

Effectiveness education of Social Stories on increase eye contact in autistic children

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Abstract: To evaluate the effectiveness of social stories to increase eye contact training on autistic children, two autistic sons - 6.8 years and 7.10 years - were selected by sampling. These kids using social stories that include 4 photo cards with content of making eye contact were evaluated. Data collection and analysis by using graph method showed that social stories would help to increase the number and duration of eye contact. Based on these findings, it is suggested that the teaching of social stories as a program-wide meeting would be used as a treat method.

[Maryam Ramshini, Janet Hashemi Azar. **Effectiveness education of Social Stories on increase eye contact in autistic children.** *J Am Sci* 2013;9(8):156-160]. (ISSN: 1545-1003). <http://www.jofamericanscience.org>. 23

Keywords: Autistic, eye contact, social stories

1. Introduction:

One of the subjects that researchers interested in neurology, social, and developmental fields is eye contact process. The subjects who have been studied are in other's face, adults, and children and how we must keep the eyes fixed for dominant state of eyes. It is not surprising that the available information in eye region is essential for processing different faces of identity recognition, age, gender, and other states of face (1).

Eye contact is a dominant visual symbol for many creatures. In many vertebrates, quick reception of eye contact indicates the existence or presence of hunter.

In human and non human mammals, eye contact is considered as an essential element in complex behaviors and understanding the viewer's aims and intentions which can set receiving visual process and recognition processes. In fact, this natural ability becomes a basis for social recognition development (1). As it mentioned before, this process is an essential factor for social relationship between people. It have learned from childhood period that it's necessary to look at the eyes of our audiences while talking with them in order to show participation in conversation, even when we want to take a photograph, we look at the camera, as if our look must be for the ones who look at our photographs (2). One of the main features in autism is lack of eye contact (3).

An autistic child hardly looks at the eyes of addressee and mostly looks at mouth, chin, lip, hair seminary and forehead (4), Eye contact process is an ideal model for studying social relations of people with autism disorder, because abnormal sample from glaring look against with eye contact in out breaking of quality damages in social relations of people with autism disorder is more recognizable (1). With problems of eye contact, we mean the presence

of recognizable damage in using multiple non verbal behaviors such as glaring look of eye to eye for organizing the interactions and social relations (5, 1), found out the specific sensitivity of direct eye contact from birthday with two experiments. In first experiment, they studied the ability of 2-5 days old infants for discriminate between direct and indirect look, In first experiment, they studied electrical activity of four months old infant's brain during direct look against indirect look. The results showed that normal infants had such a priority for direct look, while the infants were in higher ages had not, such a priority, Nasoykez and David lessen (2007) showed that the size of amygdale in autistic people is smaller compared with healthy people and being small of amygdale causes that they have difficulty in creating eye contact. Also retrospective analysis of home film from children that given autistic diagnosis about them, showed that unusual models of eye contact during the first year of life before diagnosis age for autism, has been well observed and this unusual model of eye contact in them may be related to their problems in social relations (1).

Autistic children have less social commitment and acceptance for accepting the rules of social world and even these rules might be difficult for them. So, Gray proposed social Stories in 1991 which their aim was decreasing the problems of these children in social relations through providing observable and practical social information about a situation, occurrence, skill or a concept in simple words (6). By using social stories and reading them for a child, we provide some of suitable answers for a child, we provide, some of suitable answers for questions which he/ she faces with them. In fact, social stories give direct contact with social information for the people, that relation is by pictures and text and provide a small distance between learning and possible stresses in social situations for

them. It can be said that, these stories provide a field for autistic children to exercise their skills according to the condition and improve (7).

Researches in social stories have been concentrated on social skills (7, 8).

But since eye contact is the first way for communication with others, in this research we study the effect of learning social stories with the content of making eye contact for increasing the number and duration of keeping eye contact of autistic children. Our question is that whether we can increase the number of making eye contact and duration by successful methods of social stories or not.

Method

Participants: Two autistic children (6-11 years old) with high performance were selected that had receiving language capability, and referred to special clinics of these children in Tehran. The first participant was a boy, whose name was, Bardia and was 6 years and 8 months old and he referred there for 1 year and the clinics had diagnosed him as and autistic child with high performance. The second participant was a boy, whose name was Masood that was 2 years and 10 months old and had referred there for 2 years and clinics had diagnosed him as an autistic child with high performance.

The two participants were selected by available sampling.

Research method: the research design was an experimental design which was used as single tested from baseline of AB design tools: (1) Social story: it consists of four Pictorial cards realized by contents of making eye contact which these four cards contain some pictures of a boy, a view of a clinics, a friend and a teacher with specific color which were explained for he participants separately. For example, the story of third card is:

For beginning and introducing the boy in story it is explained that the boy enters the room, he sits on a chair, he guts his hands on his legs, the

teacher opens the door of the room and enters the room , closes the door and says hello to this boy , she looks at his eyes and laughs (look) but he has kept his head down, he looks down (Do you see his eyes ?), he doesn't look at his teacher at all.

2- Recording the frequency or occurrence of meaningful behavior (eye contact): we count the number of occurrence of behavior (eye contact) in interval of 30 minutes and then record raw data resulted from behavioral observations in a paper as a table.

3- Recording the keeping time duration of meaningful behavior (eye contact): we count the keeping time duration of eye contact as a second in interval of 30 minutes and record the raw data resulted from behavioral observation in a paper as a table.

4- Konometer: the number of making and keeping time duration of eye contact measured by the konometer.

Procedure: the research measured the eye contact of two participants during four sessions (each for 30 minutes)and determined the number and keeping time duration of their eye contact with the researcher and the teacher by using konometer on AB figure in period a (baseline)

After that learning social stories began by using the picture cards in period B. the researcher put the picture cards (1-4) in front of the participant and began to tell the story by pointing to the picture. After two learning sessions an evaluation session of eye contact was done by the researcher to evaluate the process of effect of story on eye contact. This procedure was done until 10 sessions along with evaluation sessions.

Results

We used data representation method by helping of figure and table in this research.

Table (1): The number of making and keeping time duration of eye contact per second

Sessions	Number of making eye contact per second	Keeping time duration of eye contact per second						Comments
		1	2	3	4	5	6	
First session of baseline	4	4	-	-	-	-	-	The child was anxious
Second session	9	9	-	-	-	-	-	The tester had made his eyes completely round
Baseline								The rate of his nervousness has become less than the pervious session
Third session of baseline	8	8	-	-	-	-	-	The child was sick – He continued his work very calmly from nervousness aspect
First record paper of data	20	1	5	-	-	-	-	

after finishing second learning session								
Second record paper of data after finishing Fourth learning session	13	1	2	1	-	-	-	
Third record paper of data after finishing sixth learning session	31	2 1	1 0					
Fourth record paper of data after finishing eighth learning session	17	1 3	3	1				
Fifth record paper of data after finishing eighth learning session	16	1	3	3	-	-	-	

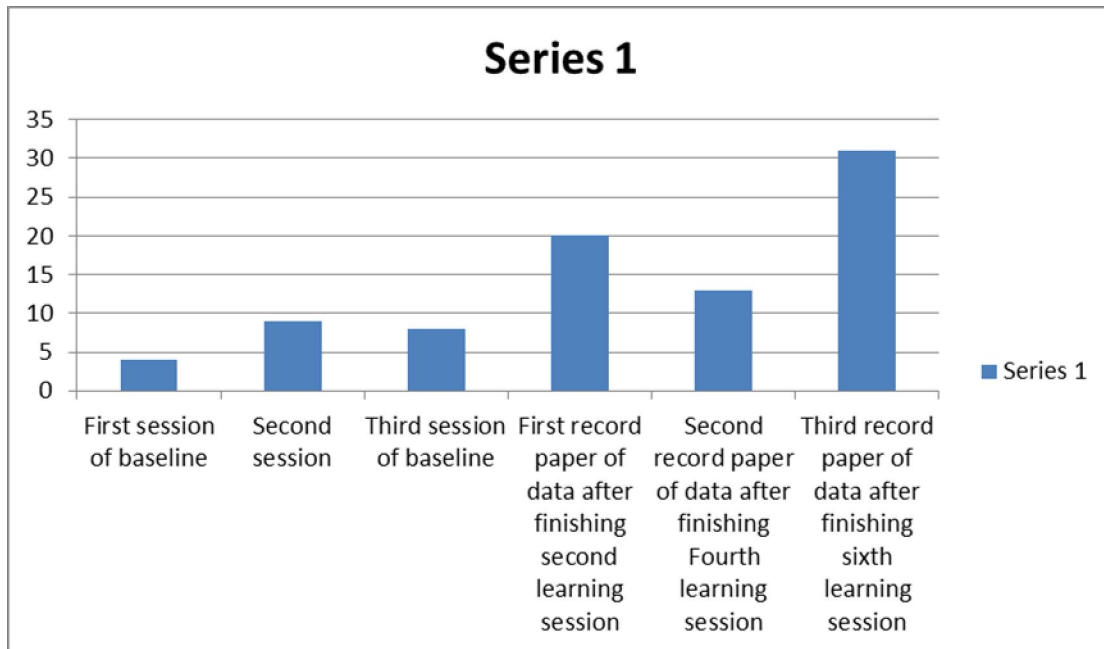
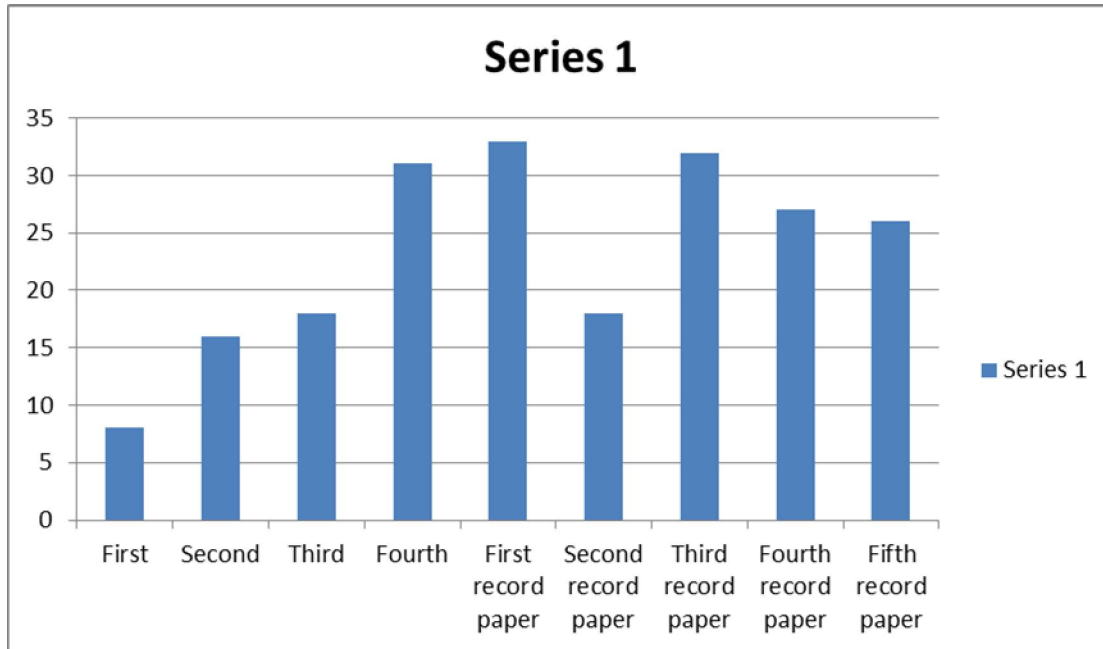


Figure 1: Recording the number of making eye contact

Second testee (Masood)

Table 1: the number and keeping time duration of eye contact per second

Sessions	Number of making eye contact	Keeping time duration of eye contact						Comments
		1	2	3	4	5	6	
First	8	8	-	-	-	-	-	
Second	16	15	1	-	-	-	-	
Third	18	16	2	-	-	-	-	
Fourth	31	22	9	-	-	-	-	
First record paper	33	22	8	2	1	-	-	
Second record paper	18	9	8	1	-	-	-	
Third record paper	32	17	11	2	2	-	-	
Fourth record paper	27	12	12	3	-	-	-	
Fifth record paper	26	15	9	-	2			



Figure; Recording the frequency of number of making eye contact

Discussion and Conclusion

We study and discuss the results of research in this section. About the first question which whether learning social story increases the number of eye contact in autistic children or not, we must say that about the first participant, Bardia, according to baseline tables and record paper of data after finishing learning Social story increases the number of eye contact and we observe the increasing trend according to figure of recording the frequency. As it is recognizable, the baseline of eye contact was 4 in first session which is the least number which has been observed but in other record paper of data, the number did not become 4 or less and this is an important sign, so social story has effect on eye contact, especially the number of making eye contact became 31 in the third record paper of data, but about the second participant, Masood as it is observed in recording the frequency, the least eye contact in baseline sessions was 8 which we hadn't less than that. Although, decrease is seen in record paper of data related to second, fourth, and fifth sessions of learning session in eye contact but we had increase in other sessions which indicates the effectiveness of Social stories on the number of eye contact. According to obtained figure from these two participants it can be said that when autistic Children look at the picture of eyes, other parts of their brains become active. In other words a part of their brain look at the things (9) we also expressed that they rarely look at the eyes of the people and mostly look at the mouth, chin, lip, and other parts of body (4), however we had observed the increase of the number

of making eye contact. In justifying this work we must say that, although we are not able to interpret visual signals of brain, but we can mention the reasons of effectiveness of social stories on increasing of the number of eye contact.

First reason: the content of story cards. Since these cards are considered as a visual program with safety messages about making eye contact and express the communication way with a reliable person and finally, this communication has had a happy consequence for the child, also, the child get rid of anxiety resulted from a confusing situation and has been able to attract and make eye contact, shortly and non continuous by transferring safety meanings for autistic child. Second reason: Repetition of story. Since autistic children are interested in repetition and lack of changing, the researcher has been able. To provide a child with a sense of trust, a sense that every thing is anticipatable and there is not a fear of change in it which in fact it has caused the picture cards to be effective.

Third reason: the reality of story. Since the autistic children are objective its, the researcher express the story with human characters and the behaviors that occur in real life and has not used imaginary Scenarios. So we can give this probability that it has caused the social story to be effective on increasing eye contact.

But about the second question that does learning social story increase the keeping time duration of eye. Contact in autistic Children or not, we must express about the first participant (Bardia) that the keeping time duration of eye contact per

second was 1 second during base line sessions but after learning, it increased. As it is observed in the first record paper, the testee could keep eye contact for 2 second which the number of these contacts was 5. It became 3 seconds in the second, fourth, and fifth record paper of data.

Although the number of keeping time was less, but in creasing of keeping time duration indicates the effectiveness of social story on keeping time duration of eye contact.

In fact, about the first participant, we could extend the keeping time duration of eye contact from 1 second to 3 seconds who this can indicate this point that the participant has been able to communicate with the pictures of the story, understand the information and concepts and show a suitable reaction against them. But about the second participant (Masood) as we see in baseline table, the keeping time durations were 1 and 2 seconds which after learning, the testee could extend them to 3 and 4 seconds. As observed, the testee could have eye contact for 4 seconds. In the first record paper of data and he could keep it for 4 seconds for twice in the third and fifth record paper of data the resulted data from this testee indicate that although the increasing of keeping time duration of eye contact has not been seen in all record papers of data and only in 3 record papers of data has been seen, but we can give a probability that social story increases the keeping time duration of eye contact. In expressing the reasons for why social story increases keeping time duration of eye contact, we must explain the first hypothesis which we avoid repeating it. Although we achieve some successes in this research, but we need other researches in this field.

Limitations

1- Limitation of executive group to 6-11 years old group.

2- Limitation of time of learning

3- Limitation to using cards with contents of making eye contact.

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12/28/2013