

Secular trends in the mental health of primary school children

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Background

Over the recent past, reports have argued that there has been a decline in the mental health of children and young people in Western societies. This is said to have occurred gradually over the second half of the last century and possibly longer.^{1,2} This view is based on evidence of a progressively declining peak age for adult type depressive disorders,^{3,4} and an apparent increase in adolescent disturbance such as substance abuse,^{5,6} attempted and completed suicide,⁷ perhaps eating disorders,⁸ and behaviour disorders.^{9,10} These phenomena have been attributed to the major changes in social values and behaviour, with their impact on child rearing and family life that gathered pace over the course of the last century.^{11,12}

However, to a significant degree, the conclusions rely upon retrospective data, self-report questionnaires and hospital or crime statistics. Consequently, they do not apply to the same extent or are not relevant to the disorders of younger children living in the community. As a result, there are fewer data available for the assessment of mental health trends among younger children and conclusions concerning younger children remain tentative.¹

In this paper, we compare indices of mental health of primary school children assessed by two surveys conducted approximately a quarter of a century apart among large samples of children in the North East of England. The setting for the studies, Newcastle-upon-Tyne, has shown economic and social changes similar to many industrial cities: a major decline in traditional heavy industries, periods of high unemployment, and increasing rates of family breakdown.

Our objective was to compare the mental health of young children in 1973 and 1994, a period during which substantial changes in rates of psychopathology are said to have occurred.¹⁰

Method

Both surveys used a cluster sampling technique with schools as the sampling unit. The earlier sample was based

on a survey of all the children starting school in 1973 in six primary schools yielding data on 515 children of mean age 7.9 years.¹³ The original description¹³ reported that these had been chosen following 'consultation with the local services to ensure that the schools used were broadly representative'.

In the 1994 survey, in association with the Newcastle-upon-Tyne Local Education Authority, a representative sample of children aged seven to nine years was obtained by selecting all children in one-in-three randomly selected primary schools in the city. The sampling frame omitted the four private primary schools, as they include many children drawn from outside Newcastle (approximately half their intake). This resulted in a sample of 1,051 and data were available on 1,044 children of mean age 7.7 years drawn from 41 schools. The 1994 survey sample had a similar male-female ratio and rate of free school meal entitlement (based on eligibility for social welfare payments and so a measure of poverty) to the city as a whole.

However, the rate of 'breadwinner' unemployment in the original sample was 23.8% and this was considerably greater than the overall male unemployment at the time of either the 1971 (10.0%) or 1991¹⁴ (19.3%) Newcastle censuses. Free school meals data were presented in the original work concerning seven schools (from which the six originally surveyed schools were drawn). In four of these seven schools (57%), the rate of free school meals eligibility was 30% or greater, the corresponding proportion in 1994 was 20 out of 41 (48.8%). Accordingly, it is likely that the earlier sample was drawn from more disadvantaged areas of the city.

The Newcastle-upon-Tyne census data in the two eras in which the surveys were conducted reveal that overcrowding had substantially reduced owing to the housing strategy of the local council and to a decline in the number of children per household. Also, car ownership, one index of a modern affluent society, but also a threat to children's play and safety¹⁵ had increased by 30%. Unemployment almost doubled over the period in question and the number of single parent households more than doubled.

Both populations were screened using the Rutter (B) teacher scales¹⁶ and the Young Group Reading Test¹⁷ and sociometric indices.¹⁸ To maximise comparability, the same YGRT was used for both studies. The sociometric assessment relied upon class peer ratings in response to questions, 'who would you like to sit beside', 'who would you not like to sit beside' and similar questions concerning whom the child would like to 'play with' or not. These ratings provided a measure of social isolation and of peer rejection. It was also possible to include rates of school-based hyperactivity estimated for a larger population of 1,040 children surveyed in 1973¹⁹ (of which the 515 were a subset), and to compare this

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Table 1: Comparison of rates of maladjustment

Index		1973	1994	
		Rate (%)	Rate (%)	(95 % CI)
Reading quotient	75	12.2	6.7	(4.7-8.7)
Rutter	10	17.1	13.2	(9.5-17.0)
Isolation score	1	9.3	11.3	(9.1-13.5)
Rejection score	14	7.8	9.6	(8.1-11.0)
School non-attendance		2.5	1.1	(0.0-1.9)
Screen positive		32.2	28.4	(24.9-32.0)
Hyperactivity		22.1*	18.7	(14.8-22.6)

* Estimated from rates among samples of screen positive and screen negative children in a survey population of 1,040

Comparison of rates of maladjustment (as indicated by scores above or below pre-specified cut-offs for various indices) among two samples of children aged 7-9 years in Newcastle local authority schools. Where the 1973 rates are outside the 95% CI of the 1994 rates, this is highlighted in bold

with the more recent rate. The rate of teacher-rated or school-based hyperactivity was calculated using the Rutter B questionnaire on the basis of three items: (i) 'very restless, often running about or jumping up and down, (ii) 'squirmy, fidgety child', (iii) 'cannot settle to anything for more than a few minutes'. The rate of school-based hyperactivity calculated for the earlier sample was similar to rates calculated for other urban samples.¹⁹ For all ratings, children who scored above (or below) a pre-specified cut-off were classified as positive on this component of the screen. The threshold for the reading test (which was used in identical form for both cohorts) was set at the 25th centile for reading obtained in the first survey. As in the original survey, subjects were deemed screen-positive if positive on any one of the screen components.

Statistical methods

Confidence intervals for the percentage of children who were screen positive on each component in 1994 were calculated allowing for clustering of children within schools. Confidence intervals were not presented in the analysis of the 1973 data, but if the 1973 rate was outside the 95% confidence interval of the 1994 rate, this suggested that the rates were significantly different.

Findings

Rates of reading delay, absenteeism and teacher rated behavioural and emotional problems were lower in the 1994 sample compared to the 1973 sample (see Table 1). The overall screen-positive rate was also lower in the second sample. However, the estimated rates of school-based hyperactivity in 1973 and 1994 were similar. There was a trend for rates of social isolation to be higher in the second sample. Finally, the rate of peer rejection in the second sample was significantly higher in the 1994 sample.

Discussion

This study explores the question of secular trends in and risk for mental disorder in childhood, an area for which there are relatively few data. With the exception of sociability, the findings do not suggest any substantial increase in vulnerability to mental disorder among primary school-age children over the period under review.

However, most of the data pointing to deterioration in mental health relate to adolescents or include adolescents. In the child samples studied here it may be that psychopathology relates to the neuro-developmental delays that may underpin attention deficit hyperactivity^{20,21} or early onset conduct disorder.²² It is unlikely that rates of neuro-developmental vulnerability which tend to be genetically determined²³ would vary much between adjacent generations.²⁴

However, the data do reveal a significant increase over the period in peer rejection, a characteristic that is strongly associated with lasting problems of social adjustment.^{25,26} This finding does parallel the reported decline between 1976 and 1989 in extra-curricular activities and contacts with friends among US children.⁹

This apparent unlinking of teacher and child-derived indices suggests the possibility that factors external to the school may have been adversely affecting children's social development. These might include, for instance, changes in the quality of parenting, known to impact on children's ability to relate to peers.^{27,28} This might be sufficiently subtle to adversely affect social behaviour but insufficient to cause a more pervasive deterioration in behaviour obvious to teachers. Alternatively, influences such as experience in pre-school may affect normal socialisation but this effect is said to be weak.²⁹ A further theoretical possibility might be the shared experience of adverse changes in neighbourhoods such as substantial increase in road traffic or other manifestations of declining social capital.^{12,15,30}

In keeping with these findings, Jacobson *et al*²⁴ reported no change in the heritability of conduct disorder symptoms over sequential cohorts. However, they did find that the common environmental influences on self-report behaviour increased substantially across cohorts. Indeed, behaviour problems in childhood show greater heritability than those of adolescence.²³ Hence, it may be that changes in family life and in the quality of neighbourhoods disproportionately impacts on adolescents but that the developmentally earlier signs of environmental change on behaviour are more subtle.

Due to the nature of the samples, one inner city and one representative of the city, had there been no major change over time in indices of mental health, an apparent decline in questionnaire scores would have emerged. In general this is what the data show. However, for the same reasons, declines in sociometric measures of isolation and rejection would have been also expected. The increase in rates of isolation and rejection is unlikely to be explained by the relative rates of deprivation of the two samples.

It is important to note that this study does not include clinical diagnoses of mental disorder and so cannot address directly the issue of trends in mental disorder. However, the chosen indices do measure phenomena related to mental disorder. For instance the relationship of reading delay,³¹ hyperactivity³² and social relationships¹⁹ to mental disorder in childhood are well known.

The key methodological weakness of this study concerns the compatibility of the two samples. Nevertheless, the characteristics of the two samples do not explain the sociometric findings. These are of concern, not least because peer relationships are of potentially lasting importance for adjustment³³ and, through their impact on self-evaluations, on mental

health.²⁶ Conceivably, perhaps via the same mechanism, they may be also relevant to the increasing affective vulnerability of young adults.^{3,4} Finally, although the second set of data was obtained in 1994, the period under study coincided with an era of rising psychopathology and so remains a relevant measure of secular trends.

Declaration of Interest: None

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