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THE RELATIONSHIP BETWEEN CHILDREN WITH PSYCHIATRIC DISORDER AND PERSONALITY TRAITS OF THEIR MOTHERS

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Abstract

Objectives: The aim of our study was to determine whether there is a relationship between maternal personality traits and the child's psychiatric disorder.

Materials and Methods: The data for this cross-sectional case-control study were collected from mothers of 134 children with a psychiatric disorder who applied to the child psychiatry department of a university hospital between February and June 2021 and the mothers of 92 children without any psychiatric disorders. Participants were evaluated by using Eysenck Personality Questionnaire Revised-Short Form.

Results: A total of 226 mothers participated in our study, 59.29% (134) of whom were the mothers of a child diagnosed with a psychiatric disorder, and 40.71% (92) were the mothers of a healthy child. The neuroticism and psychoticism scores were significantly higher in the mothers of the patient group, and the extraversion score was significantly higher in the mothers of the control group. ($p<0.001$). There was no significant difference between the two groups in terms of lie traits scores ($p=0.309$). While the highest maternal extraversion scores were seen in the group with skin picking disorder followed by attention deficit and hyperactivity disorder (ADHD), the highest lie traits score was found in the mothers of children with ADHD. Neuroticism and psychoticism scores were the highest, while extraversion scores were the lowest in mothers of children with intellectual disabilities.

Conclusion: We determined that there was a significant relationship between the presence of psychiatric disorders in children and the personality traits of the mothers.

Keywords: Maternal personality, psychiatric disorder, child, adolescent.

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Introduction

Personality is the sum of innate and acquired characteristics that distinguishes an individual from others and is the process of an individual exhibiting his/her mental, emotional, physical and social aspects in a consistent manner.[1] Both environmental and genetic factors play a role in the development of personality. While the intelligence levels, personality traits and skills of the parents constitute the genetic aspect of the child's personality development, environmental factors are the child's family characteristics, nutrition, and experiences with her/his five senses.[2] Along with the personality development of the child, adaptation to the environment and behavior style are also affected by the personality traits of the parents. The most important identification object since the birth of the child is the mother. For this reason, it is inevitable that the behavioral characteristics of the child and the ability to cope with stressful life events are affected by the personality trait of the mother.[3] The relationship between the diagnosis of the child's psychiatric disorder and the personality traits of the mothers were investigated in the context of various disorders. In one study, mothers of children with obsessive-compulsive disorder (OCD) were found to have high novelty seeking and low self-directedness and cooperative attitudes.[4] Mothers of children with encopresis have been shown to be intrusive, neat, meticulous, strict, and overly anxious.[5] Therefore, a mother with maladaptive personality traits can negatively affect the child's upbringing behavior and the child's mental health.[6]

There are a limited number of studies investigating the relationship between the mother's personality trait and the child's susceptibility to psychiatric disorders and which psychiatric disorder is associated with which trait of the mother's personality. In this study, we aimed to compare and evaluate the personality traits of mothers of children and adolescents aged 3-18 years who were followed up and treated with any psychiatric disorder in the child psychiatry outpatient clinic with the personality traits of mothers of the children without any psychiatric disorders.

Materials and Methods

Study Design

This cross-sectional case-control study was conducted in Yozgat Bozok University Child and Adolescent Psychiatry Outpatient Clinic. Data were collected between February and June 2021. Psychiatric diagnoses of children and adolescents were made according to the criteria of the diagnostic and statistical manual of mental disorders (DSM-5) and affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL), which is based on DSM-IV. Mothers of children and adolescents who applied to our outpatient clinic were informed about the study, and verbal consents were obtained from those who agreed to participate in the study. They filled out the data collection forms in approximately 10 minutes. Data were

privately collected in an isolated room. The control group consisted of mothers of children and adolescents who had never been diagnosed with a psychiatric disorder, did not apply to the child psychiatry department, and were not followed up and treated. These children and adolescents were the participants who applied to the general pediatric outpatient clinic for a routine check-up. These children and their mothers were also evaluated with the same procedure applied to the patient group.

Sampling

The study consisted of mothers of children and adolescents who applied to the Child and Adolescent Psychiatry outpatient clinic and the mothers of children and adolescents who did not have any psychiatric disorder diagnosis. When the value for type error (alpha) was 0.05, the power of the test (1-beta) was 0.8, the effect size was 0.42, and the alternative hypothesis (H1) was one-sided the minimum sample size required to find a significant difference using this test was determined as 85 in each group and 170 in total. We included 180 mothers by considering the possibility of losing some of the cases, and to increase the power of the study. However, 12 illiterate mothers and 34 mothers who did not want to fill in the questionnaires were not included in the study. Thus, the data from 134 mothers were included in the statistical analysis. The mothers of 92 children and adolescents without any psychiatric disorder diagnoses were classified as the control group. The inclusion criteria for the study group were being literate, having the ability to communicate (no mental problems, no visual/hearing impairment), having a child diagnosed with a psychiatric disorder by a child psychiatrist, and willingness to participate in the study voluntarily. Meanwhile, the exclusion criteria for the study group were being illiterate, having an intellectual disability, having a visual, speech and hearing disability, having a child without a diagnosed psychiatric disorder, and refusing to participate in the study.

Assessments

The psychiatric disorder diagnoses of children and adolescents were reviewed using the criteria of the diagnostic and statistical manual of mental disorders (DSM-5) and affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL). The personality traits of mothers were evaluated with the Eysenck Personality Questionnaire Revised-Short Form (EPQR-S).

K-SADS-PL (Kiddie Schedule for Affective Disorders and Schizophrenia-Present and Lifetime version)

The K-SADS-PL is a widely used semi-structured diagnostic interview tool used to assess current and past episodes of child and adolescent psychiatric disorders. The Turkish version of the K-SADS-PL has good test-retest and inter-rater reliability.[7,8] In this study, K-SADS-PL was used together with DSM-5 diagnostic criteria to determine psychiatric diagnoses.

Eysenck Personality Questionnaire Revised-Short Form (EPQR-S)

Francis et al. (1992) reviewed the Eysenck Personality Questionnaire[9] and its short form (48 items)[10] and created the EPQR-S. The validity and reliability study of the scale for the Turkish population was conducted by Karancı et al. (2007).[11] The questionnaire consists of 24 items and evaluates personality in 3 main factors: extraversion, neuroticism, and psychoticism. The lie subscale aims to prevent bias during the application of the questionnaire and to control its validity. In this questionnaire, in which each factor is evaluated with six items, the participant is asked to answer 24 questions in the format of Yes (1)-No (0). The score that can be obtained for each personality trait varies between 0 and 6. Internal consistency values of the scale for its subscales are 0.78 for extraversion, 0.65 for neuroticism, 0.42 for psychoticism, and 0.64 for the lie.

Statistical Analysis

All statistical analyses were performed using SPSS v.20.0 (IBM Corp., Armonk, NY, USA) software. The results were stated in the tables as number and percentage (%), median, and interquartile range (25-75 p) values. The Kolmogorov-Smirnov test was used to assess the normal distribution of the variables. For continuous variables, the statistical difference between the two groups was calculated using the Mann-Whitney U test. Non-normally distributed data were compared using the Kruskal-Wallis test. Correlations between subscales in the groups were analyzed using Spearman's correlation test. A value of $p<0.05$ was accepted as statistically significant.

Results

Among 226 mothers that participated in the study, 59.29% (n=134) were mothers of children and adolescents with a psychiatric disorder diagnosis according to K-SADS-PL and DSM-5, and 40.71% (n=92) were mothers of children and adolescents without any psychiatric disorder diagnoses. The distribution of psychiatric diagnoses of children is shown in Table 1. The neuroticism and psychoticism scores of the mothers in the psychiatric disorder group were significantly higher than those of the mothers in the control group ($p <0.001$). The extraversion score was significantly higher in the control group ($p <0.001$). There was no significant difference between the two groups for lie traits scores ($p = 0.309$) (Table 2). When we examined the psychiatric disorders in children one by one, children whose mothers had the highest extraversion score had skin picking disorder followed by ADHD. Mothers of children with intellectual disabilities had the lowest extraversion score. Mothers of children with ADHD and tic disorders had the highest lie traits score, while the lowest lie traits scores were seen in mothers of children with trichotillomania. The highest neuroticism score was observed in mothers of children with intellectual disability, while the lowest was detected in mothers of children with trichotillomania

and stuttering. The maternal psychoticism score was the highest for children with intellectual disabilities (Table 3). When we examined the psychiatric disorders one by one, we found that the extraversion score was significantly lower than the control group in all psychiatric disorders except tic disorders, skin picking disorder, trichotillomania and stuttering. The Lie traits score was significantly higher only in the mothers of children with ADHD compared to the control group (p=0.010). The neuroticism score was significantly higher in mothers of children with panic disorder, intellectual disability, autism spectrum disorders, obsessive-compulsive disorder, tic disorders and anorexia nervosa compared to the control group. The psychoticism score was significantly higher in mothers of children with ADHD, major depressive disorder, intellectual disability, autism spectrum disorders and skin picking disorder compared to the healthy mothers (Table 3). When we analyzed the subscale scores of the patient and control groups with Spearman's correlation analysis, only a negative significant correlation was observed between extraversion and neuroticism in the mothers of the patient group (r=-0.248, p=0.004). In the control group mothers, there was a negative correlation between extraversion and neuroticism (r=-0.246, p=0.031) and a positive correlation with lie traits (r=0.373, p=<0.001). When we evaluated psychiatric disorders categorically based on the dimensional classification in DSM-5 instead of individually, no significant relationship was found between maternal personality scale scores and children's psychiatric disorders (Table 4).

Table 1. Psychiatric diagnosis distribution of the participants' children (n=226)

Psychiatric disorders	**n (226)**	**%**
Absent	92	40.71
ADHD	39	17.25
MDD	19	8.40
GAD	9	3.98
Panic disorder	8	3.53
ASD	11	4.86
ID	10	4.42
Tic disorders	9	3.98
Anorexia nervosa	6	2.65
OCD	10	4.42
SPD	4	1.76
Trichotillomania	4	1.76
Stuttering	5	2.21

ADHD: Attention deficit and hyperactivity disorder, MDD: Major depressive disorder, GAD: Generalized anxiety disorder, ASD: Autism spectrum disorders, ID: Intellectual disability, OCD: Obsessive-compulsive disorder, SPD: Skin picking disorder.

Table 2. Mean EPQR-S subscale scores of mothers of children with and without a psychiatric diagnosis (n=226)

EPQR-S subscales	Psychiatric disorder		P*
	Present (134)	Absent (92)	
Extraversion	4 (3-5)	5 (4-6)	<0.001
Lie traits	5 (5-6)	5 (4-6)	0.309
Neuroticism	4 (3-5)	3 (2-4)	<0.001
Psychoticism	1 (0-2)	0 (0-1)	<0.001

*Mann Whitney U Test, All data presented as median (percentile 25-75)

Table 3. The relationship between the mean EPQR-S subscales of the mothers of the patient and control groups and psychiatric disorders in children

Psychiatric disorders (n)	Extraversion*	p#	Lie traits¥	p#	Neuroticism*	p#	Psychoticism*	p#
Absent (92)	5 (4-6)		5 (4-6)		3 (2-4)		0 (0-1)	
ADHD (39)	5 (3-5)	**0.019**	6 (5-6)	**0.010**	3 (3-5)	0.184	1 (0-1)	**0.005**
MDD (19)	4 (3-5)	**0.009**	5 (4-6)	0.712	3 (2-5)	0.712	1 (0-2)	**0.004**
GAD (9)	3 (2-4)	**0.001**	5 (4-6)	0.681	3 (2-5)	0.750	0 (0-1)	0.732
Panic disorder (8)	4 (2.5-4.5)	**0.005**	5 (4-5)	0.282	4.5 (3.5-5)	**0.045**	0 (0-1)	0.982
ASD (11)	4 (2-5)	**0.005**	5 (5-6)	0.707	5 (5-6)	**<0.001**	1 (1-2)	**0.001**
ID (10)	2 (2-3)	**<0.001**	5 (5-5)	0.914	5.5 (5-6)	**<0.001**	2 (2-3)	**<0.001**
Tic disorders (9)	4 (3-5)	0.092	6 (5-6)	0.053	5 (5-6)	**<0.001**	0 (0-1)	0.789
Anorexia nervosa (6)	2.5 (2-5)	**0.007**	5 (5-5)	0.918	5 (5-6)	**0.007**	1 (0-1)	0.213
OCD (10)	3.5 (2-5)	**0.015**	5.5 (5-6)	0.145	4 (3-5)	**0.031**	1 (0-1)	0.396
SPD (4)	5.5 (4.5-6)	0.609	5 (4.5-5)	0.475	3.5 (3-4)	0.704	2 (1.5-2.5)	**0.002**
Trichotillomania (4)	4 (3-4.5)	0.053	2.5 (2-3)	0.001	2 (1.5-2.5)	**0.032**	0 (0-0.5)	0.510
Stuttering (5)	6 (5-6)	0.339	5 (5-6)	0.312	2 (2-2)	**0.015**	0 (0-1)	0.858

ADHD, Attention deficit and hyperactivity disorder; MDD, Major depressive disorder; GAD, Generalized anxiety disorder; ASD, Autism spectrum disorders; ID, Intellectual disability; OCD, Obsessive-compulsive disorder; SPD, Skin picking disorder.

¥p=0.006, *p<0.001; Kruskal-Wallis H test. p#: according to the Absent group (Mann–Whitney U test was used for comparison of the absent control group and the psychiatric disorders groups).

All data presented as median (percentile 25-75). Bold values indicate statistical significance.

Table 4. Comparison of maternal EPQR-S subscales scores when psychiatric diagnoses in children were categorized according to DSM-5

Psychiatric disorders (n)	Extraversion	p *	Lie traits	p *	Neuroticism	P *	Psychoticism	p *
Neurodevelopmental disorders	4 (3-5)		5 (5-6)		5 (3-6)		1 (0-2)	
Depression disorders	4 (3-5)		5 (4-6)		3 (2-5)		1 (0-2)	
Anxiety disorders	4 (2-4)	0.347	5 (4-5)	0.051	4 (3-5)	0.059	0 (0-1)	0.247
Obsessive-compulsive and related disorders	4 (3-5)		5 (4-6)		4 (3-4)		1 (0-1)	
Eating disorders	3 (2-5)		5 (5-5)		5 (5-6)		1 (0-1)	

*Kruskal-Wallis H test, All data presented as median (percentile 25-75)

Discussion

The aim of our study was to determine whether there is a relationship between the maternal personality traits and the child's psychiatric disorder and to determine which pediatric psychiatric diagnoses are associated with which maternal personality trait. The results of our study indicated that the presence of any psychiatric disorder in the child was associated with a high level of maternal neuroticism and psychoticism scores. The extraversion scores were higher in the mothers of the control group. When psychiatric disorders were categorized according to DSM-5, there was no significant relationship between maternal personality traits and psychiatric groups, but when disorders were evaluated individually, maternal personality traits were found to be associated with specific psychiatric disorders. Extraversion and lie traits scores of mothers of children with ADHD were higher than those of mothers of children with other diagnoses. At the same time, when compared with the control group, the lying traits scores of mothers of only ADHD children were significantly higher. Neuroticism and psychoticism scores were highest, while the extraversion scores were the lowest in mothers of children with intellectual disabilities. Extraversion and neuroticism personality traits were inversely correlated in both the patient and control groups. In addition, extraversion and lie traits were significantly correlated in the same direction in the control group.

Studies have suggested that when examining children's psychiatric problems and their loss of function, it is necessary to evaluate family relationships and personality traits of parents[12]. In particular, it is inevitable that the personality traits of the mother, who has a long-term relationship with her child from birth, affect the child's emotions, attitudes and behaviors. The child identifies his/her mother as a model and is directly affected by her attitudes and behaviors, and has a genetic connection[3]. In our study, we found that the presence of psychiatric disorders in the child and some specific diagnoses were associated with the personality traits of the

mother. It is argued that the extraversion subscale, which is one of the personality dimensions categorized by Eysenck, is associated with warmth, thrill-seeking, sociability, impulsivity, and uncontrolled emotions. It was also stated that neuroticism is associated with fear, anxiety, depression, and low self-esteem, while psychoticism is associated with anger, aggression, insensitivity to other people, lack of empathy, and antisocial behaviors. The lie subscale is used to check the validity of the scale and to measure bias.[9] In one study, more psychiatric disorders were found in the children of neurotic mothers.[13] Similarly, we found the neuroticism scores of the mothers of children with panic disorder, intellectual disability, autism spectrum disorders, obsessive-compulsive disorder, tic disorders and anorexia nervosa to be higher than the mothers of the control group. In a study conducted in Turkey, an increase in maternal neuroticism, psychoticism, and lie subscales was associated with an increase in attention problems, destructive behaviors, depression and anxiety symptoms in adolescents.[14] In a study using different personality scales, mothers of children with OCD were reported to have low self-directedness and cooperation, while mothers of children with encopresis had authoritarian, meticulous, spiteful, and normative personality traits[4,5]. In a study on children with separation anxiety disorder in which the temperament rating scale was used, the mothers of these children were found to have high irritability, depressive, cyclothymic, and anxious personality scores.[15] The extraversion subscale was found to be significantly higher in the control group. This sub-dimension includes impulsivity and uncontrolled behaviors, as well as positive features such as sociability, warmth and love.[9] In a study by Aksoy et al., as the extraverted personality traits of mothers with daughters increased, it was determined that social anxiety in children decreased and children's adaptation to life increased.[16] In our study, we found the extraversion and lie subscales of mothers of children with ADHD to be high. Similarly, one study found that the extraversion score of parents of children with ADHD was correlated with the child's behavioral problems.[17] Because extroversion is associated with positive traits such as warmth and sociability, as well as negative traits such as impulsivity, uncontrolled behaviors, and exaggerated emotions..[9] Although the etiology of ADHD is heterogeneous, the presence of ADHD in the parent increases the risk of ADHD in the child 2-8 times.[18] In a study, high extraversion, low agreeableness, and low reactive control were associated with specific hyperactivity-impulsivity and general ADHD.[19] For this reason, high extraversion scores in mothers may be expected in ADHD, where the genetic load is evident. Therefore, it is thought that the extraversion sub-dimension may have good and bad aspects depending on the situation. As a matter of fact, there are also studies stating that each of the personality traits has strengths and weaknesses and that no personality type is better than the other.[20] Also, mothers of children with ADHD had higher lie traits scores as well as extraversion scores. Prior literature has documented high neuroticism and low conscientiousness in mothers of children with ADHD.[21]People with a low conscience are defined as those who do not trust their words and do not recognize the rules, only success-oriented.[22] As much as an extroverted person is cheerful and loves to laugh, it has also been stated that people who have difficulty in controlling their emotions often get into trouble, are reactive and unreliable in their speech and behavior.[23] Already in the correlation analysis, we found a significant positive relationship between extraversion and lie traits in the control group. In our study, the highest neuroticism and

psychoticism and the lowest extraversion subscale scores were seen in mothers of children with intellectual disabilities. Shame, guilt, pity for both themselves and their children, social isolation, hopelessness, depression, and anxiety are common in families with mentally disabled children.[24] In a study, it was shown that mothers of children with mental retardation with Down syndrome were more introverted, depressed, anxious, and psychotic personality traits were dominant.[25] In the same study, fathers of children with Down syndrome also scored significantly higher in neurotic personality traits, somatization, and hostility than fathers with healthy children.[25] Neuroticism sub-dimension with anxiety, fear, depression; It is known that the psychoticism sub-dimension is characterized by being distant from other people and feeling guilty, while the extraversion sub-dimension is characterized by liking to enter social circles. Therefore, it is not surprising that we detected these findings in this group.[9] We found a negative correlation between extraversion and neuroticism, which are already considered two different extremes, in both the patient and control groups. We found the highest psychoticism subscale scores in mothers of children with intellectual disabilities. Having a mentally handicapped child, meeting the needs of such a child, and having to cope with the attitudes and behaviors of society towards their children may cause the emergence of anger in parents.[26] Therefore, it is not surprising that the psychoticism subscale, which is characterized by anger and aggression, is high in these mothers. In a study, when the personality traits of mothers of children with mental retardation with Down syndrome were examined, psychoticism scores were found to be higher than those of control mothers.[25] At the same time, the psychoticism score was significantly higher in mothers of children with ADHD, major depressive disorder, autism spectrum disorders and skin picking disorder, as well as an intellectual disability when compared with the control group. In our study, there was no difference between the two groups in terms of lie traits scores. The lie sub-dimension shows how honestly the questions in the scale were answered. However, this sub-dimension also includes behaviors that are assumed to be wrong by society but that everyone can exhibit from time to time.[11] For this reason, when it is considered for the general society, it is thought that wrong behaviors can be seen in every person from time to time and can be socially accepted. The lack of difference between the two groups can be associated with this situation.

We found that the mothers of children with a psychiatric disorder had higher neuroticism and psychoticism scores and lower extraversion scores than the control group and that there was a relationship between maternal personality traits and the psychiatric disorders of the children. Identification and control of risk factors that play a role in psychiatric disorders that impair the functionality of children and may require long-term psychiatric treatment are of great importance in terms of preventive mental health treatments. In this context, we think that mothers' personality traits and the quality of their relationship with their children should be evaluated. However, in order to generalize our study's findings, the relationship between maternal personality and a child's mental health should be investigated in large-scale community setting studies.

Limitations

Research findings are limited to the sample group and cannot be generalized to the population. Homogeneous distribution of psychiatric diagnoses in terms of number could not be achieved. Although mothers were questioned whether they had applied to psychiatry before and whether they received any treatment, a structured assessment tool was not applied to make a psychiatric diagnosis. This deficiency eliminated our chance to evaluate the interaction between psychiatric disorders and personality. This can be considered as a limitation of our study.

Ethical Considerations: Local ethics committee approval was obtained before the initiation of the study (Date; 10.02.2021 / Decision No; 2017-KAEK-189_2021.02.10_06). All children and mothers participating in the study were informed about the study, and their consent was obtained.

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