Public Health England

Protecting and improving the nation's health

Wellbeing of adolescent girls: An analysis of data from the Health Behaviour in School-aged Children (HBSC) survey for England, 2014

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. We do this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. We are an executive agency of the Department of Health, and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the NHS in a professionally independent manner.

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Executive summary

This report summarises data on girls' emotional health and wellbeing, informed by an analysis of data from the health behaviour in school-aged children (HBSC) study for England, 2014.[1] The data draws on responses from 5,335 students aged 11-15 years who completed the HBSC survey in England.

This thematic report presents data from the most recent survey and illustrates associations between wellbeing of adolescent girls and demographics and social context. Relationships of importance and relevance which demonstrate considerable differences have been reported – guided by previous work on HBSC which has mapped protective factors across individual, family, school and local community domains.

This report is one of a series of three, the others covering cyberbullying and self-harm.

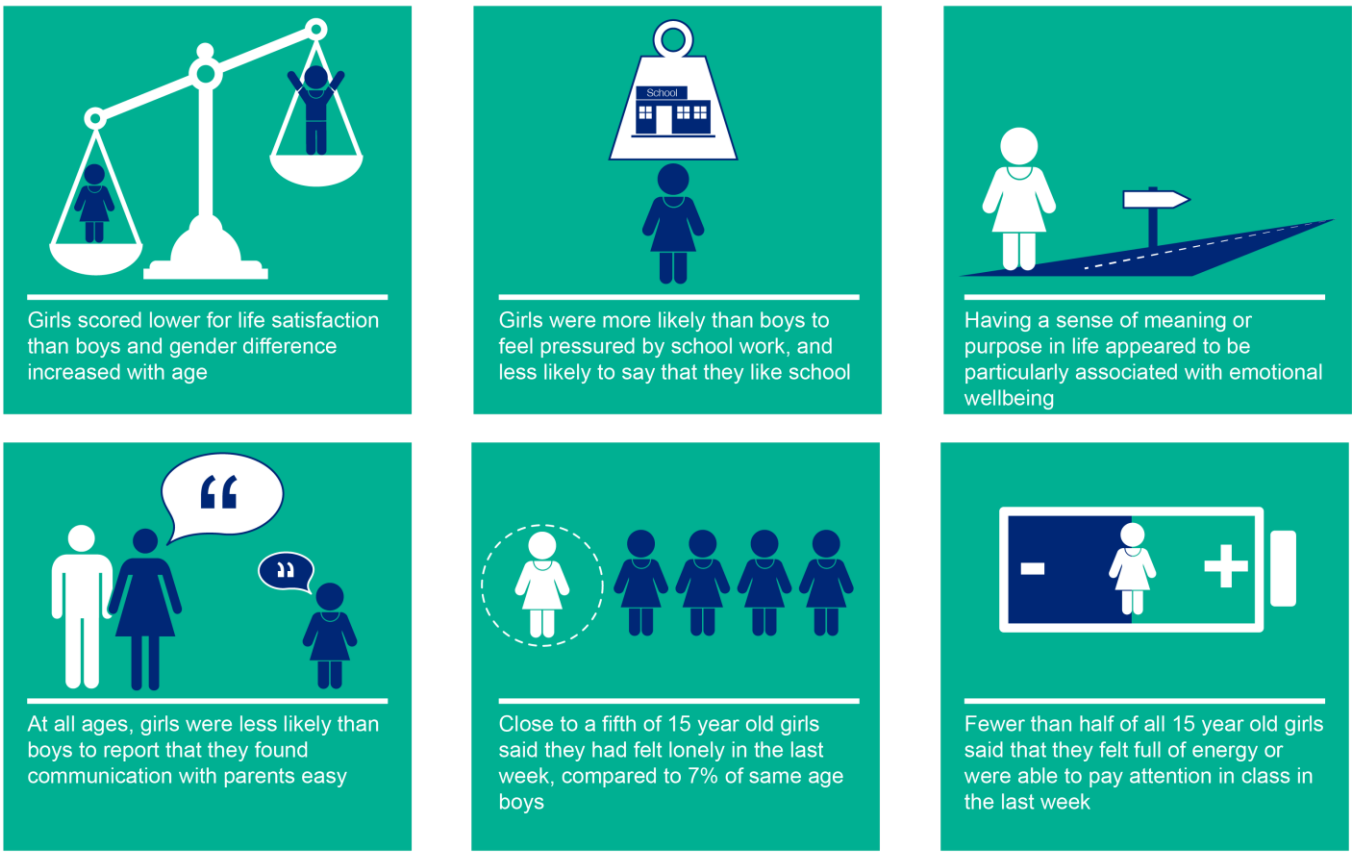
This report is intended for a range of audiences interested in promoting children and young people's mental wellbeing, including for example local public health specialists, school nurses, head teachers and college principals, CCG leads, local councillors, CAMHS leads, mental health strategic clinical networks and local children and young people's mental health commissioners.

Key points:

- across a range of indicators of emotional health and wellbeing, girls reported poorer outcomes than boys and the gap widened from age 11 to 15 years
- girls scored lower for life satisfaction than boys and this gender difference increased with age (Figure 1)
- fewer than half of all 15 year old girls said that they had felt full of energy or were able to pay attention in class in the last week (Table 1)
- close to a fifth of 15 year old girls said they had felt lonely in the last week, compared to 7% of same age boys (Table 1)
- close to a fifth of 15 year old girls said they had felt lonely in the last week, compared to 7% of same age boys (Table 1)
- girls at all ages were more likely than boys to report experiencing multiple health complaints on a weekly basis
- girls were less likely to participate in protective health behaviours than boys such as eating breakfast and taking regular exercise
- girls were more likely than boys to say that they were 'too fat'
- girls find communication with parents less easy than their male peers

- girls were more likely than boys to rate their academic achievement as above average or feel pressured by school work
- girls were less likely than boys to say that they like school
- subjective life satisfaction was strongly associated with health outcomes, and girls with the lowest life satisfaction also had the poorest reported health outcomes.

Wellbeing of adolescent girls: key stats



Referenced from the Health Behaviour in School Age Children survey http://www.hbscengland.com/wp-content/uploads/2015/10/National-Report-2015.pdf

Introduction

Data source – the HBSC study

The Health Behaviour in School-aged Children (HBSC) is a unique cross-national research study conducted in collaboration with the World Health Organization (WHO) Regional Office for Europe.[2] The study is carried out every four years in over 40 countries across Europe and North America. It aims to gain new insight into, and increase our understanding of the health and wellbeing and health behaviours of young people (aged 11, 13 and 15) as well as their social context. Further details about the HBSC can be found in Appendix 1.

In 2013/14, 5,335 young people aged 11, 13, and 15 years participated in the survey in England, with results published in October 2015.[1] England has participated in the HBSC since 2002, enabling time trends to be calculated since then. This report presents data from the most recent HBSC survey conducted in England from the 2013/14 survey cycle. Details of the methodology used can be found in Appendix 3.

Scope of analysis

The HBSC survey includes questions relating to:

life satisfaction
self-reported emotions and feelings in the past week
Health Related Quality of Life
frequency of range of health complaints

Differences in responses to these questions by gender, age and socio-economic status are reported.

The HBSC survey also includes questions spanning the domains of individual, family and friends, school and community and these were investigated for their relationship with life satisfaction and with feeling low weekly, with key findings reported. Full details of the HBSC are available in Appendix 2b.

Factors associated with wellbeing

A number of individual and external factors were investigated for their relationship with life satisfaction and with feeling low weekly. These factors related to the domains of (1) individual, (2) family and friends, (3) school, and (4) neighbourhood. Full details of these domains can be found in Appendix 2a.

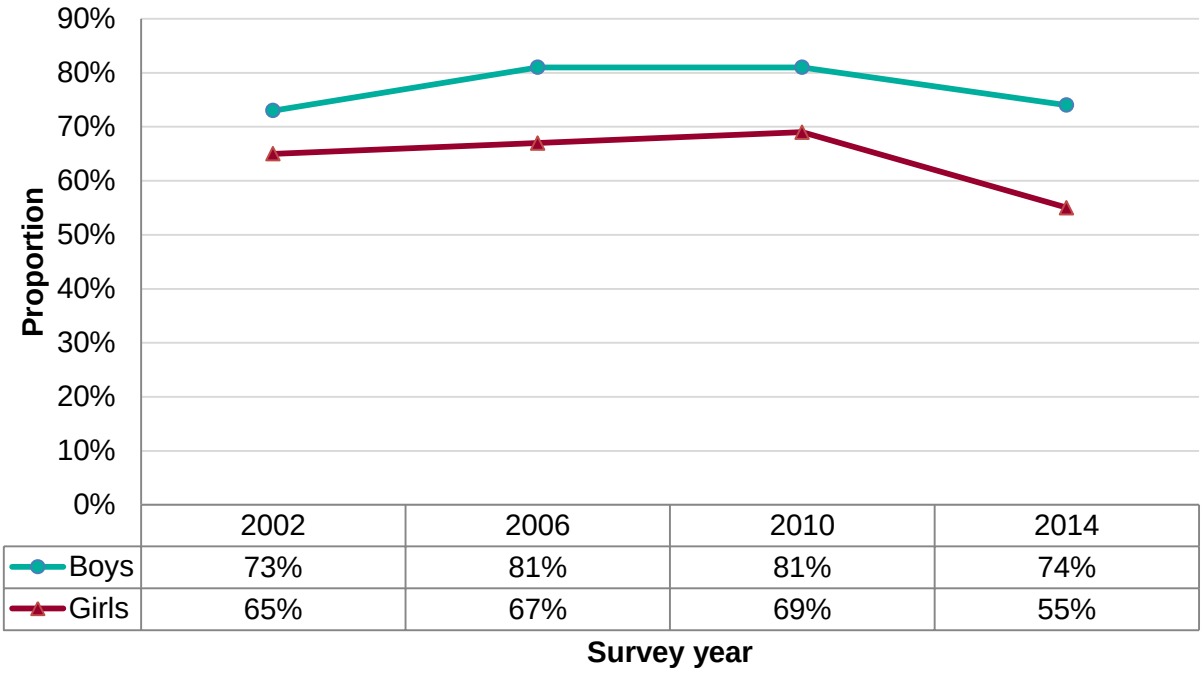
[1] The full report is available at: http://www.hbsc.org/

Key findings

Life satisfaction

Life satisfaction decreased with age among both boys and girls in 2014, and mid-adolescent (15 year old) girls appeared to be particularly badly affected. At age 11 the gender gap was small but by age 15 across all years of data collection this group reported their life satisfaction to be lower than both boys of the same age, and younger girls (Appendix 4, 5). Reported life satisfaction for this group of girls dropped particularly between 2010 and 2014 so that the proportion that can be said to be 'thriving' (high life satisfaction score, 7 and over) reduced by 10 percentage points (from 65% in 2010 to 55% in 2014; Appendix 4), while the proportion considered as 'suffering' (lowest life satisfaction score, 0 to 4) increased from 10% to 16% in 2014 (Appendix 5). Further, the gap between boys and girls in terms of life satisfaction over the same time period appears to have widened (Figure 1).

Figure 1. Proportion of 15 year olds categorised as 'thriving' by gender, 2002 to 2014



	2002	2006	2010	2014
Boys	73%	81%	81%	74%
Girls	65%	67%	69%	55%

Source: Health Behaviour in School-aged Children (HBSC) survey

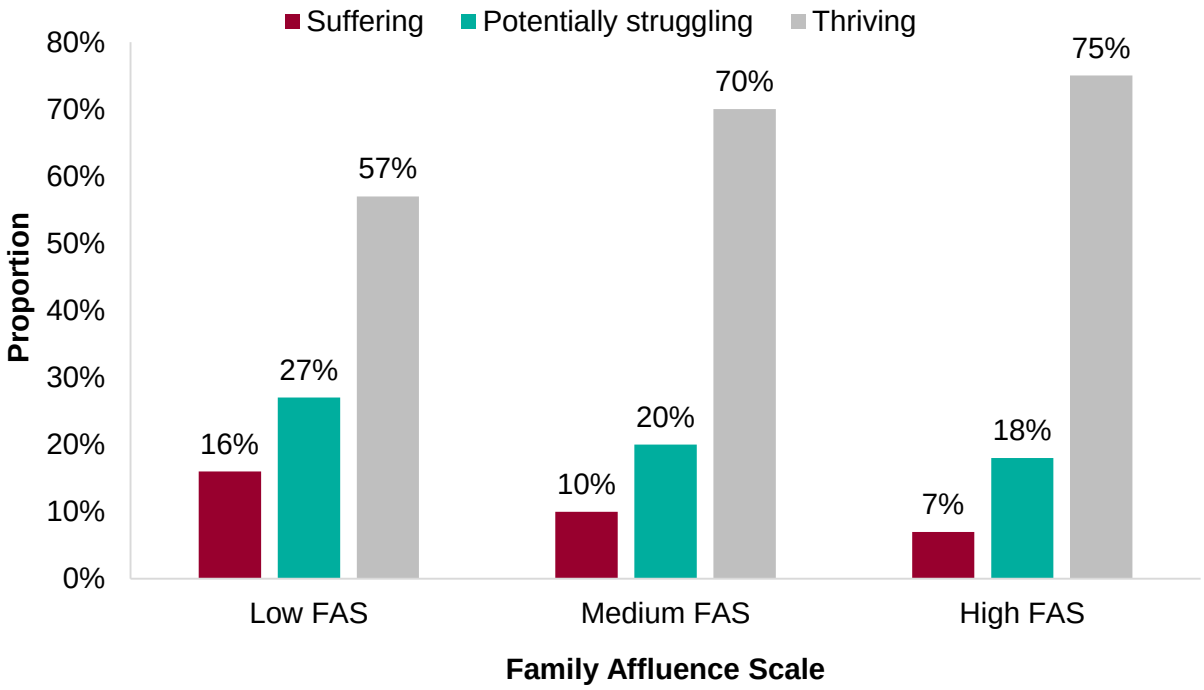
Life satisfaction increased with increasing family affluence (measured by the family affluence scale, FAS)[2]: 13% of young people in the lowest FAS group (compared to 6% in the highest

[2] The FAS is a four-item measure of family wealth and considers the number of cars, holidays, PCs and bedrooms in a household.

FAS group) scored as 'suffering' for life satisfaction, and 63% in the lowest FAS group scored as 'thriving' compared to 79% in the highest FAS group (Appendix 6).

When comparing by life satisfaction category, girls (across all ages) in the lowest FAS group are more likely to be scored as 'suffering' (life satisfaction score 0-4), and less likely to be scored as 'thriving' (life satisfaction score 7-10), than girls in the higher FAS categories (Figure 2).

Figure 2. 11-15 year old girls life satisfaction category by family affluence scale (FAS)



Source: Health Behaviour in School-aged Children (HBSC) survey

Taken together, this shows that subjective life satisfaction is worse for girls than boys and for older girls in particular.

Self-reported emotions and feelings

Self-reported feelings and emotions are valuable indicators of a young person's overall health and wellbeing and their ability to participate in school, acquire academic competence and navigate social interactions positively. Specifically, young people were asked about feeling full of energy, being able to pay attention (in general), and feeling lonely as further indicators of their emotional wellbeing.

Overall, girls were less likely to report high levels of energy (feeling full of energy; 45%); compared to boys (57%). Levels of energy were found to decrease with age among both boys and girls; however among girls the decline was steeper, with the gender difference being considerably more prominent among 15 year olds.

Eight per cent of young people said they had felt lonely in the last week. Feelings of loneliness increased only slightly with age among boys, whereas girls' reports of loneliness show a more dramatic increase across the three age categories (Table 1). Feeling able to pay attention decreased with age, and the decline was steeper for girls than boys (Table 1).

Table 1. Self-reported emotions and feelings, by age and gender

Emotion or feeling	11 year olds		13 year olds		15 year olds		All ages	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Felt full of energy	67%	63%	55%	44%	45%	23%	55%	44%
Felt able to pay attention	76%	80%	65%	62%	54%	44%	66%	63%
Felt lonely	4%	5%	5%	11%	7%	19%	5%	11%

Source: Health Behaviour in School-aged Children (HBSC) survey

Young people in the highest FAS group were somewhat more likely to say that they felt able to pay attention and that they felt full of energy than young people in the lowest FAS group, but there was no consistent difference found for feeling lonely (Appendix 7).

Health related quality of life (HRQL)

There was virtually no difference between girls' and boys' scores on the HRQL KIDSCREEN measure at age 11, however by age 13 girls were scoring lower than boys (45.3 compared to 47.9) and by age 15 the gender gap had widened further (girls 41.3; boys 46.2).

Girls' KIDSCREEN scores also differed significantly depending on their life satisfaction score, with girls reporting lower life satisfaction also scoring lower for HRQL (Appendix 8).

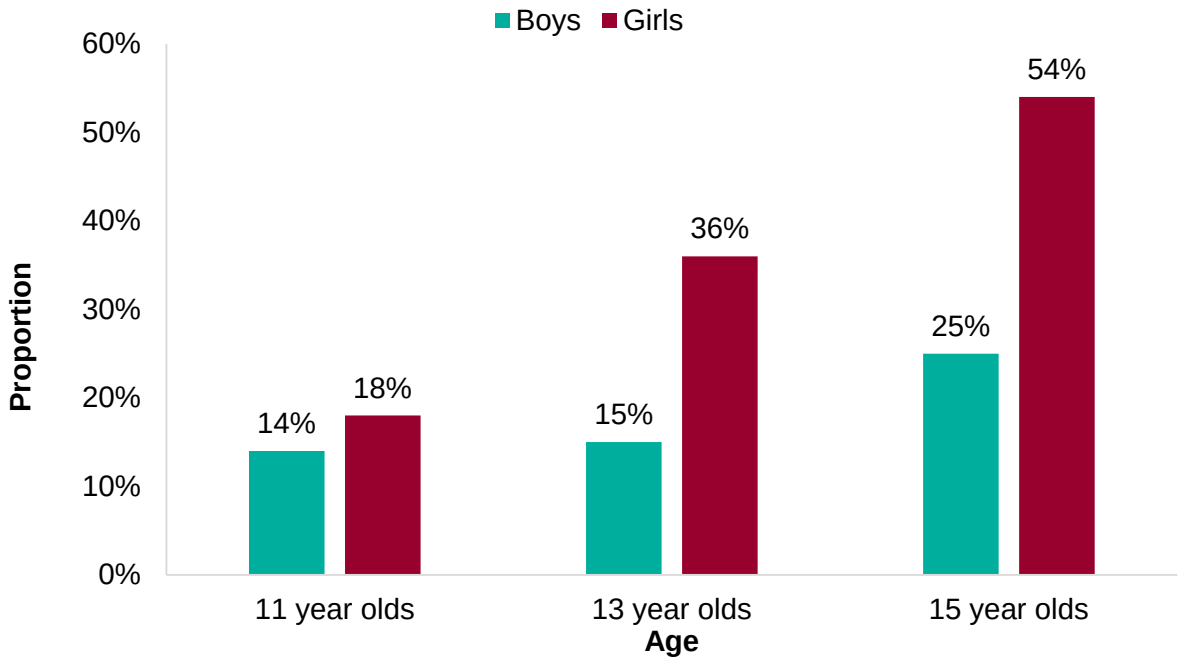
Health complaints

Across all three age groups, girls were generally more likely to report regularly experiencing multiple health complaints on a weekly basis. Differences between boys and girls were largest at age 15, and girls were more likely than boys to report feeling low weekly. Although 'feeling low' increased with age in both boys and girls, this was more dramatic among girls (Figure 3).

However, no marked difference was found for feeling low by either FAS or free school meals (Figures 4 and 5). Girls were also more likely than boys to report multiple (two or more) weekly health complaints: the difference was small at age 11 (girls 44%; boys 41%) but the gap widened substantially by age 15 (girls 72%; boys 49%, (Figure 6).

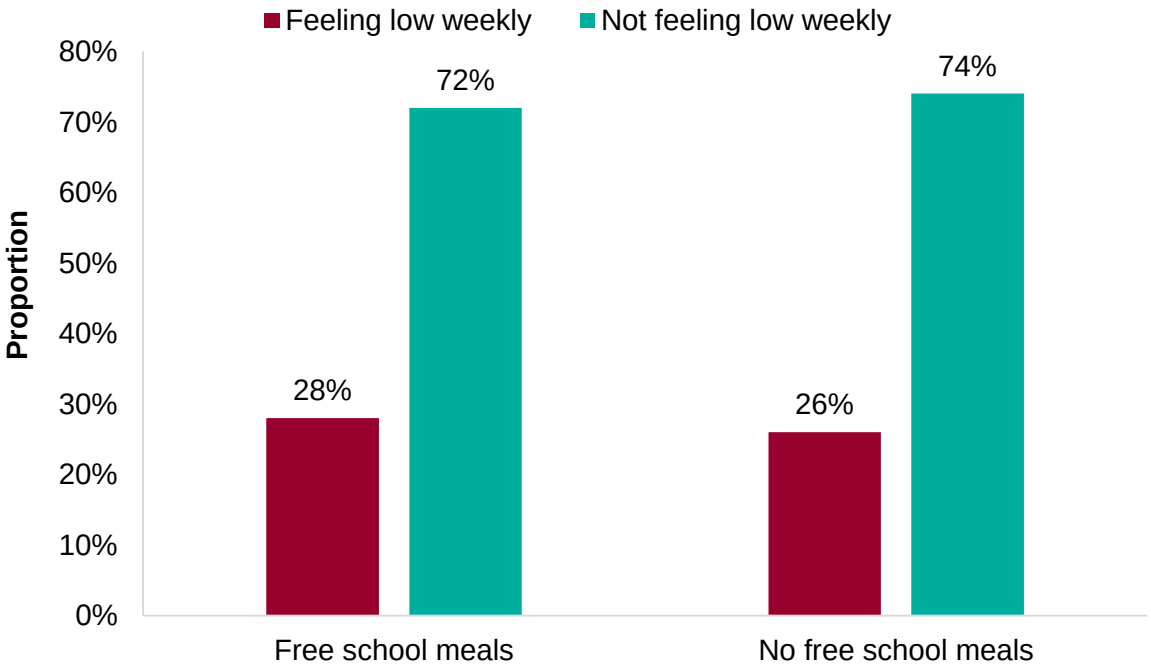
However, the proportion of both boys and girls that reported multiple weekly health complaints has decreased since 2002 (Figure 7).

Figure 3. Feeling low, by age and gender



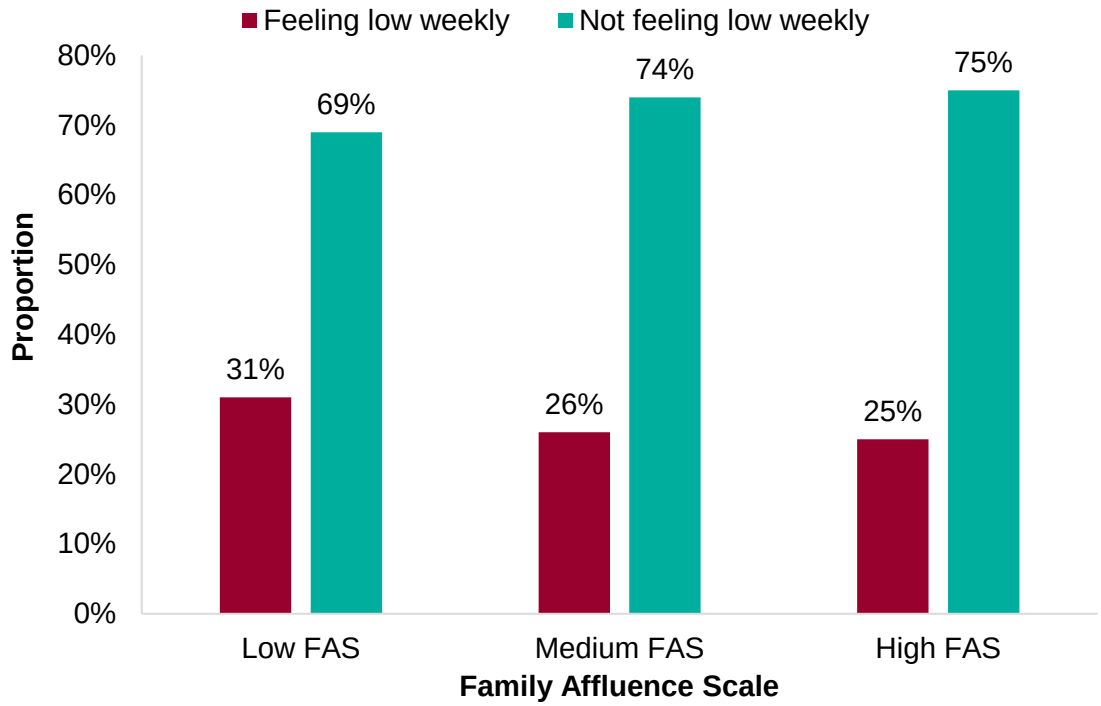
Source: Health Behaviour in School-aged Children (HBSC) survey

Figure 4. Feeling low weekly by free school meals (boys and girls)



Source: Health Behaviour in School-aged Children (HBSC) survey

Figure 5. Feeling low weekly by family affluence scale (FAS) (Boys and girls)



Source: Health Behaviour in School-aged Children (HBSC) survey

Figure 6. Young people who experience two or more health complaints weekly

Source: Health Behaviour in School-aged Children (HBSC) survey

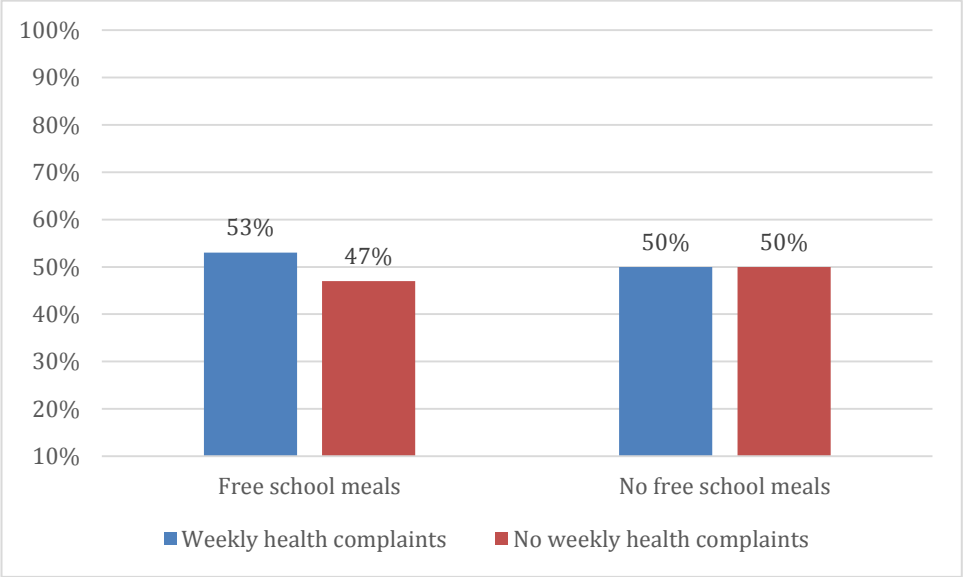
Figure 7. Young people who report experiencing two or more weekly health complaints, 2002 to 2014

	2002	2006	2010	2014
Girls	67%	58%	60%	57%
Boys	62%	51%	50%	44%

Source: Health Behaviour in School-aged Children (HBSC) survey

No difference in multiple weekly health complaints were found between those receiving and those not receiving free school meals.

Figure 8. Weekly health complaints by free school meals (Boys and girls)



Source: Health Behaviour in School-aged Children (HBSC) survey

The likelihood of experiencing multiple health complaints varied greatly by life satisfaction level for girls. Among girls scoring in the lowest tertile for life satisfaction (those considered to be

'suffering'), 60% experienced weekly multiple health complaints compared to just 2% among those in the highest tertile ('thriving') (Appendix 9). Further, girls who were 'struggling' were more than three times as likely to report having ever self-harmed (67%) than girls categorised as 'thriving' (19%; Appendix 9). However, despite these differences in reports of physical health complaints and poorer emotional wellbeing, very similar proportions of girls across all levels of life satisfaction reported having visited a GP in the last year (Appendix 10).

Variables associated with emotional health and wellbeing

1. Individual factors

A number of factors specific to the individual, from personal beliefs and ability to withstand pressure, to engaging in health promoting or risky behaviours, can be found to be associated with emotional wellbeing. Presented here are psychological factors including spirituality, self-efficacy, and self- image, and engagement in behaviours like physical activity, healthy eating and risk taking.

Spirituality

Having a sense of meaning or purpose in life appeared to be particularly associated with emotional wellbeing, in that young people with higher life satisfaction, or who did not report feeling low weekly, rated this as more important. Putting importance on feeling connected to a higher spiritual power also appeared to be related to life satisfaction and to feeling low, but no differences were found for placing importance on prayer or meditation (Appendix 10, Appendix 11).

Self-efficacy

Self-efficacy refers to an individual's faith in their own ability to carry out a task or behaviour, even under less than optimal circumstances (Bandura 1982). HBSC England measures General Self-Efficacy (GSE) which is an indicator of a person's belief in their general ability to cope under pressure and persist in the face of adversity. It is a 10-item instrument, where final scores range between 10-40. A higher score is indicative of stronger GSE, and the average score tends to fall around 29. Increasing life satisfaction appeared to correlate with increasing sense of self-efficacy, and young people (both genders) who reported feeling low weekly scored lower on general self-efficacy than those who did not feel low weekly (Appendix 12).

Self-image

Although a similar proportion of boys and girls at age 11 said that their body was 'about the right size', fewer girls than boys said so at both age 13 (girls 49%; boys 60%) and age 15 (girls, 41%; boys, 53%). At age 15, 50% of girls said they thought they were 'too fat'. This proportion has remained unchanged since 2002. At this age, girls were also more likely than boys to say they were on a diet or doing something else to lose weight (girls 25%; boys 9%), and again this proportion has stayed virtually the same since 2002. Girls in the lowest life satisfaction category

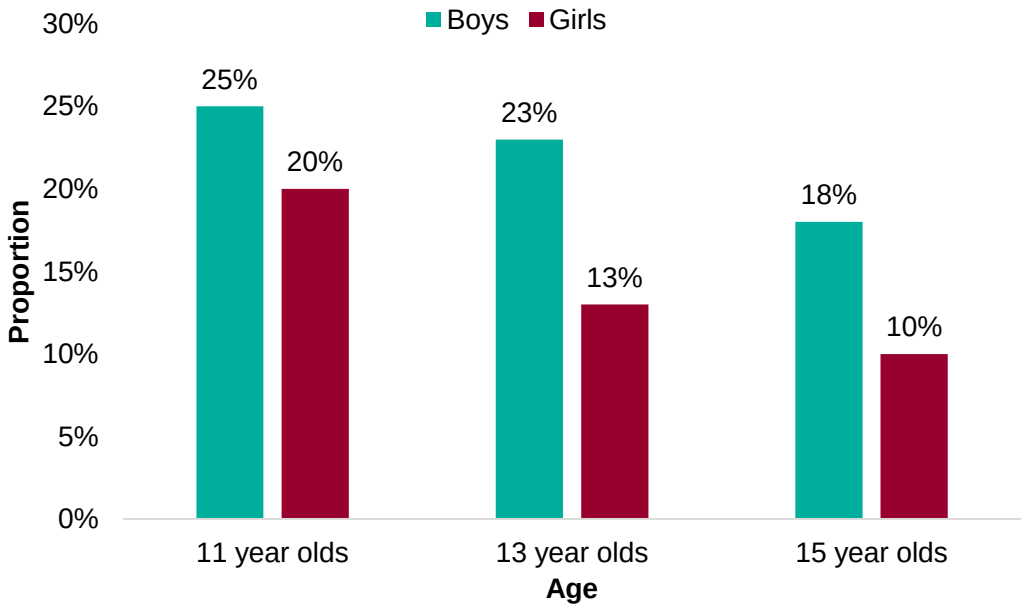
were more than twice as likely as those in the highest to say that they thought their body was 'too fat' with similar differences found between those feeling low weekly and those who did not (Appendix 13).

Diet, physical activity and sleep

Across all three ages (11, 13, 15), girls were less likely to always eat breakfast on weekdays than boys, a difference that was particularly marked among 13 year olds (girls 50%; boys 71%). Girls were also more likely than boys to say that they never eat breakfast during the week (more than 20% among 13 and 15 year old girls). Young people in the lowest life satisfaction group were the least likely to report always having breakfast on weekdays (Appendix 14). Smaller differences were also found between the different life satisfaction groups for fruit and vegetable consumption, and physical activity.
Similar to findings for life satisfaction, young people who said that they felt low weekly were less likely to eat breakfast, get five portions of fruit and vegetables every day, meet physical activity recommendations, and get enough sleep to concentrate (Appendix 15).

Overall girls were less likely than boys to be physically active, and likelihood of meeting physical activity recommendations of at least one hour per day declined with age among both boys and girls (Figure 9).

Figure 9. Young people who meet physical activity recommendations by age and gender



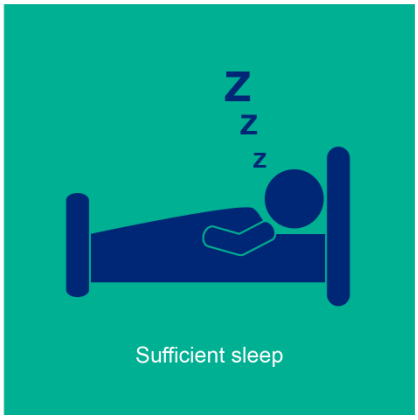
Source: Health Behaviour in School-aged Children (HBSC) survey

Risk behaviours

Although risk behaviours have gone down dramatically over the last decade among both girls and boys,[1] there still appears to be a small group of young people that remain vulnerable to risk taking behaviours and who may be putting themselves at risk through engaging in multiple risk

behaviours. Among girls, those with the lowest life satisfaction were found to be more likely to have both consumed alcohol in the last month and ever been drunk (consumed alcohol to excess), and ten times as likely to report having smoked tobacco in the last month as those with the highest life satisfaction (Appendix 16). They were also more likely to report having ever used cannabis, having had sex, and being involved in physical fighting.

Protective factors: individual



2. Friends and family

It is important to understand the wider context of young people's everyday environment when considering their emotional wellbeing and how individual, family, school and wider community factors might act as determinants of gendered patterns in health and wellbeing. These interactions are complex and while it is difficult to pinpoint cause and effect with certainty, it is interesting to observe patterns and associations in providing insights regarding factors which might be protective of girls' wellbeing.

At all ages, girls were less likely than boys to report that they found communication with parents easy – this was particularly noticeable for communication with fathers, and at age 15 fewer than half (48%) of girls say that talking to their father is easy (compared to 66% of boys). Fifteen year old girls were also less likely than boys to agree that 'my family listen when I speak' (girls 67%; boys 77%). At all ages, girls were less likely than boys to agree that they had a say in how to spend their free time, and at age 15 the difference was more than 10 percentage points (girls 47%; boys 59%).

A clear relationship between family communication and life satisfaction was found, with girls in the highest life satisfaction category being substantially more likely to report easy communication with both mothers and fathers than girls in the lowest group. Friendships also show an association with life satisfaction, with young people in the highest life satisfaction

category being most likely to say they have friends with whom they can share joys and sorrows. Similar trends were found for feeling low weekly (Appendix 17, Appendix 18).

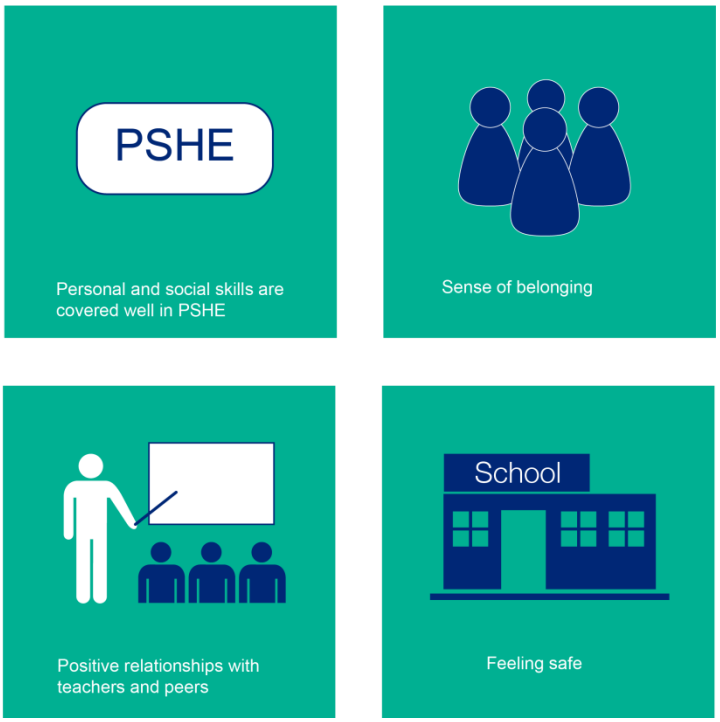
The HBSC study also used a composite measure of social support, the Multiple Scale of Perceived Social Support (MSPSS), to assess young people's perception of support by peers as well as family. Scores range from 0 to 8, with higher scores indicative of higher social support. Among girls in the current study, those with the lowest life satisfaction scored significantly lower for social support than those with the highest life satisfaction, suggesting that those most in need of support are least likely to receive it (Appendix 19).

Protective factors: family

3. School life

Overall, young people (both girls and boys) in the lowest life satisfaction category reported less favourable views of school life, ranging from rating their academic achievement lower to being less likely to perceive teachers and classmates as being supportive (Appendix 20). Similar results were found for 'feeling low' (Appendix 21). Across all three ages surveyed, girls were more likely than boys (by around 10 percentage points) to rate their academic achievement as good or very good, however by age 15 fewer girls than boys (15% compared to 21%) say that they like school 'a lot', and 41% of girls at this age say that they feel pressured 'a lot' by school work compared to 19% of boys.

Protective factors: learning environment

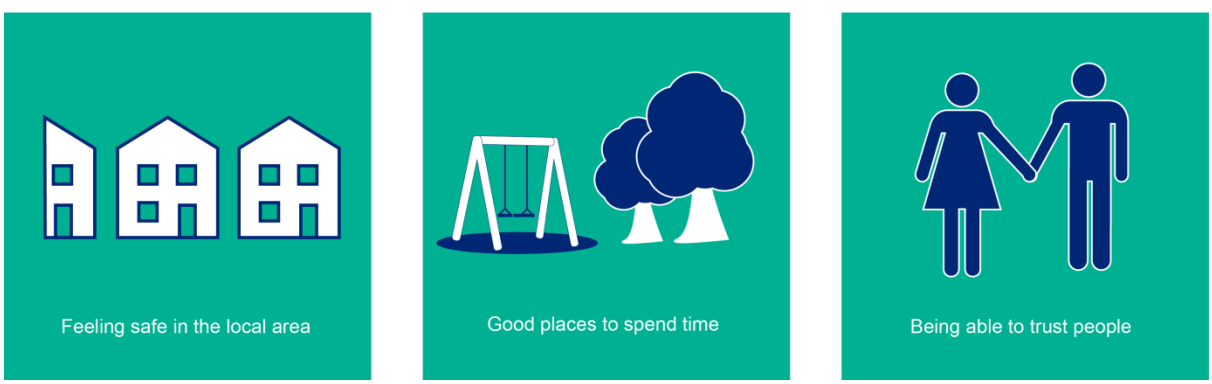


4. Local community/neighbourhood

Young people in the lowest life satisfaction category were less likely to report a positive sense of neighbourhood and community, by being less likely to say they felt safe in the area they lived, less likely to report there being good places to spend free time, and feeling less able to ask for help from neighbours (Appendix 22). Similar trends were found for feeling low weekly (Appendix 23).

Younger adolescents were more likely to have a positive view of their community and neighbourhood than older adolescents, and boys were somewhat more likely to say they felt safe in their area than girls (Appendix 24).

Protective factors: community



Conclusions

Each of the domains influencing adolescent girls' lives has implications for their health and emotional wellbeing. At an individual level, whilst behaviours such as balanced nutrition, regular physical activity, and sufficient sleep contribute to emotional as well as physical health and wellbeing, it would appear that girls that are most likely to self-report poor life satisfaction are those that are the least likely to engage in such healthy behaviours. This may become a self-perpetuating cycle where positive self-care may become more difficult to engage in as emotional health diminishes meaning that girls in this group would need extra support for emotional health as well as for establishing positive health behaviours.

The stark differences in experience of multiple health complaints noted between girls with the lowest and highest life satisfaction is a cause for concern. Physical symptoms like headaches and stomach aches may well be symptoms, as well as causes, of poor emotional wellbeing and should not be dismissed as typical of adolescents – the HBSC data shows that very few girls with high life satisfaction report experiencing multiple health complaints on a regular basis.

In terms of social support, girls with the lowest life satisfaction are the least likely to report having good social support from family, friends or school, again highlighting a need for increased resources for this group. Further evidence of the importance of social support for adolescent emotional wellbeing comes from studies showing that communication with fathers may be particularly beneficial. It has been found that young people who have a better relationship with their father have a more positive body image;[3] are less likely to engage in substance use and delinquent behaviour;[4] and have better emotional wellbeing.[5,6] This does not suggest that mothers are irrelevant for young people's wellbeing, however as demonstrated here and by others, young people generally report greater ease of communication with mothers than with fathers, suggesting that there is greater scope for improvement in relationships between adolescents and fathers overall.

The increased importance of peer relationships during adolescence is frequently seen as a defining marker of the necessary individuation taking place during this time period.[7] It appears that although good peer relationships are important to social development, they do not emerge as protective health assets. Although adolescents may be more likely to turn to peers for support, maintaining strong supportive relationships with adults are likely to have the most beneficial impact for young people's health and wellbeing. Support for both parents and teachers, and other adults working with young people, in how to improve and maintain such relationships could contribute towards better emotional health for adolescent girls.

Feelings of belonging in school and teacher connectedness have been found to be associated with wellbeing in young people.[8] In particular, although younger adolescents and those who rate their academic achievement as higher tend to have better emotional wellbeing, teacher connectedness has been found to mediate this association, operating in a protective manner

for older students and those who have lower levels of attainment.[9] This means that strong, supportive relationships in school have the potential to off-set some of the negative gendered impacts of life and developmental circumstances for adolescent girls.

Some of the effects noted in this paper may be due to a relationship between family affluence and life satisfaction; however the large variation between different variables with regards to their relationship with life satisfaction suggests that other factors are also important. The way socio-economic inequalities intersect with gender, both positively and negatively, warrants a more sophisticated level of understanding. Promotion of healthy behaviours (as long as financial restrictions are taken into consideration) is likely to benefit girls regardless of socio-economic status, as is better availability of social support.

Resources and further information

Public Health England (PHE)

Improving young people's health and wellbeing: A framework for public health
www.gov.uk/government/uploads/system/uploads/attachment_data/file/399391/20150128_YP_HW_Framework_FINAL_WP__3_.pdf

Measuring and monitoring children and young people's mental wellbeing: A toolkit for schools and colleges
www.annafreud.org/media/4612/mwb-toolki-final-draft-4.pdf

Children's and Young People's Mental Health and Wellbeing Profiles: a data tool on risk, prevalence and the range of health, social care and education services that support children with, or vulnerable to, mental illness
fingertips.phe.org.uk/profile-group/mental-health/profile/cypmh

Child and adolescent mental health services needs assessments and service snapshots for local authorities and CCGs
atlas.chimat.org.uk/IAS/profiles/aboutdynamicreports

Protecting children and young people's emotional health and wellbeing: A whole school and college approach
cypmhc.org.uk/sites/cypmhc.org.uk/files/Promoting%20CYP%20Emotional%20Health%20and%20Wellbeing%20Whole%20School%20Approach.pdf

Public Health England's National Child and Maternal Health Intelligence Network produce a number of eBulletins on Child and Maternal Health which you can sign up to
public.govdelivery.com/accounts/UKHPA/subscribers/new

PSHE Association

Key standards in teaching about body image. Guidance on teaching about body image as part of the PSHE curriculum.
www.pshe-association.org.uk/curriculum-and-resources/resources/key-standards-teaching-about-body-image

Guidance on preparing to teach about mental health and emotional wellbeing
www.pshe-association.org.uk/curriculum-and-resources/resources/guidance-preparing-teach-about-mental-health-and

Ground rules for teaching about mental health and emotional wellbeing
www.pshe-association.org.uk/curriculum-and-resources/resources/ground-rules-teaching-about-mental-health-and

Mental health teaching checklist. Guidance about best practice in teaching about mental health.
www.pshe-association.org.uk/curriculum-and-resources/resources/mental-health-teaching-checklist

Girl Guiding

Girl's attitudes survey. A yearly survey giving an insight into how they feel about emerging pressures and what this means for their happiness and wellbeing.
www.girlguiding.org.uk/social-action-advocacy-and-campaigns/research/girls-attitudes-survey/mental-and-emotional-well-being/

Appendices

Appendix 1: The HBSC survey

The survey is administered to a nationally representative sample of young people in each country. HBSC is repeated every four years allowing for temporal trends in young people's health and wellbeing to be examined.

In 2013/14, a random sample of English secondary schools, stratified by region and school type (independent and state), resulted in a sample size of 5,335 students.

The HBSC survey includes questions from different domains of a young person's life, for example; family communication, teacher relationships, perception of school environment and feelings of safety.

For more information about the HBSC study see www.hbsc.org

Appendix 2a: Individual and external factors by domain

1. Individual

Spirituality

Spiritual health is considered by the WHO to be part of the defining components of good health and wellbeing. Young people were asked for the first time in 2014 about the importance they placed on factors related to purpose, meaning and spirituality, specifically:

To have a sense of meaning or purpose

To feel connected to a higher spiritual power

To meditate or pray

Each question was rated from 1 (not at all important) to 5 (very important).

Self-efficacy

Self-efficacy is related to an individual's belief in their own ability to carry out a behaviour and to persist in the face of adversity. The General Self-efficacy Scale[10] was used to assess young people's beliefs in their ability to overcome everyday stressors and obstacles.

Diet, exercise and sleep

Never have breakfast during week

Always have breakfast during week

Eats five portions of fruit and vegetables every day

Meets physical activity recommendations of 1 hour per day

Gets enough sleep to concentrate during the day

Risk behaviours

Having smoked in the last 30 days

Having drunk alcohol in the last 30 days

Ever been drunk

Ever used cannabis (asked of 15 year olds only)

Ever had sex (asked of 15 year olds only)

Been involved in physical fighting in the last year

2. School

Young people were asked questions about the school environment and about their views of topics taught in personal, social, health and economic (PSHE) education that could potentially enable them to better manage emotional wellbeing.

- Perception of academic achievement as being above average
- Feeling pressured ‘a lot’ by school work
- Liking school ‘a lot’
- Seeing other students as kind and helpful
- Perceiving students in classes as enjoying being together
- Feeling that other students accept you as you are
- Feeling that teachers care about you as a person
- Having at least one teacher to go to with problems
- Feeling safe at school
- Feel like they belong in school
- Being bullied in the last couple of months
- Having enough sleep to concentrate
- Feeling that PSHE classes have improved skills and abilities to care for own health
- How well has personal and social skills been covered in PSHE

3. Family and friends

- Ease of talking to father
- Ease of talking to mother
- Feel as if get emotional support from family
- Has friends with whom to share joys and sorrows

4. Community

- Feeling safe in the area where you live
- Having good places to spend free time
- Could ask for help from neighbours

Appendix 2b: Scope of questions

In the HBSC, young people were asked about a number of issues relating to emotional wellbeing. These included the following:

1. Questions relating to life satisfaction

HBSC measures life satisfaction by using the Cantril ladder.[11] Young people are asked to rate their life from “worst possible life” (0) to “best possible life” (10). In accordance with Gallup a score of 7 or above is rated as “high life satisfaction” or “thriving”; a score of 5-6 is rated as “medium life satisfaction” or “struggling”; and scores of 0-4 are considered “low life satisfaction” or “suffering”.

2. Questions specifically about self-reported emotions and feelings in the past week

feeling full of energy

feeling able to pay attention

feeling lonely

3. Questions relating to Health Related Quality of Life (HRQL)

The KIDSCREEN measure[12] is used to assess Health-Related Quality of Life (HRQL) in a way that is in line with the WHO definition of health, in that it goes beyond physical health to assess young people’s feelings of general wellbeing. It is particularly effective for assessing emotional wellbeing among young people,[13] and taken together with other measures from the HBSC study it provides an insight into how wellbeing develops and changes over the course of adolescence.

The KIDSCREEN-10 measure consists of 10 questions that have been validated to measure HRQL in adolescent populations across Europe and North America. Among 12-18 year olds, the mean score across populations is 47.2 for females and 49.9 for males, with higher scores indicating better HRQL. In HBSC England 2014, scores for all ages and genders ranged from 0-83.81, with a mean score of 47.28.

4. Questions relating to frequency of range of health complaints

The HBSC questionnaire includes questions on frequency of experiencing a range of health complaints. Young people are asked how frequently they have experienced health complaints (headaches; stomach aches; back aches; irritability; feeling low; sleeping difficulties; and nervousness) in the last six months, with frequency ranging from ‘Rarely or never’ to ‘About every day’.

5. Question relating to socio-economic status (SES)

SES is measured in HBSC using the Family Affluence Scale (FAS) which divides young people into groups of low, medium and high FAS. This is assessed through questions on the numbers of cars in the household, holidays abroad, having one’s own bedroom, number of computers, numbers of bathrooms in the home, and whether the family owned a dishwasher. The FAS scale has been developed to assess family affluence across countries in the HBSC study

(Inchley et al. 2016). In the English sample overall, low FAS applies to roughly 16% of the lowest scoring adolescents, medium FAS to around 57% and high FAS to around 27%.

Appendix 3: Methodology

This report is informed by an analysis of data from the Health Behaviour in School Age Children Survey and through cross analysis of survey questions covering spanning individual, family, school and local community domains.

Further detail of the methodology for the HBSC study can be found in the England national reports http://www.hbsc.org/news/index.aspx?ni=3256 and the full external protocol is available from www.hbsc.org. The HBSC data is hierarchical and students are nested within classes, within schools as such to account for the hierarchical data structure. Multilevel modelling is the most desirable method of analysis and the factsheets refer to existing multilevel modelling of the HBSC dataset when applicable, along with existing research in the field.

Appendix 4: Proportion of young people categorised as 'thriving',* by age and gender

Year	11 year olds		13 year olds		15 year olds		All ages	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
2002	77%	72%	78%	68%	73%	65%	76%	68%
2006	81%	81%	80%	72%	81%	67%	81%	74%
2010	78%	77%	81%	71%	81%	69%	80%	72%
2014	83%	81%	80%	69%	74%	55%	79%	69%

*Young people with a high life satisfaction score of (7 or above) are categorised as 'thriving'. Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 5: Proportion of young people categorised as 'suffering',* by age and gender

Year	11 year olds		13 year olds		15 year olds		All ages	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
2002	4%	5%	5%	8%	8%	10%	6%	8%
2006	5%	6%	8%	11%	6%	10%	6%	9%
2010	7%	7%	6%	8%	5%	10%	6%	8%
2014	6%	5%	5%	11%	7%	16%	6%	11%

*Young people with a low life satisfaction score (0-4) are categorised as 'suffering'. Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 6: Life satisfaction score, by Family Affluence Scale (FAS)

Life satisfaction category	Family Affluence Scale (FAS)		
	Low	Medium	High

Suffering	13%	8%	6%
Struggling	24%	18%	15%
Thriving	63%	74%	79%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 7: Self-reported emotions and feelings, by family affluence scale (FAS)

Emotion or feeling	Family affluence scale		
	Low	Medium	High
Felt full of energy	43%	45%	50%
Felt able to pay attention	57%	61%	65%
Felt lonely	9%	12%	8%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 8: Girls' KIDSCREEN scores (means), by life satisfaction category

	Life satisfaction		
	Suffering	Struggling	Thriving
KIDSCREEN score	36.02	41.53	48.79

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 9: Girls' health, by life satisfaction category

Health	Life satisfaction category		
	Suffering	Struggling	Thriving
Experiences weekly multiple health complaints	60%	14%	2%
Ever self-harmed	67%	38%	19%
Visited GP in last year	83%	83%	82%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 10: Spirituality, by life satisfaction category

Spirituality statements	Life satisfaction category		
	Suffering	Struggling	Thriving
Important life has meaning and purpose	49%	68%	87%
Important to feel connected to higher spiritual power	26%	31%	40%
Important to meditate or pray	23%	25%	25%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 11: Spirituality, by feeling low weekly

Spirituality statements	Feeling low weekly	
	Yes	No
Important life has meaning and purpose	67%	86%
Important to feel connected to higher spiritual power	30%	39%

Important to meditate or pray	26%	25%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 12: Mean general self-efficacy scores, by life satisfaction category and feeling low weekly

	Life Satisfaction Category		
	Suffering	Struggling	Thriving
Mean general self-efficacy scores	25.9	28.3	31.2
	Feeling low weekly		
	Yes	No	
	27.8	31.2	

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 13: Girls' body image, by life satisfaction and feeling low weekly

Girls' body image	Life Satisfaction Category		
	Suffering	Struggling	Thriving
Think body is 'too fat'	69%	49%	30%
	Feeling low weekly		
	Yes	No	
	56%	28%	

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 14: Diet, physical activity and sleep, by life satisfaction level

Diet, exercise and sleep	Life Satisfaction Category		
	Suffering	Struggling	Thriving
Never have breakfast on weekdays	38%	22%	13%
Always have breakfast on weekdays	32%	47%	67%
Eats 5 portions of fruit and veg	30%	34%	41%
Meets physical activity recommendations	11%	11%	16%
Has enough sleep to concentrate	49%	66%	84%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 15: Diet, physical activity and sleep, by feeling low weekly

Diet, exercise and sleep	Feeling low weekly	
	Yes	No
Never have breakfast on weekdays	21%	10%
Always have breakfast on weekdays	52%	72%
Eats 5 portions of fruit and veg	31%	40%
Meets physical activity recommendations	16%	20%
Has enough sleep to concentrate	60%	84%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 16: Girls' risk behaviours by life satisfaction

Risk behaviours	Life satisfaction category		
	Suffering	Struggling	Thriving
Consumed alcohol last 30 days	40%	29%	16%
Smoked last 30 days	31%	9%	3%
Ever been drunk	39%	29%	15%
Ever used cannabis (15 years only)	39%	20%	16%
Ever had sex (15 years only)	41%	21%	21%
Has been in a physical fight	35%	23%	14%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 17: Family and friend support, by life satisfaction level (Girls only)

Family and friend	Life satisfaction		
	Suffering	Struggling	Thriving
Easy to talk with father	34%	49%	74%
Easy to talk with mother	52%	72%	89%
Get emotional support	28%	41%	67%
Friends to share joys and sorrows with	47%	53%	67%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 18: Family and friend support, by feeling low weekly (Girls only)

Family and friend	Feeling low weekly	
	Yes	No
Easy talk to father	45%	74%
Easy talk to mother	66%	89%
Get emotional support	44%	65%
Friends to share joys and sorrows	56%	65%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 19: Girls' Multiple Scale of Perceived Social Support (MSPSS) mean score, by life satisfaction category.

	Life satisfaction category		
	Suffering	Struggling	Thriving
Mean MSPSS score	4.36	5.00	5.67

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 20: School life, by life satisfaction level (boys and girls)

School life	Life satisfaction category		
	Suffering	Struggling	Thriving
Academic achievement above average	62%	71%	87%
Pressured 'a lot' by school work	43%	30%	14%
Like school a lot	10%	18%	38%

Feel safe at school	50%	64%	89%
Feel like belong at school	63%	58%	84%
Bullied in last couple of months	60%	43%	27%
Most of the students in my classes are kind and helpful	42%	54%	75%
The students in my classes enjoy being together	46%	58%	76%
Other students accept me as I am	41%	58%	81%
I feel there is at least one teacher I can go to if I have a problem	67%	72%	83%
I feel that my teachers care about me as a person	42%	58%	78%
PSHE classes have improved my skills and abilities to care for my own health	55%	67%	77%
PSHE has covered personal and social skills well	51%	52%	69%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 21: School life, by feeling low weekly (boys and girls)

School life	Feeling low weekly	
	Yes	No
Academic achievement above average	69%	78%
Pressured 'a lot' by school work	35%	10%
Like school a lot	17%	37%
Feel safe at school	69%	87%
Feel like belong at school	53%	82%
Bullied in last couple of months	50%	26%
Most of the students in my classes are kind and helpful	51%	74%
The students in my classes enjoy being together	56%	75%
Other students accept me as I am	52%	81%
I feel there is at least one teacher I can go to if I have a problem	72%	82%
I feel that my teachers care about me as a person	54%	77%
PSHE classes have improved my skills and abilities to care for my own health	62%	78%
PSHE has covered personal and social skills well	55%	67%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 22: Perceptions of neighbourhood, by life satisfaction score category

Perceptions of neighbourhood	Life satisfaction category		
	Suffering	Struggling	Thriving
I feel safe in the area I live	51%	64%	82%
There are good places to spend free time	51%	58%	73%
I could ask for help from a neighbour	55%	62%	75%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 23: Perceptions of neighbourhood, by feeling low weekly

Perceptions of neighbourhood	Feeling low weekly	
	Yes	No
I feel safe in the area I live	62%	82%

There are good places to spend free time	57%	72%
I could ask for help from a neighbour	61%	74%

Source: Health Behaviour in School-aged Children (HBSC) survey

Appendix 24: Perceptions of neighbourhood, by age and gender

Perceptions of neighbourhood	11 year olds		13 year olds		15 year old	
	Boys	Girls	Boys	Girls	Boys	Girls
Feel safe in the area I live	84%	81%	78%	73%	75%	66%
Could ask favour from a neighbour	75%	76%	69%	69%	66%	67%
There are good places to spend free time	78%	79%	69%	69%	57%	56%

Source: Health Behaviour in School-aged Children (HBSC) survey

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