

## The comparison of behavioral and emotional problems in children with a bipolar parent and children with healthy parents in Zahedan, Iran, 2011

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### Summary

**Aim of the study.** Mental illness in parents can cause behavioral problems in children because of genetic contribution and their narrowed parenting capabilities. Organic and psychotic disease in mother and father can affect their role in family and rising up children with genetic tendency to bipolar disorder in family which have impaired competence to bringing up the children increases the risk of mental damages.

**Subject or material and methods.** In this descriptive-cross sectional study 65 children of bipolar parents (case group) and 65 with healthy parents (control) where chosen with convenience sampling and compared with child behavior check list (CBCL). comparison of mean scores on CBCL scales between the two groups was performed by using statistical T test and analysis of variance (ANOVA).

**Results.** Findings showed that the mean scores of CBCL were higher in case group than in control group and boys had higher scores than girls in case group.

Significant relation between birth order and mean CBCL scores in anxiety, somatic complain, attention deficit/hyperactivity disorder and conduct disorder subscales was found ( $p < 0.05$ ) and CBCL mean scores in anxiety subscale had significant relation with duration of disorders in parents ( $p < 0.05$ ).

**Discussion.** The higher CBCL mean scores in bipolar parents' children than control group may suggest there is higher emotional and behavioral problems and increase in risk of bipolar disorder.

**Conclusions.** Higher degree of emotional and behavioral problems in off springs of BMD patients may predict mood disorders in future.

bipolar disorder / parental mental illness / child susceptibility to mental illness / child behaviour

### INTRODUCTION

Psychiatric disorders in parents may give rise to problems in children, first because the susceptibility to psychiatric disorders may be trans-

ferred to children and second, mental illness may make it difficult to perform as a spouse or parent. Children need care and nurture, and parents play a significant role in meeting those needs [1]. In families where there is a lack of structured upbringing because of a mental illness in one or both parents, children have a greater likelihood of developing a psychiatric disorder themselves [2]. Bipolar disorder (BD) is a severe and persistent psychiatric illness which is associated with mortality and which affects a person in a number of ways. Its prevalence has been reported at 5–10% in first-grade relatives of adults and children with bipolar disorder [3, 4]. In recent years, researchers have focused on high-risk

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populations such as offspring of parents with, or those at risk of, BD and other psychiatric disorders.<sup>5</sup> In addition to psychiatric disorders, researches indicate a high risk of behavioral and emotional disorders in children of parents with bipolar disorder, as they experience more symptoms than other children. The symptoms are: unstable temperament, anxiety, attention-deficit hyperactivity disorder (ADHD), depression, somatic complaints and educational problems [6, 7]. Lapalme et al indicated that inherent susceptibility to psychiatric disorders along with sociopsychological complications of parental BD may double the risk of psychiatric disorders and behavioral problems in children and juveniles [8]. On the other hand, Carlson and Weintraub indicated that high degrees of behavioral and emotional problems are the future predictors of affective disorders in these children [9]. One of the methods of detecting behavioral problems in children and juveniles is the Child Behavior Checklist (CBCL), a tool to evaluate parents' reports of behavioral problems in children aged 4-18 years [10]. Studies have been carried out to evaluate the profile of CBCL in children and juveniles with BD. A meta-analysis by Mick et al found that children and juveniles with BD have a different profile on the CBCL which is determined by significantly higher scores on the aggression, attention disorders, anxiety and depression subscales [11]. Wales et al found that girls and boys whose parents have BD had higher scores on CBCL subscales than the control group (girls on 7 and boys on 3 subscales out of 10) [12]. During a 14-month follow-up, Reichart et al reported higher scores in 7 out of 10 subscales for children of BD parents compared with children of parents without mental illness [13]. Studies showed that children and juveniles at high risk of BD suffer from a vast range of behavioral problems. Studying the high-risk population may help to identify and diagnose the predisposing factors and early symptoms of BD which may affect the child's personality formation and future performance level. In particular, the early onset of the disorder may have severe negative effects. Therefore, the findings of this research may help to change the approach to BD management from individual patient-focused treatment to family-focused treatment. This study was performed to evaluate the be-

havioral and emotional problems of children of parents with BD and compare them with children of parents without mental illness using the CBCL.

## METHOD

The present study was based on a descriptive sectional survey. Participants were selected from among children of patients who were referred to Baharan Psychiatric Hospital (experimental group) and Ali-Asghar Children Clinic (control group) in Zahedan city, Iran, in 2010. In the experimental group the criteria for inclusion were: one parent with at least 6 months' history of BD, age 4-18 years, no intellectual disability in the child. In the control group the criteria for inclusion were: no psychiatric disorder history in parents, age 4-18 years, no intellectual disability in the child and no chronic physical disease.

Participants were selected by the available method. The history of BD in parents of the experimental group was evaluated during their psychiatric hospitalization, whereas the mental health of the control group parents was evaluated by asking the parents the following questions: Have you ever been referred to a psychiatrist or a psychologist?

Have you ever taken any antipsychotics?

Research questionnaires were distributed among parents and in the experimental group were to be completed only by the healthy parent. The child selected for the study could be any one of the family children who fulfilled the study criteria. Thus, 65 parents of the experimental group and 65 parents of the control group completed the questionnaires. Data were gathered using a demographic characteristics questionnaire that included basic information regarding the child's age, gender, number of sisters and brothers, birth grade in family (whether first, second or later child), history of psychiatric referral and the reason for referral.

Data were analyzed using the t-test (frequency and percentage) and analyzing multiple variances (multivariate analysis of variance, MANOVA).

**RESULTS**

Overall, 65% of children with BD in one parent and 65% of children with healthy parents were studied. They were 4-18 years old (mean of 4.7

± 10.2). Boys in the experimental group scored slightly higher on the behavioral and emotional problems subscales than boys in the control group, but statistically there was no significant difference (Table 1).

**Table 1.** Prevalence of emotional and behavioral problems in children in the experimental and control groups according to gender. ADHD, attention-deficit hyperactivity disorder; CBCL, Child Behavior Checklist.

Behavioral problem (CBCL)		Boys			Girls		
		Mean	SD	<i>p</i>	Mean	SD	<i>p</i>
Emotional problems	Experimental	56.5	12.4	0.961	52.1	8.1	0.470
	Control	56.6	11.9		50.5	7.8	
Anxiety	Experimental	51.6	8.4	0.077	48.5	10.0	0.298
	Control	55.4	9.8		50.8	6.3	
Physical complaints	Experimental	53.4	9.7	0.460	51.7	8.8	0.601
	Control	55.2	11.4		52.9	7.9	
ADHD	Experimental	47.6	7.6	0.193	48.5	9.5	0.867
	control	50.0	7.4		48.9	8.7	
Oppositional	Experimental	57.0	11.4	0.214	51.1	9.1	0.773
	Control	53.9	9.7		50.4	9.8	
Conduct	Experimental	55.0	9.5	0.202	53.8	11.9	0.557
	Control	58.1	11.4		55.5	10.3	

However, we found that there was a significant difference ( $p=0.019$ ) between the experimental and control groups on the anxiety subscale in 6- to 12-year-old children (Table 2 – next page).

Also, children in the experimental group on the whole showed a higher prevalence of emotional and behavioral problems than children in the control group. The difference was lower among the first-born children and more pronounced among the next children, so rising with the child’s birth grade (Table 3 – next page).

**DISCUSSION**

Our study indicated that the mean CBCL scores were higher in the experimental group than in the control group according to age. This lead us to conclude that children of BD parents (experimental group) experience more behavioral and emotional problems than children of healthy parents (control group).

Derakhshanpour et al [17] established that, based on the subscales of physical complaints, anxiety/depression, attention problems, aggressive behavior, introversion and general problems, children with BD have more emotional and behavioral problems than do controls, which was similar to the findings of the current research. However, Wales et al [12] found that the offspring of BD parents scored higher on CBCL subscales than children of healthy parents, which is different from the findings in the current study. Another study showed that the risk of ADHD in children of BD parents is 8 times higher than that of the general population [14].

In addition to psychiatric disorders in children of BD parents, studies indicated a higher risk of emotional and behavioral disorders in these children, as they experience some symptoms more often than children of parents without mental illness. These symptoms are: unstable temperament, anxiety, ADHD, depression, physical com-

**Table 2.** Prevalence of emotional and behavioral problems in children in the experimental and control groups according to age. ADHD, attention-deficit hyperactivity disorder; CBCL, Child Behavior Checklist.

Behavioral problem (CBCL)		< 6 years			6-12 years			> 12 years		
		Mean	SD	p	Mean	SD	pP	Mean	SD	p
Emotional problems	Experimental	48.8	8.3	0.402	55.1	10.5	0.959	60.8	11.4	0.064
	Control	51.2	9.7		55.3	12.2		54.0	9.8	
Anxiety	Experimental	50.6	11.3	0.968	47.7	7.4	0.019	53.2	7.9	0.390
	Control	50.5	7.7		53.7	9.8		55.4	7.6	
Physical complaints	Experimental	53.8	12.1	0.307	49.8	6.1	0.053	55.1	8.5	0.790
	Control	50.6	6.1		54.6	10.2		56.0	12.5	
ADHD	Experimental	45.7	10.3	0.174	46.9	7.6	0.199	52.1	5.1	0.136
	control	50.1	9.7		49.7	7.7		48.8	7.4	
Oppositional	Experimental	51.0	8.1	0.571	52.7	12.0	0.197	61.2	9.5	0.118
	Control	49.2	10.9		52.4	8.5		55.8	10.6	
Conduct	Experimental	54.7	13.7	0.748	52.2	9.3	0.086	57.0	6.8	0.937
	Control	56.1	12.0		57.5	11.6		56.8	10.1	

**Table 3.** Prevalence of emotional and behavioral problems in children of experimental and control groups according to birth grade. ADHD, attention-deficit hyperactivity disorder; CBCL, Child Behavior Checklist.

Behavioral problem (CBCL)		First child			Second or third child			Fourth child and later		
		Mean	SD	P	Mean	SD	P	Mean	SD	P
Emotional problems	Experimental	56.5	7.9	0.191	55.1	11.4	0.496	49.0	14.4	0.137
	Control	53.1	9.5		53.6	10.0		54.3	12.3	
Anxiety	Experimental	52.0	5.8	0.441	50.8	11.0	0.671	44.9	6.9	0.037
	Control	53.6	8.2		52.1	6.3		53.4	10.8	
Physical complaints	Experimental	55.5	11.0	0.942	52.7	8.8	0.173	46.6	5.1	0.010
	Control	55.7	9.6		49.4	6.2		56.0	10.6	
ADHD	Experimental	48.1	9.1	0.202	50.0	8.7	0.169	41.1	4.8	0.005
	control	51.6	9.2		47.7	6.0		48.8	6.9	
Oppositional	Experimental	54.9	10.0	0.650	54.9	10.5	0.042	53.0	14.1	0.283
	Control	56.3	10.9		48.9	7.3		48.5	6.7	
Conduct	Experimental	54.9	10.5	0.470	55.9	10.7	0.567	48.8	8.4	0.002
	Control	57.5	13.2		54.1	9.6		57.4	4.9	

plaints and educational problems [6, 7]. These symptoms can be debilitating for patients and destructive for families. Hence their identification may be helpful in the early diagnosis and timely treatment of these patients and the pre-

vention of suffering from temperament disorders, especially bipolar disorder.

The results of the present study indicated that boys experienced emotional and behavioral problems slightly more often than girls. Al-

though there was no significant difference between both experimental and control groups with respect to age, in the 6-12 years group emotional and behavioral problems were more frequent. There was also a significant correlation of emotional and behavioral problems' increase with the child's birth grade.

Anxiety disorders were also more prevalent in the experimental group than in the control group, especially in boys aged 6-12 and in the fourth children and later. These findings are in accordance with the results reported elsewhere, where anxiety disorders have been mainly reported comorbid with bipolar disorder [14-16]

Children whose parent (or parents) have BD seem to be at risk from two factors: first, genetic vulnerability inherited from their parents, and second, sociopsychological factors due to living with a parent who has a psychiatric disorder, for example the mental state of the affected parent, conflict among the couple, their economic situation. To have a better understanding of the environmental factors, further and longitudinal studies might be helpful [19].

According to the studies cited here, it would appear that children of BD parents have to be considered a high-risk group for emotional and behavioral disorders and their early warning symptoms and prodromal illness should be identified. On the other hand, psychiatric diagnosis at a young age is complicated by high comorbidity, gradual and inconspicuous onset of the disorder and its atypical form. Therefore, caution should be taken regarding the onset of any type of disorder and timely and urgent actions need to be performed.

One of the limitations of this study was its sectional type and many of the disorders cannot be identified during a short period of assessment, especially in children and juveniles. Further longitudinal investigations might be helpful, especially because mental health of parents of the control group had been assessed based only on a short questionnaire.

## REFERENCES

1. Cicchetti D, Toth S. A developmental psychopathology perspective on child, abuse and neglect. *J Am Acad Child Adolesc Psychiatry* 1995; 34: 541-565.
2. Rutter M, Dunn J, Plomin R, et al. Integrating nature and nurture: implications of person-environment correlations and interactions for developmental psychopathology. *Dev Psychopathol* 1997; 9: 335-336.
3. Lewinsohn PM, Klein DN, Seeley JR. Bipolar disorder during adolescence and young adulthood in a community sample. *Bipolar Disord* 2000; 2: 281-293.
4. Johnson JG, Cohen P, Brook JS. Associations between bipolar disorder and other psychiatric disorder during adolescence and early adulthood: a community-based longitudinal investigation. *Am J Psychiatry* 2000; 157: 1679-1681.
5. Chang KD, Steiner H, Ketter TA. Psychiatric phenomenology of child and adolescent bipolar offspring. *J Am Acad Child Adolesc Psychiatry* 2000; 39: 453-460.
6. Egeland JA, Shaw JA, Endicott J, et al. Prospective study of prodromal features for bipolarity in well Amish children. *J Am Acad Child Adolesc Psychiatry* 2003; 42: 786-96.
7. Wals M, Hillegers MR, Reichart CG, et al. Prevalence of psychopathology in children of a bipolar parent. *J Am Acad Child Adolesc Psychiatry* 2001; 40: 1094-1102.
8. Lapalme M, Hodgins S, Laroche C. Children of parents with bipolar disorder: a metaanalysis of risk for mental disorders. *Canadian Journal of Psychiatry* 1997; 42: 623-631.
9. Carlson GA, Weintraub S. Childhood behavior problems and bipolar disorder: relationship or coincidence. *J Affect Disord* 1993; 28: 143-153.
10. Achenbach TM. *Manual for the Child Behavior Checklist/4-18 and 1991 Profile*. Burlington, VT: University of Vermont, 1991.
11. Mick E, Biederman J, Pandina G, et al. A preliminary metaanalysis of the child behavior checklist in pediatric bipolar. *Biol Psychiatry* 2003; 53: 1021-1027.
12. Wals M, Hillegers MH, Reichart CG, et al. Prevalence of psychopathology in children of a bipolar parent. *J Am Acad Child Adolesc Psychiatry* 2001; 40: 1094-1102.
13. Reichart CG, Wals M, Hillegers MH, et al. Psychopathology in the adolescent offspring of bipolar parents. *J Affect Disord* 2004; 78: 67-71.
14. Masi G, Perugi G, Toni C, et al. Attention-deficit hyperactivity disorder bipolar comorbidity in children and adolescents. *Bipolar Disord* 2006; 8: 373-381.
15. Masi G, Toni C, Perugi G, et al. Anxiety disorders in children and adolescents with bipolar disorder: a neglected comorbidity. *Can J Psychiatry* 2001; 46: 797-802.
16. Bashir M, Russell J, Johnson G. Bipolar affective disorder in adolescence: a 10-year study. *Aust N Z J Psychiatry* 1987; 21: 36-43.
17. Derakhshanpour F, Arabgol F, Panaghi L. Psychiatric disorders and behavioral functions in offsprings of bipolar parents. *Hormozgan J Medicine* 2010; 13: 246-252.

18. Pauline A. Young children of bipolar parents at elevated risk for ADHD. *Medscape Med News* 2010, 28 January. Available at <http://www.medscape.com/viewarticle/716034> (accessed August 2014).
19. Aminzadeh M, Shirazi E. The effect of parental mood disorder on offsprings. *Fifth Iranian Congress on Children and Adolescents Mental Health*, 8–10 October 2000.