The Effectiveness of Child Centered Play Therapy to Improve Joint Attention Skills in Children with Autism Spectrum Disorder

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Abstract
Children with Autism Spectrum Disorder (ASD) have difficulties in building and developing social and emotional skills in the same pattern with their peers. Deficit in joint attention is a core problem that presented by children with Autism Spectrum Disorder in DSM IV criteria (APA, 1994). Some expert in the field of ASD have proposed play-base interventions for working with children with ASD, providing support for using play therapy as a method of treatment (Gallo-Lopez & Rubin; Greenspan & Weider; Layne in Balch & Ray, 2015). Child Centered Play Therapy (CCPT) is a therapy that has one of the purpose involve joint attention. The previous research mentioned that CCPT is effective to increase the joint attention skills, so it can increase social interaction skills for children with A utism Spectrum Disorder (ASD). The purpose of this research is to know the effectiveness of CCPT in improving joint attention skills for children with Autism Spectrum Disorder (ASD). This research's design is qualitative method with single case pre-test-post-test design, by measuring the score of joint attention skills, including Initiative Joint Attention (IJA) and Response Joint Attention (RJA) in three years old ASD children before and after CCPT. The CCPT conducted in twenty sessions for four weeks. The result has shown that Child Centered Play Therapy (CCPT) is effective to increase Initiative Joint Attention (IJA) with skor comparison in post-test is higher (77,56) than pres-test (38,12).

Keywords : Autism Spectrum Disorder, Joint Attention, Child Centered Play Therapy.

Introduction

Based on DSM 5 (APA, 2013), children with Autism Spectrum Disorder (ASD) has persistent deficits in social interaction, deficits in social communication, and restricted or repetitive patterns of behavior. Director of Mental Health of Indonesia's Ministry of Health, Diah Setia, stated the estimation about the numbers of Indonesian's children that diagnosed with Autism Spectrum Disorder, there are around 112.000 children, in the age range of 5-19 years old. When assumed with autism prevalence 1.68 per 1000 for children under 15 years, where the numbers of children aged 5-19 years in Indonesia reached 66.000.805 people (based on data BPS in 2010), so it is estimated that there are more than 112.000 children with ASD in the range of 5-19 years old (Republika, 9 April 2013).

Deficits in nonverbal communicative behaviors used for social interaction; ranging from poorly integrated-verbal and nonverbal communication, through abnormalities in eye contact and body-language, or deficits in understanding and use of nonverbal communication, to total lack of facial expression or gestures (APA, 2013). Overall, the beginning of the delays in social behavior arises at least in 5 social behavior areas: social stimuli, joint attention, emotion, imitation, and face processing (Dawson & Faja in Nelson & Israel, 2015). The core problem has been shown by the child with ASD is the deficits of joint attention (Kerig, Ludlow & Wenar, 2012). Deficits in joint attention is the core that has been shown by the child with ASD, according to DSM 4 criteria (APA, 1994), including difficulties in sharing interest spontaneously, or doing something with other children.

Joint attention is often discussed as one of the first shape from visible communication (Schertz & Odom in Rudy et al., 2014). Joint attention refers to the child's capacity to coordinate attention with a social partner around an object or event and is observed when the child is showing overt skills such as alternating gaze between an object and a person, pointing, showing or giving, to share or to show (Mundy & Sigman; Scaife & Bruner in Kaale, Smith ,& Sponheim, 2012).

Based on the function, joint attention identified into two types: to response and to initiate. The child follows others that try to coordinate the attention to an object or particular events, by showing or changing the gaze, it is known as the response of joint attention (Naoi et al. in Jeyabalan, 2012). The second types of joint attention is initiative to seek, to give, to show, and to point something (Rudy et.al, 2014; Kaale, Smith, & Sponheim, 2012). The recent research stated that enhancement of response joint attention closely related with development of social cognition, it is a beginning to build social competences (Schietecatte, Roeyer, & Warreyn; Tomasello in Sealter, Beamis, & Davies, 2016).

Some of the experts who handle children with ASD have suggested to do intervention with a play-based (Gallo-Lopez & Rubin; Greenspan & Weider; Layne in Balch & Ray, 2015). They gave support to the implementation of play therapy as a method of treatment for children with ASD (Balch & Ray, 2015). In the study conducted by Kasari (2006), it has been examined the ability of intervention with joint attention and symbolic play as the target. The result of this research showed that the child who got joint attention intervention significantly show and express more joint attention in joint

attention structured measurement, and the child initiated joint attention in the interaction between mother and child (Kasari, 2006).

In the previous research, conducted by Kaale, Smith, and Spoheim (2012) that focused to the enhancement of initiative from higher order joint attention: showing, pointing, and giving; they gave a chance to the children in initiating joint attention used interesting toys or objects by showing or hiding the toys to stimulate initiative joint attention.

Play is a way of children with autism to communicate (Kerig, Ludlow, & Wenar, 2012). When they are playing, they have an opportunity to form a sense from their experiences and feel the sense of control from their world, which that is important to develop their emotion. Play therapy can be one of treatment method that effective to children with autism spectrum disorder, who have difficulties in verbal communication and deficits in cognitive skills. Through child-centered perspective, children with ASD got a challenge to have a relationship (Ray, Sullivan, & Carlson dalam Balch & Ray, 2015).

Child-Centered Play Therapy (CCPT) is a relationship-based intervention in which ASD children can have the opportunity to feel fully accepted by the counselor, a condition that is mostly not available to them (Ray et al. in Balch & Ray, 2015). Josefi and Ryan (in Salter, Beamish, & Davies, 2016), have specifically identified four purposes areas from Child-Centered Play Therapy. They are joint attention, imitating response, theory of mind, functional and symbolic skills in playing. The role of joint attention in the language development is one of the important reason to make it as an intervention targets in the early development. Engagement in joint attention also predicted is going to make social response in the future (Clifford & Dissanayake, 2009; Gillespie-Lynch et al. dalam Schertz et al., 2013).

There was an intervention research with control randomization that measure joint attention and symbolic play that conducted by Kasari, Stephany, and Paparella (2005) onto 58 children with ASD in aged 3 and 4 years old. The result of the research indicated that the children who got joint attention and symbolic play interventions showed more initiative and response joint attention when the joint attention was measured.

In the development of CCPT, according to Salter, Beamish. & Davies (2016), individual therapy areas using CCPT are under-researched. A comprehensive literature study states that there are only four studies that have been done nowadays.

Research Objective

The aims of this research was to examine the effectiveness of Child Centered Play Therapy (CCPT) in improving joint attention skills for children with Autism Spectrum Disorder (ASD) to have joint attention, so the children can give response and engage in social community.

Literature Review

Children with autism have many serious problem with social world (Dawson et al., 2004 dalam Kring, Johnson, Davison, & Neale, 2010). Children with autism show severe deficit in the development of gesture communication (Kerig, Ludlow, & Wenar, 2012).Deficit joint attention is core problem in child with autism, this is one of criteria of DSM IV (APA,1994) .There may be a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., not showing, bringing, or pointing out objects they find interesting).

However, a broader definition of joint attention is the capacity of a person to use gestures and eye contact to co-ordinate attention with another person in order to share the experience of an interesting object or event (Mundy, Sigman & Kasari dalam Jeyabalan, 2012). There are two tipes of joint attention (JA), initiating joint attention (IJA) and responding joint attention (RJA). Initiating Joint Attention (IJA) refers to the frequency with which a child uses eye contact, pointing and showing to initiate shared attention to objects or events. Responding to Joint Attention (RJA) refers to the child's skill in following the tester's line of regard and pointing gestures (Mundy, 2003).

This review of the literature suggests that both response to joint attention and initiation of joint attention are central to development in autism spectrum disorder (Lynch, 2013).Pattern of deficit Joint attention emerge as an autism typographic. Child with autism has desficit in shift their gaze, spending less time for joint to other people, and has difficulty to follow someone else gaze atau point (Sigman et al.; Stone, Ousley, Yoder et al. dalam Charman & Wendy, 2006).

Leekam, Lopez, dan Moore (Charman & Wendy, 2006) have some reseach for tested attention function in difficulty through ASD for responding joint attention compered with child with developmental delay, using mental age of their nonverbal ability. Result of this research indicate that ASD have no difficulty to exchange their attention in primary stimulation (object) dan object around them, but they have difficulty to someone else attention request and follow their shift gaze, and move head for give attention for another target around people.

Deficit in initiating and responding joint attention will become a long list of language development because language learning proses can occur through modeling from caregiver that pointed to object or circumstances that involve “joint: between child and cavegiver. Joint attention shaped during child and caregiver share interest in several ways, variative as far as child and caregiver decide shared attention : (1) caregiver gaze to child’s focus (2) child gaze to place where caregiver’s focus to (3) child shift gaze between place and caregiver to make sure caregiver’s focus to (4) child follow caregiver’s gaze focus to, (5) child used communicative gesture or vocalism for describe caregiver’s attention to place where child focus to.

Play is another modality through children with autism to communicate. However, unlike other child, there are deficit in social and symbolic system in autism playing behavior. For example, when given blocks to play with, a typically developing preschooler might use them to represent a car (‘vroom ! vroom!) or create an airport landing strip. The child with autism, in contrast, is more likely to become fixated on

linding the blocks up in a precisely straight row or, if they are striped or brightly coloured, spinning them and staring as they whirl (Kerig, Ludlow, & Wenar, 2012). Play is commonly recognized to have a cog- nitive organizational function, reflecting differ- ing stages of development (Piaget, Wilson & Ryan dalam Salter, Beamish, & Davies, 2016).

Areas of input have been identified that support broader development in social and emotional domains (Lai, Lombardo, & Baron-Cohen, 2014). Hence, CCPT interventions can provide the child with developmentally appropriate self- paced input across these four pivotal areas using the support of a skilled therapist. However, de- spite the general growth in CCPT intervention, the area of individual therapy with CCPT and children with autism has been poorly re- searched. A comprehensive search of the liter- ature revealed that only four CCPT intervention studies have been conducted to date. (Salter, Beamish, & Davies, 2016).

Methodology

Subject

The subject in this research is a boy, who has been diagnosed with Autism Spectrum Disorder (ASD) in 2016. Subject has been diagnosed with autism based on DSM 5, as the result of observations from the team in the therapy center. The observation was a procedure before subject started his therapy. Subject has joined sensory integration therapy, occupational therapy, and speech therapy from 2016 until now. Non-verbal abilities that subject has shown are lack of eye-contact to the objects and to other people, but he still has not shown alternative gaze between object and other people. Subject only can understand simple instructions, such as shake hand and high-five. Subject has never participated in Child Centered Play Therapy anywhere.

Research Method

This research's method is qualitative method with single case-experiment pre-test-post-test design. This research was using that method because this research only has one subject. Independence variable in this research was manipulated systematically only for one subject (Shaughnessy, Zechmeister, & Zechmeister, 2015).

Research Design

The design in this single case-experimental is A-B-A. The first stage in this research is baseline stage (A). Researcher will record and report subject's behavior, including the frequency of target behavior in certain time. After baseline stage, subject will get treatment (B), CCPT intervention. Then, after the intervention, subject will have baseline stage (A) again.

Measurement

Researcher will use Childhood Autism Rating Scale (CARS) in assessment process to identify and to classify subject's condition related with the autism spectrum disorder. Then, Denver Developmental Screening Test (DDST) to identify motoric skills, language and personal-social. After that, researcher will use Early Social

Communication Scale (ESCS) made by Mundy et al. (2003) to measure subject's joint attention ability, as pre-test and post-test.

Research Procedures

There are three stages in this research, baseline stages, treatment stages, and evaluation stages. Baseline stage (A) is using The Early Social Communication Scales (ESCS). Joint attention observation used ESCS by ESCS rater through technical record by using video.

Treatment stage is using CCPT, intervention strategy based on the combination of CCPT stage and the purpose to initiate subject's joint attention. CCPT will be conducted in 20 sessions, which are five times a week for 4 weeks. CCPT is given individually for 60 minutes/ session/ day by the researchers using the procedures and structures from Mullen and Rickli (2014).

Evaluation stage (A) is using The Early Social Communication Scales (ESCS). Joint attention observation used ESCS by ESCS rater through technical record by using video.

Results

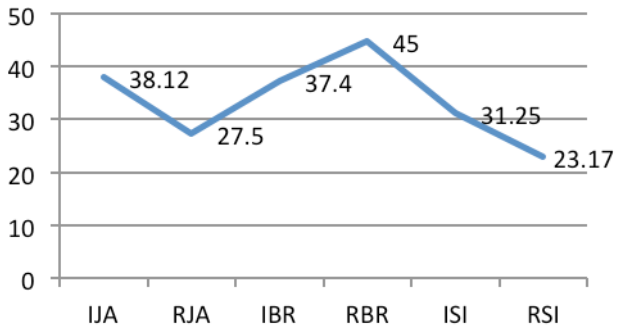
In the baseline stage, comparison of subject abilities in Joint Attention (JA), Behavior Request (BR), and Social Interaction (SI) as measured by ESCS are as follows:

Table 1: ESCS Baseline Measurement Results

No	Abilities	Average results	Average Score	Abilities Comparison
1	IJA	38.12	33.74	> 33.74
2	RJA	27.5	33.74	< 33.74
3	IBR	37.4	33.74	> 33.74
4	RBR	45	33.74	> 33.74
5	ISI	31.25	33.74	< 33.74
6	RSI	23.17	33.74	< 33.74

Information:
IJA : Initiative Joint Attention
RJA : Responding Joint Attention
IBR : Initiative Behavior Request
RBR : Responding Behavior Request
ISI : Initiative Social Interaction
RSI : Responding Social Interaction

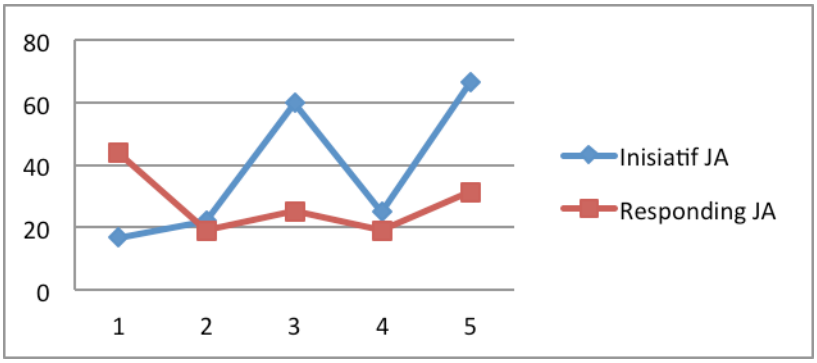
IJA, IBR, and RBR abilities are higher than the average of social communication ability that measured by ESCS, and RJA, ISI, and RSI are lower than the average of social communication ability that measured by ESCS.



Picture 1: Graph of ESCS measurement in pretest.

Table 2: Comparison of IJA and RJA abilities

Day	***Joint Attention***			
	IJA Score	*Mean IJA= 38.12*	*RJA Score*	*Median RJA =27.5*
1	16.7	< 38.12	43.75	> 27.5
2	22.2	< 38.12	18.75	< 27.5
3	60	> 38.12	25	< 27.5
4	25	<38.12	18.75	< 27.5
5	66.7	> 38.12	31.25	> 27.5
Average	**38.12**		**27.5**	

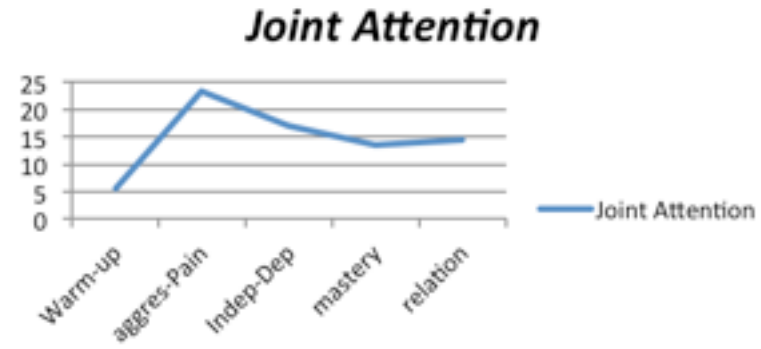


Picture 2: Graph of IJA and RJA abilities comparison.

Table 3: Result of all the CCPT Stages

Warm-up		***Aggression and pain***		***Dependence and independence***		***Mastery***		***Relationship building***	
Total	Mean	Total	Mean	Total	Mean	Total	Mean	Total	Mean
22	**5,5**	**116**	**23,2**	**67**	**16,75**	**53**	**13,25**	**43**	**14,3**

From the table, can be concluded that Joint Attention capabilities that displayed by subjects during the therapeutic process, do not have a consistent pattern. JA capability increased at the aggression and pain stage, and then decreased until the mastery stage and started to increase slightly in the relationship building stage.



Picture 3: Graph of Joint Attention Capability in CCPT application.

Evaluation Result (Post-test)

Evaluation as a post-test that conducted in this research was using *Early Social Community Scales* (ESCS). The result of post-test are as follows:

Comparison of Subject's ability in *Joint Attention* (JA), *Behavior Request* (BR), and *Social Interaction* (SI).

Table 4: ESCS Measurement Result

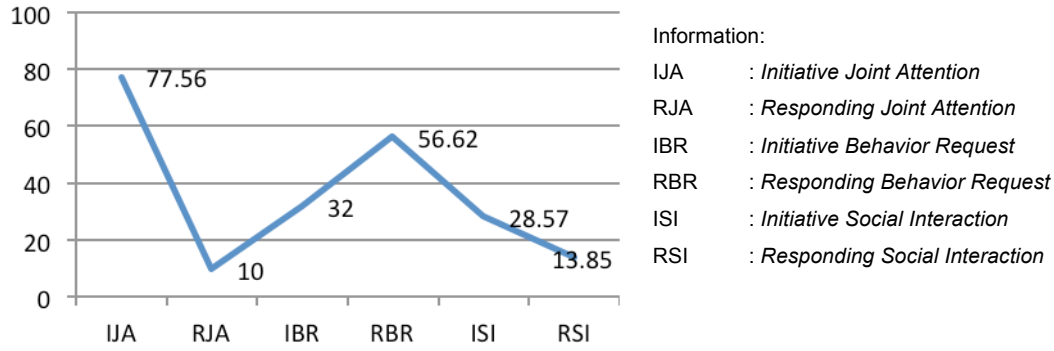
No	Abilities	Average Score	Mean	Ability comparison
1	IJA	77.56	36.4	>36.4
2	RJA	10	36.4	<36.4
3	IBR	32	36.4	<36.4
4	RBR	56.62	36.4	>36.4
5	ISI	28.57	36.4	<36.4
6	RSI	13.85	36.4	<36.4

Information:

IJA : *Initiative Joint Attention*
RJA : *Responding Joint Attention*
IBR : *Initiative Behavior Request*
RBR : *Responding Behavior Request*
ISI : *Initiative Social Interaction*
RSI : *Responding Social Interaction*

From the post-test result is known that IJA and RBR abilities are higher from the average of social communication which is measured through ESCS, it means that subject's ability to initiate attention with researcher and subject's ability to response the researcher's request are higher than the average of other abilities which is measured in ESCS.

RJA, IBR, ISI, and RSI abilities is lower than the average of social communication which measured by ESCS, means that subject's ability to response attention from the researcher, subject's ability to initiate in requesting something to the researcher, subject's ability to initiate in doing social interactions with the researcher, and subject's ability to response social interactions from the researcher are lower than the average of other abilities which measured by ESCS.

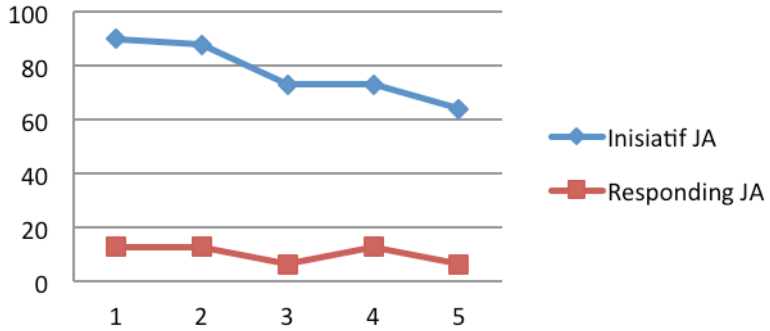


Picture 4: Graph of ESCS result.

The main ability that become the focus in this research is Joint Attention (JA). From the table and the graph is known that subject's ability in initiative joint attention (IJA) is higher than responding joint attention (RJA), *initiative behavior request* (IBR), *responding behavior request* (RBR), *initiative social interaction* (ISI), and *responding social interaction* (RSI). *Response joint attention* (RJA) is the lowest from all of the abilities measured. RJA includes following line regard and following proximal.
Comparison in JA ability specifically is subject's IJA ability is higher (Score= 77.56) than RJA ability (score= 10). It means that subject's ability to initiate all of attention with interactive partner (researcher) is higher that the ability to response attention from interactive partner (researcher), as can be seen in this following table and graph:

Table 5: Comparison between IJA and RJA abilities

Day	***Joint Attention***			
	IJA score	*Mean of IJA = 77,56*	*RJA score*	*Median of RJA=10*
1	90	>77,56	12,5	>10
2	87.8	>77,56	12,5	>10
3	73	< 77,56	6,25	<10
4	73	< 77,56	12,5	>10
5	64	< 77,56	6,25	<10
Average	**77,56**		**10**	



Picture 5: Graph of Comparison between IJA and RJA abilities

Discussion

There are two abilities that can be discussed from the result of this research, these are IJA ability (*Initiative Joint Attention*) of the subject which experienced the highest score increase was the ability to show. The operational definition of the show ability, according to the Early Social Communication Scale (ESCS) is subject is able to wave an object to the researcher and or able to refuse when the researcher tries to retrieve the object held by the subject. During the measurement (post-test) that conducted by giving some tasks in ESCS, show ability which shown by the subject was refused when the researcher tried to take an object held by subject.

The subject will persistently defend the object (toy) that he likes by refusing to give the toy to the researcher, and the toy he likes is a handheld mechanical toy (such as pop-up toy, squeeze toy, and some toys that can move by rotating the play button) and inflatable mechanical toys (like windmill, whistle with mill, and straw whistle). Mechanical toy is the most preferred toys because they can move or be moved and can make sound.

In CCPT, joint attention has been explored as an area where the child can share his interest with the therapist. The ability to show studied by subject while undergoing the treatment, because subjects were given the freedom to determine the game that he wanted to play and the researchers did not give directions, limitations and any instructions about the toy choices.

Besides it, the researcher is involved in the game with subject, so that the subject feels able to share their interests without being hindered by the researcher.

One approach of CCPT is spontaneity. Inside the CCPT the child is the controller of each session, so the structure builder in CCPT is the child. The toys and activities used are child's choice during the therapy session (Mullen & Rickli, 2014).

In the CCPT process, therapist (in this study is the researcher) worked to create an environment where children can feel secure, providing an opportunity to express themselves in the most comfortable way for the child and meeting the personal level of their development (Mullen & Rickli, 2014).

When the child feels secure, the child's secure area can be widened and the child can engage in a wider range of activities and increase interaction with the therapist (Salter.K, Beamish. W, and Davies.M, 2016). Social behavior that is able to be learn by subject was to show his interest to the researcher by preserving a toy that he likes and refuses if being prohibited by the researcher.

The ability to show his desire and decide what does he want to do are the ability that appeared at two years old, that known as *autonomy versus shame and doubt* stage. Two years old children tend to hold when they want and push or throw when they don't want. The children train their desire, their sense for autonomy, they often use "me, mine (Crain.W, 2011).

Beside of Joint Attention (JA) ability, found other things related to the social interaction's ability. These social interaction behaviors include (a) initiative and social interaction responses, and (b) developing attachments with the researcher.

Subject was able to initiate social interaction by inviting the researcher to play 'cilukba', asked the researcher to carry him, sat back to the body of the researcher, held the researcher's hand, forbade the researcher to play balloons by taking the balloon from the researcher's hands. Subjects respond to social interaction requests, such as responding to laughter when tickled, smiling, and chattering (like making a "aaa..hmmm..ei" sound) when the researcher gave comment to the subject's behavior, responding to reciprocal games and responding to pretend games, and the subject has been able to join in playing guitar together.

Subject can develop close relationships with researcher in the form of collaboration while playing with the researcher, imitating the game conducted by researcher, want to do the instructions from the researcher and give the toy to the researcher when asked, ask the researcher to help.

On the other side of this research, also there was a decrease. Subject has decreased ability to follow the line of regard during the post test. Before undergoing the CCPT process, subject was able to respond to the direction of the researcher's hand pointing at various posters in the test room. But when the post-test was given, subject showed more refused to respond by closing his eyes and whining when the researcher pointed to the posters.

This subject's behavior pattern was same as the behavior pattern in the emergence of the ability to show and to maintain in IJA ability. Subject tried to show that he didn't like the researcher's instruction and refused because that instructions didn't match with what he wanted. Subject didn't want to do JA when being directed by the researcher during the session, and this pattern also happened during the post-test. The ability to follow the line of regard which is done during the CCPT session was done spontaneously, so in the post-test subject also did it spontaneously and refused if he has known that he was being directed.

Conclusion

According to the result of the research conducted, found that Child Centered Play Therapy (CCPT) can improve the target, Initiative Joint Attention (IJA), with score comparison in the post-test was higher (77.56) than the score in the pre-test (38.12). IJA target in this research was including eye contact, alternate gaze, to point, to point and eye contact, and to show.

On the other side, this research also found that the Responding Joint Attention (RJA) target decreased. RJA decreased in 17.5, the post-test score was lower than the pre-test score. RJA target in this research was including ability to follow the line of regard and ability to follow the gestures of pointing by the researcher and directing his head and eyes in the right direction in the book.

Recommendations

The next researchers are expected to examine the improvement of verbal communication skills in children with ASD cases using CCPT interventions. The children who get freedom to express will improve their understanding by using language in the more flexible way and reduce formal intonations which is conducted by most of the children with ASD. The next researchers are expected to review the Joint Attention ability in children with ASD for different ages. Autistic children who are more than 3 years old with the same severity have different developmental tasks of both physical, cognitive, and social development.

The clinic that concerned in this research is being recommended to use CCPT as an alternative therapy, because CCPT can effectively improve the ability of Joint Attention and other social interaction abilities in three years old children with ASD.

Parents are advised to give opportunity for the children to have this play therapy further. One of the ability that can be improve through CCPT is eye contact, parents can give time twenty to thirty minutes for each day to do CCPT at home with the kids, at least three months for a cycle. CCPT can continue to be done more than one cycle, according to the development of each child.

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