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A CROSS SECTIONAL STUDY OF BEHAVIOR DISORDERS IN 6-15 YEARS AGE GROUP IN RURAL AREA

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ABSTRACT

Background: Child & adolescent psychiatric disorders and behavioral disorders are not given adequate attention. Such studies are either school based or hospital based.

Methods: To study the prevalence and pattern of behavior disorders among children from the community a cross sectional study was conducted in rural area with 600 children of 6-15 years age group by the 'Purposive Sampling' method. Percentages & chi square test was used.

Results: Response rate was 94%. Out of 600 children 252(42%) had behavior disorders and majority 155(26%) had at least one behavior disorder. Among these Personality problems (44.84%), eating problems (33.73%), habit problems (23.01%), Scholastic problems (17.46%), sleep problems (11.9%), antisocial problems (11.11%), psychosomatic (7.53%) & speech problems were (2.77%). Only 22% informants of children knew about psychiatric disorders.

Conclusions: The prevalence of behavior disorders was found to be high in children, but informants were found to be largely ignorant about these problems.

Key words: behavioral disorders, rural population, awareness.

INTRODUCTION

Behavioral disturbances are notable child health problem, the importance of which is increasingly recognized in most countries.[1] "A behavior problem is nothing but a deviation from the accepted pattern of behavior on the part of the child when he is exposed to an inconsistent social and cultural environment. [2]

As per APA-DSM ii (1968) "Behavior Disorders of Childhood & Adolescence" is a category reserved for" disorders occurring in this age group that are more stable, internalized and resistant to treatment than transient situational disturbance but less so than psychoses, neuroses and personality disorders." [3] Only one out of these hundred children gets any kind of care or treatment. Very often this is because of lack of adequate health services or trained manpower in the developing countries .Lack of awareness among the people regarding mental disorders is an important cause. A large

number of children suffer from behavioral disorders during their development. Many of these problems are transient and may not even be noticed. At times, however, the extent of these problems and their overall effects on a child's development can be serious.[4]

Aim was to study common behavioral disorders and their pattern and prevalence in a cross sectional field study in rural area under RHTC of a tertiary hospital in 6-15 year old children.

METHOD

Child behavior check list (CBCL) is different for 18month-5year(CBCL/1.5-5) and 6 years -18 year(CBCL/6-18) groups.[5] The basic processes we use to think do not change beyond adolescence mostly after 16 years of age [6] so 6-15 school age groups was selected. Guidelines from CBCL were followed and a questionnaire was prepared using classification of behavior disorders from textbook of paediatrics.[7] The questionnaire included questions mostly of dichotomous response, sometimes multiple options were used. The information for last 6 months was collected for presence of problems for repeated bouts of persistence. When the problem was frequently present for last 6 months it was taken as presence of problem in the child. Age appropriateness, frequency, intensity, severity, number and diversity are the criteria to define behavior disorder. Pilot study showed prevalence of 41%.

Due to wide range of variation of prevalence rate to estimate sample size, 40% of prevalence is utilized and accordingly the sample size is calculated with following formula.

$N = {}_{Z\,(1-\alpha/2)}{}^{2}\, p\,(1-p) / d^{2}$

Where p= anticipated population proportion

$Z\,(1 - {}^{\alpha}/_{2})$ = Standard error of population proportion at 95% level i.e. 1.96

d= absolute precision required on either side of the proportion (101)

p=0.4 (0.40%, based on pilot survey)

α error= 0.05 (5%)

Confidence level =95%

It was anticipated that prevalence was within 4 percentage points of the true value with 95 % confidence

Thus d= 0.04 (4%) & the expected proportion was 36-44%.

Thus $N= (1.96)^{2} \times 0.4 \times 0.6 / (0.04)^{2} = 576.24$

To round off, a sample of 600 was taken.

Using Purposive sampling method 600 sample size was studied. As this is a community based study, to have a uniform inclusion criteria, families residing from last 5 years or more in that area were included. Present study is conducted in community under RHTC (Rural Health Training Centre) at Palghar (Dist. Thane). Data was collected from different areas of west Palghar. Children with diagnosed psychiatric problems, developmental delays, mental retardation and those requiring long term hospitalization for neurological problems were excluded. Period of study: March 2007 –May2007. The proposal was approved by Institutional Ethical Committee. Consent of the informants (mostly parents) was taken and absolute confidentiality of information was maintained.

Initially questionnaire included information of "sexual behavior", but observing non response and feasibility, the information dropped from study questionnaire. The remaining categories included Antisocial, Habit, Personality, Psychosomatic, Scholastic, Eating, Sleep & Speech problems. Various socio-demographic correlates and some indirect factors were studied.

Parental handling questionnaire was directed towards 600 parents. It consisted of 10 questions for care and 4 questions for control in parenting. Low scores indicated high care and control. Low care-high control showed Affectionless control. High care-high control showed Affectionate constraint. High care-low control showed Optimal bonding & low care-low control showed weak bonding.[8]

Statistical Analysis: Proportion and Percentages were obtained. Chi square test was used to check the association of different factors with Child Behavior Problem. Binary logistic regression was applied. To examine the relationship of each independent variable with the dependent variable (problems), Binary Logistic Regression was performed. This procedure examines the above relationship after accounting for interaction and confounding. Entry into the analysis was p value of <0.1 in a univariate analysis.

RESULTS

Total 600 children were studied from the age group of 6-15 yrs. Majority of the children were from the age group of 6-12 i.e.456 (76%) children. Boys constituted 52% and 48% were girls. The prevalence found (42%) was quite high. Various behavior problems categories were further divided into different types (Table 1)

Table 1: Pattern of behavior problems

Problems	No. (%)
No. of problems	
None	348 (58.0)
One	155 (25.83)
Two	71 (11.84)
Three	19 (3.16)
Four	7 (1.17)
Habit Problems	
Enuresis	23 (9.12)
Nail biting	25 (9.92)
Thumb sucking	6 (2.38)
Teeth grinding	4 (1.58)
Antisocial Problems	
Lying	8 (3.17)
Stealing at home	3 (1.19)
Quarreling	14 (5.56)
Destructiveness	1 (0.4)
Fighting	1 (0.4)
Hurting	1 (0.4)
Problems of eating	
Likes/dislikes	24 (9.52)
Eating outside	26 (10.31)
Food faddiness	10 (3.96)
Food refusal	19 (7.53)
Over eating	3 (1.19)
Pica	3 (1.19)
Personality problems	
Fears	32 (12.70)
Shyness	28 (11.11)
Temper tantrums	28 (11.11)
Jealous	1 (0.40)
Aggressive	24 (9.52)
Scholastic problem	
School phobia	3 (1.19)
Absenteeism	15 (5.95)
Poor performance	13 (5.15)
Repeated failures	13 (5.15)
School dropout	
Yes	27 (4.5)
No	573 (95.5)
Dropout reason	
Economic	11 (4.36)
Disinterest	15 (5.95)
Repeated failures	1 (0.40)
Psychosomatic problem	
Stomach aches/ cramps	2 (0.79)
Headaches	7 (2.77)
Aches/pains	8 (3.17)
Problem with eyes	2 (0.79)
Sleep problems	
Insomnia	1 (0.40)
Sleep talking	19 (7.53)
Night terrors	3 (1.19)
Sleep walking	7 (2.77)

No significant association of behavior problems was found with age (p-0.631), gender (0.138), religion (0.087), Birth order (0.380), mother's education status (0.596), father's education status (0.687), parenting style (0.245).

Table 2: Association of behavior problems with socio-demographic and some indirect correlates

Associated factors	Behavior disorders		P-value
	Present (%)	Absent (%)	
Type of family			
Nuclear	167(38.7)	264(61.3)	0.029
Three generation	73(51.4)	69(48.6)	
Extended	12(44.4)	15(55.6)	
Total	252(42.0)	348(58.0)	
Place of residence			
Non slum	111(37.8)	183(62.2)	0.039
Slum	141(46.1)	165(53.9)	
Per capita income			
≤1500	186(45.3)	225(54.7)	0.044
1501-3000	43(37.1)	73(62.9)	
≥3001	23(31.5)	50(68.5)	
Mother's working status			
Works	96(50.8)	93(49.2)	0.006
Doesn't work	155(38.3)	250(61.7)	
Not applicable*	1(16.7)	5(83.3)	
Child's birth weight			
<2.5kg	59(54.1)	50(45.9)	0.002
≥2.5 kg	124(36.6)	215(63.4)	
Not available**	69(45.4)	83(54.6)	
Sibling rivalry			
Present	81(51.6)	76(48.4)	0.005
Absent	171(38.6)	272(61.4)	
Conflicts with parent			
Mother	25(58.1)	18(41.9)	0.005
Father	6(85.7)	1(14.3)	
Both	4(66.7)	2(33.3)	
None	217(39.9)	327(60.1)	
Playing games			
Outdoor	191(45.5)	229(54.5)	0.036
Indoor	35(38.0)	57(62.0)	
None	23(30.7)	52(69.3)	
Both	3(23.1)	10(76.9)	

*-Mother expired,
**- Informants didn't know the birth weight of child
These values are not considered for calculation of p value

Table 2 shows significant demographic and some indirect correlates.

Sibling rivalry, mother's working status, conflict with parents& playing games were the significant predictors for child behavior problems.

Age group 6-12 yrs had high percentage of behavior disorders (42.5%) (p value-0.631) Similarly male children had more disorders (44.9%). In the school dropout children out of 28, 13 (46.4%) had behavior disorders though the finding is not significant.

Table 3: Binary Logistic Regression-Final model

Variable	β	Odds Ratio	95% CI	P Value
Sibling Rivalry	-0.484	0.616	0.415-0.912	0.016*
Type of family	0.265	1.304	0.956-1.779	0.093
Mother's working status	-0.159	0.852	0.773-0.939	0.001*
Per capita income	-0.227	0.796	0.568-1.115	0.186
Conflict with Parents	-0.781	0.457	0.244-0.856	0.015*
Birth wt of child	-0.222	0.800	0.607-1.055	0.114
Playing games	-0.211	0.809	0.671-0.975	0.026*
Residence	-0.009	0.990	0.620-1.582	0.968

β = Correlation coefficient

Table 4: parenting style and behavior problems

Parenting style	Behavior problems	
	Present n=252 (%)	Absent n= 348 (%)
Affectionate constraint	106(42.0)	140(40.2)
Affectionless control	30(11.9)	27(7.8)
Optimal bonding	77(30.5)	126(36.2)
Weak bonding	39(15.4)	55(15.8)
Total	252(100.0)	348(100.0)

Pearson's χ^2=4.154, d.f.=3,p=0.245(NS)

Table 5: Health seeking behavior of parents regarding Psychiatric problems in children

Knowledge about psychiatric disorders	Number (%)
Yes	130 (22.0)
No	470 (78.0)
Possibility of psychiatric disorders in children	
Yes	123 (21.0)
No	304 (50.0)
Don't know	173 (29.0)
Reasons for psychiatric disorders in children	
Maltreatment by parents	77 (13.0)
Neglect by parents	46 (8.0)
Nutritional deficiency	12 (2.0)
Family tension	35 (6.0)
Don't know	430 (71.0)
Treatment preference	
Modify behavior towards children	155 (26.0)
Will be alright with age	37 (6.0)
Doctor	348 (58.0)
Don't know	60 (10.0)
Preference for place of treatment	
Govt. Hospital	250 (42.0)
Pvt. Hospital	346 (57.0)
Don't know	4 (1.0)
Time lag between onset and seeking help	
Immediate help	510 (85.0)
Wait till symptoms worsen	55 (9.0)
Don't know	35 (6.0)

Parenting style questionnaire by Savitha Malhotra was used [8]. The association of parenting style and behavior disorders was not found to be significant (p-0.245). (Table 4) Health seeking behavior of parents/informants regarding psychiatric problems in children was studied. 6 questions were included with multiple options. In the study, parents, relatives or informants of only 130 (22%) children had knowledge about psychiatric disorders. Majority (58.0%) felt the need of doctors for the treatment of such cases and (57.0%) preferred private hospital as place of treatment. (Table:5)

DISCUSSION

In present study prevalence is 42%. In 348 (58%) children problems were absent. The exact prevalence of behavior disorders is not known until now. In India, the studies available have estimated prevalence only in clinic or school settings. It gives prevalence in between range of 3% - 38.8%. In school children, the prevalence observed was 35.2% by Singh T.B. in 1988.[4] In 2001, a study by Indira Gupta in school children of Ludhiana estimated prevalence of 14.63% of which 36.5% had significant problems.[4]In our study prevalence is more than other studies. It may be because this study is community based & hence school going and non-school going children were included whereas other studies are either clinic or school based.

Antisocial problems were found in 11.11% children. Various studies found the problems in the range of 11%-34%.[9,10,11,12] Personality problems were found in 44.84%[10,13,14] Personality development of children depends upon home atmosphere and parent child interaction. The high prevalence may be due to conflicts of children with parents which were found to be highly significant (p-0.005). TR Deivasigamani, Jyoti Shenoy, MS Bhatia [10,15,9] found personality problems 11.7%, 10.3% & 10.0% respectively only.

Habit problems were found in 23.01%.Among these main problems were Thumb sucking (2.38%), nail biting (9.92%) and enuresis (9.12%). Indira Gupta reported 7.47% of children with nail biting, 5.39% children with thumb sucking and 20.33% children with enuresis[4]Nowadays almost every parent faces eating problems of children. Frequency of consuming different foods and eating pattern of children is a matter of concern for their health and wellbeing.

School age and adolescence are the sensitive period for dietary changes, brought about by the peer pressure and environment. Advertisements, social mobility and scientific awareness influence

food attitude and food behaviors of children including food preferences and eating style. Eating problems were found to be 33.73%. PK Singhal found 23.2% prevalence of eating problems in 1-15 years children.[13]

Scholastic problems were (17.46%). Shobha Srinath observed 27.09% prevalence of education problems in children in 4-16 years age group at Bangalore.[16] PK Singhal found 47.4% children with school problem [13] In our study sleep problems were found in 11.9% children. Daniel J.Gottlieb found 25% prevalence of sleep problems among children aged upto 8 years.[17] In 7(2.77%) children stammering was present. M. S. Bhatia also reported speech problems were associated with behavior disorders, mainly habit problems like nail biting, enuresis etc and also personality problems like situational fear and temper tantrum.[9]

Psychosomatic problems were observed in 7.53%. Psychosomatic symptoms are by definition clinical symptoms with no underlying organic pathology. The prevalence rate for psychosomatic complaints in children and adolescents has been reported to be between 10-25%. There is higher prevalence in girls during adolescence. Symptoms peak around age 7 years in boys and ages 6-16 in girls. The most common symptoms are stomach aches (peak at age 9 years), headaches (peak at age 12 years), musculoskeletal pain, and chest pain. [18]

Socio-demographic correlates like child's birth weight (p-0.003) was highly significant. Manju Rahi [15] in a cross sectional study done in Miraj, Maharashtra found significant association of low birth weight with psychopathological disorders in children. Even though this study didn't specify the prevalence of behavior disorders, it certainly concludes the need to educate the community about psychological implications of low birth weight. [15]

The association of type of family was found significant.(p-0.029) Indira Gupta[4] found more prevalence of behaviour disorders in children from joint families, which could be explained by the inconsistent discipline these "multimothered" children were exposed to. It may also be added that such a family structure has not been so successful in providing a stable environment. [4]

Place of residence was also found to be significant. (p-0.039) Study on behavioral problems in children in Dhaka, Bangladesh [19] revealed that mothers reported 11.8% of boys and 10.7% of girls, and teachers reported 12.8% of boys and 11.2% of girls to have behavior disorders. Boys scored significantly higher than girls, and children from lower socio-economic status obtained higher problem score than children from upper and middle socio-economic status. Slum dwelling children have higher problems than those of the non-slum areas. [19]

Per capita income was found significant.(p-0.044) B. B. Sethi [20] in a psychosocial study of delinquents with special reference to aggression in Lucknow, found that majority (94.3%) of the sample belonged to the lower income group and such an observation has also been made by various investigators (Courtes and Gatti , 1972; Adams 1973; Aring 1973).[20] Mother's working status was highly significant (p-0.006) Mary C. Howel in US stated that, working mothers cannot pay much attention and give much time for children as compared to homemaker (housewife) mothers, which affects psychosocial development of children. [21]

A conflict with parents was highly significant. (p-0.005) N. D. Dutta Banik found that many behavioral problems in children are due to maladjustment and these are much greater among children who do not have close, harmonious relationship with their parents and among those whose parents are in discord with each other. [2] Sibling rivalry was also found highly significant (p-0.005). Sibling rivalry is defined as competition and sometimes aggression among siblings that is not intended to injure or harm. Definitions of normal sibling rivalry vary drastically based on culture, values and beliefs. T.R. Deivasigamani (1990) in a study of psychiatric morbidity in primary school children found more children with sibling jealousy in positive group. [10]

This study has shown higher prevalence of behavior disorders in children playing outdoor games and least prevalence in children who played both indoor and outdoor games. This is in contrast to the findings obtained by other studies which have shown less prevalence of behavior disorders in children who play mainly outdoor games. Plays contribute significantly to the development of children. They help in child's physical, mental, emotional, aesthetic and character development. They not only afford it pleasure, but also provide a means of expression for many instincts.

CONCLUSION

Prevalence of behavior problems found in our study was high (42.0%).The detailed pattern of behavior problems was studied. Association between parenting style & behavior problems was not found significant, though optimal bonding was seen in 203(34%) children. Optimal bonding may reduce child behavioral problems. Knowledge of parents and informants was poor regarding psychiatric disorders. Majority (58.0%) felt the need of doctors for the treatment of such cases and (57.0%) preferred private hospital as place of treatment.

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