SPECTRUM OF PSYCHIATRIC SYMPTOMATOLOGY IN CHILDREN IN HIGH AND LOW SOCIO-ECONOMIC GROUPS IN LUDHIANA

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ABSTRACT

A door to door survey was conducted to study the spectrum of psychiatric symptomatology in children aged 1-12 years belonging to high and low socio-economic groups. One hundred families in each group were studied. Symptom prevalence rate was comparable in the two groups, i.e., 479/1000 in the high socio-economic (HSE) group and 487/1000 in the low socio-economic (LSE) group. However, there were significant differences in the spectrum of symptomatology. Symptoms like quarrelsomeness, disobedience, abusive language, stealing, truancy, pica, school refusal, enuresis, mental subnormality and poor scholastic performance were significantly more in the LSE group. In the HSE group, symptoms like nail biting, food refusal, food fads and temper tantrums were significantly more.

Key words: *Childhood psychiatric symptomatology, Epidemiology, Socio-economic class.*

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Information about childhood psychiatric disorders in developing countries is scarce. A few surveys conducted in India reveal varying figures of prevalence ranging from 6.7 to 35.4%(1-3). Apart from cultural, environmental and intra-familial factors which produce psychiatric disturbances in children, socio-economic factors are also known to play a definite role in affecting the pattern of mental ill heath(1,4,5). The studies conducted in India(4,5) are limited to samples drawn from hospital based child guidance clinics. We present the spectrum of psychiatric symptomatology in children of high and low socio-economic groups in Ludhiana, a prosperous industrial city of Punjab.

Material and Methods

Two localities inhabited by different socio-economic groups were identified. Sarabha Nagar has residence of mainly the affluent, while the Jawahar Nagar Camp is a locality with comparatively poorer socio-economic background. The first 100 families from Sarabha Nagar which fitted into Class 1 of the Kuppuswamy Scale(6), defined as high socio-economic (HSE) group, and the first 100 families from Jawahar Nagar Camp which fitted into Class V, defined as low socio-economic (LSE) group, were taken up for this study. A period prevalence rate was calculated from a record of all symptoms, present or past, within the given period of one year in each case as under:

$$\text{Period prevalence rate} = \frac{\text{Number of subjects who are sick sometimes during a fixed period}}{\text{Average number of subjects exposed to risk during that period.}} \times 1000$$

Recording of Data

A specially designed, semistructured, pretested proforma was utilized for recording data. The proforma included an exhaustively prepared check list of symptoms, like hair plucking, nail biting, thumb sucking, masturbations, *etc.* which strictly speaking are not psychiatric symptoms, because these terms are frequently used in general pediatric parlance. Moreover, the International Classification of Diseases, 9th edition (ICD-9) still includes such terms under the heading of 'Other and Unspecified Symptoms' (307-8). Strict objective and replicable criteria were laid down for rating each symptom as positive or negative. A key of definitions of each symptom was prepared as a guideline for the investigator:

A. *Criteria for scoring a symptom as 'positive' were:*

(*i*) The patients approached a physician (includes vaid, homeopath, faith healer, *etc.*) for the symptom.

(*ii*) The symptom was disabling enough to interfere with the patient's usual routine.

(*iii*) The same symptom led the patient to take medication on more than one occasion.

(*iv*) The examining physician believed that because of its clinical importance the symptom should be scored positive even though the above mentioned criteria were not present, *e.g.,* spell of blindness lasting a few minutes, or hallucinations or delusions which the patient did not recognize as pathological and which did not disrupt the patients usual routine.

B. *Symptoms were scored negative if they could be explained by known medical diseases of the patient.*

A house to house survey was conducted and information obtained by interviewing either parent, usually the mother, by the investigator, who remained constant throughout the study. Detailed history of all psychiatric symptoms in all children aged 1-12 years was recorded. The total information was grouped, analysed and statistically treated by applying χ^2 test.

Results

There was significant difference in family type of two groups, like high percentage of nuclear families, 66% in low socio-economic group as compared to 45% in high socio-economic group. The ratio of male and female children was similar in both groups. The occupation of father of the children in low socio-economic group was laborers while it was profession/business in high socio-economic strata. In both groups majority of mothers were traditional housewives. Only 21% of women in high socio-economic group were working as against 38% in low socio-economic group. However, the nature of work differed in two groups. In high socio-economic they were mainly professionals but unskilled workers in low socio-economic group. As far as education of parents, they were mainly graduates in high socio-economic group and less than primary in low socio-economic group children (*Table I*).

As shown in *Table II*, at the cut off score of 0 and 2, the observed symptomatology is not significant in both the groups.

Tables III & IV show comprehensive list of observed symptomatology. On comparison, the conduct disorders were signifi-

TABLE I—*Socio-economic Data*

Parameter	Socio-economic status	
	High	Low
Sex		
Male	90	124
Female	83	108
Total	173	232
Families		
Nuclear	45	66
Joint	55	34
Total	100	100
Father's occupation		
Worker	-	99
Shop owner	-	1
Professional	34	-
Business	66	-
Total	100	100
Mother's Occupation		
Housewife	79	62
Unskilled worker	-	38
Professional	20	-
Business	1	-
Total	100	100
Father's Education		
Illiterate	-	49
Primary	-	47
Matric	7	4
Graduation	67	-
Professional	26	-
Total	100	100
Mother's Education		
Illiterate	-	81
Primary	-	12
Matric	6	7
Graduation	66	-
Professional	28	-
Total	100	100

Total family Income:
High socio-ecomic status Rs.4,000-20,000 p.m.
Low socio-economic status Rs. 200-600 p.m.

cantly more in the low socio-economic group, while symptoms associated with body manipulation were significantly more in the high socio-economic group.

Discussion

There is a wide difference in the environment, life style, attainments, perceptions and aspirations of the two population groups. It was, therefore, natural to have different kinds of psycho-social problems.

The prevalence of psychiatric symptomatology in the present study is 479/1000 in HSE group and 487/1000 in LSE group which is much higher than other studies(1,3). This may be because ours is a period prevalence study taking into account a period of one whole year instead of point prevalence study. Secondly, our check list is rather extensive and includes nearly two to three times more symptoms in comparison with previous studies. Lastly, we have recorded symptom prevalence rather than disease prevalence. Disease prevalence takes into account more than one symptom, thus reducing the prevalence rate while leading to greater specificity. The minimum number of symptoms required for diagnostic specificity has been termed by Glidewell(7) as the 'cut off score'. For the purpose of public health activities, he recommended 2 as the cut off score at which our findings (*Table II*) become comparable with those of previous studies(2,3,8).

In our study, nuclear families (66%) are more in LSE group, may be because of migrating population, as compared to 45% in HSE group due to permanent settlement. The high percentage of working mothers (38%) in LSE are for economic help to the family, that is why most of them are illiterate. Conduct disorders like

TABLE II—*Prevalence Rate per Thousand (PR) of the Observed Symptomatology at Different Cut Off Scores*

Group	Cut off score 0		Cut off score 2	
	n*	PR	n*	PR
HSE (n=173)	83 (48.0)	479	51 (30.1)	306
LSE (n=232)	113 (48.7)	487	83 (35.7)	357
	χ^2= 0.021 (NS)		χ^2= 1.77 (NS)	

* Number of positive cases.
Figures in parentheses indicate percentages.

TABLE III—*Consolidated List of Prevalence of Various Psychiatric Group of Symptoms*

S. No.	Psychiatric symptoms	HSE +ve (n=173)	LSE +ve (n=2320)	Significance
1.	Disturbances of emotions	66 (38.2)	77 (33.2)	NS
2.	Problems of eating	46 (26.6)	47 (20.3)	NS
3.	Body manipulation	37 (21.4)	21 (9.1)	<0.01
4.	Conduct disorders	16 (9.2)	69 (29.7)	<0.001
5.	Sleep disturbances	20 (11.6)	36 (15.1)	NS
6.	Speech and language problems	21 (12.1)	25 (10.8)	NS
7.	Motor behavior	6 (3.5)	2 (0.9)	NS
8.	Specific delays in development	5 (2.9)	7 (3.0)	NS
9.	Neurotic behavior	4 (2.3)	2 (0.9)	NS
10.	Mental subnormality	2 (1.2)	25 (10.8)	<0.01
11.	Sexual behavior	-	4 (1.7)	
12.	Scholastic backwardness	2 (1.4)	59 (40.4)	<0.001
		**n=144	**n=146	
13.	Epilepsy	3 (1.7)	8 (3.4)	NS
14.	Others	24 (13.9)	66 (28.4)	<0.001

* Figures in parentheses indicate percentages.
** n= Number of school-going children.

quarrelsomeness, disobedience, abusive language, stealing, truancy, pica, school refusal, mental subnormality and poor scholastic performance were significantly more in the LSE group. On the other hand, symptoms associated with body manipulation like nail biting, food refusal, food fads and temper tantrums were significantly

TABLE IV—*Break up of Various Group of Symptoms*

S. No.	Symptoms	HSE (n=173)	LSE (n=232)	Significance
1.	*Disturbances of emotions*			
(*i*)	Anger	23 (13.3)	47 (20.3)	NS
(*ii*)	Obstinacy	23 (13.3)	40 (17.2)	NS
(*iii*)	Temper tantrums	20 (11.6)	6 (2.6)	($p < 0.01$)
(*iv*)	Jealousy	15 (8.7)	17 (7.3)	NS
(*v*)	Phobia	8 (4.6)	8 (3.4)	NS
(*vi*)	Sibling rivalry	8 (4.6)	3 (1.3)	NS
(*vii*)	Nervousness	5 (2.9)	1 (0.4)	NS
(*viii*)	Shyness	4 (2.3)	2 (0.9)	NS
(*ix*)	Fear	4 (2.3)	2 (0.9)	NS
(*x*)	Sadness	--	3 (1.3)	--
(*xi*)	Suicidal feeling	--	3 (1.3)	--
II.	*Problem of eating*			
(*i*)	Refusal of food	26 (15.0)	3 (1.3)	($p < 0.001$)
(*ii*)	Food fadism	22 (12.7)	1 (0.4)	($p < 0.001$)
(*iii*)	Pica	8 (4.6)	43 (18.5)	($p < 0.001$)
(*iv*)	Over eating	5 (2.9)	1 (0.4)	NS
III.	*Body manipulations*			
(*i*)	Finger/thumb sucking	14 (8.1)	12 (5.2)	NS
(*ii*)	Nail biting	14 (8.1)	1 (0.4)	($p < 0.001$)
(*iii*)	Teeth grinding	8 (4.6)	7 (2.0)	NS
(*iv*)	Lip sucking/biting nose pulling/ear pulling	5 (2.9)	3 (1.3)	NS
IV.	*Conduct disorders*			
(*i*)	Destructiveness	11 (6.4)	6 (2.6)	NS
(*ii*)	Quarrelsomeness	7 (4.0)	30 (12.9)	($p < 0.001$)
(*iii*)	Disobedience	3 (1.7)	30 (12.9)	($p < 0.001$)
(*iv*)	Lying	1 (0.6)	9 (3.9)	NS
(*v*)	Stealing	--	9 (3.9)	--
(*vi*)	Abusing	--	28 (12.1)	--
(*vii*)	Truancy	--	8 (3.4)	--
(*viii*)	Fire setting	--	4 (1.7)	--

TABLE IV *(Contd.)*

S. No.	Symptoms	HSE (n=173)	LSE (n=232)	Significance
V.	*Sleep disturbances*			
(*i*)	Nightmares	10 (5.8)	25 (10.8)	NS
(*ii*)	Night terrors	3 (1.7)	1 (0.4)	NS
(*iii*)	Hypersomnia	2 (1.2)	1 (0.4)	NS
(*iv*)	Sleep walking	–	2 (0.9)	–
(*v*)	Insufficient sleep (insomnia)	–	2 (0.9)	–
VI.	*Speech and Language Problems*			
(*i*)	Delay acquisition of speech	9 (5.2)	13 (5.7)	NS
(*ii*)	Stuttering	4 (2.3)	12 (5.2)	NS
VII.	*Motor behavior*			
(*i*)	Hyperkinesis	5 (2.9)	1 (0.4)	NS
(*ii*)	Hypokinesis	1 (0.6)	1 (0.4)	NS
VIII.	*Specific delays in development*			
(*i*)	Reading retardation	3 (1.7)	3 (1.3)	NS
(*ii*)	Arithmetic retardation	2 (1.2)	1 (0.4)	NS
IX.	*Neurotic behavior*			
(*i*)	Anxiety	2 (1.2)	–	–
(*ii*)	Depression	1 (0.6)	–	–
(*iii*)	Tics	1 (0.6)	–	–
X.	*Mental subnormality*	2 (1.2)	25 (10.8)	(p <0.01)
XI.	*Sexual behavior*			
	Handling of genitalia	–	4 (1.7)	–
XII.	*Scholastic backwardness*	2 (1.4) **ns=144	59 (40.4) **ns=146	(p <0.001)
XII.	*Epilepsy*	3 (1.7)	8 (3.4)	NS
XIV.	*Others*			
(*i*)	Enuresis	20 (11.6)	45 (19.4)	(p <0.001)
(*ii*)	School refusal	6 (3.5)	28 (12.1)	(p <0.001)
(*iii*)	Encopresis	2 (1.2)	2 (0.9)	NS

* Figures in parentheses indicate percentages.
** n=number of school-going children.

more in the HSE group. Symptoms like suicidal attempts, cruelty, narcolepsy, cataplexy, dysphonia, aphonia, elective mutism, head banging, non-epileptic fits, masturbation, homosexuality, thinking disturbances, inappropriate effect, hallucinations and autism were not observed in both the groups.

The more frequent presence of conduct disorders in LSE groups is in consonance with the report of Singh and Dagar(4) of delinquent behavior being more common in the lower socio-economic group, possibly due to their impoverished lifestyle and environment. On the contrary Singh and Saini(5) reported a higher incidence of conduct disorders among social Classes I and II as compared to Class IV. Temper tantrums were significantly more in the HSE group, although Lapouse *et al.*(8) point out that fear and worries were more frequent in the lower socio-economic group.

Of the problems of eating, refusal of food and food fadism were significantly more in HSE group. This may be because of abundance, allowing the child to impose his choice. Pica, seen more frequently in the LSE group, may be due to a higher frequency of malnutrition, anemias and infestations.

In the body manipulation group, only nail biting was more prevalent in the HSE group. Lapouse *et al.*(8), however, described a tension phenomenon (a complex of seven symptoms consisting of nail biting, nose picking, picking sores, chewing, grinding teeth and sucking thumb and fingers), and found no significant difference with socio-economic changes.

Mental subnormality was significantly more in LSE group, as in previous studies(3,9,10). The causative factors may be malnutrition, poor physical, mental and emotional support and inadequate educational and developmental opportunities.

School refusal and scholastic backwardness too were significantly higher in LSE group. This may likely be due to illiteracy, poor awareness, mental subnormality and poor adjustment at school, Singh and Dagar(4) also have made similar observations.

Enuresis was also significantly more in LSE group. Prevalence of enuresis has been variously reported by different authors(1,3,8) probably because of different selection criteria. Hallgren reported bedwetting to be more common in Social Classes IV and V, possibly because of large family size and inadequate living accommodation with children sleeping on the same bed regardless of sex(11).

A longer study period with larger number of children is desirable to bring out the true pattern of psychiatric disorders in a particular region. Factors like family size, birth order, family income, living standards and education of parents, religion and local customs could all play a role in the causation of such problems. There is need to study all these factors independent of each other.

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