

Original article

**Pattern of Child and Adolescent Mental Disorders at a Tertiary Care Centre in
North India**

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Abstract

Background: The trend of service utilization at the tertiary care hospitals is changing with more and more children and adolescents visiting psychiatric facilities than before. There is a need to study this change in pattern of mental disorders being attended at the Child Guidance Clinic (CGC), to facilitate better services for these patients.

Aim: To examine the pattern of mental disorders among children and adolescents attending CGC between 2008 and 2017 at PGIMS, Rohtak and their socio-demographic characteristics.

Settings and Design: Retrospective study at a tertiary care centre

Methods: Three thousand and twenty-eight patients (up to 16 years of age) attended the CGC of PGIMS, Rohtak over the period from 2008 to 2017. Socio-demographic and clinical data was collected retrospectively from the Patient's Annual Records Register of the CGC services. This data was analysed using Microsoft excel. Descriptive statistics used for the statistical analysis.

Results: There was a gradual increase in the number of children attending the CGC facility from the year 2008 to year 2017. Majority of them were in the age group 10-15 years, accompanied by their mother, and hailed from rural areas. The most common diagnosis was intellectual disability (21.16%), followed by ADHD (17.86%), while diagnoses of ODD was (2.93%) and conduct disorder (2.3%).

Conclusions: This trajectory and projection suggests that the psychiatric service utilization by the younger population is likely to increase over the years, and requires policy review for strengthening health care system.

Keywords: Children, adolescent, mental disorders, child guidance.

Introduction

Worldwide prevalence of child and adolescent mental disorders (CAMDs) has been estimated to be around 20% by the World Health Organization (WHO), with one-fourth of these CAMDs being severe enough to require clinical intervention [1]. Moreover, it has also been suggested that almost half of all the lifetime mental disorders have their origin prior to 14 years of age [2,3]. So, the timely detection and intervention by expert services will not only help the young population but also would benefit the family and society in long run.

Around 31% of India's population falls in the age group of 0-14 years [4]. Overall prevalence rates of psychiatric disorders among children and adolescents in India ranges from 0.48% to 35.6%, depending upon the study population, research settings and study design [5-7]. Mishra et al [8] estimated the prevalence of depression and anxiety disorder in rural and sub-urban areas of Uttar Pradesh to be 14.5% and 15% respectively, in the age group of 11-18 years. The prevalence of anxiety disorder was however found to be almost three times higher (45.6%) among children in rural Kerala in a study by Manuel et al. [9] Also, Jha et al reported the prevalence of depression to be as high as 49.2% [10]. The Global Burden of Disease Study found idiopathic developmental intellectual disability to be most prevalent mental disorder (4.5%), although the prevalence of conduct disorder (0.8%), ADHD and Autism spectrum disorders (ASD) (0.4% each) was also significant. [11] Majumder et al [12] assessed the adolescents in North-East India and found that the prevalence of neurotic, stress-related, and somatoform disorders was as high as 41%, followed by disorders of substance use abuse (21%).

Despite such proportions of CAMDs and adoption of several national policies for different areas of child development, child and adolescent mental health in India still lies in dire state, with wide treatment gaps [13].

Child guidance clinics (CGC) have been the face of child psychiatry services at tertiary care centres in India and serve the objectives of prevention, early identification, intervention and rehabilitation of CAMDs [14]. However, there is a dearth of hospital-based studies on CAMDs, with Child guidance clinics in focus, in Indian settings, particularly from the state of Haryana. By looking at the longitudinal patterns in CGC over past decade, the magnitude of various CAMDs can be identified and targeted for formulating effective prevention and control strategies. The current study was an effort to study the pattern of CAMDs in hospital-based settings over the period of 10 years (2008-2017).

Methods

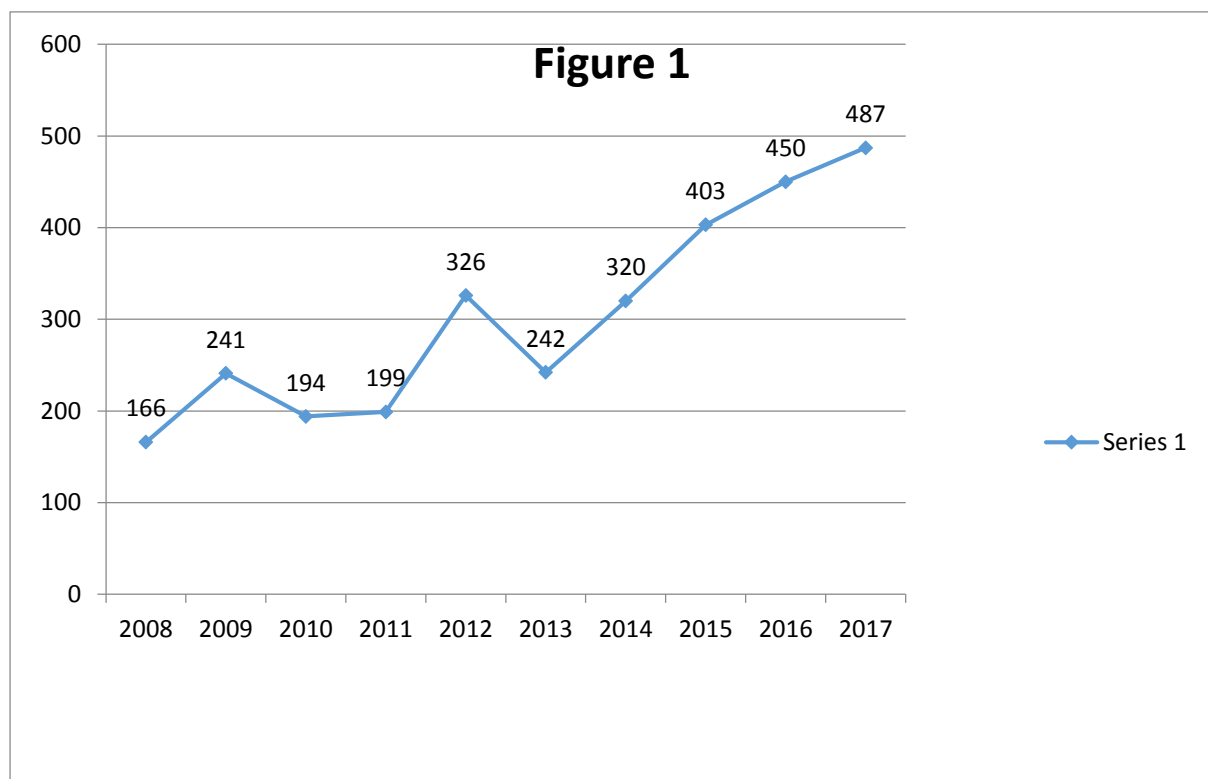
This was a retrospective study conducted at the Department of Psychiatry at a tertiary care centre in North India. The department of psychiatry runs various special clinics, including substance abuse clinic, geriatric clinic, child guidance clinic on variable frequency. The OPD of child guidance clinic (CGC) is held every Saturday and provides services to the patients from Haryana as well as from the adjacent areas of Delhi, Punjab, Utter Pradesh and Rajasthan. Further, the centre caters to mixture of population from urban and rural regions. All the children along with their caregiver, who are registered with the CGC, are seen initially by a Junior Resident, for detailed case work-up followed by discussion with the Consultant-in-charge to draw the management plan including required clinical psychology assessment. The case files are reviewed regularly after completing the detailed assessment at every follow up for treatment response and for further course of action. The current study aimed to elucidate the patterns of child and adolescent mental disorders and associated factors in outpatients attending child guidance clinic (CGC). Data used in the study was collected from the Patient's Annual Records

Register of the CGC. The study sample comprised of both new as well as follow-up cases from previous years, over the period of 10 years (from 2008-2017). The details about diagnoses as well as socio-demographic variables were recorded for all the new cases. The inclusion criteria comprised of cases that were complete in terms of diagnosis (according to Diagnostic and Statistical Manual, DSM-IV) and management plan. Cases with an inconclusive initial diagnosis were excluded from the final analysis. Data obtained were coded and entered into Microsoft Excel Worksheet and analyzed using descriptive statistics like percentage. Ethical approval for the study was obtained from the Institutional Ethical Committee (vide letter number: IEC/18/635; dated: 27.09.2018).

Results

Over the period of 10 years (2008 to 2017), a total of 3028 patients were enrolled in the CGC unit. Over the period, there has been a gradual increase in annual number of patients attending Child guidance clinic i.e., from 166 patients in 2008 to 487 patients in 2017 (Figure-1).

Figure-1: Number of children attending CGC over the study period



The majority of children belonged to the age group of 10-15 years, except for the years 2012-14, when the maximum number of children was 5-10 years old. The youngest child presenting to CGC clinic was 0.5 years while maximum age was 16 years (mode 12 years). The percentage of girls attending the child guidance clinic has remained much the same from 30.12% in 2008 to 32.85% in 2017 (Table-1).

Table-1: Socio-demographic characteristics of 2008 and 2017 sample

Characteristics	2008 N=166	2009 N=241	2010 N=194	2011 N=199	2012 N=326	2013 N=242	2014 N=320	2015 N=403	2016 N=450	2017 N=487
Age										
<5	13 (7.83%)	24 (9.96%)	14 (7.22%)	15 (7.54%)	37 (11.35%)	35 (14.46%)	33 (10.31%)	41 (10.17%)	49 (10.89%)	48 (9.86%)
5-10	64 (38.55%)	65 (26.97%)	79 (40.72%)	83 (41.71%)	135 (41.32%)	100 (41.32%)	127 (39.69%)	145 (35.98%)	167 (37.11%)	179 (36.76%)
10-15	81 (48.80%)	127 (52.70%)	89 (45.88%)	85 (42.71%)	128 (39.26%)	87 (35.95%)	118 (36.88%)	166 (41.19%)	172 (38.22%)	204 (41.89%)
>15	8 (4.82%)	25 (10.37%)	12 (6.19%)	16 (8.04%)	26 (7.98%)	20 (8.26%)	42 (13.12%)	51 (12.66%)	62 (13.78%)	56 (11.50%)
Age (Mode)	12	10	10	12	12	12	12	14	8	7
Sex										
Male	116 (69.8%)	141 (58.51%)	134 (69.07%)	136 (68.34%)	218 (66.87%)	159 (65.70%)	219 (68.44%)	292 (72.46%)	311 (69.11%)	327 (67.15%)
Female	50 (30.12%)	100 (41.49%)	60 (30.93%)	63 (31.66%)	108 (33.13%)	83 (34.30%)	101 (31.56%)	111 (27.54%)	139 (30.89%)	160 (32.85%)
Accompanying Person										
Mother	58 (34.94%)	108 (44.81%)	68 (35.05%)	80 (40.20%)	136 (41.72%)	89 (36.78%)	115 (35.94%)	157 (38.96%)	180 (40%)	210 (43.12%)
Father	59 (35.54%)	66 (27.39%)	73 (37.63%)	57 (28.64%)	80 (24.54%)	63 (26.03%)	79 (24.69%)	104 (25.81%)	127 (28.22%)	128 (26.28%)
Both	16 (9.64%)	26 (10.79%)	19 (9.79%)	25 (12.56%)	35 (10.74%)	47 (19.42%)	64 (20.00%)	83 (20.60%)	90 (20%)	79 (16.23%)
Others	33 (19.88%)	41 (17.01%)	34 (17.53%)	37 (18.59%)	75 (23.01%)	43 (17.77%)	62 (19.37%)	59 (14.64%)	53 (11.78%)	70 (14.37%)
Background										
Rural	110 (66.27%)	130 (53.94%)	132 (68.04%)	123 (61.81%)	204 (62.58%)	124 (51.24%)	202 (63.13%)	150 (37.22%)	257 (57.11%)	221 (45.38%)
Urban	56 (33.73%)	111 (46.06%)	62 (31.96%)	76 (38.19%)	122 (37.42%)	118 (48.76%)	118 (36.88%)	253 (62.78%)	193 (42.89%)	266 (54.62)

Mother has been the most common escort and informant (34.9%-44.8%), the proportion of children accompanied by both the parents has also improved (9.6% to 20.6%). It is also worth noticing that most of the children belonged to the rural background during most of these years.

There were a significant number of children who attended CGC with trauma, neurological disorders, metabolic disorders, congenital deformities and other medical conditions, and required priority consultation with other specialties, so were referred accordingly.

There were also certain cases where diagnosis was deferred because of inadequate history, and were eventually lost on follow up. Similarly, there were children with no psychiatric diagnosis. These three groups of children amounted to a total of 497 children.

Table-2 shows the diagnostic breakup of patients attending the Child guidance Clinic of PGIMS, Rohtak. It was observed that with an increase in total annual number of children attending the CGC, the number of children in each diagnostic category has also increased, however, the proportions of various diagnoses in each assessment year have not varied much. The most common diagnosis was intellectual disability (ID) (21.16%), followed by ADHD (17.86%), epilepsy (12.25%) and dissociative disorders (10.03%). The least prevalent diagnoses were that of affective disorders (3.79%), followed by autistic spectrum disorder (ASD) (3.36%) oppositional defiant disorder (ODD) (2.93%), conduct disorder (CD) (2.3%), psychotic disorder (1.78%), and number of children with the diagnoses of nocturnal enuresis, encopresis, speech disorders, somnambulism, somniloquy, specific learning disability, tic disorder, Tourette disorder, etc. was quite low so these were clubbed under “others” group (16.41%).

The number of patients with various comorbid disorders with each of the primary diagnoses is shown in Table-3. It was found that many patients had multiple comorbidities and hence, the total number of comorbidities with any primary diagnosis does not equalize with the total number of cases of the primary diagnosis.

Table-2: Prevalence of various psychiatric disorders during 2008-2017

Year	ADHD		ASD		Affective disorder		Psychotic disorder		CD		ODD		Intellectual disability		Behaviour Disorders		Epilepsy		Dissociative Ds.		O T H E R S	NAD/ D E F E R R E D
	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W	T O T A L	N E W		
2008	19	16	4	3	7	5	6	5	4	4	4	2	33	27	6	4	22	14	15	10	30	27
2009	18	15	7	4	15	12	0	0	4	3	2	0	47	36	18	15	21	13	44	35	29	44
2010	17	12	0	0	4	3	0	0	0	0	1	0	49	40	9	7	16	8	21	17	14	66
2011	37	30	3	2	9	7	0	0	5	4	6	4	35	29	7	4	40	22	31	26	33	19
2012	62	53	10	7	10	7	4	3	13	10	9	6	77	58	16	11	53	25	35	28	53	32
2013	46	29	12	8	9	6	1	1	3	2	7	5	48	37	13	9	29	14	33	26	34	39
2014	39	28	2	1	10	7	1	1	1	1	1	0	62	43	37	28	37	18	8	6	14	120
2015	92	74	10	3	17	15	10	7	10	6	14	10	80	67	12	10	50	41	31	25	68	71
2016	93	63	16	12	14	13	16	6	11	8	17	13	100	70	27	18	55	28	37	32	86	41
2017	118	64	38	21	20	9	16	4	21	9	28	13	110	89	38	9	48	24	49	28	72	38
	541	384	102	61	115	84	54	27	72	47	89	53	641	496	183	115	371	207	304	215	433	497

Table-3: Number of patients with various comorbid disorders against each of the primary diagnoses

Primary Diagnosis (No. of cases)	Comorbid diagnosis								
	ADHD	ASD	Affective disorder	Psychotic disorder	CD	ODD	Intellectual disability	Epilepsy	None
ADHD (384)	-	27	15	-	58	103	109	32	106
ASD (61)	07	-	09	-	-	05	60	17	01
Affective disorder (84)	09	02	-	05	07	13	19	04	39
Psychotic Disorder (27)	-	-	03	-	-	-	15	09	13
CD (47)	21	-	05	-	-	-	10	05	25
ODD (53)	17	-	07	-	-	-	09	02	18
Intellectual disability (496)	43	27	76	25	19	46	-	136	179
Epilepsy (207)	39	11	33	29	12	25	119	-	53

Discussion

Over this period (year 2008-2017), the CGC facility of PGIMS Rohtak witnessed about three-fold increase in number of children attending the OPD. Last five years have seen a steady rise unlike the initial 5 years where the numbers fluctuated on yearly basis. One of the several reasons for this fluctuation was that initial years were the formative period where the department was put in place and as the services became regular, so did the number of patients attend the OPD. In addition, some fluctuation in number maybe contributed to parallel services being run by paediatric department for children with epilepsy, as being the case in most of the general hospital settings [15]. The constant increasing trend over the latter half of the decade can be attributed to the existence of dedicated specialist trained in child and adolescent psychiatry services, as has been seen in other parts of the world [16].

Our hospital-based records report that most common diagnosis was intellectual disability (21.16%), followed by ADHD (17.86%), epilepsy (12.25%) and dissociative disorders (10.03%), much similar to the patterns reported in previous studies from Northern India [4,15]. A retrospective study of 529 patients from Kashmir reported ADHD (31%) and mental retardation (29%) as the most common disorders among children visiting CGC clinic [17]. But significant variability exists among the population visiting CGC's [18], with studies from different centres reporting higher frequency of affective and conversion disorders as well [19-21]. In our study psychotic disorders and affective disorders were the least reported clinical conditions, much in line with the existing findings [22,23]. The frequency of conduct disorder and ODD was reported to be less than 5%. Hospital based studies have often showed variable frequency of CD and ODD with some reporting higher frequency [24] while others as very low [25]. However, for the index study it is very likely that ODD and CD which often present as co-morbid with several other childhood disorders may have been overshadowed and missed and hence, the lower frequency as reported by other also [26].

About 5% of our study sample showed certain behavioural problems like poor concentration, academic difficulties, aggressive outburst, restless or hyperactive behaviour in isolation but did not meet any diagnostic criteria. About 16% (approx.) of sample could not be given a final diagnosis either because of insufficient information, or were referred to other specialties in suspicion of underlying organic disorders and lost to follow up.

The most common age group of 10-15 years and male predominance was similar to previous retrospective study looking at trends of CGC population from 1980-2005 [4,18,19]. There was a predominance of boys over girls (2:1), with trend showing no significant changes in 10-year duration. Previous studies have shown similar trends in CGC clinics with boys predominating the CGC clinical samples. Possible explanation for this trend includes greater vulnerability of psychiatric disorders in boys as compared to girls [27], higher prevalence of externalizing disorders among boys which are much problematic and easily noticeable [28]. Another potential and perhaps significant reason could be the prevailing socio-cultural norms where more importance is given to boys and hence gender based differential help seeking [29].

Mothers were the most common person accompanying the children over this period, but recent years saw an increasing trend towards both parents accompanying the children during hospital visits. Other possible explanations could be the changes in societal values and sense of equal participation in upbringing of the child in both the parents. Another important transition noticed over this period was overall increased in number of children visiting from rural areas. It's difficult to point out if it was due increase in mental health awareness [30], although studies pointing towards a high treatment gap for paediatric mental health disorders, it is likely that advent of information technology might have helped people seek opinion for issues which they may have ignored earlier. Further, it is likely that referral from other departments would have contributed to this shift.

Our study also noticed presence multiple comorbidities. Intellectual disability was the most common comorbidity among patients with primary diagnosis of ADHD, autistic spectrum disorder, affective disorders, psychotic disorders and epilepsy in the current study, while around one-fourth of the intellectual disability patients had comorbid epilepsy. This is in keeping with the results of the study by Shaaban et al [31] reporting the oppositional defiant disorder (ODD) as the most common comorbidity among ADHD patients if intellectual disability is excluded. Study by Zhang and Ji [32] reported that all the patients suffering from autistic spectrum disorder had intellectual disability, supports the findings of our study where sixty out of sixty-one patients with ASD had intellectual disability. The most prevalent comorbidity of ADHD with the primary diagnosis of CD and ODD lies in line with past literature [33,34]. On the contrary the study by Aaberg et al, reported ADHD (12.07%) to be the second most common comorbidity among epilepsy, first one being the intellectual disability (16.97%) [35]. The proportion of patients with comorbid affective disorders (1.08%) was significantly low. However, a similar trend of psychiatric comorbidity among children with epilepsy was reported in a cross-sectional study by Dharmadhikari and Sinha [36], who found ID (61.16%) to be the most common comorbidity, followed by affective disorders (17.86%). It is worth mentioning that a significant proportion of cases with primary diagnosis of CD, ODD and ODD did not have any comorbidity. Comorbidity data regarding some disorders including dissociative disorders, behavioural disorders, etc., could not be retrieved and hence, was not included in the results.

This study has certain limitations. Firstly, it is a hospital based-study, hence the findings may not be applicable to the community. Secondly, it was a retrospective chart review and as a result it was not possible to evaluate other socio-demographic factors. Thirdly, certain clinical profiles like comorbidities and reasons for referral could not be explored. But despite the limitation, our study provides an insight into the pattern of the population visiting a CGC unit

in a psychiatric hospital setting. The study provides precious inputs to frame better psychosocial interventions for those suffering with CAMDs at the institute level as well as may be helpful in formulating policies at the regional as well as national level.

To conclude, the current study highlights the changes in pattern of help seeking among under-14 populations, especially from rural areas. Intellectual disability and ADHD have remained the predominant diagnosis over this period, with significant improvement in involvement of parents especially fathers. The number of new cases and referrals are likely to increase in the coming years, although the number of unrecognized cases of CAMDs still remains large.

Our recommendations include regular organization of interactive awareness activities targeting school teachers and parents, both online as well as offline, where they can be sensitized about the possible problematic behaviours as well as easily identifiable symptoms of CAMDs. An easy pathway of consultation for those identified with possible risk symptoms can be developed in the form of monthly camp by a medical officer, targeting a group of schools with such children and adolescents. Those requiring detailed assessment and treatment by a specialist may then be referred to nearest Child Guidance Clinic (CGC). This would be incontrovertible without an effective collaboration of mental health and general health care system through policy review and would necessitate focussed training of medical officers along with combative community awareness programs.

The future studies can be prospective, which would help analyse various socio-demographic and clinical correlates of CAMDs. It would be imperative to focus on logistical and economic difficulties faced for obtaining a consultation at a Child Guidance Clinic (CGC).

Acknowledgement: None

Conflict of Interest: None declared

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