



Family affluence and health among schoolchildren

Kate Levin, Joanna Todd, Jo Inchley, Dorothy Currie, Rebecca Smith and Candace Currie

Child & Adolescent Health Research Unit, The University of Edinburgh

Introduction

Inequalities in social circumstances can have profound effects on health and well-being. The impact of social inequalities on the health of young children and adults is well documented but less is understood about the adolescent population. While some studies have found there to be social inequalities in adolescent behavioural problems and psychological and emotional well-being (Starfield, 2002; McMunn et al, 2001; Ford et al, 1994), others have suggested little or no evidence for health inequalities during adolescence (West, 1997). This Briefing Paper examines one source of inequalities in young people's lives – that of family material affluence. It presents research findings for 11–15 year-olds from the 2002 Health Behaviour in School-Aged Children: WHO Collaborative Cross-National Study (HBSC) in Scotland and compares findings from Europe and North America. A map and HBSC countries list are presented in the Technical Appendix where the survey methodology is also described.

Socioeconomic inequalities are prevalent and increasing throughout the industrialised nations of the world (Vleminckx and Smeeding, 2001). The HBSC study gives a unique opportunity to examine the impact of this on young people's health across Europe and North America. This *eleventh* briefing paper in the series brings a focus to the Scottish data using a comparative perspective and summarises key parts of the International Report¹ from the 2002 HBSC Survey (Currie et al, 2004).

This paper examines associations between family affluence and aspects of adolescent health and well-being, including eating habits, physical activity, reported health and life satisfaction. The purpose of the paper is to increase knowledge and understanding of health inequalities among young people in Scotland; to provide evidence of inequalities for policy makers and practitioners; and to inform actions aimed at health improvement among adolescents.

Family affluence in Scotland compared to other European and North American countries

Family affluence is measured using the HBSC Family Affluence Scale (FAS) (Currie et al, 2004) which comprises: family car ownership, bedroom occupancy, family holidays and computer ownership. A composite score is calculated for each young person and the sample

Summary of main findings

- ~ 20% of young people in Scotland live in low affluence households; lower than the average for the 35 countries in the HBSC study (28%), but higher than England (15%) and Wales (14%)
- ~ Young people from low affluence families are less likely to be physically active and to eat fruit and vegetables daily and more likely to consume soft drinks
- ~ Young people from low affluence families are more likely to report low life satisfaction and more frequent health complaints and are less likely to report their health as excellent

is then split into those living in low, medium and high affluence families.

Figure 1 illustrates the spread of low family affluence across a selection of countries. Sweden has relatively few young people reporting low family affluence while Hungary, Poland and the Russian Federation have relatively high numbers. Scotland has a higher proportion of young people with low family affluence than England and Wales.

Countries with a small proportion of young people living in low affluence families are predominantly from Northern and Western Europe and North America. A higher proportion of low affluence families are found in Eastern Europe, particularly in Ukraine, Russian Federation, Lithuania and Latvia. The Mediterranean countries (Israel, Italy and Spain) feature in the middle of the range (Boyce et al, 2004).

Family affluence and health

This paper now explores how young people's health and behaviour is related to family affluence. We present results for a variety of health outcomes including eating habits, physical activity, mental health and well-being, which are priority areas for health improvement in Scotland. Details of the health measures are presented in the Technical Appendix. Significant differences between FAS groups are noted in the report using the symbol †.

¹ Reference is made in the text to the relevant chapters from the international report for those readers wishing more detailed information.

Figure 1: Proportion of young people reporting low family affluence

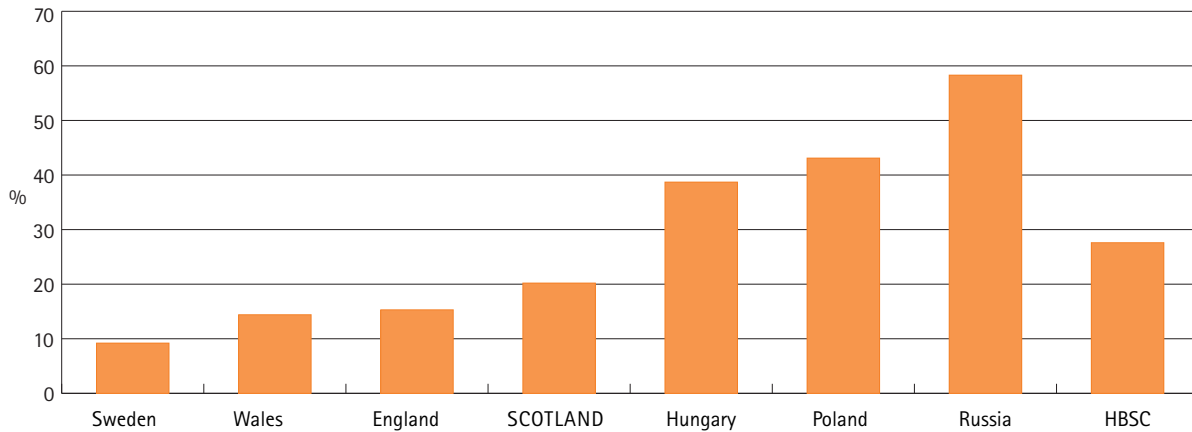
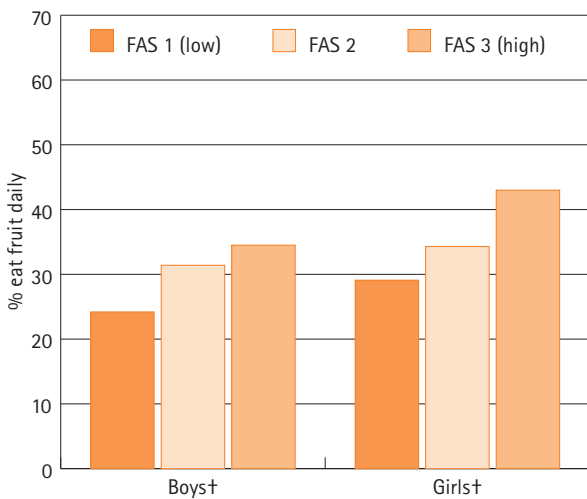


Figure 2: Proportion of 11–15 year olds eating fruit daily



† Significant differences between FAS groups ($p < 0.01$)

Eating habits

The proportions of boys and girls that consume fruit every day increase significantly with increasing family affluence (Figure 2). The same pattern is observed in approximately half of the HBSC countries and is particularly strong in Eastern Europe where a high proportion of young people live in low affluence families (Vereecken et al, 2005).

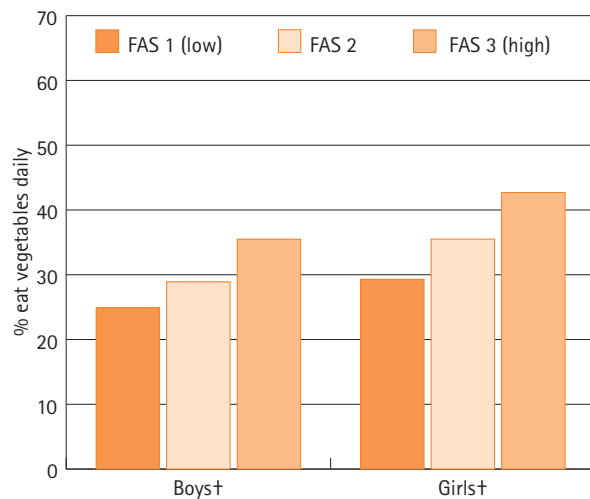
It is also worth noting that consumption of fruit decreases with age for both boys and girls in Scotland, and that girls consume more fruit and vegetables than boys across all age groups.

In Scotland daily vegetable consumption shows the same relationship with family affluence as fruit, i.e. higher rates of consumption in higher affluence families (Figure 3).

While almost half of young people eat either fruit or vegetables daily only 18% of boys and 24% of girls in Scotland eat both. Young people who eat both are more likely to come from high affluence families.

Compared with fruit and vegetables, an opposite trend in terms of high affluence/low prevalence is seen in the relationship between family affluence and the consumption of fizzy drinks². Both boys

Figure 3: Proportion of 11–15 year olds eating vegetables daily



† Significant differences between FAS groups ($p < 0.01$)

and girls from more affluent families are less likely to drink fizzy drinks daily however this is only significant for girls (Figure 4).

Fizzy drink consumption rises with age for both boys and girls, and boys consume more than girls for all age groups. These findings are in line with most HBSC countries (Vereecken et al, 2004).

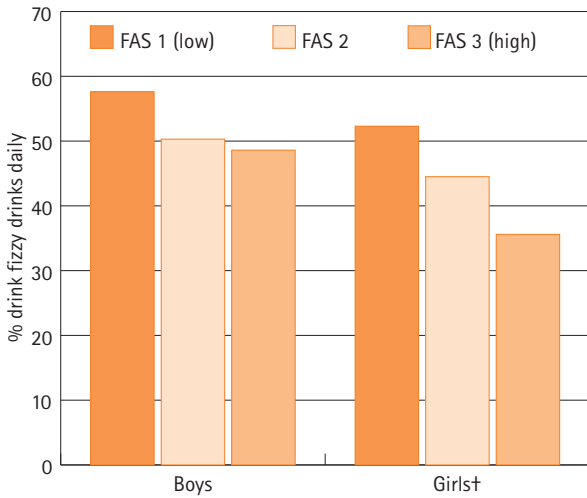
Physical activity

In Scotland young people living in affluent families are more likely to report being active for at least 60 minutes on five or more days per week than those living in less affluent circumstances (Figure 5). Across Europe young people's physical activity shows a similar relationship with family affluence and generally there is a stronger effect among girls (Holstein et al, 2004).

Among both boys and girls in Scotland physical activity decreases with age and these differences are more marked for girls. At age 15 boys report on average four days per week when they were active for at least 60 minutes, while girls report three days. Similar changes in physical activity across gender and age were found in almost all HBSC countries.

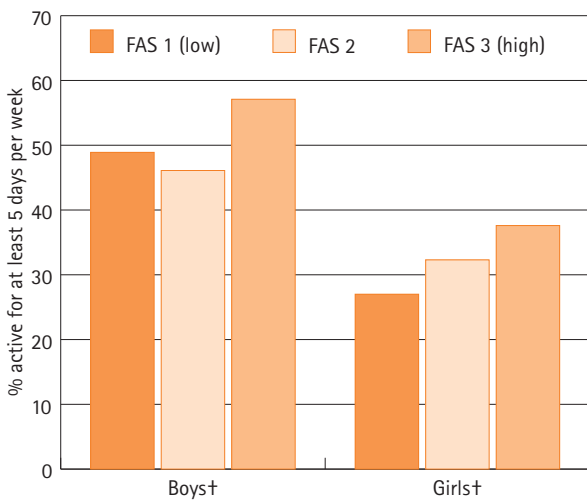
2 'coke or other soft drinks that contain sugar'

Figure 4: Proportion of 11–15 year olds consuming fizzy drinks daily



† Significant differences for girls between FAS groups ($p < 0.01$)

Figure 5: Proportion of 11–15 year olds active for at least 60 minutes 5–7 days per week



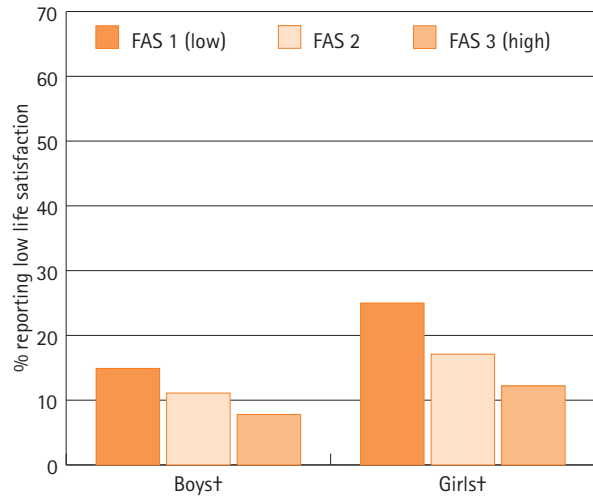
† Significant differences between FAS groups ($p < 0.01$)

Mental health and well-being

Three indicators of mental health and well-being were examined in relation to family affluence; these were life satisfaction, perceived health status and health complaints (see Technical Appendix for details). The proportion of young people reporting dissatisfaction with their life decreases significantly as family affluence increases. Young people from low affluence families are about twice as likely to report feeling negative about their lives than those from high affluence families (Figure 6).

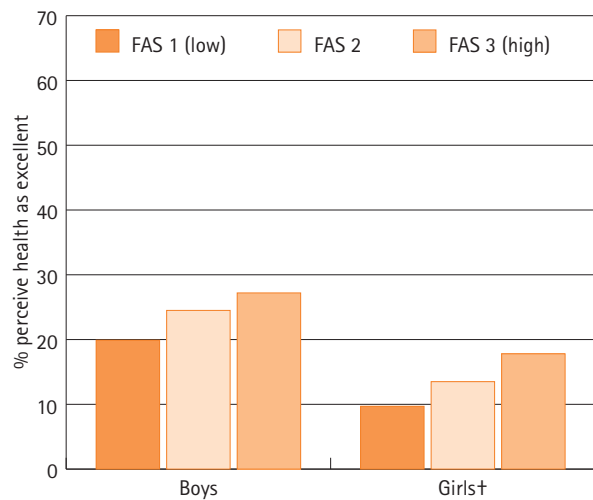
In Scotland twice as many girls (20%) compared to boys (10%) report low life satisfaction at age 15 and, in nearly all HBSC countries, girls report lower life satisfaction than boys at the ages of 13 and 15.

Figure 6: Proportion of 11–15 year olds who report low life satisfaction



† Significant differences between FAS groups ($p < 0.01$)

Figure 7: Proportion of 11–15 year olds who report excellent health



† Significant differences for girls between FAS groups ($p < 0.01$)

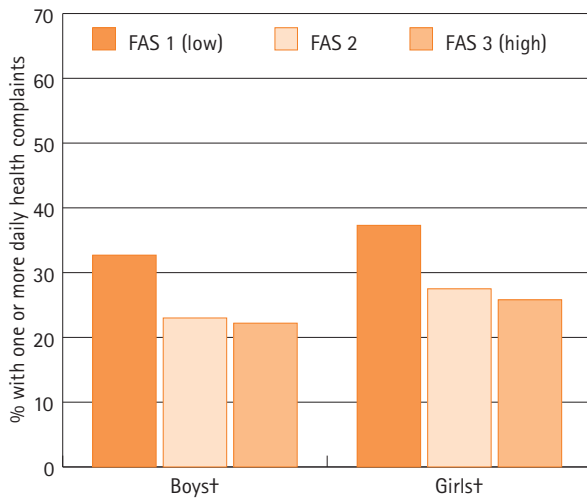
There is a trend for young people with higher family affluence to be more likely to report their health as excellent (Figure 7). Girls from high affluence families are almost twice as likely to report excellent health than those in the low affluence group.

Boys in Scotland are twice as likely to report excellent health as girls. Again this gender difference is consistent with all other HBSC study countries (Torsheim et al, 2004; Cavallo et al, 2006).

In Scotland boys and girls with low family affluence are more likely to report at least one daily health complaint, such as headache, stomach-ache or feeling low (Figure 8). This is true of several other Western European and North American countries.

Girls in Scotland are more likely to report daily health complaints than boys. This gender difference increases with age and can be seen across many countries (Torsheim et al, 2004).

Figure 8: Proportion of 11–15 year olds with at least one daily health complaint



† Significant differences between FAS groups ($p < 0.01$)

Discussion

The clear relationships observed between family affluence and eating patterns, physical activity and mental health discussed above are not found for smoking and drinking alcohol. The Scottish HBSC data revealed no significant associations between family affluence and weekly smoking or drinking alcohol. Most HBSC countries show no significant relationship between family affluence and smoking. For those that do conflicting results are found; while in some countries young people from low affluence families are more likely to smoke, in others the opposite is true (Holstein et al, 2004).

The importance of addressing health inequalities in Scotland has been discussed in *Our National Health* report (Scottish Executive 2000). The majority of indicators for monitoring and targeting inequalities, however, relate to younger children and adults (Scottish Executive 2003). This paper highlights the fact that health inequalities also exist among adolescents. Investigation and careful monitoring of adolescent health outcomes are required in order to gain a thorough understanding of the complex reasons for these inequalities and to address these inequalities through government policy. This paper is descriptive, based on one cross-sectional survey. Future briefing papers will assess the trends in the association between family affluence and health.

TECHNICAL APPENDIX

Scotland, along with 34 other countries in Europe and North America, participated in the 2001/2002 Health Behaviour in School-Aged Children (HBSC): WHO Collaborative Cross-National Survey (Currie, Todd and Smith, 2003: HBSC Briefing Paper 1). Previous surveys were conducted in 1989/90, 1993/94 and 1997/98 and findings from these have been published in a series of international and Scottish reports and briefing papers listed at the end of this document and can be found at www.education.ed.ac.uk/cahru/publications/hbhc.html. Key findings from the 2001/2 cross-national survey have been published in an international report *Young People's Health in Context* (Currie et al, 2004).

The 2002 HBSC survey in Scotland

The 2002 HBSC survey was carried out in 198 schools across Scotland. Pupils from mixed ability classes anonymously completed questionnaires in the classroom. The sample was nationally representative and included pupils from Primary 7 (11-year-olds, $n=1743$), Secondary 2 (13-year-olds, $n=1512$) and Secondary 4 (15-year-olds, $n=1149$) giving a total sample of 4,404. On completion of fieldwork, national data files were prepared using the standard documentation procedures of the HBSC International Protocol and submitted to the HBSC International Data Bank at the University of Bergen, Norway. Data files were checked, cleaned and returned to countries for approval prior to their placement in the international file. Results from the 2001/02 HBSC international survey represent more than 160,000 young people in 34 countries. Further details can be found in *Young People's Health in Context* (Currie et al, 2004).

Measures used in this briefing paper

FAS

The children surveyed were assigned low, medium or high FAS classification where FAS 1 (score = 0–3) indicates low affluence; FAS 2 (score = 4, 5) indicates middle affluence; and FAS 3 (score = 6, 7) indicates high affluence. Scores were calculated using the following survey items:

Does your family own a car, van or truck? Response categories were: *No* (= 0), *Yes, one* (= 1), *Yes, two or more* (= 2). This item is a component of a Scottish deprivation index developed by Carstairs and Morris (Carstairs & Morris, 1991), which is used widely in research on health inequalities.

Do you have your own bedroom for yourself? Response categories were: *No* (= 0), *Yes* (= 1). This item is a simple proxy for overcrowding, classified by Townsend (Townsend, 1987) as housing deprivation; it is also a component of the Scottish deprivation index.

During the past 12 months, how many times did you travel away on holiday with your family? Response categories were: *Not at all* (= 0), *Once* (= 1), *Twice* (= 2), *More than twice* (= 2). This item is a measure of deprivation in home facilities (Townsend, 1987).

How many computers does your family own? Response categories were: *None (= 0), One (= 1), Two (= 2), More than two (= 2)*. This item was added to the 2001/2002 survey questionnaire to identify families with higher socioeconomic status in affluent countries.

Fruit, vegetables and soft drinks containing sugar

Scores were calculated from the questions: *How many times a week do you usually eat or drink Fruit/Vegetables/Coke or other soft drinks that contain sugar?* Response options were: *Never, Less than once a week, Once a week, 2–4 days a week, 5–6 days a week, Once a day every day, Every day more than once.*

Physical activity

Scores were calculated using an average from the following two survey items: *In the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?*

Over a typical or usual week, on how many days are you physically active for a total of at least 60 minutes per day?

Response options were: *0 days, 1 day, 2 days, ...7 days.*

Life satisfaction

Life satisfaction was measured using the Cantril Ladder (Cantril, 1965). The following question was asked accompanying a picture of a ladder: *Here is a picture of a ladder – the top of the ladder 10 is the best possible life for you and the bottom is the worst possible life – in general where on the ladder do you feel you stand at the moment?* A score of 6 or more was defined as a high life satisfaction.

Perceived health

The question used was: *Would you say your health is...* Response options were: *Excellent, Good Fair, Poor.*

Health complaints

Young people were given a checklist and asked: *In the last 6 months how often have you had the following: Headache, Stomach-ache, Back-ache, Feeling low, Irritability or bad temper, Feeling nervous, Difficulties in getting to sleep, Feeling dizzy.* Response options were: *About every day/More than once a week/About every week/About every month/Rarely or never.*

Map of countries participating in 2001/2 HBSC study



Countries participating in the 2001/2 HBSC study

| | | | |
|-------------------|-----------|-----------------|-----------------|
| Austria | Finland | Lithuania | Scotland |
| Belgium (Flemish) | France | Macedonia, tfyr | Slovak Republic |
| Belgium (French) | Germany | Malta | Slovenia |
| Canada | Greece | Netherlands | Spain |
| Croatia | Greenland | Norway | Sweden |
| Czech Republic | Hungary | Poland | Switzerland |
| Denmark | Israel | Portugal | Ukraine |
| England | Italy | Rep. of Ireland | USA |
| Estonia | Latvia | Russia | Wales |

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