Journal of Adolescent Health 66 (2020) S3–S5

ELSEVIER

JOURNAL OF ADOLESCENT HEALTH

www.jahonline.org

Commentary

Enhancing Understanding of Adolescent Health and Well-Being: The Health Behaviour in School-aged Children Study

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The Importance of Adolescent Health

The adolescent years are a critical transitional period within the life course during which rapid physical, emotional, cognitive, and social development occurs. Previously considered a relatively healthy stage of life, many of the major behavioral risk factors for noncommunicable diseases such as smoking, alcohol use, physical inactivity, and poor diet are established forming habits that track into adulthood. A second phase of intensive brain development occurs with enhanced sensitivity to environmental stimuli. Furthermore, half of the mental health problems in adulthood emerge during early adolescence, and neuropsychiatric disorders represent the main burden of disease among adolescents in high-income countries [1,2]. The adolescent years, therefore, provide a critical opportunity for prevention and intervention to support young people's healthy growth and development, promote future health and wellbeing in adulthood, and, as such, underpin the health of the next generation.

Development of the Health Behaviour in School-Aged Children Study

The Health Behaviour in School-aged Children (HBSC), a World Health Organization (WHO) collaborative cross-national study, is an international research study that aims to increase understanding of adolescent health and health behaviors and their social determinants, particularly the settings of family, peers, and school, across different countries. Initiated in the early 1980s by researchers from three countries (England, Finland, and Norway), HBSC was one of the first cross-national studies to focus specifically on the adolescent age group, via reports from adolescents themselves as the key informants on their own lives.

From the outset, HBSC aimed to influence policy development on adolescent health, and this has remained integral to the study, driving the scientific focus and dissemination activities. Early on, HBSC was invited to become a WHO collaborative study, and this partnership has been a major strength of the study, enhancing the use and relevance of HBSC data within the policy arena both internationally as well as nationally in each participating country. Support from the WHO Regional Office for Europe has also been central to the study's growth and capacity building, enabling national systems for monitoring and evaluation of adolescent health to be established in many countries for the first time. Robust, large-scale surveys such as HBSC provide an essential source of evidence to underpin effective policies [3] and offer a rich insight into the lives of adolescents and the factors that shape their health and well-being.

The HBSC International Research Network

Study expansion was rapid in the early years, and membership has now grown to include 50 countries and regions (three of the four UK nations [England, Scotland, and Wales] participate independently, and Belgium contributes as two independent regions) across the WHO-Euro region and Canada. Member countries vary in culture, geopolitical history, and economic circumstances, including some of the richest countries in the world alongside countries classified as lower-middle income. Several countries have faced political upheaval and conflict over the course of the study. Against this backdrop of social, political,

Disclosure: This supplement was supported by the World Health Organization European Office and the University of Glasgow. The articles have been peer-reviewed and edited by the editorial staff of the Journal of Adolescent Health. The opinions or views expressed in this supplement are those of the authors and do not necessarily represent the official position of the funder.
Conflicts of interest: The authors have no conflicts of interest to declare.
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https://doi.org/10.1016/j.jadohealth.2020.03.014

and economic change, HBSC has enabled countries to monitor the health behaviors, health, and well-being of their adolescents in a rapidly changing world.

The study is run as an international network of researchers, which currently includes more than 400 adolescent health experts based in a variety of academic and public health institutions, enabling an integration of multidisciplinary theoretical perspectives and cross-fertilization of conceptual approaches. Each member country has one national team led by an approved principal investigator (PI) or two co-PIs, who are members of the study assembly and oversee all issues related to the strategic direction of the study, survey development and administration, and data management. PIs are responsible for sourcing funding for the study within their own country.

The study is led by an International Coordinator (The current International Coordinator is Dr Jo Inchley [University of Glasgow, UK], and Deputy International Coordinator is Dorothy Currie [University of St Andrews, UK]), elected by the Assembly of PIs every 4 years to provide scientific and strategic leadership and coordinate all network activities. The study is also supported by the Data Management Center at the University of Bergen, Norway, led by an elected Databank Manager (The current HBSC Databank Manager is Professor Oddrun Samdal, and Deputy Databank Manager is Professor Torbjorn Torsheim [University of Bergen, Norway]) who is responsible for quality assurance of all national data collected. The data and meta-data are stored at the Norwegian Research Centre (NSD) and shared openly after an embargo period of 3 years.

Theoretical approach

HBSC draws on a socioecological model in which adolescent health and well-being are influenced by the complex interaction between a range of individual, behavioral, social, cultural, environmental, and organizational factors functioning at different levels and changing over time. This complexity in understanding the interplay between the individual and the social context across countries and time is one of the unique aspects of the HBSC study. The social context includes both the immediate social environments in which young people live (e.g., family, peers, and school) and the wider societal systems (e.g., education, health, political, and economic), whereas the individual components include identity, attitudes, and biological aspects.

Over the years, interest has grown around socioeconomic inequalities in adolescent health and well-being, recognizing the importance of wider threats and challenges to young people's health, which have a major impact on future health trajectories. Previous HBSC reports have highlighted persistent social and gender inequalities across a wide range of health behaviors and health outcomes as well as the social settings in which young people live and learn.

This special issue illustrates the major strengths of the HBSC study. It focusses on *pressing adolescent issues*, such as sleep, social media, school work pressure, and their interplay with mental well-being, and reports the extent to which there have been *changes* in particular adolescent health behaviors and well-being during the last decades. It also investigates the importance of diverse *national-level phenomena* such as income inequality, gender inequality, and internet access for adolescent lives throughout Europe and Canada.

The HBSC survey

The HBSC survey is designed to measure key aspects of adolescents' lives using validated questions that are relevant within a cross-national context. The questionnaire contains three types of questions: *core items* that are mandatory and are used to create the international datafile; *optional packages* that are not mandatory but allow more in-depth insights into specific topics while retaining comparability with at least some other countries; and *national items* that are country specific and may be responsive to national policy and funding priorities. In some survey rounds, a specific topic has been chosen as a particular focus area for the study (e.g., online communication for the 2017/2018 survey).

For each survey, a common study protocol is developed by the entire HBSC network through topic-based groups. All member countries must adhere to the international standard protocol to ensure the cross-national comparability of the data. To guarantee comparability across survey cycles, which is essential for time trend analyses, the original methodological approach developed in 1983/1984 remains at the core of the scientific and methodological approach. The sampling frame includes all students aged 11, 13, and 15 years attending mainstream schools and should include a minimum of 95% of the eligible target population and be representative of adolescents in the country in terms of geography, ethnicity, and other relevant characteristics. Cluster sampling is used with class (or school) as the primary sampling unit and a recommended sample size of 1,500 students for each of the three age groups [4]. The survey is administered within the classroom setting using either paper or electronic questionnaires. It is acknowledged that some adolescents do not attend mainstream school and are therefore missing from the HBSC dataset. However, with increasing integration of pupils with additional support needs into mainstream schools, the representativeness of the survey has increased over time in many countries.

Impact

The end goal of the HBSC study is to strengthen the scientific basis to improve the health and well-being of adolescents. To work toward achieving this goal, HBSC data are widely disseminated to reach key stakeholders, including international agencies, national governments and national governmental organizations, the academic community, the general public, young people, parents, and the media. HBSC members collaborate with a range of international and national partners to maximize the use of HBSC data for scientific, policy, and advocacy purposes, and national teams are increasingly adopting coproduction methods to promote young people's participation throughout the survey cycle.

The main product of the HBSC study is the International Report, published every 4 years to provide a comprehensive overview of the findings from each survey. The most recent International Report, *Spotlight on Adolescent Health and Well-being* [5], was published in May 2020 and includes data from over 200,000 young people across 45 countries who participated in the 2017/2018 survey. Additional reports have provided more in-depth insights on key topics such as obesity and alcohol use [6,7]. More than 600 scientific papers, using either national or international HBSC data, have been published across a wide range of journals, enhancing understanding of adolescent health within the international academic community. A list of HBSC publications is available from the HBSC website (www.hbsc.org).

To support the use of the data, the HBSC data portal was launched in 2016 and provides open access to the HBSC international datafile and metadata. At present, data from 2001/2002, 2005/2006, 2009/2010, and 2013/2014 are available via Open Access, with data from earlier surveys available on request. Descriptive statistics from the HBSC study are available on the WHO European Health Information Gateway (https://gateway.euro.who.int/en/data-sources/hbsc) where interactive maps and charts can be browsed and downloaded. The Gateway also provides country profiles, which give a quick visual summary of the health status of children and young people within each country (https://gateway.euro.who.int/en/country-profiles/).

The Global Strategy for Women's, Children's, and Adolescents' Health (2016–2030) [8] and other recent international policy initiatives set out ambitious but achievable targets to promote adolescent health and well-being, reduce morbidity and premature mortality, and eliminate poverty to enable young people to thrive and attain their full potential. Regular and robust monitoring systems are essential to achieving such targets and ensuring that the specific health needs of adolescents are recognized and prioritized within all policies, programs, and services, which affect their lives. Building on its successes over the last 35 years, the HBSC study will continue to support global efforts to improve the health and well-being of today's adolescents and future generations to come.

Acknowledgments

Health Behaviour in School-aged Children is an international study carried out in collaboration with WHO/EURO. The International Coordinator of the 2017/2018 survey was Dr Jo Inchley, University of Glasgow and the Data Bank Manager was Prof Oddrun Samdal, University of Bergen. The authors acknowledge the contribution of all Health Behaviour in School-aged Children principal investigators and national teams. For details, see http://www.hbsc.org.

Funding Sources

J.I. was supported by the UK Medical Research Council (MC_UU_12017/14) and the Chief Scientist Office (SPHSU14).

References

[1] Gore FM, Bloem PJN, Patton GC, et al. Global burden of disease in young people aged 10-24 years: A systematic analysis. Lancet 2011;377:2093–102.
[2] Kessler RC, Angermeyer M, Anthony JC, et al. Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World Psychiatry 2007;6:168–76.
[3] Currie C, Aleman-Diaz AY. The importance of large-scale (cross-national) data collection on early adolescents (10-15 years old): Shedding light on socioeconomic and gender inequalities in health. Florence: UNICEF Office of Research-Innocenti; 2015.
[4] Roberts C, Freeman J, Samdal O, et al. The Health Behaviour in School-Aged Children (HBSC) study: Methodological developments and current tensions. Int J Public Health 2009;54:S140–50.
[5] Spotlight on adolescent health and well-being. Findings from the 2017/18 Health Behaviour in School-Aged Children (HBSC) survey in Europe and Canada. Volume 1: Key Findings. In: Inchley J, Currie D, Budisavljevic S, et al., eds. Copenhagen: WHO Regional Office for Europe; 2020.
[6] Inchley J, Currie D, Jewell J, et al. eds. Adolescent obesity and related behaviours: Trends and inequalities in the WHO European Region, 2002-2014. Observations from the Health Behaviour in School-Aged Children (HBSC) WHO Collaborative Cross-National Study. Copenhagen: WHO Regional Office for Europe; 2017.
[7] Inchley J, Currie D, Vieno A, et al. eds. Adolescent alcohol-related behaviours: Trends and inequalities in the WHO European Region, 2002-2014. Observations from the Health Behaviour in School-Aged Children (HBSC) WHO Collaborative Cross-National Study. Copenhagen: WHO Regional Office for Europe; 2018.
[8] World Health Organization. The global Strategy for Women's, Children's and adolescents' health (2016-2030). Every Woman Every Child; 2015.