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Service utilization by children with conduct disorders: findings from the 2004 Great Britain child mental health survey

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Abstract Children with conduct disorders (CD) and their families are in contact with multiple agencies, but there is limited evidence on their patterns of service utilization. The aim of this study was to establish the patterns, barriers and correlates of service use by analysing the cohort of the 2004 Great Britain child mental health survey ($N = 7,977$). Use of social services was significantly higher by children with CD than emotional disorders (ED) in the absence of co-morbidity, while use of specialist child mental health and paediatric was significantly higher by children with hyperkinetic disorders (HD) than CD. Children who had comorbid physical disorders used more primary healthcare services compared to those without physical disorders. Utilization of specialist child mental health and social services was significantly higher among children with unsocialized CD than socialized CD and oppositional defiant

disorders. Services utilization and its correlates varied with the type of service. Overall, specialist services use was associated with co-morbidity with learning disabilities, physical and psychiatric disorders. Several correlates of services use in CD appeared non-specific, i.e. associated with use of different services indicating the possibility of indiscriminate use of different types of services. The findings led to the conclusion that there is the need for effective organization and co-ordination of services, and clear care pathways. Involvement of specialist child mental health services should be requested in the presence of mental health co-morbidity.

Keywords Conduct disorder (CD) ·
Oppositional disorders · Behavioural problems ·
Services · CAMHS

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Introduction

Conduct disorder (CD) is a common mental health presentation in childhood, with a prevalence of 7.5% in boys and 3.9% in girls aged 5–16 years [12]. CD frequently co-occurs with other psychiatric disorders [17], and causes a high degree of impairment [16]. Young children with antisocial behaviour are likely to require support from a wide range of services [14, 28, 30, 33]. Children with CD and their families use mental health and social services significantly more than children with no disorder [21, 32]. A previous study found significantly higher lifetime rates of utilization of social and educational services in conduct disorders compared to other mental health disorders as a whole [30]. A longitudinal study on service contacts on a nationally representative sample found that children with CD were more likely to be in contact with social services,

teachers and special educational needs agencies than children with other disorders [7].

Few studies have examined the economic costs of CD and its burden on various agencies [14, 23, 28]. CD is associated with considerable economic costs in young life [14] and is a major predictor of life-time use of multiple resources [15, 28]. For example, by the age of 28 years, the cost for individuals with CD was ten times higher than those with no problems, and 3.5 times higher than those with less severe conduct problems [28].

A study on the continuity of care for conduct disordered youth in Canada found that an average of 19 interventions was offered by 15 agencies, with the interventions on an average lasting for 7 months [29]. Despite the findings of multiple service use, diverse interventions and economic burden related to CD, we know little about the characteristics of children with CD who are in contact with services and the services they access. The aims of this study in a national sample of 5–16 year-olds were to: (1) investigate which public sector services were accessed by children with CD, (2) compare service utilization by children with CD to those with emotional (ED) and hyperkinetic disorders (HD), (3) establish patterns of service utilization within the CD group, according to CD diagnostic sub-type and physical health disorders co-morbidity, (4) identify factors associated with health, specialist education and social services use in children with CD and (5) establish perceived parental barriers to services utilization.

Methods

Subjects and design

Our study analysed data from the 2004 child mental health survey in Great Britain. This survey has been described in detail by Green et al. [12]. It was carried out with 5–16 year-olds living in private households in England, Wales and Scotland. The nationally representative sample consisted of children on Child Benefits, as all children in full-time education in Great Britain are eligible for state benefits. Addresses were selected at random from a sample of 8,265 postal sectors in the country. Of the selected 12,294 children and families, 9% opted out of the study, and 5% had moved from their original address and/or could not be traced. Consequently, 10,496 children and their families were approached for interview, or 85.4% of the initial sample. Interview information was obtained for 7,977 children (65% of the total sample, and 76% of children approached).

Information collected through face to face interviews was supplemented by questionnaires for parents, and self-reports for children aged 11–16 years. Interviews were

conducted by trained lay interviewers. Additional questionnaires were posted to teachers with parental consent. The majority of the parents interviewed (94%) consented for their children's teacher to be contacted, and 83% of the teachers responded by returning completed questionnaires. Families had been in contact with a range of statutory and voluntary organizations.

Measures

- *Development and Well-Being Assessment (DAWBA)* [11] is a reliable and valid package of questionnaires, interviews and rating techniques that was also used in the 1999 child mental health survey in Great Britain, to assess mental health disorders. The structured interview included questions that covered relevant DSM-IV and ICD-10 criteria for psychiatric diagnosis and any resultant impairment. It was administered by lay interviewers to the main carers, and to young people if aged 11 or over. When definite symptoms were identified by structured questions further relevant open ended questions and supplementary prompts for problems were asked and recorded verbatim. The use of screening questions and use of skip rules reduced the interview length by allowing sections of interview questions to be omitted without loss of information. A brief questionnaire was completed by the children's teacher that covered conduct, emotional and hyperactivity symptoms and the resultant impairment. The data from all the sources were used to generate an algorithm-based computer diagnosis. The computer diagnosis was based exclusively on the answers to structured questions only. It is for this reason that a small team of experienced clinicians reviewed all the information using a case vignette approach, and either confirmed or overturned the computer generated ICD-10 diagnosis [31].
- *Socio-demographic data* were collected from the parents. These included ethnicity, number of children in household, household weekly income, receipt of benefits, accommodation, tenure type, family type, and parental marital status.
- *Service utilization*: Parents were asked for information relating to contact with services for mental health problems during the preceding year. The parents identified services used from a checklist consisting of the following categories:
 1. Primary health care (general practitioner, practice nurse or health visitor)
 2. Specialist child mental health services
 3. Specialist paediatric services
 4. Social services

5. Teacher (including head of year, head teacher or special educational needs co-ordinator)
 6. Specialist education services (for example, educational psychologist, educational social worker or school counsellor)
 7. Alternative therapists
 8. Other services, including self-help groups and voluntary agencies
- *Barriers to services use*: Drawing on a list of 15 themes that had emerged from earlier research [6], parents indicated which reasons had stopped them from accessing services in the last 12 months even when concerned with their child's health [12].
 - *Self-harm*: All parents were asked to identify children who had harmed themselves in the previous year.
 - *Physical disorders*: Parents were asked to select the conditions their child suffered from a comprehensive list of physical problems [12].
 - *Stressful life events*: Parents were asked if their child had ever experienced in their life any of the following adverse events: serious injury, serious illness needing hospitalization, parental separation, major financial crisis, parental dispute with the law that resulted in a court appearance, serious parental physical illness, serious parental mental illness, death of a family member, or death of close friend. They were in addition asked about permanent ending of a close friendship in the previous year.
 - *General Functioning Scale of the Mac Master Family Assessment Device (FAD)* [4]: This scale comprises 12 items that parent's rate on a four-point scale. The FAD distinguishes between families with healthy and unhealthy functioning.
 - *General Health Questionnaire (GHQ)* [9]: This standardized widely used 12-item self-report scale for parents was used to assess the presence of parental anxiety and depression.

Statistical analysis

Statistical analysis was carried out using the computerized package SAS version 9.1. Descriptive data were analysed using frequencies. Comparisons involving non-parametric data were carried out using chi square tests, and multivariable logistic regressions were used to examine factors associated with service utilization in children with CD. In each analysis, contact with a particular service was entered as the dependent variable, while age, gender, co-morbidity with psychiatric or physical disorders, presence of generalized learning disabilities, self-harm, stressful life events, school exclusion, care by Local Authority, socio-demographic variables,

parent's mental health and family functioning were the co-variables. The analyses allowed for the use of weights to account for the unequal postal sector selection, and to correct for the non-response bias associated with region, age and gender [12].

Results

Prevalence and service use in major psychiatric disorders

The prevalence rates of the major types of disorders in this sample were: conduct disorders 5.8%, emotional disorders 3.7%, and hyperkinetic disorders 1.5%. The rates for the four sub-types of CD were: oppositional defiant disorders 3%; socialized CD 1.3%; unsocialized CD 0.8% and other CD 0.6%. One-third of children with CD (35.7%) had associated co-morbidity: 18.1% with emotional disorders (ED); 16.7% with hyperkinetic disorders (HD); and 5.5% with less common psychiatric disorders.

A summary of the use of services by children with CD, ED and HD is presented in Table 1. Among these services, teachers were approached most commonly in all the three types of disorders (46.4–68.8%).

Services utilization according to psychiatric diagnostic type

Service use rates were compared between the main diagnostic categories without other psychiatric co-morbidity (Table 2). There was no significant difference of primary health care services utilization between CD and ED (24 vs. 22%) or CD and HD (24 vs. 39%).

With respect to specialist child mental health services, significantly fewer children with CD were in contact with services than children with HD (12 vs. 28%, OR = 0.35, 95% CI = 0.15–0.81, $p < 0.05$). However, there was no significant difference in this service use between CD and ED (12 vs. 14%). There was a significantly lower use of specialist paediatric services in children with CD than HD (4 vs. 19%, OR = 0.15, 95% CI = 0.05–0.44, $p < 0.001$), while there was no significant difference in service use between CD and ED (4 vs. 6%).

There was no significant difference in the use of specialist educational services between CD and HD (17 vs. 28%) or CD and ED (17 vs. 8%). Social services use was significantly higher in CD than ED (11 vs. 3%, OR = 3.79, 95% CI = 1.43–10.04, $p < 0.05$), while there was no significant difference between CD and HD (11 vs. 6%).

Table 1 Services utilization by children and adolescents with main types of psychiatric disorders

Services	Conduct disorder % (<i>n</i> = 420)	Emotional disorder % (<i>n</i> = 293)	Hyperkinetic disorder % (<i>n</i> = 109)
Primary health care	31.2 (131)	28.7 (84)	45.9 (50)
Specialist child mental health	25.2 (106)	21.8 (64)	49.5 (54)
Specialist adult mental health	3.1 (13)	2.0 (6)	1.8 (2)
Specialist child physical health	7.1 (30)	7.5 (22)	14.7 (16)
Teacher	59.8 (251)	46.4 (136)	68.8 (75)
Specialist education services	24 (101)	18.1 (53)	36.7 (40)
Social services	16.2 (68)	9.9 (29)	15.6 (17)
Family or friends	34.3 (144)	33.4 (98)	34.9 (38)
Self-help groups	3.3 (14)	2.7 (8)	6.4 (7)
Helpline	4.3 (18)	4.1 (12)	5.5 (6)
Internet	5.7 (24)	5.5 (16)	11 (12)

Table 2 Comparison of service utilization between main types of mental healthy disorders without co-morbidity

Services	CD % (<i>n</i> = 270)	ED % (<i>n</i> = 155)	HD % (<i>n</i> = 36)	CD versus ED OR ^a 95% CI	CD versus HD OR ^a 95% CI
Primary health care	24 (64)	22 (34)	39 (14)	1.14 (0.7–1.83)	0.50 (0.24–1.07)
Specialist child mental health	12 (32)	14 (21)	28 (10)	0.88 (0.48–1.6)	0.35 * (0.15–0.81)
Specialist Paediatrics	4 (11)	6 (10)	19 (7)	0.60 (0.24–1.44)	0.15 *** (0.05–0.44)
Specialist education	17 (47)	8 (13)	28 (10)	2.28 (1.18–4.38)	0.52 (0.23–1.18)
Social services	11 (31)	3 (5)	6 (2)	3.79* (1.43–10.04)	2.42 (0.55–10.67)

^a Reference group is CD

Statistically significant: * $p < 0.05$, *** $p < 0.001$

Service utilization by children with CD according to physical health co-morbidity

In the absence of other psychiatric co-morbidity among children with CD ($N = 270$), the association between comorbid physical disorders and service use was investigated. In terms of services used, there was no significant disparity between the two groups, except in the case of primary health care. Children with CD and physical disorders had a significantly higher use of primary health care services than children with CD, but without physical disorders (29 vs. 18%, OR = 2.03, 95% CI = 1.1–3.72, $p < 0.05$).

Service utilization according to sub-types of conduct disorder

As shown in Table 3, the use of specialist mental health services and social services was significantly higher in children with unsocialized CD than ODD and socialized CD. There was no significant difference in the use of the remaining services amidst the sub-types of CD studied.

Correlates of service use

Primary health care service use was associated with co-morbidity with HD (OR = 2.40, 95% CI = 1.32–4.37, $p < 0.01$), co-occurrence with physical disorders (OR = 1.76, 95% CI = 1.09–2.84, $p < 0.05$) and self-harm (OR = 3.24, 95% CI = 1.88–5.59, $p < 0.0001$) (Table 4).

The higher use of specialist child mental health services was associated with co-morbidity with HD (OR = 7.58, 95% CI = 3.95–14.49, $p < 0.0001$), co-morbidity with ED (OR = 2.30, 95% CI = 1.20–4.42, $p < 0.05$), the presence of moderate to severe generalized learning disability (OR = 2.44, 95% CI = 1.01–5.92, $p < 0.05$), self-harm (OR = 3.17, 95% CI = 1.70–5.91, $p < 0.001$), and receipt of disability benefits (OR = 2.31, 95% CI = 1.24–4.35, $p < 0.01$). The use of specialist paediatric services was higher in the presence of moderate to severe generalised learning disability (OR = 4.54, 95% CI = 1.97–10.45, $p < 0.001$).

Use of specialist educational services was higher when children had co-morbid HD (OR = 2.04, 95% CI = 1.12–3.69, $p < 0.05$), moderate to severe generalized learning

Table 3 Utilization of services in ODD, unsocialized CD and socialized CD

Services	ODD % (<i>n</i> = 222)	Unsocial CD % (<i>n</i> = 58)	Social CD % (<i>n</i> = 95)	Unsocial CD versus ODD OR ^a	Unsocial CD versus Social CD OR ^a CI 95%	ODD versus Social CD OR ^a CI 95%
Primary health care	29.7 (66)	32.7 (19)	33.7 (32)	1.19 (0.63–2.23)	0.99 (0.49–2.01)	0.85 (0.51–1.43)
Specialist child mental health	22.1 (49)	43.1 (25)	17.9 (17)	2.65** (1.42–4.93)	3.5** (1.65–7.42)	1.32 (0.71–2.46)
Specialist paediatrics	5.4 (12)	6.9 (4)	2.1 (2)	1.14 (0.35–3.70)	2.73 (0.48–15.53)	2.39 (0.52–11.0)
Specialist education	23.4 (52)	31 (18)	19 (18)	1.45 (0.76–2.76)	1.86 (0.87–4.00)	1.28 (0.70–2.35)
Social services	10 (22)	31 (18)	16 (15)	4.32*** (2.10–8.89)	2.63* (1.19–5.84)	0.61 (0.30–1.24)

^a Reference group is the first variable of the comparison

Statistically significant: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

disability (OR = 4.15, 95% CI = 1.94–8.85, $p < 0.001$), self-harmed (OR = 2.25, 95% CI = 1.27–3.98, $p < 0.01$), ever been excluded from school (OR = 2.55, 95% CI = 1.45–4.47, $p < 0.01$), and were in the 5–10 years group (OR = 2.00, 95% CI = 1.16–3.45, $p < 0.05$).

The utilization of social services was significantly higher in children who had co-morbid ED (OR = 2.03, 95% CI = 1.07–3.85, $p < 0.05$), been looked after by the Local Authority (OR = 7.04, 95% CI = 2.76–17.98, $p < 0.0001$) and self-harmed (OR = 2.52, 95% CI = 1.33–4.77, $p < 0.01$). Use of social services was significantly higher for children whose parents were single (OR = 2.30, 95% CI = 1.22–4.33, $p < 0.01$) and co-habiting but not married (OR = 2.85, 95% CI = 1.18–6.89, $p < 0.05$), as compared with parents who were married and living together.

Parents' perceived barriers to specialist services utilization

Frequencies of service waiting/response times and their acceptability by parents are illustrated in Tables 5 and 6. The salient features were that, at least 22% of children had to wait for 6 months to access specialist services, and on average at least 40% of the parents perceived the waiting times to be unacceptable.

Parents identified a number of barriers to specialist services such as difficulties in getting a referral (14.2%); lack of awareness of available services (14%); previous negative experiences with specialist services (10.5%); belief that a specialist could not help (10.3%); worries about confidentiality (7.7%); and concerns of other people's opinions about them (7%). The less frequent obstacles selected from the prompts offered by the interviewers were the fear that their child might be taken away from them (4.7%); length of time for appointments to come through (4.5%); they did not like what specialist services offered (3.9%); difficulties in arranging suitable appointments

(1.9%); fear of loss of their pay whilst attending given appointments (1.9%); inaccessibility of specialist services (1.2%); and specialists' reluctance to see them (0.7%).

Discussion

Children with conduct disorders have multiple needs that often result in contacts with different agencies [7] and are associated with high costs [14, 23, 28]. The pattern of multiple services use in CD was confirmed by the findings of this study. CD use of social services was significantly higher than ED in the absence of co-morbidity. This higher use of social services in CD compared to ED might be due to the need to address the adverse social circumstances that are known to contribute to the causation of CD. The use of specialist child mental health and paediatric services was significantly higher for HD than CD. This may reflect the wider recognition of the value of a medical model for assessment and treatment of HD than CD. Services utilization and its correlates varied with the type of service in CD. Utilization of specialist child mental health and social services was significantly greater for children with unsocialized CD than those with social CD and ODD. This may be explained by the higher impairment in unsocial CD compared to the other subtypes of CD. Socialized CD children are likely to be adjusted in their peer groups and more likely to be in contact with the criminal justice system. When contacts with different public sectors and service levels were examined in more detail, there were different emerging profiles. Overall, specialist services use in CD was associated with co-morbidity with learning disabilities, physical and mental health disorders.

The correlates of contacts for children with CD for primary health and paediatric services were not consistent. Primary health care contacts were associated with presence of physical disorders, hyperkinetic disorders and self-harm indicating appropriate use of this service. It is normal

Table 4 Correlates of services utilization in children with CD (adjusted odds ratios)

Services	Factors	<i>n</i>	OR	95% CI	<i>p</i>
Primary health care	Children with CD who did not use the service	281			
	Children with CD who used the service	129			
	Absence of co-morbid hyperkinetic disorder	341	2.40	1.32–4.37	<0.01
	Presence of co-morbid hyperkinetic disorder	69			
	Absence of physical disorders	148	1.76	1.09–2.84	<0.05
	Presence of physical disorders	262			
	Absence of self harm	333	3.24	1.88–5.59	<0.0001
	Presence of self harm	77			
Child mental health services	Children with CD who did not use the service	306			
	Children with CD who used the service	104			
	Absence of co morbid Hyperkinetic disorders	341	7.58	3.95–14.49	<0.0001
	Presence of co morbid Hyperkinetic disorders	69			
	Absence of co morbid Emotional disorders	336	2.30	1.20–4.42	<0.05
	Presence of co morbid Emotional disorders	74			
	Absence of moderate to severe generalised learning disability	378	2.44	1.01–5.92	<0.05
	Presence of moderate to severe generalised learning disability	32			
	Absence of self-harm	333	3.17	1.70–5.91	<0.001
	Presence of self-harm	77			
	Not in receipt of disability benefits	329	2.31	1.24–4.35	<0.01
Receipt of disability benefits	81				
Specialist paediatrics	Children with CD who did not use the service	389			
	Children with CD who used the service	30			
	Absence of moderate to severe generalised learning disability	385	4.54	1.97–10.45	<0.001
Presence moderate to severe of generalised learning disability	34				
Specialist Education services	Children with CD who did not use the service	308			
	Children with CD who used the service	101			
	Absence of co morbid Hyperkinetic disorders	340	2.04	1.12–3.69	<0.05
	Presence of co morbid Hyperkinetic disorders	69			
	Absence of moderate to severe generalised learning disability	377	4.15	1.94–8.85	<0.001
	Presence of moderate to severe generalised learning disability	32			
	Absence of self-harm	333	2.25	1.27–3.98	<0.01
	Presence of self-harm	76			
	Age of 11–16 years	237	2.00	1.16–3.45	<0.05
	Age of 5–10 years	172			
	Never excluded from school	269	2.55	1.45–4.47	<0.01
Has been excluded from school	140				
Social services	Children with CD who did not use the service	341			
	Children with CD who used the service	67			
	Absence of co morbid Emotional disorders	335			
	Presence of co morbid Emotional disorders	73	2.03	1.07–3.85	<0.05
	Absence of self-harm	332			
	Presence of self-harm	76	2.52	1.33–4.77	<0.01
	Never been looked after by local authorities	384			
	Has been looked after by local authorities	24	7.04	2.76–17.98	<0.0001
	Cared by married parents	187			
	Cared by co-habiting instead of married parents	49	2.85	1.18–6.89	<0.05
	Cared by single instead of married parents	172	2.30	1.22–4.33	<0.01

A very small amount of missing data for some of the co-variables in each service regression analysis resulted in total service users to vary slightly (less than 3%) with each service. The overlap between any two regressions for the final model of each of the services was greater than 97%. Only the significant covariates with each type of service use has been included in the table

Table 5 Children with conduct disorders: waiting/response times of accessing services

	Specialist child mental health services % (<i>n</i> = 102)	Specialist paediatrics services % (<i>n</i> = 27)	Specialist educational services % (<i>n</i> = 95)	Social services % (<i>n</i> = 66)
Less than 6 weeks	32.3 (33)	44.4 (12)	52.6 (50)	60.6 (40)
6 weeks to 9 weeks	11.8 (12)	22.2 (6)	8.4 (8)	6.1 (4)
10 weeks to 6 months	26.5 (27)	11.1 (3)	15.8 (15)	12.1 (8)
More than 6 months	29.4 (30)	22.2 (6)	23.2 (22)	21.2 (14)

Table 6 Acceptability of waiting times to services by parents of children with conduct disorders

	Specialist child mental health services % (<i>n</i> = 105)	Specialist paediatric services % (<i>n</i> = 28)	Specialist educational services % (<i>n</i> = 100)	Social services % (<i>n</i> = 66)
Acceptable	46.7 (49)	57.1 (16)	61 (61)	54.5 (36)
Unacceptable	49.5 (52)	42.9 (12)	33 (33)	42.4 (28)
Do not know	3.8 (4)	0 (0)	6 (6)	3 (2)

practice for children with physical disorders to be assessed by their general practitioners before they consider referring them to specialist services. Children have to go through primary care for procuring a referral to specialist services for an assessment for hyperkinetic disorder in Great Britain. Children after incidents of self-harm are assessed either by their general practitioners or in accident and emergency departments of acute hospitals. The presence of moderate to severe learning disabilities was associated with paediatrics and specialist CAMHS contacts indicating appropriate involvement of services with increased complexity of cases. The presence of additional hyperkinetic and emotional disorders, and self-harm behaviours, were associated with specialist CAMHS contacts, while some social disadvantage variables were correlates of social services use. Nevertheless, several correlates appeared non-specific, i.e. associated with use of different services suggesting that the allocation of children and families to different types of services may have been largely random, with a need of rational protocols to improve access and cost-effective use of resources.

An earlier study found that parental concern along with severity of child psychopathology and co-morbidity were related to multiple services contact [8]. Parents in this study identified several barriers to services. These can be addressed by working closely with the referrers, and through the education of parents regarding availability and access of appropriate services. The process of obtaining professional care for child mental health problems has been conceptualized in terms of two separate stages, namely parental recognition of the problems and contact with professionals [34]. For example, a study in Finland found a latent need for help in symptomatic

children before their parents recognized the true nature of their problems [22]. Parental perception of their child's mental health status as problematic or burdensome is thus an important factor in conceptualizing and planning service pathways and protocols [1, 25]. The British longitudinal study found that contact with most services for mental health problems was predicted by the impact of psychopathology; contact with teachers or primary health care; and parents' and teachers' perception that the child has significant difficulties [5, 8]. When this research question was, however, re-examined over a longer period of 4 years, future referrals to specialist child mental health services were predicted by symptom severity rather than parental burden [25]. This indicates that appropriate detection of presenting problems and parent-related help-seeking factors are both important in the establishment of effective service pathways.

There are certain limitations in this study. For example, the survey included only private households. Indeed, another GB national child mental health survey of looked after children established higher rates of conduct disorders than the general population [19]. The information on service use was based on retrospective recall and this comes with well known biases. Although ratings of severity were collected in the survey (SDQ), these were not included in this analysis. We lacked detailed information on the exact circumstances of each child, and whether the choice of service was the most rational one, given the local circumstances. Readers could judge for themselves whether this would probably be the case for their own local area. However, merits of the study included its nationally comprehensive cross sectional design, the use of multiple informant sources, sound methodology and standardized measures.

Children with CD and their families can be particularly hard to engage in treatment [13, 18]. The ‘label’ of CD may carry with it a degree of therapeutic pessimism. Therefore, creating alliances with families and agencies at an early referral stage can be beneficial in minimizing future service attrition [24]. Interventions that address multiple domains of risk factors are more likely to be clinically and economically effective [2].

Previous evidence on treatment modalities for children with conduct disorders supports the provision of targeted, inter-agency, and evidence-based interventions [3, 26, 27]. The National Institute of Health and Clinical Excellence in the UK recommended parent training and education programmes as effective interventions [20]. Clearly, specialist mental health services alone cannot meet all the demands of children with CD. Instead, their expertise and resources could be more effectively used as supplementary input for the conduct disordered children with comorbid psychiatric disorders, as either its antecedents or consequences [10].

The findings of this national survey indicate a high demand on health, social and educational services for this group of children and their families. Policy makers, commissioners and practitioners should respond with suitable planning and co-ordination of services and staff skills mix. Although there is bound to be some overlap in the use of these services at any given time, ad hoc and parallel referrals to different services can adversely affect their resources and core activities. It is, therefore, essential that clear inter-agency protocols are in place, with agreed care pathways. Such protocols should include criteria for referral, assessment and evidence-based interventions, and these should be followed by both statutory and non-statutory agencies.

The overarching objective for all sectors is the avoidance of duplication in the use of resources, the prevention of gaps in services for some client groups, and the prevention of antisocial behaviours, secondary impairments and associated costs. Despite the complexity of needs by many children with CD, the ‘primary’ area of concern could determine the key co-ordinating agency. When it is clear that cases have circumscribed CD, these should preferably be managed by social care agencies (statutory and voluntary), who can offer parent management training. With integral input from education services, appropriate school-based behavioural and learning support could be provided. Workers in these services should have adequate training in child mental health, so that they could recognize co-morbid disorders. Child mental health professionals should be involved in such training as well as in the integrated service framework, so that psychiatric disorders associated with CD are treated effectively. Identification of perceived barriers to service use can inform service planning and delivery in improving access to services and reduce unmet needs.

Conclusions

Children with CD and their families come to contact multiple services with varying demands on agencies and resources, depending on the subtype of CD and service type. In this national survey, correlates of service use varied with services considered, but there were also substantial overlap and multiple referrals, indicating the need for clear care pathways with effective organization and co-ordination of the various public services. Specialist child mental health services involvement should be requested in the presence of psychiatric co-morbidity.

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