

**Trends in parent- and teacher- rated mental health problems among 10- and 11-
year-olds in Great Britain: 1999-2012**

Leslie Morrison Gutman Ph.D.¹

Heather Joshi M.Litt¹

Michael Parsonage M.A.²

Ingrid Schoon Ph.D.¹

¹UCL Institute of Education, 20 Bedford Way, London WC1H 0AL

²Centre for Mental Health, Maya House, 134-138 Borough High St, London SE1 1LB

Corresponding Author: Leslie Morrison Gutman, UCL Institute of Education,
20 Bedford Way, London WC1H 0AL, email: l.gutman@ioe.ac.uk,

Phone: +44 20 76126258; Fax: +44 20 76128000

Word Count: 5,323

How to cite:

Gutman, L.M., Joshi, H., Parsonage, M., & Schoon, I. (2016). Trends in parent- and teacher-rated mental health problems among 10- and 11-year-olds in Great Britain: 1999-2012.

Child and Adolescent Mental Health.

Acknowledgements

The preparation of this manuscript is supported by a grant from the Economic and Social Research Council (ES/L0008211/1 to Leslie Morrison Gutman). The findings and conclusions in this report are those of the authors and do not represent the views of the sponsors.

ABSTRACT

Background: Previous evidence indicates that mental health problems are becoming more common for adolescents. Less is known about whether these trends have continued and there has been no study to date which has specifically focused on early adolescents over a sufficiently long period. The present study examines changes in parent- and teacher-reported mental health problems among 10- and 11-year-olds in 1999, 2004 and 2012 in Great Britain.

Method: Parent and teacher ratings of the Strengths and Difficulties Questionnaire (SDQ) were used to compare the prevalence of conduct problems, hyperactivity/inattention, emotional problems, peer problems and total difficulties among 10- and 11-year-olds in three nationally representative British samples assessed in 1999 (n=1,904), 2004 (n=1,348) and 2012 (n=11,397).

Results: Teacher reports showed improving trends for boys' and girls' mental health from 1999 to 2012, particularly for externalizing behaviours (i.e., conduct problems and hyperactivity/inattention). Parent reports, on the other hand, identified only one area of sustained improvement between 1999 and 2012, namely hyperactivity/inattention among boys. Although parent reports of girls' mental health indicate improving trends from 1999 to 2004, they also suggest worsening mental health from 2004.

Conclusions: These findings suggest that perceptions of emotional and behavioural problems vary by the gender of the adolescent, the context in which they are observed or by whom they are reported.

- Previous evidence indicates that mental health problems are becoming more common for adolescents.
- Less is known about whether these trends have continued for children born in the new millennium and there has been no study to date which has specifically focused on early adolescents over a sufficiently long period.
- Findings indicate that mental health among 10- and 11-year-old children in Great Britain generally improved rather than deteriorated between 1999 and 2012.
- Teacher reports were more optimistic than parent reports, suggesting different priorities for school and home-based interventions.
- This study provides up-to-date information on the changing scale and nature of mental health problems among early adolescents, which is essential for service planning.

Keywords: adolescence, mental health trends, SDQ, parent and teacher reports, conduct problems, hyperactivity/inattention, emotional problems, peer problems

Trends in parent- and teacher- rated mental health problems among 10- and 11-year-olds in Great Britain: 1999-2012

Adolescence is a critical period when the risk of emotional and behavioural disorders rises considerably (Bor, Dean, Najman, & Hayatbakhsh, 2014; Merikangas et al., 2010). In Great Britain, for example, mental health disorders affect 10.2% of boys aged 5 - 10, rising to 12.6% at ages 11 - 15, and 5.1% of girls aged 5 - 10, rising to 10.3% at ages 11 - 15 (Green, McGinnity, Meltzer, Ford, & Goodman, 2005). The majority of mental health disorders have been shown to emerge before adulthood, with most occurring during early and mid-adolescence (Cohen et al., 1993; Kim-Cohen et al., 2006; Lewinsohn, Hops, Roberts, Seeley, & Andrew, 1993). Mental health disorders in childhood and adolescence can cast a long shadow, not only for adult mental health but also in terms of physical health, educational attainment, employment prospects and other outcomes in later life (Fergusson, Horwood, & Riddle, 2005; Green et al., 2005; Moffitt, 2006; Patel, Flisher, Hetrick, & McGorry, 2007).

Cross-national studies suggest that up to one in five young people experience mental health difficulties (Bor et al., 2014; Patel et al., 2007). In recent years, there has been mounting concern that mental health problems are becoming more common for adolescents. To determine whether rates of mental health problems are increasing, numerous studies have assessed trends in mental health symptoms using repeated cross-sectional community samples or multiple birth cohorts (Bor et al., 2014). In order to identify secular trends, it is necessary to examine change over periods exceeding seven years (Eimecke et al., 2011). However, few studies examining trends in mental health problems have included adolescents born in the new millennium and there has been no study to date which has specifically focused on early adolescents over a sufficiently long

period. Documenting changes in the prevalence of mental health disorders among adolescents is important for informing policy-makers regarding resources for prevention and treatment, as well as those practitioners and educators who work with young people. The present study examines mental health trends among 10- and 11-year-olds in Great Britain measured in 1999, 2004 and 2012.

Mental Health Trends in Adolescence

Research evidence regarding trends in mental health problems indicates that mental health problems may be increasing among adolescents worldwide, although findings are somewhat inconclusive. A systematic review of cross-national studies examining changes in mental health symptoms in the 21st century found worsening internalizing symptoms for adolescents, particularly for girls. However, externalizing symptoms remained largely unchanged in most of the studies examined (Bor et al., 2014). A Global Burden of Disease Study examining physical and mental health from 1990-2010 demonstrated that the burden of mental health problems, especially depression and anxiety, increased for adolescents in developed countries (Murray et al., 2013). In a cross-national comparison of 31 countries, in contrast, psychological health complaints of adolescents remained stable in some countries (for example, in the UK) and decreased in others (for example, in Canada, US, and Ireland) from 2006 to 2010, despite the global economic recession of 2007 (Pfoertner et al., 2014).

Within Britain, previous research using nationally representative data in the period up to about 2000 suggests substantial increases in perceived emotional and behavioural problems among adolescents aged 15 to 17 years (Collishaw et al., 2004; Collishaw et al., 2010; Schepman et al., 2011; Sweeting, Young, & West, 2009). Comparing trends in mental

health among 5- to 15-year-olds in two national British samples, Maughan and colleagues showed that the prevalence of emotional and behavioural problems remained stable or showed small declines between 1999 and 2004 (Maughan, Collishaw, Meltzer, & Goodman, 2008). The age range in that study is however quite wide, comprising both children and adolescents. Only one study we know of has assessed trends among 11- to 13- year-olds, covering the period from 2009-2014 in England (Fink et al., 2015). The study found no significant changes in self-reported mental health, except for an increase in girls' emotional problems and a decrease in boys' total difficulties. However, the study was not selected at random and therefore may not be representative of the wider early adolescent population (Fink et al.).

The present study takes a longer time frame and compares trends among 10- and 11-year-olds using three nationally representative data sets in Great Britain. Both parent- and teacher-reported mental health are examined, rather than using self-reports as in Fink et al. (2015). Since boys have a greater likelihood of exhibiting externalizing problems, while girls are more likely to manifest internalizing problems, the analyses are stratified by gender (Bor et al., 2014; Green et al., 2005; Patel et al., 2007). The aims of this study are twofold: (1) to describe trends in the average parent-and teacher-rated scores for conduct problems, hyperactivity/inattention, emotional problems, peer problems and total difficulties in three nationally representative British samples assessed in 1999, 2004 and 2012; and (2) to test whether there are differences in the proportions of 10- and 11-year-olds scoring in the severe problems (abnormal) range across the three study periods.

Method

Study Samples

Three nationally representative samples of 10- and 11-year-olds were compared comprising children in the British Child and Adolescent Mental Health Surveys (BCAMHS) of 1999 (Office of National Statistics, 2000) and 2004 (Ford & Goodman, 2005) and in the UK Millennium Cohort Study (MCS) (UCL Institute of Education, 2015) assessed in 2012. Data included information on 10- and 11-year-olds living in Great Britain, i.e., England, Scotland and Wales, for parent reports (mostly mothers) and in England and Wales for teacher reports. Table 1 provides the socio-demographic characteristics of the three study samples. Ethical approval for the secondary analyses was obtained from the UCL Institute of Education research ethics board before the commencement of the project.

BCAMHS were carried out in 1999 and 2004 by the Social Survey Division of the Office of National Statistics (ONS) in order to assess the prevalence rates of mental health disorders in children and adolescents in Great Britain. Cross-sectional samples of children aged 5 – 15 years (1999) and children aged 5 – 16 years (2004) were recruited using the Child Benefit Register as a sampling frame (Green et al., 2005). In the present study, 10- and 11-year-olds with available parent-reported mental health data from each study were selected, comprising 1,904 children (957 = boys; 947 = girls) in the 1999 sample and 1,348 children (706 = boys; 642 = girls) in the 2004 sample. Teacher-reported mental health data are also available. In order to be comparable with MCS, teacher data were restricted to those 10- and 11-year-old children living in England and Wales but not Scotland, comprising 1,433 children (boys = 711; girls = 722) in the 1999 sample and 962 children (boys = 509; girls = 453) in the 2004 sample.

MCS is a nationwide longitudinal study following children born in all four countries of the UK between September 2000 and January 2002. MCS was sampled, also from the Child Benefit Register, in a complex clustered and disproportionately stratified design. The clusters were electoral wards, and the strata oversampled areas of high child poverty, minority ethnic populations and the three smaller countries of the UK. Data are available for five surveys to date (Plewis, 2007). The first survey, MCS1 (child age 9 months) was conducted between 2001 and 2002, MCS2 (child age 3) was mainly during 2004, MCS3 (child age 5) was mainly during 2006 and MCS4 (child age 7) was mainly during 2008, while the most recent survey, MCS5, collected data mainly in 2012 when the children were in their last year of primary school (child around age 11). The number of families who have been interviewed at least once is 19,244, which includes 692 families in England who were not interviewed until MCS2. If these cases are included, the initial response rate to the cohort was 71%. Typical for a longitudinal study there has been loss to follow-up, or 'attrition'. The number of families interviewed at MCS5 was 13,287 across UK, which includes some former drop-outs who had re-joined (Hansen, 2014).

In the present study, the MCS sample was restricted to children with available parent-rated mental health data living in England, Scotland and Wales, to be comparable with the BCAMHS 1999 and 2004 samples. The sample was further reduced to consider one child per family, excluding 182 children in MCS5 who were the second or third in sets of twins and triplets. Also excluded were those children who were age 12 at the time of the 2012 survey ($n = 62$). Hence, the analyses are based on data for 11,397 children (5,748 = boys; 5,649 = girls) in the 2012 survey living in Great Britain with valid mental health data. Teacher data were also available for those children living in England and Wales whose

teachers returned a postal questionnaire, with mental health data from teachers being available for 7,071 10- and 11-year-old children (3,530 = boys; 3,541 = girls).

Instrument

Mental health was assessed by the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997; 2001), a widely validated screening questionnaire in which parents and teachers report on the child's mental health symptoms in the past 6 months. It covers 25 items divided into five scales of five items each, which generates scores for emotional problems, conduct problems, hyperactivity/inattention, peer problems and pro-social behaviour. Each item is marked according to 0 = not true, 1 = somewhat true, or 2 = very true. The five items are then totaled so the score ranges from 0 to 10 for each scale. A total difficulties score is calculated as the sum of scores for conduct problems, hyperactivity/inattention, emotional problems and peer problems.

In order to categorise SDQ scores, the initial bandings were presented as 'normal', 'borderline' and 'abnormal' (the latter we henceforth term as 'severe problems'). These bandings were based on children of all ages 5-15 from the BCAMHS 1999, using independent psychiatric assessment to define cut-points (which differ slightly for parent-versus teacher-reported data), such that 80% of children scored normal, 10% borderline and 10% as having severe problems (Goodman, Ford, Simmons, Gatward, & Meltzer, 2000).

Analytic Plan

All analyses used weights from the respective survey teams to ensure representativeness and to correct for non-response. For the BCAMHS data, weights were used to account for variation in response by country and region as well as to represent the age-sex structures of the national population of children and adolescents. The MCS

analyses used both sampling and attrition weights. The sampling weights were those issued to reflect the disproportionate sampling, e.g. children over-sampled in disadvantaged areas. The MCS5 attrition weights were also applied to restore the social profile of the whole cohort such that the cross-section at age 11 can be treated as comparable with the other two cross-sectional surveys. When analysing SDQ data in MCS, additional weights were applied in order to have an equal representation of 10- and 11-year-olds.

All analyses were carried out separately for boys and girls, and for parent- and teacher-reported data. In order to account for the complex survey design of MCS and the weighting of BCAMHS, means and standard deviations were calculated for each dataset separately. *T*-tests for two independent samples were performed in order to assess differences in the mean scores between study samples. Since it is important to take into account the size of an effect when interpreting results, Cohen's *d* was calculated as a measure of effect size. Guidelines have been suggested for what can be considered a small (.20), medium (.50) or large (.80) effect size (Cohen, 1988). *Z*-tests for two population proportions were used to examine differences in the proportions scoring in the severe range between study samples. All analyses were conducted using two-tailed tests.

Results

Trends in Mean Levels of Mental Health among 10- and 11-Year-Olds

Table 2 presents the means and standard deviations of the SDQ scores by subscale among 10- and 11-year-old children in 1999, 2004 and 2012 for the parent reports. Cohen's *d* is shown for significant effects, which ranged between .08 and .13. For conduct problems and emotional problems, there were no significant differences in the parent-

rated mean scores over time for boys or girls. For hyperactivity/inattention, there was a significantly higher mean score in 1999 compared to 2004 ($t = 2.35, p < .05$) and 2012 ($t = 2.15, p < .05$) for boys; while for girls there was a significantly lower mean score in 2004 than in 1999 ($t = 2.42, p < .05$), which then increased significantly in 2012 compared to 2004, ($t = -2.45, p < .05$). For girls, parent-reported mean scores were significantly lower in 2004 compared to 1999 for peer problems, ($t = 2.36, p < .05$), and total difficulties, ($t = 2.50, p < .05$). There were no significant differences in the parent-reported mean scores of peer problems or total difficulties for boys.

Table 3 presents the means and standard deviations of the SDQ scores by subscale among 10- and 11-year-old children in 1999, 2004 and 2012 for the teacher reports. Cohen's d is shown for significant effects, which ranged between .09 and .21. For conduct problems, teacher reports showed significantly lower mean scores in 2012 compared to 1999 for boys ($t = 2.52, p < .05$) and for girls ($t = 2.11, p < .05$). For hyperactivity/inattention, teacher reports showed significantly lower mean scores ($t = 2.71, p < .01$) for boys, as well as for girls ($t = 5.03, p < .001$), in 2012 compared to 1999. For emotional problems, there were no significant differences in the teacher-reported mean scores of either boys or girls. For peer problems, teachers reported a significantly lower mean score for boys in 2012 ($t = 2.39, p < .05$) compared to 1999, while there was no significant difference for girls. For total difficulties, teacher reports showed a significantly lower mean score for boys in 2012 compared to 1999 ($t = 2.65, p < .01$). For girls, teacher-reported total difficulties were also lower in 2012 than in 1999 ($t = 3.67, p < .001$) and in 2004 ($t = 2.52, p < .05$).

Differences in Study Samples among 10- and 11-Year-Olds with Severe Problems

Table 4 presents the percentages of 10- and 11-year-old children in the 1999, 2004 and 2012 studies with parent-rated SDQ scores in the severe category. For boys, there was a significant decrease in the proportion scoring in the severe range of hyperactivity/inattention between 1999 and 2012, ($z = 3.0, p < .01$), a drop of 3.8 percentage points. For girls, there was a significant increase in the proportion scoring in the severe range of peer problems between 2004 and 2012, ($z = 2.0, p < .05$), an increase of 2.6 percentage points. There were no other significant differences among girls and boys in the severe range for the parent-reported SDQ scores.

Table 5 presents the percentages of 10- and 11-year-old children in the 1999, 2004 and 2012 studies with teacher-rated SDQ scores in the severe category. For conduct problems, there were significant decreases in the proportion of boys ($z = 2.30, p < .05$) and girls ($z = 3.30, p < .01$) scoring in the severe range from 1999 to 2012, falling 3.0 and 2.5 percentage points, respectively. For hyperactivity/inattention, there was a significant decrease in the proportion of boys ($z = 2.90, p < .01$) scoring in the severe range from 1999 to 2012, a drop of 4.3 percentage points. For girls, there were significant decreases in the proportions of girls scoring in the severe range of hyperactivity/inattention from 1999 to 2012 ($z = 4.50, p < .001$) and from 2004 to 2012 ($z = 2.8, p < .01$), drops of 3.6 and 2.6 percentage points, respectively. There was also a significant decrease of girls scoring in the severe range for emotional problems from 2004 to 2012 ($z = 2.3, p < .05$), a drop of 2.4 percentage points. Finally, there were significant decreases in the proportions of boys scoring in the severe range for total difficulties from 1999 to 2012 ($z = 2.60, p < .01$) and from 2004 to 2012 ($z = 2.90, p < .01$), falling 3.5 and 4.5 percentage points, respectively. Similarly, there was a

significant decrease in the proportion of girls scoring in the severe range for total difficulties from 2004 to 2012 ($z = 2.20, p < .05$), a drop of 2.3 percentage points.

Discussion

Comparison of three selected cohorts sampled in 1999, 2004 and 2012 indicates that mental health trends among 10- and 11-year-old children in Great Britain generally improved rather than deteriorated between 1999 and 2012. The picture, however, is somewhat mixed between teacher and parent reports. Overall, findings suggest that perceptions of emotional and behavioural problems vary by gender of the adolescent, the context in which they are observed or by whom they are reported.

For boys, both sets of reports showed significant improvements over time in hyperactivity/inattention. Parent reports showed lower mean scores in 2004 and 2012 compared to 1999 and teacher reports showed a falling mean level from 1999 to 2012. Both also showed decreases in the proportions scoring in the severe range for hyperactivity/inattention between 1999 and 2012. Teacher reports also showed declines in the mean scores of conduct problems, peer problems and total difficulties and in the proportions scoring in the severe range of conduct problems and total difficulties from 1999 to 2012. These findings are similar to research examining the mental health trends of adolescent boys in a Danish sample using parent-reports from 1996 to 2010 (Henrikson Nielson, & Bilenberg, 2012) as well as in an English sample using self-reports from 2009 to 2014 (Fink et al., 2015). It is quite possible that more recently born adolescent boys are showing fewer difficulties than their peers born in the earlier cohort.

For girls, the surveys showed significantly falling levels of several teacher-reported mental health problems. These included decreasing mean scores in hyperactivity/inattention,

conduct problems and total difficulties and in the proportions within the severe range of hyperactivity/inattention and conduct problems from 1999 to 2012 and emotional problems and total difficulties from 2004 to 2012. Parent reports also showed a fall in mean scores in girls' hyperactivity/inattention, peer problems and total difficulties from 1999 to 2004. However, there were some significant increases in parent-reported mental health problems after 2004 for girls. There were increases in the mean score of girls' hyperactivity/inattention and the proportion of girls scoring in the severe range of peer problems from 2004 to 2012. These findings are partly in line with cross-national research showing worsening trends of internalizing problems, especially for girls (Bor et al., 2014; Murray et al., 2013). They also point to an increase in externalizing problems, manifested in the home context (parent-report). These findings further support the contention that girls are experiencing greater social and academic pressures (Sweeting et al., 2009) coupled with an earlier onset of puberty (Euling et al., 2008) which likely contribute to the gender specificity in the increased risk of mental health problems (Bor et al. 2014). They could also indicate increased awareness/alertness among parents in noting adjustment problems in their children, especially among girls.

Overall, teacher reports showed improving trends for early adolescents. Parent reports, on the other hand, identified only one sustained improvement between 1999 and 2012, namely hyperactivity/inattention among boys. Although parent reports of girls' mental health indicate an improvement from 1999 to 2004, they also suggest more mental health problems in 2012 compared to 2004. Several factors may explain discrepancies between parent and teacher reports of mental health problems among 10- and 11-year-olds. First, parent and teacher reports likely reflect their different viewpoints and

perspectives. Ages 10 and 11 mark the beginning of puberty and early adolescents might demonstrate different behaviors in front of their parent than in front of their teachers and peers. It may be the case that children aged 10 and 11 show fewer mental health problems in the classroom than at home. Second, research suggests only a small to moderate agreement in the parent and teacher reports of children's emotional and behavioral problems (Collishaw, Goodman, Ford, Rabe-Hesketh, & Pickles, 2009). Previous examination of the SDQ has also shown that parents are slightly better at predicting internalizing disorders, while teachers are slightly better at predicting externalizing disorders (Meltzer, Gatward, Goodman, & Ford, 2000). Thus, parents may be more sensitive to girls' increasing peer problems than are teachers. Another possibility is the impact of the economic downturn on families which followed the financial crash of 2007/2008. Research has shown adverse effects of the economic recession on adult mental health (Katikireddi, Niedzwiedz, & Popham, 2012), which may translate into less optimistic views of their adolescents' own mental health in 2012 compared to 2004. More research is needed to gain a better understanding of the reasons for variation between parent and teacher ratings of young people's mental health, particularly where such variation points to different conclusions.

Strengths and Limitations

An important strength of this study is the bringing together of three nationally representative samples of 10- and 11-year-olds in 1999, 2004 and 2012. To make an accurate assessment of trends in population prevalence, it is necessary to use randomly selected nationally representative samples. Another strength is the sufficiently long time frame over which comparisons were made (Eimecke et al., 2011). Furthermore, the study

focused on children aged 10 and 11. Other studies have examined quite wide age ranges, comprising both children and adolescents, and there is still a lack of understanding regarding the mental health of early adolescents. Lastly, two sets of informants, parents and teachers, provided evidence on 10- and 11-year-olds' mental health, highlighting that mental health can vary in different contexts.

In terms of limitations, a key issue is the smaller sample sizes of the 1999 and 2004 studies compared to the 2012 study. As a result, in several instances, there were no statistically significant differences between 1999 and 2004, but there were between 1999 and 2012 or between 2004 and 2012, even though these differences were similar in size. Regardless of the sample sizes, however, the samples should accurately reflect the target population given their representative nature. Another related consideration is that the parent-reported data included children in all of Great Britain, while the teacher-reported data included those living in England and Wales but not Scotland. Given the small sample sizes of the 1999 and 2004 data sets as well as the nationally representative nature of the three study samples, we decided not to restrict the parent-reported data to match the geographical coverage of the teacher-reported data. As a result, differences in the findings may reflect sample differences, although Scotland represents less than 10% of the Great Britain population.¹ Lastly, we did not test *why* there were significant differences in the trends. Future studies may determine whether familial, educational, societal and economic

¹ Analyses of the parent-reported data restricted to England and Wales demonstrated the same pattern of significant results, in addition to a significant increase in the mean scores of peer problems and total difficulties between 2004 and 2012 for girls, and there was a significant decrease in the proportion of girls with severe peer problems from 1999 to 2004 and an increase in girls' total difficulties from 2004 to 2012.

changes explain positive as well as negative developments in mental health for early adolescents during this period.

Implications for Practice and Future Work

Reliable quantitative information on the prevalence of mental health problems among young people over time is in short supply. It is a matter of some concern that it is now more than ten years since the last national survey of child and adolescent mental health was undertaken in Great Britain. This study goes some way towards filling this gap and the information it provides is of value to funders and providers of children's mental health services, for whom up-to-date information on the changing scale and nature of mental health problems among children and young people is essential. Findings are generally positive, showing improving trends in the teacher-reported mental health of 10- and 11-year-olds. Yet, the lack of congruence between parent and teacher reports suggest different priorities for home and school. Mental health trends also point to the possibility of increasing vulnerabilities for girls, highlighting the necessity of continued monitoring and provision of mental health support for young people. An important area for further research will be to assess whether or not these trends among early adolescents have been maintained when data for 14- year-olds become available for analysis from the most recent sweep of the MCS. Further research is also needed on the analysis of causal factors which may help to explain the varying trends identified in this study, including differences by gender and type of mental health problem as well as context.

References

- Bor, W., Dean, A. J., Najman, J., & Hayatbakhsh, R. (2014). Are child and adolescent mental health problems increasing in the 21st century? A systematic review. *Australian and New Zealand Journal of Psychiatry, 48*(7), 606-616.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, P., Cohen J., Kasen, S., et al. (1993). An epidemiological study of disorders in late childhood and adolescence--I. Age- and gender-specific prevalence. *Journal of Child Psychology and Psychiatry, 34*(6), 851-867.
- Collishaw, S., Goodman, R., Ford, T., Rabe-Hesketh, S., & Pickles, A. (2009). How far are associations between child, family and community factors and child psychopathology informant-specific and informant-general?. *Journal of Child Psychology and Psychiatry, 50*, 571-580.
- Collishaw, S., Maughan, B., Goodman, R., & Pickles, A. (2004). Time trends in adolescent mental health. *Journal of Child Psychology and Psychiatry, 45*, 1350-1362.
- Collishaw, S., Maughan, B., Natarajan, L., & Pickles, A. (2010). Trends in adolescent emotional problems in England: a comparison of two national cohorts twenty years apart. *Journal of Child Psychology and Psychiatry, 51*(8), 885-894.
- Eimecke S, Pauschardt J, Remschmidt H, Walter, R., & Matthejat, F. (2011). Time trends in psychopathology: a 21-year comparison from Germany. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie 39*: 187-195.

- Euling, S. Y., Herman-Giddens, M. E., Lee, P. A. et al. (2008). Examination of US puberty timing data from 1940 to 1994 for secular trends: panel findings. *Pediatrics* 121 Suppl 3: S172–S191.
- Fergusson, D., Horwood, J. & Ridder, E. (2005). Show me the child at seven: the consequences of conduct problems in childhood for psychosocial functioning in adulthood. *Journal of Child Psychology and Psychiatry*, 46(8), 837-849.
- Fink, E., Patalay, P., Sharpe, H., Holley, S., Deighton, J., & Wolpert, M. (2015). Mental Health Difficulties in Early Adolescence: A Comparison of Two Cross-Sectional Studies in England From 2009 to 2014. *Journal of Adolescent Health*, 56(5), 502-507.
- Ford, T., & Goodman, R. (2005). *Mental Health of Children and Young People in Great Britain, 2004*. [data collection]. Office for National Statistics. Social and Vital Statistics Division, Office for National Statistics. Health and Care Division. UK Data Service. SN: 5269, <http://dx.doi.org/10.5255/UKDA-SN-5269-1>.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 38(5), 581-586.
- Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child and Adolescent Psychiatry*, 40(11), 1337-1345.
- Goodman, R., Ford, T., Simmons, H., Gatward, R., & Meltzer, H. (2000). Using the Strengths and Difficulties Questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *The British Journal of Psychiatry*, 177(6), 534-539.
- Green, H., McGinnity, A., Meltzer, H., Ford, T. & Goodman, R. (2005) *Mental Health of children and young people in Great Britain, 2004*. London: Palgrave Macmillan.

- Hansen, K. (2014). *MCS Guide to the Datasets, Eighth Edition*. Centre for Longitudinal Studies, IOE London
- Henriksen, J., Nielsen, P. F., & Bilenberg, N. (2012). New Danish standardization of the Child Behaviour Checklist. *Danish Medical Journal*, 59, A4462.
- Katikireddi, S. V., Niedzwiedz, C. L., & Popham, F. (2012). Trends in population mental health before and after the 2008 recession: a repeat cross-sectional analysis of the 1991–2010 Health Surveys of England. *BMJ open*, 2(5), e001790.
- Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry*, 60(7), 709–717.
- Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1998). Major depressive disorder in older adolescents: Prevalence, risk factors, and clinical implications. *Clinical Psychology Review*, 18(7), 765–794.
- Maughan, B., Collishaw, S., Meltzer, H., & Goodman, R. (2008). Recent trends in UK child and adolescent mental health. *Social Psychiatry and Epidemiology*, 43(4), 305-310.
- Meltzer, H., Gatward, R., Goodman, R., & Ford, T. (2000). *Mental health of children and adolescents in Great Britain*. London: The Stationery Office.
- Merikangas, K. R., He, J. P., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., ... & Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry*, 49(10), 980-989.
- Moffitt T. (2006). Life-course-persistent versus adolescence-limited antisocial behaviour: a 10-year research review and a research agenda. In D. Cicchetti & D. Cohen (Eds.),

Developmental Psychopathology; Vol 3: Risk, Disorder, and Adaptation (pp. 570-598). Hoboken, NJ: John Wiley.

Murray, C. J., Vos, T., Lozano, R., Naghavi, M., Flaxman, A. D., Michaud, C., ... & Aboyans, V. (2013). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *The Lancet*, *380*, 2197-2223.

Office for National Statistics (1999). *Mental Health of Children and Adolescents in Great Britain* [computer file]. Colchester, Essex: UK Data Archive [distributor], December 2000. SN: 4227 , <http://dx.doi.org/10.5255/UKDA-SN-4227-1>

Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *Lancet*, *369*, 1302.

Pfoertner, T. K., Rathmann, K., Elgar, F. J., de Looze, M., Hofmann, F., Ottova-Jordan, V., . . . Richter, M. (2014). *European Journal of Public Health*, *24*(6), 961-967.
doi:10.1093/eurpub/cku056.

Plewis, I (Ed). (2007) *Millennium cohort study: Technical report on sampling* (4th edn). London: Centre for Longitudinal Studies, Institute of Education. Available from: http://www.cls.ioe.ac.uk/library-media/documents/Technical_Report_on_Sampling_4th_Edition.pdf [last accessed 06 07 2016].

Schepman, K., Collishaw, S., Gardner, F., Maughan, B., Scott, J., & Pickles, A. (2011). Do changes in parent mental health explain trends in youth emotional problems? *Social Science & Medicine*, *73*(2), 293-300.

Sweeting, H., Young, R., & West, P. (2009). GHQ increases among Scottish 15 year olds 1987-2006. *Social Psychiatry and Psychiatric Epidemiology*, *44*(7), 579-586.

UCL Institute of Education. Centre for Longitudinal Studies. (2015). *Millennium Cohort Study: Fifth Survey, 2012*. [data collection]. *2nd Edition*. UK Data Service. SN: 7464, <http://dx.doi.org/10.5255/UKDA-SN-7464-2>.

Table 1. Socio-demographic characteristics of three study samples: Great Britain

	BCAMHS 1999 (N=1,904)	BCAMHS 2004 (N=1,348)	MCS 2012 (N=11,397)
Child Age			
10	50.6	50.6	34.0
11	49.4	49.4	66.0
Child Gender			
Female	49.8	47.1	50.0
Male	50.2	52.9	50.0
Family Composition			
Married/Cohabiting	77.9	76.1	76.2
Single	22.1	23.9	23.8
Ethnicity			
White	91.3	86.6	87.7
Black	1.5	2.4	2.1
Indian/Pakistani/Bangladeshi	4.2	6.3	5.4
Other	3.0	4.7	4.8
Country			
England	85.8	85.0	86.4
Scotland	8.9	9.1	8.5
Wales	5.3	5.9	5.1
Housing Tenure			
Own	70.1	68.4	65.0
Rent/Other	29.9	31.6	35.0
Number of Children in Household*			
1 Child	16.3	19.5	12.2
2 Children	50.1	48.7	45.8
3 Children	23.1	20.6	26.9
4+ Children	10.5	11.2	15.1

Note. Percentages are based on weighted data. Sample sizes represent approximate unweighted number of observations, as exact numbers vary slightly due to valid data available for each socio-demographic variable. *MCS counts more children in the household than did BCAMHS where an upper age limit of 16 is imposed. The contrast between the surveys of family size is therefore likely to be an artefact rather than a trend.

Table 2. Parent-rated means and SD of SDQ scores for 10- and 11-year-olds in 1999, 2004 and 2012: Great Britain

SDQ	BCAMHS 1999		BCAMHS 2004		MCS 2012		Cohort Difference (p < .05)*	Cohen's <i>d</i> *
	Mean(SD)	Confidence Interval	Mean(SD)	Confidence Interval	Mean(SD)	Confidence Interval		
Conduct Problems								
Boys	1.66(1.75)	1.54-1.77	1.59(1.87)	1.45-1.73	1.69(1.82)	1.63-1.76		
Girls	1.30(1.55)	1.20-1.40	1.25(1.53)	1.13-1.37	1.33(1.50)	1.27-1.39		
Hyperactivity								
Boys	3.96(2.72)	3.79-4.13	3.65(2.71)	3.45-3.85	3.76(2.61)	3.67-3.86	1999>2004, 2012	.12, .08
Girls	2.85(2.41)	2.70-3.01	2.55(2.36)	2.36-2.73	2.79(2.30)	2.69-2.89	1999, 2012>2004	.13, .09
Emotional Problems								
Boys	1.86(2.01)	1.73-1.98	1.98(2.00)	1.82-2.14	1.90(2.03)	1.83-1.97		
Girls	2.13(2.09)	1.99-2.26	1.96(1.99)	1.82-2.07	1.99(2.03)	1.90-2.06		
Peer Problems								
Boys	1.59(1.80)	1.47-1.70	1.55(1.80)	1.42-1.69	1.57(1.86)	1.50-1.63		
Girls	1.44(1.61)	1.34-1.54	1.24(1.45)	1.13-1.36	1.35(1.65)	1.28-1.41	1999>2004	.12
Total difficulties								
Boys	9.06(5.97)	8.68-9.44	8.76(6.37)	8.29-9.23	8.93(6.45)	8.69-9.16		
Girls	7.72(5.44)	7.37-8.07	7.02(5.52)	6.59-7.45	7.45(5.66)	7.22-7.68	1999>2004	.13

Note. The approximate sample sizes are 957 = boys, 947 = girls for 1999; 706 = boys, 642 = girls for 2004; and 5,748 = boys, 5,649 = girls for 2012.

*Significant effects only.

Table 3. Teacher-rated means and SD of SDQ scores for 10- and 11-year-olds in 1999, 2004 and 2012: England and Wales

SDQ	BCAMHS 1999		BCAMHS 2004		MCS 2012		Cohort Difference (p < .05)*	Cohen's <i>d</i> *
	Mean(SD)	Confidence Interval	Mean(SD)	Confidence Interval	Mean(SD)	Confidence Interval		
Conduct Problems								
Boys	1.27(1.97)	1.12-1.41	1.18(1.90)	1.02-1.35	1.07(1.74)	.98-1.16	1999>2012	.10
Girls	.58(1.36)	.48-.68	.50(1.13)	.40-.60	.44(1.10)	.40-.51	1999>2012	.09
Hyperactivity								
Boys	3.64(2.99)	3.42-3.86	3.40(2.96)	3.14-3.66	3.31(2.82)	3.16-3.46	1999>2012	.11
Girls	2.04(2.35)	1.86-2.21	1.86(2.30)	1.65-2.07	1.57(1.95)	1.47-1.67	1999>2012	.21
Emotional Problems								
Boys	1.43(1.92)	1.28-1.57	1.50(2.06)	1.32-1.68	1.44(1.91)	1.34-1.54		
Girls	1.39(1.94)	1.25-1.54	1.54(2.06)	1.35-1.73	1.46(1.92)	1.36-1.56		
Peer Problems								
Boys	1.62(1.95)	1.47-1.76	1.53(2.00)	1.35-1.70	1.43(1.85)	1.33-1.53	1999>2012	.10
Girls	1.12(1.57)	1.01-1.24	1.17(1.76)	1.02-1.33	1.02(1.59)	.94-1.10		
Total difficulties								
Boys	7.95(6.57)	7.47-8.43	7.61(6.85)	7.01-8.21	7.24(6.28)	6.91-7.57	1999>2012	.11
Girls	5.13(5.42)	4.74-5.53	5.08(5.33)	4.58-5.57	4.48(4.78)	4.23-4.73	1999, 2004>2012	.15, .10

Note. Sample sizes are 711 = boys, 722 = girls for 1999; 509 = boys, 453 = girls; and 3,530 = boys, 3,541 = girls for 2012.

*Significant effects only.

Table 4. Percentages of 10- and 11-year-olds with severe parent-rated SDQ scores in 1999, 2004 and 2012: Great Britain

SDQ	BCAMHS 1999		BCAMHS 2004		MCS 2012		Cohort Difference (p < .05)*
	%	Confidence Interval	%	Confidence Interval	%	Confidence Interval	
Conduct Problems							
Boys	13.7	11.5-15.9	15.6	12.9-18.3	14.3	13.4-15.2	
Girls	8.6	6.8-10.4	8.5	6.3-10.7	8.9	8.2-9.6	
Hyperactivity							
Boys	19.2	16.7-21.7	15.7	13.0-18.4	15.4	14.5-16.3	1999>2012
Girls	9.4	7.5-11.3	7.3	7.1-11.7	7.7	7.0-8.4	
Emotional Problems							
Boys	11.1	9.1-13.1	12.4	10.0-14.8	11.6	10.8-12.4	
Girls	13.5	11.3-15.7	11.4	8.9-13.9	12.0	11.2-12.9	
Peer Problems							
Boys	14.9	12.6-17.2	14.6	12.0-17.2	13.9	13.0-14.8	
Girls	10.9	8.9-12.9	8.3	6.2-10.4	10.9	10.1-11.7	2004<2012
Total difficulties							
Boys	11.9	9.9-14.0	13.0	10.5-15.5	13.1	12.2-14.0	
Girls	6.9	5.3-8.5	6.2	4.3-8.1	8.0	7.3-8.7	

Note. The approximate sample sizes are 957 = boys, 947 = girls for 1999; 706 = boys, 642 = girls for 2004; and 5,748 = boys, 5,649 = girls for 2012.

*Significant effects only.

Table 5. Percentages of 10 to 11-year-olds with severe teacher-rated SDQ scores in 1999, 2004 and 2012: England and Wales

SDQ	BCAMHS 1999		BCAMHS 2004		MCS 2012		Cohort Difference (p < .05)*
	%	Confidence Interval	%	Confidence Interval	%	Confidence Interval	
Conduct Problems							
Boys	13.5	11.0-16.0	12.5	9.6-15.4	10.5	9.5-11.5	1999>2012
Girls	5.7	4.0-7.4	3.3	1.7-5.0	3.2	2.6-3.8	1999>2012
Hyperactivity							
Boys	19.5	16.6-22.4	17.7	14.4-21.0	15.2	14.0-16.4	1999>2012
Girls	6.9	5.1-8.9	5.9	3.7-8.1	3.3	2.7-3.9	1999, 2004>2012
Emotional Problems							
Boys	4.8	3.2-6.4	5.8	3.8-7.8	4.8	4.1-5.5	
Girls	4.6	3.1-6.1	6.6	4.3-8.9	4.2	3.5-4.9	2004>2012
Peer Problems							
Boys	9.7	7.5-11.9	9.8	7.2-12.4	8.9	8.0-9.8	
Girls	5.0	3.4-6.6	4.8	2.8-6.8	5.2	4.5-5.9	
Total difficulties							
Boys	15.0	12.4-17.6	16.0	12.8-19.2	11.5	10.5-12.6	1999, 2004>2012
Girls	5.7	4.0-7.4	6.6	4.3-8.9	4.3	3.6-5.0	2004>2012

Note. Sample sizes are 711 = boys, 722 = girls for 1999; 509 = boys, 453 = girls; and 3,530 = boys, 3,541 = girls for 2012.

*Significant effects only.