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Original Article

Characteristics of Patients Visiting the Child & Adolescent Psychiatric Clinic: A 26-year Study from North India

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ABSTRACT

Aim: To study the sociodemographic and clinical profile of patients, who presented to the child and adolescent psychiatric services of a tertiary care centre over a 26-year period (1980-2005). **Methodology:** Data were abstracted retrospectively from detailed work up files of all subjects assessed in the Child and Adolescent Psychiatry (CAP) Clinic during the mentioned period. Time trends were examined over 3-peiods: 1980-1989 (Period I), 1990-1999 (Period II) and 2000-2005 (Period III). **Results:** Most of the individuals presenting to CAP clinic were boys (62.2%-63.5%), aged between 10 to 15 years (44.2%-63.4%). The common diagnoses were mental retardation (18.4%-33.2%), neurotic and stress related disorders (16.4%-18.5%), epilepsy and organic brain disorder (7.1%-15.1 %) and hyperkinetic and conduct disorders (8.3%-17.9%). There was a trend towards decrease in number of cases in younger age group (0-5 years) and those with diagnosis of mental retardation, epilepsy and organic brain disorder. There was a trend towards increase in number of cases in the older age group (10-15 years) and those with diagnosis of psychotic disorders, affective disorders, disorders of psychological development, and hyperkinetic and conduct disorders. **Conclusion:** Time trends reveal significant shifts in demographic and diagnostic profile of a CAP clinic of a tertiary care hospital.

Key Words: Service data, Time trend, Children and Adolescents, Tertiary care

INTRODUCTION

There are about 20 specialized child and adolescent psychiatry clinics/departments in India; however, there are few data regarding the profile (sociodemographic and clinical) of patients visiting these centers. Data that are available are mostly cross-sectional and often pertain to one/few psychiatric disorders.[1-4] Clinic based studies have shown a wide variation in prevalence of behavioral (3%-36%)[5-9] as well as neurotic disorders (3.7%-54%).[6,810-13] The major diagnoses reported from Indian clinics are mental retardation (20.6%), epilepsy (20%), hysterical conversion reaction (6.3%), hyperkinetic disorders (5%) and childhood depression (6%).[14] The Indian Council for Medical Research has coordinated a 4-centre collaborative study of clinic based epidemiology of child psychiatric disorders.[15]

In recent years a few community-based epidemiological studies using standardized instruments, population sampling procedures and standard diagnosis, have been conducted in India;[16-18] however, clinic based data are important, particularly for service planning and resource allocation. Cross-sectional clinic based prevalence studies help in a preliminary assessment of

service utilization, morbidity, treatment and follow-up. Evaluation of time trends can provide even more important inputs regarding service utilization (e.g. effectiveness of interventions

carried out at primary and secondary levels; and attrition rates) and changes in demography in disease patterns and prevalence rates in the populations. A few time trend studies, based on small sample sizes and limited time periods/cross sections, on CAP attendance in India have shown an increase in rates of affective disorders and neurotic/stress related disorders.[19]

In this study we planned to observe changes in clinical and sociodemographic profile and rates of psychiatric disorders in children and adolescents presenting to a CAP clinic of a tertiary care hospital.

METHODS

Child and Adolescent Psychiatric Clinic Services: The Department of Psychiatry at the Postgraduate Institute of Medical Education and Research, Chandigarh is a general hospital psychiatric unit with inpatient and outpatient facilities in a tertiary care, multi-disciplinary teaching hospital. The outpatient services comprise a daily walk-in clinic, in which children and adolescents up to 15 years of age are evaluated. All children (and their family members) registered with the CAP clinic are initially interviewed by a social worker; who also records the patient's age, gender, education, and place of stay (rural-urban); the head of the family's age, occupation, income, religion and relationship with the patient; and the source of referral. The child is then assessed by a qualified general psychiatrist (senior resident), who initiates treatment (if required) and gives an appointment for a meeting with a Consultant Psychiatrist (child psychiatrist/psychiatrist with special interest in child psychiatry) within the next fortnight. As a part of this consultation, children are assessed in detail with a semistructured interview with subparts related to sociodemographic (of patient and informants) and clinical (chief complaints, type of onset, precipitating factor, course, psychopathology, temperament, developmental history, parenting style, dysfunction, comorbidity, family history, family functioning, physical examination and mental status examination) information. Most patients are also examined by a play therapist and a clinical psychologist (for assessment of intelligence). The management is carried out under the supervision of the consultant, with inputs from play therapists and clinical psychologists, as required. All psychiatric diagnoses are based on ICD descriptions.[20,21] The case file is reviewed at a record meeting by the consultant after 8-12 weeks of the initial detailed assessment and a final diagnosis is ascribed to the case based on follow-up information, investigation reports, and treatment response.

Data recording procedure: Data of all patients registered with the department of psychiatry are analyzed routinely under the following headings: sociodemographic variables, clinical history and examination, physical and psychological investigations, management planned and executed, and course and outcome at one-year follow-up (after detailed assessment). The data are coded by a qualified social worker and a senior resident on a semi-structured performa, under the supervision of the consultant in-charge of the clinic; who ensures consistency in recording and completeness of data. These data are presented and discussed in detail at annual departmental statistical meetings.

Data extraction for the current audit: Data of all subjects who underwent detailed assessment under supervision of a consultant psychiatrist (cases that dropped out after registration in walk-in clinic were not included) in the CAP clinic of the Postgraduate Institute of Medical Education and Research, Chandigarh, India during the last 26 years (i.e. 1980-2005,

both years inclusive) were abstracted according to visits made in three time periods (Period I: 1980-1989, Period II: 1990-1999 and Period III: 2000-2005). Some adaptations in extracting data on diagnoses were necessitated due to the change in the classificatory system from ICD-9 to ICD-10 (e.g. pervasive developmental disorder).

Statistics: parametric and non-parametric statistical tests as appropriate for descriptive and comparative analysis of groups were used. Post-hoc pair-wise comparison was done by the Scheefe's statistic, which was considered significant at $p<0.05$.

RESULTS

The average number of patients assessed in detail in Period I was 228.8 per year (SD= 26.04), in Period II was 246.0 per year (SD= 23.78) and in Period III was 227.17 per year (SD=27.04). The difference in the number of patients seen in these three time periods was not statistically significanty.

Table 1: Sociodemographic profile of subjects assessed in detail (numbers per year)

Variables	Period I (1980-1989) Mean (SD)	Period II (1990-1999) Mean (SD)	Period III (2000-2005) Mean (SD)	ANOVA/ T-test	Post-hoc test[a] (p<.05)
Age groups					
0-5 years	35.69 (11.56)	26.90 (7.34)	22.66 (7.42)	F=4.28*	I>III
5-10 years	91.20 (18.19)	82.99 (18.10)	60.66 (13.48)	F=5.98**	I>II>III
10-15 years	100.89 (16.00)	136.50 (10.49)	143.66 (17.06)	F=22.29***	III>II>I
Gender					
Boys	142.99 (20.37)	153.29 (19.98)	145.00 (27.55)	NS	-
Girls	084.50 (17.14)	092.80 (09.16)	082.16 (07.13)	NS	-
State of Origin					
Chandigarh	88.49 (13.86)	99.80 (11.51)	71.50 (12.98)	F=9.17**	II>III
Punjab	82.89 (17.70)	74.90 (16.79)	74.16 (14.26)	NS	-
Haryana	32.60 (09.14)	42.50 (12.83)	46.33 (04.03)	F=4.20*	III>I
Himachal Pradesh	11.49 (04.35)	19.30 (10.61)	20.49 (04.76)	NS	-
Other states	12.20 (07.59)	09.90 (8.10)	14.49 (09.95)	NS	-

* p value <0.05, ** p value <0.01, *** p value <0.001, NS= Not significant; [a] Scheefe's test

An age gradient was observed in CAP clinic registrations, with 10-15 year olds being the largest subgroup in all the 3 time periods (Table 1). A comparison of the three time periods revealed a significant decline in clinic registration in the youngest age group (0-5 years; F=4.28; $p<0.05$). Pair-wise comparison showed a significantly lower rate of registration in this age group in Period III compared to Period I (Scheefe's test). A similar statistically significant decline in clinic registration was observed for 5-10 year olds (F=5.98; $p< 0.01$), with pair-wise comparison showing a consistent decline across the 3 time periods (Scheefe's test I>II>III). In keeping with these trends, there was a significant increase in registration in the oldest age group (10-15 years; F=22.29; $p<0.001$), with pair-wise comparison between Period I, Period II and Period III, all being significant (Scheefe's test III>II>I).

In all the 3 periods, more than 60% of clinic attendees were boys. There was no significant time trend in the distribution of subjects based on gender. Prior to the year 2000 (Period I and II), the maximum number of registrations were from Chandigarh, followed by Punjab and Haryana. However during Period III (2000-2005), registrations from Punjab

exceeded those from Chandigarh. There was a significant decline in number of registrations from Chandigarh during the three time periods (F=9.17; p<0.01), with pair-wise comparisons showing a significant decline in Period III compared to the Period II (Scheefe's test). Also, there was a significant increase in the number of registrations from Haryana across the three time periods (F=4.20; p<0.05), with pair-wise comparison showing a significant increase in Period III compared to Period I (Scheefe's test).

In all the three time periods the most common coded diagnosis was mental retardation, followed by neurotic/anxiety disorders (Table 2). During Period I epilepsy/organic/organic mental disorders formed the third largest diagnostic category; while in Periods II and III hyperkinetic and conduct disorders were the third most common diagnostic category. Psychotic disorders and affective disorders formed a small proportion of registered cases.

Table 2: Trends in Major Psychiatric Disorders (data presented as mean number of cases)

Variables	Period I (1980-1989) Mean (SD)	Period II (1990-1999) Mean (SD)	Period III (2000-2005) Mean (SD)	ANOVA/ T-test	Post-hoc test[a] (p<.05)
Schizophrenia & psychotic disorders	3.80 (1.22)	7.49 (4.14)	6.83 (2.13)	4.51*	II>I
Affective Disorder	2.00 (1.24)	6.60 (3.97)	13.49 (2.07)	32.09***	III>II>I
Neurotic/Anxiety Disorders	41.80 (10.49)	45.69 (16.26)	37.33 (12.80)	NS	-
Mental Retardation	76.40 (18.81)	71.00 (16.11)	41.49 (4.41)	10.09***	I,II>III
Disorders of Psychological Development	7.10 (3.92)	15.19 (7.84)	22.66 (7.06)	11.47***	III,II>I
Hyperkinetic & Conduct Disorder	18.90 (4.53)	44.80 (38.48)	34.66 (8.23)	NS	-
Emotional Disorders	08.99 (4.37)	07.36 (1.56)	13.16 (4.99)	4.61*	III>II
Mixed disorder of conduct & emotions#	NA	02.12 (0.99)	03.66 (1.36)	2.15*	-
PDD (Autism) #	NA	17.62 (5.85)	07.99 (3.28)	2.04**	-
Epilepsy/Organic/OMD	32.30 (8.71)	38.20 (21.11)	15.99 (7.97)	4.32*	II>III
Others #		19.28 (6.42)	18.83 (4.26)	NS	-
Deferred	13.19 (5.80)	29.90 (21.11)	17.16 (8.61)	3.63*	II>I
Nil Psychiatry	12.49 (5.33)	14.70 (7.86)	1.66 (2.58)	9.26***	I,II>III

NA data not available from 1980-1991, # Independent sample t-test; OMD Organic mental disorder, PDD pervasive developmental disorder; * p value <0.05, ** p value <0.01, *** p value <0.001, NS= Not significant, [a] Scheefe's test,

There was an increase in the number of registrations with affective disorders (F=32.09, p<0.001; Scheefe's test III>II>I), disorders of psychological development (F=11.47, p<0.001; Scheefe's test III, II>I), and emotional disorders (F=4.61, p<0.05; Scheefe's test III>II) across the three periods; mixed disorder of conduct and emotions (t=2.05, p<0.05) during Period III compared to Period II; and schizophrenia/psychotic disorders during period II compared to period I (F=4.51, p<005; Scheefe's test II>I), . There was a decrease in the number of registrations with mental retardation (F=10.09, p<0.001; Scheefe's test I, II>III) and pervasive developmental disorders (t=2.04, p<0.05) across the time periods. There was an increase in the number of cases with deferred diagnosis from Period I to Period II; however, there was a non significant decrease in the number of cases with such a diagnosis during Period III (F=3.63, p<0.05; Scheefe's test II>I). There was a decrease in registrations coded 'nil psychiatry' during Period III compared to Periods I and II (F=9.26, p<0.001; Scheefe's test I, II>III).

A majority of registrations (57.4%-79.2%) were advised psychological investigations (Table 3). About half of the registered subjects were advised pharmacological treatment. During Period II, antipsychotics were the most commonly prescribed drugs, followed by anxiolytics and antidepressants. During Period III, antidepressants were the most commonly prescribed agents, followed by anticonvulsants, antipsychotics and anxiolytics. Non-pharmacological treatment (with or without pharmacological treatment) was provided for more than four-fifths (83.3%-94.1%) of registrations. The most common modality of psychological treatment provided was parental counseling, followed by individual therapy during Periods II and III, and play therapy during Period I. One third to half of the registrations did not have any follow-up visit.

There was a significant decline in number of advised physical investigations across the 3 periods ($F=7.39$, $p<0.01$; Scheefe's test I>II, III). A significant increase in the provision of parental counseling ($F=3.89$, $p<0.05$; Scheefe's test II, III>I) and individual psychotherapy ($F=15.07$, Scheefe's test $p<0.001$; III>I, II) was recorded. A significant decline in the number of registrations with no follow-up was observed ($F=21.16$, $p<0.001$; Scheefe's test I>II, III). There was a corresponding increase in the proportion of patients with 1-3 visits ($F=6.67$, $p<0.01$; Scheefe's test III, II>I) or 4-9 visits ($F=25.24$, $p<0.001$; Scheefe's test III>II>I).

Outcome at 1 year post detailed assessment was available only for Period III. Of the cases that followed up regularly till 1 year 53.3% were rated as partially improved or recovered and 46.7% were rated as unimproved. A vast majority of cases rated as unimproved were diagnosed as having mental retardation.

Table 3: Trends in Management (data presented in terms of percentage)

Variables	Period I (1980-1989) Mean (SD)	Period II (1990-1999) Mean (SD)	Period III (2000-2005) Mean (SD)	ANOVA/ T-test	Post-hoc test[a] (p<.05)
Investigations					
Physical	29.38 (14.09)	11.62 (11.17)	09.75 (08.60)	7.39**	I>II,III
Psychological	57.38 (16.41)	63.70 (23.95)	79.20 (11.16)	NS	
Treatment Done					
Pharmacological	47.39 (10.71)	54.77 (07.87)	49.96 (04.06)	NS	-
Antipsychotics#	NA	17.20 (10.70)	12.86 (04.39)	NS	-
Antidepressants#	NA	10.16 (06.45)	16.63 (07.72)	NS	-
Anxiolytics#	NA	12.17 (03.32)	11.52 (05.51)	NS	-
Anticonvulsant#	NA	08.78 (05.79)	17.20 (08.39)	NS	-
Others#	NA	08.69 (04.19)	11.40 (04.70)	NS	-
Non-pharmacological	85.94 (09.79)	83.33 (14.16)	94.09 (03.40)	NS	-
Parental counselling	62.95 (16.97)	80.85 (19.42)	81.77 (03.79)	3.89*	II,III>I
Family therapy	01.71 (03.75)	01.66 (01.70)	02.01 (01.22)	NS	-
Play therapy	14.02 (07.28)	10.10 (09.71)	12.18 (03.46)	NS	-
Individual psychotherapy	13.17 (05.60)	16.33 (04.53)	26.62 (03.54)	15.17***	III>I,II
Follow-up rates within 1 year of detail assessment					
No follow up	54.16 (08.94)	40.61 (03.97)	34.70 (02.83)	21.16***	I>II,III
1-3 follow-ups	28.43 (07.97)	37.73 (05.72)	37.68 (03.05)	06.67**	III,II>I
4-9 followups	10.96 (03.59)	16.91 (02.90)	22.37 (02.75)	25.24***	III>II>I
10+ followup	03.04 (01.49)	04.14 (03.02)	04.48 (02.00)	NS	-

NA data not available, # Independent t-test used; *p value <0.05, ** p value <0.01, *** p value <0.001, NS= Not significant; [a] Scheefe's test;

DISCUSSION

Our findings should be interpreted in light of the study's limitations. The most salient one is that since it is a clinic based study, it does not provide a veridical reflection of the situation in the community, e.g. the prevalence of disorders in a clinic population usually differs from that in the community. However, the evaluation of functioning of service data can provide an understanding about its strength and weakness, information about the health seeking population, clinicians understanding about various disorders, usage of nosological systems, and management of various disorders; and it can help in developing research lines and preventive and management strategies. Examination of time trends in service data can occasionally serve as an indicator of demographic changes in disease patterns and prevalence rates in the population.

A majority of the subjects presenting to CAP clinic in a tertiary care centre in north-western India are boys aged 10-15 years, belonging to Chandigarh and Punjab, with diagnosis of mental retardation, neurotic and stress related disorders, epilepsy and organic brain disorders and hyperkinetic and conduct disorders. Across the 3 time periods there was a decline in registration of subjects aged less than 5 years, those belonging to Chandigarh, and those with the diagnosis of mental retardation, and epilepsy and organic mental disorders. There was an increase in the number of cases aged more than 10 years, those belonging to Punjab, and those with the diagnosis of psychotic disorders, affective disorders, disorders of psychological development, and hyperkinetic and conduct disorders. Although pharmacological treatment is used in nearly half of cases, nonpharmacological treatment remains the main stay of treatment in our clinic.

Across the 3 time periods the male-female ratio of health seekers has remained constantly in favour of males. Earlier reports suggest that this is due to gender-based differential help-seeking due to the importance given to boys in India.[22-24] Another reason for a higher proportion of male registrations could be that boys have a higher frequency of externalizing disorders, which are more easily recognized due to their disruptiveness (including e.g. by non family members like teachers). The predominance of children from Chandigarh and Punjab in the clinic sample is likely a function of its location. Also there is a possibility that there may be greater awareness about child mental health problems in these regions compared to other regions due to their relative prosperity. The proportionate decline in registrations from Chandigarh probably reflects the initiation of a new child and adolescent psychiatry centre in Chandigarh, and should be interpreted as a positiv that can influence the child's academic achievements e development in terms of access to care.

There was a decline in the number of registrations for children aged 0-5 years and an increase in the number of registrations in the 10-15 years age groups across the 3 time periods. This is probably due to a decline in the number of registrations for mental retardation and epilepsy during these years, which is probably the function of expansion of services at the Government Institute of Mentally Retarded Children (GIMRC) as well as by non government organizations caring for the intellectually disabled in Chandigarh. The increase in registrations with affective illnesses in the 10-15 years age group could be speculated to be due to improved recognition of internalizing disorders or societal stresses related to academics or rapid social change in the largely urban catchment population of the clinic. The increase in registration for affective disorders is also reflective of a worldwide trend towards an earlier onset and increased prevalence of affective illnesses.[25,26]

An increase in enrollment in schools as also greater awareness among teachers/parents due to affirmative actions instituted by central and state educational boards, may have led to an increase in registration for specific learning disorders. The increase in registration for hyperkinetic disorders may reflect their recognition as a medical disorder impacting academic achievements, in the public and among clinicians.

The highest prevalence of deferred diagnosis during Period II (1990-1999) probably suggests that clinicians take time to adjust to a new nosological system. Decrease in the number of cases of nil psychiatry diagnosis probably reflects improvement in liaison between child psychiatry services and other (sensitized) specialist services that are a major source of referral to the clinic.

The decline in the follow up of registered subjects needs nuanced understanding, e.g. many more cases (e.g. those with mental retardation or specific learning disorders) may be registering with our centre only for certification following the institution of the Disability Board at our centre; or may be referred back to their primary care providers (e.g. if they have to travel long distances) because of increased out of station registrations; or simply may be seeking help with other new centres in the city (a possible indicator of wasteful duplication of services); hence the occurrence of few follow up visits may not always be an indicator of poor services. However, this is an issue that deserves serious attention. Presentation of comparable data from other centres in India could also help in understanding this occurrence better.

Our findings suggest that Indian clinics may need to strengthen services for disorders like depression, specific learning disorders and hyperkinetic disorders. The study also underlines the need for increased number of special educators, child psychologists and strengthening of counseling services in schools. Further, it suggests a need for awareness and sensitization programmes for early detection and intervention especially for disorders like depression. Preventive interventions that focus on strengthening the school mental health programmes, reduction of stress in the schools and home and enhancement of life skills of children to cope with the stress emanating in various day-to-day situations; can be helpful in his regard. Research evaluation of efficacy and effectiveness of medications like antidepressants and stimulants in the Indian population are needed. We also need to develop appropriate treatment modules for care of hyperkinetic disorders, conduct disorders and specific learning disorders. Finally, there is a need to train our residents to provide appropriate non-pharmacological intervention, which are much required in this population.

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