Institution: The University of Edinburgh

Unit of Assessment: 26 Sport and Exercise Sciences, Leisure and Tourism

Title of case study: Monitoring global and national levels of physical activity in youth

1. Summary of the impact

Physical inactivity is a global health risk. Research undertaken by the Child and Adolescent Research Unit (CAHRU) demonstrated that there are low levels of physical activity in children across Europe and North America. The findings have informed international [World Health Organisation and UNICEF] strategies to address the physical inactivity and inequalities concerns in youth. Research in Scotland specifically demonstrated low levels of physical activity in adolescent girls. This led to adolescent girls becoming a priority target in the review of the Scottish Government policy 'let's make Scotland more active' and to government funded programmes [Fit for Girls; Y-Dance; Girls on the Move].

2. Underpinning research

Two projects undertaken at the University of Edinburgh showed that activity levels in youth are a major public health concern. A global project [Health Behaviours of Schoolchildren] led by Currie (employed at the University from 1985 until 2011) provided data identifying inequalities in physical activity levels across ages, genders and countries, and described key predictors of physical activity in young people. The second project [PASS], led by Inchley (employed at the University from 1998 until 2011) had a particular emphasis on Scottish children.

1) Health Behaviour in School-aged Children: a World Health Organisation Collaborative Cross-National Study (HBSC, http://www.hbsc.org)

HBSC is a cross-national study involving a multi-disciplinary network of researchers from 43 countries & regions in Europe and North America. The HBSC study aims to increase understanding of adolescent health and lifestyles in their social context, including physical activity. The first cross-national survey was conducted in 1983/84, with data collected every four years in 11, 13 and 15 year olds with a sample of approximately 1500 from each age group in all participating countries. Professor Candace Currie, then at the University of Edinburgh, was the elected International Coordinator of the study (1995-2012), (1). Jo Inchley has been a member of the physical activity working group since 2006 and is now co-chair of this group. Dorothy Currie provided the statistical expertise for the analysis of the HBSC data. These researchers were all employed at the University of Edinburgh until 2011).

The data demonstrated that as children grow, activity levels fall (a significantly higher frequency of daily physical activity was found among boys aged 11 than those aged 15 in most countries and regions) and universally, girls are less active than boys. The most active regions are Ireland and Austria while the least active are Denmark and Italy. This project provided data that has been used globally to inform policy and to make international comparisons of physical activity levels and associated health parameters in young people and nationally to inform policy and practice (2,3).

2) Physical Activity in Scottish School Children (PASS)

PASS was a longitudinal research study tracking levels of physical activity across the primary-secondary transition over 5 years. The study utilised an ecological framework which encompassed psychological, social and environmental influences. Over 1500 schoolchildren from eight school clusters in Angus, Fife, Glasgow City and West Lothian were involved in the study. Data were collected by questionnaire survey undertaken in 2002 among P7 (Year 6 equivalent) pupils with five waves of data collection. Qualitative interviews were also undertaken with a subgroup of pupils in P7 and S2 (Year 8 equivalent) (2002 and 2007). The key staff involved were Jo Inchley and Candace Currie. This was the first longitudinal study of Scottish school children across the primary/secondary school transition. It identified a decrease in physical activity across the primary-secondary school transition, with a further decline during the secondary school years. The

decrease was more acute for girls than for boys. The PASS report also provided evidence for the kind of activities that girls wanted to do (4, 5).

3. References to the research

1. Currie C, Nic Gabhainn S, Godeau E and the International HBSC Network Coordinating Committee (2009) The Health Behaviour in School-aged Children: WHO Collaborative Cross-National (HBSC) Study: origins, concept, history and development 1982-2008. International Journal of Public Health, 54, S131-139. DOI: 10.1007/s00038-009-5404-x
2. Currie, C., Zanotti, C, Morgan, A., Currie, D., de Looze, M., Roberts, C., Samdal, O., Smith, O.R.F. and Barnekow, V. (2012) Social determinants of health and well-being among young people. HBSC international report from the 2009/2010 Survey. Health Policy for Children and Adolescents No. 6, WHO Regional Office for Europe, Copenhagen, Denmark. http://www.euro.who.int/__data/assets/pdf_file/0007/167281/E96444_part1.pdf
3. Young I and Currie C (2009) The HBSC study in Scotland: can the study influence policy and practice in schools? International Journal of Public Health, 54, S271-277. DOI: 10.1007/s00038-009-5419-3
4. Inchley, J.,Kirby,J., Currie, C. (2008) Physical Activity in Scottish Schoolchildren (PASS) Project Physical activity among adolescents in Scotland Final Report of the PASS Study http://cahru.org/content/04-publications/04-reports/pass_final_report.pdf
5. Kirby J, Levin KA, Inchley J (2011) Parental and peer influences on physical activity among Scottish adolescents: a longitudinal study. Journal of Physical Activity and Health, 8(6), 785-793. http://journals.humankinetics.com/AcuCustom/SiteName/Documents/DocumentItem/06_kirby_JPAH_20090191.pdf

4. Details of the impact

The HBSC provides a unique data set for investigating why some health-related trends in children and young people are increasing and other trends decreasing by facilitating comparisons internationally. HBSC data has been used by the WHO Regional Office for Europe to provide a report on the social determinants of young people's health. This report was highly commended by the British Medical Association (5.1). The evidence from the HBSC data contributed to the Children's Environment and Health Action Plan for Europe (CEHAPE) Regional Priority Goal II: "*To prevent and substantially reduce health consequences from accidents and injuries and pursue a decrease in morbidity from lack of adequate physical activity by promoting safe, secure and supportive human settlements for all children."* In relation to physical activity this resulted in a WHO Europe resource 'Young and physically active' which uses the HBSC data set to provide a rationale for the need to prioritise youth activity in Europe (5.2; page 4). The importance of the HBSC data has also been recognised by UNICEF who used HBSC to inform their thinking on health inequalities (5.3; Innocent Report Card 9, The Children Left Behind) and in which the HBSC measure of physical activity was used as a key indicator of well-being (5.3: see page 14, Innocenti Report Card 9). CAHRU provided the statistical results for the analysis of inequality in children's health for this report.

Both HBSC and PASS were used alongside the Scottish Health Survey to inform the five year review, undertaken in 2008, of the Scottish Physical Activity Strategy 'Let's Make Scotland More Active' (5.4, page 19 and 20). The unique longitudinal nature of PASS created a national concern for low levels of physical activity in adolescent girls and the HBSC data provided international comparisons. Other available data were only cross-sectional which had clear limitations in determining the temporal pattern of PA. As a result, adolescent girls were singled out in this five year review as a priority group. In 2010 the Minister for Sport and the Commonwealth Games commissioned a "Teenage Girls" summit, which was held in August 2010 at the University of Edinburgh, and to which Jo Inchley was an invited expert. Feedback gathered at the Summit, including information from the HBSC and PASS data sets, was collated into a final report that was used to inform recommendations to the Minister (5.5, page 3.)

The PASS report informed the following programmes by providing the evidence for the kind of

activities that girls wanted: Fit for Girls; Y-Dance; Girls on the Move; Active Travel to School / Primary-Secondary Transition project; I Bike and 'simple steps to success'.

Jo Inchley was invited to contribute to the development and design of Fit for Girls. By the end of the Fit for Girls programme 32 local authorities had taken part in training and committed to delivery of the programme; 344 mainstream schools and 15 schools for pupils with additional support needs were engaged with the programme; 106 workshops had taken place. The girls themselves and PE staff reported increased participation as a result of the Fit for Girls programme (5.6).

Inchley also advised on the production of a Paths for All resource about pedometer use for young people 'Simple Steps to Success'. The resource used the evidence from the PASS report to inform the production of the programme. The resource was sent to every primary and secondary school in Scotland. On page 19 it is noted that '*Child and Adolescent Health Research Unit (CAHRU) at Edinburgh University:* produced the research that gave rise to this guide.' (5.7)

On the basis of the reputation of the HBSC and PASS work, Jo Inchley was invited to be one of five advisors to the Government funded Scottish Physical Activity Collaboration (SPARColl) from 2006-2011. Through SPARColl she advised on the evaluation of physical activity programmes in young people for NHS Health Scotland and for a knowledge exchange programme on physical activity in adolescent girls in 2008/2009 (funded by the Scottish Funding Council). This programme involved events for practitioners, policy makers and key academics with a focus on addressing knowledge gaps and facilitating on-going dialogue between partners. The programme highlighted practitioners' need for more evidence regards the importance of role models in adolescent girls, and the type of role model that was effective. This element of the project drew heavily on the work of CAHRU. It also identified a need for practitioners to be informed on how to effectively consult with adolescent girls regards their physical activity needs. The outcomes were a set of resources which can be seen in the Teenactive report. CAHRU's role was to write the resource associated with 'The Importance of Role Models in Making Adolescent Girls More Active' (5.8).

5. Sources to corroborate the impact

Webpages have been archived at: https://www.wiki.ed.ac.uk/display/REF2014REF3B/UoA+26

5.1 See HBSC web site http://www.hbsc.org [latest news section accessed September 2013]

5.2 WHO Europe 'Young and Physically Active' blueprint
http://www.euro.who.int/__data/assets/pdf_file/0005/175325/e96697.pdf

5.3 Innocenti Report Card 9
http://www.unicef-irc.org/publications/pdf/rc9_eng.pdf

5.4 Five year review 'Let's Make Scotland More Active' A strategy for physical activity
http://www.healthscotland.com/uploads/documents/1150-HS%20PA%205yr%20Review%20Final.pdf P19, 20

5.5 Teenage Girls Summit: Making change happen
http://www.healthscotland.com/documents/4612.aspx

and final report: http://www.healthscotland.com/uploads/documents/13592-PAHA_TeenageGirlsSummit_MakingChangeHappen.pdf

5.6 Fit for Girls final evaluation report
http://www.sportscotland.org.uk/resources/Fit_for_Girls_evalutaion_final_report

5.7 Simple Steps to Success guide
http://www.pathsforall.org.uk/pfa/health-walks/walking-and-young-people.html

5.8 Knowledge exchange in public policy. The teenactive project website
http://web.sls.hw.ac.uk/Teenactive/Research%20Web%20site/Projects/SFC.htm