

World Health Organization Approaches for Surveys of Health Behaviour among Schoolchildren and for Health-Promoting Schools

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Key Words

Health behaviour · Health promotion · Schoolchildren

Abstract

Adolescents make up about one-sixth of the world's population. Most of the healthy and detrimental habits are adopted during childhood and adolescence. In the mid 1980s, a cross-national Health Behaviour in School-Aged Children (HBSC) survey was created to increase information about the well-being, health behaviours and social context of young people by using standard school-based questionnaires adopted by the World Health Organization (WHO) European office. The European Network of Health-Promoting Schools (HPS) was commenced in 1992, followed by the establishment of the WHO Global School Health Initiative in 1995. The initiative aims to improve the health of students, school personnel, families and other members of the community through schools by mobilizing and strengthening health promotion and educational activities at local, national, regional and global levels. The HBSC and HPS programmes have been accepted as activity areas for the WHO Collaborating Centre for Primary Oral Health Care in Kuwait. This article describes the HBSC and the HPS programmes and discusses the importance of establishing these programmes in Kuwait.

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Introduction

Adolescence represents the time when young people face many challenges of physical and emotional changes and start to consider important life and career decisions. Many health and risk behaviours are adopted and established during adolescent years [1, 2]. During this period, the increase in the autonomy of individuals influences the development of his/her health and health-related behaviour. Often, these habits/behaviours continue into adulthood and affect the health status and mortality of the populations [1, 2].

Schools are an excellent venue to reach adolescents, as one billion children world-wide are at school [3]. Thus, the best place to conduct surveys or health check-up examinations among adolescents certainly is the school environment. Also, health education and promotion activities for targeting adolescents of specific age groups can best be implemented at the schools.

The core mission of schools is to maximize learning. The health of schoolchildren is of the utmost importance because it is presumed that healthy students learn better. Thus, schools are the main setting for health education and promotion among children and adolescents [3]. Good health and good education provide individuals with tools to lead productive and satisfying lives. A child's

ability to attain his/her full potential capacity is related to the effect of good health, good nutrition, physical activity and quality education [3]. Adolescents who feel that school atmosphere is fair, caring and capable of engaging them socially are significantly more likely to report higher levels of health-promoting behaviours and fewer health-compromising behaviours [4]. In addition, students who are satisfied with school are less likely to feel depressed, irritable or tired, and they are less likely to start smoking and drinking alcohol [5].

All over the world different surveillance systems have been established to study the health and health behaviour of schoolchildren, and different activities have been established for promoting health in school settings. The aim of this article is to describe the Health Behaviour in School-Aged Children (HBSC) Survey and the Health-Promoting Schools (HPS) programmes, and to discuss the importance of establishing these programmes in Kuwait.

HBSC Survey

The HBSC study was launched in 1982 by researchers from England, Finland and Norway due to a lack of comparable cross-national data on smoking among young people. The study was one of the first international surveys on adolescent health. The aim was to develop a new cross-national survey using a common research protocol and research instrument. In addition to smoking, a wide range of important health-related behaviours in the context of young people's lifestyles were included [1, 2]. Oral health habits were assessed from the very beginning by questions about oral hygiene and the use of sugar products [6, 7]. The HBSC survey focuses on understanding young people's health in their social context – where they live, at school, with family and friends. Health-related habits and psychological aspects of health are considered as outcome variables, and personal and environmental factors in lifestyle are used as predictors [1, 2, 8].

In 1983, the HBSC study was adopted by the World Health Organization (WHO) Regional Office for Europe as a collaborative cross-national survey. WHO acts as a main partner of the HBSC by providing support for member countries and to the Assembly of Principal Investigators. Membership of the HBSC is restricted to the countries and states within the WHO European region (plus Northern America). Some other countries have used the protocol by special permission obtained from the HBSC

International Coordinating Centre [1, 2]. In May 2011, a new membership system for the HBSC was established called 'Linked Projects'. It aimed to set a forum to discuss and develop research activities among researchers from across countries, and also from outside the HBSC membership area, which are using or are interested in using the HBSC instrument in their surveys [1].

HBSC surveys have been conducted every fourth year starting in the 1985/86 school year (with 4 countries), followed by surveys with an increasing number of countries in 1989/90, 1993/94, 1997/98, 2001/02, 2005/06, and the latest in 2009/10 with 43 participating countries [1, 2]. The next survey will be conducted in the school year 2013/14.

Objectives of the HBSC Survey

The current objectives of the HBSC survey have been published in the most recent international protocol [9] as follows:

- 'to initiate and sustain national and international research and to contribute to theoretical, conceptual and methodological development in the area of research on health and well-being, health behaviour and the social context of health in school-aged children;
- to collect relevant data on school-aged children and to monitor health and well-being, health behaviours and social context of school-aged children in member countries;
- to disseminate findings to the relevant audiences including researchers, health and education policy makers, health promotion practitioners, teachers, parents and young people;
- to link to the WHO objectives, especially in relation to the Child and Adolescents Health Strategy;
- to support the development of health promotion with school-aged children;
- to promote and support the establishment of national expertise on health and well-being, health behaviour and on the social context of health in school-aged children;
- to establish and strengthen an international network of experts in this field.'

Sampling and Study Instrument

A sample is drawn from 11-, 13- and 15-year-old boys and girls representing the whole country. The recommended sample size is approximately 1,500 children in each age group in each country based on previous analysis of HBSC data [8, 9]. This sample size ensures a 95% confidence interval in each age group of $\pm 3\%$ around an estimated proportion of 50% and a design factor of 1.2.

The design factor takes into account the effect of the sample design, e.g. clustering, stratification and weighting on the precision of estimates. The primary sampling unit is school class (cluster sampling). Samples can be stratified to ensure representation by geography, ethnic group and school type [8, 9].

Data are collected through self-completion of questionnaires which are administered in the classrooms by teachers or researchers. Participation is voluntary and anonymous. International standardized research protocol providing theoretical framework for research topics and data collection are created/updated for each survey. The questionnaire consists of questions from three levels: (1) core questions, which each country is required to include for international databank; (2) optional questions from specific topic areas, and (3) country-specific questions from issues of national importance. Each country needs to translate the questionnaire to their native languages, translate it back to the original language (English) and compare the translation with the original [1, 2, 8].

The HBSC survey core questions concern the following [1, 2, 8]:

- Demographic factors (e.g. age, state of maturation and gender)
- Social background (family structure and socio-economic background)
- Social context (family, peer culture and school environment)
- Health outcomes (self-rated health, injuries, overweight and obesity)
- Health behaviours (eating, dieting/weight reduction, oral hygiene and physical activity)
- Risk behaviours (smoking, alcohol use, bullying)

Data Management

After each participating country completes the survey, the data have to be entered into the SPSS by using the format specified in the HBSC codebooks for mandatory and optional variables. Each country should do a quality check of the data file; strange or missing data should not be excluded but should be double-checked to ensure correct entry. Then each country has to submit their data to the HBSC Data Bank at the University of Bergen in Norway. All data is cleaned there and an international data file is created in 4–5 months after the deadline for submission of national data sets. The international data file is restricted to the use of HBSC member country teams for 3 years from its completion and is stored at the Norwegian Social Science Data Services [8, 9].

Importance of the HBSC Study Programme

From the very beginning, the HBSC group wanted to establish a monitoring tool for policy development and to develop research in the field of adolescent health [8]. The HBSC focuses on items that increase the understanding of young people in a wider social framework. It describes relationships/associations which change over time and depend on country, culture, socio-economic and other national or local conditions [2]. Member countries and stakeholders at national and international levels can use the HBSC data to monitor young people's health, recognize the social determinants of health, translate research findings into policies and practice, and improve the lives of millions of young people. The data can be utilized by studying changes over time (trends) in perceived health and health-related behaviours within and amongst countries, and by analysing associations between behaviour and perceived health and those factors affecting behaviour and health [1]. Six international reports [5, 10–13] from different surveys (starting with the 1993/1994 survey) have been published by WHO and can be accessed from the HBSC home page [1]. The home page also includes a list of international peer-reviewed published articles from the HBSC surveys since 1986.

HBSC in Kuwait

The pilot study of the HBSC survey in Kuwait was conducted in 2002–2003, revealing an alarmingly high prevalence of consumption of sugary snacks (soft drinks and sweets) among 11- and 13-year-olds in all 6 governorates [14, 15]. The prevalence was higher than in any other HBSC member country during the same time period (fig. 1, 2) [15, 16]. In Kuwait, TV watching (≥ 4 h per day) and late bedtime were strongly associated with the daily drinking of soft drinks and eating sweets [15]. In addition, a positive association was found between infrequent dental visits and sweet consumption and between smoking and soft drink consumption.

Changes in lifestyle and especially in diet have been exceptionally rapid in Kuwait [17]. Per capita consumption of sugar has almost doubled in Kuwait from 19 to 37 kg/year between 1991 and 2005 [18]. These changes could be due to the fact that all government schools and most of the private ones have vending machines and/or canteens, which mostly offer unhealthy snack choices with low-nutrient, high-energy dense foods and sugar-containing soft drinks. 'Diet' or sugar-free soft drinks are rarely available. The intake of sucrose-sweetened beverages has been shown to increase the risk of obesity, type II diabetes, cardiovascular diseases and dental caries [19].

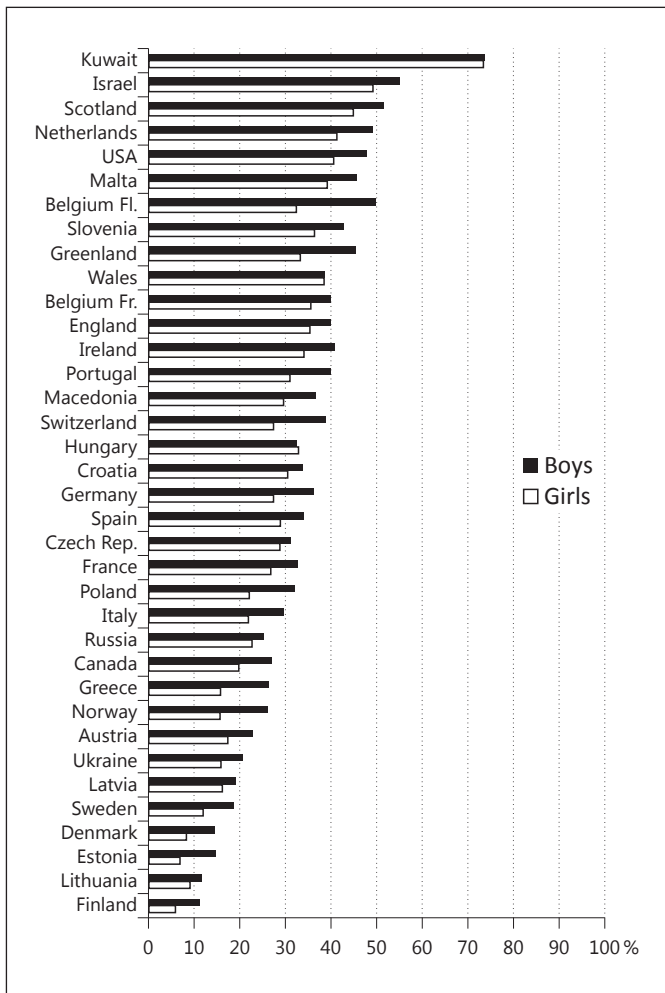


Fig. 1. Proportions (%) of schoolchildren at the age of 13 who reported to drink soft drinks every day in 2002 in Kuwait and in the HBSC member countries [modified from 15, 16].

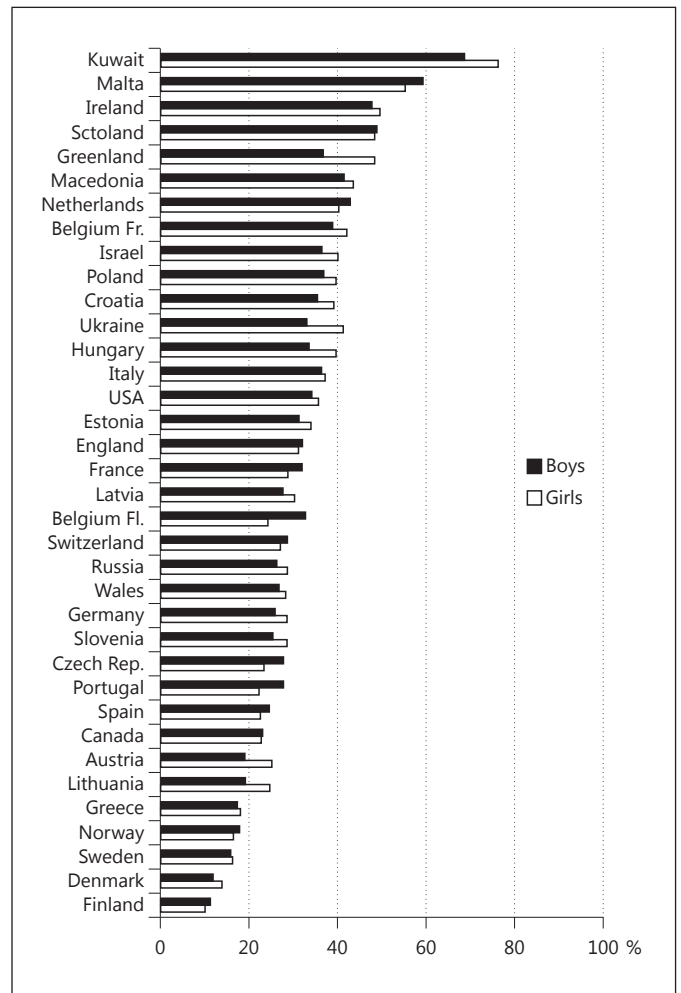


Fig. 2. Proportions (%) of schoolchildren at the age of 13 who reported to eat sweets every day in 2002 in Kuwait and the HBSC member countries [modified from 15, 16].

Also, poor oral hygiene has been shown to be associated with higher levels of cardiovascular diseases and low grade of inflammation [20], diabetes mellitus and hypertension [21], and metabolic syndrome [22]. A strong association between oral diseases and the four main non-communicable diseases, diabetes, cancer, cardiovascular diseases and respiratory diseases, has been confirmed [23]. A study among patients aged 4–14 years in Kuwait showed that periodontal disease is more evident among patients with type 1 diabetes than among those without diabetes [24].

All previously mentioned chronic diseases are highly prevalent in Kuwait [25–28]. Obesity is increasing among children and adolescents in Kuwait, and abdominal obe-

sity has been shown to be an important indicator for metabolic syndrome and is associated with cardiovascular disease risk among adolescents [29]. There is an urgent need to implement a national health promotion programme [30] and reduce soft drink and sweet consumption. The high prevalence of chronic diseases calls for population-based multisectorial interventions to change lifestyles and environment.

The HBSC study proposal by the Faculty of Dentistry, Health Sciences Centre of Kuwait University, and the Dasman Institute was accepted as an HBSC Linked Project in October 2012 [31]. A nationally representative study among 11-, 13- and 15-year-old schoolchildren is planned to be conducted in the near future to observe

10-year trends in health habits among Kuwaiti school-children and to compare the results with international data.

Health-Promoting Schools

A coordinated school health programme was introduced in the USA in 1987 [32]. Based on that experience, the European Network of HPS commenced in 1992, followed by the establishment of the WHO Global School Health Initiative in 1995 [33]. Currently over 80 countries worldwide have joined in the HPS networks [33]. The HPS Initiative aims to improve the health of students, school personnel, families and other members of the community through schools by mobilizing and strengthening health promotion and education activities at local, national, regional and global levels [33]. 'A Health-Promoting School can be characterized as a school constantly strengthening its capacity as a healthy setting for living, learning and working' [34]. In the USA, a complementary ecological model has been included in the coordinated school health programme [33]. In this model, ecology refers to the complexity of the interrelationship between intrapersonal factors, interpersonal processes, institutional and community factors, and public policy [35].

Health promotion in a school community includes activities related to components such as individual health skills and action competencies, social and physical school environment, school health services, school curriculum, healthy school policies and community links. Important health-promoting principles in school settings are equity, sustainability, empowerment, participation, collaborations and partnerships [34].

To become an HPS as recommended by the WHO [36], schools need to commit to work jointly toward the following:

- engaging health and education officials, teachers, students, parents and community leaders in efforts to promote health;
- providing a safe and healthy physical and psychosocial environment;
- providing effective skill-based health education and access to health services;
- implementing HPS policies and practices;
- striving to improve the health of the community.

Evaluation of HPS Programmes

It has been shown that nutrition-promoting programmes using the HPS approach can increase students'

consumption of high-fibre foods, healthier snacks, water, milk, fruit and vegetables, and reduce their 'breakfast skipping', consumption of low-nutrient dense or fatty/creamy foods and sweet drinks [37]. However, the changes in student eating behaviours have been modest, with girls tending to benefit more often from nutrition-promoting programmes than boys [34].

Oral Health-Related School Health Policies

Oral health is essential to general health and well-being. Poor oral health and detrimental oral health habits can have a negative effect on children's attendance and performance in school and their success in later life [38, 39]. Schools can provide a supportive environment for promoting oral health and an excellent setting for delivering oral health services for children [38]. In addition, school health promotion activities can be targeted at homes and throughout the communities by school personnel and through pupils. Each key component [34] of HPS offers many opportunities for addressing oral health issues as a specific project or as a part of general health promotion [40]. Examples of school health policies which can include oral health-related interventions are shown in table 1.

Effectiveness of School-Based Oral Health Interventions

Worldwide, well-conducted school-based oral health promotion interventions have been shown to be effective [38]. With a comprehensive curriculum in HPS, oral health outcomes can be improved and oral health inequalities within the school diminished. Schools in the HPS network have a lower proportion of children with tooth decay and dental trauma compared with schools outside the network [41]. School-based fluoride and fissure sealant programmes are effective in preventing dental caries, especially among the high caries risk children [42, 43], and school-based tobacco use prevention/control programmes have been effective in preventing or delaying smoking onset among adolescents [44].

HPS in the Middle East and Kuwait

The WHO Eastern Mediterranean Network of HPS organized their first conference in 2007 in Syria. Some activities of the HPS from the Eastern Mediterranean region have been reported from Iraq, Palestine, Saudi Arabia, Tunisia and United Arab Emirates [45]. The HPS Initiative has not been implemented in Kuwait, but the National School Oral Health Programme and the Health Promotion Department of the Ministry of Health have a

Table 1. Examples of oral health-related school health policies [modified from 40]

School health policy area	Examples of oral health-related issues
Healthy school environment	<ol style="list-style-type: none"> (1) Safe and well-designed school buildings and playground to prevent injuries (2) Smoking ban on the school premises (3) Fluoridation (e.g. milk, drinking water) (4) Ban on the sale of unhealthy foods/substances in close vicinity of the school (5) Safe water and sanitation facilities
Healthy eating	<ol style="list-style-type: none"> (1) Healthy foods available in school canteens, kiosks and vending machines (2) Only nutritious meals served in school canteens (3) Ban on sugary foods and drinks on the school premises (4) Promotion of fruit and vegetable consumption (5) Drinking-water fountains throughout the schools (6) Training for cooks and food providers of the schools (7) Assessment and surveillance of nutrition status
Oral injuries	<ol style="list-style-type: none"> (1) Accident prevention (2) Clear protocol of vital actions to be taken without a delay (3) Monitoring the incidence of trauma
Physical exercise	<ol style="list-style-type: none"> (1) Providing safe facilities for training sports (2) A protocol on safe sport, e.g. use of mouth guards in contact sports
Oral health education	<ol style="list-style-type: none"> (1) Should form a part of all subjects in school curriculum (2) Supervised toothbrushing drills (3) Training for parents about good oral health and self-care (4) Training for school staff
Oral health services	<ol style="list-style-type: none"> (1) Working closely with local oral health service providers (2) Dealing with dental emergencies (3) Monitoring of oral health-related complaints and absenteeism (4) Training for school teachers and other staff (5) Smoking cessation services and counselling

strong basis for joining this network. The National School Oral Health Programme covers the kindergartens and schools in all 6 governorates [46]. The WHO Global Oral Health Programme and the HPS Initiative as well as the National School Oral Health Programme work together to make the school a healthy setting and the Kuwaiti WHO Collaborating Centre for Primary Oral Health

Care could support this process. The work to make the school environment healthier by the multisectorial personnel of the national programme will be one of the important Primary Oral Health Care activities of the Kuwaiti WHO Collaborating Centre.

HBSC Survey and HPS Initiative – Could the Efforts Be Combined?

In a recent HBSC study from Finland, several school perceptions were found to be associated with health-compromising behaviours (e.g. smoking and use of alcohol): the more negative the perception, the more health-compromising the behaviours were [47]. Among girls, school engagement and school strain were powerful predictors of health-compromising behaviour, while school-related parental support and teacher-student relations were more effective among boys. The study concluded that more attention should be paid to the different health-promoting psychosocial factors of the school environment in everyday school life [47].

Scotland has conducted HBSC surveys since 1986 and joined the HPS programme in 1993 [48]. Over time, there has been an important practical connection between the HBSC study and health promotion in schools and the HPS programme. There is growing evidence that the study influences through the following: (1) increased use of HBSC outputs in schools and education authorities; (2) linked developments in the HPS movement, and (3) development of a training and capacity building resource for teachers which draws extensively on data from the HBSC study. Schools are using the HBSC research findings to develop their health promotion programmes and teachers use them as a source of up-to-date scientific information on young people's health in Scotland and internationally [48].

Conclusion

The HBSC Survey piloted in Kuwait in 2002/03 among 11- and 13-year-olds showed alarmingly high prevalence levels in the consumption of sugar-containing soft drinks and sweets. Since then, obesity and other chronic diseases have increased in all populations, reflecting the changing lifestyle. Thus, it is important to repeat the survey and focus also on the other health-related habits when analysing data and reporting results. Policy makers, educators and parents as well as adolescents themselves should be

made aware of the effects of lifestyle on health. As many health habits are established during childhood and adolescent years, schools are excellent venues to implement health education and promotion programmes. The HPS programme would be a suitable tool to change school environments toward healthier ones, taking into account not only the schoolchildren but also teachers, parents and the community in general.

Disclosure Statement

The author declares no conflict of interest.

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