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BEHAVIOURAL DISORDERS IN SCHOOL GOING CHILDREN IN URBAN AND RURAL AREAS OF BHUBANESWAR

Paediatrics

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ABSTRACT

Background - Behavioural problems in school going children are on a rise. Studies done in this field reveal that the prevalence of behavioural problems in children is alarmingly high. Our country, India, being a developing country has a huge population of more than a billion and out of which a significant proportion is comprised of school going children. This indicates a sizeable amount of disease burden on the society.

Objectives - The study was carried out with an objective of assessing the prevalence of behavioural disorders in school going children in urban and rural areas of Bhubaneswar and to compare the outcome between the two.

Method - A school based cross-sectional study was undertaken . 184 children in the age-group of 6 - 16 years were selected by appropriate randomization. Parent report version of the Child behaviour checklist was used. The data thus collected was analysed using appropriate statistical tests.

Results and Interpretation - Out of the total sample size of 184 children, 65 children had CBCL scores on or above the cut-off, including both rural and urban areas. Thus, the overall prevalence rate of behavioural disorders in school going children of Bhubaneswar, was found to be 35.32 %. The prevalence of behavioural disorders in the urban schools was 42.11 % and in the rural schools it was 28.08%. The difference in the prevalence rates was found to be statistically significant. The mean CBCL score was found to be higher in urban school children in comparison to the rural school children which was statistically significant. Children in the age-group of 12-16 years had a statistically significantly higher mean CBCL score than the children in the age-group of 6-11 years in the urban school. On analysing the pattern of behavioural disorders, it was found that internalising problems were common than the externalising ones. Anxiety was found to be a very common problem in children.

Conclusion - The number of school going children suffering from behavioural diorders in rural and urban areas of Bhubaneswar is very high. The prevalence is higher in the urban areas than in the rural areas. This difference can be attributed to the differences in their socio-cultural environments and family background. The study also emphasises on the need of periodic screening in children for behavioural disorders and establishment of school mental health services.

KEYWORDS

Behavioural disorders, Child behaviour checklist, urban area, rural area, anxiety, externalising problems, internalising problems.

INTRODUCTION

Children of today are the citizens of tomorrow. Prosperity of a nation depends upon the health of its future citizens. Thus it is important to ensure good health for children and adolescents which plays a pivotal role in the development of a nation. Early childhood is a time of tremendous growth across all areas of development while adolescence is a critical stage of life as it is characterised by major physical, physiological, psychological and behavioural changes. Thus, childhood and adolescence are marked by huge changes in the emotional and behavioural patterns. School age is the time when children are exposed to the outer world. It is the time when they learn to be independent and responsible. Childhood and adolescence sets the stage for a healthy adulthood. Only healthy children can grow up to become healthy and responsible adults.

Of late there has been a rise in the prevalence of mental illness and maladaptive behaviours among adolescents[1] and children. The World Health Organisation's estimate shows that up to 20% of adolescents have one or more mental or behavioural problems[1]. In the present era, on the one hand we are launching missions to the moon and mars, on the other hand there is a rapid change in the family values with breaking up of families and increasing number of dysfunctional families. With the rapidly changing socio-cultural scenarios, increasing pressure to perform, achieve and excel, peer-pressure, societal pressures to fit-in a particular norm, it has been found that behavioural problems have been on a rise amongst the young people.

It has been found that in children, mental illness is more prevalent than leukemia, diabetes and AIDS combined[2]. Although nearly 1 in 5 youths suffers from a psychiatric disorder, 75-80% do not receive needed mental health services[2]. The strong continuity into adulthood of these behavioural problems further underscores the importance of early identification and treatment[2]. Healthy adulthood depends upon successful resolution of these problems[1]. Angry or sad mood, bedwetting, overactivity, impulsivness, distractibility, learning problems, arguing, defiance, nightmares, school refusal, bullying or being bullied, worries and fears, somatisation, communication problems, tics, withdrawal or isolation are some of the common signs and symptoms in school going children that warrant clinical attention. Attention-deficit/hyperactivity, disruptive, anxiety (generalised, phobias), elimination, somatic symptom, specific learning, and tic disorders are some of the commonly diagnosed behavioural and psychiatric disorders in children[2]. Adolescents need assessment for concerns about the family situation, experimentation with sexuality and drugs, delinquency and gang involvement, friendship patterns, independence issues, identity formation, self-esteem and morality. Anxiety (panic attacks, social anxiety), depressive, bipolar, psychotic, obsessive-compulsive, impulse control, conduct, substance related and eating disorders are some of the commonly diagnosed behavioural disorders in adolescents[2].

Our country, India, being a developing country has a huge population of more than a billion as per the 2011 population census and out of which a significant proportion is comprised of school going children. This indicates a sizeable amount of disease burden on the society. Apart from this, the amount of distress that these children and their families go through because of the illness, is unfathomable. Behavioural problems and psychiatric syndromes in school going children is, hence, a matter of grave concern. According to the available literatures, the overall rates of psychiatric and mental health problems amongst school going children in India varies from 6.33% to 43.1%[3-8] . International context showed similar variability[11-14] . The available literature also speaks of variability and inadequacies of diagnostic methods, research criteria, treatment modalities and psychosocial interventions. Research studies on behaviour problems among children and adolescents in our country and in the state, Odisha, are relatively few and variable in methodology. There is limited availability of data on child mental health needs[9]. Lack of data on the subject overshadows the real magnitude of the problem which is

essential for effective health care planning[10].

OBJECTIVES

This study was planned with an objective to assess the prevalence of behavioural problems amongst school going children in rural and urban areas of Bhubaneswar. The age-group of 6 - 16 years was chosen as it is a very crucial period for children and it is the time when a child receives formal education in schools. [15] A rural -urban comparative study was taken up as the lifestyles, home and school environment, familial circumstances, peer group is completely different in both the settings. The concern therefore extends to how the school facilities can be enhanced and improved to meet the growth needs of the children.[15] The research findings will help in determining the prevalence alongwith the associated factors and predictors that will be useful in early diagnosis and management of behavioural problems in school going children in urban and rural settings. It will also show if there is any rural-urban difference in the prevalence of behavioural problems and hence define, the role of the environment in a child's social, mental and emotional development.

MATERIALS AND METHODS

Ethical approval for the study was sought from the hospital ethics committee. Appropriate schools which catered to student population from all the strata of the society residing in the urban and rural areas of Bhubaneswar were chosen for the study. To ascertain similar environment for boys and girls, only co-educational schools were chosen and boys-only or girls-only schools were excluded. Necessary permissions and consent were obtained from the school authorities and their willingness to participate in the research was noted. A sample size of 400 including both the rural and urban school was estimated.

Research design: The study is a cross-sectional type of descriptive study that compares the outcome between rural and urban areas of Bhubaneswar.

Source of data collection: Parents of children who are studying in the schools chosen for the study and who gave consent to participate in it.

Setting: The study was undertaken in the selected rural and urban schools of Bhubaneswar, having a population size large enough to be included in the study.

The study population was selected by stratified random sampling. 200 students from the urban school and 200 students from the rural school belonging to standard-I to standard X in the range of 6 - 16 years of age were included in the study. To ensure adequate and equal representation from each age-group, students from each class were selected.

Informed consent was obtained from the parents of the students participating in the study. Children of all those parents who gave their consent and were willing to participate in the study, were included. The children suffering from any diagnosed medical, surgical, psychiatric or other chronic illnesses were excluded from the study. After appropriate randomization the school students were then subjected to structured questionnaire on child behavioural problems. The questionnaire that was used in this study was :-

Tool used -
Child Behaviour Checklist[16,17] for ages 6-18.

Child Behaviour Checklist for ages 6-18 (CBCL)

The child behaviour checklist is a self rated instrument developed by Thomas M. Achenbach. It is a part of the Achenbach System of Empirically Based Assessment (ASEBA). It has been one of the most widely used standardised measures in child psychology for evaluating maladaptive behavioural and emotional problems in children from pre-school age through adolescence. It is a multi-axial scale normed by age and gender.

There are various versions of CBCL available. The parent's reported version of CBCL was used in this study.

The CBCL / 6-18 is to be used with children aged 6 to 18. It consists of 113 questions, scored on a three-point Likert scale as –
0 = absent
1 = occurs sometimes
2 = occurs often.

The time frame for item responses is the past six months.

The cut-off scores as given by Achenbach was used for assesssing the presence or absence of behavioural problems :-

Table - 01 Cut-off Score Of Child Behaviour Checklist By Achenbach

AGE	GIRLS	BOYS
6-11 years	37	40
12-16 years	37	38

The data, thus collected, was subjected to statistical analysis using appropriate tests.

RESULTS

Out of the 400 CBCL forms that were distributed in both rural and urban schools, only 252 forms were received back. Out of those 252 CBCL forms, only 184 forms were completely filled up. There were 95 students who were evaluated for behavioural disorders in urban area and 89 children were evaluated for behavioural disorders in rural area.

Out of 95 children who were evaluated for behavioural problems in the urban school, 40 children had a score on or above the cut off on the Child Behaviour Checklist. Thus, the prevalence of behavioural disorders in the urban schools was found to be 42.11 %.

Out of 89 children who were evaluated for behavioural problems in the rural school, 25 children were found to have behavioural problems. So, the prevalence of behavioural disorders in the rural schools was found to be 28.08%.

Out of the total sample size, 65 children had CBCL scores on or above the cut-off, in both rural and urban areas. Thus, the overall prevalence rate of behavioural disorders in school going children of Bhubaneswar, including both rural and urban areas was found to be 35.32 %.

Table- 02 Prevalence Of Behavioural Disorder

Study Population	On Or Above The Cut-off	Below The Cut-off	Total	Prevalence
Urban School	40 (42.11 %)	55 (57.89%)	95 (100%)	42.11%
Rural School	25 (28.08 %)	64 (71.91%)	89 (100%)	28.08%
Total	65 (35.32%)	119 (64.67%)	184 (100%)	35.32%

The chi-square statistic is 3.95 and the p-value is 0.046.

Figure- 1 Prevalence Of Behavioural Disorder In The Study Sample

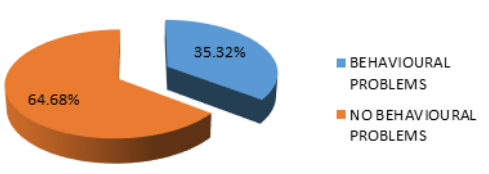


Figure- 1 (A) Prevalence Of Behavioural Disorder In Urban School Children

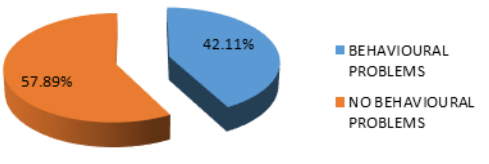


Figure- 1 (B) Prevalence Of Behavioural Disorder In Rural School Children

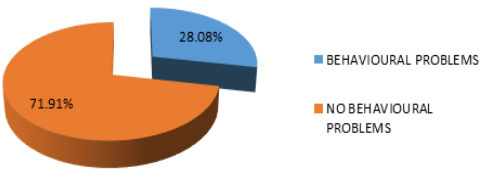


Table-03 Age-groupwise Prevalence Of Behavioural Problems In Urban School Subjects

Age- Group	On Or Above The Cut-off	Below The Cut-off	Total	Prevalence Rate
6-11 YEARS	10	24	34 (100 %)	29.41 %
12-16 YEARS	30	31	61 (100 %)	49.18 %
TOTAL	40	55	95 (100 %)	42.11 %

The chi-square statistic is 3.49 and p-value is 0.061.

Figure-02 Age-groupwise Prevalence Of Behavioural Problems In Urban School Subjects

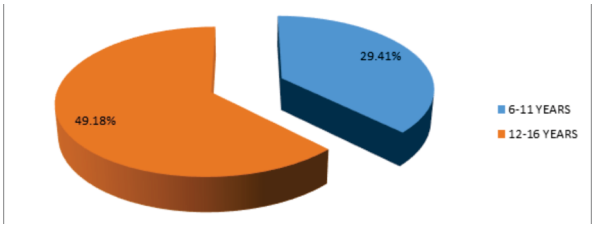


Table-04 Age-groupwise Prevalence Of Behavioural Disorder In Rural School Subjects

Age- Group	On Or Above The Cut-off	Below The Cut-off	Total	Prevalence Rate
6-11 YEARS	11	38	49 (100 %)	22.45 %
12-16 YEARS	14	26	40 (100 %)	35.00 %
TOTAL	25	64	89 (100 %)	28.09 %

The chi-square statistic is 1.72 and p-value is 0.19.

Figure- 03 Age-groupwise Prevalence Of Behavioural Disorder In Rural School Subjects

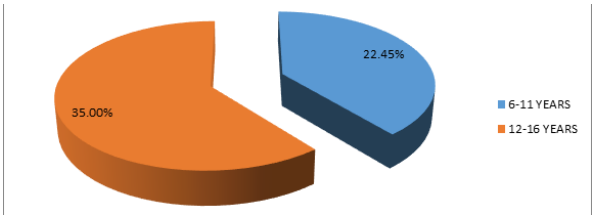


Table- 05 Genderwise Prevalence Of Behavioural Disorder In Urban School Subjects

Subjects	On Or Above The Cut-off	Below The Cut-off	Total	Prevalence Rate
BOYS	20 (46.51%)	23 (53.49%)	43 (100 %)	46.51 %
GIRLS	20 (38.46 %)	32 (61.54%)	52 (100 %)	38.46 %
TOTAL	40 (42.11%)	55 (57.89%)	95 (100 %)	42.11 %

The chi-square statistic is 0.6257 and the p-value is 0.43, which is greater than 0.05.

Figure- 04 Genderwise Prevalence Of Behavioural Disorder In Urban School Subjects

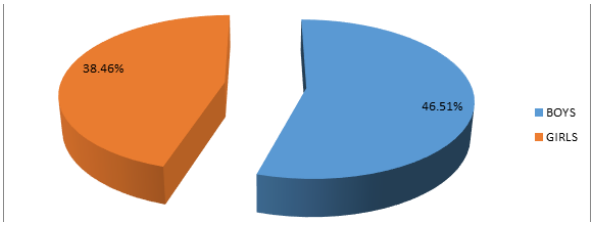


Table-06 Gender Wise Prevalence Rate Of Behavioural Disorder In Rural School Subjects

Subjects	On Or Above The Cut-off	Below The Cut-off	Total	Prevalence Rate
BOYS	9 (22.50%)	31 (77.50%)	40 (100 %)	22.50 %
GIRLS	16 (32.65%)	33 (67.35%)	49 (100 %)	32.65 %
TOTAL	25 (28.08%)	64 (71.91%)	89 (100 %)	28.08 %

The chi-square statistic is 1.12 and the p-value is 0.29, which is greater than 0.05.

Figure-05 Genderwise Prevalence Of Behavioural Disorder In Rural School Subjects

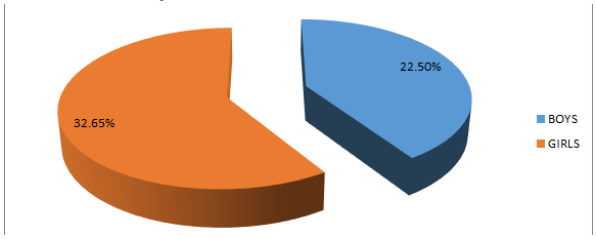


Table - 07 Gender wise Prevalence Of Behavioural Disorder In The Study Sample

Gender	On Or Above The Cut Off	Below The Cut-off	Total	Prevalence
BOYS	29 (34.94%)	54 (65.06%)	83 (100%)	34.94%
GIRLS	36 (35.64%)	65 (64.36%)	101 (100%)	35.64%
TOTAL	65 (35.32 %)	119 (64.67 %)	184 (100 %)	35.32 %

Figure-08 Gender Wise Prevalence Of Behavioural Disorder In The Study Sample

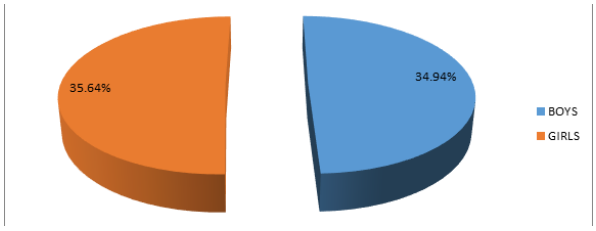


Table- 08 Mean CBCL Scores Of The Subjects

SAMPLE	MEAN CBCL SCORE	STANDARD DEVIATION	T TEST (p value)
URBAN SCHOOL	35.56	20.85	2.43 (0.008)
RURAL SCHOOL	28.89	15.58	

The figure in brackets denote p-value.

Figure- 09 Mean CBCL Scores Of The Subjects

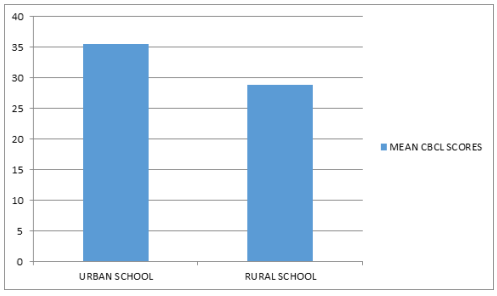


Table- 09 Comparison Of Mean CBCL Scores In Urban School Subjects

AGE GROUPS	MEAN CBCL SCORES	STANDARD DEVIATION	T TEST (p value)
Boys 6-11 Years	29.39	19.78	-0.107 (0.46)
Girls 6-11 Years	30.19	22.27	
Boys 12-16 Years	39.80	19.42	0.32 (0.37)
Girls 12-16 Years	38.08	20.46	

The figures in brackets denote p-value.

Figure- 10 Comparison Of Mean CBCL Scores In Urban School Subjects

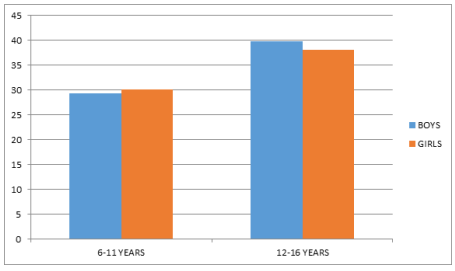


Table- 10 Comparison Of The Mean CBCL Scores In The Rural School Subjects

AGE GROUPS	MEAN CBCL SCORES	STANDARD DEVIATION	T TEST (p value)
Boys 6-11 Years	29.04	15.70	-0.11 (0.46)
Girls 6-11 Years	29.50	12.63	
Boys 12-16 Years	29.47	19.25	0.33 (0.37)
Girls 12-16 Years	27.60	15.38	

The figures in brackets denote p-value.

Figure- 11 Comparison Of The Mean CBCL Scores In The Rural School Subjects

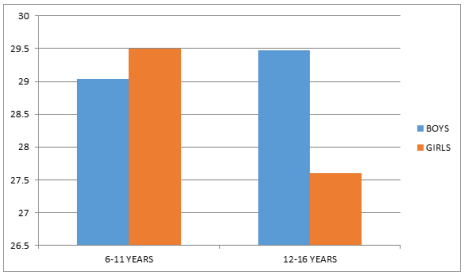


Table- 12 Gende Rwise Comparison Of The Mean CBCL Scores In Urban School Subjects

SUBJECTS	MEAN CBCL SCORES	STANDARD DEVIATION	T- TEST (p-value)
BOYS	35.44	20.24	-0.05 (0.48)
GIRLS	35.65	21.35	

The figures in brackets denote p-value. The result is not significant at p<0.05

Figure- 13 Gender Wise Comparison Of The Mean CBCL Scores In Urban School Subjects

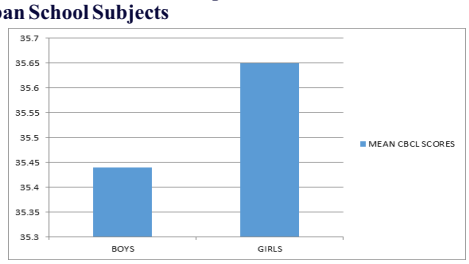


Table- 13 Gender Wise Comparison Of The Mean CBCL Scores In Rural School Subjects

SUBJECTS	MEAN CBCL SCORES	STANDARD DEVIATION	T- TEST (p-value)
BOYS	29.23	17.30	0.18 (0.43)
GIRLS	28.61	14.02	

The figures in brackets denote p-value. The result is statistically not significant at p<0.05

Figure-14 Gender Wise Comparison Of The Mean CBCL Scores In Rural School Subjects

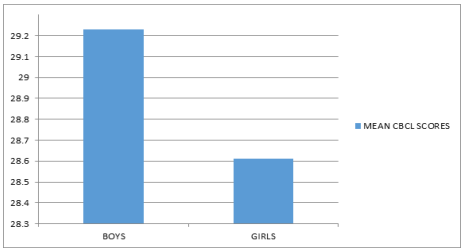


Table-14 Age-groupwise Comparison Of The Mean CBCL Scores In Urban School Children

AGE GROUPS	MEAN CBCL SCORES	STANDARD DEVIATION	T-TEST (p-value)
6-11 years	29.76	20.99	-2.0446 (0.021)
12-16 years	38.79	20.06	

The figures in brackets denote p-value. The result is statistically significant at p< or = 0.05

Figure - 16 Age-groupwise Comparison Of The Mean CBCL Scores In Urban School Children

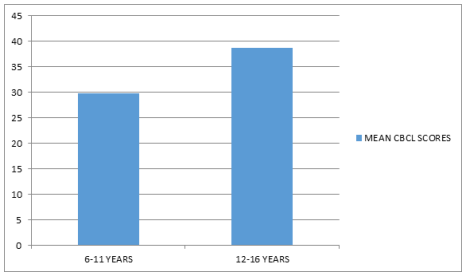
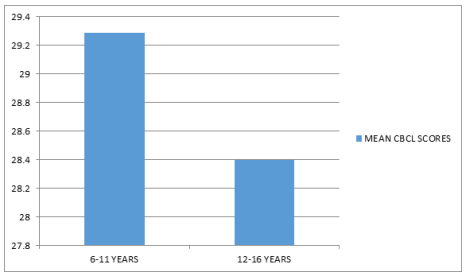


Table-15 Age-groupwise Comparison Of The Mean CBCL Scores In Rural School Children

AGE GROUPS	MEAN CBCL SCORES	STANDARD DEVIATION	T-TEST (p-value)
6-11 years	29.29	14.16	0.263 (0.396)
12-16 years	28.40	17.16	

The figures in brackets denote p-value. The result is statistically not significant at p<0.02

Figure - 17 Age-groupwise Comparison Of The Mean CBCL Scores In Rural School Children



DISCUSSION

In this study which was carried out in the school going children in urban and rural areas of Bhubaneswar, total of 189 children from both the urban and rural areas were evaluated. Among 189 children, it was found that the prevalence of behavioural disorders is 35.32 %. It is very high compared to another Indian study by Srinath et al, conducted in the urban and rural areas of Bangalore, India[9]. In another study conducted on the psychosocial problems among adolescents in Dehradun district by Muzammil K et al [22], in the year 2006-2007, the prevalence was found to be 31.2 %. Study conducted by Prakash J et al on children in a paediatric outpatient department, the prevalence rate was found to be 40 % [23]. Another study conducted by Malhotra et al[3] in Chandigarh, the prevalence rate was found to be 6.33 %. Roberts et al in a meta analysis of 52 studies done in 20 countries of the world, found that prevalence of psychopathology among adolescents varies from 6 % to 41%.[24]

Thus, the disparate estimate of prevalence and need for national data on epidemiology has been highlighted by Sharan and Sagar[25]. Although the available Indian studies have started to address the unmet need for systematic information tracking of the prevalence and distribution of mental and behavioural disorders, national data are still not available. The absence of empirical data on the magnitude, course, and treatment patterns of various mental disorders in a nationally representative sample of children and adolescents has largely restricted the efforts essential for establishing mental health policy for this population.

In the present study, the prevalence of behavioural disorders in the school going children in the urban areas, was found to be 42.11 % while the prevalance in the school going children of rural area was 28.08 %. Thus, approximately, one-third of our children and more are suffering silently from behavioural and psychosocial problems without even getting recognised. The prevalence of behavioural disorders is higher in the urban school going children as compared to their counter parts from the rural areas. This highlights the importance of the social-cultural environment in shaping the behaviour and psyche

in the children. The difference in the prevalence in the two areas was found to be statistically significant. Though, in another study conducted by Srinath et al, there were no significant differences among prevalence rates in urban middle class, urban slums and rural areas[9].

In urban areas, the prevalence in the age-group of 12 - 16 years was found to be higher than in the age group of 6 - 11 years. though the difference is not statistically significant'

Girls belonging to 12 - 16 years had the least mean CBCL score of 27.60. The girls belonging to 6 - 11 years had the highest mean score of 29.50. There is no significant difference between boys and girls in both the groups in the rural school children.

On comparing the mean CBCL scores between boys and girls in urban children, both boys and girls showed similar mean CBCL scores with girls marginally higher than boys. Girls had a mean score of 35.65. The mean score of boys was 35.44. There is no statistically significant difference between boys and girls in the urban children.

In rural school subjects, boys had a higher mean CBCL scores than girls, though the difference was not statistically significant. The mean score of boys was found to be 29.23. Girls had a mean score of 28.61.

On analysis of the pattern of the behavioural disorders it was found that, the patterns of behavioural problems were similar in both rural and urban settings.

In general, internalising problems are more prevalent than the externalising ones in children. This is in contrast with the findings in various other studies conducted by Chaudhary *et al*[18], Shetty and Shihabuddeen[19] , Shastri *et al* [20], Shenoy *et al*[6], Molin and his colleagues[13]

Girls had more of internalising behaviour problems than the boys. Boys showed more of externalising behavioural problems like argues a lot, restless, hyperactive etc.

Anxiety, was found to be a common behavioural problem, a fact which cannot be ignored keeping in the mind the increasing competition and performance pressure in the modern era. Girls were found to be more anxious than the boys.

Interestingly, more number of girls showed aggressive and defiant behaviour. This should be a cause of concern for the paediatricians and mental health experts. The changing social-cultural scenario in our society could be a causative factor behind it.

The common behavioural problems in these children were found to be 'nervousness', 'too fearful', 'anxious', 'lack of concentration', 'restlessness' etc. A significant number of parents also reported complaints of somatic problems in children like frequent headaches, stomach aches and problems in socialising.

On further analysing it was revealed that a significant proportion of children had symptoms suggestive of attention deficiet hyperactivity disorder. Children showing the symptoms of conduct problems were the least.

There are certain limitations to the study. Generally, Multi informant studies comprising of responses of parents, teachers and the child himself with cross informant comparisons are ideal for screening for behavioural and mental health of the propositus[27] followed by psychiatric clinical evaluation[28]. for a definitive diagnosis. In this study, only a single informant report was used. So, this could be one of the important limitations of the study. Variable level of education in the parents in rural and urban areas could also be another important limitation in the study.

Further, it is a descriptive study, cross-sectional in nature. Descriptive studies cannot be used to co-relate variables or determine cause and effect. Findings may not be replicable in a different population.

The study is very useful in assessing for behavioural disorders in the school going children though the final diagnosis needs detailed evaluation and assessment by a team of experts comprising of a developmental paediatrician, child psychologists and psychiatrists.

CONCLUSION

The prevalence of behavioural disorders in Bhubaneswar region, including both urban and rural areas was found to be 35.32 % which means more than one-third of school going children in our area are suffering from some or other kind of behavioural problems. This is also higher when compared to studies done in other parts of the country.

The prevalence of behavioural disorders in school going children in urban areas of Bhubaneswar was found to be 42.11 %. This means almost about half of our urban school going children are facing behavioural problems. It reflects the need for urgent and immediate attention on mental health services in the urban schools.

The prevalence of behavioural disorders in school going children in rural school of Bhubaneswar was found to be 28.08 %. Though this figure is lower than that in the urban schools, but it is still too high. It means that though the percentage of children studying in schools located in rural areas showing behavioural disorders is less but still they are not lagging far behind their urban counter-parts. If appropriate intervention is not made and suitable action is not taken at this stage, we may have to deal with a problem of larger magnitude in the near future.

On comparing the rural and urban figures, we can come to a conclusion that, definitely there is a statistically significant difference between the prevalence rates of behavioural disorders in school going children in urban and rural areas of Bhubaneswar.

This study emphasises the need for periodic screening for behavioural disorders in school going children in both urban and rural areas followed by a detailed assessment and evaluation by the specialists. School mental health services can help in tackling the problem at the earliest. The role of a counsellor for addressing behavoiural problems in schools becomes imperative.

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