

Original Research Article

Referral profile of child guidance clinic of a tertiary care hospital in central Maharashtra: a retrospective observational study

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ABSTRACT

Background: Developmental disabilities occur in approximately 5-10% of the childhood population. The paucity of data regarding the burden and risk factors slows down the programs and policymaking actions for these highly prevalent conditions in developing countries.

Methods: A retrospective review of records of 264 children below 12 years referred to CGC of a Tertiary Care Hospital from November 2016 to December 2018 was done. Data was analysed using SPSS software and is described in terms of frequency and mean.

Results: 264 new cases that were referred to the CGC were enrolled. The mean age of referral was 2.54 yrs. (± 1.00) with M: F ratio being 1.4:1. In religion, Hindu predominance (56.4%) was found. 76.5% hailed from urban area. 39% of all cases showed Consanguinity. 37% belonged to Class IV (Upper Lower) and 89% had chronic malnutrition. 46.2% of cases had NICU stay of which perinatal asphyxia (PA) was found in 40%. Majority of children (45.7%) had Global developmental delay (GDD)/Mental Retardation (MR), 37.7% had various forms of CP, Attention Deficit Hyperactivity Disorder (ADHD) was seen in 13%, 3.4% had Autism, 4.5% had specific language disorder, Learning disability was seen in 2.7% and only 2.7% had Isolated motor delay.

Conclusions: Early Intervention services for children lag behind in developing countries and the proportion of children referred to CGC with severe disabling conditions is high. This study provides baseline data for further planning of services and interventions for these children in Maharashtra.

Keywords: Child guidance clinic, Cerebral palsy, Global developmental delay, Mental retardation, Referral Profile

INTRODUCTION

Neurodevelopmental Disorders (NDDs) comprise a diverse group of disorders characterized by difficulties in one or more domains, including but not limited to, learning, behavior and self-care.¹ Developmental disabilities occur in approximately 5-10% of the childhood population.² Global developmental delay is defined as performance at least 2 S.D. below the mean of developmental domains. This term is used for younger children (<5 years). Whereas the term MR is used for

older children where IQ testing is more reliable. Global developmental delay is estimated to be 1-3% of children aged <5 years and is a symptom complex with heterogeneous presentations, causes, associated conditions and evolution over time.²

The due importance is given to the physical health of children and adolescent in all social groups but developmental, behavioral and emotional aspects of children are not getting enough concerns. There are many reasons for this. Important ones among them are

widespread lack of knowledge about child development and childhood mental disorders, limited number of professionals, lack of training in the field, poor financial assistance and relatively weak advocacy. The situation is relatively same across the world. Apart from these there are many other reasons for the underutilization of services like stigma, cultural tradition, cost, and reluctance on the part of parents or children to seek help, difficulty in getting to providers etc.³ The community prevalence of mental health disorders among children and adolescent across the globe is 20%.⁴ Community prevalence studies on different studies give relatively varying results such as USA-21%, UK-10%, INDIA-12.5%.⁵⁻⁷ In a study conducted in 8 to 10 year school children in Kerala, the community prevalence is 9.4%.⁸ In a similar study among school children in Chandigarh in age of 4-11 years it is 6.3%.⁹

Prevention, along with early recognition and intervention, is critically important to mitigate the enormous personal and socioeconomic impact of these disorders.^{10,11} In most developing countries, the diagnostic and intervention services for these children are very scarce. However, with improvement in the socio-economic conditions, and decrease in the family size, awareness and concerns about these problems have increased among the caregivers and the physicians. Delays or time spent waiting for developmental and rehabilitative services have been burning issues in developed countries, and are likely to gain importance as these conditions will be more frequently diagnosed in third world countries.¹² The paucity of data regarding the burden and risk factors slows down the programs and policymaking actions for these highly prevalent conditions in developing countries. Thus, for planning services for these children, there is a need for baseline data on the profile of children with developmental disabilities.

There are limited studies from Maharashtra, India on the clinical and demographic profile of children attending child guidance clinic under government paediatric setup. Hence, this study was conducted to address this need by delineating the demographic and disease profile of cases referred to a CGC located in a tertiary care government hospital in central Maharashtra, India.

METHODS

The study was conducted at outpatient department of Pediatrics, Government Medical College Aurangabad, Maharashtra from November 2016 to December 2018. The study population consisted of all children below the age of 12 years with behavioral and developmental disorders who were referred to the outpatient department (OPD) on specific days. The CGC has a team of Pediatrician, Clinical Psychologist, Speech Therapist and Occupational Therapist.

Total 264 children below 12 years who attended the child guidance clinic OPD were enrolled. An inclusion

criterion was all children between 1 month to 12 years of age, who were referred to CGC with developmental delay irrespective of the cause. Neonates and children with non-availability of parent or parent surrogate were excluded from the study.

After inclusion, children were initially assessed by a Pediatrician and then a composite evaluation in management plan was formulated for multidisciplinary management. The children were assessed clinically with a detailed clinical history, a semi structured proforma for socio demographic detail using Modified Kuppaswamy scale 2019, family history, birth history and anthropometry. The clinical diagnosis of various neuro-developmental disabilities and other disorders was made by the team as per standard clinical criteria. Developmental Quotient (DQ) was assessed using Denver Developmental screening test 2 (DDST 2).¹³ Intelligence Quotient (IQ) and Social Quotient is measured using Bhatia's Battery test and Vineland social maturity scale respectively.^{14,15} Mental retardation (MR), Autism, ADHD and behavioural disorders were diagnosed and classified using diagnostic and statistical manual-V-text revision criteria (DSM V-TR).¹⁶ Global developmental delay (GDD) was diagnosed in children less than 5 years of age.¹⁷ Cerebral Palsy was diagnosed and classified as per the American Academy of Pediatrics Guidelines.¹⁸ Hearing and vision impairment was diagnosed by subjecting the children for BERA Test and ophthalmic evaluation.

Data is described in terms of frequency and mean and analysed using SPSS statistical software IBM version 23.

RESULTS

A total of 264 new cases below 12 years attended the CGC during the study period. The mean age of referral was 2.54 yrs. (± 1.00) with M: F ratio being 1.4:1.56.4 % (n=149) belonged to Hindu religion. Urban background was seen in (n=202) 76.5%. 39% of all cases showed Consanguinity. According to Modified Kuppaswamy Scale 2019, 37% belonged to Class IV (Upper Lower). 89% had chronic malnutrition as per WHO criteria.

Family history of Developmental delay or similar complaints was found in (n=41) 15.5% and Academic history in the form of poor school performance was seen in (n=60) 22.7% and (n=44) 16.6% of the children who were of school going age had not joined school (Table 1).

Majority were hospital delivered (n=214, 81%). Term delivery was seen in (n=224, 84.8%) and Pre-term (PT) delivery was seen in (n=35, 13.3%). Majority of cases had PA (n=49, 40%) as the cause for NICU admission followed by seizures (n=37, 30.32%) (Table 2).

Majority of children GDD (45.7%) had Global developmental delay (GDD)/Mental Retardation (MR), (n=100, 37.7%) had various forms of CP, Attention

Deficit Hyperkinetic Disorder (ADHD) was seen in (n=13, 13%), Learning disability in (n=7,2.7%),(n=9,3.4%) had Autism, (n=12, 4.5%) had Specific language delay and isolated motor delay was seen in (n=7,2.7%). (n=70, 26.5%) had associated seizures and (n=140, 53%) had microcephaly and (n=31, 11.7%) had behavioural problems (Table 3).

Table 1: Socio- Demographic profile of the sample subjects.

Variables	Frequency (n= 264)	n (%)
Age(Years)		
< 1	29	11
1-3	123	46
4-6	64	24
7-9	37	14
10-12	11	4.2
Sex		
Male	154	58.3
Female	110	41.7
Religion		
Hindu	149	56.4
Muslim	112	42.4
Others	3	1.1
Domicile		
Urban	202	76.5
Rural	62	23.5
Marriage		
Consanguineous	103	39
Non- Consanguineous	161	61
Socio- Economic Class (Modified Kuppusswamy Scale 2019)		
Upper(I)	22	8.3
Upper Middle(II)	25	9.4
Lower Middle(III)	53	20
Upper Lower(IV)	98	37
Lower(V)	66	25
Family History		
Significant	41	15.5
Non- Significant	223	84.5
Academic H/o		
Not Joined School	44	16.6
Poor School Performance	60	22.7
Average School Performance	6	2.27
Good Performance	2	0.75
Not Eligible(<3 years)	152	57.5
Nutritional Status(WHO)		
Normal	28	10.6
Chronic Malnutrition	236	89

Although the etiological diagnosis could not be established (n=116, 43.9%) but in the remaining of 148 cases, Perinatal cause was found in majority of the cases

(n=103, 39%) followed by genetic etiology (n=18, 6.8%) and postnatal cause being (n=12, 4.5%) (Table 4).

Table 2: Birth and neonatal history.

Variables	Frequency	Percentage (%)
Place of Delivery		
Home	50	18.9
Hospital	214	81
Term of Delivery		
Full-Term	224	84.8
Pre-Term	35	13.3
Post-Term	4	1.5
Late- Preterm	1	0.4
NICU Stay		
Yes	122	46.2
No	142	53.8
Postnatal Complications		
Perinatal Asphyxia	49	40
Sepsis	18	14.75
Jaundice	7	5.73
Seizures	37	30.32
Hypoglycaemia	6	4.91
Not Known	5	4.0
Total	122	100

Table 3: Diagnostic profile of study subjects.

Disability/Disorder	Frequency (n=264)	Percentage (%)
Global developmental delay/mental retardation	121	45.7
Isolated motor delay	7	2.7
Specific language delay	12	4.5
Cerebral palsy		
Spastic Quadriplegia	46	46
Spastic Hemiplegia	10	10
Spastic Diplegia	30	30
Spastic Monoplegia	4	4
Dyskinetic CP	7	7
Mixed CP	3	3
Autism	9	3.4
Learning Disability	7	2.7
Attention Deficit hyperactivity disorder(ADHD)	34	13
Associated Co-morbidities		
Seizure Disorder	70	26.5
Microcephaly	140	53
Behavioural problems	31	11.7
Vision impairment	12	4.5
Hearing impairment	6	2.2
Feeding problems	1	0.3
Strabismus	4	1.5

n-8(3%) had Isolated ADHD and n-26(10%) had ADHD with one more disability.

Table 4: Probable etiological diagnosis of study subjects.

Variables	Frequency (n=264)	Percentage (%)
Genetic Disorder	18	6.8
Pregnancy related cause	3	1.13
Perinatal Cause	103	39
Postnatal Cause	12	4.5
Neuroregression	3	1.1
Malnutrition	3	1.1
Systemic Cause	6	2.3
Not Known	116	43.9

DISCUSSION

Author tried to study the clinical and demographic profile of children referred to CGC in a tertiary Care Government Hospital taking into consideration the scarcity of data bases particularly in developing countries like India.

In our study, the mean age of children attending CGC was about 3 years which indicates that children are either referred late or that parents try to find out other options before bringing them to CGC. Bailey et al, found the mean age of referral was 1.2 years.¹⁹ But in other studies the mean age of children reported was between 4 and 5 years.^{20,21} It has been reported that paediatricians more often referred children, who were more than 3 years of age or children with more severe disabilities, for special services. It may be possible that paediatricians rarely use developmental or behavioral screening tests, preferring to rely more on developmental surveillance in the context of normal health care provision. Stigma associated with seeking help from a special institute could be another reason of delay in seeking help.

In our study, the maximum numbers of patients were male which may be explained by the tendencies of family to nurture a male child more as compared to the female child expecting financial contributions from the male children once they grow up. Despite the lack of any similar facility in the surrounding areas, only 23.5% of children came from rural areas.

This finding is in accordance with the meta-analysis conducted by Ganguli et al who found that mental retardation prevails more in the urban areas than rural areas with a ratio of 243/100.²² Lack of awareness is also a possible reason for the lesser number of patients from villages.

In our study, we found majority of children were belonging to Hindu Religion (56.4%). This may be explained by the geographical location of the hospital where the study was conducted is in a Hindu majority region.

Majority of children in the study were from upper lower socioeconomic class a finding similar to other studies conducted which showed relation of childhood psychiatric disorders with low socio-economic class.^{23,24} This finding in our study may be due to high level of illiteracy, poor awareness of antenatal and postnatal care, poor birth control and high level of ignorance in lower economic classes regarding childhood mental health disorders.

In our study, we found chronic malnutrition in majority of cases (89%) Nutritional deficiency along with lack of social and environmental stimulation predisposes the child to psychological under development.²⁵

The common problems identified were GDD/MR, CP and ADHD. There was under-representation of children with specific language disorders, isolated motor delays and Autism, which are known to have prevalence as high as 3.5%, 1% and 5%, respectively.^{26,27} In our study the incidence of learning disorder was 2.7% which is matching to that reported by a study from Monica Juneja et al.²⁸ Speech, language, and communication disorders have been reported to be a prominent reason for referrals to a child development center but a previous Indian study also reported poor utilization of rehabilitation services for speech and hearing disability, despite this being the most common disability in the community.²⁹⁻³¹ This may be due to common belief that male children will start speaking late and less disabling nature of these conditions. The lesser number of children with Autism in this study is probably because many of the features of Autism are taken as variation of normal behaviour, especially in low to middle income families in India. Also, many children with severe symptoms are managed easily with drugs by general practitioners and may not be referred to a tertiary care centre.

In another multi-centric population based study conducted by Narendra K. Arora et al which estimated the prevalence of NDDs among 2-9 year-olds across five geographically diverse sites in India: North-Central (Palwal), North (Kangra), East (Dhenkanal), West (North Goa), and South (Hyderabad) found hearing impairment and intellectual disability as two most common NDD's while in our study the percentage of hearing impairment is less as this study had a small number of children as compared to above study and it was a hospital based study rather than community based.³²

Despite the presence of mental retardation in the majority of cases in the present study, more than half the children were referred after 3 years of age. This contrasts to the finding of a study from a district child development clinic of a developed nation, where more than 50% were referred before 2 years of age.³³

In etiological diagnosis complications of labour was most common followed by genetic cause. In another EI study conducted by Paramleen kaur et al, with different

methodology reporting of perinatal complications was similar to the current study.³⁴ Pregnancy related complications and neonatal problems were reported less often. Cause was not obvious in 43 % cases, which is in keeping with earlier reports on etiological diagnosis in mental retardation.^{35,36}

One of the limitations of the current study was that authors have only studied children referred to their centre and the data may not be representative of the community. Being a leading tertiary government referral centre, possibility exists that only the more severe and complex cases are being referred to this centre, as majority of patients seeking help are from lower socioeconomic groups who are more likely to have severe problems at presentation.³⁷ However, this study is the largest data-set from Maharashtra providing a profile of all children at a government centre with multi-disciplinary evaluation and therapeutic services. Since identification of severe presentations and late referral were important findings of this study, education of public and health professionals to promote and ensure early screening and identification of cases is an important intervention required. Nevertheless, findings of this study are important to create and upgrade Early Intervention facilities for children with developmental delay. The study may also serve as a guide mark for establishment of such services in other parts of the country for children who have a delayed development.

CONCLUSION

There is a felt need for dissemination of information and awareness of information regarding developmental delay, mental retardation, behavioural problems as well as welfare facilities provided by the government. Paediatricians and other specialists have a major role in identifying children at risk and referring them for intervention at the earliest.

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