Health Behaviors in School-age Children

The Health Behaviors In School-age Children (HBSC) 2005/2006 Survey SCHOOL REPORT

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The Health Behaviors in School-age Children (HBSC) 2005/2006 survey examines the complex relationships that exist between health behaviors and their social and environmental contexts and attempts to describe how these factors are related to health. The U.S. HBSC survey is the only international survey of its type and regular school-based national survey of health behavior during early adolescence in the U.S. The U.S. HBSC complements the Youth Risk Behavior Survey (YRBS) and the Monitoring the Future surveys of older adolescents. Unlike other U.S. surveys, HBSC is a part of an international effort involving over 40 countries, predominantly those in Europe and North America.

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INDIVIDUAL HEALTH BEHAVIORS

The pages that follow provide results from the international HBSC survey, the U.S. HBSC survey and the schools in your region of the U.S. Because we wish to protect students' anonymity, we only report results for regions of the country, not for individual schools (where a single classroom of students may have participated, thereby making it difficult to assure anonymity of individual students). The averages presented on each chart are based on equal weighting of each region, regardless of differences in achieved sample size. Chi-square tests were carried out to assess statistical significance of differences between the international results and the U.S. and between your region of the country compared to the rest of the U.S. Statistically significant gender and age differences (from 6th through 10th grades) within the U.S. are also reported for some health behaviors. Throughout this report we will also provide U.S. Department of Health and Human Services (U.S. DHHS) Healthy People goals or objectives for the year 2010 (HP 2010) in order to permit a comparison between these objectives and the relevant indicators from the U.S. HBSC 2005/2006 survey.

Demographics

The U.S. previously conducted HBSC surveys during the 1997/1998 and 2001/2002 school years. The U.S. survey parallels the international survey of 11-, 13-, and 15-year-old youth but also expands the sample to provide a representative national sample of 6th through 10th graders. The sample is selected so that students from all regions of the U.S. are represented. Over 9,000 students completed the HBSC survey; approximately 25% of these students were Hispanic and 22% were African-American; 51% were females.

OBESITY AND DIETING

Worldwide, among the leading causes of death are coronary heart disease, cerebrovascular diseases, and chronic obstructive pulmonary disease. Obesity is a risk factor for many of these chronic conditions and there is an increasing prevalence of obesity and type 2 diabetes in U.S. children and adults with resulting increases in morbidity and mortality. Childhood obesity has been associated with the incidence of type 2 diabetes among adolescents and neurologic, endocrine, cardiovascular, pulmonary, gastrointestinal, renal, musculoskeletal, and psychosocial complications. Research has shown that being overweight or obese after 10 years of age has a significant relationship with risk for a fatal or nonfatal coronary heart disease event in adulthood. Overweight and obesity are particularly problems in the U.S. and at every age U.S. boys have a higher rate of obesity than children in all other countries.

HP 2010 Objective 19-3: Reduce the proportion of children and adolescents who are overweight or obese.



[see Region Definitions below]

International Comparison: Percent of students who are overweight or obese



Regions:

Weight Reduction Behavior

Obesity is related to an imbalance in the energy equation; that is, when daily intake of calories is greater than energy expended. As such, the most effective weight loss strategies include both reducing caloric intake and increasing energy expenditure (physical activity). Dieting, therefore, can contribute to weight loss. However, there are also risks associated with dieting, particularly in children. Unless the energy balance is maintained, dieting can be followed by subsequent weight gain. There is a risk, particularly for adolescent girls, that dieting can include a cycle of dieting and binge eating. Another risk is excessive weight loss associated with anorexia. Extreme dieting has been associated with low self-esteem, depression, anxiety, eating disorders, and suicidal ideation. HBSC data indicate that dieting is more prevalent in girls. In addition, the prevalence of dieting increases with age in girls and decreases with age in boys.



Compared to boys from other countries, U.S. boys had the highest prevalence of dieting at all ages (19%); U.S. girls had the highest prevalence of dieting at age 11 (25%), were second (to Malta) at age 13 (29%), and had the tenth highest prevalence of dieting (26%) at age 15.

PHYSICAL ACTIVITY

Moderate-to-Vigorous Physical Activity

Extensive reviews of the literature on children and adolescents (ages 6 through 18) indicate that moderate-to-vigorous activity is related to decreased adiposity, improvement in Metabolic Syndrome (abdominal obesity, elevated blood pressure, elevated fasting glucose, and reduced high density lipoproteins), decreased triglyceride levels, increased high density lipoproteins, bone density, muscular strength and endurance, and aerobic fitness, and improved mental health (anxiety, depression, self-concept). The establishment of healthy patterns of physical activity during childhood and adolescence is important because physical activity habits established early are maintained during adolescence and from adolescence to adulthood. Furthermore, national surveys confirm the negative relationship between physical activity during childhood and both childhood and subsequent adult obesity. Physical activity appears to improve both short- and long-term physical and mental health status; general health, bone health, health-related guality of life, and positive mood states have all been associated with higher levels of daily physical activity. In addition, there is ample evidence that increased physical activity improves academic and cognitive performance. The 2008 U.S. Department of Health and Human Services recommendation for children is that they should engage in 60 minutes or more of moderate-to-vigorous physical activity every day. We evaluated whether children taking the HBSC survey met these guidelines. Overall, most children in the U.S. and in all other countries surveyed did not meet these guidelines.



U.S. girls meeting national guidelines for moderate-to-vigorous physical activity decreased with age (from 26% at age 11 to 14% at age 15); U.S. boys were in the top 10% of countries for physical activity among 13- and 15-year-old boys internationally.

- HP 2010 Objective 22-6: Increase the proportion of adolescents who engage in moderate physical activity for at least 30 minutes on 5 or more of the previous 7 days.
- HP 2010 Objective 22-7: Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.

Vigorous Physical Activity

Another objective of Healthy People 2010 is to increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion. The recommendation for children is that they engage in vigorous physical activity at least 3 times per week. We assessed the proportion of children who engaged in vigorous physical activity 2 to 3 times per week. More children met this criterion than the guidelines for daily physical activity.









SEDENTARY BEHAVIOR

Sedentary behavior usually refers to leisure-time activities such as watching television, playing video or computer games, or using a computer. In adolescents, time spent in sedentary activities has been associated with obesity and obesity-related health problems as well as muscular-skeletal pain and behavioral problems such as aggression and substance use. Television viewing has been associated with bullying, higher consumption of sweets and soft drinks, and lower consumption of fruit and vegetables. Less is known about the health effects of playing computer games but some recommendations for reduced time playing computer/video games parallel the recommendations for reduction of television viewing. The U.S. HBSC data has indicated a link between screen-based sedentary behaviors and problems with quality of life, family relationships, physical health status, health complaints, physical aggression, tobacco use, and alcohol use. There is evidence that the effects of sedentary behavior build up over the course of childhood and contributes to overweight independently of the level of physical activity. Current recommendations from the American Academy of Pediatrics (AAP) suggest that children should not have any more than one to two hours of quality television and video viewing per day.

HP 2010 Objective 22-11: Increase the proportion of adolescents who view television 2 or fewer hours on a school day.

Television Viewing

The proportion of children spending time watching television increased with age. There was no difference between boys and girls in the percentage of children spending more than 2 hours per day watching television. Generally, children from lower socioeconomic status homes spent less time watching television. U.S. Regional Comparisons: Proportion of children that meet the recommendation of no more than 2 hours of television per weekday



Regions:



U.S. Regional Comparisons: Students playing computer games for more than 2 hours per day



Physical Education Classes Providing At Least 30 Minutes of Physical Activity

A major contributor to daily physical activity, particularly for children who are overweight or obese, is participation in school-based physical education classes. One concern among physical education specialists is whether classes provide adequate time engaging in physical activity as opposed to time spent sitting or watching others participating in an activity. To address this issue, the U.S. survey included a question not asked by the international survey: "During an average physical education class, how many minutes do you spend actually exercising or playing sports?" U.S. Regional Comparisons: Students reporting that their physical education classes have at least 30 minutes of physical activity per class



HP 2010 Objective 22-8: Increase the proportion of the Nation's public and private schools that require daily physical education for all students.

NUTRITION Breakfast

Breakfast makes a significant contribution to a child's daily nutrition. In addition, skipping breakfast may limit students' ability to take advantage of learning opportunities in school and affect school performance. Skipping breakfast has also been associated with poorer nutrition behaviors throughout the day and with subsequent obesity. The causes of skipping breakfast can be both economic and lifestyle. HBSC data suggest that eating breakfast decreases with age.



Daily Fruit Intake

A diet with low fruit, vegetable, and fiber intake and high sodium and fat intake puts adolescents at increased risk for long-term health problems such as cancer and cardiovascular diseases. The American Dietetic Association and U.S. DHHS recommendations suggest that successful cognitive and physical development, weight management, and chronic disease prevention can be obtained through a combination of following the dietary guidelines and getting adequate physical activity. The dietary guidelines emphasize adequate daily consumption of fruits, vegetables, whole grains, and fat-free or low-fat milk. Fruits and vegetables provide a variety of important micronutrients and fiber. Unfortunately, most children in the U.S. do not meet the guidelines for consumption of at least five servings of fruits and vegetables daily; the recommended number of servings increases with age until it reaches nine for adults. On average, few students ages 9 and older eat more than one serving of fruit per day.

HP 2010 Objective 19-5: Increase the proportion of persons aged 2 years and older who consume at least two daily servings of fruit to 75%.

U.S. Regional Comparisons: Students reporting that they ate fruit more than once a day



A significantly larger percentage of U.S. children (20%) ate fruit more than once a day than children from other countries (18%). This cross-national difference in daily fruit intake was significant among U.S. boys only. A larger percentage of U.S. boys (20%) ate fruit more than once a day than boys from other countries (16%), but generally girls ate more fruits than boys.

Soft Drinks and Snacks

Although results are mixed, the trends in children's dietary intake suggest an increase in caloric intake over the previous two decades, mainly from increasing consumption of snacks, soft drinks, fruit drinks, and pizza and eating away from home. The problem with most of these foods is that they are 'empty' calories which do not contribute to the range of nutrients necessary for healthy growth and development. Energy intake from 'empty' calories competes with consumption of nutrient rich foods and thus decreases the intake of fiber, calcium, and protein. Another problem is that the consumption of refined sugars contributes to dental caries. We report the proportion of students who report that they drank soft drinks daily and who ate chips or fries daily.

U.S. Regional Comparisons: Students reporting that they drank soft drinks every day





U.S. Regional Comparisons: Students reporting that they ate chips or fries every day



Eating at a Fast Food Restaurant

According to the American Dietetics Association, fast foods usually do not contribute to the consumption of fruits and vegetables and instead tend to be high in calories and fats. In comparison, children who eat more meals at home have higher intake of fruits, vegetables, vitamins, and minerals. Another potential problem with fast food restaurants is the size of servings ('super size'); children eat more when provided with larger portion sizes.



ORAL HEALTH

Along with daily flossing, daily teeth brushing is an important part of dental hygiene and is among the health behaviors practiced by the vast majority of Americans. Daily brushing reduces the risk of dental caries and gum disease. Recent studies have linked dental problems to other chronic illnesses, including cardiovascular disease. More girls than boys regularly brush their teeth.



HP 2010 Objective 21-5: Reduce periodontal disease. "Home-care oral hygiene practices, such as daily tooth brushing and flossing, reduce bacterial plaque on teeth and gingiva and help maintain periodontal health."

Regions:

CIGARETTE SMOKING

Cigarette smoking is related to an increased risk of some of the major causes of disease and death in the U.S., including heart disease, cancer, and chronic lung disease. It is estimated that half the people who smoke today will suffer pre-mature death due to their tobacco use. The earlier children begin smoking, the more likely they are to become addicted to tobacco, making it difficult to guit, and the more likely they will suffer its long-term consequences. In addition, most smokers begin during adolescence, making this time a focus for efforts to prevent the addiction to tobacco. Therefore, a goal of the U.S. DHHS and the Centers for Disease Control and Prevention is to prevent children from smoking or to delay the onset of smoking in order to increase the chance that children will not become addicted or, at the very least, to reduce the number of years of exposure to cigarette smoke.

Students participating in the HBSC survey were asked to indicate whether they had ever smoked cigarettes and, if so, how often they currently smoke. The HBSC data indicate that the proportion of children smoking increases with age and is associated with how well off their family is. There were no significant differences between the rates of smoking in girls versus boys; this is a change from decades ago when boys were more likely to smoke.



The proportion of U.S. students who smoke at age 11 (2%) is a little above average compared to students in other HBSC countries (1%). However, as they get older, the rate of adoption of smoking in U.S. students is lower, so by age 13 fewer U.S. students (4%) smoke than the average HBSC student (6%) and by age 15 fewer U.S. students smoke (8%) than students in any other HBSC country (average = 19%).

- HP 2010 Objective 27-2: Reduce tobacco use by adolescents.
- 🐖 HP 2010 Objective 27-3: (Developmental) Reduce the initiation of tobacco use among children and adolescents.
- HP 2010 Objective 27-4: Increase the average age of first use of tobacco products by adolescents and young adults.

HP 2010 Objective 27-11: Increase smoke-free and tobacco-free environments in schools, including all school facilities, property, vehicles, and school events.

ALCOHOL USE

Although alcohol-related deaths are most prevalent in the fifth decade of life, alcohol use has been related to some of the leading causes of mortality in children: accidental injuries, suicide, and homicide. Frequent or heavy adolescent alcohol use has been associated with tobacco and illegal drug use, risky sexual behavior, behavioral problems, depression, anxiety disorders, eating disorders, and obesity. Thus, the Healthy People 2010 has identified objectives to increase the proportion of adolescents not using alcohol during the past 30 days, and to reduce the proportion of persons engaging in binge drinking of alcoholic beverages.

Alcohol Use – Weekly

One indicator of alcohol use is the proportion of U.S. students who indicated they drink an alcoholic beverage at least weekly. HBSC data indicate that alcohol use increases with age. In the U.S., there was no difference between the rate of alcohol use in boys and girls nor was alcohol use related to family socioeconomic status.

HP 2010 Objective 26-9: Increase the age and proportion of adolescents who remain alcohol and drug free.

HP 2010 Objective 26-11: Reduce the proportion of persons engaging in binge drinking of alcoholic beverages. Objective 26-11d: Adolescents aged 12 to 17 years 1995 baseline: 7.7, 2010 Target: 2.0.



International Comparison

A smaller proportion of U.S. students drink than the average HBSC international student. U.S. students were about average for drinking wine, liquor, and pre-mixed drinks. However, compared to other countries, the proportion of U.S. students drinking beer at age 11 was average, but among the lowest at age 15.

Alcohol Use – Drunkenness Ever

The data below indicates the proportion of students who indicated they had gotten drunk at least twice in their lifetime. Not surprisingly, drunkenness increased with age; boys reported a higher prevalence than girls of getting drunk at age 11 only.



MARIJUANA USE

Even though marijuana use is illegal in most countries, its use was prevalent among adolescents in most HBSC countries. Although there has been some inconsistency in the research findings, early marijuana use and chronic marijuana use have been related to negative long-term consequences such as increased risk of other illicit drug use, subsequent dependence and addiction to illicit drugs, and psychosocial adjustment and mental health problems in late adolescence and early adulthood. To assess marijuana use in the HBSC survey, we asked how often students had used marijuana in their lifetime and, to assess current use, how often they had used it in the last 30 days. Some HBSC countries did not ask this question of all of their students; therefore the international comparisons are only made for students 15 years of age.

- HP 2010 Objective 26-9: Increase the age and proportion of adolescents who remain alcohol and drug free.
- HP 2010 Objective 26-10: Reduce past-month use of illicit substances. Objective 26-10a: Increase the proportion of adolescents not using alcohol or any illicit drugs during the past 30 days.
- HP 2010 Objective 26-10b: Reduce the proportion of adolescents reporting use of marijuana during the past 30 days.

U.S. Regional Comparisons: Students reporting that they had ever taken marijuana during their life



International Comparison: Students reporting use of marijuana at least once (15 year olds only)



Marijuana Use in the Last 30 Days

U.S. Regional Comparisons: Students reporting that they had used marijuana in the last 30 days



International Comparison: Percent of students likely to have used marijuana in the last 30 days



Regions:

BULLYING, AGGRESSION AND VIOLENCE

The consequences of adolescent bullying, fighting, and violence in schools are now recognized as a significant public health problem. Physical aggression has been associated with an increase in injuries, violent crime, school adjustment problems, substance use, and mental health problems. Results from the first U.S. HBSC survey in 1998 indicated that bullying and victimization were significant problems in the U.S. and served to encourage an increase in efforts to prevent this problem. The 2002 and 2006 HBSC surveys indicate that bullying has decreased significantly in the U.S. since the first HBSC survey, providing possible evidence that school-based intervention efforts are succeeding.

Fighting

The data below indicate the proportion of students who indicated that they have been involved in physical fights three times or more in the past 12 months. Generally, fighting is more prevalent in boys, but it decreases with age.



International Comparison

In the 2005/2006 HBSC data, a significantly smaller percentage of U.S. children (10%) were in a physical fight three or more times in the last 12 months than children from other countries (14%). At age 11, students in the U.S. were in the bottom 10% compared to students in all the HBSC countries and they were in the bottom half at ages 13 and 15. A Healthy People 2010 goal is to reduce the proportion of students in grades 9 through 12 who engaged in a physical fight in the last 12 months to 32%; 37% of the students responding to the HBSC survey engaged in a fight at least once in the last 12 months.

Bullied by Others

Victims of bullying experience a range of problems such as depression, anxiety and, in extreme cases, suicide. Being bullied is also associated with poor academic achievement, low self-esteem, problems making friends, loneliness, and higher levels of substance use. The data below indicate when students indicated they had been bullied two or more times in past couple of months. Generally, victimization from bullying decreased with age and appeared equally in boys and girls.



International Comparison: Percent of students reporting being bullied at least twice in the last two months



Note: compared to students in other countries, U.S. students were above average at 11 years of age.

Bullying Others

In addition to connections with other forms of youth violence, bullying has been associated with substance use, delinquency, emotional disturbance, and physical health symptoms. Students who bully other students may report more problems with family communication, negative perceptions of school, and health-risk behaviors, such as smoking and excessive drinking.

These data from the U.S. HBSC indicate the proportion of students who report that they bullied others at least twice in the past couple of months. Generally, bullying by U.S. students showed little change with age and was more prevalent in boys than girls at ages 13 and 15.

U.S. Regional Comparisons: Percent of students reporting that they bullied others at least twice in the last 2 months



International Comparison

The U.S. is above average at every age for bullying at least once in the past couple of months. However, a comparable percentage of U.S. children (11%) and children from other countries (12%) bullied others at least twice in the last 2 months.

SCHOOL ENVIRONMENT

Attitude toward School

While students' reported positive attitudes towards school decreases with age, the U.S. reports are consistent with attitudes of students from other countries. Among U.S. girls, attitudes towards school were positively related to SES.

U.S. Regional Comparisons: Students reporting that they like school a lot



International Comparison: Percent of students reporting they like school a lot



Regions:

Classmates

U.S. Regional Comparisons: Students reporting they agreed or strongly agreed that most classmates are kind and helpful



International Comparison: Percent of students who agreed or strongly agreed that most classmates are kind and helpful



Perceived Performance in School

Perceived school performance was found to decline with age among U.S. students, and it was positively related to SES among both boys and girls.



Perceived Stress in School

Reported perceptions of stress in school increases with students' age, and was not related to SES.



SCHOOL HEALTH EDUCATION

Schools provide an opportunity for students to learn objective information about a variety of important health topics. Healthy People 2010 set goals for school health education programs. The HBSC administrator survey provides information on school health education programs. The table below compares the HBSC school rates with the Healthy People 1994 baseline goals and the 2010 goals.

School Health Education Program and Policies	Healthy People 1994 Baseline (%)	HBSC Schools (%)	Healthy People 2010 Goal (%)
Physical education (PE) required for students	8	9	15
Physical activity and fitness	78	89	90
Accident or injury prevention	66	71	90
Alcohol or other drug use prevention	90	89	95
Tobacco use prevention	86	89	95
Suicide prevention	58	54	80
Tobacco-free environment	37	90	100

INTERNATIONAL COMPARISONS

Some highlights of international comparisons and notable results from the survey data follow:

- At every age, U.S. boys (34%) were more likely to be overweight or obese than youth in 39 other developed countries (16%) and U.S. girls ranked second (26% vs. 11%). (HBSC is the first study to contrast overweight in relation to dieting behavior and self-image in a large number of European and North American countries or regions.)
- U.S. boys ranked number one (19%) on dieting to lose weight compared to all other countries; U.S. girls rank among the top countries on dieting to lose weight (25% at age 11, 29% at age 13, and 26% at age 15).
- U.S. students are less likely to eat breakfast every day than students in 80% of the countries surveyed.
- Although the average percent of U.S. girls meeting national guidelines for moderate-to-vigorous physical activity decreased with age (from 26% at age 11 to 14% at age 15), U.S. boys were in the top 10% for physical activity among 13- and 15-year-old boys internationally.
- U.S. youth do not watch significantly more television than youth in other HBSC countries.
- Relative to other students internationally, U.S. youth are higher in prevalence of daily smoking at age 11 but the least likely to smoke at age 15.
- Alcohol use has a similar pattern to tobacco. Overall use increases with age, but as U.S. youth get older, they drink less relative to youth in many HBSC countries.
- U.S. 15-year-old boys ranked third and U.S. girls ranked fourth for lifetime use of marijuana. U.S. 15-year-old boys ranked second and U.S. girls ranked third for use of marijuana in the last month.
- In direct response to HBSC reports of bullying in U.S. students, bullying has been addressed in many U.S. schools. Previously, U.S. students were more likely to be bullied or to have bullied others compared to the all-country average for bullying. However, the 2005/2006 survey indicates that the U.S. is now about average and there has been a significant decrease in both bullying and being a victim of bullying since the 1997/1998 HBSC survey.
- A relatively high percentage of U.S. youth rate their health as fair or poor, placing them in the top 20% of youth internationally. More than 47% of U.S. girls and 32% of boys report having two or more health complaints, such as backache, stomachache or headaches, at least once a week or daily.

For the full international HBSC report, please go to: http://www.euro.who.int/datapublications/Publications/Catalogue/20080616_1

If you wish more information, please contact:

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