ПСИХОФІЗІОЛОГІЯ ТА МЕДИЧНА ПСИХОЛОГІЯ

УДК 316.6
DOI https://doi.org/10.32782/2709-3093/2022.4/17

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CHILDREN WITH ASD AND THEIR SOCIO-PSYCHOLOGICAL ADAPTATION THROUGH THE DENVER EARLY INTERVENTION MODEL

The article examines problem of socio-psychological adaptation of children with autism spectrum disorders. It is concluded that the socio-psychological adaptation of these children is more effective when carried out with the support of their parents. In this regard, the need for parents to acquire relevant knowledge, skills and habits for the Denver early intervention program is discussed. It is concluded that parents with experience in the Denver early intervention program can more easily develop the social and communication skills that are important for their children's socio-psychological adaptation.

Autism spectrum disorder (ASD) is a category of neurodevelopmental disorders characterized by disorders in the social and communicative spheres, as well as limited and repetitive behavior. Children with such a disorder need substantial support, the burden of which falls, of course, primarily on the shoulders of parents, brothers and sisters, as well as on society. Although the basis of the symptoms of ASD are neurological features, they manifest themselves in behavior, which varies depending on the age of children, their speech level and cognitive skills. The DSM-5 states that the main symptoms cover two areas of social communication, one of which is interaction, and the other is limited, repetitive patterns of behavior. Toddlers with ASD and impaired speech have more social difficulties than their peers with ASD who do not have speech disorders. Children with ASD and lack of intelligence have the hardest time developing social competencies. Forecasts for children with ASD from phenotypic and demographic subgroups require additional research. About 9% of children who received a diagnosis of ASD at the age of 3 years, in early youth may not be in the diagnostic criteria of ASD. Young people who managed to get rid of the diagnosis of ASD, most likely, had high cognitive skills at the age of 2, used early intervention services and over time achieved a reduction in the frequency of repetitive behavior.

Key words: *socio-psychological adaptation, early intervention, Denver model, autism, neurodevelopment, neurological features, role-playing games.*

Statement of the problem in general terms and its connection with important scientific and practical problems. According to statistics, the prevalence of ASD increases more and more over time among children [1, p. 12]. Despite the progress made in the knowledge of the neurobiology and genetics of this type of disorder, this diagnosis is still made, as before, on the basis of the presence of certain symptoms of behavior detected by direct observation, and from the words of loved ones.

Impaired ability to understand the intentions of another person, shortened eye contact, unnatural use and understanding of gestures are harbingers of atypical development in the field of social communication, story-role play and interest in other children [2, p. 89].

Then the symptoms of ASD are formed with a lack of skills of correct understanding and, accordingly, atypical processing of information in the visual (gestures, facial expressions) and auditory (speech) sensory systems. The same type of repetitive behavior can be both a symptom, which is a periodically observed obsessive behavior, and a consequence of inadequate processing of sensory information, or an indicator that a person is unable to understand the intentions of other people. Almost a quarter of children with ASD, most often in the age range of 18-24 months, have a regression in speech and social skills [1, p. 24].

Goal and tasks. To identify the socio-psychological adaptation of children with ASD and show it through the Denver model of early intervention.

Presentation of the main material of the study. Our hypothesis is that the knowledge and skills acquired during the training will contribute to positive changes in the development of children living with autism spectrum disorder, helping them to better socio-psychological adaptation. Children of parents who participated in the training and those who did not participate in them were tested for development according to the Denver model, after which the results were analyzed using the statistical method SPSS version 16.0. First, a statistical analysis was given related to demographic indicators Table 1.

The fact that the standard deviation is greater than the average indicates that the values are different and far from each other. To further clarify this, the independent sample T-test was first tested to explain whether a family of independent variables depends on learning to develop children's personal and social development, fine and large motor skills and speech skills. Thus, the results obtained are presented in Table 2.

It should be noted that the independent sample test was based on the family factor as an independent variable, and, as is known from the average values, there are statistically significant differences between the groups in social development, fine and large motor skills, and speech skills. And if you look at an independent T-test explaining these differences, the importance of the first line becomes obvious. The hypothesis of the significance of H_0 is rejected because it corresponds to the level of $a < 0.05$, i.e. according to the family factor, there are differences in personal and social development, in large and small motor skills, as well as speech skills of children with ASD.

After determining the influence of the independent variable, a one-sided Anova test was applied to determine whether the influence of the variable on all qualities was the same. The test results are presented in the table below. Table 3. Change of skills depending on the level of education of the family.

Table 1

Demographic indicators

Statistical description					
	Number	**Minimum**	**Maximum**	**On average**	**Deviation from the standard**
Family	60	1	2	1.50	.504
Average number	60				

Table 2

Group statistics					
	Family	**Number**	**On average**	**Deviation from the standard**	**The average value of the standard error**
Personal and social	Experimental	30	2.83	.461	.084
	Control	30	1.23	.504	.092
Fine motor skills	Experimental	30	2.47	.681	.124
	Control	30	1.43	.679	.124
Large motor skills	Experimental	30	2.13	.730	.133
	Control	30	1.33	.606	.111
Speech	Experimental	30	2.20	.761	.139
	Control	30	1.27	.583	.106

Independent test sample

	Levene's criterion of equality of variables		**Equality for the t-criterion of averaging**				**95% confidence in the differences**	
	F	**Meaning**	**T**	**df**	**Meaning (2*)**	**Average difference**	**Lower**	**Upper**
Personal and social	.906	.345	12.829 12.829	58 57.548	.000	1.600 1.600	1.356 1.356	1.850 1.850
Fine motor skills	.108	.748	5.884 5.884	58 57.999	.000	1.033 1.033	.682 .682	1.385 1.385
Large motor skills	.768	.384	4.616 4.616	58 56.107	.000	.800 .800	.453 .453	1.147 1.147
Speech	4.443	.039	5.331 5.331	58 54.327	.000	.933 .933	.583 .583	1.284 1.284

Table 3

Change of skills depending on the level of education of the family

Identity of variables				
	Leven's criterion	**F1**	**F2**	**Meaning**
Personal and social	.906	1	58	.345
Fine motor skills	.106	1	58	.746
Large motor skills	.768	1	58	.384
Speech	4.440	1	58	.039

ANOVA

		Sum of squares	**Difference**	**Square averaging**	**F**	**Meaning**
Personal and social	Between groups	38.400	1	38.400	164.571	.000
	Groups with each other	13.533	58	.233		
	General	51.933	59			
Fine motor skills	Between groups	16.017	1	16.017	34.620	.000
	Groups with each other	26.833	58	.463		
	General	42.850	59			
Large motor skills	Between groups	9.600	1	9.600	21.306	.000
	Groups with each other	26.133	58	.451		
	General	35.733	59			
Speech	Between groups	13.067	1	13.067	28.420	.000
	Groups with each other	26.667	58	.460		
	General	39.733	59			

Table 4

Comparison of pre-test and post-test responses of children with ASD

Double sampling statistics

	On average	**Number**	**Deviation**	**Standard error**
Pre Personal-social Post Personal-social	138.38 197.41	30 30	33.472 33.508	8.386 8.337
Pre Fine motor skills Post Fine motor skills	119.01 139.55	30 30	22.475 22.506	7.332 7.221
Pre Large motor skills Post Large motor skills	121.03 144.05	30 30	44.221 44.341	9.233 9.121
Pre Speech Post Speech	143.09 168.89	30 30	123.001 122.344	5.325 5.221

Table 5

Total by model

Model	**R**	**R square**	**Adjustable R square**	**Standard error of trust**
1	.860a	.739	.735	.260
2	.902b	.813	.806	.222
3	.909c	.826	.816	.216
a. Predicted: (Constant), Personal-social				
b. Predicted: (Constant), Personal-social, Fine motor skills				
c. Predicted: (Constant), Personal-social, Fine motor skills, Large motor skills				
d. Dependent variable: Family				

Table 5 (continuance)

ANOVA[d]

Model		The result of the square	df	Square averaging	F	Meaning
1	Regression	11.091	1	11.091	164.571	.000[a]
	Residual	3.909	58	.067		
	General	15.000	59			
2	Regression	12.191	2	6.096	123.699	.000[b]
	Residual	2.809	57	.049		
	General	15.000	59			
3	Regression	12.385	3	4.128	88.397	.000[c]
	Residual	2.615	56	.047		
	General	15.000	59			

a. Projected: (Constant), Personal-Social
b. Predictable: (Constant), Personal-Social, Fine Motor
c. Predicted: (Constant), Personal-Social, Gross Motor
d. Dependent Variation: Family

Coefficients						
Model		Non-standardized coefficients		Standardized coefficients	t	Meaning
		B	standard error	Beta		
1	(Constants)	2.440	.081		30.287	.000
	Personal and social	.462	.036	.860	12.829	.000
2	(Constants)	2.646	.082		32.455	.000
	Personal and social	.394	.034	.732	11.559	.000
	Fine motor skills	.177	.037	.299	4.725	.000
3	(Constants)	2.716	.087		31.371	.000
	Personal and social	.366	.036	.680	10.193	.000
	Fine motor skills	.168	.037	.285	4.586	.000
	Large motor skills	.083	.041	.128	2.036	.047

a. Dependent variable: Family

Based on the fact that a > 0.05 is greater than the group variables, as well as on the fact that the root-mean-square value and a < 0.05 is less than a < 0.05 in the Anova test, the knowledge obtained by families as variables is personality-social. It is concluded that there are significant differences in the impact on small and large motor skills and speech skills. All these results are used to measure the difference between them. In conclusion, there are many facts confirming our hypothesis. However, these results are at the post test level. A double-sampling T-test was used to determine what these skills were at first, and what changes occurred between them afterwards (Table 4).

As you can see, the average indicator is reflected in completely different figures at the pre-text and post-test levels. At the pre-textual level, there was a significant change in the social personality, motor and speech skills of children with ASD after involving their parents in training, as well as an increase in their working capacity.

At the end of the training, attention was paid to the question of what skills should be developed by parents so that children with ASD better assimilate social skills. For this reason, a one-sided regression analysis was carried out. The results are grouped into the following tables.

Conclusion. If we want to explain the answers, we must first look at the percentage of probability that our model will work, and, as we had the opportunity to see above, personal social skills make up 70%, personal social skills plus fine motor skills – 80%, personal social skills plus fine and large motor skills – 80%. Using this model, it can be concluded that 80% of development skills (adjustable R-square) are valid for the population.

Given that the family is a dependent variable, its significance level is less than 0.05, and we reject the H0 hypothesis, we can conclude that the model is suitable for use. It should only be noted that speech skills are not included in this model, because they do not correspond to the level of importance. In our study, family involvement in training is considered as a dependent variable, since regression analysis is based on the development of variables.

If we set a goal to determine which skills will be further improved in the next classes, depending on the trainings conducted for the family, then we will have to look at the beta criteria to find out the answer to this question. According to the beta criterion, personal and social skills are in second place (0.860), followed by fine motor skills (0.299) and large motor skills (0.128). This means that if we strengthen the training in accordance with these skills at the next trainings, we will be able to contribute to greater psychological development in families of children with ASD. In the above model, it is concluded that there is no need to increase training in the speech direction in future activities, since speaking skills do not correspond to the level of importance.

Our research shows that if the results before and after testing in the experimental group were low before training, then after training there was an increase in these skills. While weak skills were observed in the pre-test results of the control group, weak development took place in the post-test results. Accordingly, when compared with the post-test results of the experimental group, it was found that the dynamics of development is very weak. This confirms the hypothesis that the participation of parents in the Denver model of early intervention helps the socio-psychological adaptation of their children.

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Султан Н.Ф. ДІТИ З РАС ТА ЇХ СОЦІАЛЬНО-ПСИХОЛОГІЧНА АДАПТАЦІЯ ЧЕРЕЗ ДЕНВЕРСЬКУ МОДЕЛЬ РАННЬОГО ВТРУЧАННЯ

Стаття присвячена вивченню проблеми соціально-психологічної адаптації дітей із розладами аутистичного спектру. Зроблено висновок про те, що соціально-психологічна адаптація цих дітей ефективніша, коли здійснюється за підтримки їхніх батьків. У зв'язку з цим обговорюється необхідність набуття батьками відповідних знань, навичок та навичок для Денверської програми раннього втручання. Зроблено висновок, що батьки, які мають досвід участі в Денверській програмі раннього втручання, можуть легше розвивати соціальні та комунікативні навички, які є важливими для соціально-психологічної адаптації їхніх дітей. Розлад аутистичного спектру (РАС) – категорія розладів нейророзвитку, що характеризуються порушеннями в соціальній та комунікативній сферах, а також обмеженою та повторюваною поведінкою. Дітям з таким розладом необхідна суттєва підтримка, тяга якої лягає, звичайно ж, насамперед, на плечі батьків, братів і сестер, а також на суспільство. Хоч і основу симптомів РАС становлять неврологічні особливості, виявляються вони у поведінці, яка різниться залежно від віку дітей, їхнього мовного рівня та когнітивних навичок. У DSM-5 йдеться про те, що основні симптоми охоплюють дві сфери соціальної комунікації, однією з яких є взаємодія, а іншою – обмежені, повторювані шаблони поведінки. У дітей з РАС і порушеною промовою більше соціальних труднощів, ніж у їхніх однолітків з РАС, які не мають мовленнєвих порушень. Дітям з РАС та недостатністю інтелекту доводиться найскладніше у розвитку соціальних компетенцій. Прогнози для дітей з РАС із фенотипічної та демографічної підгруп вимагають додаткового дослідження. Близько 9% дітей, які отримали діагноз РАС у віці до 3-х років, у ранній молодості можуть не опинитися в діагностичних умовах РАС. Молоді люди, що зуміли позбутися діагнозу РАС, ймовірно, мали високі когнітивні навички в 2-річному віці, використовували сервіси раннього втручання і з часом домоглися зменшення частоти поведінки, що повторюється.

Ключові слова: *соціально-психологічна адаптація, раннє втручання, Денверська модель, аутизм, нейророзвиток, неврологічні особливості, рольові ігри.*