BRIEF REPORTS

PSYCHOSOCIAL DISORDERS AMONG DISABLED CHILDREN AND SOME EPIDEMIOLOGICAL CORRELATES

Ananya Ray Laskar*, V.K. Gupta**, Dharmendra Kumar***
M.M. Singh****, Nandini Sharma*****

ABSTRACT

This study was undertaken to assess the psychosocial changes and its determinants in disabled children in comparison with apparently healthy children so that necessary modifications can be designed and implemented accordingly. A cross-sectional study was conducted from April 2005 to March 2006 in the Institute for Physically Handicapped, New Delhi. Parents of 100 children with physical disability of age group 6-15 years were interviewed using semi-structured questionnaire and Childhood Psychopathology Measurement Scale (CPMS). 37% of the disabled children had psychosocial problems according to the CPMS scale, while among the children without disability it was 17%. Presence of high proportion of psychosocial problem indicates a need for screening and early detection of psychosocial problems in developing rehabilitation programmes for children with physical disabilities.

INTRODUCTION

According to NSSO 2002 report, India has about 18.49 million disabled people. Among different types of disabilities, prevalence of locomotor disability is the highest in the country (55% in males and 46% in females). Locomotor disability accounts for the highest number among disability in India (1046 in rural and 109 in urban for every 100,000 population) (1). Less than 10% of children and youth with locomotor disabilities in India have access to any form of education or even their basic rights (2). Such children and adolescents face functional limitations for a lifetime which in turn make them highly vulnerable to developing psychosocial problem (3,4). Their caregivers have to cope with their special needs and therefore disability

in children are not only problem for affected children, but in real sense they are 'family disease'(5). This study attempts to assess the psychosocial problem in locomotor disabled children of age group 6-15 years in comparison to their non-disabled counterparts.

METHOD

A cross-sectional study was conducted in the outpatient department (OPD) of the 'Deen Dayal Upadhyay' Institute for Physically Handicapped (IPH) New Delhi, India, from April 2005 to March 2006. All subjects attending the OPD during this period, fulfilling the inclusion criteria and willing to participate, were enrolled for the study. The inclusion criteria were: children of age group 6-15 years, with permanent locomotor disability attending the OPD. For the purpose of this study, the definition of the Government of India was used. 'Locomotor Disability' is a person's inability to perform distinctive activities associated with moving both himself and objects from place to place and such inability resulting from affliction of either bones, joints, muscles or nerves depending on the extent (1). Children with multiple disabilities such as visual, hearing or mental disability along with locomotor disability and those not staying with any of the parents were excluded.

Another group of apparently healthy children without any disability were randomly selected from the nearby field practice areas for the comparison with the first group after matching for age, sex and socio-economic status. This group was the control group.

Tool

Assessment of the psychosocial status of the child in relation to the disability was conducted by using Childhood Psychopathology Measurement Scale (CPMS). This is a standardised scale used extensively all over India (6). This is based on Child Behaviour Checklist (CBCL) devised by Achenbach and Edelbrock (7). CPMS has been standardised on the Indian population taking into consideration the cultural differences. It is applicable to both sexes and has been validated for the age group of 4 to 15 years. It measures psychosocial problems in children which is manifested in the form of behaviour that is inappropriate for that particular age, particularly when it is qualitatively pathological in nature (6). Each question regarding the child's behaviour during the past one year and is to be asked to the parent, preferably the mother. It contains 8 factors namely low intelligence with behavior problem, conduct disorder,

anxiety, depression, psychotic symptoms special symptoms, phobias and somatisation with a set of questions designed in Hindi.

Interpretation of the scale

The answers in each item are scored on a 2-point scale (0/1) where '0' denotes absence and '1' presence of particular symptom. Those children who score 10 or more in CPMS are considered as positive for psychosocial problems and those scoring < 10 are considered "normal". With this cut off score the reported sensitivity is 82% and the specificity is 87%. Any child having an abnormal CPMS score was referred to the clinical psychologist of the institute and appropriate counseling was given to the child as well as the parent/s.

Analysis

Data were analysed using EPIINFO-2003 and SPSS version 12. For qualitative data, proportions were calculated and Chi-square and Mann Whitney Mann-Whitney test were used for non-parametric data.

RESULTS

Out of the total of 329 children belonging to the age group under study, 100 were selected based on the inclusion criteria and willingness to participate. Hundred children without any disability were selected randomly from the two nearby field practice areas under the department of Community Medicine, for the comparison after matching for age, sex and socio-economic status with the first group.

Majority of the children (35%) were between 14-15 years of age, followed by 20 children each in age groups of 6-7 years and 12-13 years. 59% of the children were males. 58% of the subjects were of urban origin and belonged to Hindu nuclear families. 50% of them belonged to the upper-lower socio-economic class and the rest to the lower-middle (33%) or lower socio-economic class (17%) classification. 63% of the disabled children were currently studying, as against 74% in the comparison group. There were 29% school drop-outs in the former group as against 18% in controls.

Psychosocial problems were detected in 37% of the disabled children as compared to 17% among children without disability. 57.1% of the disabled children, with abnormal CPMS

score belonged to the age group of 14-15yrs, as against 27.8% in the control group. The proportion of males detected to have psychiatric disorder was higher among males in both the cases (39%) and controls (20.4%) than females.

On statistical analysis, association of disability with psychiatric disorder was found to be statistically significant [O.R.=2.87 (C.I. 1.41-5.87)]. Table 1 shows the overall mean scores were more in the study group than control group. The scores in terms of individual factors show that the mean scores are higher for 'Depression', 'Psychotic symptoms' and 'Anxiety' among cases than controls. The mean scores were higher for 'Conduct disorders' among controls. Significantly different scores were observed for three items i.e., conduct disorder, anxiety and depression among the study group than controls (p <0.01).

Table 1. Comparison of Overall and Individual Scores using the Childhood Psychopathological Scale

C.P.M.S. Factors		Mean Scores (S.D.)		P values
		Cases	Comparison	
	Overall Scores	7.81 (3.57)	7.12 (2.72)	1.9
1.	Low Intelligence with Behaviour Problem	1.98 (1.5)	1.98(1.16)	0.49
2.	Conduct Disorder	0.54 (0.81)	2.19 (1.45)	<0.001
3.	Anxiety	0.73 (0.71)	0.29 (0.45)	<0.001
4.	Depression	2.12 (1.37)	0.79 (0.79)	<0.001
5.	Psychotic Symptoms	1.01 (0.82)	0.83 (0.71)	0.14
6.	Special Symptoms	0.25 (0.54)	0.15 (0.35)	0.272
7.	Physical Illness with Emotional Problems	0.81 (0.72)	0.63 (0.59)	0.10
8.	Somatisation	0.48 (0.61)	0.36 (0.57)	0.13

* p values were derived from Mann Whitney Test

Statistically significant association of disability with psychiatric disorder [Odds Ratio of 2.87 (95% C.I 1.41to 5.87), c2 = 10.15,].

Mean number of family members was 5.88 and 6.49 in the study and control group respectively. As is evident from Table 2, the proportion of psychosocial disorder increased with the increase in size of the family in both the groups. However, no statistical significance was found (p >0.05). The mean family-size (total number of children) was 3.19 in the study group and 3.32 in the control group.

Table 2. Association of psychiatric disorder with total members in the family

No. of family members	Cases			Control		
	No Disorder	Disorder	Total	No Disorder	Disorder	Total
3-4	19 (70.4)	8 (29.6)	27 (100.0)	17 (94.4)	1 (5.6)	18 (100.0)
5-8	39 (60.9)	25 (39.1)	64 (100.0)	56 (87.5)	8 (12.5)	64 (100.0)
e"9	5 (55.6)	4 (44.4)	9 (100.0)	10 (55.6)	8 (44.4)	18 (100.0)

no statistical significance was found (p >0.05)

Table 3 shows that children having two or more siblings had a higher prevalence of disorder in both the cases (56.3%) and control group (37%). The association was statistically significant among cases [OR= 0.30, CI: 0.1-0.83 (p 0.009)].

Table 3. Association of Psychiatric Disorder with Total No. of children in the Family

No. of children	Cases			Control		
	No Disorder	Disorder	Total	No Disorder	Disorder	Total
1-2	30 (78.9)	8(21.1)	38 (100)	23 (92.0)	2 (8.0)	25 (100)
3-4	26 (56.5)	20(43.5)	46 (100)	51(83.6)	10 (16.4)	61 (100)
e"5	7 (43.8)	9(56.3)	16 (100)	9 (64.3)	5 (35.7)	14 (100)

The association was statistically significant among cases [OR= 0.30 (95% CI: 0.1-0.83) with c2 =6.69 (p-value of 0.009)].

Table 4 shows a relationship between the mother's educational status and proportion of disorder. Poor educational status of the mother was significantly associated with the child's psychosocial disorder [O.R= 5.59 CI: 2.01-15.94, (p value 0.0001)] while in the control

group it was not found to be significant (p value 0.116). However, no significant association was seen with fathers educational; status in any of the two groups.

Table 4. Association of Mother's Education with Psychiatric Disorder

Mothers Education	Cases		Control	
	No Disordern(%)	Disordern(%)	No Disordern(%)	Disordern(%)
Illiterate	10 (34.5)	19(65.5)	23 (74.2)	8(25.8)
primary school	26 (61.9)	16(38.1)	40 (83.3)	8(16.7)
secondary	17 (89.5)	2(10.5)	20 (95.2)	1(4.8)
Bachelor deg	10 (100.0)	0	0	0

Mother's poor educational status significantly associated with the child's psychosocial disorder [O.R= 5.59 (CI: 2.01-15.94), c_2 =14.25 (p value 0.0001)] In the control group it was not found to be significant (p value 0.116).

The median per capita income was Rs.750/- and 700/- per month in the study group and control group respectively. Table 5 reveals a higher proportion of disorder in lower socio-economic status as compared to the higher socio-economic status. It was found to have a significant association with prevalence of disorder [OR.= 18.67 CI: 6- 60.8 (p <0.001)].

Table 5. Association of Socio-Economic Status with Psychiatric Disorder

Socio-Economic Status	Cases		Control	
	No Disordern(%)	Disordern(%)	No Disordern(%)	Disordern(%)
Lower	13 (39.4)	20 (60.6)	23 (69.7)	10 (30.3)
Upper-Lower	35 (70.0)	15 (30.0)	45 (90.0)	5 (10.0)
Lower-Middle	15 (88.2)	2 (11.8)	15 (88.2)	2 (11.8)

Significant association of lower socio-economic status with prevalence of disorder [OR.= 18.67,CI: 6-60.8, c_2 = 37.7 (p <0.001)].

In the control group, 2-tailed Fishers Exact Test was 0.0016, OR of 5.98 (95% C I : 1.75 -21.05).

Table 6 reflects that psychosocial disorder was more among the children who had never gone to school or in school drop-outs, than who were currently studying, in both the study and control groups. The association between poor school-enrolment among children with psychosocial disorders was found to be significant [OR =4.52 , CI: 1.71-12.20, p 0.006] in the study group and in controls [OR =3.73 CI: 1.13-12.8, p 0.012].

The most common reasons for drop-out, cited by the parents, included inability to use public transport (75.7%), over dependency on other family members (62%) lack of enough number of special schools or senior secondary schools being located far away (46%), problem of security especially in case of girls (38.4%) and other problems such as family denial and lack of money.

Table 6. Association of Educational Status of the Child with Psychiatric Disorder

Educational Status	Cases		Control	
	No Disordern(%)	Disordern(%)	No Disordern(%)	Disordern(%)
Never gone to school	1 (12.5)	7 (87.5)	6 (75.0)	2 (25.0)
School Drop-out	8 (27.6)	21 (72.4)	10 (55.6)	8 (44.4)
Currently studying	54 (85.7)	9 (14.3)	67 (90.5)	7 (9.5)

The association between poor school-enrolment among children with psychosocial disorders was found to be significant [OR =4.52 (95% CI: 1.71-12.20), c2 =11.77 and p value 0.006] in cases and OR =3.73 (95% CI: 1.13-12.8), c2 = 6.18 and p value 0.012.

DISCUSSION

The age distribution in the study shows a predominance of 14-15 yrs which points to the fact that majority of the clients were brought to the specialised government institutions such as IPH with long-standing disability when the associated psychosocial disorders had already set-in. An early consultation with the clinical psychologist at the onset of the disability could have helped tackle children with such disorders, or even averted the progression.

There is a preponderance of males among the children attending the OPD. Another Indian study also reported that male representation was uniformly dominant at about 71% amongst persons of various socioeconomic strata (8). This suggests the existence of gender bias in

terms of accessing rehabilitation services throughout all socio-economic status groups. It may be attributed to the fact that greater attention is often paid to the male child, hence any deviation from normal behaviour is noticed at an earlier stage (3).

In this study, a statistically significant association was found between disability and psychosocial disorder. Similar results were observed in the study by Banerjee which showed a prevalence of 33% (9) while in another community based study by Premarajan et al, it was only 5.8% (10). Overall prevalence of psychosocial disorders among school-aged children without disability was found to be 13.7% in a study conducted by ICMR (11), which is lower than the 17% found in the present study. This variation in the prevalence may be due to the difference in inclusion criteria, screening tools used to measure the psychosocial disorder, age group of children, sample size and sampling methods used.

The findings depict that more the number of children in the family, higher is the chance of having psychiatric disorder. The association was found to be statistically significant in the case group with an OR= 0.30 (95% CI: 0.1-0.83 with c^2 =6.69 p-value of 0.009). These findings are in agreement with those of Verghese and Baig who found prevalence to be 8.6 % in larger families as compared to 5.2% in smaller families (12). Lal and Sethi also showed a high prevalence of psycho-social problems in larger families (55.7%) than in smaller families (13). This could be due to the fact that less individual attention is paid to the child with special needs. Due to other pressing concerns, the parents may not be aware of the child's mental and emotional needs and any deviant behaviour is either not noticed early, or ignored.

It was observed that the mother's education was significantly associated with the child's psychosocial disorder [O.R= 5.59 (95%CI: 2.01 to 15.94), c^2 =14.25 (p value 0.0001)]. These findings corroborate with those of Gortmaker et al, who found significant decrease in prevalence of psychosocial disorders, as education of the mother increased from less than high school to completed college (14). Disabled children with better social support particularly by mothers are less likely to develop adjustment problems (15). Maternal education and awareness level has a crucial role to play in the child's overall psychological development. Educated mothers can deal better with psychological needs of the child. Moreover, it increases her awareness regarding any developmental or behavioural deviance of the child at an earlier stage when it is still amenable to treatment rather than at a later stage when deviance becomes established.

Socio-economic status was found to have a significant association with prevalence of disorder [OR.= 18.67 CI: 6-60.8 (p <0.001)]. Disability accentuates poverty due to additional cost of treatment, transport and social exclusion may lead to exacerbation of psychosocial problems. The Wisconsin longitudinal study showed that parents of a child with developmental disability had lower rates of employment, larger families and lower rates of social participation which may herald psychosocial problems in these children (16). An Indian study found that prevalence of behavioural disorders among children was maximum (58%) in lower socio economic status (17). Another study quoted 21.74% in the lower socio-economic class, as compared to 8.65% in the middle class (18). Lipman et al found that poor socio economic status was significantly associated with behavioural problems and poor school performance in children (19).

Schools have a crucial role to play in the formative years of life. Psychosocial disorder was found to have a close link with the child's educational status in the present study. These disorders were more common among the children who had never gone to school or among school drop-outs, than those who were currently studying in both the study and control groups. A significant association was found between poor school-enrolment and psychosocial disorders. The NSSO 2002 survey (58th round) shows that illiteracy rate in India among the physically disabled stands at 55% in the urban area and 41% in the rural areas. A meager 9% have completed secondary education or more.

CONCLUSION

Disability coupled with lower socio-economic status, large family size, child and mothers' educational status were found to be significantly associated with psychosocial disorders. Screening for behavioral disorders in disabled children should be incorporated in the initial assessment of such children for early detection and appropriate intervention. This will instill self-confidence and nurture social competency for a socially and economically productive life.

* Address for correspondence
Senior Resident Dept of Community Medicine
MAMC, New Delhi
A - 601, Abhyant Apartments,
Vasundhra Enclave, Delhi-110096.
Email: ananya.ray@rediffmail.com

**Professor
Deptt of Community Medicine
MAMC, New Delhi

***Director
Institute for Physically Handicapped
New Delhi

****Professor
Deptt of Community Medicine
MAMC, New Delhi

*****Professor
Deptt of Community Medicine
MAMC, New Delhi

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