

The impact of paediatric psychiatric morbidity as perceived by parents attending outpatient services

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Background

Recent literature has pointed out the importance of assessing the impact of a child's mental illness on both the child and the parents. The term 'impairment' refers to the consequences of present psychiatric symptomatology for the children regarding their distress or functioning. In contrast, 'burden' reflects the problems for significant others, that is, the parents and other family members.

Objective

The objective of this study is to investigate the impact of psychiatric illness on children and the caregivers, along with the factors contributing to it.

Participants and methods

A total of 350 Children aged 4–16 years attending Child and Adolescent Outpatient Clinics for the first time with presenting complaints. Children were diagnosed according to the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., and parents were required to fill the Strengths and Difficulties Questionnaire (SDQ).

Results

According to SDQ, 50.9% of the cases were in the abnormal range on the total difficulties score, whereas 77.8% were in the abnormal range on the impact score. Of the parents, 58.7% perceived their children as having definite/severe difficulties and 83% reported difficulties for a duration of more than 12 months. Classroom impairment was the most frequently reported; 80% of caregivers were significantly burdened by their children's difficulties but only 46.4% perceived these difficulties as distressing to the child. The factors that predicted significant difficulties were the extent of total psychopathology and its duration and impairment. Scoring high on the prosocial scale negatively predicted the perceived difficulty. Moderate-to-severe burden was predicted by perceived difficulties and the impact of difficulties on the child's life.

Conclusion

Perceived burden was the main motive driving parents to seek psychiatric services. It is predicted by perceived difficulties and impairment of the child.

Keywords:

burden, child, impact, impairment, SDQ, Strengths and Difficulties Questionnaire

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Introduction

Mental health problems affect 10–20% of children and adolescents worldwide. They are considered a leading cause of health-related disability in this age group and they result in long-lasting effects throughout life (Kieling *et al.*, 2011).

Many researchers have pointed out the importance of assessing the impact of mental illness of the child on both the child and the parents (Angold *et al.*, 1999; Costello *et al.*, 2005). In general, the term 'impairment' refers to the consequences of present psychiatric symptomatology for the child regarding their distress or functioning (Meltzer *et al.*, 2000). In contrast, 'burden' reflects the problems for significant others, that is, the parents and other family members (Angold *et al.*, 1998).

The dimensions of the burden of caregiving include the symptom-specific burden impact of the disability associated with the illness itself, both in terms of demands for assistance and supervision and in terms of the potential stigma associated with the illness; the social burden impact on family and other social relationships; the emotional burden impact on mental and emotional well-being; and the financial burden impact on work and the general financial costs of care-giving (Vaddadi, 1997). Parents of children with mental health disorders are more likely than other parents to cut work hours, to quit work and to spend more time arranging their child's care (Busch and Barry, 2007).

Dada *et al.* (2011) found that the most important factors that predict a caregiver's burden are the level of impairment as assessed by the clinician and the level of

functioning as assessed by the caregiver. However, Angold *et al.* (1998) found that the strongest predictor of the presence of any perceived burden was the child's total symptom score, but the child's level of impairment also made a substantial contribution.

Aim of the work

The objective of this study is to investigate the impact of psychiatric illness on children and the parents, along with the factors contributing to it.

Participants and methods

Study type

This is a cross-sectional descriptive study recruiting a convenient sample.

Participants

Children aged 4–16 years attending C and A outpatient clinics in the period from 1 March 2009 to 1 September 2010 for the first time with a presenting complaint. The diagnosis was made according to the *Diagnostic and Statistical Manual of Mental Disorders*, 4th ed., by a senior psychiatrist with an MD degree.

Children with mental retardation, epilepsy or those receiving medication for severe chronic illnesses were excluded.

Tools

A structured information sheet

The sheet covers age, sex, family history of psychiatric disorders, pregnancy and delivery complications, developmental history, medical history and medications prescription.

Strengths and difficulties questionnaire (Goodman, 1997)

The Strengths and Difficulties Questionnaire (SDQ) is a brief behavioural screening questionnaire that covers 25 attributes, some positive and others negative. The 25 items are divided between five scales of five items each, generating scores for conduct problems, inattention-hyperactivity, emotional symptoms, peer problems and prosocial behaviour. All scales except the last are summed to generate a total difficulties score (range 0–40). SDQ scores can be used as continuous variables or by classifying them into normal, borderline and abnormal. There are three forms of the questionnaire: one to be filled by parents, one by teachers and the third by the young person if aged 11 to 17 years. The three forms have the same questions (Goodman, 1997).

Besides covering common areas of emotional and behavioural difficulties, the SDQ also has an impact supplement that enquires about chronicity, distress, social impairment and burden to caregivers (Goodman, 1999).

In the areas of emotions, concentration, behaviour or social relations, perceived difficulties are rated on a four-point scale: 0 = no, 1 = minor, 2 = definite and 3 = severe. Respondents who reported difficulties rated chronicity

of perceived difficulties, distress of the child and social impairment (home life, friendship, classroom learning and leisure activities) and the level of burden placed on them by the child's difficulties. The impact score adds the scores for the distress and social impairment items. It ranges from 0 to 10. It can be classified to normal, borderline impairment and abnormal: a total impact score of 2 or more is abnormal; a score of 1 is borderline; and a score of 0 is normal. This scoring system implies a threshold effect as only in the presence of considerable impairment does the impact score increase above 0. In this study, the Arabic version of the questionnaire was used and completed by parents.

Statistical analysis

Data were statistically analysed using the Statistical Package for Social Sciences (SPSS; SPSS Inc., Chicago, Illinois, USA) version 16. Descriptive statistics were means and SD for numerical data and number and percentage for categorical data. Inferential analyses used for quantitative variables were the Student *t*-test and χ^2 -test for qualitative data. The level of significance was considered at *P* value less than 0.05. Forward logistic regression analysis was used to predict the presence or absence of a characteristic (where the dependent variable is dichotomous) on the basis of the values of a set of predictors.

Description of the participants

Three hundred and fifty patients attending outpatient child and adolescent clinics for the first visit were reviewed for demographic and clinical data.

Age

Participants' age ranged from 4 to 16 years, mean age 7.71 ± 3.007 ; the majority were younger than 6 years ($n = 194$, 42.6%) and from 6 to 9 years of age ($n = 107$, 30.6%). A total of 63 participants (18%) were from 10 to 12 years of age and only 31 participants (8.9%) were older than 12 years.

Sex

Of the sample, 71.1% ($n = 249$) were men and 28.9% ($n = 101$) were women.

Pregnancy complication

A total of 83% ($n = 227$) reported no complications during pregnancy and 16.8% ($n = 46$) reported complications during pregnancy. Only 2.3% ($n = 8$) of the sample were premature babies.

Delivery type and complications

A total of 55% ($n = 149$) reported delivery through caesarian section, 26.6% ($n = 93$) reported a complicated delivery and 13.1% ($n = 36$) reported a history of incubation after delivery. Only 3.3 ($n = 9$) had used a ventilator or an oxygen box during the period of incubation.

Developmental history

Only 7.1% ($n = 25$) of the sample reported a history of delayed motor development, whereas 25.1% ($n = 88$) reported a history of language delay.

Medical history

Only 10% of the sample ($n = 35$) reported a chronic medical condition; most of them had bronchial asthma.

Medications prescription

Only 32.6% ($n = 114$) of the sample were on medications; 20.6% ($n = 72$) received a single medication and 12% received multiple medications. Of this group, 46.49% ($n = 53$) received antipsychotics (risperidone, haloperidol and pimozide), 45.51% ($n = 52$) received antidepressants (imipramine, amitryptiline, clomipramine and selective serotonin re-uptake inhibitors), 30.7% ($n = 35$) received treatment for attention deficit hyperactive disorder (atmoxetine and lefoxidine) and 18.42% ($n = 21$) received other medications (nootropics, omega fatty acids and benzotropine).

Mother's occupation

A total of 56.7% ($n = 143$) of the mothers were housewives and 43.3% ($n = 109$) were working mothers.

Family history of psychiatric disorders

Of the sample, 77.7% ($n = 272$) reported a negative family history of psychiatric disorders and 22.3% ($n = 78$) reported a positive family history (73.07% had family history of single psychiatric diagnosis, 26.93% had family history of more than one psychiatric diagnosis). They reported a positive family history of mood disorders ($n = 32$), anxiety disorders ($n = 19$), ADHD ($n = 14$), dementia ($n = 11$), epilepsy ($n = 10$), psychosis ($n = 8$), mental retardation ($n = 8$) and autism ($n = 1$) (Fig. 1).

Psychiatric diagnosis

A total of 46% ($n = 161$) of the sample were diagnosed with ADHD, 12.3% ($n = 43$) with internalizing disorders were diagnosed as internalizing disorders (major depressive, adjustment and anxiety disorders), 10.3% ($n = 36$) with developmental disorders (pervasive developmental disorders, specific learning disability), 8.9% ($n = 31$) with externalizing disorders (conduct and oppositional defiant disorders), 18.9% ($n = 66$) with the V code (e.g. parental discord and divorce, sexual abuse and masturbatory behaviour, parent-child relation problems, sibling relation problems) and 3.7% ($n = 13$) with other disorders (tic and elimination disorders) (Fig. 2).

Figure 1

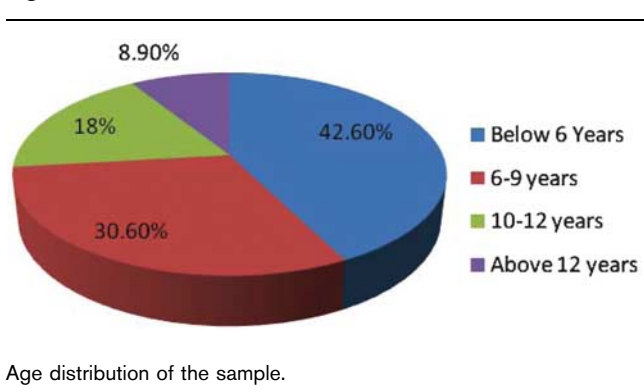


Figure 2

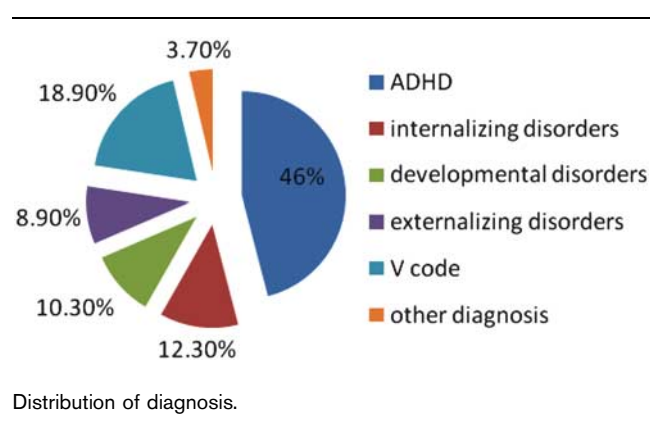


Table 1 Distribution of participants among Strengths and Difficulties Questionnaire scales' categories (bands)

	N (%)		
	Normal	Borderline	Abnormal
Hyperactivity scale ($n=299$)	119 (39.8)	39 (13)	141 (47.2)
Emotional symptoms scale ($n=296$)	113 (38.2)	46 (15.5)	137 (46.3)
Conduct problems scale ($n=300$)	95 (31.7)	51 (17)	154 (51.3)
Peer problems scale ($n=298$)	131 (44)	51 (17.1)	116 (38.9)
Prosocial scale ($n=300$)	249 (83)	21 (7)	30 (10)
Total difficulties ($n=281$)	93 (33.1)	45 (16)	143 (50.9)

Results

Strengths and Difficulties Questionnaire scale

Table 1 shows the distribution of children among the different categories of the SDQ scales and the total difficulties score. The latter was generated by summing the scores from all the scales, except the prosocial scale.

According to the SDQ total difficulties score, 50.9% of the participants whose parents completed the SDQ were in the abnormal range. The highest percentage was in the area of conduct problems (51.3%) and the lowest in the prosocial behaviour (10%).

Strengths and Difficulties Questionnaire impact supplement

Perceived difficulties

Out of 296 parents who answered this item, 13.2% ($n = 39$) reported that their children had no difficulties and 86.8% perceived their children as having some difficulty; 28% ($n = 83$) rated the difficulties as minor, 37.8% ($n = 112$) as definite difficulties and 20.9% ($n = 62$) as severe difficulties.

Chronicity

A total of 72% ($n = 253$) of the parents specified a duration for the difficulties their children were facing. The vast majority, 83% ($n = 210$), reported difficulties for a duration more than 12 months, 11.5% ($n = 29$) reported a duration of 6–12 months and 4.3% ($n = 11$) reported a duration of 1–5 months. Only 1.2% ($n = 3$) reported difficulties for less than a 1-month duration.

Distress to child, impact (social impairment) and burden to parents

For 63% ($n = 221$) of children, an impact score could be calculated (obtained by combining the scores of distress to the child and the degree of impairment in different domains). A total of 77.8% ($n = 172$) of these children obtained an impact score that classified them within the abnormal range. Only 11.8% ($n = 26$) were within the normal range and 10.4% ($n = 23$) were borderline.

Classroom impairment was the most frequently experienced; 65% of children were perceived by their parents to have moderate-to-severe classroom impairment. Leisure activities were the least frequent; only 32.5% reported moderate-to-severe impairment (Table 2).

Eighty percent of caregivers were significantly burdened by their children's difficulties, although only 46.4% perceived that these difficulties distress the child (Table 2).

Correlates of Strengths and Difficulties Questionnaire scales and impact supplement*Age*

A significantly higher percentage of the 6–9 year olds compared with those younger than 6 years obtained scores in the abnormal range on the total difficulties scale (61.5 vs. 38.5%), ($\chi^2 = 12.833$, $P = 0.046$). However, there were no significant differences among the different age groups in relation to the other SDQ scales (hyperactivity, conduct problems and peer problems).

There was a highly significant positive correlation between age and emotional symptoms scores (emotional symptoms increase with increasing age of the child ($r = 0.271$, $P = 0.000$), and as Table 3 shows, significantly higher percentages of the older age groups scored within the abnormal range ($\chi^2 = 18.089$, $P = 0.006$).

There were no significant differences between the different age groups in the degree of perceived difficulties ($\chi^2 = 11.36$, $P = 0.251$), burden on parents ($\chi^2 = 11.062$, $P = 0.272$) or the impairment domains affected by the difficulties and impact score ($\chi^2 = 3.622$, $P = 0.728$).

Sex

A significantly higher percentage of boys compared with girls scored in the abnormal range on the hyperactivity scale (53.3 vs. 32.6%, $\chi^2 = 20.733$, $P = 0.000$) and conduct problems scale (56.5 vs. 38.4%, $\chi^2 = 9.018$, $P = 0.011$). Boys and girls did not differ on the emotional, peer and total difficulties scores. There were no

significant differences between boys and girls in the degree of perceived difficulties ($\chi^2 = 5.364$, $P = 0.147$), burden of the family ($\chi^2 = 0.922$, $P = 0.82$) or the different domains of impairment and the impact on the child (impact score; $\chi^2 = 0.968$, $P = 0.616$).

Diagnosis

As shown in Table 4, the highest percentage of abnormal scores on each scale was obtained by the corresponding diagnosis, ADHD on the hyperactivity scale, other externalizing disorders on the conduct problems scale and internalizing disorders on the emotional scale. The peer problems scale was the only scale that showed no statistical difference among the different diagnoses. The majority of parents perceived their children as having normal prosocial behaviours. The highest percentage of those with abnormal scores on the prosocial scale was from the group with developmental disorders (36.8%). The latter group showed high percentages of those with abnormal scores on peer problems (63.2%) and hyperactivity (50%) as well.

As shown in Table 5, more children with developmental disorders (80%) and ADHD (73%) were perceived to have definite and severe difficulties ($\chi^2 = 55.979$, $P = 0.000$).

Table 6 shows that children with ADHD had the highest impairment in classroom learning compared with other diagnostic groups ($P = 0.007$). There were no significant differences between different diagnostic groups in other domains of impairment (home life, friendship and leisure activities). Again, there were no significant differences between different diagnostic groups in terms of burden on the parent ($n = 248$, $\chi^2 = 13.229$, $P = 0.58$) or the impact score ($n = 221$, $\chi^2 = 9.836$, $P = 0.45$).

Comorbidity

A total of 76.6% of the sample had a single diagnosis ($n = 268$) whereas 23.4% ($n = 82$) had more than one diagnosis.

Table 3 Emotional problems in different age groups

Age (years)	Emotional problems [N (%)]			
	Normal	Borderline	Abnormal	Total
<6	53 (48.6)	20 (18.3)	36 (33.0)	109 (100.0)
6–9	38 (38.8)	15 (15.3)	45 (45.9)	98 (100.0)
10–12	15 (24.6)	7 (11.5)	39 (63.9)	61 (100.0)
13–16	7 (25.0)	4 (14.3)	17 (60.7)	28 (100.0)

$\chi^2 = 18.089$, $P = 0.006$.

Table 2 Distress to child, domains of impairment and burden as perceived by caregivers

	N (%)			
	Not at all	Only a little	Quite a lot	A great deal
Do the difficulties upset or distress your child? ($n = 248$)	61 (24.6)	72 (29)	68 (27.4)	47 (19)
Do the difficulties interfere with your child's home life ($n = 245$)	34 (13.9)	66 (26.9)	77 (31.4)	68 (27.8)
Friendship ($n = 245$)	49 (20)	70 (28.6)	72 (29.4)	54 (22)
Classroom learning ($n = 245$)	36 (14.7)	50 (20.4)	73 (29.8)	86 (35.1)
Leisure activities ($n = 232$)	90 (38.8)	66 (28.4)	47 (20.3)	29 (12.5)
Do the difficulties put a burden on you or the family as a whole? ($n = 248$)	7 (2.8)	43 (17.3)	80 (32.3)	118 (47.6)

Table 4 Strengths and Difficulties Questionnaire problems in different diagnoses

Diagnosis	N (% within diagnosis)					
	Hyperactivity abnormal score	Emotional problems abnormal score	Conduct problems abnormal score	Peer problems abnormal score	Total difficulties abnormal score	Prosocial abnormal score
ADHD	94 (63.1)	64 (43.2)	92 (60.9)	62 (40.8)	86 (60.6)	12 (8.0)
Internalizing	6 (15.4)	29 (74.4)	10 (26.3)	15 (39.5)	15 (39.5)	4 (10.3)
Developmental	10 (50.0)	4 (20.0)	8 (40.0)	12 (63.2)	8 (44.4)	7 (36.8)
Externalizing	12 (46.2)	11 (42.3)	17 (65.4)	8 (32.0)	15 (60.0)	2 (8.0)
V code	15 (28.3)	23 (45.1)	20 (37.0)	14 (26.9)	14 (29.2)	4 (7.4)
Others	4 (33.3)	6 (50.0)	7 (63.6)	5 (41.7)	5 (50.0)	1 (7.7)
Total of abnormal score in all diagnoses	141/299 (47.2)	137/296 (46.3%)	154/300 (51.3%)	116/298 (38.9%)	143/281 (50.9%)	30/300 (10.0%)
χ^2	59.400	29.041	26.208	12.125	29.549	18.816
P	0.000	0.001	0.003	0.277	0.001	0.043

Table 5 Perceived difficulties in different diagnostic groups

Diagnosis	Perceived difficulties [N (% within diagnosis)]			
	No	Minor	Definite	Severe
ADHD	6 (4.1)	34 (23.0)	75 (50.7)	33 (22.3)
Internalizing	9 (24.3)	11 (29.7)	9 (24.3)	8 (21.6)
Developmental	0 (0)	4 (20.0)	8 (40.0)	8 (40.0)
Externalizing	6 (24.0)	8 (32.0)	9 (36.0)	2 (8.0)
V code	16 (29.1)	21 (38.2)	9 (16.4)	9 (16.4)
Others	2 (18.2)	5 (45.5)	2 (18.2)	2 (18.2)
Total (n=296)	39 (13.2)	83 (28.0)	112 (37.8)	62 (20.9)

$\chi^2=55.979, P=0.000.$

Table 6 Classroom learning impairment in different diagnoses

Diagnosis	Classroom learning impairment				Total
	Not at all	Only little	Quite a lot	A great deal	
ADHD					
N	9	24	46	60	139
% within diagnosis	6.5%	17.3%	33.1%	43.2%	100.0%
Internalizing					
N	6	9	5	8	28
% within diagnosis	21.4%	32.1%	17.9%	28.6%	100.0%
Developmental					
N	3	4	6	3	16
% within diagnosis	18.8%	25.0%	37.5%	18.8%	100.0%
Others					
N	3	1	3	3	10
% within diagnosis	30.0%	10.0%	30.0%	30.0%	100.0%
Externalizing					
N	7	3	4	3	17
% within diagnosis	41.2%	17.6%	23.5%	17.6%	100.0%
V code					
N	8	9	9	9	35
% within diagnosis	22.9%	25.7%	25.7%	25.7%	100.0%
Others					
N	3	1	3	3	10
% within diagnosis	30.0%	10.0%	30.0%	30.0%	100.0%
Total					
N	36	50	73	86	245
% within diagnosis	14.7%	20.4%	29.8%	35.1%	100.0%

$\chi^2=31.68, P=0.007.$

There was no significant difference between the group with a single diagnosis and the group with comorbidity regarding the perceived difficulties ($n = 296, \chi^2 = 3.344, P = 0.34$), the chronicity of perceived difficulties ($n = 253, \chi^2 = 3.19, P = 0.36$), the domains impaired by difficulties, the impact of difficulties (impact score) on the child ($n = 221, \chi^2 = 2.988, P = 0.22$) or the burden of difficulties on the parents ($n = 248, \chi^2 = 3.049, P = 0.38$).

Medication

Table 7 shows that more children on medication were perceived to have difficulties of definite and severe degrees (69.7%) than children who were not on medication (51.3%, $P = 0.03$).

Medication use was associated significantly with classroom learning impairment ($P = 0.000$) and leisure time activities ($P = 0.012$) but not home life ($P = 0.25$), friendship ($P = 0.43$) or burden to parents ($P = 0.057$) (Table 8). Similarly, the impact of the difficulties (impact score) did not differ according to medication use ($P = 0.064$) (Table 9).

Factors predicting perceived difficulties of the child

Factors that predicted definite to severe difficulties were the extent of total psychopathology and its duration, and impairment in certain domains especially classroom and home life and to a lesser extent in friendship. Scoring high on the prosocial scale negatively predicted the perceived difficulty (Table 10).

Factors predicting burden on the parents

Moderate-to-severe burden was predicted by both the perceived difficulties and the impact the difficulties has on the child's life (impact score). The actual score of the SDQ symptoms did not predict burden, except for the hyperactivity score, which was significant but to a lesser degree (Table 11).

Discussion

Strengths and Difficulties Questionnaire

The SDQ is considered a brief behavioural screening questionnaire, especially when comparing it with the 113-item Child Behavior Checklist (Achenbach, 1991).

Table 7 Medication use and perceived difficulties

	Perceived difficulties				Total
	No difficulties	Minor difficulties	Definite difficulties	Severe difficulties	
Medication					
No medication					
<i>N</i>	27	65	70	35	197
% within medication users	13.7%	33.0%	35.5%	17.8%	100.0%
Medication					
<i>N</i>	12	18	42	27	99
% within medication users	12.1%	18.2%	42.4%	27.3%	100.0%
Total					
<i>N</i>	39	83	112	62	296
% within medication users	13.2%	28.0%	37.8%	20.9%	100.0%

$\chi^2 = 8.951$, $P = 0.03$.

Table 8 Distress, domains of impairment, burden and medication use

	Medication	<i>N</i> (% within medication users)				χ^2	<i>P</i>
		Not at all	Only a little	Quite a lot	A great deal		
Difficulties distress child? (<i>n</i> =248)	No	37 (22.4)	54 (32.7)	41 (24.8)	33 (20.0)	4.739	0.192
	Yes	24 (28.9)	18 (21.7)	27 (32.5)	14 (16.9)		
Home life (<i>n</i> =245)	No	23 (14.3)	46 (28.6)	54 (33.5)	38 (23.6)	4.105	0.250
	Yes	11 (13.1)	20 (23.8)	23 (27.4)	30 (35.7)		
Friendship (<i>n</i> =245)	No	33 (20.5)	50 (31.1)	47 (29.2)	31 (19.3)	2.732	0.435
	Yes	16 (19.0)	20 (23.8)	25 (29.8)	23 (27.4)		
Classroom learning (<i>n</i> =245)	No	31 (19.0)	40 (24.5)	49 (30.1)	43 (26.4)	20.837	0.000
	Yes	5 (6.1)	10 (12.2)	24 (29.3)	43 (52.4)		
Leisure activities (<i>n</i> =232)	No	59 (37.8)	54 (34.6)	28 (17.9)	15 (9.6)	10.907	0.012
	Yes	31 (40.8)	12 (15.8)	19 (25.0)	14 (18.4)		
Difficulties put a burden on you? (<i>n</i> =248)	No	6 (3.7)	34 (20.9)	54 (33.1)	69 (42.3)	7.506	0.057
	Yes	1 (1.2)	9 (10.6)	26 (30.6)	49 (57.6)		

Despite its brevity, it correlates highly with the Child Behavior Checklist and is equally effective in detecting internalizing and externalizing problems; in addition, it is considered more sensitive in detecting inattention and hyperactivity (Goodman and Scott, 1999). The advantage of the SDQ for this research was that it has already been translated into Arabic and validated by its original author, who placed it on the measure website <http://www.sdqinfo.com>. The Arabic SDQ version was validated in the Gaza strip (Thabet *et al.*, 2000) and in Yemen (Almaqami and Shuwail, 2004; Alyahri and Goodman, 2006).

The SDQ impact supplement addresses the overall effect on quality of life associated with the child's mental health problems by relating behavioural or social difficulties to their impact on the child's functioning, family, school and social life, which may be a better indicator of caseness than symptom counts (Goodman, 1999).

The reliability and validity of the SDQ make it a useful brief measure of the adjustment and psychopathology of children and adolescents (Goodman, 2001).

Mental health problems (Strengths and Difficulties Questionnaire scales)

On the SDQ scales, the percentage of those obtaining abnormal scores ranged from 39% (peer problem scale) to 51% (conduct problem scale); in striking contrast was the prosocial scale, for which only 10% scored in the abnormal range (Table 1). This is a low percentage compared with

Table 9 Medication use and impact score

	Impact score			Total
	Normal	Borderline	Abnormal	
Medication				
No medication				
<i>N</i>	21	19	110	150
% within medication users	14.0%	12.7%	73.3%	100.0%
Medication				
<i>N</i>	5	4	62	71
% within medication users	7.0%	5.6%	87.3%	100.0%
Total				
<i>N</i>	26	23	172	221
% within medication users	11.8%	10.4%	77.8%	100.0%

$\chi^2 = 5.485$, $P = 0.064$.

the 38% reported by Mathai *et al.* (2002) in their sample of children attending the child and adolescent outpatient clinic.

Difficulties, impact and burden

According to the SDQ impact supplement, 80% of the parents who reported difficulties reported a burden of a 'quite a lot/a great deal' severity, 58.7% perceived their children's difficulties as definite/severe and only 46.4% perceived their child as distressed. As such, it seems that a feeling of being burdened was the main motive driving parents to seek psychiatric services. This is in agreement

Table 10 Forward logistic regression showing factors that predict the presence of definite to severe perceived difficulties

Dependant variable	Independent variables	B	SE	Wald	Significant	Percent correct
Perceived difficulties No/minor difficulties	SDQ total difficulties scores	0.104	0.004	5.533	0.019	85.9%
	Duration categories	0.964	0.451	4.573	0.032	
Definite/severe difficulties	Classroom learning impairment	0.750	0.221	11.557	0.001	
	Home life impairment	0.743	0.227	10.730	0.001	
	Friendship impairment	0.616	0.252	5.993	0.014	
	SDQ prosocial scale score	-0.233	0.111	4.414	0.036	

Variables not in the equation: sex, age, other SDQ scales, leisure activities impairment, distress of the child, use of medications, mother's work. SDQ, Strengths and Difficulties Questionnaire.

Table 11 Forward logistic regression showing factors that predict the presence of moderate-to-severe burden

Dependant variable	Independent variables	B	SE	Wald	Significant	Percent correct
Burden No/little burden ^a	Perceived difficulties	1.620	0.473	11.72	0.001	90.5%
	Impact score ^a	1.034	0.354	8.514	0.004	
Moderate-to-severe burden	SDQ hyperactivity scale score	0.239	0.120	4.012	0.045	
	SDQ prosocial scale score	-0.277	0.143	3.73	0.053	

Variables not in the equation: sex, age, medication, mother's work, other SDQ scales and SDQ total difficulties score, items of impact score (child distress and impairment in different domains). SDQ, Strengths and Difficulties Questionnaire.

^aIncluding cases with no difficulties.

with Angold *et al.* (1998), who found that parents' perception of burden led to significantly increased use of mental health services for all degrees of psychopathology.

The main domains impaired in children's life were classroom learning 65% and home life 59%, followed by friendship 51.4%, and the least affected domain was interference with leisure activities 32.5% (Table 2). This order may reflect the parents' perception of priorities regarding their children's lives, giving the utmost priority for school.

In this study, 77.8% of children obtained an impact score that classified them within the abnormal range. This finding is similar to that of Mathai *et al.* (2002), who found that 82% of children attending the child and adolescent outpatient clinic had an impact score rated by parents in the abnormal range.

Age and sex

Although the types of difficulties differed with age (emotional problems increased with age) and sex (conduct and hyperactivity problems were more in boys), the parents' perception of their children's degree of difficulties of the domains affected and of the impact of the difficulties on the child and most importantly their perception of their burden by the child's condition was the same in boys as in girls and the same in all age groups. These findings are in agreement with the results of Liu *et al.* (2007), who did not find the child's age or sex to be predictors of parents' stress. It is worth noting that Meltzer *et al.* (2011) found that parental burden was not affected by the sex if the disorder was sex typical.

This was in contrast to Wille *et al.* (2008), who found that parents who reported more perceived difficulties, more school and home life impairments and more burden were parents of boys rather than girls. This disagreement could be explained by the different recruitment techniques

used, as in the work of Wille *et al.* (2008), the sample was recruited from the community, in contrast to this study and that of Liu *et al.* (2007), in which the samples were recruited from mental health clinics. For the child to present to the mental health clinic, a certain degree of impairment and difficulty is required that might ameliorate the sex difference.

Diagnosis

The results of this study substantiate Goodman's *et al.* (2000) conclusion that the SDQ generates specific predictions for conduct disorders, hyperactivity disorders and emotional disorders as the highest percentage of abnormal scores on the hyperactivity scale were obtained by those with ADHD; on the conduct problems scale by those diagnosed with oppositional defiant disorder and conduct disorder; and on the emotional scale by those diagnosed with internalizing disorders (Table 4).

Although SDQ does not cover developmental disorders, it seems to show a distinct profile (see Table 4) for this group, with a significantly high percentage for those with a prosocial abnormal score (36.8%) and a comparatively high percentage with an abnormal score on the peer problems scale (63%) in addition to 50% on the hyperactivity scale. This is in agreement with Iizukaa *et al.* (2010), who found that children with high-functioning autism obtained scores indicating high abnormality on SDQ peer problems and the prosocial scale.

This study found statistically nonsignificant differences among different diagnostic groups in the peer problems scale. This was in agreement with several researches that found significant peer problems in many psychiatric diagnoses in children such as ADHD (Hoza, 2007), conduct disorder (Calkins and Keane, 2009), specific language disorder (St Clair *et al.*, 2011), high-functioning autism (Iizukaa *et al.*, 2010), Tourette's disorder (Bawden *et al.*,

1998) and internalizing disorders (Wilmshurst, 2005). This might indicate that irrespective of the diagnosis, there is a problem with peers but the nature of the problem may differ according to the diagnosis, for example, gets on better with an adult than with other children and solitary play for developmental disorders group, especially pervasive developmental disorder, no friends for those with CD and ODD and those with internalizing disorders.

Parents of children with ADHD and developmental disorders perceived their children as having significantly higher levels of difficulties (Table 5). This could be explained by the significantly greater interference with classroom learning (Table 6) compared with other diagnoses.

In this study, similar percentages of those with internalizing disorders (45.9%) and those with oppositional defiant and conduct disorders (44%) were perceived by their parents to have definite and severe difficulties (Table 5). This finding is in contrast to that reported by Meltzer *et al.* (2011), who found that parents of children with conduct disorder reported more burden than parents of children with emotional disorders. They attributed their findings to the fact that emotional disorders might be less persistent and may be less visible than conduct disorder. In this study, the majority of parents stated that the problems of their children have existed for more than one year (83%); this might explain why the burden was similar for both groups.

Use of medications

Medications were significantly related to the severity of perceived difficulties and interference with classroom learning and leisure time activity. Burden to parents did not reach significance ($P = 0.057$) (Tables 7 and 8). It is worth noting that within the categories of definite and severe difficulties, only 43.5% (42 out of 112) and 37.5% (27 out of 62), respectively, were prescribed medications. It seems that in child psychiatry, the tendency is still not to medicate (whether because of the reluctance of parents, professionals or both). However, classroom learning is overvalued in our culture and a main concern for the majority of Egyptian families; hence, any measure to alleviate the hindrance is adopted. In contrast, if even leisure activities are affected or impaired, this represents a serious situation that requires an effective measure.

Factors that predicted perceived difficulties of the child and burden on the parents

Logistic regression has shown that the extent of total psychopathology and longer duration predicted the degree of seriousness of the perceived difficulties in the child. In this study, the total difficulty score rather than comorbidity predicted perceived difficulties. This is in agreement with Wille *et al.* (2008), who found strong associations between SDQ total difficulties scores and perceived difficulties. Also, it might not be the question of coexisting diagnosis but the multiplicity of coexisting problems.

Eighty-three percent of the parents perceived difficulties for a duration of more than 12 months. Longer duration of the difficulties predicted a perception of them being

definite or severe. It seems that a longer duration indicates the existence of a real problem and the fact that the problem will not go away and the child will not grow out of it.

Although the abnormal prosocial scale was only present in 10% of the sample, abnormality on this scale significantly predicted perceived difficulty. Also, it showed an almost significant prediction for burden on the parent. This was in contrast to Wille *et al.* (2008), who found that the prosocial behaviour scale did not contribute significantly to the prediction of perceived difficulties or burden.

Although interference with home life, classroom learning and friendship predicted perceived difficulties, only classroom learning interference was significantly related to medication. This could be explained by the tolerance of parents to interference to home life and friendship but not to classroom learning.

Logistic regression showed that burden is predicted by the total impact score. The higher the severity of impairment, the higher the is perceived burden. This is in agreement with Dada *et al.* (2011), who found that the most important factors that predict a caregiver's burden are the level of impairment. They suggested that child impairment may require more assistance from the caregiver in different domains in child life that may place a burden on the caregivers in daily life activities.

This study has shown that classroom impairment was the most frequently reported impairment (65%); it significantly predicted perceived difficulties and was significantly related to the use of medications. These findings highlight the importance of school environment in the emergence of a child's difficulties.

Clinical implication

Assessment and evaluation of child's distress and impairment provides important information beyond the knowledge of symptoms and diagnoses that helps to tailor an individual management plan.

Understanding and evaluation of parents' burden resulting from the care of children with mental health problems is recommended. Management of parents' burden may have a positive impact on the psychological well-being of the child.

The finding of this study highlighted the significance of classroom impairment; the integration of mental health services in school is needed to improve school-based interventions of mental health problems that may result in reducing a child's impairment.

Research implication

It is recommended that future research should investigate the relationship of perceived burden and variables related to the caregivers such as age, sex, degree of closeness to the child, education, occupation and the presence of mental disorders.

Future research should also study the children's perspective of their problems, perceived difficulties, distress and

impairment, and compare them with those of the parents to assess the consistencies and discrepancies.

Studying the teachers' evaluation of a child's problems and level of impairment may provide a comprehensive understanding of a child's difficulties.

Limitations

This is a cross-sectional study with a convenience sample. A follow-up prospective study with a randomized sample is needed to improve the generalizability of the findings of this study.

This study used a single source of information (parents); multi informant (parents, children and teachers) rating is recommended to improve the reliability of the data presented.

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Conflicts of interest

There are no conflicts of interest.

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