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THE PREVALENCE OF ADHD DEFICIENCY AND ITS RELATIONSHIP WITH SOCIAL GROWTH AND ATTACHMENT STYLE OF PARENTS AMONG ELEMENTARY SCHOOL STUDENTS

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ABSTRACT

Today attention / hyperactivity deficiency disorder is one of the prevalent disorders among children with some symptoms like absent-mindedness, hyperactivity, aggressiveness, be impulsive and dangerous behaviors that can follow serious results. This disorder interfere with child's life in family, school and society so that child's disabilities can last until puberty ages and if no cure, it prepares child for society vulnerability and psychiatry for future. The importance of cure for these children with ADHD becomes more clear by being higher of delinquency, accident – prone, abuse drug and bipolar disorder with attention to the importance of this disorder in children and its results, the present study occurred with the aim of determining ADHD disorder prevalence and relationship with social growth and attachment style of parents among elementary school students of Tonekabon city in 2012-2013. The sample with 500 persons (250 male and 250 female) were selected from research society who are all students (male-female) of elementary school of Tonekabon by simple random sampling. It was used of Conners questionnaires, Vaineland scales and adult attachment style (ASS) in this research. The analyzing of the finding by using of SPSS and descriptive statistic and inferential statistic. The results showed that ADHD prevalence in aim society is 13/4% (15/6% in boys and 11/3% in girls) and also children with ADHD have lower social growth than the other children, the attachment style parents of children with ADHD, avoidant and insecure – ambivalent

Keywords: Attention-deficit/Hyperactivity, Attachment Style, Social Growth, Absent – Mindedness, Being Impulsive

INTRODUCTION

The complicated relationship parent-child has been important for a lot of psychologists like object relation theorists and they emphasis that quality, features, and the pattern type of this relationship determines some psychological factors for two sides, especially among children. The rate of social growth and ADHD is one of the behavior models (patterns) that is effective in children's future; and in contrast, there is parents attachment style which can known as one predictive pattern for these two variable i.e. social growth and ADHD in mutual and complicated mechanism.

The attachment is constant emotional relationship that its feature is tendency to search and contiguity, maintaining with special person especially in stressful situations (Berry, 2007).

Attachment theory by Bowlby was started for explaining why and how children become attached to their first care – giver and why fear separating from care – giver (Behzadipour, 2012).

Ainsworth and Bowlby identified three styles, secure, anxious insecure and apprehensive insecure (Davis, 2004). Hazan and Shaver (1987) also identified these styles in adulthood (Hazan and Shaver, 1987). Bowlby believed that attachment theory isn't just child's transformation theory, but is transformation theory in life and attachment behaviors and their result are always active and present and don't become limited to childhood (Behzadipoor, 2010).

The person's social roles. Social growth includes growth, altruism, honesty, self- defensiveness, communication, attachment, cooperation, self – control and improvement motivation (Naziri, 2008).

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Vineland (1965) believed that the social growth is necessitate for person's ability in doing self practical needs in life, and responsibility accepting and believed that social growth includes skills like general self – help, self- help in eating, self- help in clothing, self – help direction, occupation, communication, locomotion and socializing. Social growth is received when it can receive to the degree of ability in social communications that live in society easily (Naziri, 2008). Social growth can be placed under the mutual effect with a lot of variables and psychological disorder like ADHD deficiency disorder.

ADHD deficiency disorder is the most usual psychological disorders among children and is one of the most researchable disorders (Baydala, 2006). ADHD is the decreased pattern of constant attention and or hyperactivity and impulsive behavior which is more prevalent that is seen in children and youth with similar growth level (Sadock and Sadock, 2007).

The revised version of fourth edit of statistical and diagnosis leader of psychic disorder, ADHD is identified as one growth disorder as the result of behavior disorders in three fields, attention-deficit/hyperactivity disorder and hyper impulsivity and uses of definite symptom for diagnosis and its separation (American psychiatry Association, 2000).

Today they believe that the reason of ADHD is complicated interaction of neurological- anatomical systems and neurological – chemical systems. This idea is based on family genetic studies, twins and adopted- child, the studies about Dopamine gene, the studies of neurological imagery and neurotransmitter finding (Sadock and Sadock, 2007).

ADHD is related to low performance of Dopamine transferring process (Solanto, 2002) and causes two behavior results i.e. inhibition deficiency and problem in continuous attention (Barkley, 1997). The basic hypothesis implies that hyperactivity and impulsive behavior in ADHD, is the result of being low of Dopamine Tonic level which causes to high rate of Dopamine phasic responses in abnormal manner (Grice, 2001). Being low of frontal cortex activity of brain or long-term decrease in prefrontal cortex activity in children with ADHD (Rubia *et al.*, 1999) made more sensitive these children to external stimulus by indisposing the balance between Dopamin Tonic and phasic levels (Russell *et al.*, 2005).

Environmental variables like using cigarette (Mick, Biederman, Faraone, Sayer and Kleinman, 2002), deprivation at early staged of life (Rutter *et al.*, 2001), social – psychic problems of family (Biederman *et al.*, 1995), the problems related to pregnancy (Roland *et al.*, 2002) and the problems of childhood (Harrison and Scarpitti, 2002) are known as dangerous important factors for ADHD. It should be important that some mentioned factors may interact with parent's genotype (Castellanos and Tannock, 2002).

The basic mechanism of ADHD haven't been definite completely and existed models for making clear these mechanism have selected different attitudes about it. Some models, know descending processing in frontal cortex and inhibition as basic core of deficiency in ADHD symptoms (Barkley, 1997). The other models have emphasized upon sub cortical and brain stem regions as regions that are important for understanding ADHD and state ascending processing (Sergeant *et al.*, 2003). Some models pay attention to dysfunction of Dopamine transferring (ascending processing) as basic factor of behavioral disorders in ADHD. The degrees of short delay, the deficiency of temporal processing and the decrease of working memory, are End phenotype which is supposed that are responsible in the deficiencies of executive control (descending performance) (Sergint and Colleagues, 2003; Castellanos and Tannock, 2002). All one reason theories in explaining basic mechanism of ADHD used of psychological concepts like disinhibition response (Barkley, 1997), energy level (arousal) (Sergeant, 2000), fit stimulation (Zentall and Zentall, 1983). Delayed avoidance (Sonuga-Barke, 2002) and the deficiency of extinction (Gordon and Colleagues, 2005). Although each of above descriptive models have help to make clear aspect of existing ambiguities in ADHD, however none of them couldn't provide strong neurobiological origins for this disorder similar to dynamic transforming theory (Gordon and colleagues, 2005).

The dynamic transforming theory is based upon strong neurobiological origins and abnormal functions of Dopamine plays basic role in it. The hypo function of Dopamine branches causes failure and deficiency in good signal transferring of non- Dopamine. According to this theory, the avoidance delay and response disinhibiting are known as extinction deficiency that is exsiccated by dysfunction of mesolimbic

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Dopamine branches. The extinction deficiency is the result of low Dopamine Tonic level and stopping Dopamine phasic responses against external stimulation that causes short delay degrees of reinforcement (Gordon and colleagues, 2005). The liberation of Dopamine acts as learning sign and its decreasing as error sign in its reinforcement (Chultz, 2002). Because avoidance needs too much time and it is tried to provide enough levels of Dopamine for good learning as the result of reinforcement, therefore it follows with delay. For this reason, low level of Dopamine Tonic in children with ADHD makes them reactive against external stimulus more than usual (Gordon and colleagues, 2005). The extinction doesn't act in a good manner in children with ADHD. Therefore, it is decreased from the reinforcement importance by stopping of Dopamine phasic response and this state's causes decreasing or even synapse absorbing which causes situational maladjustment on the basis of dynamic transforming model systematically. None of biologic symptoms which we presented their detailed explanation in describing ADHD models, because the diagnosis, can't known as the diagnosis origin of ADHD.

The existing estimates with FMRI, PET and EEG studies have done at group level and we can't result by them at personal level. Although Zang and colleagues (2005) found that the brain volume in children with ADHD is more little than normal children (Zang *et al.*, 2005), but the mentioned difference isn't so important with paying attention whole body volume and proportion between head and body (Soderlund *et al.*, 2007). At present level of knowledge, we can identify psychological function that may act as End phenotypes in ADHD research as behavioral or neurological manner. End phenotypes provide some criteria that place between genes and behavioral symptom. The degrees of short delay, the deficiency of temporal processing. The degrees of short delay, the deficiency of temporal processing, the deficiency of working memory, are known as examples of End phenotypes related with ADHD (Castellanos and Tannock, 2002). It is believed that nervosas and its levels can act as one End phenotypes which knows Dopamine transferring and especially the portion between Dopamine Tonic and phasic (Palsson and Colleagues, 2011).

The determining of ADHD prevalence has been difficult because of the changing descriptions. The estimates changes from 2-7% in united states (August and colleagues, 1996), New Zealand (Ferguson *et al.*, 1993) and Germany (Esser and colleagues, 1996) and the rate of disorder is little higher in India (Bhatia and Colleagues, 1991) and China (Leung and Colleagues, 1996).

We can achieve to similar prevalence rate when it is used of similar criteria for ADHD for countries like united states, Kenya, China and Thailand (Anderson, 1996); however using of same criteria couldn't show cultural difference in ADHD sufficiently. Almost 3-7% children who go to school have ADHD in all worlds (American psychiatry Association, 2000). Some researchers are doing in the field of ADHD prevalence in world:

One research at elementary schools of Arabic society reported 9/4% prevalence (Bener and Colleagues, 2006); Scahill and Schwab-Stone (2000) estimated the best estimate prevalence between 5-10% in school children on the basis of 19 studied research. One research which was accomplished in Nigeria, estimated the prevalence 8/7 % (Adewuya and Famuyiwa, 2007). Also In research that was accomplished at exceptional schools of Irland by Barkley and Colleagues (2008), they estimated the prevalence 9/55%. In other research about the prevalence of ADHD, was estimated 8/6,9/4,6,7/2,7/4% orderly (Sanchez and Colleagues, 2011).

The prevalence of ADHD was estimated between 3/5 and 5/6% in France recently (Lecendreux and Colleagues, 2010). The prevalence of ADHD has been studied in different cities which was estimated this disorder among boys 18/1 and among girls 6/7% in Mashhad (Abdollahyan and colleagues, 2002) and was achieved the prevalence rate 9/1% in Zanzan (Shabani and Yadgari, 2003). Also in one study by Abrabgol and Colleagues (2002), the ADHD prevalence was estimated 3/7% among students. A lot of data show that ADHD is more prevalent among boys than girls (Davidson, 2007).

Because of higher probability aggressive and antisocial behavior among boys, they may refer to clinic more than girls (Davidson, 2007). One research group, studied a big and different sample from the girls with ADHD and without it nationally and reported some basic finding (Hinshaw and Colleagues, 2002); The probability of being accepted to adopted- child for girls with ADHD was more than the other girls;

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the girls with composed type had perturbation behavioral symptoms more than the girls with attention deficiency like the related findings to male samples; the probability of having behavioral disorder or confronting oppositional disorder was more for the girls with composed type than the girls without ADHD; The probability of being anxious and depressed was more for the girls with ADHD than the girls without it. From the point of view of coevals, the girls with composed type were more negative than the girls with attention deficiency and the girls without ADHD.

The girls with attention deficiency were estimated more negative than the girls without ADHD; The girls with ADHD showed some psychological – neurological deficiencies, especially in executive performance (for example, planning, problem solving) than the girls without ADHD which is the repetition of the other findings (Castellanos and Colleagues, 2000).

They believed that ADHD diminishes in adolescence simply; but a lot of longitudinal studies have challenged this idea (Barkley and Colleagues, 2002). Although some children show the decrease of symptoms severity in adolescence (Cohen and Colleagues, 1993), 65-80% of children with ADHD have the criteria of this disorder in adolescence. As it was mentioned attention deficiency hyperactivity disorder is one of the most prevalence psychiatry disorders in childhood that can result to irreparable damages in adulthood like the decrease of self – esteem, disorder in relationships with others and also depression, anxiety and eventually abuse – drug if no cure; Therefore with regarding the aim of the prevalence study of ADHD disorder in elementary school children and the prevalence relationship of this order with the born order, divorce children, mother's education level and mother's job.

According to what was stated, the present study is going to find response for the following questions:

1. What rate is the prevalence of ADHD disorder in students of Tonekabon town?
2. What rate is the prevalence of ADHD disorder in girl students of Tonekabon town?
3. What rate is the prevalence of ADHD disorder in boy students of Tonekabon town?
4. How is the demography factors related with ADHD?
5. What is the relationship of ADHD with social growth?
6. What is the relationship of ADHD with the attachment style of parents?
7. How is the polyhedral relationship between ADHD, the attachment style of parents, social growth and demography factors of children?

Statistical society, sample and research's method: at present research statistical society included 1900 Elementary School students (700 girls and 1700 boys) of Tonekabon town that 500 persons (250 boys, 250 girls) were selected for attending at final study by purposive sampling.

The method of this research is descriptive and from survey type.

Research's Tool

The short diagnosis questionnaire of ADHD disorder for adults – Kanrez (CAARS-S: S). it is the questionnaire with suitable validity and reliability including 26 items with 0-3 score which is used of the five following subscales for its correct (Connors and colleagues, 1999).

A. attention-deficit / memory problem, B agitation/ hyperactivity, C/problems with general supposing from self, D / hyperactivity – attention-deficit/hyperactivity index, E emotional in stability/ be impulsive. The subscale, E shows the scale from general level of ADHD symptoms and is the best screen for identifying persons who are in the risk of sickness among the subscales. The raw scores of each subscale has been changed into T scores by using of fit normative table (the T scores in this scale has 50 mean and 10 standard deviation).

The t scores higher than 65 are significant clinically and the T scores higher than 80 show the severity (degree of problems and pathology of that field and also the probability of bad shaped or the exaggeration in symptoms (Connors and colleagues, 1999). The disharmony index is also accounted (determined) for each from which if it is more than or equal with 8, shows the disharmony in responses and therefore the results should analyzed precautions.

The persons who had the disharmony index more than or equal with 8 and also the persons who hadn't completed the questionnaire sent out the study. It was used of the Persian translation of CARRS-sis questionnaire for this research. This questionnaire hasn't been nor med in Iran yet, but in our study, it was

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accomplished upon 20 persons with an introductive study and its validity was accounted by Cornbrash's alpha that was 81%. Its content validity was measured by three expert's knowledge of child's psychiatry and estimated it fit (Arabgol and colleagues 2004).

The Attachment Style Questionnaire (AAI)

This scale has been made by Hazan and Shaver (1987) and has been normed on the nurses of governmental hospitals of Isfahan city (Rahimian and colleagues, 2007). This questionnaire has 15 items that each of three attachment style, secure, ambivalent and avoidant has 5 items. Its scoring is from never (0 score) until almost always (4 score). The score of attachment subscales account by calculation the scores mean of five questions for each subscale. For determining the attachment style of every person, digital values of related items with each level is added up and then is divided on 5. Hazan and Shaver calculated the reliability and retest of this questionnaire 81% and the reliability with Cronbach's alpha 78%. Collins and Read also calculated the reliability of Cornbrash's alpha 79% (Collins and Read, 1990). The reliability of Cronbach's alpha was calculated for all tests in Rahimian Boogar and colleagues us research, ambivalent, avoidant and secure style 75%, 83% and 77% orderly. That shows suitable reliability. Its content validity was also confirmed by some psychologists at Isfahan University. It was used of Mein organized interview for adult attachment for the study of concurrent validity. The organized interview of mien includes pre specified questions that measure three attachment styles for adults. The concurrent validity of these two questionnaires is measured in concurrent accomplishing of this interview by attachment questionnaire on 100 nurses and this kind of validity was calculated for whole test, ambivalent, avoidant and secure style 80%, 87%, 84% and 79% orderly that shows the positive and significant relationship of those with each other.

Analytic Strategy

Table 1: The prevalence of ADHD in girls Branch city is how much?

Model	Percent
Children with ADHD	11.3
Healthy	88.7

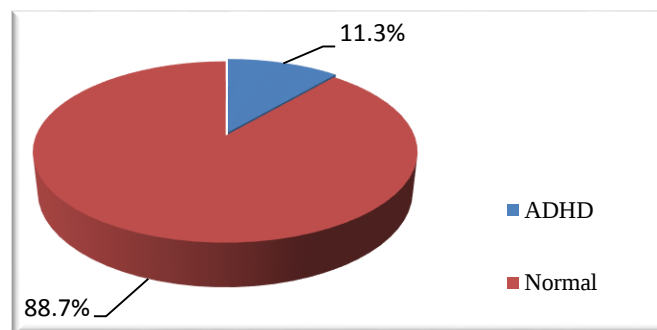


Figure 1:

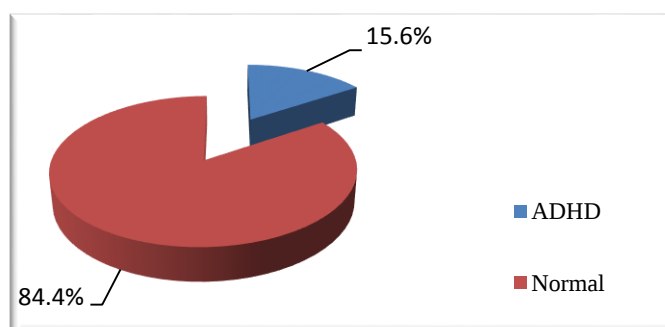


Figure 2: The prevalence of ADHD in boys Branch city is how much?

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Table 2: What are the demographic factors associated with ADHD?

Model	Percent
Children with ADHD	15.6
Healthy	84.4

Table 3: Life status of parents (boys)

		Living together	Armistice	Total
Group	Patient	17	22	39
	Healthy	187	24	211
Total		204	46	250

Table 4: Life status of parents (girls)

		Living together	Armistice	Total
Group	Patient	10	18	28
	Healthy	207	15	222
Total		712	33	250

Table 5: Parental education (boys)

		Cycle	Diploma	Academic	Total
Group	Patient	21	12	6	39
	Healthy	36	116	59	211
Total		57	128	65	250

Table 6: Parental education (girls)

		Cycle	Diploma	Academic	Total
Group	Patient	17	8	3	28
	Healthy	48	104	70	222
Total		65	112	73	250

Table 7: Parental occupation (father) (boys)

		Housekeeper	Free	Employee	Farmer	Total
Group	Patient	1	14	6	18	39
	Healthy	2	124	66	19	211
Total		3	138	72	37	250

Table 8: Parental occupation (father) (girls)

		Housekeeper	Free	Employee	Farmer	Total
Group	Patient	1	10	7	10	28
	Healthy	0	144	61	17	222
Total		1	154	68	27	250

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Table 9: Occupation of parents (mother) (boys)

		Housekeeper	Free	Employee	Farmer	Total
Group	Patient	17	10	3	9	39
	Healthy	62	80	33	36	211
Total		79	90	36	45	250

Table 10: Occupation of parents (mother) (girls)

		Housekeeper	Free	Employee	Farmer	Total
Group	Patient	11	6	4	7	28
	Healthy	93	72	25	32	222
Total		104	78	29	39	250

Table 11: What Is ADHD a relationship with social development?

			Social development
Spearman test	ADHD	The relationship	-.680
		The significance level	0.039
		Total	500

According to this test, it's evident that this relationship is significant because of being low the significance level from %5 and the negative relationship indicates that the sickness has reverse relationship with social growth. We use of independent-T test for evaluating the difference and the comparison of two groups.

Table 12

		Levene's Test for Equality of Variances			
		F	The significance level	The significance level	The mean difference
Social development	Equality of variance	.001	.577	.008	5.341540
	Inequality of variance			.008	5.341540

It is used of Levin test for determining the variance equality the equality hypothesis of variance is correct according to the significance level of this test which is more than %5. We study the significance level of T-test for determining of being significant the difference of two groups which this difference is significant because of being low this value than %5 and according to being positive, we conclude that patients have low social growth than healthy people.

Children affected with ADHD have more low social growth and this indicates weak communicational pattern and low self – assistant (self – help) skills. We can state that ADHD is known as one suitable predictor pattern for low social growth, In other words, children affected with ADHD are more weak in self – guidance, self – assistant (self – help) in eating, self – assistant (self – help) in wearing public (general) self – assistant (self – help), communication and even socializing than their usual (healthy) coevals.

What is the relationship between parents of ADHD with attachment style?

To evaluate this hypothesis, the Fisher's exact test was used.

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Table 13

		Attachment			Total
		Safe	Ambivalent	Avoidance	
Group	Patient	20	111	203	334
	Healthy	28	61	77	166
Total		48	172	280	500

Table 14

Chi-Square Tests

	Value	p
Kai Association - Pearson	15.515 ^a	0.008

With regarding to being low the significance level than %5, it is evident that this test is significant and there is a significant relationship between variables. It is evident from above tables that patients have avoidant and ambivalent style. It has been used of Cramer test for determining the rate of this relationship.

Table 15

		Value	p
Nominal by Nominal	Phi	.721	.008
	Cramer's V	.721	.008
N of Valid Cases		500	

According to being significant the significance level, it is evident that the rate of this relationship is 0.721. According to the significance level, it is observed that the significance level of educations, parents occupation and secure attachment style which more than %5 and the relationship of these variables isn't significant. The line formula is:

$$ADHD = 3.424 + 0.284X_2 + 0.312X_3 - 0.618X_4 + 0.194X_5$$

Beta coefficients are the potency of E value that shows the rate of the effect each variable on dependent variable.

CONCLUSION

In the point of view of many researchers and theorists, for example (Bowlby 1975; told by Peivastegar, 2006), attachment style plays important role in people's psychic compilations, communications with others and his selections at future. Emotional experiences, expressive factors for attachment security level of baby- parent, but these features are the result of the kind of communications that their parents have had with them previously (Izard and colleagues, 1991).

It was also determined that ADHD prevalence in elementary school students is 13/4% (15/4% boys and 11/3% for girls).

The calculated prevalence is more than many related research: Pastura and colleagues (2007) with 8/6% prevalence, Bener and Colleagues (2008) with 9/4% prevalence, Skounti and colleagues (2010) with 6% prevalence, Soma and Colleagues (2011) with 7/4% prevalence. The attachment style of parents hasn't been studied as very important intermediate variable. It was very important to find the relationship between attachment style of parents with hyperactivity and social growth of children.

The nursery children are most hyperactive and have more limited attention field. These symptoms have been indicated by long emotional limitation and diminish by elimination of privation symptoms like accepting adopted child and transferring to step parent home. The psychological stressful events, disturbance in family balance and the other anxious factors are important in appearing or continuing ADHD. The intrigue factors may include child's temperament, family – genetic factors and society's expectations for doing behavior or usual and accepted performance (Sadock and Sadock, 2007).

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It was found by this research that the attachment style of parents who their children have been diagnosed addicted to ADHD, is avoidant style and insecure / ambivalent style:

Something that is understood from this conclusion and scientific discussion: persons with avoidant attachment style and insecure/ ambivalent style aren't able for communicating transpersonal well (even with their children) and also, the avoidant attachment style and insecure/ ambivalent style is the starter of avoidance from stressful situations, doubt, conflict, enmity and distress (Besharat, 2007). In contrast, something that child wants the need to security (need to being confirmed and accepted) isn't provided (Yalom, 1980). Anxiety and severe anxiety are the result of being not confirmed and being not accepted. Therefore the child tries to deviate his attention from environment (because environment is the origin of anxiety for child). The child's hyperactivity also can be effective for decrease of internal anxiety: one of the symptoms of general anxiety disorder (GAD) is motor tension; motor tension is as a way for decrease of anxiety and apprehension for this disorder.

The deep effects of attachment style in two fields, interpersonal and transpersonal make clear the basic role of first emotional quality between child- parent in shaping and continuation of basic trust, affiliation, discovery, experience, dealing ability and problem – solving (Besharat, 2007).

The ability and tendency of parents for creating close attachment with their children is related to the way of their training. Psychoanalysts have emphasized upon this subject that there is a kind of congruency between persons in the models of communication. When parents have had close attachment with their parents by creating close communications, they can communicate with their children very much (Fonagy et al., 1991).

They also found that children with ADHD have lower social growth and this is indicator weak communicational model and low self – help skills for these persons. It can state that ADHD is known as one suitable predictive model for low social growth, so that children with ADHD act in self – help skills, self – help in eating, self – help in dressing, general self – help, communication and being socialized than their usual coevals faintly.

The achieved resulting indicates that ADHD as general disorder, exposes to danger the process of child's being socialized, because the suitable and normal communication with coevals which is a good way toward being socialized is disturbed in persons with ADHD and also the children with ADHD have problem in learning because of their non-concentrations.

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