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Psychopathology and Personality Patterns in First-Degree Relatives of Bipolar Patients

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SUMMARY:

Objective: This is a cross-sectional study designed to assess psychopathology and personality patterns in a group of high-risk subjects for bipolar disorder compared to a control group. As high-risk subjects first-degree relatives of bipolar patients were selected.

Method: Ninety-five first-degree relatives of 54 bipolar patients and 93 first-degree relatives of 54 subjects without any psychiatric disorder were recruited in the study. Control subjects were matched to bipolar patients according to age, gender and educational status. SADS-L (Schedule for Affective Disorders and Schizophrenia-Lifetime Version) was used both to ascertain the psychiatric status of the patient and control subjects, and to evaluate the psychopathology in probands' and controls' relatives. MMPI-2 (Minnesota Multiphasic Personality Inventory-2) profiles of relatives of patient and control groups were compared as well.

Results: In the relatives of bipolar patients the SADS-L diagnoses of hypomania, minor depression and schizotypal personality were statistically more prevalent than in the relatives of the control group. MMPI-2 profiles of both relatives of bipolar patients and controls were within "normal" range, whereas relatives of patients were more defensive in disclosing psychopathology. Any specific profile characteristic for relatives of bipolar patients could not be described.

Conclusion: Minor mental disorders were more prevalent in the relatives of bipolar patients group. A personality pattern spesific to high risk group for bipolar disorder couldn't be detected.

Key Words: Bipolar disorder, MMPI-2, personality, psychopathology, relatives

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INTRODUCTION

The association of personality traits or temperament and affective disorders have been emphasised by several authors, since Kraepelin. Research on interepisode personality patterns (Hirschfeld et al 1986, Peselow et al 1995, Solomon et al 1996, Ulusahin and Uluğ 1997), and with family members as high-risk groups (Maier et al 1995a, b, Potash et al 2000) support this association.

Studying interepisode personality assessments is not the precise way to show the relation of personality traits and illness, since intermorbid personality may not reflect premorbid personality patterns. It will not be easy to differentiate the residual effects of past affective episodes from premorbid personality patterns, even in remission. In order to fully appreciate the association between the personality and illness, studies with high-risk groups are needed. The first degree relatives of the bipolar probands have been considered as high risk population for bipolar disorder in several studies (Akiskal et al 1985, Lauer et al 1998, Coryell et al 1985, Leboyer et al 1999), since the probability of bipolar disorder in the first degree relatives of a proband is approximately 4-8 times more than expected in the general population (Kelsoe 1999).

The interpretations of the association between personality traits and affective disorders are classified by Maier et al (1995a) into two major approaches. The first approach considers temperament as a minor variant of the illness. The second approach regards temperament or personality traits as a risk factor for developing affective disorder. Both approaches need a fine description of personality traits in risk groups. Several clinical and personality features were described with different

instruments for the assessment of the first-degree relatives.

Akiskal and colleagues (1985) made an alternative approach and proposed that characteristics of affective temperament might be considered as an endophenotype for bipolar disorders. They reported that some definite temperament characteristics, which might be present in healthy people, were more prevalent in some types of affective disorders, they might have hereditary transition and were seen more frequently in close relatives of patients when compared with general population. Hyperthymic temperament was shown to be an endophenotypical feature for Bipolar I disorder (Kesebir et al., in press).

Attempts have been made to classify bipolar disorder according to common clinical features in the families. Psychotic symptoms aggregated in families (Potash et al 2001) whereas rapid cycling did not show a familial aggregation (Nurnberger et al 1988). Familiality of puerperal trigger was reported (Jones and Craddock 2001). Non-familial bipolars experienced significantly more depressive episodes and had higher neuroticism scores than familial bipolar probands on the Eysenck Personality Inventory (Moorhead and Scott 2000). Maier et al (1995a) reported an aggregation of obsessive compulsive and anancastic traits in families with affective disorders. A study comparing the personality patterns of unipolar versus bipolar patients reported that bipolar persons were less judging, more extroverted, more novelty seeking and less harm avoidant (Janowsky et al 1999). High occupational or educational achievement was reported in the relatives of bipolar probands (Coryell et al 1989).

Majority of research focusing on the relationship of personality and affective disorders has been carried out in Western countries. Personality traits, however, without doubt are influenced by culture. Though, most of the instruments used in personality research are validated in several cultures (Butcher 1996), more specific investigations are needed for assessing the discrepancies in different cultures.

In this paper we aim to study the frequency and type of psychopathology and personality patterns in a group of high-risk subjects for bipolar disorder by comparing with a control group in a Turkish sample.

METHOD

Participants

Ninety-five first-degree relatives (RBP) of 54 bipolar patients (BP) and 93 first-degree relatives (RC) of 54 subjects without any psychiatric disorder (C) were recruited in the study. BP group selected among the bipolar patients' records who were treated in Hacettepe University Hospital, Department of Psychiatry. Of 250 recorded bipolar patients 54 were within the age limits of 18-65 at the time of the study, living in Ankara, had first degree relatives fitting the inclusion criteria and gave consent for the study. Bipolar diagnoses of BP subjects were confirmed by Schedule for Affective Disorders and Schizophrenia-Lifetime version (SADS-L) interview. Similarly, C group was also interviewed with SADS-L to establish that they had never experienced any mental illness. Inclusion criteria for relative groups (RBP and RC) were being elder than 17 years old with at least 8 years of education.

Control group was matched to the bipolar group according to age, gender and educational status. The male/female ratios in the groups were approximately 1. The mean and SD of age for the groups are given in Table 1. BP and C groups were matched, RBP and RC groups were comparable in terms of age and gender as shown in Table 1.

RBP group consisted of 43 siblings, 37 offspring, 9 fathers and 6 mothers. RC group included 39 siblings, 42 offspring, 8 fathers and 4 mothers.

MATERIALS

Schedule for Affective Disorders and Schizophrenia-Lifetime version (SADS-L): This semi-structured interview schedule was designed to elicit information necessary for making diagnoses using the Research Diagnostic Criteria (RDC) (Endicott & Spitzer 1978). Reliability and validity studies of the SADS Turkish version were performed by our team (Saka et al., 1998, Uluşahin et al. 2000).

Minnesota Multiphasic Personality Inventory – 2 (MMPI-2): A well-known objective instrument for the assessment of personality and psychopathology (Butcher et al 1989). Its validity was examined in various societies (Butcher 1996). Standardisation studies of Turkish translation were completed (Savaşır and Çulha, 1996). These standardisation studies were performed with individu-

Table 1. Age and Gender Ratios in the Study Groups.

	BP (n=54)	C (n=54)	RBP (n=95)	RC (n=93)
Mean age (SD)	38.87 (11.5)	40.77 (11.6)	33.44 (13.7)	31.66 (11.2)
Female/Male	26/28	26/28	49/46	41/52

BP: Bipolar Patients, C: Individuals without any psychiatric disease, RBP: Relatives of Bipolar Patients, RC: Relatives of Controls.

als who were at least secondary school graduates.

Socio-demographic Information Form (SIF): was designed by the researchers to obtain sociodemographic and family information.

Procedure

All participants (BP, RBP, C, RC) were interviewed with SADS-L and asked to fill SIF. Relative groups (RBP, RC) were assessed by MMPI-2. The same investigator performed all SADS-L interviews. Informed consents were obtained from patients and relatives.

Statistical Analysis

In order to compare relatives of patients with controls, chi-square test for the prevalence of psychopathology and Student's t-test for MMPI-2 sub-scale points were used. As MMPI-2 standards for females and males were different, statistical analyses for females and males were performed separately (i.e. female relatives of bipolar patients were compared with female relatives of controls and male relatives of bipolar patients were compared with male relatives of controls).

RESULTS

i. Results of SADS-L

Research Diagnostic Criteria (RDC) diagnoses of RBP and RC groups were evaluated by SADS-L. Diagnoses of labile personality (1.1%), schizotypal personality (8,4%), hypomania (4.2%), cyclothymia (7.4%), minor depression(11.6%), obsessive compulsive disorder (5.3%) and phobic disorder (1.1%) were detected. Distribution of these diagnoses to the groups were compared by crosstab and given in Table 2. As it is indicated in Table 2, RBP subjects are more likely to have psychiatric diagnoses. Particularly, minor depression, schizotypal personality, hypomania and obsessive compulsive disorder are more frequent among relatives of bipolars.

ii. Results of MMPI-2

Relatives of bipolar and control subjects were compared in terms of all MMPI-2 subscales with Student's t test. All subscales have a mean within normal range. Table 3 and 4 summarise means of MMPI-2 content and standard subscales for men and women respectively. For the sake of simplicity only the subscales revealing statistically significant differences are included in the tables. Female RC subjects got significantly higher points from subscales of psychastenia, hypomania, cynicism, depression and bizarre mentation than female RBP subjects. Similarly male RC subjects got significantly higher points from subscales of L, depression, psychasthenia, anger, work interference, obsessiveness, anxiety, hypochondriasis, fears, type A, health concerns, schizophrenia, bizarre mentation, cynicism, social discomfort, negative treatment indicators and anti-social practices than male RBP subjects. Both male and female RBP subjects got higher scores on validity subscales particularly K score than RC subjects (Table 3 and 4).

DISCUSSION

The association between personality and psychopathology in affective disorders needs well-designed studies with high-risk groups. This is a family study that compares psychopathology and personality traits between the first -degree relatives of bipolar patients as a high-risk group and relatives of healthy subjects with similar socio-demographic characteristics.

There was not any clear psychopathology in MMPI-2 evaluation of RC or RBP groups both. But psychasthenia, depression, bizarre mentation, cynicism, schizophrenia, hypochondriasis, fears, anger, antisocial practices, type A, work interfer-

Table 2. Distribution of RDC Diagnoses in Relatives of Bipolar Patients and Controls.

RDC Diagnoses	RBP N (%)	RC N (%)	χ^2	P
Labile personality	1 (1,1)	0	0,98	.321
Schizotypal personality	8 (8,4)	1 (1,1)	5,56	.018*
Hypomania	4(4,2)	0	4,00	.045*
Cyclothymia	7 (7,4)	0	4,57	.033*
Minor Depression	11(11,6)	0	14,81	.002**
Obsessive-Compulsive Disorder	5 (5,3)	0	5,03	.025*
Phobia	1 (1,1)	0	0,98	.321

* $p < .05$, ** $p < .01$
RBP: Relatives of Bipolar Patients, RC: Relatives of Controls, RDC: Research Diagnostic Criteria

ence, negative treatment indicators, social discomfort, health concerns, obsessiveness and anxiety subscales were found to be higher in female relatives of controls versus RBP group. This finding was considered to relate with defensive attitude of RBP group and will be discussed elsewhere. The finding that females got different points from 5 subscales and males got different points from 16 subscales might be interpreted as females of RBP group had a relatively lower level of defensive attitude. As a result of SADS-L evaluation, the prevalence of psychological diagnoses was higher in RBP group. Assessment of MMPI-2 reveals the profile of the whole group, since it depends on means of the scores. On the other hand by SADS-L, individuals with psychopathology were detected. Thus the distinct qualities of our instruments enriched the results on two different dimensions.

As it may be expected minor mood disorders (minor depression, cyclothymia and hypomania) were common in the relatives of bipolar patients and not seen in the relatives of controls. This result is in accordance with several other studies indicating higher frequency of mood disorders in the families of bipolar patients than in general population (Gershon et al 1982; Goodwin and Ghaemi 1998; Joyce et al. 2004; Kısa et al. 2004). Similarly Andreasen et al (1987) and Weissman et al (1984) reported frequent minor mood disorders in the relatives of bipolar patients.

One of the most interesting findings of the study was higher prevalence schizotypal personality in relatives of bipolar patients. Eight individuals had diagnosis of schizotypal personality in RBP group versus one person in RC group. In a series of studies schizotypal personality was reported to relate with schizophrenia (Kendler et al. 1981). In some other studies, it was found that schizotypal personality characteristics were more prevalent among relatives of bipolar patients versus normal population (Squires-Wheeler et al. 1989; Gilvary et al. 2001). Heron and colleagues (2003) found that the prevalence of schizotypal characteristics were higher than normal population, but lower than relatives of patients with schizophrenia in relatives of bipolar patients.

Another interesting finding of the study was the higher prevalence of obsessive-compulsive disorder in RBP group versus RC group. Concurrence of obsessive-compulsive disorder with bipolar I and II disorder was reported in many studies (Kruger et al. 1995; Perugi et al. 1997; Angst et al. 2005). Higher prevalence of obsessive-compulsive disorder in relatives of bipolar patients might be considered as another evidence of coincidence of these two psychopathologies. As our controls were chosen among healthy individuals, MMPI-2 subscales were within normal limits as expected. Evaluation of MMPI-2 points revealed that validity scales were different in RBP and RC groups. K and L scores of RBP males were higher than RC group, but only K scores of RBP females were higher than controls. Higher points of RBC group from validity subscales might be due to an attitude towards unwillingness to reveal personal information or having a positive impression on other peo-

Table 3. Mean Values for MMPI-2 Subscale Points of Males in RBP and RC Groups.

	RBP Mean (SD)	RC Mean (SD)	t
L	6.20 (2.93)	4.53 (2.00)	3. 43***
K	15.5 (4.15)	10.11 (3.77)	6.90***
Hypochondriasis	6.15 (3.76)	8.96 (4.43)	3.43***
Depression	6.04 (5.36)	10.51 (5.97)	3.95***
Psychasthenia	10.87 (7.12)	17.81 (8.56)	4.40***
Schizophrenia	13.67 (10.30)	19.14 (10.10)	2.71**
Anxiety	5.41 (4.17)	10.05 (4.91)	5.06***
Obsessiveness	3.98 (3.11)	7.74 (3.48)	5.71***
Health concerns	6.02 (4.25)	8.77 (4.77)	2.87**
Bizarre mentation	3.63 (3.36)	5.39 (3.44)	2.60*
Anger	5.98 (3.01)	8.26 (2.93)	3.89***
Cynicism	12.04 (4.46)	14.30 (4.27)	2.61**
Anti-social practices	8.46 (3.67)	10.19 (3.49)	2.45*
Social discomfort	6.80 (3.95)	9.04 (4.91)	2.49*
Negative treatment indicators	6.74 (4.36)	8.88 (4.42)	2.45*
Fears	6.07 (3.46)	8.49 (3.72)	3.39***
Type A	8.94 (3.39)	11.23 (3.10)	3.58***
Work interference	7.98 (4.98)	12.93 (4.54)	5.27***

* p<.05, ** p<.01, ***p<.001
RBP: Relatives of Bipolar Patients
RC: Relatives of Controls

ple. Members of families with a history of mental illness might know that they were in a greater risk. This awareness might lead to controlled answering to MMPI-2 questions with the purpose of defensive attitude. Similar behavioural attitudes were reported in relatives of individuals with high risk for affective disorders (Hecht et al. 1998). These findings about personality patterns and attitudes, which were determined with MMPI-2, were consistent with studies in Western communities which were performed with similar populations.

Though family studies provide valuable information, they carry some methodological limitations which are valid for the present study as well. First limitation is connected with the control group. Since the control subjects were screened for mental disorders, they may not represent the general population precisely. Otherwise, if the controls are not screened there will be a probability of misclassifying someone with the disorder as a control. Therefore, screening of the control group either for all psychiatric disorders or only for the disorder being studied is recommended for the family studies (Faraone and Tsuang, 1995). Although Faraone and Tsuang (1995) favoured screening only for the disorder being studied, we preferred to screen for all mental disorders. Because, as a well-known fact bipolar disorders are related with many psychiatric disorders which are highly common in general population. Depressive disorders (Stancer et al 1987) and alcohol dependence (Raimo and Schukitt, 1998) are common in bipolar patients and in their families. Including subjects with these disorders might have invalidated the homogeneity of our control group.

The second problem of family studies is the re-

Table 4. Mean values for MMPI-2 subscale points of females in RBP and RC Groups.

	RBP Mean (SD)	RC Mean (SD)	t
K	13.86 (4.10)	10.67 (4.11)	3.544***
Depression	9.51 (6.41)	12.55 (6.86)	2.10*
Psychasthenia	16.22 (8.34)	20.28 (8.65)	2.17*
Hypomania	16.14 (4.60)	18.64 (3.68)	2.69**
Bizarre mentations	3.31(2.73)	5.72 (3.78)	3.43***
Cynicism	12.16 (4.10)	14.67 (3.70)	2.90**

* p<.05, ** p<.01, ***p<.001

quirement of reaching a high proportion of the relatives. In the most comprehensive family studies with bipolar I patients average relatives per patient was over 5 (Weissman et al 1984; Andreasen et al 1987). In Coryell et al's (1984) study with bipolar II patients, this number was 3,7. On the other hand, there were some studies which were carried on around one relative per patient (Akiskal et al 1985; Hecht et al 1998). We could reach to only 1.7 relatives per subjects. This low rate partly depends on the at least 8 years education level requirement of our study. Since obligatory primary education was 5 years in our country till 1998, many relatives were excluded. Though it was reported that personality traits were more stable after the age of 25, we included the relatives over the age of 17 in order to raise the relative/patient proportion.

Reaching to the members of the family who are living in different cities or abroad, constitutes another problem of such studies. Some studies solved this problem by getting contact with relatives who are living in long distance by telephone interviews (Coryell et al 1984). Since our study depends on the MMPI assessment, we needed to meet these subjects face to face and this resulted in low rate of recruitment.

The interviewers were not blinded for the diagnoses of patients and controls. This fact might lead to impairment of the objectivity of the interviewer and result with a false high prevalence of psychopathologies in relatives of bipolar patients.

As a conclusion psychopathology was more common in the first-degree relatives of bipolar probands compared to the first-degree relatives of the subjects who had never had any psychiatric disorder. Minor affective syndromes, schizotypal personality and obsessive compulsive disorder were the most prevalent mental disorders in the first-degree relatives of bipolar patients. MMPI-2 profiles of both relatives of bipolar patients and controls were within the "normal" range, whereas relatives of patients were more defensive in disclosing psychopathology. Any specific MMPI-2 profile characteristic for relatives of bipolar patients could not be described.

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