SHE and HBSC collaboration: The potential for data driven health improvement

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Aims

- To outline the HBSC and the potential for collaboration with SHE
- To present a collaborative framework successfully implemented in Wales
- To highlight how data driven practice has been supported at multiple levels in the Welsh case study
- To consider opportunities for the development of further collaborations with SHE/HBSC

HBSC is an international alliance of over 400 child health experts based in 50 countries who collaborate to develop and execute the HBSC survey.

Every four years, the HBSC research network collects data on 11, 13 and 15 year olds' health and well-being, social environments and health behaviours.

Findings are used at both a national and international level to:

- gain new insight into young people's health and well-being
- understand the social determinants of health
- inform policy and practice to improve young people's lives

Aims of HBSC

- To advance scientific knowledge and raise awareness of adolescent health internationally
- To gather cross-nationally comparable data on adolescent health and wellbeing
- To promote the use of data in policy and practice at national and international level
- To build capacity in adolescent health research through the HBSC network
- To work with national and international partners to maximise impact of the study and effect change

HBSC study growth

2017
2013
2009
2005
2001
1997
1993
1989
1985

History

HBSC started in 1983 in 3 countries and soon established collaboration with WHO

Now 50 member countries in Europe and North America

HBSC international network of more than 400 scientists

10 cross-national surveys conducted; 7 international reports published by WHO in Health Policy for Children and Adolescents series

HBSC Membership

Albania	Estonia	Latvia	Serbia
Armenia	Finland	Lithuania	Slovakia
Austria	France	Luxembourg	Slovenia
Azerbaijan	Germany	Malta	Spain
Belgium (Flemish)	Georgia	Moldova	Sweden
Belgium (French)	Greece	Netherlands	Switzerland
Bulgaria	Greenland	North Macedonia	Turkey
Canada	Hungary	Norway	Ukraine
Croatia	Iceland	Poland	USA
Cyprus	Ireland	Portugal	Uzbekistan
Czechia	Israel	Romania	Wales
Denmark	Italy	Russian Federation	
England	Kazakhstan	Scotland	

More information at: http://www.hbsc.org/membership/countries/index.html

HBSC future growth

Belarus

Bosnia and Herzegovina

Montenegro

Turkmenistan

Kyrgyzstan

Tajikistan

Cyprus

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Specialist centres

International Coordinating Centre (ICC)
Child and Adolescent Health Research Unit
School of Medicine
University of St Andrews
info@hbsc.org

International Coordinator: Dr Jo Inchley
Deputy International Coordinator: Dorothy Currie

Data Management Centre (DMC)
Research Centre for Health Promotion
University of Bergen
dmc@hbsc.org

International Data Manager: Prof Oddrun Samdal

Methodology

- School-based survey undertaken every 4 years: self-report questionnaire completed in classroom under ‘exam’ conditions
- 10 surveys completed to date, the most recent in 2017/18.
- Nationally representative samples of ~1500 11, 13 and 15 year olds
- Countries use standardised international protocol and survey instrument
- Questionnaire consists of mandatory items, optional packages and national items
- International School Level Questionnaire also available

HBSC scope

Physical, emotional and social health and wellbeing

Measures wide range of behaviours, both risk and protective factors

Focus on social determinants of health

Developmental perspectives

International comparisons

School-related variables (2017/18)

Mandatory

- Liking school
- School pressure
- Classmate support
- Teacher support
- Bullying at school

Optional Packages

- School-related competence/autonomy
- School-related reward
- Participation

Examples of national items

Perceived academic performance, health literacy, truancy, post-school aspirations, school facilities, schoolwork support, school climate, safety, risk for school drop-out.

Recent HBSC publications on school-related factors

- The role of school-based **health education** in adolescent spiritual moral, social and cultural development.
- Burden of Chronic Conditions and Subjective Complaints as Factors Modifying the Way Polish Students Are **Functioning at School**.
- Associations between Students' Perceptions of the **Psychosocial School Environment** and Indicators of Subjective Health in Finnish Comprehensive Schools.
- Gender-specific substance use patterns and associations with individual, family, peer, and **school factors** in 15-year-old Portuguese adolescents.
- The Impact of **School Bullying** on Physical Activity in Overweight Youth: Exploring Race and Ethnic Differences.
- The Role of **School-Related Well-Being** for Adolescent Subjective Health Complaints.
- Does Sleep Mediate the Association between **School Pressure**, Physical Activity, Screen Time, and Psychological Symptoms in Early Adolescents?
- **School start time** and the healthy weight of adolescents.
- **Education system stratification** and health complaints among school-aged children.
- **Food environments in and around post-primary schools** in Ireland: Associations with youth dietary habits.
- **Suicidal ideation and behaviors within the school context**: Perceived teacher, peer and parental support.

HBSC International Report 2016

Growing up unequal

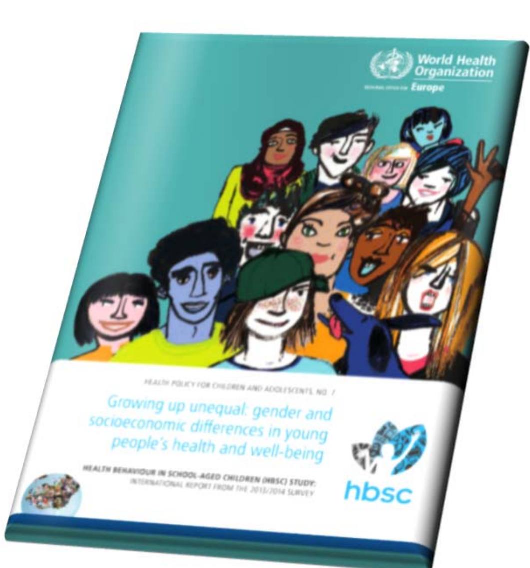
Gender and socioeconomic differences in young people's health and wellbeing

WHO report series: Health Policy for Children and Adolescents No.7, 2016

HBSC 2013/14 INTERNATIONAL REPORT: DATA ACCESS

All data presented in the International Report is accessible via:

- WHO European Health Information Gateway
- WHO European Health Statistics App



Additional maps and charts available

Customisable maps, charts and tables

Can all be downloaded

http://portal.euro.who.int/en/data-sources/hbsc/

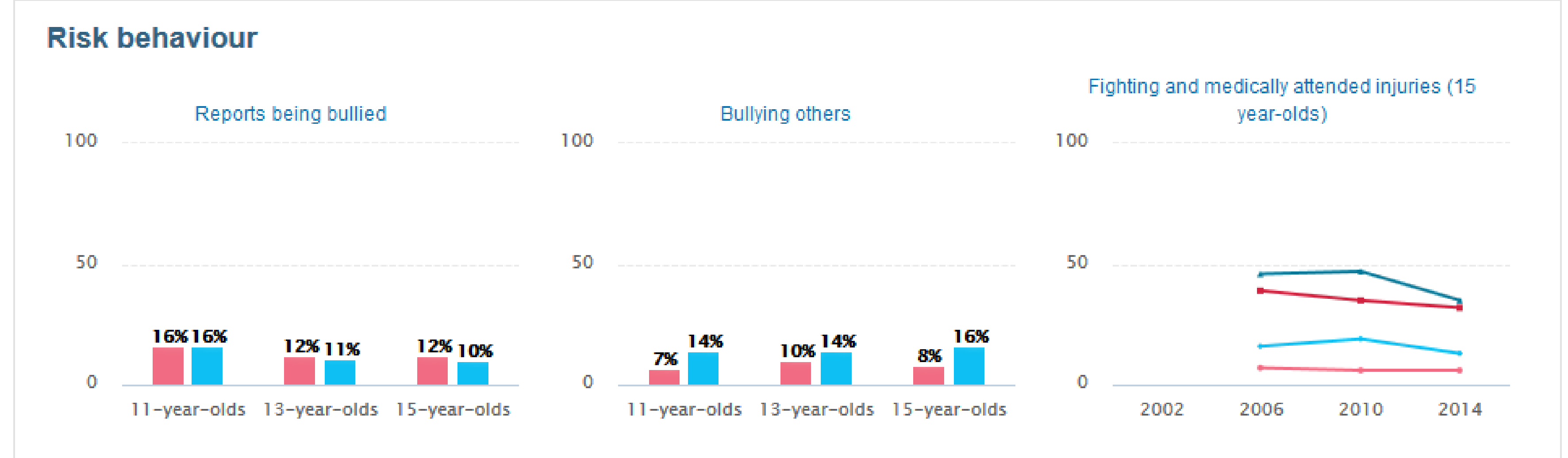
European Health Information Gateway

European Health Information Gateway

Luxembourg

Child and adolescent health

This section presents the current available information and status of child and adolescent health in the Member States of the WHO European Region. The indicators document progress in achieving the objectives of the "Investing in children: the European child and adolescent health strategy 2015–2020" (CAH strategy). Gaps in the tables and graphs are due to missing information, which WHO will try to fill through data collection from the countries, starting in second half of 2016.



Research outputs and dissemination activities

- International Reports
- Journal articles
- Policy briefings & factsheets
- Data visualisations
- Data access portal
  - www.uib.no/en/hbscdata

www.hbsc.org

Socioeconomic inequalities in adolescent health 2002–2010: a time-series analysis of 34 countries participating in the Health Behaviour in School-aged Children study

Frank J Elgar, Timo-Kolja Pförtner, Irene Moor, Bart De Clercq, Gonneke W J M Stevens, Candace Currie

Summary

Background Information about trends in adolescent health inequalities is scarce, especially at an international level. We examined secular trends in socioeconomic inequality in five domains of adolescent health and the association of socioeconomic inequality with national wealth and income inequality.

Methods We undertook a time-series analysis of data from the Health Behaviour in School-aged Children study, in which cross-sectional surveys were done in 34 North American and European countries in 2002, 2006, and 2010 (pooled n 492 788). We used individual data for socioeconomic status (Health Behaviour in School-aged Children Family Affluence Scale) and health (days of physical activity per week, body-mass index Z score [zBMI], frequency of psychological and physical symptoms on 0–5 scale, and life satisfaction scored 0–10 on the Cantril ladder) to examine trends in health and socioeconomic inequalities in health. We also investigated whether international differences in health and health inequalities were associated with per person income and income inequality.

Findings From 2002 to 2010, average levels of physical activity (3·90 to 4·08 days per week; p<0·0001), body mass (zBMI –0·08 to 0·03; p<0·0001), and physical symptoms (3·06 to 3·20, p<0·0001), and life satisfaction (7·58 to 7·61; p=0·0034) slightly increased. Inequalities between socioeconomic groups increased in physical activity (–0·79 to –0·83 days per week difference between most and least affluent groups; p=0·0008), zBMI (0·15 to 0·18; p<0·0001), and psychological (0·58 to 0·67; p=0·0360) and physical (0·21 to 0·26; p=0·0018) symptoms. Only in life satisfaction did health inequality fall during this period (–0·98 to –0·95; p=0·0198). Internationally, the higher the per person income, the better and more equal health was in terms of physical activity (0·06 days per SD increase in income; p<0·0001), psychological symptoms (–0·09; p<0·0001), and life satisfaction (0·08; p<0·0001). However, higher income inequality uniquely related to fewer days of physical activity (–0·05 days; p=0·0295), higher zBMI (0·06; p<0·0001), more psychological (0·18; p<0·0001) and physical (0·16; p<0·0001) symptoms, and larger health inequalities between socioeconomic groups in psychological (0·13; p=0·0080) and physical (0·07; p=0·0022) symptoms, and life satisfaction (–0·10; p=0·0092).

Interpretation Socioeconomic inequality has increased in many domains of adolescent health. These trends coincide with unequal distribution of income between rich and poor people. Widening gaps in adolescent health could predict future inequalities in adult health and need urgent policy action.

Funding Canadian Institutes of Health Research.

Introduction

Adolescence is a formative life stage for adult health, but is often neglected in health policy.[1] Health and health behaviours track strongly from early adolescence to adulthood, and inequalities in health are typically established early in life.[2] Socioeconomic status (SES) is a major determinant of these inequalities.[3] To grow up in impoverished and marginalised socioeconomic conditions shortens the lifespan and contributes to poor mental and physical health.[3,4] Some research has suggested that socioeconomic differences in health emerge in early childhood and then diminish in early adolescence, only to re-emerge in adulthood.[5] However, most of the evidence in this area shows social class gradients in health at every stage of the life course, including adolescence.[6,7]

An understanding of trends in health inequalities and their social determinants is crucial so that policy can be developed to redress them.[1,8] The available evidence in this area relies heavily on local and national samples of young children.[4,9] International studies of social inequalities in adolescent health are scarce and, as a result, predictions about future inequalities in adult health are not based on robust information. Findings from the Health Behaviour in School-aged Children (HBSC) study,[10,11] which surveys the health of adolescents in North America and Europe, have shown SES differences in health in most countries and health domains, including self-rated health, psychological and physical symptoms, and life satisfaction. However, this research has not focused on trends in health inequalities in adolescence, nor on structural

The School Health Research Network in Wales: Development and Implementation

Y RHWYDWAITH YMCHWIL IECHYD MEWN YSGOLION

SCHOOL HEALTH RESEARCH NETWORK

School Health Research Network Aims

- **Develop an infrastructure to provide timely and robust health and wellbeing data for national, regional and local stakeholders**
- **Co-produce high quality school-based health improvement research**
- **Increase the quality, quantity and relevance of school-based health improvement research and reduce research burden on schools**
- **Build capacity for evidence-informed practice and facilitate the translation of research evidence into practice**

Diffusion 2013 to 2018

Phase 1: 2013 Pilot

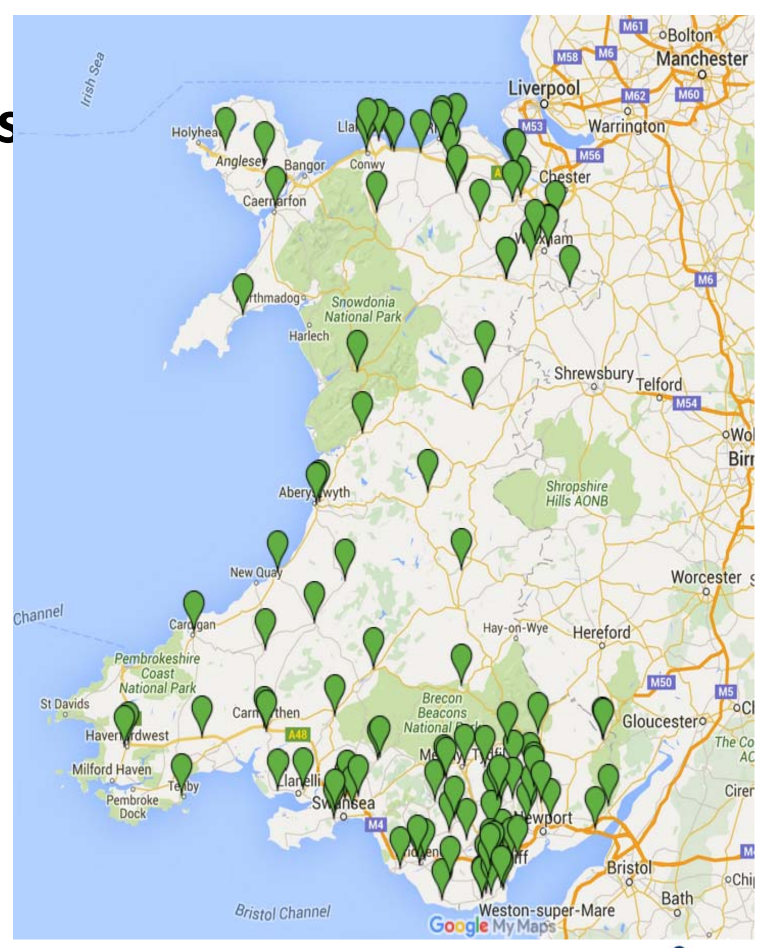
- **Recruitment of 61 (of 82) HBSC schools**

Phase2 : 2015 Scalability

- **53% (N=115) of all maintained secondary and middle schools**

Phase 3 : 2017 Diffusion

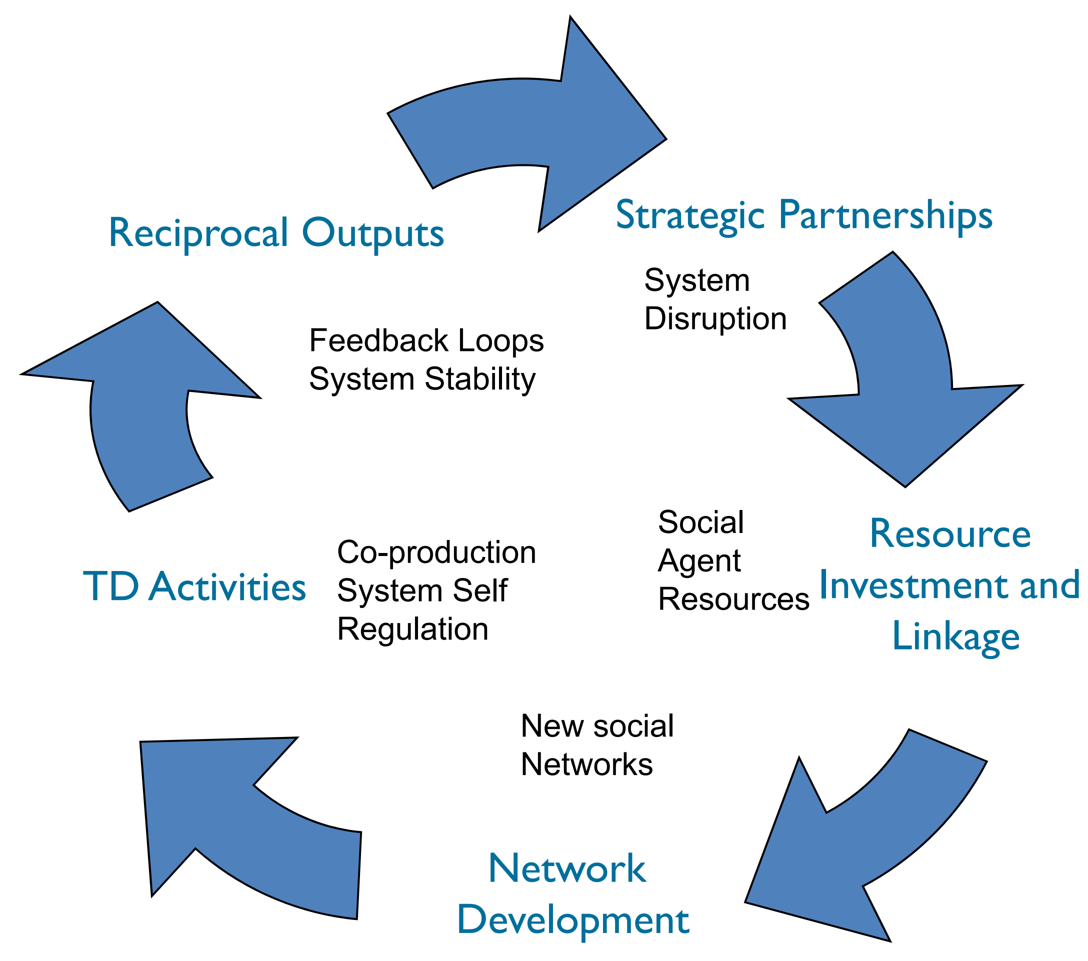
- **100% (N = 212) secondary schools recruited with WNHSS. HBSC conduct embedded**
- **Longitudinal and data linkage pilot - 50% consent**



School Health Research Network Structures

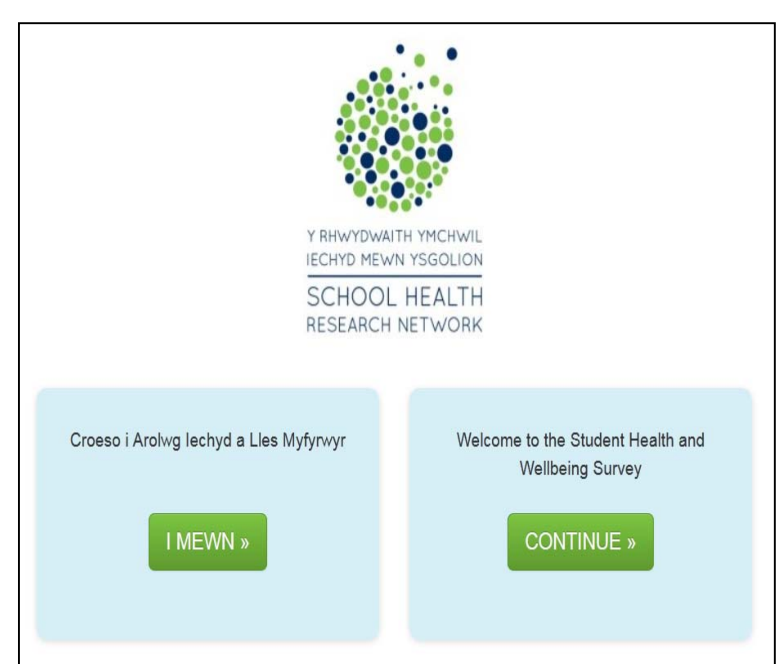
- Strategic partnerships established – Welsh Government (Health and Education) and Public Health Wales (Welsh Network off Healthy Schools Scheme)
- Established core SHRN team for cross academic/policy/practice working – network manager, survey researcher, co-ordinator, linked DECIPHer resources.
- Development of data infrastructure via HBSC survey 2013
- Network and capacity development activities
- Adoption process for SHRN supported studies – portfolio of 46 funded studies (c.£15 million)
- Reciprocal outputs for partners

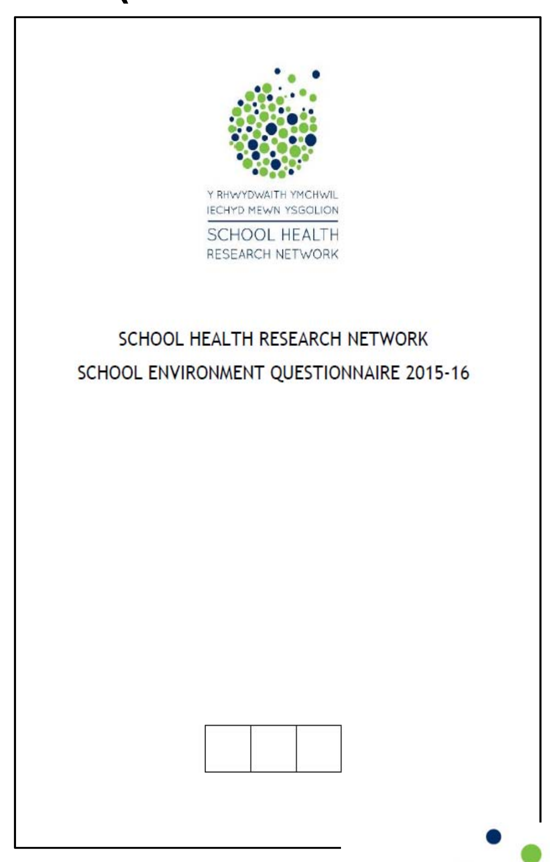
Transdisciplinary Action Research Interventions for Systems Change



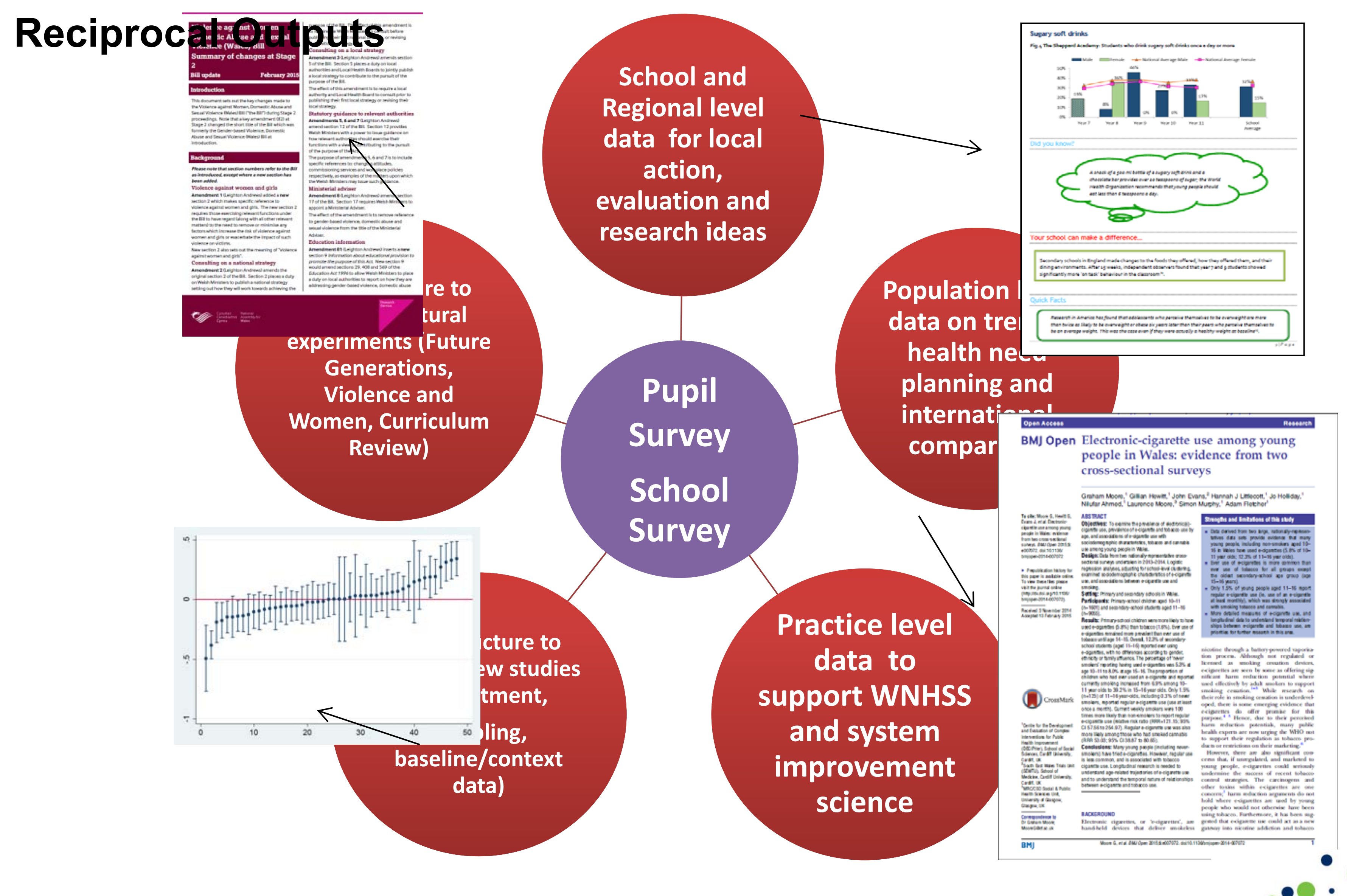
Data Infrastructure - Network Surveys

- **Biennial pupil/school survey – HBSC, scientific, policy, practice, public priorities**
- **2017 2017 – 112,045 responses from 11 to 16 year olds in (over 60%). The largest dataset of its kind in Wales**





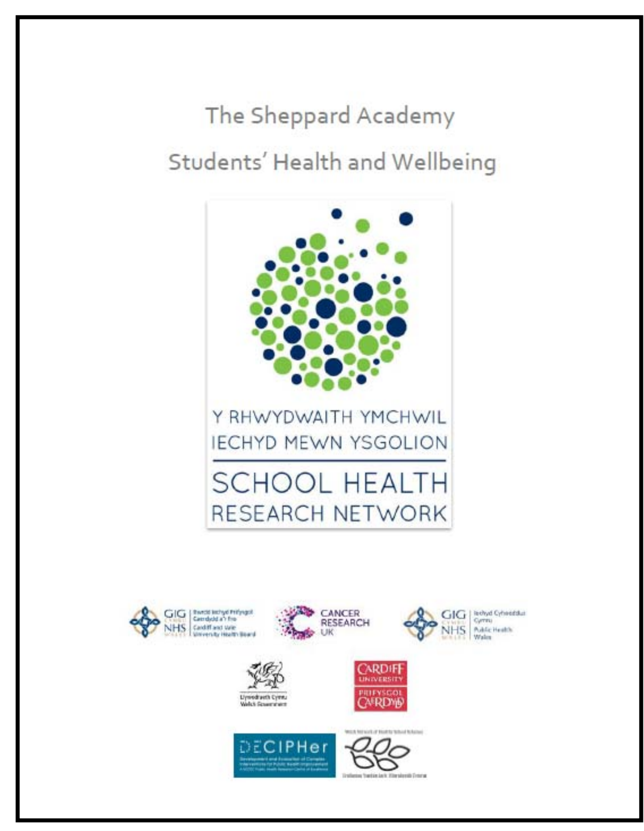
Reciprocal Outputs

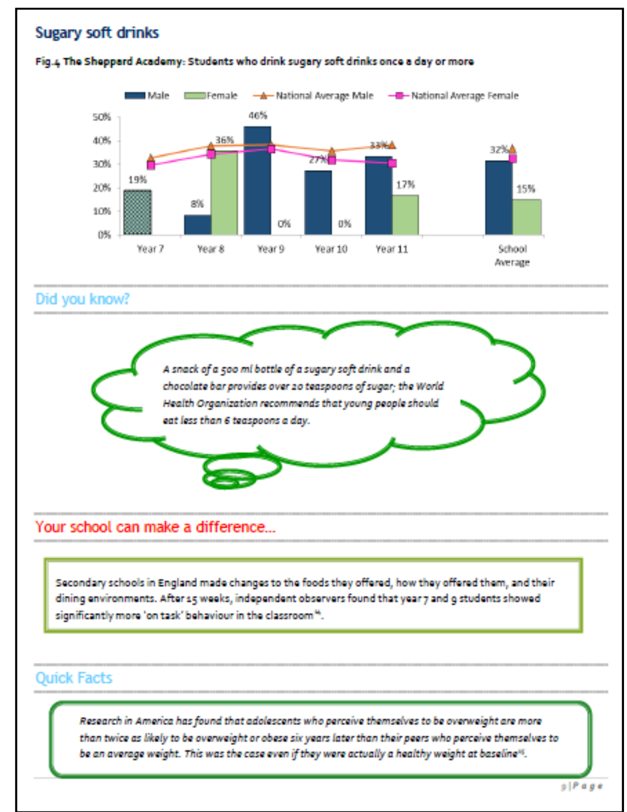


Student Health and Wellbeing Reports

Tailored benchmarked reports of student health and wellbeing (Gender/age) for each school for action planning and monitoring.

Regional and National reports





Sugary soft drinks

Fig.4 The Sheppard Academy: Students who drink sugary soft drinks once a day or more

Did you know?

A snack of a 500 ml bottle of a sugary soft drink and a chocolate bar provides over 20 teaspoons of sugar; the World Health Organization recommends that young people should eat less than 6 teaspoons a day.

Your school can make a difference...

Secondary schools in England made changes to the foods they offered, how they offered them, and their dining environments. After 15 weeks, independent observers found that year 7 and 9 students showed significantly more 'on task' behaviour in the classroom[14].

Quick Facts

Research in America has found that adolescents who perceive themselves to be overweight are more than twice as likely to be overweight or obese six years later than their peers who perceive themselves to be an average weight. This was the case even if they were actually a healthy weight at baseline[15].

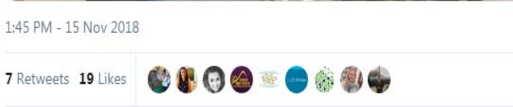
9 | Page

Ebbw Fawr PE
@EFLC_PE
Following
Y9 girls discussing results from 'Health and Wellbeing survey' @SHRNWales and the reasons why girls don't participate in sport out of Sch time compared with the rest of Wales. 🤔 #Wellbeing #PhysicalActivity
Transport
Lazy
Equipment
Unfit
Motivation

St David's Chester
@stdavidschester
Follow
Some of our school council representatives are at a conference today analysing the data from our SHRN report. They are making some excellent contributions towards the Flintshire Schools SHRN action plan. Workshops this afternoon from @theredcardwales and @TheProudTrust
11:01 AM - 16 Nov 2018
3 Retweets 5 Likes
Tweet your reply

Ebbw Fawr 3-16
@ebbwfawr
Following
Using our @SHRNWales data on energy drinks 🥤 to raise awareness in our learners in the restaurant today #learningtoachievetogether
WHAT HAPPENS 24 HOURS AFTER DRINKING AN ENERGY DRINK

Nerys Davies
@NerysDavies
Following
Using our @SHRNWales data to inform our students over lunch about the importance of 💤 😴 sleep! #learningtoachievetogether
DID YOU GET ENOUGH SLEEP LAST NIGHT?
80%
34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7 Retweets 19 Likes

Alun School
@alunschool
Following
Alun School Council members at @SHRNWales event. Working with, @CastellAlun, @hawardenhs, @flinthigh, @MaesGarmon, @stdavidschester, @theredcardwales and @TheProudTrust #FutureLeaders #DecisionMakers
Ebbw Fawr PE
@EFLC_PE
Following
Y9 girls discussing results from 'Health and Wellbeing survey' @SHRNWales and the reasons why girls don't participate in sport out of Sch time compared with the rest of Wales. 🤔 #Wellbeing #PhysicalActivity
Transport
Lazy
Equipment
Unfit
Motivation
Confidence
Money
More clubs needed
2:07 PM - 23 Nov 2018
2 Like

Evaluation of the Health Promoting School

Moore et al. BMC Public Health (2016) 16:138
DOI 10.1186/s12889-016-2763-0

BMC Public Health

RESEARCH ARTICLE Open Access

Variations in schools' commitment to health and implementation of health improvement activities: a cross-sectional study of secondary schools in Wales

Graham F. Moore*, Hannah J. Littlecott, Adam Fletcher, Gillian Hewitt and Simon Murphy

Abstract

Background: Interventions to improve young people's health are most commonly delivered via schools. While young people attending the lowest socioeconomic status (SES) schools report poorer health profiles, no previous studies have examined whether there is an 'inverse care law' in school health improvement activity (i.e., whether schools in more affluent areas deliver more health improvement). Nor have other factors that may explain variations, such as leadership of health improvement activities, been examined at a population level. This paper examines variability in delivery of health improvement actions among secondary schools in Wales, and whether variability is linked to organisational commitment to health, socioeconomic status and school size.

Methods: Of the 82 schools participating in the 2013/14 Health Behaviour in School-aged Children (HBSC) survey in Wales, 67 completed a questionnaire on school health improvement delivery structures and health improvement actions within their school. Correlational analyses explore associations of delivery of health improvement activity among schools in Wales with organisational commitment to health, socioeconomic context and school size.

Results: There is substantial variability among schools in organisational commitment to health, with pupil emotional health identified as a priority by 52 % of schools, and physical health by 43 %. Approximately half (49 %) report written action plans for pupil health. Based on composite measures, the quantity of school health improvement activity was greater in less affluent schools and schools reporting greater commitment to health. There was a consistent though non-significant trend toward more health improvement activity in larger schools. In multivariate analysis deprivation (OR = 1.06; 95 % CI = 1.01 to 1.12) and organisational commitment to health were significant independent predictors of the quantity of health improvement (OR = 1.60; 95 % CI = 1.15 to 2.22).

Conclusions: There is no evidence of an 'inverse care law' in school health, with some evidence of more comprehensive, multi-level health improvement activity in more deprived schools. This large-scale, quantitative analysis supports previous smaller scale, qualitative studies/process evaluations that suggest that senior management team commitment to delivering health improvement, and formulating and reviewing progress against written action plans, are important for facilitating the delivery of comprehensive interventions.

Keywords: Socioeconomic status, School, Adolescent, Child, Health behaviours, Inequalities

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doi:10.1093/eurpub/ckw093

Do stronger school smoking policies make a difference? Analysis of the health behaviour in school-aged children survey

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2 Social Research and Information Division, Cathays Park, Cardiff, United Kingdom

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Background: Associations of the strength of school smoking policies with cigarette, e-cigarette and cannabis use in Wales were examined. **Methods:** Nationally representative cross-sectional survey of pupils aged 11–16 years (*N*=7376) in Wales. Senior management team members from 67 schools completed questionnaires about school smoking policies, substance use education and tobacco cessation initiatives. Multi-level, logistic regression analyses investigated self-reported cigarette, e-cigarette and cannabis use, for all students and those aged 15–16 years. **Results:** Prevalence of current smoking, e-cigarette use and cannabis use in the past month were 5.3%, 11.5% and 2.9%, respectively. Of schools that provided details about smoking policies (66/67), 39.4% were strong (written policy applied to everyone in all locations), 43.9% were moderate (written policy not applied to everyone in all locations) and 16.7% had no written policy. There was no evidence of an association of school smoking policies with pupils' tobacco or e-cigarette use. However, students from schools with a moderate policy [OR = 0.47; 95% (confidence interval) CI: 0.26–0.84] were less likely to have used cannabis in the past month compared to schools with no written policy. This trend was stronger for students aged 15–16 years (moderate policy: OR = 0.42; 95% CI: 0.22–0.80; strong policy: OR = 0.45; 95% CI: 0.23–0.87). **Conclusions:** School smoking policies may exert less influence on young people's smoking behaviours than they did during times of higher adolescent smoking prevalence. Longitudinal studies are needed to examine the potential influence of school smoking policies on cannabis use and mechanisms explaining this association.

Introduction

Tobacco use is commonly initiated during youth.[1] Hence, recent decades have seen growing emphasis on preventing uptake of smoking among young people.[2] Interventions to influence adolescent smoking are often delivered via schools because they provide opportunities to reach most young people, while the norms and environments of schools' can influence risk behaviours.[3,4] The 'Health Promoting Schools' framework, endorsed by the World Health Organization,[5] consistent with Ottawa Charter principles emphasizing the need to go beyond simplistic health education and toward creating healthier environments,[6] advocates multi-level approaches to health improvement, focused on integration of health into the curriculum alongside changes to the school's social and physical environment. Environmental change interventions have demonstrated significant positive effects on a range of outcomes, including tobacco use.[7]

One key strategy for changing school social environments is through written policies. These can play an important role in establishing and communicating a school's ethos, in terms of norms for acceptable and unacceptable ways for staff, students and others to behave within the school environment.[8] Changing school policy has been described as low cost, realistic and easy to address[9] and many schools have adopted formal written smoking policies.[10] Earlier studies investigating school substance use policies have shown that universal smoking bans and restrictions are associated with a lower likelihood of smoking behaviour and smoking prevalence among youth.[11] For example, Moore *et al.*[9] found that having a written smoking policy for all students, teachers and other adults on school premises was associated with lower likelihood of daily and weekly smoking.

However, weaker associations between school smoking policies and tobacco use have been observed in more recent studies.[11] In part this may be because school smoking policies have become more common and more consistent in their universality, perhaps limiting variance in practice between schools.[9,12,13] However, national policies to 'denormalize' smoking, and limit its visibility to children, such as smoke-free legislation, may mean that schools operate within a macro-system in which smoking is already heavily denormalized,[14] while adolescent smoking rates are now at an all-time low.[15,16] Given the growing denormalization of smoking in front of children,[17] adults may now be less likely to use tobacco on or near school grounds than during earlier studies. Furthermore, young people who continue to smoke in contemporary society do so despite it being widely stigmatized within society and hence may be less influenced by norms within the school environment. As such, the capacity for strong policies to achieve further gains in reducing youth smoking may have diminished over time.

However, no previous studies have looked beyond effects on smoking and toward understanding secondary effects on other substances. Smoking clusters with other risky behaviours[18] and is often considered a 'gateway' into future use of illicit substances such as cannabis.[19,20] However, while smoking tobacco is increasingly denormalized, strong government policies on tobacco have been accompanied by mixed messages on cannabis, and it is unclear whether cannabis use has declined at the same rate as tobacco use. Internationally, legislation surrounding cannabis use has become more rather than less permissive, including legalization in some jurisdictions. Perhaps arising from these mixed messages, there is some

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DOI 10.1186/s12889-016-3213-8

BMC Public Health

RESEARCH ARTICLE Open Access

Predictors of physical activity and sedentary behaviours among 11-16 year olds: Multilevel analysis of the 2013 Health Behaviour in School-aged Children (HBSC) study in Wales

Kelly Morgan[1]*, Britt Hallingberg[1], Hannah Littlecott[1], Simon Murphy[1], Adam Fletcher[1], Chris Roberts[2] and Graham Moore[1]

Abstract

Background: The present study investigated associations between individual- and school-level predictors and young people's self-reported physical activity (total activity and moderate-to-vigorous activity) and sedentary behaviours.

Methods: Individual-level data provided by the 2013/14 cross-sectional survey 'Health Behaviour in School-aged Children (HBSC) study in Wales' were linked to school-level data within the 'HBSC School Environment Questionnaire'. The final sample comprised 7,376 young people aged 11-16 years across 67 schools. Multilevel modelling was used to examine predictors of total physical activity, moderate-to-vigorous physical activity (MVPA) and sedentary behaviours (screen-based behaviours).

Results: Taking more physical activity (less than 5 days vs. 5 or more days per week), engaging in higher levels of MVPA (less than 4 hours vs. 4 or more hours per week) and reporting 2 or less hours of sedentary time were predicted by several individual level variables. Active travel to school positively predicted high levels of physical activity, however, gender stratified models revealed active travel as a predictor amongst girls only (OR:1.25 (95 % CI: 1.05 - 1.49)). No school-level factors were shown to predict physical activity levels, however, a lower school socio-economic status was associated with a higher level of MVPA (OR:1.02 (95 % CI:1.01 - 1.03)) and a lower risk of sedentary behaviour (OR:0.97 (95 % CI:0.96 – 0.99)). A shorter lunch break (OR:1.33 (95 % CI:1.11 - 1.49)) and greater provision of facilities (OR:1.02 (95 % CI:1.00 - 1.05)) were associated with increased sedentary activity. Gender stratified models revealed that PE lesson duration (OR:1.18 (95 % CI:1.01 - 1.37)) and the provision of sports facilities (OR:1.03 (95 % CI:1.00 - 1.06)) were predictors of boy's sedentary behaviours only.
(Continued on next page)

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Network and Capacity Development

- Termly Newsletter, Webinars and Research Briefs for WNHSS activity
- Network Events in North, South and West Wales
- Briefings for key stakeholders
- Research Literacy workshops and workforce development
- Developing pupil engagement infrastructure

System integration and adoption

'It is enormously beneficial for us to get a raft of data which can be considered by staff, pupils and external agencies to analyse and organise programmes accordingly.' ***Headteacher***

When working within a system that has become so data driven it is great to be part of a like-minded network with wellbeing at the forefront.' ***Assistant Head***

'Privileged – glad that the school is on board and supportive. Priority to see/hear about new initiatives and ideas that will fit into healthy schools.' ***In-school Healthy Schools Coordinator***

'Being a member of SHRN gives us as a school, access to up to date and relevant research, support and information.' ***Assistant Head***