

## PREVALENCE OF OPPOSITIONAL DEFIANT DISORDER (ODD) IN SCHOOL CHILDREN

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### ABSTRACT

#### OBJECTIVE

To examine the estimates of oppositional defiant disorder (ODD) in 4th and 5th grade school children with reference to gender and family correlates.

#### STUDY DESIGN

Cross-sectional study.

#### PLACE AND DURATION OF STUDY

The study was conducted in four public sector schools of Rawalpindi city from January to December 2012.

#### SUBJECTS AND METHODS

The study included 223 students (119 boys and 104 girls) from 4th and 5th grades. Data were collected from their parents and teachers through Demographic Information Sheet and Assessment of Disruptive Symptoms DSM-IV (ADS-IV). SPSS 18 was used for data analysis.

#### RESULTS

The overall prevalence of ODD was 5.8% in the total sample and was relatively higher for boys (7.6%) than girls (3.8%). Symptoms more frequently presented by boys were arguing with adults, deliberately annoying people, losing temper, and blaming others. Parental education and family monthly income were inversely related to ODD symptoms in children.

#### CONCLUSION:

The results of this study highlight the need to take into account the diagnosis, prevention and treatment of ODD for school children. The variables like gender, parental education and socioeconomic status are important factors to be considered in planning preventive strategies and treatment programs.

#### KEY WORDS

Oppositional defiant disorder, School children, Assessment of disruptive symptoms DSM-IV

### INTRODUCTION

Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) defines oppositional defiant disorder (ODD) as "a recurrent pattern of negativistic, defiant, disobedient, and hostile behavior toward authority figures. Negativistic and defiant behaviors are expressed by persistent stubbornness, resistance to directions and unwillingness to compromise, give in, or negotiate with adults or peers"<sup>1</sup>.

A number of theorists have suggested strong links between disruptive and externalizing behavior problems in school years and more serious conduct problems during adolescent years<sup>2,3</sup>. Untreated ODD children are at higher risk for display of delinquent behavior and substance abuse with other mental health and learning disorders<sup>3</sup>. The oppositional defiant disorder is frequently co morbid with other psychiatric disorders like conduct disorder (CD), attention deficit hyperactive disorder (ADHD), anxiety disorders, depression, and learning disorders<sup>4,5</sup>. The early-onset pathway of ODD begins in preschool years, then progresses to CD in middle childhood to most serious symptoms of disruptive behavioral problems in adolescents<sup>7,9</sup>.

Malik and colleagues (2014) conducted an efficacy study of behavioral parent training program with 55 Pakistani families of diagnosed ADHD children and also studied associated problems of ODD and CD. According to parent and teacher ratings, 83 % children were laid in the clinical range for ODD. They reported a reduction in ADHD and ODD symptoms after completion of the program<sup>10,11</sup>. Various studies have revealed that ODD estimates are more prevalent in boys than girls<sup>12-15</sup>. Meltzer, Gatward, Goodman, and Ford (2000) carried out a survey to observe the prevalence of mental disorders in 5-15 years old children (n=10438). According to these results 7.4 % boys and 3.2% girls and 5.3% of the overall sample had the oppositional disorder. Boys had more hostile and persistent symptoms than girls<sup>16</sup>.

There is insufficient research evidence available on the prevalence of ODD in Pakistani school children. In this context, the present research analyzes gender differences and the overall prevalence of ODD with family correlates and provides better understanding of the expressions of ODD symptoms in boys and girls. This will help to expand the awareness and sensitivity of the problem in school children and plan effective treatment or prevention

### METHOD

#### Participants

The sample of the present study was selected from four public sector schools in Rawalpindi, Pakistan. Five teachers with three teacher assistants completed the measuring scale for 4th and 5th grade students. Only those classes were taken

which received 70% parental consent to participate in the study. Care was taken to choose the sample from intact families (i.e., with no case of divorce or separation or death of one or both spouses). Four hundred and sixty three parents were contacted to get consent for their children. Seventy-four (15.98%) parents refused to participate, sixty-eight (14.69%) children did not meet inclusion criteria (i.e., child and parent has no psychiatric illness, both parents alive and living together) and ninety-eight (21.16%) children were belonging to a classroom which produced 50-65% parental consent. Finally 223 (48.16%) children qualified to participate in the study. Participants were 119 boys (53.4%) and 104 girls (46.6%) with age range from 9 to 12 years ( $M = 10.10$ ,  $SD = 0.77$ ). All children were living with both parents and had more than two siblings ( $M = 3.23$ ,  $SD = 0.88$ , range = 2-6).

## MEASURES

### Demographic Information

Demographic details such as age, sex, grade, parental marital status, and education, number of siblings, number of family members, family structure, and family income were gathered on a performa from parents.

### Assessment of Disruptive Symptoms DSM-IV (ADS-IV)

ADS-IV is DSM-IV based assessment scale to measure attention deficit hyperactive disorder (ADHD) and oppositional defiant disorder (ODD)<sup>17</sup>. Teacher-rated Urdu version of ADS-IV (ODD subscale only) was administered in this study. Eight ODD symptoms are assessed through a five point likert scale that is scored from 0 (much less than other children) to 4 (much more than other children). ODD symptoms cause the problem at school was measured with a possible response range of 0 (no problems) to 4 (very severe problems). Continuous scores of ODD were calculated by averaging the symptom ratings and diagnostic groups of ODD and non-ODD children were depending on the presence of four ODD symptoms with severe or very severe impairment.

## PROCEDURE

As the first step, the school administration was contacted for data collection. The school administration was requested to send the consent form and demographic information form to the parents. They were informed about the purpose of the research and assured that the information will be used for research purposes only. After careful scrutiny, children who fulfilled the inclusion criteria were selected for instrument administration. Class teachers who had supervised the children for at least two months were asked to rate the children behaviors in the class and during school time. The scores were calculated to analyze the data. Descriptive statistics was calculated to report estimates of ODD in boys and girls. Logistic regression, t-test, Pearson product correlation, and ANOVA were applied to assess the associations and differences on gender and other demographic variables of the sample.

## RESULTS

Cronbach's alpha was computed for continuous scores of ODD measure ( $\alpha = .94$ ) which was excellent. Descriptive statistics was calculated for the demographic data (see Table 1).

**Table 1**  
Distribution of Sample on the Basis of Demographics (N=223)

Variables	f	percentage	Mean (SD)
Child's age	223		10.10 (0.77)
Child's gender			
Male	119	53.4%	
Female	104	46.6%	
Father's age			38.91 (2.45)
Mother's age			35.53 (2.17)
Fathers' education			13.48 (1.99)
Mothers' education			12.53 (2.06)
Family monthly income in PKR			41,224.17 (11,164.22)
Mother's work status			
Not working	149	(66.8%)	
Working	74	(33.2%)	
Familial structure			
Nuclear	119	(53.4%)	
Extended	104	(46.6%)	

**Table 2**  
Prevalence of oppositional defiant disorder (ODD) symptoms and association with gender

ODD symptoms	Prevalence (%)			OR	95% CI		p
	Total	Girls	Boys		LL	UL	
Argues with adults	75.8	60.2	<b>81.5</b>	2.09	1.10	3.95	<b>.024</b>
Spiteful or vindictive	48.4	42.3	53.8	1.61	0.91	2.86	.105
Blames others	79.8	73.1	<b>85.7</b>	2.47	1.21	5.06	<b>.013</b>
Defies or refuses	63.7	68.3	59.7	0.63	0.35	1.14	.128
Angry and resentful	74.4	79.8	69.7	0.56	0.29	1.06	.077
Touchy or easily annoyed	77.1	79.8	74.8	0.75	0.39	1.43	.376
Loses temper	84.3	78.8	<b>89.1</b>	2.34	1.09	5.01	<b>.029</b>
Deliberately annoys people	56.5	42.3	<b>68.9</b>	3.28	1.83	5.90	<b>.000</b>

Note: ODD = Oppositional Defiant Disorder; CI = Confidence Interval; LL = Lower Limit; UL = Upper Limit; OR = Odd Ratio; Logistic regression adjusted for age, fathers' and mothers' education, and family income.  
In bold: significant association

**Table 3**  
One-way ANOVA for educational levels of parents (fathers and mothers) on the presence of ODD symptoms in children (N = 223)

Measures	Metric		FA		BA		MA		F	p	Post hoc
	M	SD	M	SD	M	SD	M	SD			
Father's Education											
ODD	10.55	7.05	10.98	6.99	8.70	5.50	7.90	5.76	3.082	.028	2>4
Mother's education											
ODD	12.34	6.76	8.83	6.29	8.13	5.33	6.48	4.65	8.801	.000	1>2,3,4

df = (3,219)

Prevalence of ODD according to teacher ratings was 5.8% (n=13) whereas 15 children (6.7%) in non-ODD group were having four or more symptoms of ODD but teachers rated them as having mild to moderate exhibition of these symptoms at school settings.

To find out gender differences between boys and girls on continuous scores of ODD, independent sample t-test was conducted. Teacher ratings have shown statistically significant differences ( $t(223) = 2.27$ ,  $p < .05$ ) in boys ( $M = 10.53$ ,  $SD = 6.71$ ) and girls ( $M = 7.62$ ,  $SD = 5.42$ ). Boys had higher ODD scores than girls.

The results revealed that Odds Ratios of boys for the presence of ODD symptoms were higher than girls (Table 2). Symptoms more frequently presented by boys were arguing with adults, blaming others, losing temper and deliberately annoying people.

Pearson product correlation revealed strong negative correlation between ODD symptoms and family income  $r(223) = -0.292$ ;  $p = 0.001$ . A one-way analysis of variance (ANOVA) has shown statistically significant relationship between different levels of fathers' and mothers' education and symptoms of ODD,  $F(3,219) = 3.08$ ,  $p < .05$  &  $F(3,219) = 8.80$ ,  $p < .001$  respectively. Tukey's HSD post hoc analysis displayed significant differences ( $p = .037$ ) on ODD scores of the children whose fathers education was FA and master/professional. The children whose fathers had FA education had more symptoms of ODD as compared with those children whose fathers had higher education (masters or professional) and no significant differences were found between other groups. The children whose mothers had up to matric education had more ODD symptoms ( $M = 12.34$ ,  $SD = 6.76$ ) as compared with those children whose mothers were FA ( $M = 8.83$ ,  $SD = 6.29$ ;  $p = .005$ ), BA ( $M = 8.13$ ,  $SD = 5.33$ ;  $p = .001$ ) and MA/professional ( $M = 6.48$ ,  $SD = 4.65$ ;  $p = .000$ ). Thus parent's higher education is related to fewer ODD symptoms in children whereas other family characteristics, like maternal work status, parent's age, and familial structure had insignificant association with ODD symptoms (Table 3).

## DISCUSSION

The results revealed an eye opening percentage of ODD symptoms in the school children.

There is no research evidence available on the prevalence of ODD in Pakistani school children although there are some studies which measured ODD as a co morbid problem in children either having ADHD or CD<sup>10,11,18,19</sup>. The prevalence of ODD in current findings is similar to those reported by Meltzer and colleagues<sup>16</sup> but lower than other reports in the general population with similar age range<sup>20,22</sup> that used DSM-IV definitions and parents and teachers as informant. Prevalence was relatively higher for boys (7.6%) than girls (3.8%). Symptoms more frequently presented by boys were arguing with adults, deliberately annoying people, losing temper, and blaming others. Consistent with the international literature, the present study also showed same lines of findings on child-related demographics<sup>13</sup>. Child's gender was found to be significantly related to high levels of ODD like symptoms, boys scored higher on presence of ODD rates and symptoms as compared to girls. The results on gender differences in ODD manifestation are in line with previous research works<sup>18,16</sup>.

It was found that low family income is related to higher rates of ODD.

ODD is more prevalent among children with low socioeconomic status families<sup>1</sup>. The results also showed that parent's higher education is significantly related to the low rate of ODD.

There are some limitations of the study. ADS-IV is a reliable and valid measure; current study established its reliability but could not validate this measure with Pakistani children. Small sample, one type of the school system, and one age group also limited the generalizability of the study. Future research should focus on these issues in relation to the co morbid nature of ODD with ADHD and CD in school, home, and community contexts. Since ODD in early age tends to persist in middle school years and results in serious antisocial behavioral display in adolescent years, so early onset identification would help parents, teachers and clinicians to take appropriate steps in planning effective treatment and prevention programs for disruptive behaviors.

## CONCLUSION


The results reveal that the prevalence of ODD is not very high in school children, but the presence of ODD symptoms is an alarming sign and some effective steps in dealing with oppositional behavior patterns should be taken. Gender differences were significant with boys showing more ODD symptoms. Parental education and family monthly income were inversely related to ODD symptoms in children. Although being limited in scope, this study draws attention of the researchers, teachers, parents and practitioners towards the relatively neglected area of the detection of ODD in children.

## Acknowledgement

The study was supported by Higher Education Commission, Government of Pakistan under grant number 0411043225s-039.

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