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Russian child mental health A cross-sectional study of prevalence and risk factors

■ **Abstract** *Background* The fall of communism and subsequent economic crises have been followed by major social and health problems. High rates of child mental health problems are frequently cited by

the Russian media, though there is little relevant evidence. *Aims* The aim of this study was to investigate the prevalence and associations of child mental health problems in Russia using internationally recognised measures and diagnostic systems. *Method* A two-stage, two-phase cross-sectional survey of the mental health of 7- to 14-year-olds involved random sampling of schools, followed by random sampling of pupils from school lists. A sample of 448 children was obtained, representing an 83% participation rate. In the first phase, screening measures of psychopathology and risk were administered to parents, teachers and 11- to 14-year-olds. In the second phase, more detailed psychiatric

assessments were carried out for subgroups of screen-positive and screen-negative children (N = 172). *Results* The prevalence of psychiatric disorder was about 70% higher than that recently found in Britain with comparable measures, but there were few differences between Britain and Russia in type of disorder or key risk factors. *Conclusion* There is a pressing need for evidence-based mental health treatments to be made widely available to Russian children and adolescents.

■ **Key words** Russia – epidemiology – child and adolescent mental health – risk factors – prevalence

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Introduction

The economic and political reconstruction that has taken place in Russia since the fall of communism has been accompanied by substantial social dislocation, including marked increases in family breakdown, substance abuse, crime, poverty and suicide [25]. Russia's economic and social situation further worsened after the economic crisis of 1998, as indexed by deteriorating life expectancy, partly attributable to increasing alcohol consumption [18], and particularly affecting the lower socio-economic groups [19]. The Russian media are full of graphic accounts of children under stress, often accompanied by claims that between 40% and 80% of Russian children have mental health problems. While

these claims are generally unsubstantiated, one Russian study of 13- to 16-year-olds did report an overall prevalence of mental pathology of 66% [6], though this estimate was not based on internationally recognised instruments or diagnostic criteria.

Given the level of concern and the potential scale of the problem, with around 31 million children and teenagers in Russia [24], surprisingly few studies have used standardised and validated measures and diagnoses to establish the rate of mental health problems in representative community samples of Russian children and adolescents. Two community studies have used the Child Behavior Checklist and related measures [1–3]. A small study (N = 105) of 9- and 10-year-olds from a school in central Russia showed that Russian mothers and teachers reported more total problems and inter-

nalising symptoms (but not more externalising symptoms) than would be expected for normative American samples [5]. Another study (N = 256) of 13- to 17-year-olds from a single Siberian school showed higher problem scores and lower competence scores than would be expected from American norms [21].

Two other community surveys have used Rutter questionnaires [7]. A large sample of 8- to 9-year-olds from Karelia in North-Western Russia (N = 1,186) were compared with 8- to 9-year-old Finnish children (N = 1,268), demonstrating increased levels of symptoms in the Russian children; the Russian and Finnish samples were similar in their *pattern* of symptoms even though they differed in their *level* of symptoms [16]. A separate study using the Rutter teacher questionnaire reported that 41.5% of 7- to 16-year-olds from Siberia scored above the cut-off, which is much higher than in previous studies using the same measure in other countries [22]. The Russian rates of teacher-reported behavioural symptoms such as truancy and lying were mostly higher than those previously described in studies from Britain, New Zealand and China [8], whereas rates of emotional symptoms were similar across studies.

Finally, one community study has used the teacher version of the Strengths and Difficulties Questionnaire (SDQ) [11] in a study of 7- to 17-year-olds (N = 623), demonstrating that mean levels of emotional symptoms, conduct problems, hyperactivity, peer problems and total difficulties scores were roughly twice as high in Russia as in Britain, whereas prosocial behaviour scores were lower in Russia than Britain [20].

Some of these community studies provide limited information on risk factors for child mental health problems in Russia. There is consistent evidence that externalising problems are commoner in boys [16, 20–22], but there is discrepant evidence on whether internalising problems are commoner in boys [16, 22] or in girls [21]. Maternal anxiety and impaired family functioning are both associated with internalising problems [5]. Greater family size is associated with conduct problems [20].

Our study was designed to use internationally recognised measures to learn more about the prevalence and associations of child mental health problems in Russia. This study is the third in an international series of epidemiological surveys of child and adolescent mental health that employ identical measures of psychopathology in each country – the Strengths and Difficulties Questionnaire (SDQ) [11] and the Development and Well-Being Assessment (DAWBA) [12] – as well as overlapping measures of risk factors. The first study in the series was a survey of 10,438 British 5- to 15-year-olds [10, 17], and the second was a study of 1,251 Brazilian 7- to 14-year-olds [9]. Sister studies have recently been completed or are underway in Spain, Norway, a second site in Brazil, Bangladesh, Yemen, Italy, Israel and India.

Each study is generating findings of interest and relevance to local service planning, while comparisons of child mental health across cultures and economic condition provide additional insights.

Subjects and methods

■ Overview

The study was carried out in Novosibirsk, which is Russia's third largest city and the economic and academic capital of Siberia. Ethical consent was obtained from the Russian Academy of Medical Sciences (Siberian Branch) and the Institute of Psychiatry in London. The study was a two-stage, two-phase cross-sectional survey. The municipal government provided us with a list of all the schools in the city stratified into public schools of below-average quality, public schools of average quality, public schools of above-average quality, and private schools. The ratings of quality were based on information on educational level and teaching standards. The two stages of the study were: firstly, random sampling of schools from each stratum; and, secondly, random sampling of pupils from schools. Ten schools were selected (three below-average public schools, three average public schools, three above-average public schools, and one private school) and all ten agreed to participate. Within grades 1–8 (ages 7–14) of each school, we randomly sampled six or seven children from each grade and informed their parents of the study. The two phases of the study were: firstly, an assessment of all participants using a screening measure of psychopathology (the SDQ) and our measures of risk; and, secondly, a more detailed psychiatric assessment (the DAWBA) for screen-positive and some screen-negative children. All psychiatric diagnoses were made blind to the SDQ results.

■ Sample

A total of 541 parents were approached, of whom 448 (83%) agreed to participate in the study. Information on psychopathology (SDQ) and risk factors was provided by all 448 parents, as well as by 98% of teachers and 96% of 11- to 14-year-olds. The presence or absence of a psychiatric disorder was predicted from the multi-informant SDQ questionnaires using an established computer algorithm [13, 14]. A total of 93 children were screen-positive: we approached all these families, and 87 (94%) agreed to a detailed psychiatric assessment using the DAWBA. Of the remaining 355 screen-negative children, 100 were approached at random and 85 families (85%) agreed to a detailed psychiatric assessment using the DAWBA. For analyses of prevalence, the Russian sample was compared with a community sample of

7,640 British 7- to 14-year-olds studied using identical measures of psychopathology; this is a subgroup of the larger sample reported elsewhere [17], having excluded children aged 5, 6 and 15 to increase comparability.

■ Questionnaire measures

Informants were asked to complete the extended version of the Strengths and Difficulties Questionnaire (SDQ) [11, 15]. This brief questionnaire covers common areas of emotional and behavioural difficulties; if the informant thinks that the child has a problem in any of these areas, there are additional questions about resultant distress and social impairment. Further information on the SDQ and copies of the questionnaire in Russian, English and over 40 other languages can be obtained free from www.sdqinfo.com. There is a standard computerised algorithm for predicting psychiatric disorder from multi-informant information on symptoms and impact [13, 14]. The algorithm makes separate predictions for three groups of disorders, namely conduct-oppositional disorders, hyperactivity-inattention disorders, and anxiety-depressive disorders. Each is predicted to be unlikely, possible or probable. Predictions of these three groups of disorders are combined to generate an overall prediction about the presence or absence of any psychiatric disorder. For this study, 'unlikely' and 'possible' ratings were combined into a screen-negative category, while 'probable' was counted as positive. The SDQ has been translated into Russian and used in clinics and research studies [20]. The mental health of the child's principal caregiver was assessed using the Self Reporting Questionnaire (SRQ) [27]. Additional measures of risk (see Table 2) included a teacher report of grade point average (GPA) as a measure of academic ability, and parental reports of socio-economic status and family factors. The rating of whether the child had seen marital violence was based on witnessed physical aggression as judged from the following question to parents: "When adults quarrel with one another at home, children may see and hear what goes on. Has your child witnessed any such quarrels? If so, did the witnessed quarrels involve: neither verbal nor physical aggression; verbal aggression; physical aggression (you may mark more than one choice)?"

■ Psychiatric diagnosis

Psychiatric diagnoses in the second phase of the study were generated with the Development and Well-Being Assessment (DAWBA) [12], which uses a mixture of closed and open questions about child psychiatric symptoms and their *impact* (i. e. resultant distress and social impairment). It is administered as an interview to parents and young people (aged 11 or more), and as an

abbreviated questionnaire to teachers. The interviews can be administered by lay interviewers who also record verbatim accounts of any reported problems, but do not rate them. Experienced clinicians subsequently review both the verbatim accounts and the answers to structured questions before assigning diagnoses according to ICD-10 criteria (World Health Organisation 1993). Previous studies have provided evidence for the validity of the DAWBA in English and Portuguese [9, 10, 12].

The questions in the structured part of the DAWBA interview are closely related to DSM-IV and ICD-10 diagnostic criteria [4, 26] and focus on current rather than life-time problems in order to obtain prevalence estimates that are relevant to service planning. The DAWBA interview can be administered to parents of 5- to 17-year-olds, but is only administered to young people aged 11 or more since previous studies suggest that the information obtained from younger children is unreliable.

The DAWBA was translated into Russian and then independently back-translated to check fidelity. After initial piloting, wording was adjusted where necessary to maximise comprehensibility and cultural appropriateness. Further information on the DAWBA is available from www.dawba.com – including on-line and downloadable versions of the measures in Russian, English, and several other languages, as well as demonstrations of the clinical rating process. For this study, verbatim transcripts of respondents' answers to open-ended questions were subsequently translated from Russian to English. All diagnostic ratings were then made by the first author (RG), an experienced child psychiatrist who also supervised all diagnostic ratings for the British comparison study.

■ Statistical analysis

The prevalence rates shown in Table 1 were calculated using the Statistics/Data Analysis Program (STATA 6) survey program, which uses Taylor series linearisation methods to adjust for sampling weights and clustering within strata and primary sampling units (schools) in the calculation of test statistics and standard errors [23]. Thus, the confidence intervals around prevalence estimates do allow for stratification, clustering and weighting. Analyses of associations with potential risk factors gave equal weight to each subject.

Results

Table 1 compares the rates of psychiatric problems in Russia and Britain according to eight different criteria. The first four were derived from the SDQ: How often did parents think their children had definite or severe problems with emotions, behaviour, concentration or social

Table 1 Prevalence of child mental health problems in Russian and British 7- to 14-year-olds

Measure of child mental health problem	Proportion positive (95% CI)		Odds ratio (95% CI)
	Russia	Britain	
Based on questionnaires			
Parent thinks there is a problem	26.9% (13.5%, 40.3%)	9.0% (8.3%, 9.7%)	3.72 (1.88, 7.40)
Teacher thinks there is a problem	21.1% (11.4%, 30.9%)	12.0% (11.2%, 12.8%)	1.97 (1.09, 3.54)
Adolescent thinks there is a problem	9.2% (2.4%, 16.1%)	6.4% (5.5%, 7.3%)	1.49 (0.65, 3.42)
Multi-informant questionnaire 'caseness'	19.0% (15.1%, 22.9%)	10.3% (9.6%, 11%)	2.04 (1.57, 2.66)
Based on psychiatric assessment			
Any ICD-10 psychiatric diagnosis	15.3% (10.4%, 20.1%)	9.1% (8.4%, 9.8%)	1.79 (1.22, 2.63)
An ICD-10 emotional disorder	8.8% (4.0%, 13.5%)	4.2% (3.7%, 4.7%)	2.17 (1.18, 3.96)
An ICD-10 behavioural disorder	8.6% (6.0%, 11.1%)	4.9% (4.4%, 5.4%)	1.81 (1.28, 2.55)
An ICD-10 hyperkinetic disorder	1.3% (0.3%, 2.3%)	1.4% (1.2%, 1.7%)	0.94 (0.43, 2.08)

relationships? How often did teachers think the same of their students? How often did 11- to 14-year-olds think that of themselves? How often did the SDQ computer algorithm predict probable 'caseness' based on all sources of information? The remaining four criteria for psychiatric problems were derived from the DAWBA: rates of any ICD-10 psychiatric disorder, any emotional disorder, any conduct disorder (including oppositional-defiant disorder), and hyperkinetic disorder. As shown in Table 1, six of the eight prevalence rates were significantly higher for the Russian sample than for the comparison British sample, while the other two did not differ significantly by country. The average odds ratio across the eight prevalence measures was 2.0, and all the confidence intervals spanned this value. There was significant agreement between the SDQ and DAWBA categories, with at least one ICD-10 psychiatric diagnosis being made in 35% (30/87) of the screen-positive and 14% (12/85) of the screen-negative subjects (continuity-adjusted chi-square = 8.6, 1df, $p = 0.003$).

Table 2 analyses the influence of possible risk factors for the 406 of the 447 Russian subjects (91%) with full data on all the relevant demographic, academic, family and social factors. The dependent variable was the multi-informant SDQ prediction of psychiatric disorder that was available on all subjects, rather than the DAWBA rating of psychiatric disorder that was only available on around half of the subjects (and which would, therefore, have reduced the power of the study to detect significant risk factors). The prominent risk factors are either individual characteristics of the child, including gender and academic ability, or adverse aspects of the child's immediate environment such as witnessing marital violence, having a depressed mother, or having an alcoholic father. By contrast, the rate of child psychiatric disorder was less affected by affluence, family type, parental education, parental occupation or school characteristics. Entering the significant and near-significant factors from Table 2 into a forward stepwise logistic regression analysis, the risk factors that were still associated with child psychiatric disorder were the child's

Table 2 The relationship between possible risk factors and the rate of child psychiatric disorder as predicted from multi-informant SDQs (N = 406 with full information on risk factors)

Risk factor	Categories	Child psychiatric disorder (SDQ)	p
Gender	Male	27% (52/196)	0.007
	Female	15% (32/210)	
Age	7-10	17% (32/192)	0.08
	11-14	24% (52/214)	
Grade point average	Lowest third	33% (45/136)	0#
	Middle third	16% (23/144)	
	Highest third	13% (16/126)	
Child has seen marital violence	No	19% (72/382)	0.001
	Yes	50% (12/24)	
Alcoholism in family	No	19% (74/388)	0.001
	Yes	56% (10/18)	
Maternal anxiety-depression	Lowest third	12% (16/133)	0.001#
	Middle third	20% (30/147)	
	Highest third	30% (38/126)	
Family type	Traditional	19% (54/291)	NS
	Single-parent	26% (22/86)	
	Reconstituted	28% (8/29)	
Maternal education	< 11 years	24% (11/45)	NS
	11-14 years	24% (45/189)	
	> 14 years	16% (28/172)	
Family affluence (consumer goods)	Lowest third	27% (36/132)	NS#
	Middle third	16% (26/164)	
	Highest third	20% (22/110)	
Occupation of head of household	Unskilled	22% (40/182)	NS#
	Technical	20% (40/197)	
	Professional/Managerial	15% (4/27)	
School quality or type	Disadvantaged	27% (34/125)	0.06#
	Average	18% (23/129)	
	Advantaged/Private	18% (27/152)	

Significance levels calculated using chi-square tests, with continuity adjustment where appropriate. The results marked '#' were based on chi-square for trend

academic ability ($p = 0.000$), the mother's anxiety-depression score ($p = 0.001$), having a close family member with alcohol problems ($p = 0.005$) and witnessing domestic violence ($p = 0.07$).

Discussion

The rates of child mental health problems in Russia and Britain were compared, using equivalent measures and diagnostic criteria in both countries; these rates were generally higher in Russia, though the difference varied according to the measure used. For example, 27% of Russian parents as compared with only 9% of British parents thought that their child had definite or severe mental health problems; the corresponding national difference was less striking though still significant for rates of ICD-10 psychiatric disorders diagnosed by a clinical rater with access to detailed information from multiple informants: 15% in Russia as compared with 9% in Britain. Contrary to sensational media reports that 40–80% of Russian children have serious mental health problems, our study suggests that the true figure is more probably 15–20%, though this requires corroboration from larger studies in a range of settings.

Though differing in *rate*, child psychiatric disorders in Russia and Britain are similar in terms of *type*: emotional and behavioural disorders are the two common categories, with both being roughly twice as common in Russia as in Britain. Thus, our study confirms previous findings [16] that Russian children have a higher level, but a similar pattern, of psychopathology to children elsewhere; it does not support previous findings that the increased psychopathology is restricted just to internalising problems [5] or just to externalising problems [22].

In Russia, as in Britain [17], the most significant risk factors are characteristics of the children and their immediate family environment. The most predictive factors in this study were the child's academic ability, the mother's mental health, the presence of a close relative with alcohol problems, and witnessing domestic violence. The lack of predictive power of socio-economic measures in Russia – in contrast to Britain's four-fold difference in the rate of child psychiatric disorder across the social classes [17] – may reflect a transitional society where the traditional markers of a family's social status correlate poorly with the factors that impact directly on a child's well-being.

■ Limitations of this study

The screening procedure, based on multi-informant questionnaires, had a negative predictive value of 86% and a positive predictive value of 35%, which are poorer than previously reported for Britain [13]. A study based on a relatively small two-phase sample is bound to have fairly wide confidence intervals around prevalence estimates, particularly when first-phase screening is of low predictive value. A restricted sample size will also have reduced our power to detect significant risk factors. For

example, children from professional and managerial classes made up less than 10% of our relatively small sample size, limiting our ability to detect social class differences. Sampling from a single city undoubtedly limits the generalisability of our findings, but having demonstrated that it is possible to carry out epidemiological surveys in Russia that achieve good participation rates and use internationally recognised measures and diagnostic criteria, we hope that other investigators will carry out further such studies on a larger scale and in a wider range of different locations. Only then will it be possible to provide precise estimates of prevalence.

■ Clinical and policy implications

The study's findings have implications both for prevention and treatment. As far as prevention is concerned, the findings suggest that improving maternal mental health and reducing alcoholism and marital violence are not only self-evidently valuable in their own right; they are also likely to have wider benefits for child mental health. As far as treatment is concerned, Russia is currently poorly provided with child and adolescent mental health services, and existing services have traditionally focused on inpatient provision for severely impaired children; outpatient services for common emotional, behavioural and hyperactivity services are scarce (and totally lacking in many regions). In its continuing economic crisis, Russia is faced with a difficult choice: in the short term, there are limited resources to expand services, while, in the longer term, the country cannot afford the cost of leaving so many children untreated. It is a truism that a nation's future depends on the human capital represented by today's children, and that poor mental health undermines this capital. This critical situation requires a considered, rather than a hasty, response. There is a danger that rushed or faulty planning could lead to the creation of services that impose costs without producing corresponding benefits. The first priority should be the development and evaluation of 'model' community services that build on existing strengths while incorporating best practice from around the world. Since Russian child psychiatric disorders resemble those seen in the 'West' in terms of type of disorder and key risk factors, it seems likely that evidence-based treatments and prevention strategies developed in the West can be successfully adapted for use in Russia. Once shown to be successful, model services in Russia could form the basis for wider dissemination and training.

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