

# Scottish mental health profiles for adolescents: summary report

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# Scottish mental health profiles for adolescents: summary report

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## 1. Summary

Wellbeing was lower for girls than boys in senior school during both year 2 (S2) and year 4 (S4). Emotional and behavioural problems and emotional symptoms were higher for girls than for boys at both these stages and, along with hyperactivity, increased more in girls than boys between stages. A much higher percentage of boys than girls lacked pro-social behaviour characteristics in both S2 and S4, and this worsened more for boys than girls between stages. Mental health for both sexes generally deteriorated from S2 to S4. The one exception was conduct problems in boys, but the improvement was slight. There was a linear gradient across deprivation quintiles for all of these measures, with better mental health and lower prevalence of problems in the least deprived groups.

We conclude that there are inequalities in mental health by sex and deprivation. Those living in the most deprived communities are at greatest risk of worse mental health. Girls reported worse mental health than boys on survey measures for wellbeing, emotional problems and symptoms, and (at S4) hyperactivity, whereas boys reported more conduct problems and are more likely to lack pro-social behaviour characteristics. These issues generally worsen from S2 to S4.

Further work to identify effective policies and service responses to reduce these inequalities is important if we are to achieve the aspiration of a mentally flourishing Scotland. Better data on the range of mental health and wellbeing outcomes and their causes would be helpful in generating better understanding in the future.

## **2. Introduction**

This report supports the publication of the Scottish Public Health Observatory (ScotPHO) mental health profiles for children and young people, available on the ScotPHO website.<sup>1</sup>

Like its companion report for adult mental health, the report summarises the mental health and wellbeing data available at Scotland level. The analyses reveal health inequalities for each indicator by class year, by sex and by quintiles of the Scottish Index of Multiple Deprivation (SIMD). They also provide a health equality benchmark for Health and Social Care Partnerships.

Health, social care and education providers need a particularly close working relationship to tackle mental health issues in adolescents. The local profiles provided alongside this report describe the available data in their areas in comparison with all other areas for local authorities and Health and Social Care Partnerships (HSCPs). HSCPs are co-terminous with local authorities in Scotland, with the exception of the merged HSCP of Stirling and Clackmannanshire local authority areas.

## **3. Methods**

The analyses were carried out using SPSS version 19 and Microsoft Excel 1997–2003. The data source for all the indicators was the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS).<sup>2</sup> This national survey collects data about young people in year two (S2, age 13–14 years) and year four (S4, age 15–15 years) at secondary schools in Scotland.

SALSUS survey data from 2010 and 2013 were combined to give sufficient cases for analysis by HSCP (provided online). Wellbeing was assessed using the Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS), where a higher score indicates greater wellbeing on a range from 14 to 70. The wellbeing indicator was based on the comparison of means for age group, sex and SIMD quintile (and we derived 95% confidence intervals [CIs] from the standard error of the mean).

The other indicators made use of the Strengths and Difficulties Questionnaire (SDQ). Four of these indicators used the relevant subscales from the SDQ: emotional symptoms; hyperactivity; conduct problems; and pro-social behaviour. The other indicator was emotional/behavioural problems, which was a composite measure of total difficulties on the SDQ, summing the scores for emotional symptoms, conduct problems, hyperactivity and peer problems, but excluding scores for pro-social behaviour. These indicators were measured using the proportion of the sample with a score showing they had difficulties or were borderline (i.e.  $\geq 2$  on the the three-category subscale). SIMD 2006 was used for all SIMD analyses.

We calculated the slope index of inequality (SII) by ranking the outcome measure by SIMD deprivation quintile and then regressing the outcomes against those relative ranks. The relative index of inequality (RII) (and its 95% CIs) were calculated as SII (or 95% CI) divided by the population mean/percentage/rate as appropriate for the measure. We used the complete SIMD, not only its income–employment subscale. Data were weighted appropriately to allow valid comparisons between local authorities given the stratified sampling design of SALSUS. Where there were missing data, analyses were based on the total number with data available, cases with missing data being excluded.

## 4. Results

The total number of respondents for each question in the combined 2010 and 2013 survey waves are shown in Table 1.

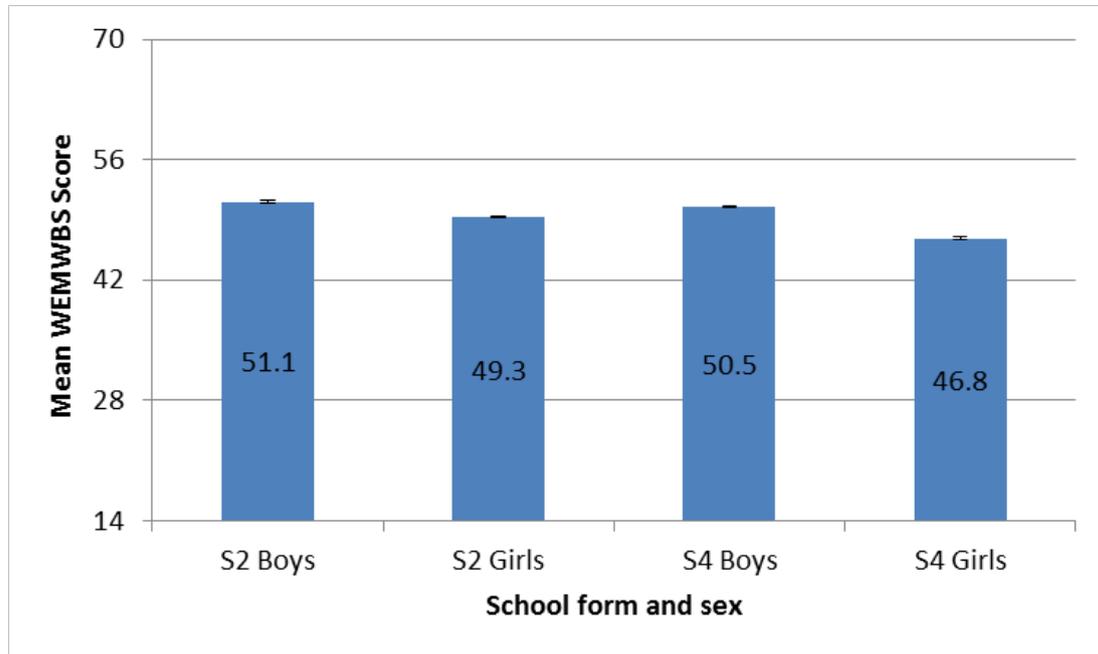
Table 1 Numbers with SIMD data for each indicator

<b>Indicator name</b>	<b>With SIMD</b>
Wellbeing	62,693
Conduct problems	65,079
Emotional/behavioural problems	64,829
Emotional symptoms	65,001
Hyperactivity	64,933
Pro-social behaviour (problems)	65,233

### Wellbeing

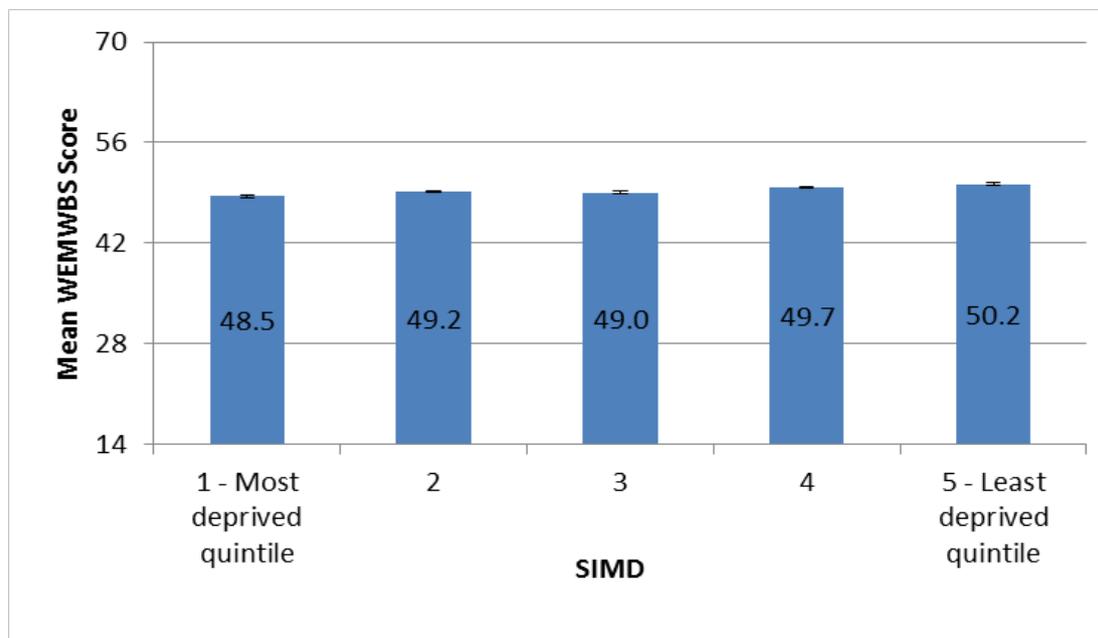
Figure 1 shows equalities comparisons for the mean WEMWBS score by class year and sex for the two class years available in the SALSUS data. Class year is used as a proxy for age, as pupils will generally turn 14 years old during their time in S2, and 16 years old while at S4 level. Boys in S2 and S4 have higher wellbeing than the girls. For both sexes wellbeing decreased from S2 to S4, but the drop was greater for girls than for boys.

Figure 1 Mean Warwick–Edinburgh Mental Wellbeing Scale (WEMWBS) score for S2 and S4 pupils, Scotland, for 2010 and 2013 combined



Mean wellbeing increased stepwise from least deprived to most deprived across SIMD quintiles (Figure 2), except between quintiles two and three, where there was no change. The mean level of wellbeing overall was 49.4. The SII for wellbeing by SIMD quintile was 1.9 (95% CI 1.7–2.2).

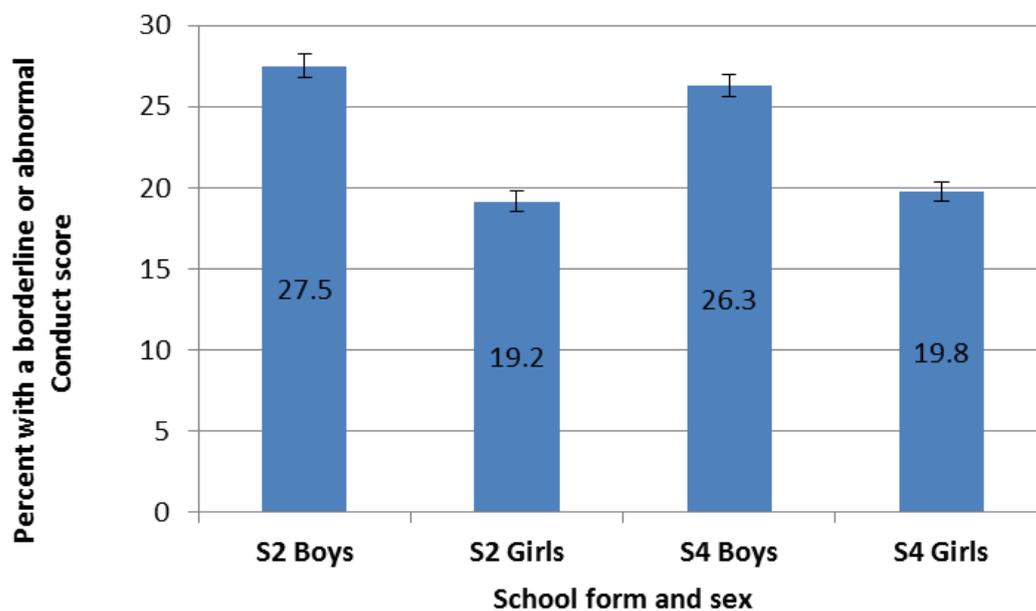
Figure 2 Mean WEMWBS score for S2 and S4 pupils, Scotland, for 2010 and 2013 combined, by SIMD quintile



## Conduct problems

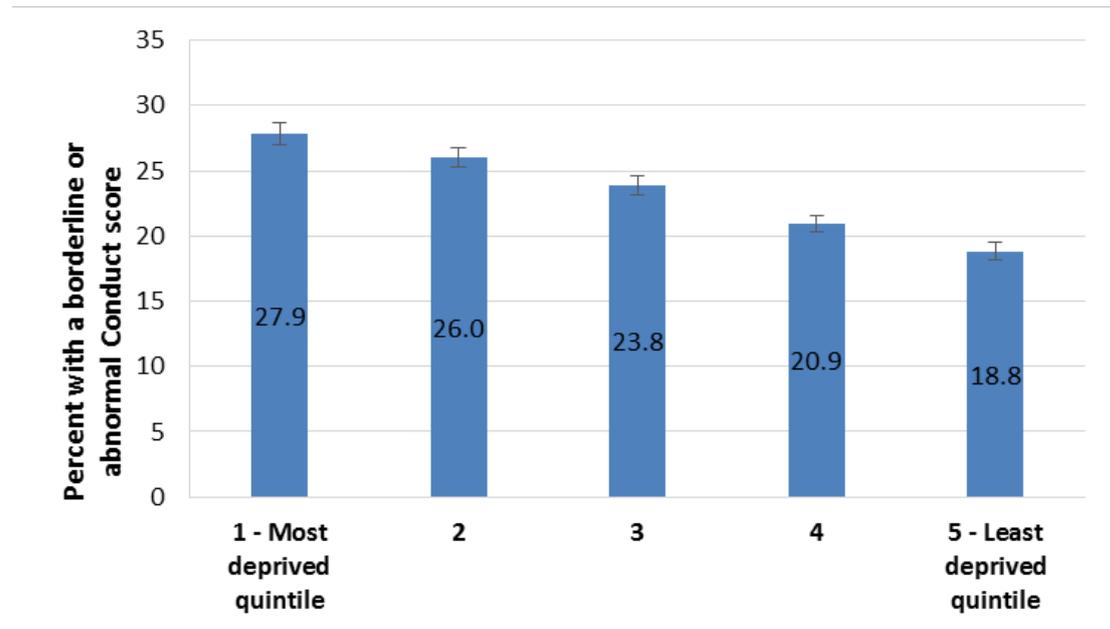
For both sexes the percentage of pupils with conduct problems was very similar in S2 and S4 (Figure 3), but the percentage with conduct problems was lower for girls than for boys.

Figure 3 Percentage of S2 and S4 pupils with conduct problems, Scotland, for 2010 and 2013 combined



The percentage of pupils with conduct problems decreased stepwise from most deprived to least deprived across SIMD quintiles (Figure 4). Overall, 23.2% of the sample had conduct problems on this indicator. The SII for conduct problems by SIMD was 11.4 (95% CI 10.3–12.5).

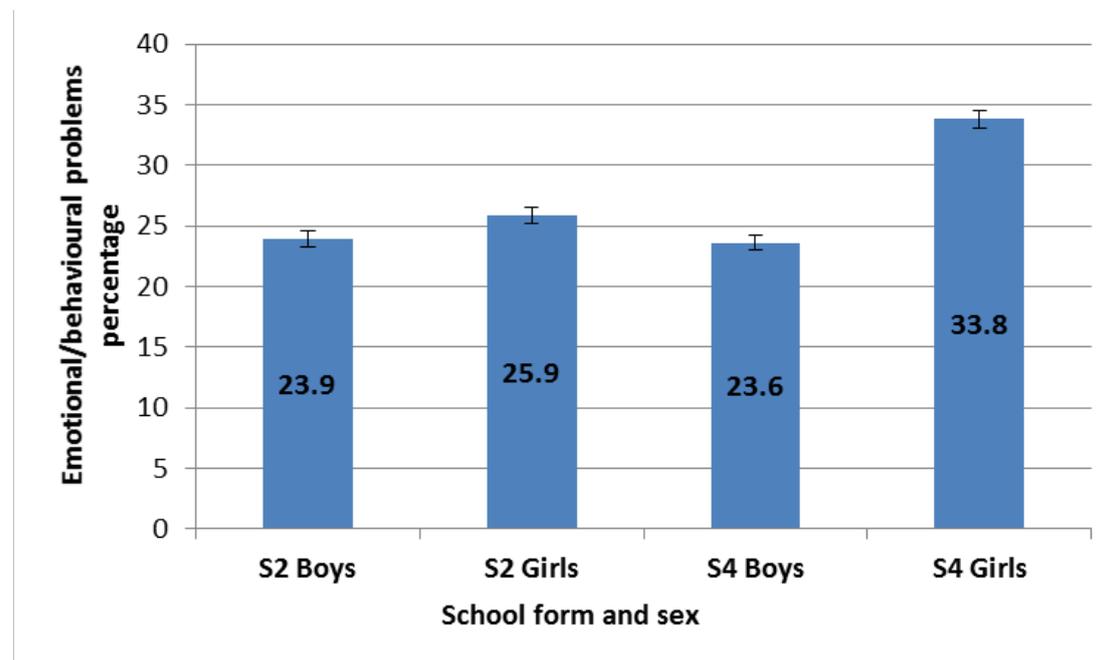
**Figure 4** Conduct problems by SIMD quintile, Scotland, for 2010 and 2013 combined



## Emotional and behavioural problems

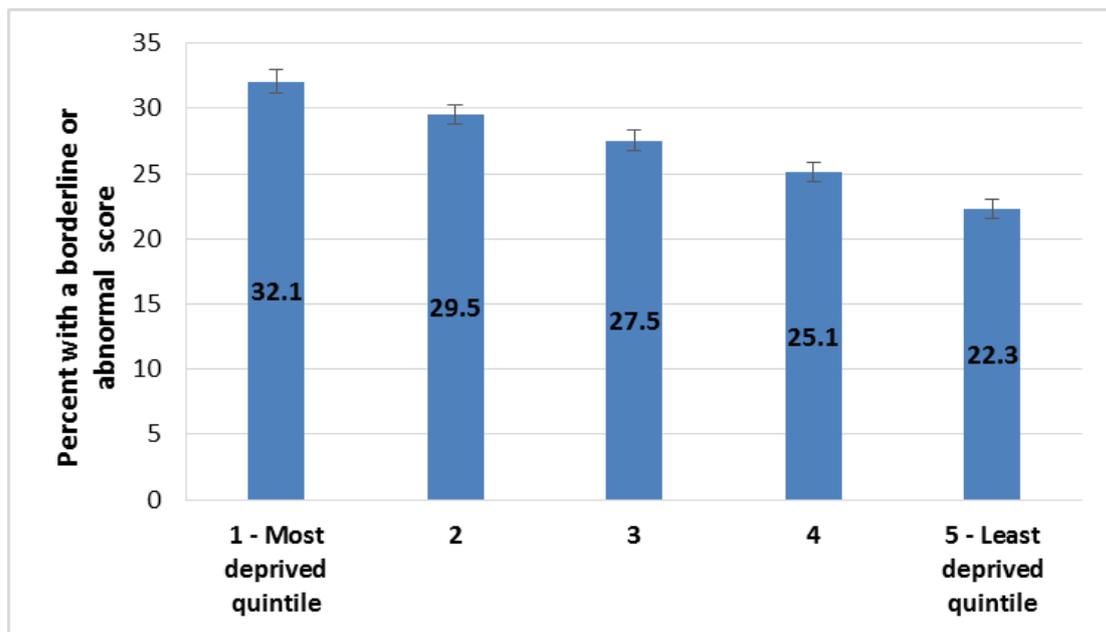
The percentage of boys with emotional/behavioural problems remained stable from S2 to S4 (Figure 5), but the percentage with emotional/behavioural problems was higher for girls than for boys, and increased between S2 and S4.

Figure 5 Percentage of S2 and S4 pupils with emotional/behavioural problems, Scotland, for 2010 and 2013 combined



The percentage of pupils with emotional/behavioural problems decreased stepwise from most deprived to least deprived across SIMD quintiles (Figure 6). Overall, 26.9% of those sampled had emotional/behavioural problems on this indicator. The SII for emotional/behavioural problems by SIMD quintile was 11.8 (95% CI 10.7–12.8).

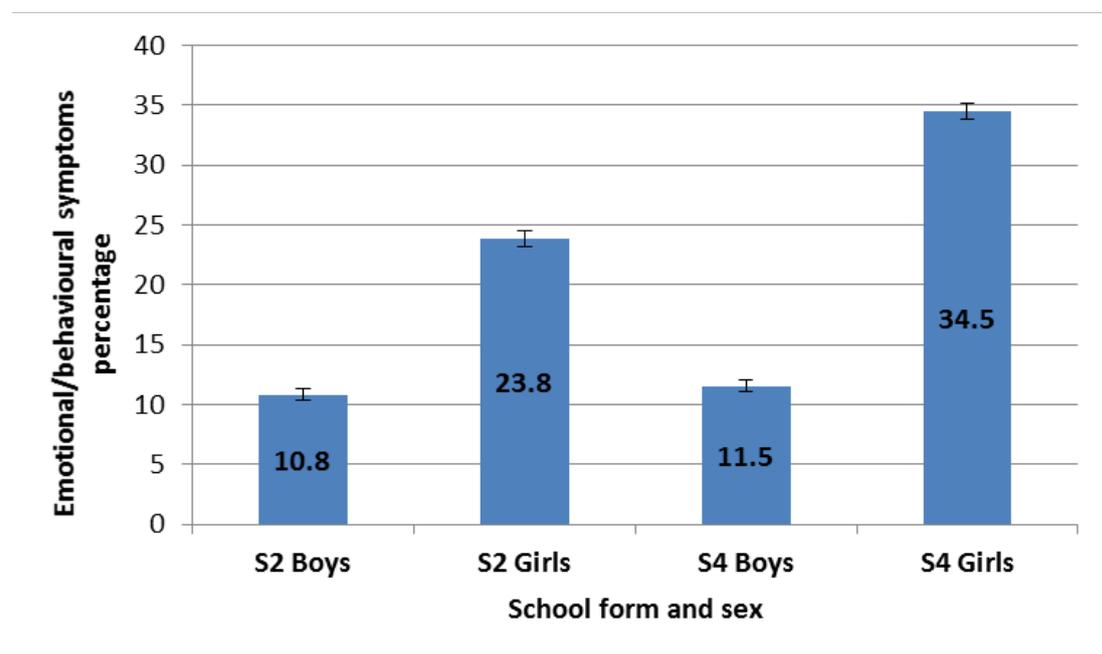
**Figure 6** Emotional/behavioural problems by SIMD quintile, Scotland, 2010 and 2013 combined



## Emotional symptoms

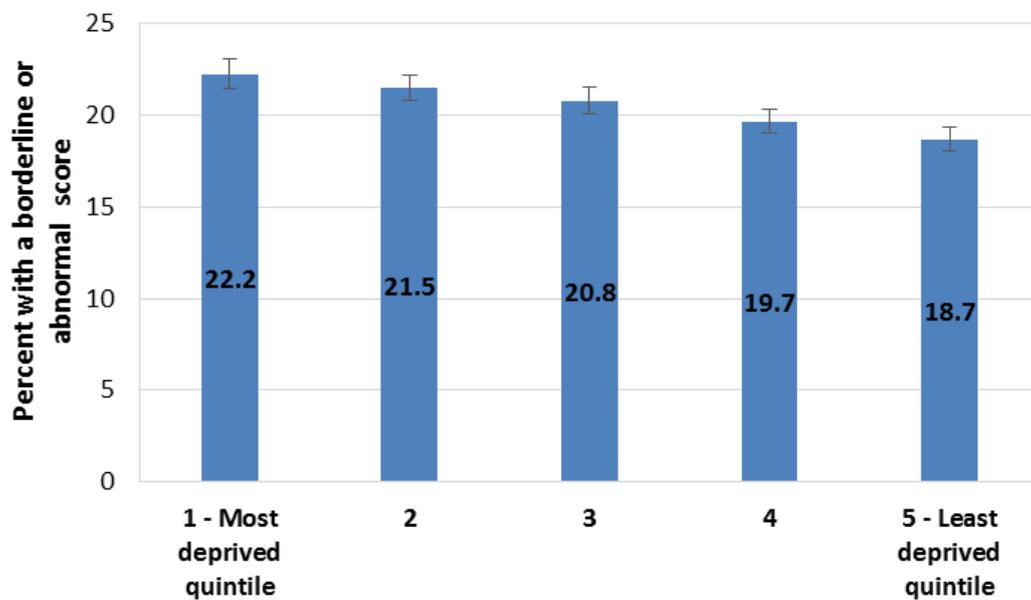
For boys the percentage with emotional symptoms remained stable from S2 to S4 (Figure 7), but the percentage with emotional symptoms was higher for girls than for boys, and increased between S2 and S4.

**Figure 7** Percentage of S2 and S4 pupils with emotional symptoms, Scotland, for 2010 and 2013 combined



The percentage with emotional symptoms decreased stepwise from most deprived to least deprived across SIMD quintiles (Figure 8). Overall, 20.4% of the sample had emotional symptoms on this indicator. The SII for emotional symptoms by SIMD quintile was 4.4 (95% CI 3.9–4.9).

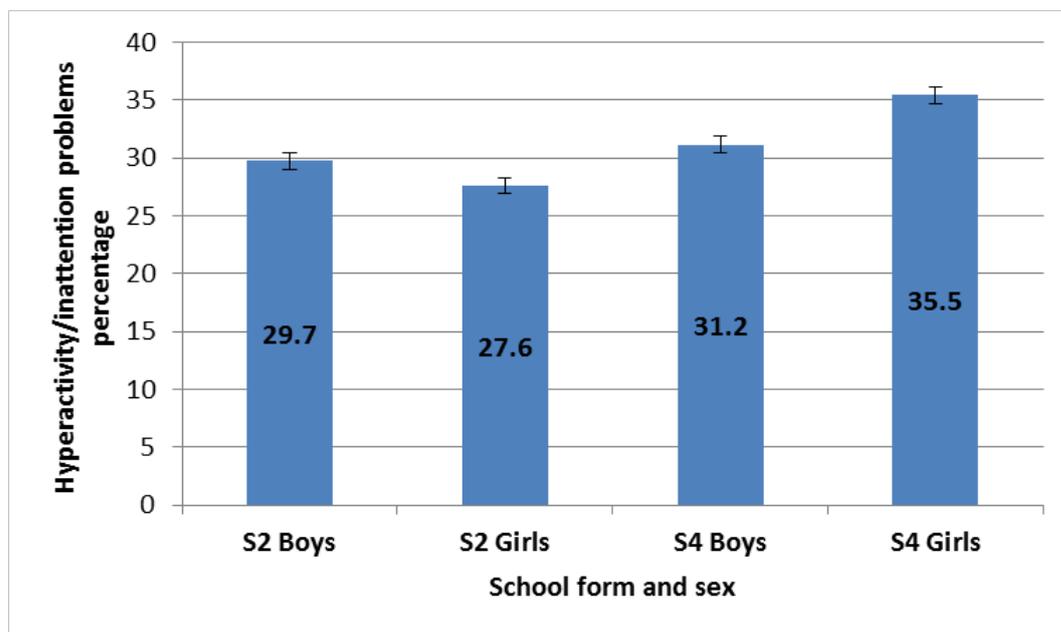
**Figure 8** Emotional symptoms by SIMD quintile, Scotland, 2010 and 2013 combined



## Hyperactivity/inattention

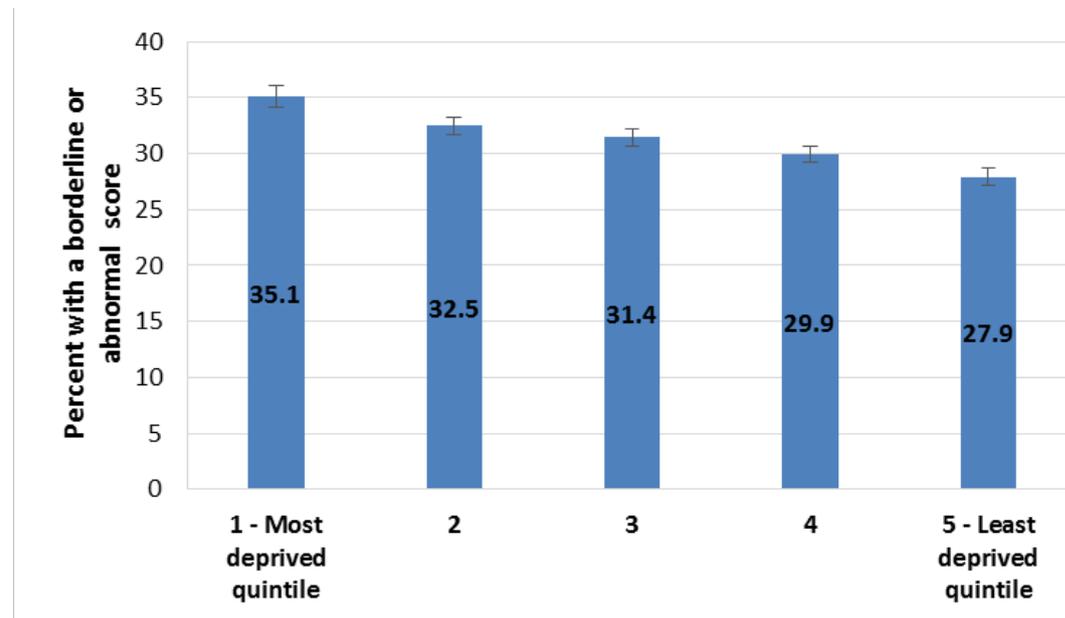
In S2 the proportion of girls showing hyperactivity/inattention was lower than the proportion of boys showing this. The proportion was higher in S4 than in S2 for both boys and girls, but was highest among girls (Figure 9).

**Figure 9** Percentage of S2 and S4 pupils with hyperactivity/inattention problems, Scotland, for 2010 and 2013 combined



The percentage with hyperactivity/inattention decreased stepwise from most deprived to least deprived across SIMD quintiles (Figure 10). Overall, 31.1% of the sample had hyperactivity/inattention problems on this indicator. The SII for hyperactivity/inattention by SIMD quintile was 8.3 (95% CI 6.0–10.7).

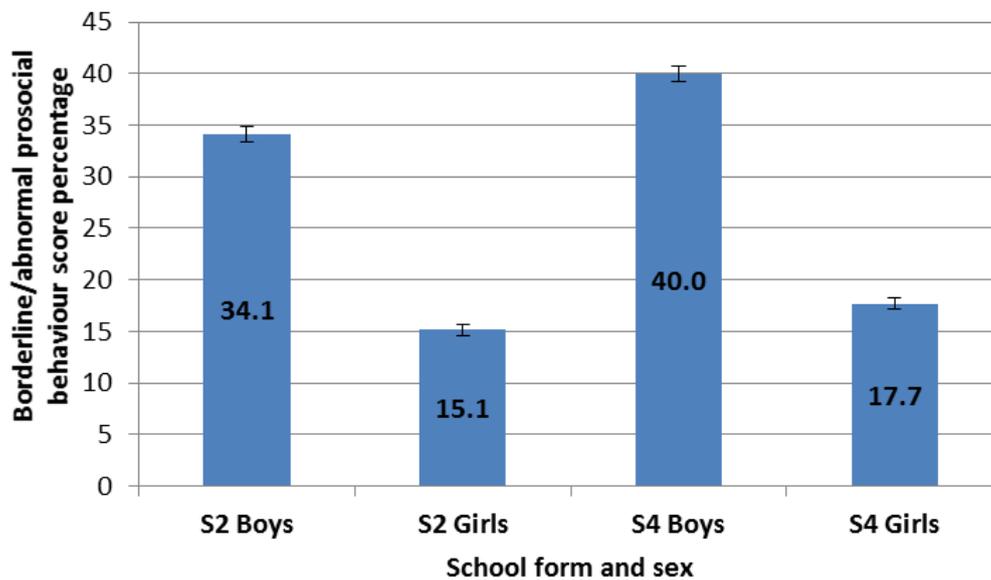
Figure 10 Hyperactivity/inattention by SIMD quintile, Scotland, 2011 and 2013 combined



## Pro-social behaviour

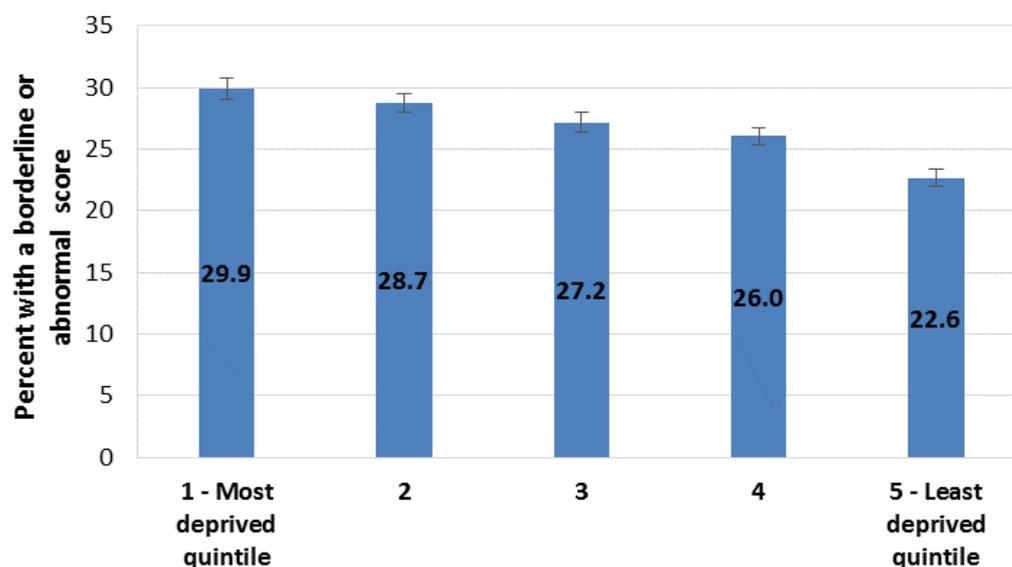
The percentage of S2 and S4 girls with borderline or abnormal scores on the pro-social (helping) behaviour indicator was much lower than for S2 and S4 boys, suggesting girls were more likely to be 'normal' on this indicator (Figure 11). For both boys and girls there was a modest but significant increase in the proportion with borderline or abnormal scores as they moved from S2 through to S4.

**Figure 11** Percentage of S2 and S4 pupils lacking pro-social behaviour, Scotland, for 2010 and 2013 combined



The percentage who lacked pro-social behaviour characteristics decreased stepwise from most deprived to least deprived across SIMD quintiles (Figure 12). Overall, 26.7% of the sample lacked pro-social behaviour characteristics on this indicator. The SII for hyperactivity/inattention by SIMD quintile was 8.5 (95% CI 5.3–11.7).

**Figure 12** Lacking pro-social behaviour by SIMD quintile, Scotland, for 2010 and 2013 combined



## Inequality by SIMD – summary

The SII by SIMD quintile for each adolescent indicator are summarised in Table 2, below. Absolute and relative inequalities (as indicated by the SII and RII, respectively) are evident across all of the indicators, but it is not possible to compare the magnitude of these inequalities as all the indicators are derived from different survey scales.

**Table 2** Summary of absolute and relative inequality in Scotland by SIMD quintile for indicators of adolescent mental health and wellbeing (2010 and 2013 combined)

<b>Indicator name</b>	<b>Population mean</b>	<b>SII (95% CI)</b>	<b>RII (95% CI)</b>
Mean wellbeing	49.4	1.9 (1.7–2.2)	0.04 (0.03–0.04)
% conduct problems	23.2	11.4 (10.3–12.5)	0.49 (0.44–0.54)
% emotional/behavioural problems	26.9	11.8 (10.7–12.8)	0.44 (0.40–0.48)
% emotional symptoms	20.4	4.4 (3.9–4.9)	0.21 (0.19–0.24)
% hyperactivity	31.1	8.3 (6.0–10.7)	0.27 (0.19–0.34)
% lacking pro-social behaviour characteristics	26.7	8.6 (5.3–11.7)	0.32 (0.20–0.44)

# 5. Discussion

## Main results

Wellbeing was lower for girls than boys at both S2 and S4. Emotional and behavioural problems and emotional symptoms were higher for girls than boys at both these stages, and both these and hyperactivity increased more in girls than boys between stages. A much higher percentage of boys than girls lacked pro-social behaviour characteristics in both S2 and S4, and this worsened more for boys than girls between stages. Mental health for both sexes generally deteriorated from S2 to S4. The one exception was conduct problems in boys, but the improvement was slight. There was a linear gradient across deprivation quintiles for all of these measures, with better mental health and lower prevalence of problems in the least-deprived groups.

## Strengths and weaknesses

Data were available for only a limited range of measures of health and wellbeing and for a limited range of equality groups. For example, we would have liked to have examined outcomes by ethnicity, religion and for specific groups such as looked-after children, but there were insufficient data to do so.

The measures are all survey-based and therefore subject to sampling and response biases which are likely to underestimate the extent of the problem in Scotland and the inequality. For example, between S2 and S4 some children will drop out or be excluded from mainstream schools. Such loss to follow-up could exacerbate the differences between S2 and S4.

The area-based measure of socioeconomic status we use is also subject to the ecological fallacy, as it applies an area-based measure to all residents within particular postcodes, which is likely to underestimate the extent of inequality compared with an individual-level measure. As stated in methods above, we used the complete SIMD. Although there is a circular logic in

ranking by health outcomes (as included in SIMD) and then describing a gradient in health outcomes by that measure, in practice using the full SIMD index rather than the income–employment domain is unlikely to have changed the results substantially. Future work will explore the use of the income–employment domains as a marker of socioeconomic status.

## Implications

There are inequalities in mental health by sex and deprivation. Those living in the most deprived communities are at greatest risk of worse mental health. Girls report worse mental health than boys on survey measures for wellbeing, emotional problems and symptoms, and (at S4) hyperactivity, whereas boys report more conduct problems and are more likely to lack pro-social behaviour characteristics. These issues generally worsen from S2 to S4.

Further work to identify effective policies and service responses to reduce these inequalities is important if we are to achieve the aspiration of a mentally flourishing Scotland. These data suggest there is also a need for further research to investigate whether health inequality intensifies or decreases between these S2 and S4 stages. It would be of interest for future research to investigate the changes in mental health inequality by SIMD between S2 and S4 for all pupils, and for boys and girls separately.

## 6. References

1. ScotPHO Profiles. [www.scotpho.org.uk/comparative-health/profiles/online-profiles-tool](http://www.scotpho.org.uk/comparative-health/profiles/online-profiles-tool) (accessed 09/11/15).
2. SALSUS [www.isdscotland.org/Health-Topics/Public-Health/SALSUS/](http://www.isdscotland.org/Health-Topics/Public-Health/SALSUS/) (accessed 09/11/15).

