

# Studying the Correlation between the Personality Traits of Parents having Autistic Children and the severity of Autism in their Children

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## Abstract

The current research aims to determine the correlation between the personal traits of parents having autistic children and the severity of autism in their children. The research design is correlative and the population includes all of the parents having autistic children in age range of 4-11 who visit the Zehne Ziba clinic or Tehran Autism Society, school for exceptional children in Babol, and Treatment and Rehabilitation Center of Khorshid Amol in 2013. Among these parents 40 individuals were chosen as the sample by the use of available sampling. Tools used in this research are two questionnaires of NEO personality inventory (FFI) and Autism spectrum Quotient. The Pearson correlation statistical method and multivariate regression analysis were used for data analysis. Results showed that personality traits of mother and father significantly affect the changes in the severity of autism, in other words the variables of personality traits of mother and father have the power for predicting the severity of autism in children. Based on the stated findings we could consider these findings along with the existence of a correlation between the personality trait of parents and the autism disease, which means that the personality traits of parents affect the autistic children and the children affect the personality traits of parents as well. This effect could be through genetics, modeling, learning or the effect of these factors on the environment.

**Keywords:** Personality Traits of Parents, Autistic Children, Severity of Autism

## Introduction

Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition states three criteria for detecting the autism disorder which consists of impaired social interactions, impaired communications, and limited memes (APA,2002) while DSM-V reduced these criteria to two main criteria including impaired communications and social interactions (these two are considered as one problem) and limited behaviors (Lauritsen, 2013). The average ratio of autism disorder in epidemiological studies is 5 out of 10 thousand individuals. The reports range varies from 2 to 20 individuals out of 10 thousand individuals (DSM-IV). But more recent studies about the prevalence of autism disorder show 1 individual out of each 100 births (Flamgan, 2011).

The severity of autism refers to the severity or the coefficient of children's autistic traits which are reported by the parents and these traits are divided into 5 different groups; social inhibition, paying attention to details, selective attention (change of attention), communications and imagination (Auyeung, Baron-Cohen, Wheelwright and et al, 2007).

Due to the accompaniment of various spectra of language, communicational, behavioral and social disorders and also difficulty in detecting, prevalence of symptoms after the normal growth of the child, lack of definitive and effective treatments and unfavorable prognosis, disorders of autistic spectrum could all be the ground for many mental pressures on the family and child's relatives (Rafei, 2007). Studies show that parents of children having disorders of autistic spectrum are more exposed to mental pres-

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asures of having a child with disability than the parents of children having other psychological disorders (Kuhn and Carter, 2006). By the type of behavior parents show they create situations that provoke certain behaviors in children or they provide them with examples for modeling, or they encourage the children toward a special group of behaviors. The family members' personality especially the parents is the interfering element in interpersonal relationships. Personality is an overall structure consisting of collection of personal characteristics and it refers to three factors of thinking and observable external behaviors which play roles in interaction with environmental elements (Pervin and Cervone, 2005).

In an effort for detecting the risky factors which create behavioral problems for a child, researchers often study the characteristics of parents which have been proved to be one of the most important factors affective on the child's growth (Alizadeh, 2001).

The genetic theory of autism is highly hereditary and it depends on the fact that if the first-degree relatives of the children have Broader Autism Phenotype (BAP) or not. Hereditary in autism has been estimated more than 0.90 and BAP in parents having autistic children has been confirmed (Baron-Cohen and Wheelwright, 2004; quoted by Baron-Cohen, Ring, Chitnis and et al, 2006).

When the genetic factors in etiology of autism have been detected, this possibility that some of the family features may be indicators of milder phenotype of this disease has attracted more attention. In one of the most basic and key observations Smalley, Asarniw and Spence (1988) showed the catching risk of higher than 0.2 in sisters versus about 4 out of 10,000 and they also showed the observable difference in catching rates of Monozygotic (MZ) and Dizygotic (DZ) twins. The term Broader Autism Phenotype (BAP) refers to a group of subliminal communicational features and social skills and abnormal personality traits that are observed in relatives of individuals having autism and it seems that milder aspects are the character features of this disease (Constantino, Lajonchere, Lutz and et al., 2006; Rutter, 2000). In addition to existence of possibility of attributing some parents' behaviors and autistic children's behavior which are similar to the inheritance, another factor being affective is the parents' personality and their type of interaction with the child.

Belsky (1984) offered a theoretical pattern including 3 effective factors in order to state the fac-

tors for parenting: 1. Individual characteristics of the child 2. Source of support and pressure 3. Personality of parents. Belsky believes that among these three factors, parents' personality is the most important and effective factor, because the personality affects other determinants of parenting such as individual characteristics of the child, marital quality, job performance, and social support (Belsky, 1984).

When Kanner (1943) defined autism as a disorder he also stated this point that personality traits of parents are also a participant in occurrence of this disorder (Rosenhan, 1992; quoted by Dadsetan, 1999). Several studies confirm this issue (Murphy, Bolton, Pickles, and et al, 2000, Higgins, Bailey, and Poryes, 2005, Siller, and Sigman, 2005, Rajabi Damavand, Boushneh, and Ghobari Bonab, 2009, Ghobari Bonab and Estiri 2006).

The effect of behaviors and sensitivity of parents of autistic children on the development of their children's communicational skills has been shown in Siller and Sigman (2008) study. In the study of Ghobari Bonab and Estiri (2006) it has been concluded that in mothers having autistic children, the mental irritation is more than the mothers having normal children. Also in the research of Rajabi Damavand, Boushneh, and Ghobari Bonab (2009) it has been shown that a significant difference exists between the personality traits of parents having children with BAP such as sociability, innovative thinking, and tirelessly.

Kanner described some of the parents having autistic children as cold and uninterested in relationships, emotionally non-responsive and smart and he also referred to some of their obsessed features (Bettelheim, 1967). In studying the personality traits of parents having autistic children Piven, Wzorek, Landa, et al (1994) found out that personality traits such as aloof, untactful, undemonstrativeness, unresponsiveness in parents having autistic children are more than parents having normal children and with Down syndrome. Research backgrounds show that in previous studies the personality traits of parents having autistic children have been surveyed but less attention has been paid toward this matter that whether these features are effective on the severity of autism or not? In order to help reducing the behavioral symptoms in autistic children and providing better situation for these children it is required to detect the factors that are effective on its symptoms and pay attention to them and use them in the educational programs and planning therapies for

these children. In order to achieve these goals the current research aims to study the correlation between personality traits of parents and the severity of autism in autistic children.

## Methodology

### *Statistical society and sampling methods*

The current research population includes all of the parents having autistic children in age range of 4-11 years who visit the Zehne Ziba clinic or Tehran Autism Society, school for exceptional children in Babol, and Treatment and Rehabilitation Center of Khorshid Amol in 2013. Due to the problems of accessibility to the parents of clinical society (low prevalence rates, non-cooperation with the researcher and time-consuming levels of conducting research and completing the questionnaire), the available sampling was used. According to the research literature and lack of full access to the parents and after possible losses (lack of completion of tests in one session and lack of researcher's re-access to the specific examinee) in group of parents having autistic children 40 individuals volunteered for participating in this research.

### *Instruments*

Neuroticism-Extroversion-Openness Five Factor Inventory (NEO-FFI) which is one of the questionnaires related to evaluating the character structure of individuals older than 18 years old which is provided by McCrae & Costa (1987). This questionnaire consists of 60 questions of self-assessment and 5 factors of Neuroticism, Extraversion, Openness Experience, Agreeableness and Conscientiousness. Costa and McCrae (1992) reported the Cronbach's alpha between 0.68 (for agreeableness) to 0.86 (for neuroticism). The NEO-FFI inventory in Iran was standardized by Garousi Farshi (1998). The questionnaire validity was achieved by the use of test-retest method for 208 university students with a 3-month intervals and for factors C,A,O,E,N they were respectively 0.79, 0.80, 0.75, 0.83 (Fathi Ashtiyani, 2012). The current questionnaire Cronbach's alpha was evaluated by Haghshenas(2011) and it was 0.48-0.87.

Autism spectrum Quotient: This tool is provided by Auyeung and et al (2007) and measures the severity of autism in children. This child's form is provided for studying the subliminal symptoms of autism disorders in normal children 4-11 years old in Cambridge Center for Autism Studies and

it was translated by the Institute of Cognitive Science. This scale includes 50 phrases and in front of each phrase 4 items exists which are completed by the child's guardian or parent. In this questionnaire each 10 questions evaluate one of the cognitive fields of social skills, attention switching, communication, attention to detail, and imagination. Reliability of this test was achieved through the use of test-retest by Nejati and it was 0.82. The internal consistency of this test was measured by the use of Cronbach's coefficient and it was 0.76 to 0.79 (Nejati Safa, Kazemi Bejestani, Alaghbandrad 2003).

## Results

The current research is a correlative study. The data collection is conducted by collecting the scores of questionnaire (descriptive, cross-sectional, retrospective) and studying the correlation between these scores which means determining their correlation.

The current research main aim is to study the correlation between the personality traits of parents having autistic children between 4 to 11 years old. The multiple-regression (stepwise) was used for data analysis, and the below results were achieved:

According to the table No.1 the results show that:

In fathers, between the features of neuroticism ( $r= 0.318$ ,  $P= 0.024$ ) with Alpha 0.05, conscientiousness ( $r= 0.535$ ,  $P= 0.000$ ) with Alpha 0.01 and autism severity in children a positive and significant correlation exists. In other words, the more the amount of these features in fathers the higher the severity of autism in child. Also a negative and significant correlation exists between the features of extraversion ( $r= -0.426$ ,  $P= 0.003$ ) and openness experience ( $r= -0.447$ ,  $P= 0.002$ ) with Alpha 0.01, agreeableness ( $r= -0.340$ ,  $P= 0.017$ ) with Alpha 0.05 and the autism severity in children, which means that the higher these features in fathers the lower the autism in child. Also a positive and significant correlation exists between neuroticism ( $r= 0.394$ ,  $P= 0.007$ ), conscientiousness ( $r= 0.394$ ,  $P= 0.007$ ) and the autism severity in children in Alpha level 0.01. In other words the more the amount of neuroticism in mother the higher the severity of autism in child. Also based on the calculated correlation coefficient, a negative and significant correlation exists between the features of agreeableness ( $r= -0.332$ ,  $P= 0.021$ ), openness experience ( $r= -0.327$ ,  $P= 0.023$ ) with Alpha 0.05, extraversion ( $r= -0.389$ ,  $P= 0.008$ ) with Alpha 0.01 and autism severity, which means that

the higher the amount of neuroticism in mother the lower the autism severity.

In order to determine the best predictor for the autism severity of the predicting variables, the mul-

tivariate regression model in two arranged series by the use of simultaneous method and partial correlation was used. The achieved results are shown in table 2.

**Table 1. Correlation Coefficient Matrix of Variable of Autism Severity and the Predictor Variables**

5	4	3	2	1	Variable
**0.535	*-0.340	**0.447	**0.426	*0.318	Father (autism severity)
				-	N
			-	*-0.278	E
		-	**0.441	-0.082	O
	-	0.238	**0.573	*-0.292	A
-	0.226	-0.244	0.095	0.093	C
**0.492	*-0.331	*-0.327	**0.389	**0.394	Mother (autism severity)
				-	N
			-	0.041	E
		-	**0.494	-0.202	O
	-	**0.380	**0.545	*-0.279	A
-	0.157	-0.070	0.097	0.224	C

\*P<0.05

, \*\*P<0.01

**Table 2. Multiple Correlation Coefficient and Squared Multiple Correlation of N, E, O, A, C Variables (father & mother) in Predicting Autism Severity**

Significance level	F coefficient	Adjusted squared multiple correlation coefficient	Squared multiple correlation coefficient	Multiple correlation coefficient	Predictor variable	Model	Variable
0.000	9.686	0.595	0.595	0.771	N,E,O,A,C Father	1	Autism severity
0.000	7.345	0.234	0.829	0.731	N,E,O,A,C	2	

According to the above-mentioned findings it could be concluded that personality traits of father significantly affect the changes of autism severity, (R2= 0.595, F= (5,33)= 9.686 P= 0.000) These data show that variables of personality traits of father have the ability to predict the autism severity in autistic children.

Personality traits of mother predicted a significant ratio of the autism severity variance after the personality traits of father (R2= 0.234 F= (5, 32) = 7.345 p= 0.000).

Results for determining the regression coefficient and determining the power of significant predictor for independent variables and adjusting the regression equation are provided in table 3.

According to table 3 results and significance of F in table of variance analysis and t in table 3, the

regression equation is as below:

Prediction of autism severity = 20.826 - 0.250 (E) + 0.324 (C)

According to the amount of slope, the more the amount of variables of personality traits of mother (C and E) the more it predicts for autism severity of children. The indices provided in table 4 show the relative ability of each predictor.

As it is observable all of the bivariate correlations between the amounts of variables of personality traits of father are significant. (p<0.01). Only the partial correlation between the amounts of variables of personality traits of father in component C is significant and all of the bivariate correlations, between the amounts of variables of personality traits of mother are significant. (P<0.01). Only the partial correlation between the amounts of variables of

personality traits of mother in components C, E is significant. According to this correlation analysis it could be concluded that the predictors of person-

ality traits of father by themselves predict 60% and the personality traits of mother predicts 23% (R<sup>2</sup>) of changes of autism severity in children.

**Table 3. Standard and Non-Standard Regression Coefficients in Predicting Autism Severity**

Significance level	t	Standardized beta coefficient	Standard error	Non-standardized beta coefficients	Statistical index Predictor variable	Model	Variable
0.000	4.493	-	5.378	24.163	Fixed (father)	No.	Autism severity
0.373	0.903	0.108	0.123	0.11	N	1	
0.118	-1.603	-0.239	0.118	-0.189	E		
0.338	-0.972	-0.128	0.115	-0.112	O		
0.063	-1.923	-0.272	0.084	-0.162	A		
0.000	4.417	0.578	0.072	0.341	C		
0.000	3.961	-	5.258	20.826	Fixed (Mother)	No.	
0.065	1.908	0.262	0.119	0.228	N	2	
0.028	-2.306	-0.375	0.109	-0.250	E		
0.971	-0.036	-0.005	0.150	-0.005	O		
0.422	-0.813	-0.129	0.112	-0.091	A		
0.001	-3.819	0.490	0.085	0.324	C		

**Table 4. Bivariate and Partial Correlations of Predictors with Autism Severity**

Partial correlations	Bivariate correlations	Variable
0.155	*0.318	N (father)
-0.269	** -0.426	E
-0.167	** -0.447	O
-0.317	* -0.340	A
**0.634	**0.535	C
0.320	**0.394	N (mother)
* -0.377	** -0.389	E
-0.006	* -0.327	O
-0.142	* -0.332	A
**0.560	**0.492	C

## Discussion and Conclusion

The results of data analysis show that the personality of parents having autistic children which means both father and mother in components Neuroticism (N), and Conscientiousness (C) have positive correlation with autism severity in children, which means that by the increase of these two features in parents the autism severity in children

increases. Individuals who achieve high scores in neuroticism index may have negative feelings such as fear, sorrow, guilt, permanent harassment, and irrational beliefs, they also have less power on controlling impulses, they have poor compatibilities with others and they show stressful situations (Fathi Ashtiyani, 2012). Thus it could be said that one of the probable reasons of this positive correlation with destructive emotions of parents could be their



low compatibility which leads to increase of autism symptoms. On the other hand the autism symptoms may cause increase of negative emotions, incompatibility and symptoms of parents' neuroticism. Murphy, Bolton, Pickles, and et al (2000) studied the personality traits of relatives of individuals having autism. With evidences from several profiles of parents they had significantly some features such as anxiety, traumatism and irritability. Researches of Piven, Wzorek, Landa, and et al (1994), Cook, Charak, Arida and et al (1994), Piven, Palmer, Landa and et al (1997), Linhart (1999), Kuhn and Carter (2006) show that parents that have children suffering from BAP are more exposed to mental pressure and stress than the parents that have children suffering from other psychological disorders. Parents who have more neuroticism show more distress and, restlessness and anger. This type of features sometimes causes the parents to put some strict rules and orders for communicating with their child, and to have less intimate relationship with their children. It also results in increasing the conflicts in their relationships (Greet, Stams, Belsky and et al, 2009). On the other hand, the anger and affectivity of parents also have a correlation with children's behavior (Belsky and Barends, 2002). Yazd Khasti and Ghasemi research (2011) showed that increase of parents' neuroticism is related to the increase of rejection and decrease of acceptance. Thus the parents' neuroticism probably intensifies the autistic behaviors of the child.

Conscientiousness feature ( C ) was the next factor which had a positive correlation with autism severity. In positive aspects of this index the individuals achieving high scores in professional and academic fields are successful people. In negative aspects of this index the individuals achieving high scores are objector, boring, obsessive-compulsive toward cleaning and/or they put so much pressure on themselves toward business and professional affairs. Individuals with high scores in this index are accurate and punctual (Fathi Ashtiyani, 2012). Thus the increase of conscientiousness score in parents could indicate the feature of being obsessive-compulsive or putting extreme pressure on themselves for business and professional affairs. Folstein and et al (1999) believe that one of the components of BAP which is inherited separately is the personality trait of rigidity and obsession, which means that parents having obsession transfer this factor to their children, and one of the autistic behaviors of children is obsessive behavior and too much attention

to details (Quoted by Tajmir Riyahi, 2012). Anastopoulos and Barkly (1988) indicated the extremes of features of conscientiousness, ordering, and negative phrase of most of parents and their correlation with child's aggression. But from the perspective of explaining parenting the findings are against this hypothesis. For example Oliver, Guerin, Coffman (2009) concluded that more conscientious parents impose less limitation and they are more involved in their children's problems. Thus such parents' children act with less influx, which means that conscientiousness could be a positive parenting factor. In contrast with this hypothesis the research of Yazd Khasti (2011) states that fathers with high scores in conscientiousness have less tendency toward rejecting their children and their acceptance increases, as a result the proper growth of the child increases.

Another research result showed that a negative correlation exists between the features of (E), (O), (A) and autism severity, which means that by decrease of these three features in parents the autism severity in children increases. Extraversion is a type of behavior which is specified by an objective and external perspective and it is accompanied by higher practical activities. Extroverts have less preparation for self-mastery (Eysenck, 2000). Extroverts are social individuals. Additionally, these types of individuals are philanthropists and they have tendency toward participating in gatherings and celebrations. These people are decisive, active, and talky and they love conversations, and they also love excitement and mobility, and they have hope toward being successful in the future (Fathi Ashtiyani, 2012), while introversion is a behavior which is accompanied by mental inward and the introverts show more preparation for avoidance and self-mastery. These types of people have less tendency toward participating in gatherings and they spend most of their times studying and doing individual mental activities (Eysenck, 1947). Some of the aspects of introversion could be described in conflict with features of extraversion. Introverts are usually shy. Introverts are curious and they are also interested in research, they are conservative, independent and solitary people. Individuals suffering from autism disorder have deficiency in social skills and they cannot communicate with others. These people seem to be cold, indifferent and aloof and they do not show any tendency toward communicating with others. Autistic children are much more interested in being alone; they do not enjoy play-

ing with others and they do not show any interest in others (Samadi, and McConkey , 2012). Thus it could be said that introversion of parents could be a factor for children's learning, which means that introverted fathers may show behaviors such as being shy, less presence in the gatherings, and less social communications and they show more interest in being alone; that is why probably their children repeat their behaviors through the effect of social learning and taking examples. Along with this explanation in a research Joinson (1999) studied the role of taking examples and children's imitation during life based on the social learning theory. Stable personality characteristics of parents could help the children in doing developmental assignments and they can also prevent them from doing these assignments. In the next explanation it could be said that temperamental traits of the child are depended on the temperamental aspects of parents (Rattew, Stanger, McKee and et al, 2006), which means that children could inherit their parents' personality traits. Conducted researches related to the weakness in relatives of individuals suffering from autism show that relatives of children suffering from autism achieve specifically lower scores in special performance scales such as weakness in communication, and social skills (Baron-Cohen, Wheelwright, Hill and et al, 2001). Locas & Fivgita (1999) showed that extroversion is correlated with joy and introversion is correlated with negative feelings, thus the negative feelings could affect the factor of autism severity in children (Carror & Sheier, 1999; quoted by Keshavarzi, Arshadi, Azmoudeh, 2006). Parents who are extroverted use more imperative controlling methods for their children (Huver, Otten, Vriess and et al 2009). Locas and Fivgita (1999) showed that extroversion is correlated with joy and introversion is correlated with negative feelings, and they are also accustomed to reviewing negative aspects of their life (Carror & Sheier, 1999; quoted by Keshavarzi, 2006).

The openness experience scale is assigned to empirical aspects or limitations which a person faces and he/she is open to them. People who are open to experience are people who are curious in fertilizing inner experiences and the surrounding world and life and they are full of experiences. (Fathi Ashtiyani, 2012). One of the features of children suffering from autism is the inability to shift attention and they achieve low scores in this factor (Baron Cohen, Wheelwright, Hill and et al, 2001) which means that they show less response toward new

stimuli and they experience less new stimuli. Autistic children do not change and they successively repeat the repetitive routines (Samadi & McConkey, 2012), thus it could be said that children show these features through imitating and social learning and also inheritance (Yazd Khasti & Ghasemi 2011).

Agreeableness is another feature mentioned in this research. A person who has this feature is essentially a philanthropist, he/she has sympathy and empathy and he/she is interested in helping them and believes that others have the same relationship with him/her, while non-agreeableness or dissident index is self-centered and the one with this feature is doubtful about others' intentions. It seems that this index leads toward social positive aspects and mental health (Fathi Ashtiyani, 2012). Keshavarzi, Arshadi, Azmoudeh (2009) stated that the agreeableness feature in parents having normal children was more than parents having exceptional children.

Based on the research results, it is suggested to pay more attention to the personality traits of parents in the process of detecting and especially choosing the therapeutic intervention and a holistic approach should be adopted about the child or adolescent along with considering the individual, and if it is possible the surrounding members especially his/her parents should be exposed to intervention. Also in order to improve the relationships of children suffering from autism and accelerating the healing process a treatment plan should be designed for creating relationships between child-parent. If the parents become aware of their weaknesses, strengths and their personality, and the genetic causes of disease they could make conscious decisions about the birth of new children, treating the children suffering from autism and/or reinforcing the social skills.

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