ORIGINAL PAPER

Barbara Maughan · Stephan Collishaw · Howard Meltzer · Robert Goodman Recent trends in UK child and adolescent mental health

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Abstract Background Past studies have documented rising levels of conduct problems among UK adolescents in the last guarter of the twentieth century, and increased rates of emotional difficulties between the 1980s and 1990s. Method We used parent, teacher and youth ratings from two large scale, nationally representative studies of 5-15 year-old carried out in 1999 and 2004 to assess whether these increases continued into the early years of the new millennium. Results Ratings on most "problem" subscales remained stable or showed small declines over this period, and parent and teacher reports suggested small increases in levels of prosocial behaviours. Conclusions The upward trends in rates of UK child adjustment problems noted since the 1970s and 1980s may have plateaued, and possibly begun to be reversed.

Key words child mental health – time trends – epidemiology - strengths and difficulties questionnaire

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Introduction

Extensive evidence points to rising levels of psychosocial problems among young people in many western societies over the second half of the twentieth century [15]. In the UK, concerns over young people's well-being have been further heightened by findings from a UNICEF report showing that the UK ranked low in international comparisons of rich countries on a series of indicators of child wellbeing including risk behaviours, peer and family relationships, and perceived satisfaction with life [19].

While these broad conclusions now are widely accepted, commentators have also noted the many methodological challenges that face attempts to track population trends in child and adolescent mental health. In principle, three main types of evidence could be used to identify such trends: official statistics, data on service use, and survey responses. On closer inspection, however, each has limitations as an index of trends in underlying rates of disorder. Official statistics are only available for a few, relatively severe indicators relevant to the mental health field, most notably completed suicide and convictions. Although data on these topics are available for relatively extended historical periods, they clearly only index a minority of mental health-related difficulties, and they can be vulnerable to changes in recording. Trend data on service use and prescribing for mental health problems are available on a wider range of conditions. Here, however, other problems of interpretation arise: increases in service use may reflect changes in public awareness of children's problems as much as variations in their basic prevalence, and increases in prescribing may reflect improved recognition by clinicians, or changes in the availability of effective medications.

Given these difficulties, data from repeated community based surveys of mental health problems should provide the best evidence on underlying trends in disorder, and are crucial for identifying the large numbers of children with clinically significant difficulties who fail to access or receive services. Even here, however, interpreting findings may not be straightforward, as changes in diagnostic criteria and developments in case ascertainment [5] can render comparisons of recent and past studies problematic.

Where research methods have remained more consistent, however, is in the use of standardized questionnaires. Here, a small handful of well-established measures of common emotional and behavioural difficulties have continued in use for many years; as a result, much of what we know about trends in child and adolescent mental health has been derived from comparisons of surveys using measures of this kind [11, 18]. Taking this approach, we recently reported on parent ratings of emotional/behavioural problems in three nationally representative samples of UK teenagers studied between the mid-1970s and the late 1990s [3]. We found few changes in levels of adolescent hyperactivity over this period; increases in levels of adolescent emotional problems between the 1980s and 1990s; and a long-term, significant rise in rates of adolescent conduct problems since the 1970s of a medium effect size (d = 0.33), equivalent to a doubling in rates of high scores over the 25-year study period. This increase in conduct problems appeared quite general, affecting girls as well as boys, and young people from all social backgrounds; importantly, tests also suggested that it was not simply an artifact of changes in parents' styles of reporting.

National studies of child mental health undertaken by the Office for National Statistics (ONS) in 1999 and 2004 [9, 12] now make it possible to update that picture. Using the interview-based measures available from these surveys, Green et al. [9] found no significant change in levels of ICD-10 conduct or hyperkinetic disorders, and pointers to a slight decline in levels of emotional disorders, over this 5-year period. Because the prevalence of clinically significant disorders is quite low, however, power to detect change in diagnostic categories may be limited even in large-scale studies. As a result, we report here on complementary (and statistically more powerful) comparisons of overall levels of emotional/behavioural problems in the child population, assessed through parent, teacher and youth questionnaires, to examine whether these also suggest a slowing of the rise in UK problem levels highlighted in our previous report.

Methods

The data are drawn from the 1999 [6, 12] and 2004 [9] UK national studies of child and adolescent mental health undertaken by ONS on behalf of the Department of Health and the Scottish Executive. Full details of the study methods are given in earlier reports [6, 9, 12].

Samples

The samples were ascertained in similar ways in both surveys. Families with children aged 5-15 years in 1999, and 5-16 years in 2004, were identified via Child Benefit records. After exclusion of addresses with no postcode, and entries that were under revision at the time of the surveys, the sampling frame was estimated to represent 90% or more of British children [12]. The sample design consisted of samples of postal sectors, and within these, samples of addresses. Response rates in both studies were high: parental information was collected on 83% (10,438/12,529) of eligible children in 1999, and from 76% (7,977/10,496) of families approached for interview in 2004; mothers were the primary respondents in over 95% of cases in both surveys. Teacher reports were available for 81% of children in participating families 1999 and 77% in 2004, and 95 and 86%, respectively, of 11-15/16 year-old provided selfreports of their difficulties. Boys made up 50% of the 1999 sample and 52% of the 2004 sample, and children of each year of age in the study age-range were approximately equally represented in each survey. To ensure comparability between the two surveys, we focus on results for 5-15 year-olds from each sample here.

Measures

Emotional/behavioural problems

Parents and young people aged 11 years and over were administered the Strengths and Difficulties Questionnaire (SDQ) [7]. With parental agreement, teachers were also sent a version of the SDQ for completion. The SDQ is a brief behavioural screening questionnaire that asks about 25 attributes, some positive and others negative, employing a three-point response scale (not true, somewhat true, certainly true, scored 0–2). The 25 items are divided between five scales of five items each, generating scores for conduct problems, inattention-hyperactivity, emotional symptoms, peer problems and prosocial behaviour; all scales but the last are summed to generate a Total Difficulties score. The SDQ has been widely used in UK and international research; it has good psychometric properties, and identifies children with clinically significant problems [8].

Socio-demographic background

The parental interviews provided data on a series of socio-demographic indicators: maternal age at the birth of the study child; maternal qualifications (classified as degree/other higher level qualification; A level or good GCSEs; other qualifications; no qualifications); family type (classified as "traditional" two parent, single parent, or reconstituted); large family size (1–3 children vs. 4 children or more); gross household weekly income; parents' economic activity (one or both parents economically active vs. neither economically active); and housing tenure (owner-occupied vs. rented).

Statistical analyses

The analyses were undertaken in STATA [17], using weights developed by the original survey teams to take account of the sample design and the effects of non-response in each survey; full details of the derivation of the weights is given in the main reports on the two surveys [9, 12]. We report here on results from two-tailed *t* tests with robust standard errors for comparisons of mean scores in the 1999 and 2004 samples, and ordinary least squares regression (again using robust variance estimates) for multivariate analyses. Because the analyses involved multiple tests of cohort differences (on different sub-scales of the SDQ, and/or on responses from differences in bivariate comparisons. Where significant differences were detected between the two cohorts we

Table 1 Parent, teacher and young people's ratings on the Strengths and Difficulties Questionnaire (SDQ) in 1999 and 2004

| SDQ score | Parent ratings of child aged 5–15 years | dren | Teacher ratings of aged 5–15 years | children | Young people's self-ratings ages 11–15 years | |
|---------------------|---|------------------|------------------------------------|-----------------|---|----------------------|
| | 1999 <i>n</i> = 10,305 | 2004 $n = 7,312$ | 1999 <i>n</i> = 8329 | 2004 $n = 5609$ | 1999 <i>n</i> = 4244 | 2004 <i>n</i> = 2930 |
| | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Total Difficulties | 8.43 (5.8) | 8.04 (5.9)*** | 6.54 (6.0) | 6.50 (6.0) | 10.28 (5.2) | 10.07 (5.2) |
| Conduct problems | 1.60 (1.7) | 1.50 (1.7)*** | 0.90 (1.6) | 0.90 (1.6) | 2.23 (1.7) | 2.12 (1.7)** |
| Hyperactivity | 3.45 (2.6) | 3.26 (2.6)*** | 2.86 (2.8) | 2.77 (2.7) | 3.76 (2.2) | 3.85 (2.2) |
| Emotional problems | 1.91 (2.0) | 1.88 (2.0) | 1.42 (1.9) | 1.52 (2.0)†† | 2.81 (2.1) | 2.62 (2.0)*** |
| Peer problems | 1.48 (1.7) | 1.41 (1.7) | 1.37 (1.8) | 1.32 (1.8) | 1.48 (1.4) | 1.47 (1.5) |
| Prosocial behaviour | 8.61 (1.6) | 8.81 (1.6)*** | 7.25 (2.4) | 7.56 (2.4)*** | 7.99 (1.7) | 7.95 (1.7) |

**Lower problem/higher prosocial scores in 2004 than in1999 (P < 0.01)

***Lower problem/higher prosocial scores in 2004 than in1999 (P < 0.001)

††Higher problem scores in 2004 than in1999 (P < 0.01)

also report effect sizes (d). Cohen [2] tentatively defined effect sizes of ≤ 0.2 as small, >0.2 and ≤ 0.5 as medium, and >0.5 and ≤ 0.8 as large.

Results

Table 1 shows means and standard deviations for parent, teacher and self-rated SDQ sub-scales and Total Difficulties scores for the full sample of 5-15 year-old in each cohort, along with the N of respondents with full data on the Total Difficulties scales (numbers with data on some sub-scales were slightly larger). According to parent ratings of "problem" scores, overall levels of Total Difficulties were slightly but reliably lower in the more recent cohort (t = -4.31, P < 0.001, d = 0.06), predominantly as a result of small but reliable reductions in mean levels of conduct problems (t = -3.61, P < 0.001, d = 0.06) and hyperactivity (t = -4.81, P < 0.001, d = 0.07). Parent ratings of emotional difficulties and peer problems showed no marked changes between the two cohorts, but parents rated their children as showing higher levels of prosocial behaviours in 2004 than in 1999 (t = 8.24, P < 0.001, d = 0.13).

Teacher ratings also identified higher levels of prosocial behaviour in the more recent cohort (full samples t = 7.48, P < 0.001, d = 0.13), but no changes in levels of conduct problems, hyperactivity or peer difficulties. Teacher ratings of emotional problems were the only indicators to suggest any rise in problem levels between 1999 and 2004, with a small but significant increase (t = 2.77, P = 0.006,d = 0.05). Finally, the young people's own responses (available for 11-15-year old only) pointed to some reduction in levels of conduct problems (t = -2.67, P = 0.008, d = 0.06) and emotional difficulties (t = -3.98, P < 0.001, d = 0.10) between the two cohorts, but stable levels on other problem sub-scales and in relation to prosocial behaviours.

To assess the consistency of these findings for different sub-groups within the child population, Table 2 shows more detailed breakdowns of Total Difficulties scores by child gender and age group, and according to a series of socio-demographic background indicators. In general, the findings paralleled those for the full samples. Parent-rated Total Difficulties scores showed significant declines between 1999 and 2004 in both boys (d = 0.06)and girls (d = 0.07), and among both children (ages 5-10 years, d = 0.06) and adolescents (ages 11-15 years, d = 0.07). The generality of these trends was also reflected in declining levels of parent-rated difficulties within the great majority of sociodemographic background categories, although not all of these contrasts reached statistical significance. Where they did, effect sizes were typically small, ranging from d = 0.07 for children and young people in "traditional" two-parent families to d = 0.10 for those in smaller families (with three children or fewer). The only exception to this pattern was for youth in large families (four children or more), where the decline in parent-rated difficulties was of a medium effect size (d = 0.27). The only significant change in teacher-rated Total Difficulties scores also focused on children and young people in large families (d = 0.25), while the young people's own ratings showed no change in overall levels of emotional/behavioural difficulties by gender, or within any socio-demographic category.

To complete the analyses we undertook two further sets of tests focusing on parent-rated Total Difficulties scores, where the main evidence for change in problems levels had emerged. First, to test for possible changes in the associations of problem levels with socio-demographic factors over time, we examined interactions between each socio-demographic indicator and study cohort. With only one exception (family size) these tests were non-significant, suggesting that age and sex trends in problem levels, along with associations with maternal and family characteristics, were broadly similar in the two cohorts. In the case of family size, however, the analyses suggested that the decline in parent-rated problem levels for children and young people in large families was more substantial than the reductions that had Table 2 Total Difficulties scores 1999 and 2004 and socio-demographic background factors

| | Parent ratings | | Teacher ratings | | Youth ratings | |
|---|----------------|----------------|-----------------|----------------|----------------|----------------|
| | 1999 Mean (SD) | 2004 Mean (SD) | 1999 Mean (SD) | 2004 Mean (SD) | 1999 Mean (SD) | 2004 Mean (SD) |
| Gender | | | | | | |
| Boys | 9.08 (6.0) | 8.72 (6.2)** | 7.78 (6.3) | 7.52 (6.4) | 10.54 (5.1) | 10.23 (5.2) |
| Girls | 7.78 (5.5) | 7.32 (5.6)*** | 5.32 (5.3) | 5.42 (5.4) | 10.03 (5.3) | 9.90 (5.3) |
| Age group | | | | | | |
| 5–10 years | 8.59 (5.7) | 8.22 (5.8)** | 6.75 (5.9) | 6.56 (5.9) | - | - |
| 11–15 years | 8.22 (5.8) | 7.84 (6.1)** | 6.26 (6.1) | 6.43 (6.2) | 10.28 (5.2) | 10.07 (5.2) |
| Maternal age at child's birth | | | | | | |
| <25 years | 9.91 (6.2) | 9.58 (6.2) | 7.61 (6.5) | 7.81 (6.6) | 10.92 (5.5) | 10.90 (5.3) |
| ≥35 years | 6.96 (5.4) | 7.06 (5.8) | 6.26 (5.7) | 6.02 (5.7) | 9.30 (4.9) | 9.41 (5.0) |
| Maternal education | | | | | | |
| Degree/other higher qualifications | 6.66 (5.1) | 6.32 (4.9) | 5.21 (5.1) | 5.30 (5.2) | 9.52 (4.9) | 9.15 (4.8) |
| No qualifications | 10.34 (6.2) | 9.95 (6.7) | 8.49 (6.7) | 8.26 (6.8) | 11.19 (5.5) | 10.92 (5.6) |
| Family type | | | | | | |
| Traditional | 7.63 (5.3) | 7.24 (5.4)*** | 5.71 (5.4) | 5.79 (5.5) | 9.76 (5.1) | 9.52 (5.0) |
| Single parent | 9.91 (6.2) | 9.45 (6.5) | 8.53 (6.6) | 7.99 (6.5) | 11.04 (5.3) | 11.14 (5.4) |
| Reconstituted | 10.15 (6.3) | 9.47 (6.5) | 7.71 (6.4) | 7.40 (6.5) | 11.53 (5.4) | 10.81 (5.5) |
| Family size | | | | | | |
| 1–3 children | 8.37 (5.7) | 8.00 (5.9)*** | 6.48 (5.9) | 6.47 (6.0) | 10.28 (5.2) | 10.04 (5.2) |
| 4 or more children | 10.70 (6.7) | 9.10 (6.5)** | 8.86 (7.0) | 7.22 (5.8)** | 10.49 (5.8) | 10.81 (5.4) |
| Household income | | | | | | |
| ≤£199 per week | 10.37 (6.3) | 9.80 (6.4) | 8.75 (6.8) | 8.40 (6.8) | 11.41 (5.5) | 11.21 (5.5) |
| ≥£500 per week | 6.89 (4.9) | 6.65 (5.1) | 5.16 (5.0) | 5.38 (5.3) | 9.50 (4.9) | 9.39 (4.9) |
| Parents' economic activity | | | | | | |
| At least one parent economically active | 7.92 (5.4) | 7.47 (5.5)*** | 5.97 (5.5) | 6.00 (5.7) | 10.06 (5.1) | 9.86 (5.1) |
| Neither parent economically active | 10.86 (6.6) | 10.61 (7.0) | 9.25 (7.0) | 9.23 (7.1) | 11.35 (5.5) | 11.58 (5.7) |
| Housing tenure | | | | | | |
| Owner occupier | 7.45 (5.1) | 7.21 (5.4) | 5.61 (5.2) | 5.75 (5.5) | 9.82 (5.0) | 9.53 (5.0) |
| Rented | 10.52 (6.5) | 10.02 (6.6)** | 8.64 (6.9) | 8.43 (6.7) | 11.36 (5.5) | 11.60 (5.6) |

**Lower problem scores in 2004 than in 1999 (P < 0.01)

***Lower problem scores in 2004 than in 1999 (P < 0.001)

occurred in smaller families over this period (family size × year: $\beta = -0.027$, t = -2.18, P = 0.03).

Finally we undertook a multivariate analysis to test whether cohort differences in parent-rated Total Difficulties scores were still evident once any changes in the socio-demographic profiles of the two survey populations had been taken into account. Initial tests highlighted a number of such changes; in the main, these seemed likely to reflect general demographic trends occurring over the study period. In line with increasing ages at first childbirth in the UK [14], for example, mean maternal age at the birth of the study child rose from 27.6 years in the 1999 cohort to 28.3 years in the 2004 cohort, while in line with improving qualification levels in the adult population the proportion of mothers with no educational qualifications decreased from 22.3% in 1999 to 18.1% in 2004. Most demographic changes were relatively modest in size, and appeared to reflect improvements in social and material conditions between the two surveys: the proportion of families where no parent was economically active, for example, fell from 18.5% in 1999 to 15.9% in 2004, and the proportion of families living in rented accommodation fell from 32.3 to 29.6%. Other trends reflected the increasing diversity of family patterns in UK society [14], with a fall in the proportions of children living in "traditional" two-parent families (66.4–64.6%) and an increase in those in single parent households (22.5–24.9%).

To take account of these variations, we undertook a multivariate (multiple regression) analysis testing for cohort differences in parent-rated Total Difficulties scores with effects of socio-demographic background factors controlled. Table 3 shows the results. With the exception of family size, all of the sociodemographic indicators were independently associated with problem levels in this multivariate context.

| Table | e 3 | Multiple | regression | analy | rsis o | of | parent-rated | Total | Difficulties | scores |
|-------|-----|----------|------------|-------|--------|----|--------------|-------|--------------|--------|
|-------|-----|----------|------------|-------|--------|----|--------------|-------|--------------|--------|

| Gender 1.39 (1.56, 1.22) 16.00 <0.00 | Predictor | b | (95% CI) | t | Р |
|---|---|---|--|--|--|
| A level/GCSE versus degree 0.66 $(0.45, 0.87)$ 6.15 <0.00 Other quals versus degree 1.66 $(1.36, 1.97)$ 10.70 <0.00 No qualifications versus degree 2.19 $(1.88, 2.49)$ 14.10 <0.00 Family type Single parent versus traditional 0.46 $(0.18, 0.75)$ 3.16 0.002 Reconstituted versus traditional 1.52 $(1.20, 1.84)$ 9.37 <0.00 Household income -0.18 $(-0.26, -0.10)$ -4.21 <0.00 Parents' economic activity -0.76 $(-1.11, -0.41)$ -4.24 <0.00 Housing tenure 1.17 $(0.90, 1.44)$ 8.58 <0.00 | Gender Age group Maternal age at child's birth Maternal education A level/GCSE versus degree Other quals versus degree No qualifications versus degree Family type Single parent versus traditional Reconstituted versus traditional Household income Parents' economic activity Housing tenure Vear (2004 vs. 1999) | 1.39 -0.48 -0.09 0.66 1.66 2.19 0.46 1.52 -0.18 -0.76 1.17 -0.04 | (1.56, 1.22) (-0.66, -0.31) (-0.11, -0.07) (0.45, 0.87) (1.36, 1.97) (1.38, 2.49) (0.18, 0.75) (1.20, 1.84) (-0.26, -0.10) (-1.11, -0.41) (0.90, 1.44) (-0.08, -0.01) | 16.00 -5.50 -9.61 6.15 10.70 14.10 3.16 9.37 -4.21 8.58 8-2 35 | <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 <0.001 |

Inclusion of all significant covariates resulted in a 46% reduction in the coefficient for study cohort (from -0.078 in an unadjusted model to -0.042 with all covariates included). As Table 3 shows, however, even after controls for this range of background factors, a small but statistically reliable decline in parent-rated Total Difficulties scores still remained.

Discussion

Epidemiological data on population trends in health are essential for service planning, and may give important pointers to changes in risk. Reliable data on trends in children's physical health have been available for many years (see e.g. [13]); until recently, comparable indicators of change in young people's mental well-being have largely been lacking. The ONS surveys of 1999 and 2004 mark an important advance here, providing comparable measures on large-scale, nationally representative samples studied some years apart. Green et al. [9] used these data to compare rates of diagnostically defined disorders over this 5-year period. They found no significant change in the prevalence of ICD-10 conduct or hyperkinetic disorders, and a slight decline (statistically significant in the case of 5-10-year-old boys) in rates of emotional disorders.

Our findings complement their report, focusing on average levels of parent, teacher and adolescent-reported emotional and behavioural difficulties across the UK child population as a whole at these two timepoints. Our study shares both the strengths and the limitations of this earlier report: directly comparable assessments of large-scale, nationally representative samples, but a relatively short (5-year) observation period. Our comparisons (statistically more robust than contrasts based on relatively low-rate, categorically defined disorders) suggest that parent ratings of most "problem" scores either remained stable, or showed small but statistically reliable declines over this period, while both parents' and teachers' perceptions of young people's levels of prosocial behaviours increased. More detailed analyses suggested that the declines in parent-rated problem levels were quite general, being evident in scores for boys and girls, for children and adolescents, and for young people across a range of socio-demographic background groupings. With the exception of family size (where declines in problem levels were more marked in large than in smaller families), associations with these demographic factors were similar across the two cohorts. Finally, a multivariate analysis controlling for changes in the socio-demographic profiles of the two samples suggested that a small decline in problem levels remained detectable with effects of socio-demographic factors controlled.

The stronger reduction in problems levels for children and young people in large than in smaller families appears to be part of a longer-term trend. As we have reported elsewhere [4], large family size showed markedly (and significantly) reduced associations with parent-rated adolescent conduct problems in UK samples between the early 1970s and the late 1990s, with odds ratios for high conduct problem scores falling from 3.0 in 1974 to 1.9 in 1999. Our current findings suggest that this trend continued in the new millennium; indeed, our multivariate analysis showed that large family size—once regarded as a strong independent correlate of childhood behaviour problems-no longer contributed to the prediction of emotional/ behavioural difficulties in these more recent samples once other maternal and family characteristics had been controlled. These findings act as an important reminder that at periods of rapid social change the impact of previously well-established demographic correlates of childhood difficulties may also be found to vary, and requires continued monitoring.

More generally, comparisons between the 1999 and 2004 surveys highlighted a series of modest changes in the socio-demographic composition of the two study samples. In most cases these were in line with expectations based on well-documented UK social trends over recent years [14], and showed, for example, that mean maternal age had increased slightly between the two surveys that maternal qualification levels had improved, and that parental economic activity levels had increased. We should also note, however, that because response rates to the 2004 survey were somewhat lower than in 1999, some part of this changing socio-demographic profile may be attributable to socially patterned variations in response. We have no way of disentangling the relative importance of these two processes-"real" social change, or socially patterned bias in responding-on the composition of the samples. As a result, two rather different interpretations of findings from our multivariate analysis are possible. First, if observed demographic changes between the two surveys were solely a reflection of "true" social trends, the findings suggest that approaching half of the observed decline in problem levels between 1999 and 2004 was mediated by trends in these social and family indicators, but that a considerable proportion remained unexplained. If sample differences were solely a reflection of response bias, by contrast, the multivariate findings would suggest that small but statistically reliable declines in problem levels remained once a range of factors affecting response rates had been taken into account. Though no definitive answers are possible on this issue, we suspect that some mixture of both processes is likely to have been involved.

No UK national data on rates of diagnostically defined disorders are available prior to 1999. In the case of questionnaire ratings, however, findings from the ONS studies can be set in a more extended historical context. Our previous study of trends in adolescent mental health between the mid-1970s and late 1990s [3] was based on parent rating scales; indeed, the final data-point for those analyses drew on the 1999 ONS data used here. Our previous report identified rising levels of emotional difficulties between the 1980s and 1990s, and longer-term increases in adolescent conduct problems, of a medium effect size (d = 0.33), between the mid-1970s and the late 1990s. Our current findings suggest that these longer-term trends may now have plateaued, and possibly begun to be reversed.

Setting our findings in a broader international context reveals both similarities and differences in trends in child mental health problems in different countries in recent decades. Repeated surveys of child and adolescent samples in the Netherlands [18], for example, have identified small but significant increases in parent-rated internalizing difficulties between 1983 and 2003, along with increases in the proportions of children and young people scoring in the deviant range on rule-breaking behaviours. Studies in the US [1], by contrast, highlighted a significant rise in problem levels between the 1970s and the late 1980s, but a fall thereafter. While many of the socio-cultural and economic changes of recent decades have been shared across western societies, others may be more country/culturespecific; as a result, variations of this kind should not perhaps be unexpected. For the UK, our findings suggest that the rising levels of child mental health problems identified over the last decades of the twentieth century may have now have peaked; further data-points are needed to test whether, as in the US, this plateau signals the beginning of a more general decline.

Taken in conjunction with our earlier findings, however, our present results suggest that rates of emotional and behavioural problems among UK children and adolescents remain considerably higher than in the 1970s and 1980s, and are likely to require continuing high levels of service input if they are to be tackled appropriately. As yet, the factors underlying time trends in child emotional and behavioural difficulties are largely unknown. In principle, marked changes in rates of child mental health problems over relatively short historical periods are likely to reflect effects of environmentally-mediated risks (or the environmental "component" in gene-environment interplay); as a result, they are at least potentially open to modification. As we have argued elsewhere [4], although some risks for changing levels of mental health problems may overlap with factors that contribute to individual differences in vulnerability, others may differ, and reflect broader aspects of social change. Given the long-term debilitating effects of many child mental health problems [10, 16], identification of these risks must be a key priority for future research.

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References

- Achenbach T, Dumenci L, Rescorla LA (2003) Are American children's problems still getting worse? A 23-year-comparison. J Abnorm Child Psychol 31:1–11
- 2. Cohen J (1988) Statistical power analysis for the behavioral sciences, 2nd edn. Lawrence Erlbaum Associates, Hillsdale
- 3. Collishaw S, Maughan B, Goodman R et al (2004) Time trends in adolescent mental health. J Child Psychol Psychiatry 45:1350-1362
- 4. Collishaw S, Goodman R, Pickles A et al (2007) Modelling the contribution of changes in family life to time trends in adolescent conduct problems. Soc Sci Med 65:2576–2587
- Costello EJ, Egger H, Angold A (2005) 10-Year research update review: the epidemiology of child and adolescent psychiatric disorders: I. Methods and public health burden. J Am Acad Child Adolesc Psychaitry 44:972–986
- Ford T, Goodman R, Meltzer H (2003) The British child and adolescent mental health survey 1999: the prevalence of DSM-IV disorders. J Am Acad Child Adolesc Psychiatry 42:1203– 1211
- 7. Goodman R (1997) The strengths and difficulties questionnaire: a research note. J Child Psychol Psychiatry 38:581–586
- Goodman R (2001) Psychometric properties of the strengths and difficulties questionnaire (SDQ). J Am Acad Child Adolesc Psychiatry 40:1337–1345
- 9. Green H, McGinnity A, Meltzer H et al (2005) Mental health of children and adolescents in Great Britain, 2004. Palgrave Macmillan, London
- Kim-Cohen J, Caspi A, Moffitt TE et al (2003) Prior juvenile diagnoses in adults with mental disorder: developmental follow-back of a prospective-longitudinal cohort. Arch Gen Psychiatry 60:709-717
- Maughan B, Iervolino AC, Collishaw S (2005) Time trends in child and adolescent mental disorders. Curr Opin Psychiatry 18:81–385
- 12. Meltzer H, Gatward R, Goodman R et al (2000) Mental health of children and adolescents in Great Britain. The Stationery Office, London
- 13. Office for National Statistics (2004) The Health of Children and Young People http://www.statistics.gov.uk/children/
- 14. Office for National Statistics (2007) Social Trends no 37. Palgrave Macmillan, Basingstoke
- 15. Rutter M, Smith DJ (1995) Psychosocial disorders in young people: time trends and their causes. Wiley, Chichester
- Rutter M, Maughan B, Kim-Cohen J (2006) Continuities and discontinuities in psychopathology between childhood and adult life. J Child Psychol Psychiatry 47:276–295
- 17. StataCorp (2002) Stata Statistical Software: Release 7.0. College Station, Texas
- 18. Tick NT, van der Ende J, Verhulst FC (2007) Twenty-year trends in emotional and behavioral problems in Dutch children in a changing society. Acta Psychol Scand 116:473-482
- UNICEF (2007) Child poverty in perspective: an overview of child well-being in rich countries, Innocenti Report Card 7. UNICEF Innocenti Research Centre, Florence