

Understanding Emotion Patterns in Children with Autism: A Case Study

Khofidotur Rofiah

Universitas Negeri Surabaya
Surabaya, Indonesia
khofidoturrofia@unesa.ac.id

Sujarwanto

Universitas Negeri Surabaya
Surabaya, Indonesia
sujarwanto@unesa.ac.id

Febrita Ardianingsih

Universitas Negeri Surabaya
Surabaya, Indonesia
febritaardianingsih@unesa.ac.id

Siti Mahmudah

Universitas Negeri Surabaya
Surabaya, Indonesia
mahmudah_plb@yahoo.com

Endang Purbaningrum

Universitas Negeri Surabaya
Surabaya, Indonesia
endangpurbaningrum@unesa.ac.id

Ima Kurrotun Ainin

Universitas Negeri Surabaya
Surabaya, Indonesia

Abstract—The study investigated the emotion pattern in children with autism. Children with autism are considered to have disabilities in recognizing and expressing their emotion. Even though, latest studies show that actually, the children are able recognize and express basic emotions in their daily life. However, just a few in those studies explore emotional pattern in children with autism by look upon their behavioral responses. This is a qualitative research employed through observation with audiovisual records to explore three ten-year-age children with autism in Surabaya, Indonesia. The observation was conducted to observe emotional stimulus, responses of emotional stimulus in children with autism such as emotional reactions or emotional control in subject. The results found that human being, object, and condition could be stimuli that may cause emotional reactions. From the emotional reactions could be classified based on the subject's expressed emotions, namely positive emotions (i.e. happy, love, missing, and shy) and negative emotions (i.e. angry, scary, sad, and shocked). In addition, in terms of emotional control of the subject could be in the form of external and internal emotional controls

Keywords—*autism, emotional stimulus, emotional reactions, emotional pattern*

I. INTRODUCTION

Developmental disorder that occurs in autistic children is one extreme example of how children develop in different patterns with other normal children. Some articles state that this case continues to increase from year to year, from only a 1:1.500 1:10,000 [1]. Experts agree that autism is a disorder with multi factorial causes, including genetic and environmental factors [2]. One of cause is a variety of conditions that affect and interfere with brain development, whether it occurs before, during and after birth. The limbic system plays an important role on the behavior of human emotions. If the system is disrupted or dysfunctional it was

natural persons with autism in the process of emotional disorder.

In some cases emotional problems in children with autism are very diverse forms. Previous findings showing an indication of weakness persons with autism to recognize emotions. Castelli [3] in his study entitled Understanding Emotions from Standardized Facial Expression in Autism and Normal Development, in 2005 found that autistic children can recognize basic emotions (Happiness, Anger, Sadness, Surprise, Fear, Disgust) through facial expressions. Not only at the time of image matching facial expressions, but also when naming each of these expressions.

Several previous studies have found that autistic children's inability to make contact with other people and the affection difficult to read the expressions of others, have difficulty recognizing certain emotions[3], [4], and difficulty expressing emotions. The limbic system is one part of the brain abnormalities in children with autism have an important role in the process of emotion in children with autism. Disturbances in the limbic system that is central to emotional difficulties resulting in an autistic child to control his temper, easy raging, angry, aggressive, crying, afraid of certain things, and suddenly laughed. In addition, children become hyperkinetic, aggressive, refused to move with no apparent reason, head banging, biting, scratching, or hair pulling [5], [6].

One of the functional areas of the central nervous system disorder is sensory processing. Children with sensory processing disorder can't integrate the data and interpret incoming emotional from shrinkage of view. Emotional processing can be confounded by those who are too reactive or less reactive. Reactivity or sensory processing disorder can cause children to misinterpret emotional information from the surrounding area resulting in an inappropriate emotional reactions or extreme [5], [7].

Ability to add biological meaning to the literal perception. Autistic children are difficult to analyze and understand human communication and finally the children with autism are also difficult to communicate. Autism is a developmental disorder, impaired comprehension / pervasive disorder. Cognition is about understanding. Children see, hear, feel, and taste. They then learn to appreciate, understand, to think abstractly. Understanding related to processes such as attention and memory.

Processing disorders in children with autism that can cause child to misinterpret emotional information from around the result of in appropriate emotional reactions or extreme thus causing confusion and fear. In the emotion recognition of children with autism have a replacement strategy so they have a different response. In some theories and research on emotion in children with autism get some stimulus that causes emotional response. Autistic children who have sensory processing problems can be very sensitive or less sensitive to stimuli [4], [8].

In addition to the interest and curiosity of children with autism against very large objects because objects more predictable. Usually children with autism learned more things than people[5], [9]. Response of children with autism to objects visible from the desire to pick up and carry thing where they go, If these objects are taken then they will reject and angry.

Stereotype behavior of autistic children do is a way to control their emotions. Act of self- harm, such as head banging or hair pulling himself made an autistic child to avoid a greater pain and a communicative function to get attention. Back in the routine can be a way to prevent and control the child's fear or a way to escape from a confusing situation[5].

II. METHODS

The method of this case study research method used is a qualitative method. The research subjects consisted of three children with autism aged ten years old, female and male.

Both subjects with autism get the treatment from the school after a doctor diagnosis autism disorder. The data collection Method used in the retrieval of data is semi participatory observation and semi-structured interviews. The technique of recording observations using paper and pencil in this research paper and pencil for recording the researchers used a combination of running records and spacemen description. Audiovisual recording equipment is also used in observational research as a means of supporting records. The technique of recording the interview using a tape recorder. In this observational study will focus on the situation, stimulus, and emotional reactions, and the activity of the subject at a particular time.

Analysis procedures of this study detailed steps of analysis conducted by researchers in this study are listed in Table I.

TABLE I. PROCEDURE OF DATA COLLECTION AND ANALYSIS

IMPLEMENTATION ANALYSIS	
Found the incidence of cause emotions and actions the response to the incident.	
Verbatim interview	Find situations that cause emotional responses are repeated.
Preparing the data	Draw conclusions using conceptual relations / theoretical enforce the conclusion triangulated sources and methods Categorized according to the theory. Narrative observation notes gives the code Insert into site dynamics matrix
Assessment of research more focused on data observation	Audio recording of visual observations Grouping based on the events that proceeded. Removing the actions reflect emotions.
Discussions with colleagues	Reviewing the format of the matrix (summarized and grouped with the more complex variables). Compare with theory. Fill the matrix.
Contact Summary	Compare between subjects using a summary tabulation. Classify. Looking for a conceptual relations / theoretical.
Summarize	Group data with a more complex variables. Tabulate the two cases.

III. RESULTS AND DISCUSSION

Based on the results of four studies found that: 1. *Positive emotions* can be seen from the actions of the autistic child's emotional response to certain stimuli. Emotions are happy, love, longing, and shame. Nice, the source of stimulus is the cause of this emotion is a thing / object, situation, and interaction with humans. Of the three sources of stimulus on top of things / objects and situations / events is the stimulus that tends to because of this emotion. Another stimulus that gave rise to an action that reflects the emotion excited is when the subject is alone and at meal diet is not maintained.

The response of this stimulus is as follows: smiling, laughing, moving (walking up and down, jumping, clapping, running here and there, style), close to the source of stimulus, taking things with his own hand or using someone else's hands, looking in long, repeat do fun activities, tinkering with the object of interest, covered their ears and hum.

Unfortunately, based on data obtained source of stimulus is the cause of this emotion emerges is of people and objects. Both subjects showed his affection to the people closest to them like a mother, a therapist, and a companion. Of the object, the subject first showed his affection for dolls. Compassion shown by others to the second subject acceptable. But if the stimulus is excessive affection or felt they would be disturbing then became angry and did not want to be touched.

The response of this stimulus is; kissing, hugging, smiling, laughing, holding hands, approached, asked to play, moving (pacing, style) in close proximity to people who loved, and glanced at the man who loved. Against a loved object is the subject of action; hugging, kissing, combed the doll, where taken away, and if not at the place to be searched to find it. The first subject also showed a response to scold her persuading

people by hugging and kissing when people are scolded. People are the closest people, like mothers, grandmothers, sisters, and therapists.

Love, each subject lived with their parents separate. Mother only visited the subject at certain schedules. These emotions arise related to the presence of the mother. This is the response of the stimulus; crying quietly in bed, calling the mother, and daydreaming. When the mother both physically present then the subject will embrace. Even though the first case, the subject usually takes a while to get used to the presence of the mother. However when connected via the telephone the first subject will look happy and asked the mother to sing.

Shame, as well as the emotions of longing, shame there is not much revealed in the literature on emotions in children with autism. However, when compared with normal children of the emotional response can be seen that the emotion is owned by an autistic child. Source of stimulus is a man, as seen when there are people who pay attention to the subject it will display the response; laughing, smiling looking away, head down, his eyes, holding other people, away, ran back and forth, and jumping jacks.

2. *Negative Emotions.* Angry, the source of stimulus is the cause of this is human emotions and situations. Stimulus that comes from the rise of human emotion when the subject is prohibited from engaging in activities that desirable was told to do things that are not favored, violated property rights, and action / utterance rectified others. Stimulus that gave rise to the emotion of anger is seen on the subject is not visible at first but the second subject is ignored when angry, when the subject did not complete his training, and cuddled / held / kiss when doing certain activities. In addition to the stimulus of a situation that triggered the emotion of anger is when there is a desire or need for the subject is not met. Sometimes these desires may not be fulfilled, as if to turn the television on when the power goes out. The observation also shows that sometimes the cause of anger is not clear.

Response seen in the accompanying stimulus to show emotion is anger; whine, scream, rebel, still trying to do, verbal rejection, avoidance, kicking and pushing, pulling people, twisting and finger biting people, slamming objects nearby, chasing people, crying, stomping feet, clapping her hands together and pacing. Bring up the subject of the first such action was approached and did not want to approach people who do not care about the previous day. Researchers did not see the response of temper tantrums, such as body hurt themselves and others against excessive stimulus which has a charge of emotional upset during the study period. Even though the two subjects had a history of tantrums are equal before the study, such as body slamming, sleep on the floor, banging her head, beat his own body, pinching, twisting, hitting people around him.

Fear, the source of stimulus is the causes of the emotion of fear in children with autism are people and situations / activities. Source of stimulus human like, scolded / beaten, met with people who never scold / beat them could be the emergence of emotional stimulus. Stimuli such as excessive sensitivity to stimuli, darkness, solitude, find themselves in

situations they are considered scary by including the source of the stimulus that comes from the situation / activity.

Response in the form of action that is afraid to show emotion; cried quietly, turning away from people who scold (for cover), cover the ears, interesting people who are nearby, rebellion, escape (away), using other people's hands, head down, walking in a hurry, holding tightly to the people near him, holding the body, crying, and hugging others, hit the table.

Sad, in the emotions of negative emotions has not been widely discussed in the literature on the emotions of children with autism. However, based on the observations of researchers found that both subjects can express feelings of sadness. Feelings of sadness arising in connection with the mother, if the mother has not come to visit then they show behavior such as daydreaming, crying in silence, and calling his mother.

Surprised, the large Indonesian surprised the incident cause of emotion that comes suddenly. Physiologically people are surprised members of his body will become rigid, while the actions that usually accompany it are running here and there. Based on the results of this study, emotional shock arises when the two subjects caught by other people are doing something that should not don'ts, such as eating food abstinence and taking a particular item. Both subjects were surprised by the person who caught them, so they responded by putting objects taken or abandon activities that are prohibited, and hurried away.

A. *Control of Emotions*

Internal control is the control of emotions by subjects and external control is the control of emotion by people who are in an environment subject, such as family, school, and the place of therapy.

Internal control, the two subjects using stereotype behavioral to control emotions. For example, the first subject has turned deaf ear stereotype behavior, pacing, open the catalogue sheet, and arrange objects. One time the subject became angry because they could not turn on the television which at that time electricity was out. The subject of angry and end up crying, subjects taking catalogue sheets and open it open so the tears and anger to subside. The second subject has stereotype behavior hit the table, stomp feet, clap her hands, and walk like a hurry. One time the subject was asked to do something that is not fun then the subject became angry. The second subject of stomping feet, hitting the table, and walked in a hurry.

An external control, the control is done by people in the family, schools, and places particular therapy to manage anger control subjects. Control is done is to give the sense, provide an opportunity to do his (direct), help subjects to practice verbal and expresses himself through action. Response to the treatment of this subject is his desire that the subject cannot be angry.

B. *Other Findings*

Based on the research findings of other researchers to get on the field that is how autistic children interact with children

his own age, either with a normal child or with other autistic children.

Both subjects have a different character when trying to interact with kids her age. The first subject will be close to the child spontaneously, without communicating, and unilaterally. Together with children who are well known, the subject first tried to interact with the way all of a sudden holding cheek, holding hands, kissing, pulling objects held by others, and be done with a laugh / smile. If the child is not yet known it is usually the first subject will suddenly catch, seize objects which are being held by the child, and two are do with a laugh.

The second subject of trying to interact with kids my age are already known by the way: push, pull hands of kids who want to play with, spinning his own, running, and all this is done with a laugh. Together with the kids my age are usually unfamiliar subject. Children invited to play by the subject will usually run away because they do not understand the behavior of the subject shown.

Discussion In this study researchers looked at how emotional patterns of children with autism who viewed the emotional actions. Through the emotional action research to find out what emotions are recognized and how they express and control it. Through actions that reflect emotions can be seen that autistic children can express positive emotions of happy emotion, love, longing and shame as well as the negative emotions of anger, fear, sadness, and surprise.

Happy emotions tend to come from stimulus objects / objects and situations / activities. The actions of an autistic child who is happy to show emotion; smiling, laughing, moving (walking up and down, jumping, clapping, running here and there, style), close to the source of stimulus, taking things with his own hand or using other people's hands, seen in a long time, repeat doing fun activities, fiddling with objects of interest, covered their ears and hum. Unfortunately associated with human emotions, the actions reflect the emotion of love is; kissing, hugging, smiling, laughing, holding hands, approached, asked to play, moving(pacing, style) in close proximity to people who loved, and glanced at the people who loved. Emotions are also associated with the human longing, the subject exhibits behavior such as crying quietly in bed, calling the mother, and daydreaming. The last positive emotion observed in this study is shame. Both subjects will be laughing, looking away, down, his eyes, holding other people, away, ran back and forth, and jumping up and down when expressing these emotions.

Negative emotions arise largely due to human stimulus and the situation / activity. Emotions tend to be associated with human anger. When both subjects angry they will whine, scream, rebel, still trying to do, verbal rejection, avoidance, kicking and pushing, pulling people, twisting and finger biting people, slamming objects nearby, chasing people, crying, stomping feet, patting hand, and pacing. Emotion of fear is likely to be caused by situations / specific credible form. The actions of the two subjects that reflect the emotion of fear is; cried quietly, turning away from people who scold (for cover), cover the ears, interesting people who are nearby, rebellion, escape (away), using other people's hands, bowed, hurried the

run, clinging to the people near him, holding the body, crying, and hugging others, hit the table.

The next two negative emotions, namely sadness and shock tends to be associated with humans. Sad emotion shown both subjects when sad, especially related to the mother are: daydreaming, crying in silence, and calling his mother. While the emotional shock is shown through actions such as putting objects taken or abandon activities that are prohibited, and hurried away. Emotional shock requires more comprehensive observations as through the actions that can be reflected a little emotional.

Emotional changes abruptly from laughing to crying or appear in the observations. Both of subject looks be happy, angry, sad, scared without any obvious cause such as in some of the literature and research on the emotions of autistic children who have been there. Both subjects based on the observations do not have a good tantrum when she was disappointed suddenly. As happened in the first subject, in the period before the time of diagnosis of autism research in enforce until just before see frequent tantrums or disappointed feel good because all of a sudden. Regulation of negative emotion in this case the emotion of anger and fear are grouped in the regulation of emotions in self and the outside. Performed by self-regulation in children with autism by doing stereotype behavior. Settings from the outside by people close to the subject such as parents, families, therapists, and teachers by providing meaning of companion and train subjects to speak in order to convey they want.

The second response is subject to the measures no different. The existence of a physiological disorder affecting emotions of children with autism assessed. There is a nerve centered functions are disturbed to do with emotions in children with autism. These functions are disturbed is how children with autism capture information from the outside, process and understand it, and how children with autism using the individual mind and body for planning and implementing a response to incoming information.

IV. CONCLUSION

Each child with autism has the characteristics that researchers grouped the factors that may affect the emotional response of children with autism, the first is the characteristics of the subjects, each autistic child has different characteristics such as level of independence, intellectual maturity, how your social interactions, and characteristics- other autistic characteristics.

Secondly, the background of the subject, such as how the intensity of therapy, family participation, and other backgrounds. Recent research includes gender as a factor affecting the difference in response of the two subjects. Women are more often given the emotional stimuli than men. Expression of emotion is also more often directed at girls.

On the subject of this study can be seen to respond appropriately to emotional stimuli appear in the observations. But the subject has its own way to respond to the stimulus and the emotional development of the subject has problems. Each subject has different emotional characteristics. This is due to

several factors, ranging from differences in biological and environmental characteristics. Each child with autism has its own characteristics therefore can't be handled and treated in the same way.

Emotional control in children with autism and controls intended to control negative emotions such as anger and fear. There are two kinds of control is internal control and external control. Internal control is the control of emotions by subjects themselves, as do the stereotype behaviors to control his anger. External controls do the people closest to the subject in order not subject to tantrums, can learn to express her wishes, and can absorb it better workout.

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