Using the Strengths and Difficulties Questionnaire (SDQ) to measure the behavior and emotional health of children in schools in the United Kingdom

HOBBS, T., LITTLE, M. & KAOUKJI, D.

Abstract

This article describes the application of the Strengths and Difficulties Questionnaire (SDQ) as a tool for understanding the nature and prevalence of mental health disorders in schools within a local authority in the UK. Teachers from 24 primary schools completed the SDQ on behalf of 1,204 children. Illustrative data are presented to highlight its relevance to policy-makers and schools. The article discusses the ways in which the data may be used to improve mental health and school performance by considering where resources are best allocated, by challenging expected patterns of mental health and by using data to inform the design, implementation and evaluation of strategies and services to improve mental health.

Key Words: mental health, schools, services

The prevalence and distribution of mental health disorders in children is important to schools for many reasons. A prominent concern is the relationship between disorders, academic attainment and school engagement. For example, some studies have suggested that mental heath disorders are a predisposing factor for underachievement (Mannuzza et al. 1997; Weiss & Hechtman 1993). Others propose a reverse connection, with underachievement leading to disruptive behavior (Ackerman et al. 2007; Brier 1995). Scientists are primarily concerned with the direction, nature and potential causality of such relationships. Policy makers and practitioners have an equally important, but narrower, concern to translate available knowledge into better mental health and educational performance.

About one in eight children present some type of mental health disorder (Costello et al. 2005; Meltzer et al. 2000). Although individual studies vary in their estimates, the median prevalence rates for children aged five to 17 across studies are as follows: roughly 3.5% for attention deficit-hyperkinetic (AD-HKD) disorders; approximately 4% for conduct disorder, with a ratio of roughly 1:3 boys to girls; around 4% for major depressive disorders and 7.5% for anxiety disorders (Costello et al. 2005). Further, there are indications that mental health problems among UK children have been increasing over the last three decades (Collishaw et al. 2004). These data suggest that the average school child experiences an increased level of difficulty compared with previous generations; the focus on the average child is in addition to the con-

tinuing concern about the proportion of children with significant impairments who do not receive adequate services to meet their needs (Costello, 2003; Burns, 1995). A vast body of work has accumulated exploring the causes and correlates of such mental health difficulties (e.g. Rutter et al. 1998; Fergusson et al. 2005; Shaw et al. 2005).

The use of reliable and valid measures of health and development in service contexts has been gaining acceptance among children's services agencies as they seek to provide more robust evidence of their effectiveness (Axford & Berry, 2005) and chart levels of need (Axford, forthcoming). There is also a long history of psychological testing in schools (Albers et al. 2007; Kamphaus 2000). This article explores the potential to use one such instrument, the Strengths and Difficulties Questionnaire (SDQ) described below, to estimate the prevalence and distribution of mental health problems in schools and across local authorities. It demonstrates how data from the SDQ can be used by policy-makers and senior managers in local authorities and schools to target resources more effectively with a view to improving mental health outcomes, academic performance and school engagement.

Aims and objectives

This article describes a study that examined the opportunities and practical difficulties of using the SDQ in schools. It had the following aims. The first was to explore some of the practical difficulties of using the SDQ in schools and to arrive at simple recommendations for its future use. The second was to gather data from schools and children and assess its relevance to the efforts to improve of mental health and school performance. A third objective was to monitor how participating local authorities reacted to the data that emerged. Finally, the study aimed to draw out some recommendations about how applying the SDQ in schools can inform the design, implementation and evaluation of strategies and services to improve children's mental health and school performance.

Methodology

The Strengths and Difficulties Questionnaire

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) seeks to measure the mental health of children aged 3-16 years and is built on the foundations of earlier work by Michael Rutter and colleagues (Rutter, 1967). It is a self-completion instrument comprising 25 items and can be completed by the child, parent or teacher (or a combination; there are different versions for each group). The SDQ is made up of five sub-scales indicating conduct problems, inattention-hyperactivity, emotional symptoms, peer problems and pro-social behavior. Each subscale contains five items that are answered across a three-point likert scale ('not true', 'somewhat true', or 'certainly true'). The first four of these are based on medical diagnoses from two primary classification schemes: the DSM-IV (American Psychiatric Association, 1994) and the ICD-10 (World Health Organization, 1993). These sub-scales are combined to form a total difficulties score, a broad overall measure of a child's mental health. The pro-social behavior subscale is a qualitatively different concept – the absence of prosocial behavior does not indicate antisocial behavior – and so is omitted from the total difficulties score. In addition to the total difficulties score and five subscales, there is also an optional impact supplement (Goodman 1999). Whereas the SDQ records the presence or absence of mental health problems, the impact supplement assesses the extent to which these problems impair the child's development or the well-being of those around them.

The SDQ has been used widely for epidemiology (Goodman & Scott 1999), developmental and clinical research (Goodman *et al.* 2000b) and as a screening tool in clinical practice (Goodman *et al.* 2000a). It can be downloaded at no charge from the Internet for non-commercial purposes (www.sdqinfo.com). It has been used widely in Europe, North America and many other countries around the world and translated into over 60 languages.

The self-report version has been shown to be reliable and valid with children aged 11 to 15 years (Goodman 1997; 2001; Muris *et al.* 2003). Parents and teachers can also complete on behalf of children from the age of three to sixteen. The SDQ displays a high level of concurrent validity with the well-established Rutter questionnaires (Elander & Rutter, 1996); correlations ranged from .78 to .92 across symptoms and raters (Goodman, 1997). The SDQ also displays strong ability to discriminate between psychiatric and non-psychiatric samples (Receiver Operating Characteristic curves show an area under-the-curve of .83 -.91 (Goodman, 1997)). Internal consistencies from a UK nationwide survey are generally high (mean Cronbach alphas for total difficulties, emotional problems, hyperactivity, prosocial behaviour and impact range from .70 to .84; conduct problems = .66 and peer problems = .56. (Goodman, 2001)). These reliabilities have been broadly replicated in a range of international studies (e.g. Smedje *et el.* 1999; Muris *et al.* 2003; Bourdon *et al.* 2005). Test-retest interclass correlations range between .70 and .83 (Goodman, 1999). The SDQ can also be used with caution children aged between seven and 11 (Mellor 2004; Muris *et al.* 2004).

Goodman and Scott (1999) note the following advantages of SDQ over previous behavioral screening questionnaires such as Rutter's Child Behavior Questionnaire (CBQ; 1967) and Achenbach's Child Behavior Checklist (CBCL; 1991). First, it is short: in its paper format, the 25 items fit on one side of A4 paper. It is also possible, through the developer of the scale, to host and complete the SDQ on-line. In this form it takes only around five minutes to complete. Second, unlike many measures, the SDQ also focuses on child strengths as well as weaknesses. Third, SDQ pays greater attention than other measures to dimensions such as impulsivity, hyperactivity and concentration. In addition, symptom dimensions of other measures like the CBCL have not always been reliably replicated (Hartman *et al.* 1999; Lengua *et al.* 2001).

The research reported in this article applied the SDQ in an urban local authority in England (Reading Borough Council – RBC) with overall population of 143,000 people. RBC has 37 state-funded primary schools and seven-state funded secondary schools, serving a population of 15,500 school-aged children. Expenditure on education and children's services is in the region of £20 million per annum. Of this figure, £5.7m is delegated to targeted services for children and £1.1 to special educational needs (SEN) services. The amount spent directly on schools is roughly £6.2 million.

The Director of Children's Services in RBC encouraged school principals to participate in a seminar led by the research team where evidence about children's well-being and the potential of using SDQ to help improve outcomes for pupils were outlined. The seminar also covered the practicalities and ethical issues involved in collecting data and what feedback from the research schools could expect.

A pilot study in another local authority had shown that it was difficult to engage parents and that teachers did not have time to complete the SDQ for every child. It was therefore decided that although reports from multiple informants are typically more robust, data from single respondents (teachers or children) would generally be sufficient for the purposes of developing policies and services in schools (Becker *et al.* 2004). It was also agreed that teachers would be asked to complete the SDQ on behalf of a random 25 per cent of children in their class. However, in the case of children aged seven to nine years (where reliability of self-reports may be questioned), information from both teacher and students was considered to be preferable. For the purposes of the work described in this article, parent-completed versions of SDQ were therefore not felt to be necessary.

Parents of all children in participating schools were sent passive parental consent letters. These described the nature, purpose and intended use of the research and asked parents to

alert the school if they did not want their child to take part. The SDQ was posted on the Internet via the website of the developer of the questionnaire. When children logged in they were given the option to actively consent (or not) to taking part in the study.

Every child from year four (age seven or eight) upwards in participating schools was asked to complete the child version of the questionnaire (with accompanying pictures to aid understanding; Truman *et al.* 2003). Therefore children from the last three years of primary school and from all secondary school years up to the age of 16 were asked to complete the questionnaire (usually at the beginning of an information technology lesson). In addition to the SDQ data, school name, year group, class name and gender were collected. It took each child roughly ten minutes to complete the questionnaire, always with the support of their teacher. If there were any elements a child did not understand, questions were read aloud by the teacher. In addition, primary school teachers were asked to complete the teacher version of the SDQ for a one-in-four random sample of students in reception classes through to year six (ages three to ten years-old). All data were automatically saved to a database for analysis.

Twenty-six of the 37 infant and primary schools in the local authority and four of the seven secondary schools agreed to take part. Further analysis of data from the pilot study had shown that for a local authority to build an adequately representative picture of the mental health of students in its schools, it would be necessary to include only those schools that achieved a 70% response rate from pupils. In this main study, 24 of the 26 participating primary schools reached this target but only two of the four participating secondary schools (both of which were all-girls schools) reached this target. Due to the poor response rates from secondary schools, illustrative data in this article rests solely on 1,203 teacher-reports in primary schools. Child data is not presented.

The mental health of students in the participating local authority

There are two ways of using the SDQ to understand levels of mental health problems in a school population. The first concerns the average amount of difficulty, or how the *average child* is behaving. The second indicates the proportion of children that have 'borderline' or 'abnormal' scores on each of the SDQ subscales and the total difficulties score. Children in the 'abnormal' categories are likely to reach the threshold of a clinical diagnosis for a mental disorder (Goodman *et al.* 2000a; Goodman *et al.* 2000b; Goodman, 2001). Findings on both the average child and the 'abnormal' child are important for policy makers and teachers trying to improve outcomes for children – educational and otherwise.

The average child

Table 1 presents the mean scores and standard deviations from RBC for all subscales of the SDQ. It compares the average child in the local authority with the average child in the UK. Both sets of results reported here are based on teacher ratings. This comparative data about the average child in the UK is drawn from a nationally representative sample comprising 8,208 teacher SDQ reports on children aged 11 to 15 years using the SDQ (Meltzer *et al.* 2000). The table shows that on most subscales the mental health of children in the participating local authority was significantly worse than in the UK as a whole (Welsh's unpaired t-test: total difficulties ($t = 2.30$, $df = 1512$, $p < .001$); emotional problems ($t = 2.50$, $df = 1506$, $p = 001$); conduct problems ($t = 3.45$, $df = 1490$, $p < .001$); hyperactivity ($t = 2.00$, $df = 1501$, $p = 0.05$); and impact ($t = 2.67$, $df = 1392$, $p < .001$)). However, average levels of peer problems in the local authority were identical with those in the UK as whole, and the children were significantly more prosocial than the average child in the UK ($t = 2.40$, $df = 1619$, $p = 0.02$).

Table 1
Means and Standard Deviations (SD) of SDQ for Reading compared with National Norms

	RBC overall	British overall norms*
Total difficulties (normal: 0-11)	7.3 (6.4)	6.7 (5.9)
Emotional problems (normal: 0-4)	1.7 (3.0)	1.5 (1.9)
Conduct problems (normal: 0-2)	1.1 (1.8)	0.9 (1.6)
Hyperactivity (normal: 0-5)	3.2 (3.1)	3.0 (2.8)
Peer problems (normal: 0-3)	1.4 (1.8)	1.4 (1.8)
Pro-social behaviour (normal: 6-10)	7.9 (2.3)	7.7 (2.4)
Impact (normal: > 1)	0.5 (1.2)	0.4 (0.9)

*   From a sample of 8208 teachers of children aged between five and ten years representative of Britain as a whole (Meltzer et al., 2000).

The data also reveal variations in aspects of mental health by gender, age, class and school. Table 2 shows the differences [FN1] in mean scores between boys and girls in the participating local authority. Consistent with the literature, the average boy scored significantly higher than the average girl on total difficulties (Chi squared = 28.1, df = 1, p > .001), conduct problems (Chi squared = 48.9, df = 1, p > .001), hyperactivity (Chi squared = 81.7, df = 1, p > .001), pro-social behavior (a higher score on the prosocial behaviour subscale indicates more prosocial behaviour; Chi squared = 97.2, df = 1, p > .001) and impact (Chi squared = 34.1, df = 1, p > 0.001). Also in line with the literature, the average girl scored significantly higher on emotional problems than boys (the Kolmogrorov-Smirnov test was found not to be significant, therefore a nonparametric Mann-Whitney test was conducted and found to be significant (Z = -2.51, p = .012)). Surprisingly, there was no significant difference between the average boy and girl on peer problems (Z = -2.34, p = 0.82).[1]

It should be noted that although differences between RBC and national norms are significant, they are often small. But do such small differences mean anything? Are children in RBC really worse that the national averages in some areas? It is when we shortly turn to the cut-scores that we see small differences in mean scores being translated into real differences at the tail of the distribution.

The data can also be used to chart levels of difficulty displayed by students across year groups. Any of the SDQ sub-scales can be used. Here the total difficulties score illustrates the point. When combining boys' and girls' scores together, no clear picture emerges but further analysis reveals gender differences.

Figure 1 shows that generally speaking boys have higher levels of difficulties than girls across the primary school years. However, in the participating local authority girls enter primary school with relatively higher levels of difficulty compared to later years than boys do, but

there are improvements across later years. This relationship for girls is statistically significant (Spearman's r = .09, n = 587, p = .04 two-tailed). Although boys in the local authority started primary school with relatively fewer problems compared to later years, there were marked increases from year three onwards (Spearman's r = .06, n = 604, p = .14 two-tailed).

Table 2
Means and Standard Deviations (SD) for boys and girls in the sample

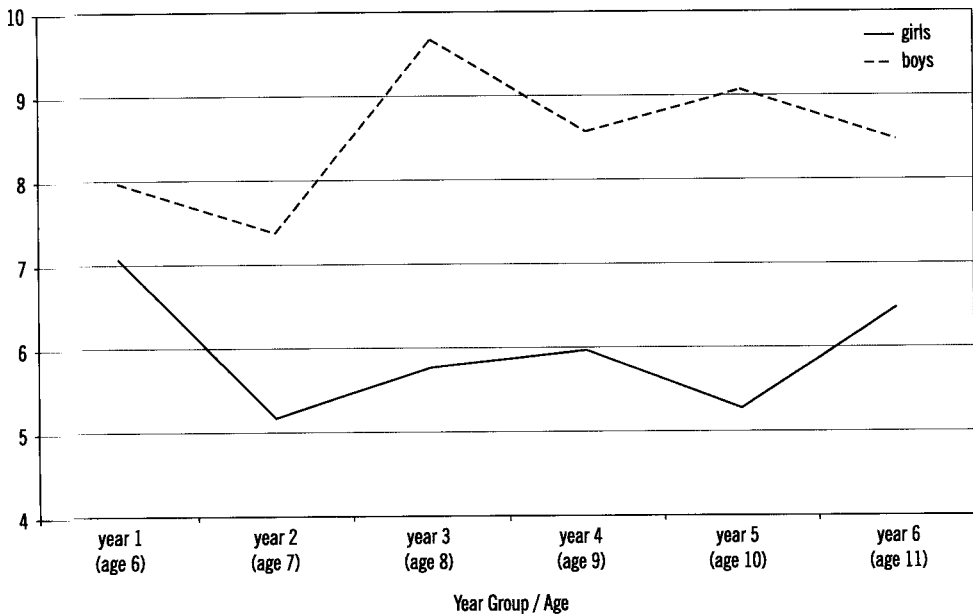|	RBC overall	RBC boys only	RBC girls only
Total difficuities (normal: 0-11)	7.3 (6.4)	8.4 (6.8)	6.1 (5.8)
Emotional problems (normal: 0-4)	1.7 (3.0)	1.5 (2.0)	1.8 (2.1)
Conduct problems (normal: 0-2)	1.1 (1.8)	1.5 (2.0)	0.7 (1.5)
Hyperactivity (normal: 0-5)	3.2 (3.1)	4.1 (3.3)	2.3 (2.6)
Peer problems (normal: 0-3)	1.4 (1.8)	1.4 (1.8)	1.3 (1.7)
Pro-social behaviour (normal: 6-10)	7.9 (2.3)	7.2 (2.4)	8.5 (2.0)
Impact (normal: > 1)	0.5 (1.2)	0.7 (2.0)	0.4 (1.0)

Figure 1
Mean teacher-rated total difficuities for boys and giris across year groups

Children with poor mental health

As well as indicating patterns for the average child, the data also reveal the proportion of students that fall within the 'abnormal' range on SDQ subscales and who potentially could meet a psychiatrist's clinical diagnosis for mental disorder.

Table 3 reports the proportion of students whose scores were borderline or abnormal for different mental health disorders in the participating local authority. Data are compared with British norms (Meltzer *et al.*, 2000). It can be seen that around five per cent of students were borderline for emotional, conduct, hyperactivity or peer problems. Borderline problems were seriously affecting the lives of such children and those around them in nearly one in ten (9%) cases.

The prevalence of potential mental disorder ranged from one in 17 (6%) in the case of emotional disorders to one in six (18%) in the case of hyperactivity. These mental health problems were affecting the lives of such children and those around them in almost one in five (18%) students. The data also show that levels of potential mental disorder in the participating local authority were routinely higher than for children of the same age in Britain as a whole. Such differences will not be accounted for just by what happens in school; they will be affected by factors in the home and in the wider community.

More than one in five (22%) primary school children in Reading were at least borderline for some form of emotional and behavioral difficulty. Just over one in ten (11%) were at least borderline for an emotional disorder, just under one in five (17%) for a conduct-related disorder and almost one in four (23%) for a hyperactive disorder. For almost one in five (18%) children in Reading these problems have a significant impact on their lives.

In some respects, these data on the high levels of potential mental disorder in a primary school population are disquieting. While the results indicate the need to improve the mental health of children in the local authority concerned, and by these means to enhance school performance, it should be noted that the SDQ cannot be used on its own as a diagnostic tool, and its predictive validity is limited when single (child, parent or teacher) responses are being used.

Analysis across and within schools

It will be recalled that 24 out of 37 primary schools participated in the exercise and achieved an adequate response rate (70%) for analysis. In those cases it was possible ascertain whether there were differences between schools in the average levels of difficulties being displayed by students (as rated by teachers). Significant differences (F = 3.07, df = 23, 1167, MS = 123.35, p < .001) were found for the total difficulties score, as illustrated in figure 2.

Table 3
Percentages of children falling within borderline and abnormal categories in Reading compared with British norm data

	RBC borderline for disorder	RBC potential disorder	British borderline for disorder	British potential disorder
Total difficulties	10.1%	11.5%	11.8%	7.9%
Emotional disorder	5.1%	6.2%	4.2%	4.8%
Conduct disorder	6.4%	10.9%	5.6%	7.6%
Hyperactivity	4.7%	18.3%	5.1%	13.8%
Peer problems	6.6%	6.7%	5.2%	7.2%
Impact	8.7%	18.4%	10.4%	11.0%

Different bars represent different schools. Error bars are 95% confidence intervals.
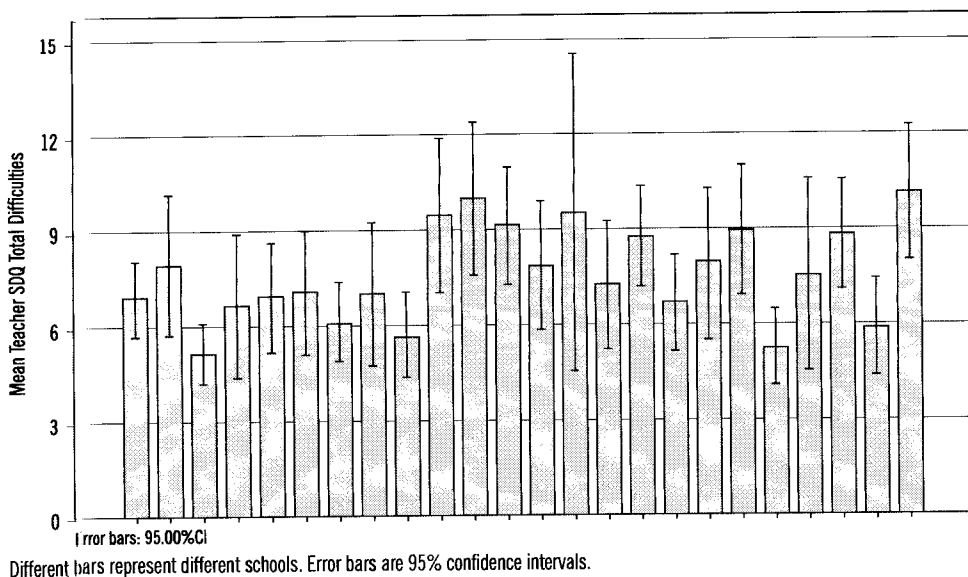
Figure 2
Mean teacher-rated total difficulties score across different schools

Each bar indicates a single school. The higher the bar, the greater the level of difficulties. Variations between schools are apparent (as well as variations within, as demonstrated by 95% confidence intervals). Most are well within a normal range, but one in particular has very high rates, indicating that the scores of the average pupil in that school are borderline for mental health disorders.

Analysis was also undertaken to determine whether levels of difficulty varied between classes within participating schools. In several there were significant differences. Graph 3 illustrates this pattern within one school (with two classes within each year group). There is variation in total difficulty scores between the two classes in most year groups, likely reflecting the effect of selection by academic performance into 'higher' and 'lower' sets. The graph also reinforces the point made previously, namely that levels of difficulty vary across the primary school years.

The data presented here illustrate patterns in a single local authority. Some of the findings are likely to be replicated when the exercise is repeated in other local authorities or in single schools. For example, it is to be expected that boys will display higher levels of total difficulties and conduct problems than girls. Levels of depression and conduct disorders will generally be within the 5-15% range (Meltzer *et al.* 2000). However, in other respects, significant variation might be expected in other contexts. For example, levels of mental health problems may be below the British norm in some local authorities or single schools. The distribution of problems by age and the differences between classes in individual schools might also be expected to vary from place to place.

Discussion

This paper has described findings from an exercise in a single English local authority. By themselves, the data are of limited value. However, they demonstrate the potential to use SDQ to
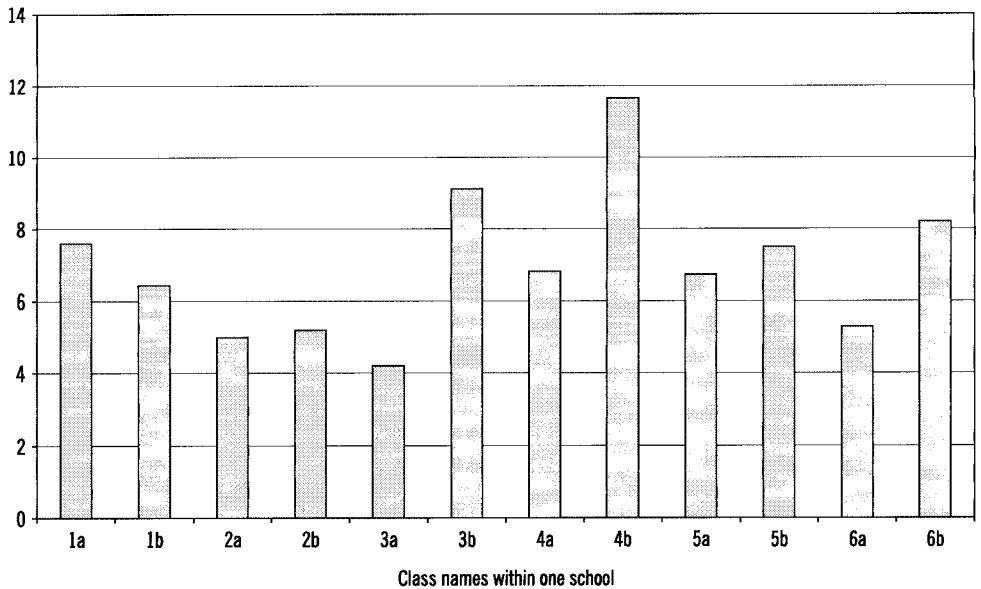
Figure 3
Mean teacher-rated total difficulties across individual classes within one school

measure the prevalence and pattern of emotional and behavioral problems across schools and to do so in a way that generates clear options about how to target resources and innovate with the goal of improving child well-being.

In discussing the findings, experience from work in the both the pilot and main study is used to make recommendations about how to use the SDQ to understand the prevalence and pattern of mental health problems; how to use the results to improve the response of schools and other children's services to student needs; and how to integrate such work within broader reform of children's services.

How to use SDQ to understand prevalence and patterns of mental health problems

The exercise has shown that the SDQ provides a simple and inexpensive tool for understanding the prevalence and pattern of mental health problems of students in schools. Prevalence can be compared with national norms and with rates in the same schools in previous years. Patterns can be identified: i) across the local authority in question; ii) across different socio-demographic contexts, for example between more and less affluent neighbourhoods, or between rural and urban settings; iii) between schools; iv) between individual classes in schools; and v) across different age and year groups.

SDQ can be applied in many ways. In relation to the first objective of the article, the experience in two local authorities has led to the conclusion that the following method is the most efficient. (It is described in relation to an entire local authority, but the approach would work as well in a single school.) First, the instrument should be completed by all children eight years and over, once per school year (given other demands on school time it would be impractical to expect more frequent data collection). The instrument should be administered in class, ideally using computer-assisted techniques. Free paper versions of the questionnaire are

available to download if computer facilities are not available. In addition to the SDQ, a few questions should be added about the child's age, gender, school class and other categorical variables that might be related to variation in mental heath.

Second, although data from students will be sufficient to identify broad trends, results for children below the age of 11 will be less reliable than for older children. There is therefore much to be said for teachers also completing SDQ on a random sample of primary school students (as is reported here).

Third, schools should be invited to participate in the process in the knowledge that their results will not be analysed if fewer than 70% of students participate. Findings similar to those described in this article should be routinely fed back to schools to encourage their continuing year-on-year participation.

Fourth, a clear ethics statement should be prepared. It should allow parents and students to give informed consent to participate and ensure that all data collected will be anonymous. This will mean that data can only be used to examine group patterns and trends over time. Teachers and headteachers are likely to want to use the SDQ as a screening instrument to identify individual children with mental health problems. Although it can be used for this purpose, particularly if data is drawn from multiple informants and combined with the impact supplement (Goodman *et al.* 2000a; Mathai *et al.* 2002; Levitt *et al.* 2007), additional ethical scrutiny would be required.

Fifth, considerable care should be taken when interpreting the results. The data reported in this article are sufficient for promoting innovation in services, as described below, but they should not be taken as an indication of the mental health of all children in the local authority. This is because selection effects will result from some schools deciding not to participate and from schools in the private sector not being invited to do so.

How to use the results to improve schools' response to student needs

In relation to the second objective of this article, the results from a study like the one conducted in this particular local authority may be used in three inter-connected ways. The first is to guide the allocation of resources. This may relate to particular groups of children, for example identified by age or gender. In this case the results pointed to a need to increase resources for younger children, particularly to boys in primary schools. Moving from home to primary school represents a significant disruption associated with behavioral and emotional problems (Bruce *et al.* 2002; Rutter 1981). The value of investing here is supported by studies indicating that prevention and early intervention at this stage of a child's development reap more rewards than intervention during the later years of secondary school (e.g. Rutter, 1998; Little & Mount 1999; Chevalier *et al.* 2006).

Another aspect of resource allocation concerns the balance of attention to be paid to the average child versus those experiencing acute problems. In the local authority described, in addition to there being a higher proportion of children with potential disorders, the average child was less happy and less well-behaved than the average child in Britain. Lessons from public health initiatives indicate the potential to use improvements in the well-being of children generally to prevent acute problems occurring in later years (Rose 1992).

School administrators will also recognize the potential to target resources more effectively between schools and between classrooms. Presently, much resource allocation is based on distal measures, such as poverty indicators, or the unreliable perceptions of principals and teachers. The method described permits a simple way of establishing which schools and which classrooms have the greatest need.

The second way in which SDQ data may be used to improve schools' response to student needs is to help local authorities and individual schools to be realistic in their expectations for

change. Redirecting resources will not eradicate behavioral and emotional problems, nor will improvements happen overnight. A realistic target in the local authority described would be to reduce emotional and behavioral problems by just a few points over a three to five year period. Bringing well-being up to the level of the British norm in this way would be a significant achievement and it would make a tangible difference to students, classrooms and schools. It would also be measurable.

Designing change with teachers is recommended. In the exercises undertaken for this study relating to the third objective, before results were fed-back to teachers, they were asked for their perceptions of prevalence and patterns both across the local authority and in their own schools. Generally speaking they guessed wrong. One of the powerful aspects of this exercise is that the results of SDQ are intuitively correct but largely discordant with teacher perceptions. This leads principals and teachers to be much more open to using evidence to think about resource implications, services and other responses to students' mental health.

A corollary of setting targets in this way is to indicate the broad nature of services required. In this instance, the scale of change required in children's behavior and emotions requires intensive, enduring, logical, outcome-focused and consistently delivered provision – what are called 'thick' services. These prescriptions are often contrary to the well-meaning and often *ad hoc* 'thin' provision that exists in many schools (Axford *et al.* 2003). Using databases of proven models and effective practice such as Blueprints,[2] Promising Practices Network[3] and Common Language[4] can help teachers understand the nature and sophistication of 'thick' provision currently available.

In addition to sponsoring innovation, analysis of the SDQ data may be used to justify the introduction of a range of proven programmes to improve specific outcomes for children. One such example being considered by RBC is the implementation of a social curriculum for students called PATHS (Greenberg & Kusche 2002) that produces improvements in emotional and behavioral outcomes (with knock-on benefits for educational performance).

Relating to the final objective of this article, the potential uses of the data described in this article can be used alongside established strategy development and service design techniques such as Common Language (Axford *et al.* 2006) and Communities that Care (Utting & Fairnington 2006). Such methods use data on the well-being of children, involve policy makers, practitioners and service users in its analysis and draw on robust local and international evidence about what works, for whom, when and why. They connect innovation to the broad policy framework in which it will be introduced, include techniques to ensure strong fidelity to the original design and encourage robust evaluation to estimate impact on child well-being.

Robust evaluation is central. There is a danger that local authorities or schools will rush from simple results, such as those described in this paper, to a general policy response. For example, it was suggested that patterns in the data may lead to the implementation of appropriate proven prevention models, such as the PATHS curriculum (Greenberg & Kusche 2002). One danger would be immediate and across the board implementation of such a programme into all schools. Better to invite schools to participate, test the curriculum in a small randomly selected sample, and then to compare the well-being of students getting PATHS with those applying unsuccessfully. If the results are promising, schools will be much more open to fully implementing the model at a later stage.

Integration with broader reforms of children's services

In England, where the approach described in this article was tried, there is a strong legislative emphasis on outcomes. The *Children Act* 2004 requires local authorities to help children to be healthy, be safe, enjoy and achieve, make a positive contribution and achieve economic well-being. Slowly the legal change is leading to the design, implementation and evaluation of new approaches to children's services. Better quality data and better use of information are an important part of innovation.

The data reported in this article rested on teacher reports on 1,203 students in 24 primary schools. This information was sufficient to indicate improvements in policy and practice, but it was not representative of the local authority as a whole. A local authority wishing to use the method to build a picture of the mental health of all school-aged children in their area would need to include both primary and secondary schools, to extend the project to the private sector and ensure broad coverage (ideally at least half the schools) and a high response rate (ideally at least 70% within each participating school). Some might go further and integrate the data collection into a broader approach to epidemiology, strategy development, service design and evaluation. One midlands local authority has been working with the research team with this goal in mind.

Whatever the approach, collecting data in a consistent way year-on-year with a roughly comparable sample would do much to help local authorities understand trends in the well-being of its children, and to know whether it is meeting the requirements of the *Children Act* 2004.

Conclusion

This article has described the application of the SDQ to understanding the prevalence and pattern of mental health problems of students in ordinary schools, with a view to improving outcomes. The data and the interpretations contained in the paper require greater validation before they can be confirmed but these first attempts have produced an acceptable model for helping local authorities to change thinking about the mental health of children in schools. It is intended to apply the method in several parts of England and to monitor its impact on children's mental health and educational performance.

Notes

1. FN1: Initially a series of nonparametric Kolmogorov-Smirnov tests were conducted to determine significance of differences. Further nonparametric median tests were conducted on nonsignificant results using Kolmogorov-Smirnov.
2. http://www.colorado.edu/cspv/blueprints.
3. http://www.promisingpractices.net/programs.asp.
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Authors notes

Tim Hobbs
Corresponding author: Tim Hobbs
Dartington Social Research Unit, UK
Lower Hood Barn
Dartington, Devon
TQ9 6AB
England
T: + 44 (0)1803 762400
F: + 44 (0)1803 763983
E: thobbs@dartington.org.uk

Michael Little
Dartington Social Research Unit
UK and Chapin Hall Centre for Children
University of Chicago, USA

Dwan Kaoukji
Dartington Social Research Unit
UK and Chapin Hall Centre for Children
University of Chicago, USA