

The Effect of Early Family-Centered Psychological and Educational Interventions on the Expressive and Receptive Skills Development in Children with Autism Spectrum Disorders

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ABSTRACT

The purpose of this study was to examine the impact of family-based psychological and educational early interventions on the development of expressive and receptive skills of children with autism disorder. The method of the study was experimental. For this purpose, using random sampling method, thirty six children with autism disorder under five years old were selected and assigned to experimental and control groups. In order to collect data, first, Newsha Development Evaluation Test was implemented on the subjects. Consequently, the intervention program was conducted on during five months, and data was analyzed using covariance analysis. The findings indicated that there was significant difference between control and experimental groups in expressive and receptive skills. Also, the results revealed that there were significant differences between different age groups, in utilizing the intervention program (receptive skills $P=0/0001$ in level $P<0/0001$ and expressive skills $P=0/021$ in level $P<0/05$). Thus, it can be concluded that early interventions have affected positively on the expressive and receptive skills development of children with autism disorder.

KEYWORD: Early Intervention, Expressive Skills, Family-Centered, Receptive Skills, Autism Disorder

INTRODUCTION

Today with the daily increase of world population, despite the principle and general efforts to reduce the birth rate of exceptional children in particular the groups with specific limits (disabled), we are still facing with a numerous number of these children. The children who from the time of birth and during the development stages and change up to adulthood and finally by the time they are alive impose many economic, social and mental problems on the family and community and make it an inevitable issue in living with them and bearing their difficulties. So, with regard to the education of family, family counseling, family rehabilitation, family treatment and study of the situation of an exceptional child or a child with specific needs in the family are constantly introduced as the preventive strategies. At present the role of the family in the education and treatment of exceptional children is an unmatched and unique role and the family-centered intervention programs have allocated specific position to themselves. In recent years, the necessity of performing programs for identification and early intervention of autism has become clear to everybody. Many studies in the world have shown that in case of early identification and intervention, the children with autism will achieve to the full objectives of rehabilitation. [1]

The on time intervention programs have grown up in recent years and during the last 30 years, a noticeable change has been created in the infrastructural philosophy of early invention in developed countries.[2,3,4,5]. One goal of family-centered services is to develop the parents' abilities by becoming more informed decision-makers for them to advocate for their children during collaboration with professionals [6]. Intervention for families can begin as early as birth. When children are born and are placed at risk or established risk they are typically in need of some kind of early intervention services[7].Some of these programs are exclusively for children whereas some others are focused on families and help with the families to provide further the grounds for the greater growth of the child and accommodate with his/her additional needs. The children who receive these services are higher than children who do not take part in these programs from the viewpoint of intelligent, kinetic skills and acquisition of language[8]

Previously, the focus of therapy and intervention services has been on the child. However, this idea has shifted to include the family as a major role in intervention. Families are responsible for carrying out the essential daily treatments necessary for improvement in the child's life and families have a profound impact on their child's development. Parents are commonly acknowledged as children's first language teachers [9].Parents play a vital role

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during their child's development, especially when it comes to recognizing a possible problem and knowing when to reach out for services. The earlier a child receives intervention services, the more benefit there is for the child. "Research indicates that two very important contributors to recovery from a communication disorder are early identification and intervention" [10]. In this respect, studies have shown that the programs which start more precisely and earlier and are focused on family and children have the greatest impacts [11]. The early stages are the most important stages in life, because a child who is disabled or has delay in growth and is identified earlier, can further use the intervention strategies designed to compensate the disabilities. Research literatures all confirm this point that the on time intervention program during the first five years of life causes the increase and development of growth change [12]. Deficits in language and communication skills have been cited as the most significant behavioral deviation for children with autism. Among the deficits in behavior of children with autism, poor communication skills may be the most problematic because they are necessary for social and play skills. Therefore, developing communication skills, especially verbal competence is extremely important. The level of communicative competence attained by children with autism has been found to be an important predictor of more positive outcomes [13,14]. Teaching children with autism language skills at a young age, and investigating procedures to teach these skills is a research area that has been fairly neglected in literature and practice. Research suggests a strong benefit of early treatment on language development in children with autism [15].

Studies have shown that appropriate educational intervention can lead to better outcomes for children with autism. Early intervention can significantly improve the quality of life for individuals with autism, however, the majority of individuals with autism will continue to exhibit some symptoms in varying degrees throughout their lives, and they may require lifelong care and supervision. The most effective programs share an emphasis on early, appropriate, and intensive intervention [16,17,18].

Seven independent research teams described noticeable benefits in connection with the early intervention for children with autism. Smith [19] Goralink [20] states that not only the results obtained from the on time intervention programs increase a good perspective on children with autism but also it increases the optimism about the fact that other children with development disorders can utilize these programs as well. Research in autism spectrum disorders (ASD) described individual differences in response to intervention. Studies have shown that Seventy-eight children aged 15–35 months diagnosed with ASD by standardized diagnostic tools were included. Evaluations of verbal and non-verbal abilities, adaptive skills and autism severity were obtained at pre-intervention (T1) and after one year of intervention (T2). At T2, children improved significantly in their verbal ability and the severity of autism symptoms was reduced. Outcome in adaptive skills was best predicted by baseline verbal ability and maternal age. Better verbal ability especially in those with severe autism symptoms, and older maternal age predicted better adaptive skills outcome. T1 autism severity, child's age and maternal age and educational attainment best predicted cognitive gains. Less severe autism symptoms, younger child's age at start of intervention, older maternal age and higher maternal education predicted greater cognitive gains with intervention. The study suggests biological factors including age, language abilities and autism severity and environmental factors including maternal age and education, impact the ability to benefit from early intervention in ASD [21].

Sass-Lehrer [22] identified children who were enrolled in Parent Infant Programs prior to 11 months of age and whose families were involved performed better on vocabulary and verbal reasoning skills than those whose parents were less involved. Yoshinaga-Itano, [23] states that the positive affects of the early detection occurs when it is associated with early interventions. This conclusion was repeated by Hogan et al [24] in a study which was made on the primary language change of 37 children in England. In this respect, in a study which was performed on 152 children with classic autism, the results showed the improvement of parents-child interaction [25]. Children who received the intervention showed significant improvements in communication skills, and mothers showed improvement in terms of health. The results showed that the trained therapists spent a maximum of 36 hours at a home-based intervention, which would be less time spent by other intervention approaches [26].

Peri et al [27] in their study reported that the children with autism who have used the on time compressed behavioral intervention program have shown a significant progress both from statistical and clinical points of view in reducing the intensity of autism, growth at cognitive levels and increase of the level of adaptive behavior. The various behavioral and developmental-interactive approaches outlined have all reported at least some evidence of effectiveness in intervening on language and communication skills in children with autism [28,29]. Research suggests the benefit for children with autism of an early start to treatment in order to increase effectiveness [15]. Some children using Picture Exchange Communication System later develop speech, and it has been a promising practice for enhancing communication. A number of studies show increased communication skills after two years of PECS usage [30,31,32]. Studies of the effectiveness of PECS report that children with limited communicative ability can be trained to use the system, and that independent speech also occurs for many of these children [30,33,32]. A larger study was that of Magiati and Howlin [34] who described a pilot study evaluating PECS

in which teachers of 34 children with autism were trained in the approach. The children involved in the study had varying degrees of communication skills. Some children were nonverbal and others spoke in short phrases. Most participants were found to show improvements in their use of PECS, with rapid increases found, but the authors reported that improvements in general communication skills were slower.

In this regard, Ganz and Simpson [31] completed a study involving three young children with an autism and developmental delay, and found that the children were able to use PECS and additionally, that word utterances increased in number of words and complexity. At present there is a clinical agreement that autism should be detected early. So that the compressed behavioral on time intervention can be performed at the lowest possible age. However, the evidences indicating that the early starting will cause a very big difference are limited and still a documented study does not show a great impact in respect of on time behavioral intervention[35].

METHODS

The current research was designed based on an experimental study. The statistical population were all children with autism disorder under five years of Autism of center Isfahan that were enrolled in 2014 - 2015 years. For this purpose using random sampling method. Meanwhiel, thirty six children with autism disorder under five years old were selected and assigned to experimental and control groups. By the way, the standards to exit from the research were: deafness, blindness and affliction with many disabilities. It is worth mentioning that the written consent of parents were obtained for participation in this research.

Research instruments

The Research instrument used is based on Newsha Development Assessment Scale Malayeri et al[36] as the integrated scale to measure the development of cognitive, social, hearing and speech(receptive & expressive) for Persian speaking children. This scale is made up of seven developmental areas and is provided in13 growth tables. Each item has a score in this scale. To determine the reliability and validity of content and structure, the test was conducted on 530 normal children. A correlation greater than 0.95 was obtained following studying both reliabilities: that of interviewers comments and of test-retest . In more than 90% of cases, the content validity was assessed as being full extent and very high in terms of construct validity based on Likert's Seven-Item Scale, showing the effect of age on test results. The reliability between interviewers comments in the area of receptive language is reported 82% and in the area of expressive language development 68% applying the SKI-HI Language Development Scale (LDS)[37]. However Jafari and Ashayeri study have reported the test reliability for receptive language was 70% and for expressive language was 76% using Test-Retest method. The content validity index is obtained ranging from 0/8 to 1 in various developmental skills which indicates that the test has very high content validity.

In order to collect data, first Newsha Development Assessment Scale (pre-test) was conducted individually by the trainers of the Center, who were all familiar with the method of performance and its scoring system in the domains of expressive and receptive language development on children with autism in both test and control group. The family-centered educational and psychological early intervention program designed by researcher was then implemented on the test group to increase the abilities of the family children with. This program had been prepared and adjusted based on "Hope" family-centered intervention program and Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) and Picture Exchange Communication System (PECS) intervention programs. Also in order to change the negative attitudes and beliefs of families, stress reduction and acquisition of skills to face crises and stress and a better adaptation with the children with autism, in the psychological intervention, the cognitive-behavioral method was employed. In 15 sessions of individual and group counseling were held during 5 months in order to increase the capacity of families in education and development of expressive and receptive language in autism children and early intervention program content, was presented by using film screenings, lectures, power point presentations and educational CD. Then, Newsha development assessment scales were again implemented on the experimental and control groups and the obtained data was studied by Co-variance analysis

Table 1: A brief description on content of Psychological and Educational Family-Centered Early Intervention Programs is given in the table below

Session	Subject	Subject-matters put forth in the program
1.	Familiarity with the characteristics of children with autism and development skills	Causes, cognitive, language, verbal, kinetic and emotional features and development skills
2.	Change in the attitudes of parents towards children with autism	Correcting the false beliefs, creating motivation and hope and reducing the negative emotions to accept the child with autism, methods to reinforce self-trust
3.	Familiarity with the educational issues and rehabilitation of children with autism	Academic features, educational plans, rehabilitation issues and treatment and various treatment interventions, familiarity with the services existing in the society and supportive institutions
4.	Communication with a child	Method of treatment with a child in the first educational meeting, objectives and expectations from a child with autism, establishing a suitable communication between parents and specialists, relation between parents and sibling with a child
5.	The role of senses in learning in children with autism	The parents are assisted to use the capabilities of their children by using the visual support and structured education to help the development of sensual, social and communicative skills (expressive and receiving language) of their own children.
6.	Introducing, distributing and employing the booklet of the first Hope educational package for the parents of children with autism	Game Book: In this booklet, the causes, the significance of games and orientation for doing the games are presented to the parents to reinforce the communicative skills. The suggested games are in this five domains: explorative games, physical games, games with spillage, games on table, imaginative or symbolic games
7.	Introducing, distributing and employing the second and third Hope educational booklets for the parents of children with autism	The second booklet tries to create a positive view towards living with an individual with autism. The third booklet (from parents to parents) contains a set of key points and valuable experiences of parents who have a child with disorders of autism spectrum. Using these points, certain practical approaches are presented to treat with the problems of child in the areas of behavior, feeding, self-helping skills, method of treatment with other children and so on.
8.	Introducing, distributing and employing the fourth and fifth Hope educational package for the parents of children with autism	The fourth book (giving meaning to the sensual activity of a child), states the problems and issues related to the senses of this group of children along with a set of simple approaches to facilitate the sensual activities. The fifth booklet (communicative and socialization skills) tries to promote the relation between parent and child in line with the facilitation of socialization process in an individual with disorders of autism spectrum. It also helps with the skills of receiving and expressing language in children.
9.	Educational workshop for parents in connection with TEACCH method	In this workshop, the primary concepts, domains and different practical parts of this method was emphasized.
10.	Educational workshop for parents in connection with TEACCH method	While presenting practical education to parents, efforts were made to adapt environment with the child instead of adaptation of child with the environment and the program could be adjusted based on the level of child performance
11.	Educational workshop for parents in connection with the TEACCH method	While presenting practical education to parents, it was tried to teach them that instead of adapting the child with environment, make the environment adapt with the child and the program to be adjusted based on child performance level. Practical assignment in this regard was given.
12.	Educational workshop for children in connection with PECS	For further information, the PECS package (including albums, images and other attached tools in the related package on PECS program) were given to parents.
13.	Educational workshop for parents in connection with PECS method	Slides, PowerPoint, and films on different stages of PECS (6 films) were presented to parents.
14.	Educational workshop for parents in connection with PECS method	The method of performing the program and printed materials as additional data were used in connection with this method.
15.	Happiness in family and skills to face the crises and stress	definition of happiness in a family, rate of happiness in a family, the necessity of happiness, characteristics of happy couples, happiness test What is crises and stress? What are the sources of stress? The impact of stress on an individual and methods to face the stress (using the cognitive-behavioral therapy)

Findings

This study examines the impact of Family-Centered Psychological and Educational Early Intervention Program

on the development of expressive and receptive skills in children with autism. The mean and standard deviation of receptive and expressive skills in pre-test and post-test experimental and control groups are presented according to the study variables in Table 2.

Table 2: Statistical indicators of autism children performance in the experimental and control groups in terms of receptive and expressive skills

		Receptive language					Expressive language				
		Pretest			Posttest		Pretest		Posttest		
Group	Indicators	N	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
	Control	18	32/22	8.98	41.83	7.16	37	11.04	46.94	9.49	
	Experimental	18	33.16	9.10	36.16	8.94	38.33	9.43	41.66	9.17	
Sex	Girl	Con	6	39.50	7.76	30.66	9.81	47.50	11.18	37	12.85
		Exp	7	34.57	8.1	31.42	8.03	41	8.34	38.14	7.94
	Son	Con	12	43	6.88	33	8.89	46.66	9.04	37	10.64
		Exp	11	37.09	9.68	34.27	9.94	42.09	10.04	38.45	10.65
Group of age	24-36 month	Con	6	22.83	2.04	35.16	1.72	24.83	2.63	36.83	2.13
		Exp	7	23.85	2.11	26.85	2.47	28.28	4.46	32	4.58
	37-48 month	Con	7	32.28	4.71	41.28	5.15	37.71	5.31	47.14	4.56
		Exp	5	34.40	5.68	37.20	4.20	41.80	4.26	44.80	4.49
	49-60 month	Con	5	43.40	4.03	50.60	3.36	50.60	3.57	58.80	4.14
		Exp	6	43	3.46	46	3.46	47.16	4.16	50.33	3.77

As it can be seen in table 2, the average receptive and expressive skills in control and experimental groups are different from each other and experimental group have language skills more than the control group. To examine the significance of these differences, after testing the assumptions of parametric tests, the analysis of covariance was used. One of the assumptions in applying parametric tests is the assumption of distribution normality of group scores with sample groups in the community. Shapiro - Wilk test and Kolmogorov-Smirnov test was used to test this hypothesis. The results showed that the assumption of distribution normality of pre-test scores can not be ruled out in both control and experimental groups.

Table3: The result of Kolmogorov-Smirnov Test and Shapiro – Wilk Test in control and experimental groups

Variables	Group	Kolmogorov-Smirnov Test			Shapiro – Wilk Test		
		Statistic	df	P	Statistic	Df	P
Expressive skills	Exp	0.155	18	0.200	0.938	18	0.266
	Con	0.134	18	0.200	0.948	18	0.389
Receptive skills	Exp	0.164	18	0.200	0.938	18	0.272
	Con	0.176	18	0.144	0.906	18	0.072

Also, to examine equality of variances, the data were analyzed with Levin variance homogeneity test.

Table4: The result of Levin variance homogeneity test in the study variables.

Variables	F	(df1)	(df2)	P
Expressive skills	1.763	11	24	0.119
Receptive skills	1.971	11	24	0.080

The findings of Levine test show that P is not significant in the level of $P < 0.05$. Thus, the variances of the experimental and control groups are equivalent at all the study variables.

Table 5: Correlation matrix of the linear relationship between pre-test and post-test scores in the study variables

Scales	Receptive skills				Expressive skills	
		Pretest	Posttest	Pretest	Posttest	Posttest
Receptive skills	Pretest	R	1			
	Posttest	R	0.902*	1		
Expressive skills	Pretest	R	0.958*	0.841*	1	
	Posttest	R	0.903*	0.935*	0/930*	1

$P < 0.0001^*$

The correlation matrix shows that the correlation between pre-test and post-test scores of all variables is significant in level of $P < 0.0001$.

This means that there is the linear relationship between pre-test and post-test scores for all variables.

Covariance Analysis

The first hypothesis: The Psychological and Educational Family-Centered Early Interventions have positive effect on development of receptive skills in autism children.

Table 6 findings: Analysis of covariance effect of family-based early intervention on receptive skills in autism children under the age of five

Source changes	SS	Df	MS	F	P	Eta	R ²
	179.106	1	179.106	118.112	0.0001	0.837	1
Group	283.390	1	283.390	186.882	0.0001**	0.890	1
Age	3.680	2	1.840	1.213	0.316	0.095	0.238
Sex	5.558	1	5.558	3.665	0.068	0.137	0.450
Group * Age	38.730	2	19.365	12.770	0.0001**	0.526	0.992
Group* Sex	2.983	1	2.983	1.967	0.174	0.079	0.270
Age* Sex	0.679	2	0.340	0.24	0.801	0.019	0.081
Group * Age* Sex	2.151	2	1.075	0.79	0.503	0.058	0.155
Error	34.877	23	1.516				
Total	57205	36					

$P < 0/0001$ **

Findings in table 6 show that in view of the pre-test scores as a covariate variable, the difference between control and intervention groups performance in terms of receptive skills is significant in level of $P < 0.0001$. In other words, the difference between the two groups scores indicates that psychological and educational family-centered early interventions have positive effect on development of receptive skills in autism children less than 5 years of age. In view of the Eta square it can be said that 89% of these changes are due to interference effects. Also the results of analysis covariance Table (Table 6) shows that the psychological and family-centered educational on time intervention program has a similar impact on the rate of perceptive skills growth among the male and female children with autism in test groups and there is not a significant difference among male and female children with autism.

Also the results of analysis of covariance (Table 6) shows that there is a significant difference between the children of age groups participating in the intervention program from the viewpoint of influence received from a program in the areas of perceptive skills growth ($P=0/0001$). With regard to the average score of the age groups in pre-test and post-test, it should be said that among the three age groups, the intervention program has had the greatest impact on the growth of perceptive skills of the 24-36 month age group. And to the extent that the intervention has started earlier, to the same extent it has had a greater impact. Also the results of analysis of covariance (Table 6) shows that there is a significant difference ($P=0/0001$) among the children with the age group participating in the intervention program from the viewpoint of rate of receiving influence from the program, in the area of growth of perceptive language skills. Also with regard to the results of analysis of covariance in connection with the variable of age, gender, the interactive impact of gender with a group and the interactive impact of a group, gender and age, it should be said that there is no significant difference between the male and female children of the age groups participating in intervention program from the viewpoint of rate of receiving influence from the program in the areas of growth of perceptive skills. The second hypothesis: Psychological and educational family-centered early interventions have positive effect on expressive skills development in autism children.

Table 7 findings: Analysis of covariance effect of family-based early intervention on expressive skills in autism children under the age of five

Source changes	SS	Df	MS	F	P	Eta	R ²
Covariate variable	384.127	1	384.127	249.533	0.0001	0.916	1
Group	331.333	1	331.333	215.237	0.0001**	0.903	1
Age	0.849	2	0.424	0.276	0.762	0.023	0.088
Sex	0.004	1	0.004	0.002	0.961	0.0001	0.050
Group * Age	14.105	2	7.053	4.581	0.021*	0.285	0.719
Group* Sex	6.412	1	6.412	4.166	0.053	0.153	0.498
Age* Sex	3.575	2	1.788	1.161	0.331	0.092	0.229
Group * Age* Sex	1.511	2	0.755	0.491	0.619	0.041	0.121
Error	35.406	23	1.539				
Total	73883	36					

$P < 0/0001$ **

Findings in Table 7 show that in view of the pre-test scores as a covariate variable, the difference between the control and intervention groups performance in terms of expressive skills is significant in level of $P < 0.0001$. In other words, the difference between the two groups scores indicates that psychological and educational family-centered early interventions have positive effect on development of expressive skills in autism children under 5 years of age. In view of the Eta square it can be said that 90% of these changes are due to interference effects.

Also the results of analysis covariance Table (Table 7) shows that the psychological and family-centered educational on time intervention program has a similar impact on the rate of expressive skills development among the male and female children with autism in test groups and there is not a significant difference among male and female children with autism. Also the results of analysis of covariance (Table 7) shows that there is a significant difference between the children of age groups participating in the intervention program from the viewpoint of influence received from a program in the areas of expressive skills development ($P=0/05$). With regard to the average score of age groups in pre-test and post –test, it must be said that among the three age groups, the intervention program has had the greatest impact on the development of expressive language of 24-36 month age group and the earlier intervention result in greater influence taking. Also with regard to the results of analysis of covariance in connection with the variable of age, gender, the interactive impact of gender with a group and the interactive impact of a group, gender and age, it should be said that there is no significant difference between the male and female children of the age groups participating in intervention program from the viewpoint of rate of receiving influence from the program in the areas of development of expressive skills.

DISCUSSION AND CONCLUSION

The primary focus in the implementation of EI services is on the capability of reducing negative effects in a given condition or risk factor and thus promoting optimal development over time. Combined with early detection, EI is critical for children identified with autism disorder. Both the theoretical models dealing with intervention programs for exceptional children as well as the professionals in the field who operate them have come to regard the family itself as the central agent and crucial partner in the child's rehabilitation process. In this regard, this article has evaluated the effectiveness of psychological and educational family-centered early interventions on receptive and expressive language skills development of autism children under 5 years of age. The results support the efficiency of intervention for infants and young children with autism disorder. The findings showed that psychological and educational family-centered early interventions have positive effect on receptive and expressive language skills development of autism children under the age of five. This finding is consistent with findings reached by Virués-Ortega et al[11] Sallows, [17] Osborne[18], Smith[19],Guralnick[20],Ben Itzhak & Zachor[21], Yoshinaga-Itano [23], Hogan et al [24], Green et al[25], McConkey & Cassidy[26], Perryet al[27], Jordan et al,[28]Bondy & Frost[30], Ganz &Simpson[31], Charlop-Christy et al[32], Schwartz, Garfinkel &Bauer[33].

One of the reasons to get to such a conclusion is that in family-centered approach, the early intervention is demonstrated by beliefs and practices that treat families with dignity and respect, and ensures the active involvement of family members in the mobilization of resources and supports necessary for them to care and rear their children in ways that have optimal child, parent, and family benefits. The families who receive support through early intervention appear to adjust more quickly to their child's autism status and show more active involvement in the process of his/her developmental abilities improvement. In summary, the degree of parents' involvement in child's program and collaborative relationship between parent and professionals may be powerful ingredients in family-centered practice. This would result in a more progress of autism children participating in the intervention program. The main reason to use these methods is that in fact the on-time intervention consider the performance of a child, parents and family as a set and individualizes the nature of the environment of any activity with a minimum limitation for a child and his/her family[38]. The educational methods and treatment techniques are performed throughout the day and in all environments in which the child participates so that the child could use all available learning opportunities. Another reason is that Most professionals, especially those directly involved in providing rehabilitation services for young children, are aware of the critical significance of intervention onset in infancy (Critical period of language development)to reduce the negative effects of autism on the child and believe it is useful. Collectively, then, emerging views of child development and child language acquisition pointed to the importance of the parents as tutors and to the family and its activities as the primary learning context in early childhood. Moreover, the results showed that there is a significant difference between the children of age groups participating in the intervention program from the viewpoint of receiving influence from the program in the areas of expressive language and receiving language skills. This means that to the extent that the intervention starts sooner, to the same extent the influence taking has been greater. This finding is in agreement with the findings of Spencer&

Marschark[8], Virués-Ortega et al[11], Ben Itzhak & Zachor[21], Sass-Lehrer et al[22], Yoshinaga-Itano [23], Hogan et al [24], Howlin et al[35], Granpeesheh et al [39] and Lovaas[40]. This finding is in coordination with this perception that children will develop their lingual, communicative, receiving language and expressive language better, provided that this intervention could be started sooner. The reason is that there is an ideal period for the specific change in the receiving language, expressive language and language abilities. If a delay or a growth inability in a child could be detected early, there will be a greater possibility that children could utilize the strategies of intervention and family contribution in educational programs to compensate the needs of childhood period and will definitely bring about benefits for children and their families.

According to the child growth theory of Lev Vygotsky, the primary growth and the best learning takes place within the framework of cultural group of the child which is usually the family and the learning experiences are provided through interaction with adults and in particular father and mother or the primary care takers . The active environments involve the active participation of a child in learning and encourage them for reinforcing the existing capacities and promoting new capabilities. This is an issue upon which the base of family-centered intervention program has been formed and has a special attention towards it[8]. Considering what was already said, it can be concluded that though there are evidences for the positive consequences for the children with autism as a result of early detection and intervention, but such kind of services for families should be presented in the sets in which the child is taken care and educated, i.e. the natural environment of a child. The objectives of family-centered intervention not only relates to the growth outcomes for a child but also to the interest and needs of the parents and other family members too and should facilitate the grounds for the child and family active participation.

One of the limits of this research was the lack of homogeneity of the parents participating in the intervention from different aspects such as the number of children, social and economic class, and cultural level, level of education and age of parents. Though the intervention group and control group were similar to each other to some extent due to random selection and statistical controls have made it possible to compare these two groups, but educational programs for parents demands a type of specific homogeneity in parents and children with autism, so that it will be possible to provide broader and deeper educations, an issue whose fulfillment seems to be very difficult.

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