Strengths and Difficulties Questionnaire scores and mental health in looked after children.

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Summary

Since 2009, British local authorities have been required to monitor the mental health of looked-after children using mean Strengths and Difficulties Questionnaire (SDQ) scores from parents or carers. This assumes that differences in mean SDQ scores reflect genuine differences in child mental health in this group, something we examined using nationally-representative surveys (N=1391, age 5-16). We found that the SDQ was a genuinely dimensional measure of mental health in looked-after children and provided accurate estimates of disorder prevalence. This supports the government's use of mean SDQ scores from parents or carers as a mental health indicator in this high-risk group.

Keywords: Looked-after children; foster care; Strengths and Difficulties Questionnaire; psychometric

Introduction

The mental health of children looked after by the State (e.g. in residential or foster family care) is a priority for both policy-makers and practitioners (1). In Britain, this has prompted the government to include the 'Emotional and behavioural health of looked-after children' as a compulsory measure within the National Indicators set, namely the set of indicators whereby central government monitors the performance of local authorities. Specifically, since 2009 local authorities have been required to administer the Strengths and Difficulties Questionnaire (SDQ) to the primary carers of all children aged 4-16 who have been looked after for a year. They are then required to report the mean score to the Department for Education, with the intention that trends can be monitored over time and/or comparisons made between comparable local authorities (2).

The parent SDQ is a good screening device for disorder in looked-after children (3, 4), with 'high' SDQ scores predicting much greater rates of mental disorder than 'low' scores. If comparisons across local authorities or over time are to be valid, however, more than this is required: it needs to be demonstrated that *any* difference in mean SDQ scores corresponds (on average) to a genuine differences in mental health. This appears to be true in the general British population. In individual-level analyses, each one-point increase in mean symptom SDQ score predicts a higher prevalence of disorder (5). Likewise in population-level analyses, mean SDQ scores predict the prevalence of disorder in an accurate and unbiased manner across subpopulations defined by multiple child, family and area characteristics (e.g. ethnicity, family type, area deprivation). This allowed us to derive and validate UK 'SDQ prevalence estimators' (6); see www.sdqinfo.com/prevalence_estimators for look-up tables.

Yet although encouraging, these general population findings cannot automatically be assumed to apply to looked-after children. First, nationally-representative British surveys of looked-after children report a disorder prevalence of 45% (1), which is much higher than the prevalence in the general population (9.4% overall prevalence) or in any of the subpopulations we studied (median 9.8%, inter-quartile range 7.3%-14.5%). Secondly, the prevalence estimator was derived from a group where the overwhelming majority of informants were biological parents. By contrast, informants for looked-after children are

usually foster parents or residential care-workers who may plausibly respond differently. This short report therefore uses a nationally-representative sample to examine whether, among looked-after children 1) the parent SDQ is a genuinely dimensional measure of child mental health, and 2) the parent SDQ prevalence estimator provides an accurate prevalence estimate.

Method

Sample

We combined data from three nationally-representative surveys (one each in England, Scotland and Wales) of looked-after children aged 5-17 (1). In 2002-2003, random samples of looked-after children were selected from the relevant databases in each country, and primary carers, teachers and youth over 11 were asked to complete the SDQ and DAWBA. In total, 1391 looked-after children (595 females) aged 5-16 provided DAWBA and parent SDQ data (57% participation rate; we excluded 127 children aged over 16 to match the age range monitored by local authorities, and also excluded 20 children aged under 17 but living independently). We divided these children by placement type: living with natural parents (N=190), living with kin (N=165); living with unrelated foster parents (N=781); or living in residential care, i.e. non-family placements (N=255).

For comparison, we present data from the 1999 and 2004 British Child and Adolescent Mental Health surveys, two nationally-representative surveys of children aged 5-16 in private households (7, 8). In total, 18,205 children (8967 females) provided DAWBA and parent SDQ data (69% participation rate). These were divided into fifths according to small-area deprivation (9).

Measures

The Strengths and Difficulties Questionnaire (SDQ) is a measure of mental health problems in children aged 4-17 which can be administered to parents/carers, teachers and children aged 11 or over (10, 11). Its 20 items relating to emotional symptoms, conduct problems, hyperactivity and peer problems are summed to create a 'total difficulty' symptom score ranging from 0-40. We have previously developed and validated UK SDQ prevalence estimators which convert a subpopulation's mean symptom score into an estimated prevalence of disorder, adjusting for the subpopulation's age and sex composition (6; prevalence estimator equations in the online supplement).

The DAWBA is a detailed psychiatric interview for parents/carers and youth, and a briefer questionnaire for teachers (12). It includes a fully-structured section (including screening questions and skip rules) followed by open-ended descriptions by respondents of problem areas. Experienced clinicians then assign diagnoses according to DSM-IV and ICD-10, using both the closed and open DAWBA responses, and triangulating information across informants (13). We defined attachment disorders using standard criteria; high comorbidity meant the overall prevalence of disorder was almost unchanged when using broader definitions (14, Appendix C).

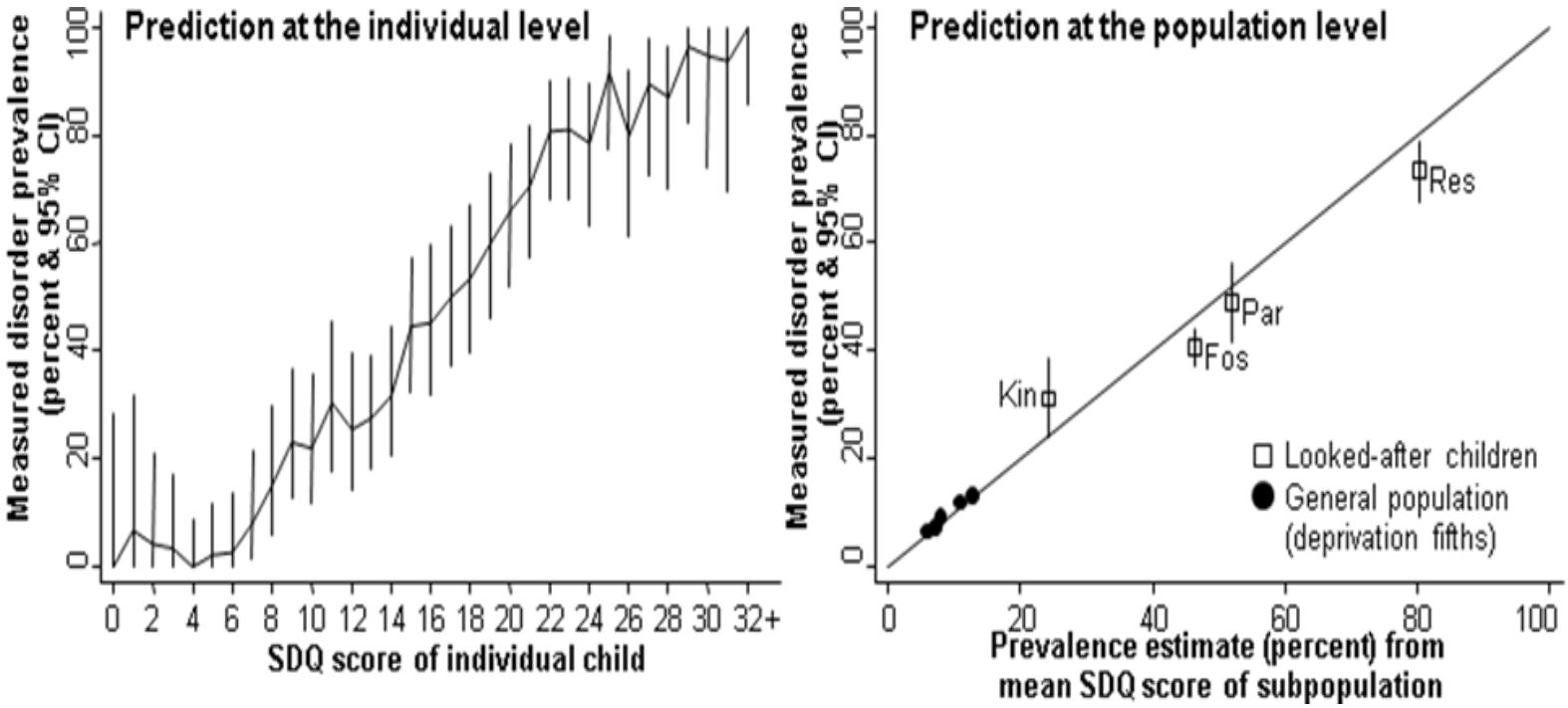
Analysis

Our individual-level analysis involved taking looked-after children with any given SDQ score and plotting this against the measured prevalence of disorder for that SDQ score (disorder defined as receiving at least one DSM-IV DAWBA diagnosis). Our population-level analysis involved calculating the mean parent SDQ score for four subpopulations of looked-after children (defined by placement type) and using the SDQ prevalence estimators to estimate disorder prevalence. We then plotted these estimated prevalences against the measured prevalence of disorder in that subpopulation, presenting general population data for comparison. All analyses used Stata12.

Results

Each one-point increase in SDQ score among looked-after children generally corresponded to an increased prevalence of clinical disorder (Figure 1, left side). The only possible exception was for very low scores (0-4); given that such low scores were rare in this sample this could reflect regression to the mean or simply the small sample sizes at this low end. Otherwise, higher mean SDQ scores predicted a higher prevalence of disorder across the full range.

Figure 1: Using mean parent SDQ scores to predict the prevalence of child mental health disorder among looked-after children: performance at the individual- and population-levels



Par=living with natural parents, Kin=living with kin, Fos= living with foster parents, Res=residential care. See online supplement for population-level data presented in a table form. In individual-level analysis, SDQ points grouped once the number of individuals fell to below 10.

The parent SDQ prevalence estimator also performed well in looked-after children in our population-level analysis (Figure 1, right side). Subpopulations of looked-after children with higher mean SDQ scores also had a higher prevalence of disorder, and the SDQ prevalence estimators provided good approximate estimates of these (discrepancies 3-7% across our four subpopulations, in the context of measured prevalences of 31-73%).

Conclusions

This study evaluated the performance of the SDQ for parents or carers in a British, nationally-representative sample of 1391 looked-after children aged 5-16. We demonstrated that the parent SDQ provides a genuinely dimensional measure of mental health in looked-after children, despite their having a much higher prevalence of disorder than the general population (45% vs. 9%). Any difference between groups of looked-after children in their mean SDQ score will, on average, reflect real differences in their mental health. This supports the use of mean SDQ scores to compare local authorities and monitor trends over time. Moreover, mean parent SDQ scores also generated good estimates of disorder prevalence using the SDQ prevalence estimators (6). This may be useful when seeking to translate findings for local policy-makers and practitioners, as one can turn non-intuitive mean scores into intuitive caseness rates.

These findings therefore support the British government's current use of mean parent SDQ symptom scores to monitor the mental health of looked-after children. Given that the parent SDQ is also a valid screening measure for psychiatric disorder in looked-after children (3, 4), the parent SDQs collected could additionally be used to identify high-risk individual children who warrant more detailed assessment. We therefore hope the recent inclusion of mean parent SDQ scores as a compulsory part of the National Indicator set will permit monitoring and screening programs that can inform both public health and clinical interventions. Beyond Britain, the SDQ has been validated for screening looked-after children in Canada (3); other countries may also wish to examine the utility of this short, widely-translated measure for promoting the mental health of looked-after children.

Conflict of interest

None

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Parent SDQ in looked-after children: online data supplement

Table 1: British SDQ prevalence estimators for the parent, teacher and youth SDQ

	Proportion of individuals with a disorder: for percent, multiply by 100
Parent	1 /(1 + exp(- [(0.303*TDS) + (0.539* p(Old)) - 5.102]))
Teacher	1 /(1 + exp(- [(0.394*TDS) + (0.450* p(Old)) + (0.411* p(Fem)) - 5.313]))
Youth	1 / (1 + exp(- [(0.524*TDS) - (0.220* p(Fem)) - 7.419]))

exp=exponential; TDS=total difficulty score; p(Old)=proportion of sample aged 11-16 (vs. 5-10); p(Fem)=proportion of sample female. Derived and validated in Goodman, A. and R. Goodman, *Population mean scores predict child mental disorder rates: validating SDQ prevalence estimators in Britain.* JCPP, 2011. **52**(1): p. 100-108. see also www.sdqinfo.com/prevalence_estimators for look-up tables.

Table 2: Using mean parent SDQ scores to predict the prevalence of child mental health disorder among looked-after children: performance at the population-level

Sample	**Subpopulation**	**N**	**Mean parent SDQ total difficulty score (95% CI)**	**Estimated prevalence (%) disorder from parent SDQ (95% CI)**	**Measured prevalence (%) of disorder from DAWBA (95% CI)**	**Discrepancy (%) estimated minus measured prevalence**
Looked-after	Foster care	781	15.3 (14.7, 15.8)	46.3 (42.2, 50.5)	40.5 (37.0, 44.0)	5.8
	Living with natural parents	190	16.2 (15.0, 17.3)	52.1 (43.5, 60.5)	48.9 (41.6, 56.3)	3.2
	Kinship care	165	12.2 (11.0, 13.4)	24.3 (18.3, 31.5)	30.9 (24.0, 38.6)	-6.6
	Residential care	255	20.0 (19.1, 20.8)	80.4 (76.0, 84.1)	73.3 (67.5, 78.7)	7.1
General popu-lation	Deprivation fifth 1 (low)	3634	6.9 (6.7, 7.1)	5.9 (5.6, 6.3)	6.3 (5.6, 7.2)	-0.4
	Deprivation fifth 2	3636	7.5 (7.3, 7.7)	7.1 (6.8, 7.5)	7.2 (6.4, 8.1)	0.1
	Deprivation fifth 3	3642	7.9 (7.7, 8.1)	7.8 (7.4, 8.3)	8.9 (8.0, 9.8)	1.1
	Deprivation fifth 4	3637	9.1 (8.8, 9.3)	10.9 (10.2, 11.6)	11.9 (10.7, 13.1)	1.0
	Deprivation fifth 5 (high)	3641	9.7 (9.5, 9.9)	12.8 (12.1, 13.6)	12.9 (11.7, 14.2)	0.1