

Short Report

Prevalence of mental health problems in schools: poverty and other risk factors among 28 000 adolescents in England

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Summary

Current mental health provision for children is based on estimates of one in ten children experiencing mental health problems. This study analyses a large-scale community-based dataset of 28 160 adolescents to explore school-based prevalence of mental health problems and characteristics that predict increased odds of experiencing them. Findings indicate the scale of mental health problems in England is much higher than previous estimates, with two in five young people scoring above thresholds for emotional problems, conduct problems or hyperactivity. Gender, deprivation, child in need status, ethnicity and age were all associated with increased odds of experiencing mental health difficulties.

Declarations of interest

None.

Keywords

Mental health; adolescence; risk factors.

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Recognition of the scale of mental health problems in children and young people¹ and the implications that childhood mental health has for mental disorder in adulthood² have led to increasing emphasis on prevention and early intervention. There has been a particular focus on schools as a universal access point for mental health support from research and policy alike.³ A recent green paper from the British government and a set of proposals arising out of it^{4,5} highlights the role of schools in supporting the mental health of children and young people and proposes the introduction of mental health leads in every school, alongside mental health support teams working with schools to offer individual and/or group-based support, as well as making referrals to more specialist services.

Such proposals drew heavily on prevalence data collected over a decade ago suggesting that one in ten young people experience mental health problems.¹ However, one very recent report published after submission of the current paper reports slightly higher rates of one in eight⁶ and further studies indicate there may be higher rates in some populations (for example adolescent girls^{7,8}), with a range of groups showing increased odds of experiencing such difficulties (such as children from more deprived backgrounds and those with additional learning needs⁹). The current study draws on a recent, large-scale survey of a community-based sample of adolescents to explore prevalence of mental health problems in schools and characteristics that increase the odds of children and young people experiencing them.

Method

The full sample for the current analyses was 28 160 out of a possible 30 866 adolescents with complete data on all study variables (46.2% male), 51.2% of whom were in Year 7 (age 11–12) and 48.8% of whom were in Year 9 (age 13–14) in 97 state-maintained secondary schools across six geographical locations in England. Of 2726 not included in these analyses, 2016 were missing demographic data

and 710 were missing relevant survey data, with those missing survey data being more likely to be eligible for free school meals (FSM), have a statement of special educational needs (SEN) and less likely to be Asian. Comparisons with national datasets show that the sample (a) was slightly more deprived than the national average, based on FSM eligibility (study sample FSM: 4576, 16.3% v. national figures of 13.8%); (b) had a slightly lower proportion of children with a statement of SEN (study sample: 3194, 11.3% either has a statement of SEN or SEN support v. national figures 12.6% with either a statement of SEN, an education, health and care plan or SEN support); and (c) had a greater proportion of young people classified as White (study sample: 21 979, 78.1% v. national figures of 75.1%).

Measures

The child self-report Strengths and Difficulties Questionnaire (SDQ)¹⁰ was used to broadly indicate the proportions of young people in schools reporting mental health difficulties. The SDQ is a 25-item measure comprising four problem scales (emotional symptoms, conduct problems, peer-relationship problems, hyperactivity/inattention problems) and a prosocial behaviour scale. The four problem scales have thresholds for 'borderline' and 'abnormal' scoring ranges indicating children and young people at elevated and high risk of experiencing mental health problems.¹⁰ The 'abnormal' thresholds were used to create binary variables of above (1) versus below (0) threshold. Findings presented here relate only to the four problem scales.

The following potential risk factors were derived from the National Pupil Database: SEN status; FSM eligibility; child in need status (CIN, this is a child who either (a) is unlikely to achieve/maintain a reasonable standard of health and development without local authority provision; (b) is likely to be impaired without local authority provision; or (c) is disabled); and ethnicity (Asian, Black, Chinese, Mixed, White or any other ethnic group).

Table 1 Multilevel logistic regression for mental health difficulties and child characteristics (*n* = 28 160)^a

	Emotional symptoms, yes (<i>n</i> = 5181, 18.4%)	Conduct problems, yes (<i>n</i> = 5197, 18.5%)	Attention/hyperactivity, yes (<i>n</i> = 7135, 25.3%)	Peer-relationship problems, yes (<i>n</i> = 2058, 7.3%)
Fixed effects, intercept (s.e.)	-2.35 (0.04)	-1.60 (0.04)	-1.13 (0.04)	-2.68 (0.05)
Gender, OR (95% CI)				
Male (<i>n</i> = 15 152)	Reference	Reference	Reference	Reference
Female (<i>n</i> = 13 008)	2.93 (2.73–3.14)***	0.63 (0.59–0.67)***	0.80 (0.75–0.85)***	0.92 (0.84–1.01)
Ethnicity, OR (95% CI)				
White (<i>n</i> = 21 979)	Reference	Reference	Reference	Reference
Any other ethnic group (<i>n</i> = 450)	0.71 (0.53–0.93)*	0.75 (0.57–0.99)*	0.57 (0.43–0.74)***	0.88 (0.60–1.28)
Asian (<i>n</i> = 2841)	0.66 (0.58–0.76)***	0.66 (0.57–0.77)***	0.45 (0.39–0.52)***	0.64 (0.53–0.77)***
Black (<i>n</i> = 1682)	0.53 (0.44–0.63)***	1.01 (0.87–1.17)	0.60 (0.51–0.70)***	0.67 (0.54–0.85)**
Chinese (<i>n</i> = 56)	0.62 (0.28–1.40)	0.18 (0.04–0.73)*	0.45 (0.20–0.99)*	1.01 (0.36–2.81)
Mixed (<i>n</i> = 1152)	0.83 (0.71–0.98)*	1.00 (0.86–1.17)	0.96 (0.83–1.10)	0.78 (0.61–1.00)*
Year group, OR (95% CI)				
Year 7 (<i>n</i> = 14 418)	Reference	Reference	Reference	Reference
Year 9 (<i>n</i> = 13 742)	1.38 (1.30–1.47)***	1.18 (1.11–1.26)***	1.16 (1.10–1.23)***	1.00 (0.92–1.10)
Special education needs, OR (95% CI)				
No (<i>n</i> = 24 966)	Reference	Reference	Reference	Reference
Yes (<i>n</i> = 3194)	1.42 (1.29–1.57)***	1.49 (1.37–1.63)***	1.23 (1.13–1.33)***	2.03 (1.81–2.29)***
Free school meals, OR (95% CI)				
No (<i>n</i> = 17 942)	Reference	Reference	Reference	Reference
Yes (<i>n</i> = 10 218)	1.20 (1.12–1.28)***	1.70 (1.59–1.82)***	1.44 (1.36–1.53)***	1.35 (1.23–1.49)***
Child in need status, OR (95% CI)				
No (<i>n</i> = 26 658)	Reference	Reference	Reference	Reference
Yes (<i>n</i> = 1502)	1.07 (0.93–1.22)	1.36 (1.20–1.54)***	1.24 (1.10–1.39)***	1.24 (1.04–1.48)*
Variance components				
School-level (s.e.)	0.20 (0.02)	0.27 (0.03)	0.26 (0.03)	0.17 (0.03)
Intraclass correlation	0.01	0.02	0.02	0.01

a. Each column represents a new regression model.
 ****P* < 0.0001, ***P* < 0.001, **P* < 0.05.

Procedure

Children in Years 7 and 9 in participating schools completed surveys online in a usual school lesson. Survey data were collected using a secure online system as part of a teacher-facilitated session during a usual school day. Consent for participation in the research was sought from parents prior to, and from children and young people at the outset of, the survey sessions. Parental opt outs were received by post, phone or email and child assent was recorded via computer at the beginning of survey sessions. Schools were selected to be involved in the study by virtue of their involvement in the HeadStart programme (this is a National Lottery funded programme and the data described here are part of the baseline data collection for the programme). This research was approved by the UCL ethics committee (reference: 8097/003).

Results

Across the 97 schools, 18.4% scored above the abnormal threshold for emotional symptoms, 18.5% for conduct problems, 25.3% for inattention/hyperactivity and 7.3% for peer-relationship problems; 42.5% scored above threshold for any one of the first three problem scales (emotional symptoms, conduct problems or inattention/hyperactivity). Odds ratios calculated in Stata using multilevel logistic regression models showed many similarities across different types of mental health problems and revealed that very little variance in mental health problems were accounted for by schools (intraclass correlations ≤ 0.02 ; Table 1).

Having SEN significantly increased the odds of experiencing any of the four mental health problems, as did FSM eligibility. With the exception of peer-relationship problems, being in the older year group significantly increased the odds of experiencing a mental health problem. Being male significantly increased the odds of scoring above threshold for behavioural problems and inattention/hyperactivity, whereas being female significantly

increased the odds of experiencing emotional symptoms. In terms of ethnicity, relative to the White ethnic group (as the largest ethnic grouping in the sample): being Asian significantly reduced the odds of experiencing any of the four mental health problems; and being Black significantly reduced the odds of experiencing all mental health problems, except conduct problems, for which the odds were comparable with being White. Being a CIN significantly increased the odds of experiencing all mental health problems with the exception of emotional symptoms.

Discussion

Findings reported here indicate the scale of mental health problems in children across many schools in England is much higher than previous estimates, with around two in five young people scoring above 'abnormal' thresholds for three of the four problem areas measured (emotional problems, conduct problems and hyperactivity).

Although this sample was slightly more deprived on average than all schools nationally, the higher proportion of children eligible for FSM does not fully account for the extent of the increased rates of self-reported mental health problems. Moreover, these findings are consistent with other recent reports of increasing rates of mental health problems in children.^{7,11} Such increases may reflect potential improvements in accuracy in young people's reporting because of greater recognition of mental health issues.¹¹ Alternatively, increases may represent an actual rise in difficulties. It is beyond the scope of this paper to speculate as to what might drive such a rise but many factors have been suggested including the impact of austerity,¹² increasing experience of academic pressures,¹³ reduced rates of sleep¹⁴ and increased use of social media.¹⁵ Rates were particularly high for attention problems, a finding which, though surprising, is not inconsistent with other recent studies employing the same measures.⁷ It is possible that this increased rate is partly explained by measurement issues and

that a diagnostic tool may not have revealed such high proportions.¹⁶ Also, it may be that child report of feeling 'restless' or not being able to 'sit still for long' reflect increased expectations of them to sit still and concentrate rather than changes in the behaviours themselves.¹⁶ Rates of peer problems were low compared with the other problem domains, suggesting that the increases in other difficulties are potentially not adversely affecting peer relationships in this age group. However, all these suggestions await further rigorous research.

In terms of risk factors for mental health problems, odds ratios also indicate that gender, deprivation (FSM eligibility), CIN status, ethnicity and age all significantly altered the odds of experiencing mental health difficulties. Where risk factors are in higher concentration in schools, such as those with high proportions of FSM eligibility, the prevalence of mental health problems is likely to be even higher.

In addition to the skew towards a more deprived population noted above, the reliance on child self-report data from a very brief assessment tool should be acknowledged as a limitation of this study and may contribute to the high estimates reported. There generally is low to modest agreement between different reporters of child mental health problems¹⁷ and any brief assessment tool such as the SDQ is unlikely to have the sensitivity and specificity of a diagnostic interview⁶ in its detection of mental health problems, increasing the likelihood of false positives (i.e. identification of mental health problems where there are none) and false negatives (no identification of mental health problems where these do in fact exist). Nevertheless, it remains the most feasible and practical means for large-scale school-based population estimates.¹⁸

Findings from this study suggest two things. First, attempting to address the mental health need in at least some schools will require significant resourcing and additional support provision, over and above any provision based on the longstanding estimate of one in ten young people experiencing mental health problems. Second, creating more systemic solutions tackling ingrained risk factors implicated in a range of poor outcomes for children, such as deprivation, may be important to explore, since the same root causes appear to underlie a range of outcomes.¹⁹ Opportunities arising from an increased interest in prevention and early intervention, such as the proposals in the green paper described previously, may best be realised by close attention to these common factors.

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