

Issues of Future Parents Diagnostic Assessment as a Method of Autism Spectrum Disorders Prevention

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ABSTRACT

The main purpose of the article is to analyze the scientists' theoretical achievements concerning the issues of parents' personal characteristics influence upon a child's autistic behavior; identification of the reasons increasing the number of children with autism spectrum disorders in Ukraine. The authors explain a significant increase in autism disorders by an unstable political situation in Eastern Ukraine, which affects the emotional state of future parents. These influences deform future parents or act as triggers of changes in their personal sphere, which subsequently affects their fulfillment of educational functions. The authors analyze both theoretical and practical achievements of researchers who examined the issue of the influence of the parental personality on a child's autistic behavior. Theoretical generalizations are made in the article, due to which the authors formed a bank of techniques for diagnosing the identity of future parents in order to prevent autism spectrum disorders. It gave us opportunity to outline ways for further scientific research, which consist of a comparative analysis results of the diagnostic examination of parents who are immigrants and parents who are already raising children with autism spectrum disorders.

Keywords: *autism, autism spectrum disorders, personality, psychoanalysis, systemization*

1. INTRODUCTION

According to the order of the Ministry of Education and Science of Ukraine dated 01.10.2010 No. 912, inclusive education in Ukraine is a comprehensive process to ensure equal access to high-quality educational process for children with special educational needs. It is possible thanks to the organization of training in general educational institutions based on the use of person-centered teaching methods with due account for the individual characteristics of the educational and cognitive activities of children.

Inclusive education is only gaining its momentum in Ukraine. Now, unfortunately, not all inclusive education meets the criterion that we indicated above.

The main issue that is now quite acute for teachers, psychologists and social workers is the issue of introducing children with autism spectrum disorders into an inclusive space and helping parents to bring up children with autism. This even more raises the issue of early diagnosis and the possibility of preventing the occurrence of autism disorders.

Today, there happen changes in the world, and in particular in Ukraine, that can and in some way affect the personality of citizens. Having analyzed statistical data from Kryvyi Rih Psychoneurologic Dispensary for the last 10 years, we have noticed that the first five years in our

city there has been a gradual increase of children with autism spectrum disorders while for the last 3 years this increase was intermittently: for year 2009 there were registered 34 children with early infantile autism; year 2010 – 42 children; year 2011 – 45 children; year 2012 – 49 children; year 2013 – 45 children; in year 2016 there were already 99 children with autism spectrum disorders; in the end of year 2018 the number of children with autism spectrum disorders increased up to 127 persons. Thus, in year 2014 the active military activities started on the territory of Ukraine and it led to occupation of territories of Luhansk and Donetsk regions and annexation of The Crimean Peninsula what could not but affect the personal disturbance of the citizens. Many citizens of the occupied territories became in-migrating persons what also had negative impact on personality. As we can see from the statistical data the upsurge of children with autism spectrum disorders exactly happened after events in year 2014 when people were in constant stress and disturbance for their own lives and lives of their family member what could cause the prevalence of anxiety and depression disorders, as well as exacerbation manifestation of certain accentuations of character. Because of it we consider it to be up-to-date to research personalities of future parents as definite determinant of children's autistic behavior.

2. BACKGROUND

The scientific commonwealth started to become interested in autistic spectrum disorders as far back as the 19th century. The first person who made an attempt to describe this disorder was H. Maudsley [10]. Further there were such famous psychiatrists as E. Blair, L. Kaner and G. Asperger [5], [12]. The term autism for description of specific thinking in schizophrenia was first used by E. Blair, while L. Kaner was the first person who described early infantile autism and G. Asperger for the first time started to talk about high-functioning autism [5]. Simultaneously these scientists described one disorder with the separation of its certain forms. The shut-in personalities, who were not easy to get in touch with and who were not approachable, who did not talk or their speech was complicated, those people who had specific sustained interests fell under criteria of autism. Over the course of time the stated criteria broadened. Thus, V.M. Bashyna [8], K.S. Lebedynskaya [8], V. Ramachandran [8], L. Oberman [8], S. Baron-Cohen [2], carried out researches for the causes of autism [15]. The scientists pointed the way towards polyetiology and they considered that the main reasons were genetic, habitual metabolic, organic disorders of CNS (central nervous system), chromosomal abnormalities (Figure 1).

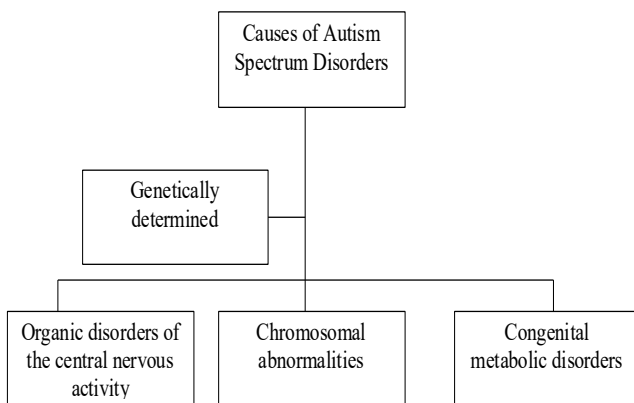


Figure 1. Somatic causes of autism spectrum disorders
In spite of the great interest of the scientists in finding causes of autism, unfortunately no definite answer was found.

Therefore, consideration of autistic spectrum disorders occurrence only from the physiological point of view is insufficient for understanding of etiology and prevention of autism disorders. For this reason, we think that during looking for reasons of autism occurrence it is necessary to pay attention to personal characteristics of parents of such children what for our opinion may be a determinant of child autism.

The psychoanalysts were the first who made emphasis on specific affecting of parental personality on the child. English psychoanalyst and pediatrician D. Winnicott observing young mothers noticed that the important role during building of communication with the child for his/

her better development was mother's adapting to her child. When mother does not support and does not react to actions of her child, she may stimulate the child for existence mainly or only in capacity of continuation of her own, as a passive object of her concern, as an affected object, which represses the child's ability to adapt [4]. Adaptive capacities of a child are very limited and his/ her growth and development are completely determined by the adaptation to him/ her of the mother [4]. In other words, when a child bites, scratches, pulls her hair and hits her with legs, the mother has one task - to survive. Everything else is left to the child. If the mother survives, the child learns the new meaning of the word «love», something new will come into his world – imagination [4, p. 14]. D. Winnicott draws attention to the fact that children may become autistic when their attempts to establish relations came upon reactions that were considered by them as destructive (when the mother does not respond to baby crying, pushing way of child, indifference, etc.). Because of this, in the view of the analyst, children stopped to take any initiative [4]. Therefore, active aspiration of the child to reciprocity may quickly become exhausted if his/ her intentions do not elicit any response from the mother, if all his/ her attempts do not lead to two-way interaction. The doctor also points at the personality of the mother and her emotional stress and behavior in the period of pregnancy what may influence the further development of personality of the child [4]. The author also points to the importance of taking care of the newly-fledged mother. He writes that if her husband or the State takes care of the woman, or the husband and the State, then the woman will adapt more easily to the child, it will no longer be difficult for her to understand and satisfy needs of the child. Unfortunately, in Ukraine, during the period indicated by us, namely after 2014, the number of children with autism disorders increased and the words of D. Winnicott confirm our hypothesis about the connection of this splash with the tense situation related to the borders of our State. Mothers were left alone without the care of their husbands and without the hope that the State would be able to provide a liveable future for her and her child. This all may affect the negative reception of motherhood and the complexity of adapting to the child. Under the negative reception of motherhood, we understand not only that the mother because of her experience becomes indifferent to her baby, but also her excessive guardian over him in which she may not take into account the personality and wishes of the baby, perceiving him as continuation of herself, thereby she prevents normal separation.

Migrant women are forced to earn money to support the child and the family, which leads to the fact that babies at a very early age can stay alone or under the supervision of outsiders for them, who cannot always understand the emotional manifestations of the child and give him an adequate emotional response. D. Winnicott writes that such an early abandonment of children can lead to psychological trauma of the child. In other words, for various reasons, children are left at a time when they are not yet able to cope with the fact of the mother's

departure, and it injures and cripples their infant personality [4, p. 5].

American psychoanalyst B. Bettelheim points at the important role of nutrition in infant activity. The author writes about the conditions upon which the infant is fed, the importance of the way how the baby is picked in arms, whether the mother can listen to the baby's wishes during feeding (put in some way, take breaks, etc.). All these factors may be affected by the state of the mother of the child. Mother's ability to adapt for and «hear» wishes of the child determines the state of comfort or discomfort of the baby and it also affects the further development of the child. But the important role during feeding is given not just to the mother, activity of the baby may in future form his/ her own experience in which the baby will take into account his/ her needs [3]. The psychoanalyst emphasizes that, if the mother does not pay attention to the activity of her baby - it can thus push the child to refuse to build interaction with adult persons, which will lead to the inactivity of the baby. The scientist saw the reasons why the mother does not pay attention to the activity of the child or inhibit them are hidden in the situation when during feeding the child because of different reasons felt discomfort and pushed aside the mother but the mother because of certain personal emotional stresses did not try to find out what was the cause of such an action, and in her turn, pushed the child aside too. B. Bettelheim gives examples of other mothers who tried to understand the reasons of such behavior of their children. They gently turn the baby to the nipple even if the baby refuses from the breast. After that the child may eat even more actively breast milk and their connection gets better. When establishing such a positive, developmental connection it is important if the mother can improve communication with her child. It means that she will take shout, child's talk, cry or smile as a signal that informs about some special episode and she will correspondingly react to this signal. Such early communication let to form empathy [3]. We agree with the abovementioned and we also would like to add that it can deal not just with an infant but also with elder child who using certain actions tries to interact and his/ her actions can be interpreted in a wrong way and therefore interaction becomes impossible because of specificity of actions or because of certain states of adult person.

French psychoanalyst A. Green has developed conception of a «dead» mother that explains the possible development of autism. A dead mother is a mother who is alive, but in the eyes of a small child she is carrying for she is mentally dead because she is depressed for some reasons [6]. Formally such a mother stays with her child, takes care for the child but emotionally she is not with him/ her. The child may make vain attempts to renew relations and fight against anxiety by means of different active ways such as agitation, artificial cheerfulness, asomnia, or night fears, but all is in vain. Thus, to relieve appeared anxiety the child identifies himself/ herself with the mother. As a result, the emptiness that the mother experiences in the state of depression passes to the child. The child stops to respond to other objects without the hope to receive any

feedback from them [6]. In such states, children may sink into autoerotism that may manifest in stereotypes in children with autism.

All that has been described by A. Green illustrates very well what can worry a young mother, who had to leave their native territory. Depression, hopelessness, and emptiness – the feelings that accompanied the women on the territory of Ukraine in the period from 2014. The guilt complex of survivor may also occur, a ban on the positive emotions, the desire of own death to be reunited with those who could not get to the peaceful territory or those who gave their lives for this woman could live and give birth to her child. All this can be reflected in the post-natal depression, and subsequently develop into the phenomenon of the dead mother.

The presented authors do not indicate any personal characteristics of fathers. They talk about fathers in the context of the fact that they «appear» in the mother-child dyad only by the age of one and a half or three years, when the dyad becomes a triad. Up to this point, fathers perform a supportive, protective function. Fathers create a safe and emotionally stable space for mother and baby. Since 2014, a situation of complete absence or insufficiency of the figure of a father (defender) has become quite common for many Ukrainian families, which may be a background for the number of children with autism spectrum disorders to become larger. In the works of D. Winnicott, we find confirmation of our hypothesis, namely, when he talks about the formation of psychoses: «... schizophrenia leads to infancy, to the very beginning, to the stage of almost absolute dependence. In short, the lack of a supportive environment in these cases was experienced at a stage when the immature and dependent ego did not yet acquire the ability to form defenses « [4, p. 17].

We were able to observe the theoretical generalizations given by the analysts when we worked with families who have an autistic child or a child who fits criteria of early infantile autism but he/ she was not given the final diagnosis. Thus, during this work we saw that it is difficult for the mothers of these children to establish contact with their child not because the baby «does not want it» but because the mothers do not understand what their child is trying to do now or they turns away from the child because they feel sense of guilt related to the fact that it was not desired baby, or there was abortion before this child, difficult relationship with the father of the ingant, etc. These mothers gave the impression of women being in jitteriness, after which there was overprotection of the child or states of depression with the feeling of self-emptiness and guilt. Herewith, we noticed that the mothers themselves have signs of autism.

It was also characteristic of these families that the fathers either did not take an active part in the life of the family (mother and child), or were absent. The mothers did not want to talk about them or remembered them as indifferent, aggressive, authoritarian, emotionally labile.

Thus, to understand correctness of our considerations and to confirm or contradict theoretical generalizations of the analysts and to form bank of methods on search of parents' personalities we turned to experimental searches regarding

influence of parents' personalities on autism behavior of their child.

The article «The hyper-systemizing, assortative mating theory of autism» of S.B. Cohen is very interesting for understanding of this phenomenon. S.B. Cohen considers that people with autism have highly developed mechanism of systematization [15]. According to the author's opinion it affects the fact that people with autism spectrum disorders can deal only with highly-logical systems and systems with high variability or alterability, for instance, social world, are very difficult for them. S.B. Cohen suggests that people with autism spectrum are hyper-systematizers and can cope only with the information that may be highly-systemized [15]. He also suggests that autism can be a result of assortative marriages when both of parents were severe systematizers. The scientist characterizes systematization as the strongest instrument of forecasting of changes because of stipulations of the laws. It occurs thanks to observation of connection as «input-operation-exit» what gives opportunity to look for the structure [15]. Systematization allows us to make the prediction that an event «x» may occur with probability «p». Thus, systematization let to establish the certain law. Changes in the social world are too fast and their laws are more difficult to be systemized. All people have mechanism of systematization. But this level is different for every person. So, people who do not have or have a little fixation on the systematization belong to the first level. Such people with greater effort notice whether the input data has regularity or a certain structure or not. The mechanism of systematization of women from the general population most commonly corresponds to the second level and the mechanism of systematization of men corresponds to the third level. Those people whose mechanism of systematization belong to the second level may manifest embrace, for instance, for emotions and those people who belong to the third level have embrace for mechanisms. The fourth level which is above the average to which belong scientists with the higher coefficient index of AQ autistic spectrum than in the average population. It is indicative of the fact that people who belong to the fourth level of the systematization may have more autistic signs than those who do not belong to this level [15]. Thus, the scientist found out that not only scientists belong to this level but parents of autistic children too. Fathers and grandparents of children with autism were twice oftener worked in the engineering field, which is a good example of a systematic profession, unlike men from the general population [2]. Therefore, systematization is a part of genetic clockwork. So, students who study natural sciences have relatives with autism more often than those who study humanitarian sciences [15]. In the article «Autism and Technical Thinking» S. B. Cohen gives statistical data according to which 12.5% of parents whose child suffered from autism were engineers or scientists, while only 5% of parents of mentally healthy children had this professional direction [2]. Besides that, 21.2% of grandfathers of children with autism were technicians; for grandchildren without autistic disorders

this percentage was only 2.5% [2] what confirms this theory.

The family environment may have great influence on «deterioration» or «relief» of pathological patterns of behavior at autistic teenagers. The group of scientists consisting of L. E. Smith, G. Grinberg and M.R. Mailik came to this conclusion at their research work «The Family Context of Autism Spectrum Disorders: Influence on the Behavioral Phenotype and Quality of Life». We agree with authors who consider that warmth and acceptance in relations between parents and autistic teenager can ease the flow of autistic behavioral patterns while criticism on the contrary, makes the child to shrink into himself, provokes stronger autistic patterns of behavior (autostimulation, stereotypes and other). Also, the scientists have noted that excessive emotional involvement of parents or self-sacrifice adversely affect the behavioral manifestations of autism [16]. Speaking in psychoanalytic language, the inability of separation (excessive emotional dependence) from the parents can block development of the autistic child, what may lead to difficulties in studying and communication with other adults, for instance, with teachers.

Parents of children with autism have a higher level of psychopathology. The most typical problem of personality of these parents is depressive symptoms and negativism. This conclusion was made by Iranian researchers S. Amiri, F. Ranjbar, R. Hatami. They state that frequency of occurrence of personality disorders was higher at parents of children with autism than at parents of the control group ($p < 0,01$) [13]. The most common mental disorders among parents of children with autism were melancholic personality disorder, stable depression and negativism what confirm words of A. Green. The scientists also pointed to a higher level of stress for mothers of autistic children. They associated this with such personal characteristics as: neuroticism, excessive control. Besides that, mothers of children with autism had much wider autistic phenotype (behavioral characteristics that are typical for autistic disorder) than mothers from the control group. S. Amiri, F. Ranjbar, R. Hatami found out that psychological stress, depression and anxiety are higher at parents of autistic children in comparison with parents of children without autistic disorder. In their study it also was found that parents of autistic children have higher frequency of bipolar disorder, post-trauma stress disorder, obsessive-compulsive disorder and a lower prevalence of hysterical personality disorder [13]. In our view all the above mentioned, may become a barrier in the early stages of establishing contact with such a baby, as D. Wincott said. In future such disorders will make difficulties for parents in normal interaction with their child and environment (child care center, school).

In the work «Personality traits of the relatives of autistic probands» M. Murphy, P. F. Bolton, A. Pickles, E. Fombonn, J. Piven, and M. Rutter showed significant group differences in the manifestation of signs of shyness and disengagement at parents of autistic children in comparison to the control group. Increasing of these indexes affects level of social isolation and social anxiety

disorder at parents of autistic children. The scientists also point to the high frequency of schizoid personalities among relatives of autists [14]. It also confirms the abovementioned opinions of the psychoanalysts.

In the research work of the group of scientists headed by Xiadjinng Li «Personal characteristics and neurocognitive functions of parents of children with autistic spectrum disorders» was found that parents of children with autistic disorders are introverted, egocentric, querulous, unadapted to changes. The scientists identified problems in planning, mobility and functions of visual processing. According to personality questionnaire of G. Eysenck the scale of psychotism and neuroticism of parents of autistic children significantly exceeded index of the same scales of parents of children without autistic disorders [13]. This all may become a barrier in development of autistic child because of specificity of interaction with parents; this may influence on more serious autisation of the child (as defence activity) and on somatization (occurrence of certain physiological symptoms) what will prevent the child from becoming a subject of learning and social environment. It will be difficult for parents to build trusting relationship with other adults who interact with their child.

Therefore, we can see that theoretical generalizations that were made by the psychoanalysts in the last century regarding influence of parental personality on their child and possible autistic behavior of the child have experimental confirmation in the search works of our contemporaries.

Our Contribution

Thus having analyzed literature sources for understanding of those personal characteristics of parents that may affect etiology of autism and possible autistic behavior of their child, we made conclusion that personalities of parents who may possibly have a child with autistic disorders is characterized as schizoid; who has autistic personality signs, who is shy, introverted, with difficulties in adapting to some life situations, with a systematization level above the average, which has anxiety or depressive disorders. Professional interests of such personality of parents may be in technical field. Therefore, for the diagnosis of personality of future parents we consider it necessary to use such psychodiagnostic tools as follows: the personal questionnaire of EPQ by G. Eysenck [1].

EPQ is the fourth personality questionnaire proposed by G. Eysenck. To the previous two-dimensional questionnaires, namely MPI and EPI, G. Eysenck and S. Eysenck added a third factor— psychotism. Psychoticism was added to the fourth version of the personality questionnaire and it represents characteristic of tendency to antisocial behavior and inappropriate emotional reactions. This factor is not bipolar like other factors, extraversion and neuroticism. The high rates of psychotism may indicate difficulties in social adaptation.

The personal questionnaire EPQ consists of 101 question that can be answered «yes» or «no».

According to theoretical generalizations and experimental studies stated above, with help of this methodology we can check hypothesis regarding existence of signs of introversion and psychoticism in the list of personal characteristics of the parents whom we will study. We will consider these signs as possible reasons of influence on autistic behavior of the child.

Also, according to the abovementioned, namely that parents who bring up autistic children have autistic signs and systematization level which is higher than average, we plan to check for autistic personality signs and systematization level using AQ and SQ tests of S.B. Cohen a that are aimed on diagnosing of these indexes.

The AQ test, which determines the presence of autistic signs in adults, was developed by S.B. Cohen.

During the first trial using of the AQ test, the average score for the control group was 16.4. Eighty percent of those diagnosed with autism or related syndromes received thirty-two points or more. So, during interpretation of results the number of points equal to 25 indicates the result is above the average, and numerical score which is equal to 32 means a high level, namely, the presence of autistic signs in adults.

The test AQ itself consists of 50 questions that can receive the following answers: "strongly agree", "more agree", "more disagree", "disagree".

The SQ test was also developed by S. B. Cohen. The scientist investigated the level of systematization and empathy in the control group and a group of people who were diagnosed with Asperger's Syndrome and highly functional autism. The study showed that the level of systematization of men from the control group was higher than the same level of women, while the level of empathy of women from the control group was higher than the level of empathy of men from the same group. The highest level of systematization was shown by those who entered the second group - a group of people who were diagnosed with Asperger's syndrome and highly functional autism. These results are discussed regarding two theories: the theory of gender differences "empathizing-systemizing", E-S and the theory of autism "extreme male brain".

The SQ test consists of 60 questions that can be answered with the following answers: «I completely agree», «I more agree», «I disagree more», and «I disagree». The maximum number of points that can be obtained is eighty what indicates a high level of systematization; 70 – 69 points indicate a level of systematization above the average; 40 – 60 points indicate an average level of systematization; points from zero to forty indicate a low level of systematization.

We will test the hypothesis of anxiety disorders that may affect autism with the Spielberger-Hanin personal anxiety scale [9]. We want to choose this particular methodology for our future research, since it allows us to clearly differentiate anxiety as a situational experience and as a constant personality trait.

The Spielberger-Hanin trait anxiety scale is divided into two parts. The first part measures the level of state anxiety,

and the second part measure the level of trait anxiety. In each of the two parts there are twenty statements to which you can give answers such as: "never", "almost never", "often", "almost always".

We will test diagnosis of depression disorders about which scientists have mentioned above with help of The Beck's Depression Inventory [7].

This scale was developed on the ground of clinical observations which allowed to find out a limited set of the most relevant and significant symptoms of depression and frequent complaints of patients. After correlating this list of parameters with clinical descriptions of depressions from literature sources, it was developed a questionnaire that included twenty-one categories of symptoms and

3. CONCLUSION

Therefore, we see prospects for the further researches in the experimental study of the psychological characteristics of the personalities of future parents and parents who bring up children with autistic disorders using the abovementioned psychodiagnostic tools and identifying and analyzing correlative relationships for the possibility of prevention of development of autistic spectrum disorders in the future.

To resolve the issue of stabilization of the emotional state of mothers who had to leave their homes and give birth to a child in a resettled territory without possible proper support from her husband and relatives, we consider it necessary to organize systematic patronage support, which would include not only the medical aspect, but also the psychological, social and material.

REFERENCES

[1] Eysenck, Personality Questionnaire [Electronic media]. – URL: <https://psylab.info/> – Name from title screen.

[2] Baron-Cohen Simon. Autism and The Technical Thinking [Electronic media] / В мире науки(In the World of Science), January 1, 2013.– P. 48-52. – URL: www.sciam.ru. – Name from title screen. DOI: 10.1038 / Scientificamerican1112-72

[3] Bettelheim B., The Empty Fortress: Infantile Autism and the Birth of the Self / Bettelheim B. – the second edition – M.: Academic project; Fund «Mir», 2013. – 480 p.

[4] D. W. Winnicott, Babies And Their Mothers / D. W. Winnicott; translation from English from N.M. Padalko – M.: Klass, 2011. – 80 p.

complaints. Each category of such symptoms consists of four or five statements among which you should choose those that fully keep up with the respondent's inner experiences.

The following requirements will be put for all the methods that we presented above: validity, compliance with age-related characteristics, comprehensive assessment of specific personality traits of the studied persons such as psychotism, autistic traits, a high level of systematization, anxiety, depressiveness, introversion.

[5] Gilbert K., Autism. Medical and psychological impact: book for educators-defectologists / Gilbert K., Piter T. – M.: VLADOS, 2005. – 144 p.

[6] Green A., The Dead Mother / Green A., French psychoanalytical school// Edited by A. Zhybo, A.V. Rossokhina. – SP: Piter, 2005. – 576 p.

[7] Ilin E. P. Emotions and feelings / Ilin E.P. – the second edition – SP: Piter, 2018. – 782 p.

[8] Lebedinskaya K.S. Diagnosis of early infantile autism: initial presentations / Lebedinskaya K.S., Nikolskaya O.S. –M.: Prosveshchenie, 1991. – 96 p.

[9] Workshop on the psychology of the states: educational book / edited by prof. O.A. Prokhorov. - SP: Rech, 2004. - P.121-122.

[10] Psychiatric clinic: tutorial / edited by prof. V.P. Samokhvalova. - Simferopol, 2003 . – 608 p.

[11] AQ test [Electronic media]. – URL: <https://www.aspergers.ru/aq/> – Name from title screen

[12] Shulzhenko Diana. Autism is not a verdict / Shulzhenko Diana. –L.: Kalvariia, 2010. – 224 p.

[13] Amiri S., Ranjbar F., Hatami R. Psychopathology of the Parents of Autistic Children Based on the Clinical Personality Disorders / Abdi S., et al. (2016), Ann Psychiatry Treatm 1(1), P. 01-05. DOI: 10.17352/apt.000001

[14] Murphy M., Bolton P. F. Personality traits of the relatives of autistic probands / Psychological Medicine, 2000, 30. - P. 1411–1424. DOI: 10.1017/S0033291799002949

[15] Simon Baron-Cohen. The systemizing quotient: an investigation of adults with Asperger syndrome or high-functioning autism, and normal sex differences / Philosophical Transactions of The Royal Society B Biological Sciences, Feb 28; 358(1430): 361374. DOI:

10.1098/rstb.2002.1206

[16] Smith L. E. The Family Context of Autism Spectrum Disorders: Influence on the Behavioral Phenotype and Quality of Lif / Child Adolesc Psychiatr Clin N Am. January 2014; 23(1): 143–155. DOI: 10.1016/j.chc.2013.08.006

[17] Xiaojing L.I. Personality characteristics and neurocognitive functions in parents of children with Autism Spectrum Disorder / Shanghai Archives of Psychiatry, 2017, Vol. 29, No. 1. – P. 41. DOI: 10.11919/j.issn.1002-0829.216108