion of how broad dimensions such as physical health, emotional wellbeing, cultural identity and psychosocial development, may be developed and enhanced within a whole-school health-promoting context. Healthy behaviours can be established in young people, and these behaviours tend to translate into healthy habits in adulthood, which are subsequently modelled and passed on to the following generations. In this chapter, the salience of health promotion in schools is presented in terms of preventing obesity and type 2 diabetes by promoting a healthy body image, establishing positive food habits and encouraging involvement in sport and physical activity. The potential 'ripple effect' that school health promotion can have via families and communities is also addressed as an additional avenue which can be utilised and embraced by teachers, health professionals and communities.

Links between health and education outcomes

One way to promote health in schools is to highlight the important links between a child's health status and their academic achievement. As recently as 2010, the United Nations' 2010 Human Development Report clearly reiterated the predictive nature of health and education variables by stating that 'education, health, nutrition and sanitation complement each other, with investments in any one contributing to better outcomes in the others' [39]. Other researchers agree and demonstrate how literacy and numeracy are inextricably interwoven with education, and education is concurrently a key predictor of life opportunities, including economic development, psychological wellbeing, health status and social spheres [4, 33]. It is recognised that healthy students are more able and ready to learn [25], and that improving the health of students and the school environment has positive outcomes for learning and academic results.

An example of this important association is given in some recent studies which clearly demonstrate the predictive relationships between physical activity and educational performance and achievement, and show that physical activity is positively related to

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brain function and cognitive performance [14, 37]. Positive relationships have also been documented between academic achievement and both physical activity [5, 20] and sports participation [10, 11]. Field and colleagues [11] found that students who reported having high physical activity and exercise participation also reported having higher grade point averages (GPAs), better family relationships, lower levels of drug use and better mental health, than those who reported participating in physical activity and exercise less often. Vigorous levels of physical activity are also positively associated with overall grade score [6, 7, 12, 16, 35].

Similarly, recent studies of nutrition and cognitive function also reinforce earlier reports that dietary components favourably influence cognitive function and academic achievement in children and adolescents. For example, comparisons of studies among school-aged children indicate that breakfast consumption is more beneficial to cognitive function and academic performance than skipping breakfast, particularly in those whose nutritional status is already compromised by social disadvantage and poverty [3, 15, 23]. Recent reviews and experimental studies present a working hypothesis that a breakfast of low-glycaemic index is beneficial to the blood glucose supply to the brain, and that this effect is likely to explain the positive relationship between breakfast consumption and the cognitive and academic performance of schoolchildren [24, 36].

Other studies provide ongoing evidence for the link between the academic achievement and health status of children, with a recent report also proposing clear pathways between socioeconomic position, physical activity, mental health and educational performance in adolescents [19].

A whole-school, health-promoting schools framework

Whilst the links between child health and academic achievement become more cemented in the recent international research literature, governments, schools and local communities have become increasingly perceived as having the major responsibility for child health promotion, childhood obesity and type 2 diabetes prevention. Much of the resultant pressure placed on governments has been in the area of providing procedures and resources for health promotion.

One way of ensuring a collaborative and developmental process on which to base health promotion is the World Health Organization (WHO) health-promoting schools framework [43]. This framework outlines a holistic approach to foster health within a school and its local community by engaging health and education officials, teachers, students, parents, health professionals and community leaders in making common, coordinated and sustained efforts to promote health. A 'whole-school' or health-promoting school approach is one which has an organised set of policies, procedures, activities, and structures designed to protect and promote the overall health and wellbeing of students, staff, and wider school and community members.

The health-promoting schools concept is based on the previously outlined premise that education and health are inseparable and that health supports successful learning,

and successful learning supports health [39, 43]. The ideology of the health-promoting schools framework states that the whole school and its surrounding community must implement policies, practices, and other measures that respect individual self-esteem, are culturally appropriate, provide multiple opportunities for success, and acknowledge group efforts and intentions as well as personal achievements. A health-promoting school also strives to improve the health of school personnel, families, and community members as well as students, and it works with community leaders to help them understand how the community and environment is influential in affecting health and education.

The WHO guiding principles for developing health-promoting schools include the holistic nature of health, gender equity, involvement and ownership of the whole-school community, participatory decision-making, sustainability, cultural appropriateness, and inclusion of measures to increase health literacy. WHO defines health literacy as the cognitive and social skills that determine the motivation and ability of individuals to gain access to, understand, and use information in ways that promote and maintain health [43]. Thus, the health-promoting school promotes empowerment of students, teachers, parents, school staff, and community members because they learn to obtain and use health information.

The framework focuses on three areas of intervention within the school and its local community: 1) School curriculum, teaching, and learning; 2) School ethos, environment, and organisation; 3) School–community partnerships and services.

The overall guiding principles for the development of health-promoting schools include the following:

- Good health supports lifelong learning, living and wellbeing.
- Students grow and learn in a safe, caring, responsive and empowering environment.
- Health-promoting schools view health holistically, addressing the physical, social, cultural, mental, intellectual and spiritual dimensions of health comprehensive programs.
- Equal access by male and female students from all population groups to educational opportunities is essential for promoting quality of life.
- Health-promoting schools ensure a coordinated, comprehensive approach to health and learning by linking curriculum with the school ethos/environment and the community.
- Health-promoting schools are inclusive – the whole community of students, parents, staff and local agencies are engaged in school activities.
- Active participation is based on respecting skills, values and experiences of parents, students and staff.
- Collaborative, participatory decision-making and personal action provide the conditions for the empowerment of individuals and the school community.
- Staff and parent wellbeing is an integral part of health-promoting school activity.
- Partnerships result in action which is more effective, efficient and sustainable.

- Addressing health literacy is an important component of a health-promoting school.
- The contribution of diverse cultures and groups is supported and valued.

In a recent report of a health-promoting schools project in Africa, MacNab and colleagues [21] demonstrate how these basic principles can have wide relevance and application in multiple international settings. In this oral health and nutrition project, the researchers demonstrate how health-promoting schools provide information and support systems that can be catalysts for behavioural changes to improve health globally and reduce healthcare costs [21].

Unfortunately, school-based health education programs face many challenges such as inconsistent health messages in the child's home or community environment, coupled with communication barriers between the health and education communities [25]. Health-promoting schools practitioners can overcome these issues by collaborating with community representatives, opening the lines of communication, distributing clear messages to the community and engaging students, parents, teachers, and health and education professionals. Health-promoting schools can empower students to make positive decisions about their health and allow them to take such knowledge home to their families.

Inchley and colleagues [17] expressed concern that a common approach toward health promotion and education in a school setting had been a focus on specific, short-term interventions that produce observable change in students' health related behaviours. Such short-term initiatives neglect to fully embrace the philosophy behind health-promoting schools, which states that long-term gains will only follow if initiatives are integrated into a more diverse, multifaceted health-promotion strategy that supports sustained change [17]. This is in accordance with the concept of a whole-school and community approach that encompasses a combined and collaborative effort.

A successful whole-school approach to health promotion must also provide opportunities to utilise broader social, economic and environmental factors as catalysts for positive behavioural change [34]. Further successes can be attributed to drawing connections between curriculum and learning imperatives within the school environment as well as placing value on the partnerships between the school and community [34].

Factors that affect health promotion in a positive and negative way

The delivery of health education and promotion is a very important factor to be considered, as there are many components that can impact the way health education is received by its target recipients.

Potential resistance to the messages presented in health interventions is often reported among adolescents [40]. School students often do not respond well to the paternalistic nature of health-education interventions and can have an oppositional response if they see the intervention as a threat to, or removal of, their freedom to determine their own health status [41]. Whitehead [40], however, explains a continuum to counter this, whereby the

less educating a health intervention is, and the more health promoting it becomes, the less likely the strategy is to be rejected by its target group.

Alternatively, a program that is properly planned, implemented and delivered can have a profoundly positive impact, as recently demonstrated in the Brighter Smiles Africa oral health program which generated more positive attitudes towards health-related practices for the wider community [21].

A recent study conducted by Xin-Wei and colleagues [44] discusses the development of an overall health-promoting school program in a province of China. It was reported that with community collaboration, it was feasible to implement the health-promoting schools concept in rural and urban schools in both resource-poor and adequately resourced schools. This study subsequently reported enhanced student educational outcomes as well as improvement in the emotional and social wellbeing of students and the broader school community [44].

Development of health-promoting schools

The long-term planning and partnerships required to produce health-promoting schools do not develop overnight and it is unrealistic to assume that such initiatives will lead to immediate change. Inchley and colleagues [17] suggest that there are four themes that should be given the major focus in planning and development of school health promotion programs. These include: 1) recognition – ownership and empowerment, 2) leadership and management, 3) collaboration, and 4) integration [17]. Deliberately utilising these major themes in health-promotion activities reduces barriers to implementation, promotes ease of access beyond narrow individual behavioural outcomes, and aims instead to improve the school as a whole organisation, whilst supporting teachers and facilitating sustainable long-term health improvement.

Rowe and colleagues [34] also recognise the importance of school leadership and management naturally forming from within the school environment, rather than being imposed from outside of the school or the local community. The role of such leadership is critical in engaging others in the program implementation.

There are many factors that influence whether a school will be able to adopt and implement a health-promoting schools approach. A recent Canadian study found that there were four predictors relating to school organisational characteristics that carried great weight in determining the adoption of a health-promoting schools approach: 1) the presence of leaders within schools, 2) perceived school contextual barriers, 3) school investment in healthy lifestyles, and 4) belief in collective efficacy [8]. These findings imply that emphasis should not be placed solely on strategies designed to ‘sell’ the health-promoting schools concept to schools, but also on strategies that support the organisational change required to incorporate it within schools [8].

The health-promoting schools framework involves shifting from practices that rely predominantly on classroom-based health education to a more integrated construct of

health promotion that encompasses both children's attitudes and behaviours as well as their environment [8]. The framework outlines requirements for a planned and sequential health-education curriculum across all age groups and the need for inter-sectoral and cross-curricular approaches.

An example of this concept in regard to obesity prevention, would be a coordinated, cross-curricular approach using a deliberate focus on promotion of healthy eating habits and prevention of fad dieting and subsequent weight-gain cycles in health-education classes (skill development to reduce the influence of peer-group pressure), English classes (the impact of persuasive advertising), and science (normal composition and nutritional needs of the human body). The cross-curricular approach ensures health messages remain balanced and consistent across subject areas. In addition, the utilisation of a health-promoting schools framework emphasises teacher training in specific areas and the opportunity for teachers to reflect on their own values, beliefs, prejudices and life experiences in order to be effective role models. In regard to the long-term prevention of body image problems, promotion of lifelong physical activity, healthy eating, and obesity and diabetes prevention, teachers and other school and community personnel are likely to require training to better understand these problems, training in effective and safe preventive strategies, and access to counselling and referral services.

First, do no harm

Before governments and other agencies leap into actions that they assume to be beneficial in the promotion of child and adolescent health and the prevention of childhood obesity and type 2 diabetes, we must remember to employ one of the most important principles of modern medicine and prevention science, 'First, do no harm'.

Programs aimed at healthy eating or increased physical activity that are not adequately planned, pre-tested or inappropriately delivered, have the potential to do more harm than good [28]. Those who work with young people in any health-promoting capacity need to recognise the vulnerability of children and adolescents of both genders to body image and eating concerns and that weight-focused programs are already known to result in further feelings of shame, guilt and hopelessness and a subsequent low participation in physical activity [31].

The 'First, do no harm' approach is not just salient for obesity, diabetes and other disease prevention, but rather an imperative that should be actively considered for all health-education and promotion campaigns. The potential to cause inadvertent and undesirable outcomes when delivering obesity or type 2 diabetes prevention activities should be a serious consideration for all health professionals, teachers and educators. Such risk can be summarised in the following four major points:

- Implementation of 'treatment' rather than 'prevention': for example, measuring and diagnosing student overweight or obesity based only on a one-off BMI measure that does not take into account many factors such as pubertal stage, ethnicity, muscularity or adiposity; or providing weight-loss advice.

- Inadvertent suggestion of fad dieting and other weight-loss techniques that are likely to be unsupervised and thereby fail: for example, discussing weight loss and inadvertent promotion of dieting rather than promoting weight maintenance or a healthy lifestyle; inadvertently encouraging disordered eating or suggestion that dieting behaviour is normal and/or desirable.
- Creation of stigmatisation, prejudice and discrimination: for example, suggesting that health is exclusively associated with slimness, weighing students and having them plot their BMI on a chart, inadvertently encouraging weight and BMI comparisons, focusing on weight rather than growth as evidenced by height, fitness and overall health markers, labelling and shaming overweight and obese students. This can also stigmatise overweight or obese students as having a 'problem', being a 'failure' and promote the idea that in order to be 'healthy', students must lose weight.
- Undesirable outcomes of unplanned approaches. Inadvertently creating weight concerns can lead to weight-loss attempts that are particularly unhealthy and harmful such as smoking for weight control, vomiting, laxatives, excessive exercise or avoidance of exercise, shame of body, social isolation and depression. In some recent literature, researchers have identified the link between eating disorders and obesity, particularly in young women seeking bariatric surgery [13]. In these research reports the obesity is the likely result of a binge-eating disorder which ought to be treated by psychiatric and psychological interventions, rather than by simplistic surgical intervention or health promotion. The obvious link between eating disorders and weight gain require further recognition and research.

Nutrition promotion in schools

It has long been recognised that schools have the potential to make significant and long-lasting contributions to promoting healthy eating habits in children and adolescents [34]. Sound child nutrition offers many varied benefits, including growth, brain function, intelligence, immunity to infections, energy regulation, better concentration and behaviour, dental health, prevention of lifestyle diseases and the development of good eating habits, many of which are likely to continue into late adolescence and adulthood. School students who are properly nourished tend to demonstrate better classroom learning behaviours, fewer disciplinary problems, better attention and increased attendance [26].

Normal growth and weight control are other benefits of a nutritious diet, but these factors are often not considered most important to parents. Hence, the focus on other important positive benefits as outlined above which are crucial in the engagement of families in health promotion. An interesting point related to child and adolescent nutrition is that the food habits learned at theses stages of life are often carried on and taught to future generations of children. This can ensure healthy food habits for the next generation of children or, conversely, the continuation of poor eating habits and the risk of adult ill-health.

Food and nutrition are very interesting and relevant topics for children and adolescents of all ages, but all too often this material is taught in a very negative way. Teachers and other health educators often focus on telling students what NOT to eat rather than encouraging

them to enjoy healthy options. This approach is negative and unnecessarily narrow because the key components of human nutrition are balance, variety, enjoyment and moderation. In this regard, there is no one food that cannot be included in a balanced diet. School personnel and health professionals need to approach the topic of nutrition education using the 'balance, variety, moderation' messages in a consistent manner.

While nutrition has long been included in health-education curricula in Westernised nations, there has been a recent increase in the recognition of the social and environmental factors that influence food choice, which has extended the focus to include the whole-school community, rather than narrowly approaching nutrition education from just one avenue [34].

As an example of a health-promoting schools approach, a primary school in the UK developed an approach called Kids Café which empowered the students to prepare, sell and serve nutritious food to staff and students. This initiative is an example of how the health-promoting schools approach can be utilised to instigate changes in the school environment that support and encourage healthy eating habits among children [34]. Further, the Kids Café initiative provides an example of how to promote the availability, affordability and accessibility of nutritious foods in the school environment.

Other examples of positive, health-promoting schools nutrition activities include the following:

- School gardens – students grow fresh vegetables; examine environmental factors in food production; demonstrate the affordability of and accessibility to nutritious foods; learn about nature, nutrition and health; create recipes for vegetables; develop a sense of ownership of the health promotion initiative; become empowered to make choices regarding their project; raise funds. This kind of mutual support where the students are contributing to the public community and the local shops are supporting their schools is a good example of a whole-school approach having a positive impact beyond the school environment.
- Cookery sessions – students learn about an array of foods from multicultural origins; develop recipe-modification skills; enjoy healthy eating in a social situation; develop budgeting and consumerism skills; master cooking skills.
- Healthy school canteen – students learn to choose healthy options; teachers model healthy eating; pricing policies demonstrate influences on food choices.
- Shopping/supermarket tours – students learn consumerism skills, value for money, budgeting, how to interpret food packaging and labels, food law, food safety, how to decipher advertising messages, the food supply and the food distribution chain.
- Classroom food tasting activities – students have a set class break for fruit and vegetable snack; school programs provide milk, breakfast, fruit, water bottles or water fountains/dispensers; local vendors provide food products.
- Environmental initiatives – soft-drink machines removed, water fountains installed and regularly maintained; marketing initiatives scrutinised; canteens implement

healthy food and drink policy, canteens provide healthy choices, sponsorship by food companies should be scrutinised, local food producers and media are utilised to reinforce program aims.

For further reading on this topic please see the book by Worsley [47].

Promotion of a healthy body image

The promotion of a healthy body image is desirable because it impacts on many aspects of adolescent health including self-image, psychological health [31], participation in physical activity [9], avoidance of dangerous dieting and it is part of the array of self-concept factors that promote and protect general child health status [22].

The evidence presented by Canadian researcher Niva Piran and her colleagues [32] recognises that teachers are on the 'frontline' with students and in a position of power to convey critical information, values, norms and other culturally encumbered material. This position of intensive interaction allows teachers great potential to become involved in the prevention and treatment of eating disorders and childhood obesity, and should be geared towards health education and promotion [32]. School-based health-promotion programs can have a positive and lasting impact on body image, eating behaviours, attitudes, and the self-image of adolescents [30]. There is also great potential to address the surrounding issues of body dissatisfaction, self-esteem and self-efficacy in a safe and health-promoting environment.

The environment in which issues such as obesity, eating disorders and unhealthy weight-loss practices, are didactically taught via classroom 'lessons', is considered to be a 'toxic' environment which has the potential to cultivate these problems [18]. Such programs, like the information-giving approach, can glamourise and normalise eating disorders and disturbances, as well as introduce young people to methods of fad dieting and weight control that are dangerous and health harming, such as laxative abuse and starvation. Unintentional harmful effects have been reported when teachers and school staff inadvertently transfer their own poor body image, lack of interest in sport or physical activity or weight prejudices to the impressionable young people in their care. Piran [32, p4] discussed teachers being role models and the importance of examining their own past body-anchored experiences and attitudes, including 'weightism'. This critical consciousness could reduce the potential for inadvertent transference of misinformation, prejudices and inappropriate advice from teacher to student.

Suggestions for body image improvement initiatives in schools include the following:

- Design of school uniforms and sports uniforms in which students feel comfortable, fashionable, culturally appropriate and less concerned about their body image. An example of this is a sport/swim uniform that is designed for use by Muslim girls.
- Implementation of a 'free' physical education uniform so that students can be active in their own choice of clothing or swimwear. For example, students are allowed to wear board shorts and rash vests to swimming.

- Implementation of a policy that allows students to wear their sports uniform to school on the day of sport or physical education to avoid having to change in school changing rooms.
- Addressing privacy/modesty issues such as placing doors on school change cubicles and covering school showers with curtains.
- Implementing body image promotion activities for both girls and boys.

Promoting physical activity

The health benefits of regular physical activity in children and adolescents have been well established in the research literature for many decades [26, 47] as have the health risks of physical inactivity or a sedentary lifestyle [1, 2, 27]. Promoting physical activity is a clear public health policy objective [42] and one which lends itself to school-based promotion.

Physical activity among children and adolescents can be basically divided into organised and non-organised activities and the promotion of both is important for children's health and wellbeing.

The promotion of physical activity within a health-promoting schools framework would incorporate some of the following strategies:

- Promoting opportunities for children and adolescents to be physically active as part of daily life eg walking or riding bikes to school, providing play time at school, providing play time before and after school, planning specifically targeted physical activity programs that are supervised before and after school
- Assisting school teachers in the delivery and resourcing of school sport and physical activity
- Promoting non-competitive, cooperative games and physical activity environments
- Offering non-structured options such as walking, martial arts, free play or gardening in school physical activity programs
- Providing structural enablers at school such as safe bike routes, secure bike racks or lock-up areas for bicycles
- Restructure playgrounds by using colorful markings and providing different types of game equipment
- Avoid or reduce the time required for uniform changing and showering at school sport or physical education classes. Allow sports uniforms to be worn to school on the day of sport or physical education
- Avoid activities in which students wait for their turn in a queue – find an activity to keep all students active during the whole class
- Produce innovative activity areas including climbing equipment, rock walls, skate areas and free play materials
- Designing modest and/or self-selected sports uniforms and swimwear to encourage participation and reduce body consciousness

- Providing same gender physical activities as an option in order to reduce competitive behaviours and self/body consciousness
- Implementing environmental changes to enable more physical activity and to address barriers to physical activity eg providing safe public spaces for physical activity, providing seasonally appropriate activities in the community, such as indoor heated swimming pools, providing play areas and equipment in high-rise housing areas
- Involve parents in monitoring sedentary time and promoting adequate sleep and daily physical activity of their children
- Provide teacher training to update skills, knowledge and resources.

Conclusions

Research reinforces the suggestion that educators need preventive strategies that encompass objectives of holistic health promotion including healthy eating, improved body image, increased physical activity as well as prevention of obesity and type 2 diabetes. School-based programs may provide an efficient and effective way to approach these problems utilising a health-promoting schools framework which encompasses a range of influences internal and external to the school environment. The holistic focus of the framework targets numerous aspects of promoting a healthy lifestyle including school curricula, policies and attitudes as well as the local environment and community activities, services and resources. Collaboration among school, home and community, which is central to implementing the framework, enables a shared language and a shared way of working and understanding each other [43].

The school environment is crucial in determining future health as it complements the classroom learning and provides a basis for knowledge, beliefs, attitudes and behaviours that will almost certainly be carried into the young persons' future life.

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