

Original Research Article

A clinical study of phenomenology in subjects with pervasive developmental disorders

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ABSTRACT

Background: Pervasive Developmental Disorders (PDD) are group of developmental disorder with impairments in interaction, communication and behaviour. The study aims to explore the phenomenological aspects of subjects with PDD.

Methods: Patients in Psychiatry outpatient department (OPD), presented with impairment in social- interaction, language, communication and mental retardation were assessed for features of PDD by applying Developmental Behaviour Check List (DBCL), ICD-10 Diagnostic Criteria for Research and Multi-Axial version of ICD-10. The subjects were assessed for severity of PDD on Childhood Autism Rating Scale (CARS).

Results: Total number of screened positive cases were 20, in which males were over-represented (90%). Majority belonged to urban locality (65%) and nuclear family (75%). Cases of childhood autism were found in all age groups, while childhood disintegrative disorder, Rett's disorder and atypical autism were found in younger subjects. No family history of PDD was found in 1st degree relatives of PDD subjects. Five subjects (25%) had birth and perinatal complication.

Conclusions: The mean age at presentation of the children with PDD was 8.12 years. Eighty percent (80%) of the subjects had severe autism on CARS. Hyperactivity, inattention and impulsivity were present in 90%, 80% and 45% of subjects respectively.

Keywords: Autism spectrum disorders, Clinical features, Childhood autism rating scale, Developmental behaviour checklist, Pervasive developmental disorders

INTRODUCTION

The pervasive developmental disorders (PDD) are group of developmental disorder in which there is impaired social interaction, associated with verbal and nonverbal communication deficits and stereotyped behaviors. Onset of these disorders is during early years of life. There is disruption in developmental process and are often associated with mental retardation.¹

The prevalence of childhood autism is about 13 per 10,000, Asperger's disorder is approximately 3 per 10,000, Childhood disintegrative disorder is very rare at about 0.2 per 10,000 and PDD NOS is 20.8 per 10,000. The prevalence of Rett Syndrome is estimated to be between 1 in 10,000 to 1 in 22,000.^{2,3}

Three systematic studies on PDD were found in Indian literature search.⁴⁻⁶ Studies by Narayanan et al, were done four decades earlier and were based on older diagnostic criteria. Since then the diagnostic criteria have become

more refined and specified. Malhotra et al, published a retrospective chart review of PDD cases over a period of ten years from 1989 to 1999, using ICD-10 diagnostic criteria. There is no prospective study on PDD has been done in Indian context. Besides above studies, few case reports of Rett's syndrome, CDD are also published in Indian context.⁷⁻⁹ Most of the studies in this area have used retrospective data to describe the phenomenology of PDD.

In Indian context, only few case reports and systematic studies are found which throw light on phenomenology of PDD. So present study on phenomenology will supplement the scarce database of PDD.⁴⁻⁹

METHODS

The subjects for this study were drawn from the child and adolescent psychiatric clinic and adult psychiatry outdoor.

Inclusion criteria

- Subjects with an ICD-10 DCR diagnosis of PDD
- Availability of at least one reliable informant who may be a parent or guardian of the patient
- Informed consents of the parent/guardian or informed consent/ assent of the subject, where applicable.

Exclusion criteria

- Non-availability of a reliable informant
- Parents or guardians not willing to give informed consent/assent.

Following tools were applied

- A semi-structured proforma for socio-demographic details and psychiatric history.
- Developmental Behaviour Checklist (DBC) (54 item) is a reliable and valid, widely used checklist developed to broadly assess behavioral and emotional disturbances in children and adolescents (4-18 years) with intellectual disability (ID).¹⁰
- Childhood Autism Rating Scale (CARS). It is 15-items, 4 points Likert scale ranging from 1.0 to 4.0 with intermediate values, between units.¹¹
- Kiddie-Schedule for affective disorders and schizophrenia. K-SADS is a semi-structured psychiatric interview designed for clinical or research assessment.¹²
- ICD-10 diagnostic criteria for research (WHO, 1993).¹³
- Multi-axial version of ICD-10 classification of mental disorders of child and adolescents (WHO, 1996).¹⁴

All the newly registered patients in child and adolescent psychiatry OPD and adult psychiatric OPD, who

presented with impairment in social interaction, language and communication and mental retardation were screened for features of PDD by applying DBC-54 items. After initial screening the subjects were selected on the basis of inclusion and exclusion criteria. All the old cases of PDD, registered in child and adolescent OPD, were also selected on the basis of inclusion and exclusion criteria. The subjects who fulfilled selection criteria were observed and evaluated in several sessions like in outdoor clinic, child's play room in outdoor clinic, in their own home and the centre for autism. Socio-demographic and historical details were recorded on a semi-structured proforma. Features of PDD were recorded on a detailed timeline and evidences for each symptom or sign were collected, on the proforma. Developmental history along with medical and family history also recorded on the proforma.

A thorough physical examination was done. The subjects were assessed for severity of PDD on CARS. The subjects with PDD were assessed for their intellectual ability by the clinical psychologist. Subjects were diagnosed and classified by ICD-10 diagnostic criteria for research and multi-axial version of ICD-10, classification of mental disorders of child and adolescent respectively.

RESULTS

Table 1 shows demographic profile of the subjects. Mean age (in years) at presentation is 8.12±4.37. Males are overrepresented (90%). Most subjects belonged to urban background (65%). 15 subjects (75%) belonged to nuclear family, rest 5 subjects (25%) belonged to joint family. 3 subjects (15%) are eldest, 3 subjects (15%) middle, and 7 subjects (35%) are youngest in birth order. 7 subjects (35%) are only child in the family.

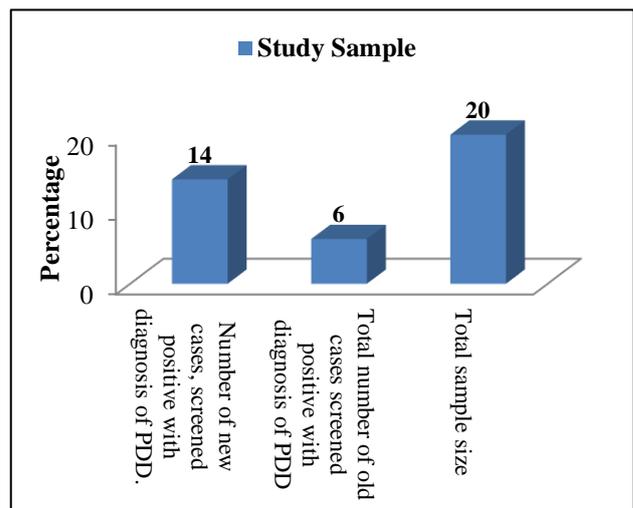


Figure 1: Study sample showing total number of subjects are 20.

Item-wise symptom category of Developmental Behaviour Checklist is presented in Table 2.

Table 1: Socio-demographic profile of the subjects (N=20).

Variable	N (%)
Age (in years)	
Up to 5	08 (40%)
6-12	09 (45%)
13-18	02 (10%)
More than 18	01 (5%)
Sex	
Male	18 (90%)
Female	02 (10%)
Locality	
Urban	13 (65%)
Rural	07 (35%)
Family type	
Nuclear	15 (75%)
Joint	05 (25%)
Birth order	
Eldest	03 (15%)
Middle	03 (15%)
Youngest	07 (35%)
Only Child	07 (35%)
Family income (rupees per month)	
Upper (>15,000)	03 (15%)
Middle (5,001-15,000)	07 (35%)
Lower (<5,000)	10 (50%)

Most frequent abnormalities are in the areas of social interaction (100%), communication (100%) and mood symptoms (100%), followed by hyperactivity (90%), inattention (80%), stereotyped and repetitive motor mannerism (80%), aggression (75%) and restricted, repetitive and stereotyped patterns behaviour, interests and activities (70%). Under the category of qualitative abnormality in reciprocal social interaction the items are; aloof, in his/her own world (100%), does not mix with peers (100%), avoids eye contact (95%), prefers to do things on own (90%), does not respond to feelings of other's (90%), wanders aimlessly (85%), does not show affection (80%), deliberately run away (40%) and resists being cuddled, touched/held (30%).

Under the category of abnormality in communication the items are; hums, whines, makes non-speech noises (20%), repeats same word/phrases over (50%), repeats back what others say like an echo (15%), speaks in whispers / unusual tone or pitch (10%), thoughts are disconnected (5%) and confuses pronouns (0%). Under the category of restricted, repetitive and stereotyped patterns of behaviour, interests and activities the items are; Likes to play with/hold unusual objects (70%), obsessed with idea/activity (70%), preoccupied with one or two interests (65%), stares at lights/spinning objects (65%), overly interested in mechanical things (30%), upsets over changes in routine/environment (30%), fears particular things / situations (25%), arranges objects / routine in strict order (10%) and lights fires (5%).

Table 2: Item-wise symptom category of DBC (most common symptoms).

Variables	N (%)
Abnormality in reciprocal social interaction	
Aloof, in his/her own world	20 (100%)
Does not mix with peers	20 (100%)
Abnormality in communication	
Hums, whines, squeals, makes non-speech noises	20 (100%)
Repeats same word/phrase over	10 (50%)
Restricted, repetitive and stereotyped patterns of behaviour, interests and activities	
Likes to play with/hold unusual objects e.g. Strings	14 (70%)
Obsessed with idea/activity	14 (70%)
Stereotyped and repetitive motor mannerisms	
Repeated movements e.g. hand flapping/rocking	16 (80%)
Unusual body movements / posture / walking	12 (60%)
Non-functional elements of play materials	
Smells, tastes/licks objects	09 (45%)
Mood symptoms	
Laughs for no obvious reason	20 (100%)
Unrealistically happy/elated	17 (85%)
Hyperactivity / inattention / impulsivity	
Overactive, restless, unable to sit still.	18 (90%)
Poor attention span	16 (80%)
Impatient	10 (50%)
Impulsive, acts before thinking	09 (45%)
Easily distracted from his/her task	06 (30%)
Aggression	
Throws/breaks objects	15 (75%)
Screams a lot	12 (60%)
Eating problems	
Fussy eater / food fads	11 (55%)
Sensory abnormalities	
Under reacts to pain	13 (65%)
Covers ears / distressed by certain sounds	09 (45%)
Disturbance in toileting	
Urinate outside toilet although trained	02 (10%)

Non-functional elements of play materials like smells, tastes/licks objects are 45%. Mood symptoms like laughs for no obvious reason (100%), unrealistically happy/elated (85%), irritable (60%), mood changes rapidly for no apparent reason (55%), cries easily for no reason (40%), appears depressed, downcast, or unhappy (25%) and tense, anxious, worried (15%).

Under the category of aggression, the items are; throws/breaks objects (75%), screams a lot (12%), has temper tantrums (55%), kicks, hits others (40%) and scratches or picks his/her skin (25%). Items under the miscellaneous category are; poor sense of danger (55%), stubborn (55%), eats non-food items (30%) and strips off clothes (25%).

Table 3: Age and the PDD diagnostic categories.

Age groups	Type of PDD	Total no.
Up to 5 years	Childhood autism	07
	Atypical autism	01
6-12 years	Childhood autism	06
	Rett's disorder	02
	CDD	01
13-18 years	Childhood autism	02
> 18 years	Childhood autism	01

Age and the PDD diagnostic categories as shown in Table 3. Childhood autism found in each age group, while atypical autism, Rett's disorder and CDD belonged to lower age group.

Table 4: ICD-10 diagnostic breakup of subjects.

Clinical psychiatric syndrome	Total no. (%)
Childhood autism	16 (18%)
Atypical autism	1 (5%)
Rett's disorders	2 (10%)
Other CDD	1 (5%)

Diagnostic breakup as per ICD 10 is shown in Table 4. Most frequent diagnosis is Childhood Autism (80%) followed by Rett's disorder (10%), Atypical Autism (5%) and Other CDD (5%).

Table 5: Severity of CARS.

Subjects	CARS	Mean
Non-Autistic (N=1)	29.5	-
Mild to moderately autistic (N= 3)	32.0 to 36.5	34.0±2.50
Severely Autistic (N=16)	40.0 to 55.0	45.16±6.20

Severity of CARS is summarized in Table 5, in which majority (80%) are severely autistic, while 15% are mild to moderately autistic and 1 subject (5%) is non-autistic on CARS.

DISCUSSION

Present study showed males were over-represented 90% (9:1), similar to previous studies (4:1 and 3:1). The mean age at presentation in the present study is 8.12±4.37 years. Cases of childhood autism were found in all age groups, while CDD, Rett's disorder and atypical autism were found in younger age group. Study done by Srinath, et al. (1989) states that infantile autism was more common in upper income group but in the present study most cases of PDD belonged to lower and middle socioeconomic status. Similar to previous study urban families were nearly doubled. Two third cases belonged to joint family. In contrast to previous studies, most children (70%) were youngest in birth order (Table 1).⁵

No family history of PDD was found in 1st degree relatives of PDD subjects. Prevalence of positive family history of psychiatric disorders (e.g. Schizophrenia and Hyperactivity) were quite similar to previous study done by Malhotra et al.^{6,15,16}

Percentage of perinatal complications was 25% which was similar to previous studies. This point indicates towards the possibility that peri-natal complications are of etiological significance for PDD.^{5,6}

Phenomenology

In accordance to previous studies onset was before 3 years of age and it was gradual.^{5,6} Under the category of qualitative abnormality in reciprocal social interaction the most frequent items were; aloof, in his/her own world (100%), does not mix with peers (100%) and avoids eye contact (95%), prefers to do things on own (90%) and does not respond to feelings of other's (90%), these findings were similar to previous work. The above suggests that impairment in reciprocal social interaction is most prominent symptom found in subjects with PDD.^{5,6}

As compared to previous studies, present study showed less prevalence of Echolalia (43% Vs 15%). Most common communication disturbances were non-speech voices (100%) and same phrase repetition (50%). Study did not find "pronoun confusion" in any subject but history of 'pronoun confusion' was present in 2 subjects. This may be because we have seen severe cases of autism who rarely converse verbally.^{5,6,8}

In the area of restricted, repetitive and stereotype patterns of behavior, interests and activities, the most frequent symptoms were 'likes to play with/hold unusual objects' (70%), 'preoccupied with one or two interests' (65%) and 'stares at light / spinning objects' (65%). These findings were alike to previous research work done in India. One interesting finding in present study was that subjects used to play with "polythene pouches", which are easily available on streets. In the Western setup's lights fire has maximum loading in autistic subjects. But present study has found only one subject, who lights fire. So, study reveals that unusual interest is also a prominent symptom in these PDD subjects, but these are somewhat different in this subcontinent as compared to western subcontinent.^{5,6}

In the category of stereotyped and repetitive motor mannerism, the most frequent items were, 'repeated movements' e.g. hand flapping/rocking (80%), 'unusual body movements/posture' (60%), 'facial twitches/grimace' (60%).^{5,6}

In the category of non-functional elements of play material 45% subjects showed symptoms like 'smells, tastes/licks objects. Almost all subjects (100%) had

mood symptoms. Anxiety symptoms were less than those found in study done by Malhotra et al (55% vs 26%).⁶

In the category of aggression, most frequent items were throws / breaks objects (75%), screams a lot (60%), temper tantrums (55%), eating problems (55%) and self-injury (25%). Malhotra et al in their study found 95% subjects had eating problems and 45% showed temper tantrums. It is possible that these PDD subjects communicate by showing aggression and control their environment by these activities.⁶

In the category of sensory abnormality 'under-reacts to pain' was found in 65% and 'covers ears / distressed by certain sounds' found in 45% of subjects. 10% subjects used to urinate despite being toilet trained as compared to 22% subjects in study done by Malhotra et al.⁶ Sleep disturbance was found in 30% subjects, alike to previous study.⁶

As compared to work done by Malhotra et al in which they found 20% of their subjects had psychotic features, present study did not find any psychotic features in their subjects.⁶

One subject showed "Peak ability" of producing rhythm on any surface in an exceptionally coordinated manner, which was considered much above the expected level as per his age.

A majority of the subjects (80%) were severely autistic on CARS (scores 40.0 to 55.0) (Table 5). This indicates that there are chances that milder autistic children may be there in the community as mentally retarded or oddly behaved children.

CONCLUSION

The mean age at presentation of the children with PDD was 8.12 years. 90% of the subjects were males. 16 (80%) subjects had a diagnosis of childhood autism. 2 (10%) subjects were of Rett's disorder. 1 (5%) subject of other childhood disintegrative disorder while 1 (5%) subject had atypical autism. 80% of the subjects had severe autism on CARS. Hyperactivity, inattention and impulsivity were present in 90%, 80% and 45% of subjects respectively. However, a diagnosis of ADHD could not be made due to ICD-X DCR criteria.

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Conflict of interest: None declared

Ethical approval: Not required

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