

Profiles of Joint Attention Ability for Children with Autism Spectrum Disorders

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Abstract

The ability of joint attention is a series of behaviors that develop early in the life of a child and have an important role in communication and social development. This study aims to describe the profile of joint attention skills for children with autism spectrum disorders and intervention strategies used by teachers in developing these skills. This study uses a qualitative approach with 2 (two) children with autism spectrum disorders as subjects. The results showed the ability of children in Initiating Joint Attention is still low on aspects of Eye Contact, Alternate, Point and Show. The ability of the Responding to Joint Attention also still low also on aspects Following Proximal Point and Following Line of Regard. The intervention strategy carried out by the teacher was very rigid, not in accordance with the age and development of the child, teacher's understanding of joint attention is limited to eye contact only, the teacher teachers do not assess activities, food, and or toys that are favored by children that can be used as reinforcement to improve joint attention skills in children with autism spectrum disorders. It is necessary to understand the child's ability profile and current interventions to form appropriate intervention

Keyword: assessment, children with autism spectrum disorders, Joint attention

Introduction

The prevalence of autism spectrum disorders has increased rapidly in recent years (Gillberg&Wing, 1999; Schertz&Odom 2004), with the problem of increasing prevalence, finding an effective intervention strategy is urgent and urgent. Early identification of children with autism spectrum disorders has become very important lately so that early intervention can be carried out immediately (Schertz&Odom 2004). Joint attention becomes the most important part in identification and early intervention because joint attention skills become the initial marker in children with autism spectrum disorders. Joint attention is defined as the simultaneous involvement of two or more individuals in a mental focus on the same external matter (Baldwin, 1995). Tomasello (1995) states that joint attention is more complex than two people who see the same object. There is synchronization between the two participants to coordinate attention between objects and another people. In the joint attention process, there are stages of understanding that other participants have focused attention on the same entity. This skill is a series of behaviors that develop at the beginning of a child's life. These skills have an important role in communication and social development and must be an initial priority in interventions (Jones, Carr,&Feeley 2006).

The development of joint attention ability appears in developmental type children between the ages of nine months to 15 months. Children respond to other people's joint attention direction, and start joint attention by directing others to adopt the focus of children's attention. Responding and initiating joint attention (RJA and IJA) can be in various forms of behavior and can change with the age of the child. RJA is a response to other people's interactions for joint communication, for example

the therapist says (maybe pointing) to the child, "Look outside there is a plane passing". If the child is not able to see the thing that is appointed, the child does not have that ability. Generally the response involves objects that the child sees that are directed by other people to pay attention to them. While initiating joint attention is the ability of children to attract the attention of others to something object. This ability involves changing views, where the child sees the object and looks back at the adult and returns to the object. This skill usually involves looking at objects with simple gestures which are pointing and showing / showing so that others pay attention to the object (Jones, Carr,&Feeley 2006).

The development of joint attention in children with autism disorders often shows a significant deficit (Murray, 2008). Mundy et al. (1994) found an association between mental age and joint attention in children with spectrum disorder. Although individuals with a high and low mental age showed a joint attention deficit, differences occurred in the presentation of this deficit. Young children with autism with a higher IQ show deficits in high level joint attention skills (pointing or showing). Deficits in low-level joint attention skills (inability to follow the direction of head movement, eye sight, and show), this is most clearly seen among children of low mental age, in children younger than 20 months.

The importance of joint attention ability intervention because this ability is related to the development of child communication. Mundy, (1990) found that a child's ability to follow the direction of views and pointing movements of experimental actors was a significant predictor of the development of receptive language. Bates et al. (1976) investigated a series of pre-verbal gesture schemes, namely: giving, showing, pointing at communicative, and requesting rituals. They found that from this communicative scheme, communicative designation was the best predictor of language development in children with this type of development. Ulvund and Smith 1996 in Mundy and Gomes (1998) provide evidence of a significant relationship between initiation of joint attention with receptive and expressive language. Mundy and Gomes (1998) found that IJA was strongly associated with expressive language skills, while responding of joint attention was a strong associative predictor of receptive language. In addition, RJA correlates with receptive and expressive languages in advanced testing. In addition, Kasari et al. (2008) stated that joint attention skills have been specifically associated with vocabulary development in children with this type of development.

From the above, it is clear that joint attention is a skill that must be mastered by a child so that he can carry out his development tasks. The development of communication is one of the prerequisites for joint attention. In other words, Joint attention is a precursor skill in communication. Determining the basic abilities of children with autism spectrum disorders in the field of joint attention is done through assessment. With teacher assessment, it can determine the basis of intervention and how the strategy is. Sumantri 2016 explains that assessment is a systematic process in collecting data on a child's child that serves to see the abilities and difficulties faced by a person at that time, as an ingredient to determine the actual needs. Based on this information the teacher will be able to arrange an intervention program that is of reality in accordance with the objective reality. So how important is the role of assessment that is closely related to activity or intervention.

In this study assessment of joint attention ability using Early Social Communication Scales (ESCS: Mundy et al., 2003) which consists of initiating joint attention (including Eye Contact, Alternate, Point and Show) and responding of joint attention (including Following Proximal Point and Following Line of Regard). The author also observes the teacher's ability to intervene in joint attention abilities. The initial ability of autism spectrum disorder children in the aspect of joint attention and the condition of the teacher's objective in intervening in these abilities are the basis for formulating intervention strategies. The question in this study is how the profile of joint attention skills in children with autism spectrum disorders use ESCS instruments. How the intervention has been done by the teacher.

Method

The subject of this study consisted of two children with autism spectrum disorders who had been assessed by related parties. The age range of this child is under the age of six and having low joint attention abilities.

Table 1. Data on children with autism spectrum disorders

Subject	Sex	Age (in years and months)	parent education		Level of autism ^a
			Father	Mother	
Subject 1	male	4,7	Bachelor	Bachelor	Moderate
Subject 2	female	4,10	Bachelor	Bachelor	Moderate

a. using Classification of the Childhood Autism Rating Scale (CARS)

The data taken is the ability to initiate joint attention which includes aspects of eye contact, alternate, pointing and showing. The responding of joint attention data include the aspects of Following Proximal Point and Following Line of Regard. In carrying out the assessment, modifications are made according to the situation at the research site. Data are taken by giving the code in each column aspects of joint attention. The treatment was given as many as 10 trials and summed the frequency and searched the total percentage of each aspect of joint attention ability.

The assessment is carried out in a closed and recorded room. Recording is done by a designated officer. Coding is done through analyzing video recordings and discussing with the research team. In addition to video analysis, observations were also carried out during the intervention process, both in class settings and in the playing room. This process is to match the assessment results in a special room and the intervention space so that the data are accurate. The goal is that triangulation between assessment data and interventions is not appropriate / not very different. In addition to data about the ability of joint attention of children with autism spectrum disorders also supporting data is needed, namely how the teacher intervenes in joint attention abilities. The data are important because it supports joint attention assessment profiles. And also the data are taken into consideration in building appropriate intervention strategies.

Coding is said to be successful / passed according to the indicators of each sub aspect.

Table 2. The criteria of pass for each aspect of joint attention

Aspects	Sub Aspects	Mastered
Initiating joint attention	Eye contact	The child sees the object and touches it, or looks at the assessor when the toy is placed on the table without prompting, at least 1 second. If the direction of an adult is at least 2 seconds
	Alternate	Children look at objects and to assessors in turn
	Pointing	The child points to a mechanical toy with a finger, or points to an image in a book
	Showing	Children lift active mechanical toys and show them to the assessor, at least 2 seconds
Responding of joint attention	Following Proximal Point	Pointing pictures in books with the direction of the assessor, 6 pictures with different pages
	Following Line of Regard	Look at the picture to the right and left according to the teacher's direction. If you look to the right and left of the image in the position behind the neck of the child must cross the shoulder

The material used in joint attention assessment refers to the ESCS protocol. Among they are mechanical toys so that they can be turned on and off according to the demands of each aspect. In the IJA aspect and sub aspects of eye contact and alternate using mechanical toys as many as 3 types, each of which appears alternately. For pointing aspects and showing using mechanical toys and books that contain pictures. Aspects of RJA and sub aspects of Following Proximal Point use posters

that are affixed to the right and left of the assessment room and are parallel to the child's seat. The material use the following aspects of the Following Line of Regard poster is posted on the left and right sides of the child's seat.

Results and Discussion

The results of the joint attention assessment using the ESCS are described in each subject, and each aspect. Subject 1 in the IJA aspect, the sub-aspect of eye contact obtained the correct frequency of 7 out of 10 trials. The alternate sub aspect obtained the correct frequency of 3 out of 10 trials. The pointing sub aspect obtained the correct frequency of 6 out of 10 trials and in the aspect showing subsection obtained the correct frequency of 3 out of 10 trials. The total percentage of subject 1 in the IJA aspect is 47.5%, this number is obtained by means of the true total frequency divided by the total number of trials. Subject 1 for the RJA aspect with the following aspects of Proximal Point obtains the correct frequency of 6 out of 10 trials, for the Following Line of Regard sub-aspects, the correct frequency is 6 out of 10 trials. The total percentage of RJA ability for subject 1 is 60%. Subject results 1 based on interviews and observations showed the ability of eye contact for 2 seconds without prompt. For eye contact using the prompt food placed near the eye of the therapist has lasted up to 5 seconds. When playing in the room if the subject 1 is called, he has seen the teacher who called him.

The IJA 2 aspects of the contact sub-aspect obtained the correct number of frequencies 4 out of 10 trials, alternate obtained the correct frequency of 2 out of 10 trials, pointing obtained 4 out of 10 trials, showing obtaining 2 out of 10 trials. The total acquisition of IJA percentage in subject 2 is 30%. The RJA aspects for the following sub-aspects of proximal point subject 1 obtain the true frequency of 2 out of 10 trials and the following aspects of the line of regard obtain 1 of the 10 trials. The total percentage aspect of RJA in subject 2 is 15%. For the results of observation and interview of subject 2, the ability of eye contact is still with prompting to 5 seconds. Eye contact while in the playroom cannot be independently. The pleasure of the subject is to bring the book everywhere, but it has not yet responded if told to designate the picture in the book.

Table 3. score of joint attention ability acquisition

Subject	Aspecs	Sub aspecs	Score	% score total/aspecs
Subject 1	Initiating Joint attention	Eye contact	7	47,5%
		Alternate	3	
		Pointing	6	
		Showing	3	
	Responding of joint attention	following proximal point	6	60%
		following line of regard	6	
Subject 2	Initiating Joint attention	Eye contact	4	30%
		Alternate	2	
		Pointing	4	
		Showing	2	
	Responding of joint attention	following proximal point	2	15%
		following line of regard	2	

From the acquisition of the percentage of total IJA scores for each subject, which is 47.5% and 30% and the RJA results are 60% and 15%, both aspects are categorized as low because they are less than 80%. Joint attention is categorized as pass if the average score is more than 80%. Likewise with the results of observations and interviews with teachers, eye contact is categorized as graduated if it can last for 5 seconds without prompting, make eye contact without prompts at a certain distance and eye contact in the playing room. The results of the observation of intervention strategies carried out by the teacher in teaching joint attention skills with class settings and using discrete trial training (DTT)

techniques with the applied behavior analysis (ABA) approach. The subject sat before the teacher with a small table between the teacher's chair and the subject. To build eye contact the teacher uses meal rewards. The teacher does it very structured and settings according to the ABA and DTT protocols. In the intervention process, it is often seen that the subject is refusing, according to the researchers' analysis the possibility of the intervention setting is very rigid so that the child is bored with the condition. This became a discussion between the research team and the teacher's team. Discussion to improve intervention settings so that children do not refuse. So the intervention becomes fun, and this is agreed upon by the teacher. Researchers also interviewed teachers' understanding of joint attention through interviews, teachers interpreting joint attention as limited to eye contact. In choosing the reward or reinforcement that is preferred by the teacher chosen child, only focus on food and the teacher does not carry out a free operant assessment.

The purpose of this study was to describe the profile of joint attention skills in autism spectrum disorders. The profile is taken into consideration when deciding on the right intervention strategy. The discussion of the findings of the research shows that both subjects 1 and subject 2 have low ability in joint attention because it is less than 80%. From some research results that joint attention is one indicator that determines an autistic child or not. Hurwitz&Watson (2016) states that there are differences in joint attention that are very prominent in children with autism spectrum disorders and this is often used as an indicator of the disorder. In his research explaining the joint attention ability of children with autism spectrum disorder significantly less / lower than children developmental delay. Related to language development, children with autism spectrum disorders who have good joint attention skills, they have good language development than low ones. Joint attention interventions carried out by teachers using reward foods help children with autism spectrum disorders develop their abilities, this supports the research conducted by Jones and Carr, 2004 where children have been motivated to increase their IJA frequency by gaining an interest they really like as a gift, thus indicating that JA can be increased by using non-social incentives. Thus, there is a need for free operant assessment.

Conclusions

Joint attention is the ability to focus together on people or activities. Very low ability is part of the characteristics of children with autism spectrum disorders. To develop communication skills, adequate joint attention is needed. Previous research explains that joint attention is the first milestone for the development of communication. In children with autism spectrum disorders this ability is not well developed. with limited capabilities, communication is limited. Every child with autism spectrum disorder has different joint attention abilities even though the level of autism is at the same level as the case above. With different profiles the intervention given to children is also different.

Conducting assessments and understanding the profile of joint attention abilities every child with autism spectrum disorder will make it easier for teachers to formulate appropriate intervention strategies. Basically every individual with autism spectrum disorder is unique with all its strengths and limitations. Existing profiles are used as a starting point for developing these abilities so that the teacher can compare skills before and after the intervention.

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