

Detection of child mental health disorders by general practitioners

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SUMMARY

Background: Few children with mental disorders access specialist services. Although previous studies suggest that general practitioner (GP) recognition is limited, parents may not be presenting these problems.

Aim: To compare GP recognition of disorders with child mental health data and to examine factors affecting recognition, in particular whether recognition is enhanced if the parent expresses concern during the consultation.

Design of study: A two-phase design involving an initial community survey of children between the ages of 5 and 11 years. In the second phase, primary care attenders who were regarded by their GP as having a mental health disorder were compared with those who were not.

Setting: Five general practices in Croydon, outer London.

Method: For 186 children attending primary care, GP recognition of disorders was compared with the results of a child mental health questionnaire completed by parents. Accuracy and predictors of GP recognition were examined.

Results: Seventy-four per cent of children meeting criteria for caseness were not recognised by GPs as having a mental health disorder. The expression of parental concern in the consultation about a mental health problem increased the sensitivity of recognition from 26% to 88%. Expression of concern also increased GP recognition of non-cases; this reflected GP identification of other mental health and learning problems. Only a third of parents who had concerns expressed these during the consultation.

Conclusions: GPs are responsive to concern and take parental views into account. As well as detecting disorders, GPs are also sensitive to other psychosocial and educational problems that may present in primary care. There is a need for parental education about child mental health disorders.

Keywords: child mental disorders; learning disorders; primary health care; questionnaire.

Introduction

ALTHOUGH child mental health disorders are common and often persist into adolescence and adulthood, few affected children are seen by specialist services.^{1,2} This implies that most children with disorders who attend primary care are managed within this setting. Most of our knowledge about the recognition of child mental health problems in primary care comes from the United States. Differences in the organisation of services mean that the generalisation of these findings to the United Kingdom (UK) is limited. Public and professional awareness of these problems and their implications may have increased; for example, concerned parents are now more likely to request referral to specialist services than they were a decade ago.³ An examination of the factors that influence general practitioner (GP) recognition of disorders is timely and has public health and intervention implications. Primary care trusts have an increasing role in commissioning child health services, and an aim of the forthcoming national service framework for children is to reduce barriers to accessing services. As GPs are the main referrers to specialist child and adolescent mental health services (CAMHS), and many services limit referrals to doctors, GP recognition is the key step in accessing specialist services.³ Failure to detect disorders may prevent or delay the receipt of effective interventions. Given that most children attend primary care, the consultation provides a potential opportunity to identify those with disorders.

Earlier studies about GP recognition were limited because they lacked objective measures of child symptoms.⁴⁻⁶ Few studies have compared GP recognition against objective measures.⁷⁻¹⁰ These have found low levels of sensitivity (generally between 80 and 90% of disorders are missed) and high levels of specificity (few children without disorders are misdiagnosed). However, these data may reflect unfairly on GPs, since parents may not have expressed concerns at the consultation. Research suggests that severity of disorders and parental perception of difficulties also play an important role in the processes of presentation to and management within primary care.¹¹⁻¹³

Children with mental health problems who attend primary care may not meet diagnostic criteria for disorders, even if they have significant symptoms or related impairment. Nevertheless, such problems can be risk factors for later development and are associated with service use.¹⁴ Hyperactivity is an example of a common and persistent childhood problem. In clinical practice, GPs are reliant on parents being the main informants about a child's symptoms and functioning in different settings. Given the salience of parental views, an examination of children with possible hyperactivity can inform about factors that affect GP recognition of child mental health disorders in general. This study aims to compare GP recognition of disorders against a measure

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HOW THIS FITS IN*What do we know?*

In the United States, where many paediatricians are based in primary care, recognition of child mental disorders is limited.

What does this paper add?

This study extends previous findings to settings where general practitioners (GPs) have a gatekeeper role. GPs are responsive to parental concern to a greater extent than previous studies have suggested. Regardless of whether a child meets criteria for caseness, GP recognition of a mental health disorder increases when parents express concern about mental health problems.



of child mental health completed by parents, and examines whether recognition is enhanced if parents express concern during the consultation.

Method*Setting*

The study was carried out in the outer London borough of Croydon, because it has a similar socioeconomic profile to the national average and GPs are the main referrers to the local CAMHS. Ten of 12 randomly selected general practices agreed to participate in the study. Time constraints meant that five of these practices (18 GPs) were chosen randomly for the study. The study was approved by the South London and Maudsley NHS Trust Ethics Committee.

Participants

The first phase of sample recruitment involved a postal survey that took place between 1999 and 2000. The parents of all children between the ages of 5 and 11 years who were registered with these practices were sent information about the study and asked to complete the strengths and difficulties questionnaire (SDQ).^{15,16} After a single reminder to non-responders, responses were received for 1194 (40%) children. A careful assessment was made of the possibility of selection bias in parental response. The proportions of children scoring above the cut-off points of symptom scores were in keeping with the expected population proportions.¹⁵ Although there was no difference between responders and non-responders in terms of children's sex, there were small differences in age and the Jarman under-privileged area (UPA) scores for the enumeration district.¹⁷ These measures were included as covariates in subsequent logistic regression models. Further details about the community survey are described elsewhere.³ In phase two, all high scorers on the hyperactivity items of the SDQ were matched with a low scorer according to age and sex. Four hundred and ninety-six children thus identified were the sample for this study of GP recognition of disorders. GPs were blind to the SDQ scores.

Measures

A 'recognition form' was designed for the study following consultation with the participating GPs.³ This was attached

to each child's case notes for completion after their next appointment. One form was available per child. To examine recognition of disorders, the GP was asked whether they thought the child had a mental health disorder and, if so, the nature of the disorder. Other questions enquired whether the parent expressed concern about a mental health problem and requested referral to specialist services, and whether the GP felt able to manage the disorder or would refer the child. These forms were completed over a 1-year period between 2000 and 2001.

The SDQ is a well-validated measure of child mental health and informs about symptoms, parental perception of difficulties, and impact (impairment or distress) for the child. The total symptom score (0 to 40) relates to hyperactivity, conduct problems, emotional symptoms, and peer relationships. Although the sample was selected according to hyperactivity items, the definition of caseness was based on wider criteria: a total symptom score of at least 14 and an impact score of at least 2.^{2,15,16} This cut-off only applies to 6.7% of children and increases the probability of an independently assessed psychiatric diagnosis by an odds ratio of 22.1 (R Goodman, personal communication, 2004). It has a negative predictive value of 95% and a positive predictive value of 56%, minimising the proportion of 'false negatives' at the expense of being over-inclusive. Although high scores on rating scales are not the same as diagnostic criteria for a disorder, these problems constitute a high developmental risk, suggesting that the identification of these children for further assessment is of relevance.

Analysis

The SPSS for Windows program was used for analysis. The focus of the study was the relationship between caseness and GP recognition rather than prevalence estimates. Like other studies with a two-phase design that examines associations between variables of interest, findings are presented for children with completed recognition forms using unweighted data rather than as estimates weighted to the entire screened sample.^{9,10}

Concordance between caseness and GP recognition was examined in terms of sensitivity (proportion of children meeting caseness criteria who are recognised by the GP as having a disorder) and specificity (proportion of children who do not meet caseness criteria and are not regarded as having a disorder). It was hypothesised that caseness, parental perception of definite difficulties (from the SDQ) and expression of concern about a mental health problem at the appointment would be associated with GP recognition. Logistic regression analyses compared children who were recognised with those who were not. These controlled for age, sex, and household Jarman UPA scores to provide adjusted odds ratio estimates. Where appropriate, univariate analyses using Fisher's exact test were carried out instead.

Results

Recognition forms were completed for 38% (186/496) of children. With one exception, all GPs completed forms (mean = 9.8, standard deviation [SD] = 6.4, range = 1–23). There were no differences between children for whom forms

were completed and those for whom they were not completed in terms of sex, hyperactivity status, most other SDQ scores, and household Jarman UPA score. However, forms were more likely to be completed for younger children (mean ages of 8.07 [SD = 1.73] years versus 8.52 [SD = 1.86] years; t -test = 2.71, df [degrees of freedom] = 494, P = 0.007) and for children with higher emotional scores (mean = 2.98 [SD = 2.53] versus 2.41 [SD = 2.33]; t -test = 2.53, df = 494, P = 0.01). The age difference is likely to reflect greater primary care attendance in younger children. Although it is possible that GPs are more likely to complete forms for children with emotional problems, it may also be that these children are more likely to attend primary care and so have forms completed.

GP recognition of disorders

Overall, 20 (11%) of the 186 children were recognised by the GP as having a mental health disorder and 43 (23%) met caseness criteria. The sensitivity for recognition was 0.26 (11/43) and the specificity was 0.94 (134/143). Parents perceived difficulties in relation to 40 (22%) children. Despite this, concern was only expressed at the consultation for 13 (7%) children. With two exceptions, this was accompanied by parental requests for referrals. For these 13 children, the sensitivity of GP recognition increased to 0.88 (7/8). However, this was at the expense of specificity, which became 0 (0/5).

Table 1 gives details of the 20 recognised children. The GPs stated they would refer 15 of the children, and three children had already been referred to CAMHS. GPs regarded themselves as being able to manage a disorder for just one child. Overall, 11 of these children met caseness criteria, suggesting a positive predictive value of 0.55 for GPs

recognising disorders. There were other explanations for seven children: two were regarded as having a learning disability and one had associated tics (the SDQ does not ask about these problems), two were not regarded as needing referral, one was referred to paediatrics, and one had been under the care of CAMHS in the previous year. The final two children were regarded as having attention deficit hyperactivity disorder, suggesting that parental concern and reporting of symptoms were being taken into account.

Predictors of GP recognition

Table 2 shows that recognition was associated with all three predictor measures. The wide confidence interval for expression of concern reflects that there was only one child whose parent expressed concern, but the GP did not regard the child as having a disorder. On theoretical grounds, the role of caseness was not examined further in a multivariate analysis; theoretically, both parental perception of difficulties and expression of concerns are on the pathway of the relationship between caseness and recognition. This decision was confirmed by the strong associations between caseness and both parental perception of difficulties and expression of concerns. For cases, 65% (28/43) of parents perceived a difficulty, compared with 8% (12/143) for non-cases (χ^2 with continuity correction = 59.70, df = 1, P < 0.001). For cases, 18% (8/43) of parents expressed a concern, compared with 3% (5/143) for non-cases (Fisher's exact test, P = 0.002). In contrast, parental perception of difficulties and expression of concern were not associated with each other. In a multivariate logistic regression analysis both these measures continued to predict GP recognition: parental perception of difficulties (odds ratio = 11.6, 95% confidence interval [CI] = 2.4 to 56.2; P = 0.002) and expression of concern (P < 0.001).

Table 1. Recognition forms of the 20 recognised children.

Child ^a	Parental concern	Type of disorder ^b	Type of referral ^c
SDQ caseness			
A	Yes	LD	Paediatrics and EP
B	Yes	ED	CAMHS
C	Yes	CD	CAMHS
D	Yes	ADHD	CAMHS
E	Yes	LD	CAMHS
F	Yes	ED and CD	CAMHS
G	Yes	CD	CAMHS
H	No	CD	Already under CAMHS
I	No	ADHD	Already under CAMHS
J	No	Asperger's syndrome	Already under CAMHS
K	No	ED	CAMHS
No SDQ caseness			
L	Yes	Dyslexia	EP
M	Yes	LD	CAMHS
N	Yes	ADHD	CAMHS
O	Yes	ADHD	CAMHS
P	Yes	ED	CAMHS
Q	No	CD	None
R	No	ED	None
S	No	ED	Paediatrics
T	No	ED and tics	CAMHS

^aEach row reflects an individual child (letters A to T). ^bGP's view about type of disorder: LD = learning disability; CD = conduct disorder; ED = emotional disorder; ADHD = attention deficit hyperactivity disorder. ^cGP's decision about referral: EP = educational psychologist; CAMHS = child and adolescent mental health services. SDQ = strengths and difficulties questionnaire.

Table 2. Predictors of GP recognition.

	Recognised <i>n</i> = 20	Not recognised <i>n</i> = 166	Odds ratio (95% CI) ^a
Male sex (<i>n</i> [%])	15 (75)	108 (65)	
Jarman UPA score (mean [SD])	8.39 (11.27)	0.84 (13.35)	
Age in years (mean [SD])	7.56 (1.65)	8.13 (1.73)	
Caseness (<i>n</i> [%])	11 (55)	32 (19)	5.9 (2.1 to 16.6)
Difficulties (<i>n</i> [%])	10 (50)	30 (18)	7.5 (2.5 to 22.8)
Parental concern (<i>n</i> [%])	12 (60)	1 (1)	247.1 (26.1 to 2340.8) ^b

^aAdjusted for age, sex, and Jarman UPA (under-privileged area) score. ^bPresented for completeness. The odds ratio (and wide CI) reflects the low cell value in the 'not recognised' group; for the bivariate analysis, Fisher's exact test, $P < 0.001$. SD = standard deviation.

The effect of caseness on the relationship between parental expression and recognition was examined by stratifying children by caseness. For cases, 88% (7/8) were recognised when concern was expressed, compared with 11% (4/35) when not expressed (Fisher's exact test; $P < 0.001$). For non-cases, all (5/5) were recognised when concern was expressed compared with 3% (4/138) when not expressed (Fisher's exact test; $P < 0.001$).

Discussion

Summary of main findings

Although only a quarter of children meeting criteria for caseness were recognised by GPs as having a mental health disorder, the expression of parental concern about a mental health problem in the consultation increased the sensitivity of recognition to 88%. If the parents expressed concerns, recognition also increased considerably for non-cases, suggesting that GPs are responsive to concern and take parental views into account. For example, GPs picked up a range of learning problems and made referrals to educational psychology and paediatric services. Despite GPs' responsiveness, few parents expressed concerns about their children's mental health. Furthermore, expression of concern was not associated with parental perception of difficulties, suggesting that even if parents are concerned they do not necessarily express this. As hypothesised, caseness, parental perception of difficulties, and expression of concern all predicted GP recognition. GPs planned to refer the majority of recognised children, and generally did not feel able to manage disorders within primary care. This may reflect the multi-disciplinary resources and multi-agency links available to CAMHS. It may be that GPs refer those children whom they consider to have a disorder, but manage and monitor milder problems in primary care.

Strengths and limitations

The two-phase design of this study is similar to previous studies examining this issue.^{9,10} Given that the aim was to examine recognition, the sampling approach meant that a higher proportion of participants than consecutive attenders would have a disorder. To assess parental perceptions, a common problem was chosen where parents were likely to be aware of the behaviour. Although it can be difficult to distinguish between recognition and referral, the sample size enabled a specific examination of GP recognition.¹¹ GPs were blind to the SDQ scores, however, participation in the study may have influenced their responses. There was

considerable sample attrition at each stage, suggesting that findings should be interpreted cautiously. However, potential sources of selection bias were assessed and their extent was minor. The majority of non-completion of recognition forms is likely to reflect non-attendance in primary care.¹ However, there were variations in completion rates among GPs and it was not possible to assess factors influencing this. This study is a 'snapshot' of recognition practice. Recognition was based on a single appointment rather than the child's consultation history; however, a main focus was parental behaviour at the appointment. The sensitivity of GP recognition of disorders may have been underestimated for two reasons. First, the definition of caseness that was employed does miss some disorders and wider psychosocial problems that may be the reason for consulting. It also identifies children with high developmental risk but no disorder, highlighting the limitations of diagnostic classification systems for children with common mental health problems seen in primary care settings.^{14,18} Secondly, although child mental health disorders, especially externalising ones such as hyperactivity, are persistent,² there was a time delay between the community survey and GP completion of forms. It was not possible to examine the roles of other parental factors (such as sex, age, ethnicity, mental health, socioeconomic status) and GP factors.^{12,18} Finally, parental expression of concern was based on the GP's view, yet GPs' and parents' perceptions as to whether concerns were expressed may differ.¹³

Agreement with existing literature

At face value, the study confirms the low sensitivity and high specificity of GP recognition of child mental health disorders. However, sensitivity increased considerably when parents expressed concern.¹¹ In contrast with previous work, recognition also increased among non-cases when concern was expressed.¹¹ This suggests that GPs are influenced by parental concerns to a greater extent than previously suggested. Few parents expressed mental health concerns about their child — previous research has found a considerable difference between what parents say they will discuss with the doctor and what they actually report in a consultation.¹⁹

Clinical and research implications

The findings suggest that parental concerns provide a clue to possible child disorders. If concerns are presented, the nature of symptoms and associated impairment should be clarified. If concerns are not presented, general questions about the child's activities or progress at school may elicit

concerns — parents may not be aware that psychosocial concerns can be discussed in this setting. However, a major implication of such identification of needs is the availability of specialist support and services to primary care. If parents are encouraged to express concerns, are resources available to meet the demand? In the UK, the current development of the primary mental health worker role holds promise.²⁰

In terms of future research, work is needed on three fronts. First, a comparison of GPs' and parents' views about whether a child has a disorder would be informative and may have implications for self-referral. Secondly, at the methodological level there is a need to distinguish between what parents say they will report or have reported, what they actually report, and what GPs think has been reported. Objective measures of interactions could help clarify this issue. Finally, it is currently uncertain whether interventions should be aimed at GPs or at parents. Although there are some parallels with the adult mental health literature, such as the presentation of physical symptoms when mental health problems are present, particular differences are that children are dependent on key adults to perceive problems and seek help on their behalf.²¹ As few children are presented with mental health concerns, this suggests that parental behaviour influences GP recognition behaviour. GP recognition is dependent on the parental presentation, which limits opportunities for direct ascertainment from the child. Consequently, childhood mental disorders may be less recognised. Training GPs to elicit parental concerns may only benefit a proportion of parents — a small study found that parents were reticent about raising concerns in primary care even when given permission to do so.²² Parental education about child mental health could benefit a greater proportion of children with unrecognised disorders.

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