DETERMINING THE LEVELS OF ANXIETY, DEPRESSION AND SELF-CONFIDENCE THROUGH DRAWINGS OF CHILDREN AFFECTED BY THE EARTHQUAKE

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Abstract:

The aim of this research is to identify behavioral disorders such as post-traumatic anxiety, depression, and self-confidence in their emotional world through the pictures of children who experienced the earthquake. For this purpose, the images of 34 children between the ages of 7 and 9 who experienced the earthquake disaster in Izmir, Türkiye in 2020, were analyzed. In the research, the one-subject research design was used among the experimental designs, which is one of the quantitative research methods. Mann-Whitney U test was used to determine whether there was a significant difference in the analysis of the data. According to the findings of the study, it was concluded that children reflected mental health variables such as their depressive levels, self-esteem levels, and anxiety states with the pictures they drew. The scores obtained from the sub-dimensions of anxiety, depression, and self-confidence in the children's drawings evaluated through the scale were higher in the preliminary drawings immediately after the earthquake compared to the final drawings made three months later. It is understood that this finding caused the high scores of the preliminary drawings because they were made right after the earthquake. This situation revealed that the prepared scale was valid and reliable.

Keywords: child painting, earthquake, trauma

1. Introduction

On October 30, 2020, at 14.51 Turkish time, an earthquake with a magnitude of 6.9 Mw occurred 16.5 km below the ground, with its epicenter off Samos Island (Greece) and 23 km from the town of Seferihisar (Izmir, Türkiye). As a result of this severe earthquake, which lasted for approximately 16 seconds, 119 people were killed and 1053 people were injured in Türkiye and Greece. From the mainshock to 12:54 on 02.11.2020, 1230 aftershocks with magnitudes ranging from 1.0 to 5.1 were recorded. It was recorded as the deadliest earthquake among the earthquakes that occurred on earth in 2020 (AFAD,

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2020). After the earthquake, a total of 90,813 damaged buildings were detected in different districts, especially in Bayraklı and Bornova districts of İzmir. In addition, 506 buildings and 4,239 independent sections that were heavily damaged, were to be demolished in an emergency, and 4,239 independent sections were identified, while 5,119 buildings were slightly damaged and 511 were moderately damaged. The people living in the buildings to be demolished started to move out without wasting time. Although this devastating earthquake lasted only seconds, its effects on people will continue for years.

Every experience that directly threatens the existence of the individual and upsets his whole life, that occurs suddenly and gives fear, is defined as "trauma". Coddington also described psychological trauma as an event that requires a change in a person's life and re-adaptation for the person (Coddington, 1972: 205). Earthquake, like many other natural disasters, is considered to be psychological trauma in terms of their suddenness and negative consequences. There are studies showing that young children with traumatic reactions due to earthquakes are more adversely affected and that it is observed more in developing countries (Bulut, 2009; Briere & Elliot, 2000; Kokai, 2000).

Although the main cause of the trauma is experiencing the moment of the earthquake, continuous exposure to images and comments that remind that moment after the earthquake also causes the duration of the trauma to prolong. The news about this earthquake took place on TV channels and social media for weeks. After many disasters in the world and in Türkiye, there is uncensored dissemination of images of injured and/or deceased people on social media (Demiröz, 2020). Although this situation is shown by censorship in other media, it should be taken into account that the uncensored and continuous accessibility of such images on social media may have negative effects on the victims, the public, and especially on children. There are various studies revealing that children experience post-traumatic stress disorders after natural disasters (Goenjian, 1995; Kokai et al., 2004; La Greca et al., 1998; North, 2003; Risler, et al., 2014; Shannon, et al., 1994; Watanabe, 2004).

In disaster situations, children can suffer many losses, just like adults. They may be in danger of suddenly losing their relatives, their basic assumptions about the places where they carry out their daily routine programs, as well as their sense of security and everything that goes normally. They can suddenly become disconnected from reality and distance themselves from everything they feel betrayed (like nature, parents, and society). This withdrawal may manifest itself as a psychological shock, become a serious reaction, or vice versa, they may operate repression mechanisms (Laor et al., 2002: 926).

Experiencing and witnessing natural disasters (earthquake, flood, landslide, avalanche, etc.) and disasters caused by people (war, torture, fire, forced detention, traffic, plane crashes, work accidents, etc.) or hearing traumatic events (Eren & Gürdil, 2009). In addition to these, actual or threatened death is an event that creates a serious physical injury or a physical threat to oneself or another person. According to Breslau et al. (1998), the rate of encountering a traumatic event in a person's life varies between 21.4% and 89.6%. In addition, the National Child Health Survey (NSCH) conducted in

the USA in 2017 revealed that approximately 35 million children (approximately 48%) were exposed to one or more traumas (Allen et al., 2000). Moreover, several large-scale survey studies show that half to two-thirds of today's population experience a minimum of negative childhood experiences in their first 18 years of life (Hansen, Turner & Davis, 2022).

Symptoms that include physical, emotional, mental, behavioral, and social disorders that develop after people encounter such events are defined under the title of Post Traumatic Stress Disorder (PTSD). PTSD is a physiological, psychological, and emotional disorder that occurs following an insurmountable event. PTSD, re-experiencing the traumatic event, avoiding events, places, people, and activities that remind one of the trauma; It manifests itself with limited emotional responses and symptoms of excessive autonomic arousal (Catherine, 2019; Clark, 1997: 25). Of course, the effects of traumatic events may vary according to individual differences. Therefore, every traumatic event does not cause the same reactions, and those who experience the same traumatic event do not give the same reaction (Özçetin et al., 2008).

Post-traumatic stress responses are habitual and normal responses that occur after exposure to trauma. Such reactions apply to adults as well as children, and anyone can be affected. The natural reaction in this situation is to try to push the memory away and avoid any reminders about the memory. Although this provides temporary relief, it aggravates the problem in the long term, as it prevents the memory from functioning fully and doing what is necessary. Thus, the memories keep returning, for example, with intrusive images and nightmares. The result is a vicious circle, with more invoking memories leading to more avoidance, and more recollections.

Children exposed to natural or man-made disasters may develop symptoms of depression and bereavement. However, these are generally milder than the symptoms of post-traumatic stress disorder (Spitz & Spitz, 2013). In addition to stress reactions, another condition that endangers mental health is the risk of depression, as stated above. Depression is different from stress reactions and shows different symptoms.

The confidence of children with post-traumatic stress disorder is severely shaken. However, adults do not want to talk much about traumatic events with their children, perhaps to quell their own anxiety; They act as if the event never happened or as if it didn't matter. This situation causes children to produce their own scenarios and assumptions about events (Oflaz, 2015). However, the situation that the child constructs in his own mind makes the child very uncomfortable because it has uncertainties and is based on guesses. Talking to the child after a traumatic experience positively affects the process of shaping this event in his mind and giving certain meanings. If we give an example of this; if the family of a child whose home was destroyed or damaged in an earthquake does not talk to him after the incident and is just in a hurry to look for a new home, the child may not have a true explanation of the incident in his mind. She remembers her mother saying, You destroyed the house on our heads, one day when she was misbehaving, and she may begin to believe that there is a connection between the commemoration of the house being destroyed/damaged and her own behavior. After a

certain period of time, he thinks that the destruction/damage of the house is his own fault. On the other hand, when the parents talk to the child after the event and tell them that the earthquake was a natural disaster and that it was caused by the movements of the earth, that they are going through a troubled period at the moment, and that they will rent a new house and move there as soon as possible, the child will feel much more relaxed and safe. Another communication tool that can support this verbal communication process is children's drawings. The child should be allowed to express his feelings and thoughts about the event with pictures as well as verbally, and in this way, an environment suitable for self-expression should be created.

Considering the results of the research (Harris & Machado, 2017; Oflaz, 2015; Ray, 2014) that a simple interview that allows the child to explain himself or herself can be an initiative that opens the door for the child to process the trauma and integrate it with others, it is possible to talk to the children during the drawing about their experiences and thoughts about the earthquake. The topic can be discussed. In general, this conversation can be continued in the form of giving short and clear information and answering questions, without using abstract concepts in accordance with the age of the child, in order to eliminate the uncertainties in the mind of the child. In addition, it should be stated that this situation is temporary and will improve, and children's anxiety should be reduced. Children who experience trauma sometimes seem unaffected and may not reveal their emotions, and they may have problems expressing themselves. Painting is an important tool for these children to express their feelings.

While painting, the child works as simple, sincere, and spontaneous as possible. In this process, thoughts and feelings such as subconscious desires, desires, dream worlds, fear, anxiety, and curiosity are expressed through painting. Toomela (2002) states that children's drawings are closely related to their psycho-motor development, imagination, memory, and perception capacities. Children use the doors of their inner world as a language that they reflect outside with the drawings they make. As it can be understood from these statements about children's painting, the drawings are almost a mirror of the child's inner world. Willats (2008) stated that this situation arises from the fact that children paint what they know, not what they see.

Bühler noted that young children always sketch, rather than "draw what they see" like a photograph. Since the sketches can be drawn easily, it can be thought that it is preferred by the child. However, Bühler argues that this is due to the fact that the child sees objects in a completely different way on his retina (Williats, 2008). This explanation is of course debatable in the light of modern theories of vision, but the main reason why children's drawings look different from adults is that children very strongly see objects around them differently from adults. Children acquire what they know from their own lives and as a natural result of their developmental processes. He also reveals the visual repertoire he has obtained as a symbolized language, which is an important means of expression for getting to know the child. Expresses objects and events with symbols in their paintings. This situation continues until around the age of seven. The idea that children see objects clearly and directly before their vision is contaminated by

information has been termed the "sensory core" by Costall (1997; 2001). In the developmental period starting around the age of seven and around the age of nine, children's previously seen features in their paintings begin to change, as they learn more about people and their environment over time, in parallel with the child's cognitive development. As their awareness increased during this period, they began to name and describe body parts in their paintings. In this period when children start school, it is seen that the schemas and symbolic language began to change in their paintings. In this process, children's perception of the world develops and their perception of reality increases and their awareness of their relations with their environment develops (Yavuzer, 2016).

Young children have difficulties in expressing themselves verbally and in writing, but this turns into the opposite situation when drawing pictures. The painting's surface symbolizes his inner world and provides an environment where he can express himself. In this environment, the child loves to paint without any coercion. Savaş (2015) stated that research on children's paintings emerged with the increasing interest in the paintings of the mentally ill and with the increasing wool of the works of Freud and Jung. Savaş also stated that psychoanalytic theory is the basis of theories that explain child painting with clinical reflective approaches. The main point of view in later variations of this theory, put forward by Sigmund Freud, is the unconscious; it is the source of compensatory motives such as sexual satisfaction, aggression, and destructiveness. Freud argued that these instinctive impulses often lead to threatening or unacceptable desires and impulses and therefore prohibit conscious understanding (Savaş, 2015). According to Freud's theory, the child's painting work is greatly influenced by his subconscious desires and fears. But the expression of these desires can be symbolic or hidden. Hammer cites a picture of a little girl as an example. This girl is so worn out from the frictions and arguments at home. He tried to reflect this with the thick layer of smoke rising from the chimney he used while drawing his houses. In this case, the painting reflects the girl's view of her home as an environment of turmoil and unrest. Reflecting on emotions in this way created the idea that children's painting can be used to measure emotion patterns (Savaş, 2015: 45).

The ancestors of modern psychology, Freud and Jung, were concerned with the connections between art, symbols, and personalities. Freud observed that images represent forgotten or repressed memories and that these symbols can emerge through dreams or pictorial representations. Freud believed that universal human conflicts and neurosis led painters to artistic creativity. This observation first aroused and then confirmed the belief that pictorial expression is a way to understand the inner world of the human soul. (Malchiodi, 2005, 25). Considering these features of children's painting, the use of painting works as a source of information about the child is based on a scientific basis and is considered natural (Cited by Venger, Halmatov, 2016).

The origin of research on the clues of personality traits through the drawings of the individual dates back to the end of the 19th century. Researchers such as Abroise-Auguste Tardieu (1872), Paul Max Simon (1876), and Cesare Lombroso (1895) examined

the pictures of mental patients in order to gain information about their psychological state (Golomb, 2004). In the next ten years, it is noteworthy that the number of these studies has increased and attracted attention. As a result of this, the understanding that the mental states of mental patients can be determined by means of pictures has become increasingly established.

The new understanding of drawing and the possibility of using the visual arts to assess personality have quickly increased interest in children's drawings, aiding emotional diagnosis and treatment. Since the beginning of the 20th century, children's drawings have been used to evaluate conceptual development. The assumption that a drawing could be an indicator of a child's cognitive status has led to various efforts to standardize children's drawings of human figures and the creation of the well-known Goodenough Draw-a-Man test (Golomb, 2004). Scores obtained on this test show an acceptable correlation with standard IQ tests provided the subject is within the limited age range of 6 to 10 years.

Children's drawings can also be used to help them express their feelings about trauma through symbols (Barenbaum et al., 2004; Geldard & Geldard, 1999; Gupta & Zimmer, 2008; Yule, 2002). In this sense, the Diagnostic Drawing Series (DDS) developed by Cohen (1990) is the best example of this research. Children's drawings were used to measure depression in children and adolescents with the DDS.

2. Purpose of the Study

The main purpose of this research is to identify behavioral disorders such as post-traumatic anxiety, depression, and insecurity in the emotional world of the child through pictures. In this direction, the pictures drawn by children between the ages of 7 and 9 were evaluated within the scope of the research. The main reason for choosing this age group is that children have more information about their environment in parallel with their cognitive development in their developmental period starting around the age of seven and up to the age of nine, and yet they are far from external factors (feeling of being liked, being directed by their parents and teachers or receiving negative criticism while painting). This is because they have a more sincere and plain pictorial language due to fear of fear, etc.).

3. Methodology

In this section, the research model, sampling, data collection, data collection tools, and data analysis are included.

4.1. Model of the Research
In order to choose the most appropriate study method, it is important to first decide what to study and then agree on the right method. This study, it was aimed to investigate the reflection of behavioral disorders such as post-traumatic anxiety, depression, and low

self-esteem in the pictures of children who experienced the earthquake. For this purpose, the one-subject research design was used among the experimental designs, which is one of the quantitative research methods.

A single-subject research design was preferred since the effectiveness of an application should be evaluated within each subject by taking repeated measurements from one or more subjects under standard conditions. This design is an experimental type of research in which the effect of the independent variable on the dependent variable is investigated with one person or a small number of people with similar characteristics (Büyüköztürk et al., 2014).

4.2. Analysis of Data

Mann-Whitney U test was used to determine whether there was a significant difference in the analysis of the data. This test is used to look at the mean difference between two independent groups from a similar population and to determine the difference or equality between the groups. The analyzes were made in the SPSS package program and the statistical significance level was taken as $p < 0.05$. The pictures made by the children who experienced the earthquake shortly after the earthquake and the pictures they made about three months later on the same subject were examined, the prepared scales were filled in and it was checked whether there was a significant difference.

4.3. Participants and Sampling

Given the limited scope of the current study, a type of non-probabilistic sampling called fit sampling was the most appropriate method of data collection. In this sampling type, where participants are not selected systematically, it is thought that the sample does not represent the population (Creswell, 2002; Jackson, 2003). Nevertheless, improbable sampling, such as proper sampling, provides valuable information for answering questions and testing hypotheses (Creswell, 2002). In this sampling method, the researcher should be very careful while generalizing the data they obtained "(Babbie & Mouton, 2006, p. 166).

A population is "*a collection of objects, events or individuals having some common characteristic that the researcher is interested in studying*" (Roscoe, 1969, p. 155). The population that the current sample relates to is therefore all İzmirs children between the ages of 7 and 9 years. The sampling frame "*refers to the set of all cases from which the sample will actually be selected*" (Mouton, 1996, p. 135). The sampling frame of this study is 34 children between the ages of 7 and 9 who study at primary schools in Izmir. Demographic information about the children participating in the study is included in Table 1. When the data in Table 1 are examined, it is seen that 35% of the participants are girls (n = 12) and 65% are boys (n = 22).

Table 1: Demographic Information on Participants

Gender	n	f
Girl	12	35
Boy	22	65
Total	34	100
Age	**n**	**f**
7	15	44
8	9	26
9	10	30

4.4. Data Collection Tool

In the research, the pictures made by the children were used as a data collection tool. Before starting the research, which was carried out in the fall term of 2020-2021, necessary permissions were obtained from their families. During the application process with the children, instructions were given to the children to draw a picture of the earthquake (what they experienced during and after the earthquake, what they thought about the earthquake). It was ensured that the children used completely equal materials while making their pictures, pastel paint, dry paint, A4 paper, and an eraser were provided. While painting about the earthquake, the researcher informed the children that they were completely free about what they wanted to draw and that they could draw whomever they wanted. It was stated that there were no time restrictions while making the pictures and that they should be comfortable. After the children completed their picture drawings, they were also asked to write briefly on the back of the paper what the picture they drew was. The drawings were interpreted considering the size of the picture, its position on the page, the proportion, the drawing style, the drawing order of the human figure's limbs, its size, and its smallness. These comments were taken into account in the scoring of the pictures.

Studies using the "draw a person" test have shown that children prefer to draw figures of their own gender more (Koppitz, 1968; Winner, 2006). Therefore, their preference for drawing gender figures was not included in the scoring, as it was interpreted as a result of the child's identification with their own gender.

4.4.1. Scoring Children's Drawings According to Anxiety

In the study, the variables of anxiety clues in children's drawings were evaluated based on the information in the literature. Large ears in children's drawings are seen in anxious children who think that others are talking about them. Cut-out pictures and thick drawings that leave marks on the paper show anxiety in children's drawings (Yavuzer, 2016). The use of warm colors such as red, orange, yellow and brown in drawings, especially the excessive use of red color, can be shown among the symptoms of anxiety (Furth, 2002). Excessive use of erasers in pictures indicates high anxiety, and too much detail in pictures indicates anxiety (Halmatov, 2016). Considering the relevant literature findings (Akkapulu, 2010; Burkitt et al., 2009; Cherney et al., 2006; Michaelides, 2005; Morra, 2008; Neuß, 1999; Skybo, & Ryan-Wenger, 2007; Williats, 2008; Yavuzer, 2016) the

following five-point Likert-type anxiety scale was prepared and it was shown that the drawings reflect anxiety. The items considered were converted into points.

Table 2: Anxiety Detection Scale from Children's Pictures

Substances	1	2	3	4	5
	1-5 between points	6-10 between points	11-20 between points	21-30 between points	31 between points
Printed figures in children's drawings (One point for each)					
Use of the color red in drawings (One point for painting each object)					
Large drawn body parts (One point each)					
Small drawn body parts (One point each)					
Small drawn body parts (One point each)					
Drawing figures with dashed lines (One point each)					
Using lots of erasers in drawing (One point for each)					
Every extra detail in children's drawings (For example, if the child draws a family picture in a house or uses too much detail in the figures he draws while he is expected to draw a family picture, an anxiety score is given for each extra piece he draws).					

4.4.2. Scoring Depression Based on Children's Drawings

The child draws the world not as he sees it, but as he perceives it. It cannot describe/describe objects in a realistic understanding and instead projects them onto the surface in a symbolic language. It is seen that colors have symbolic meanings as well as objects. For example, colors such as black, dark brown, and gray show pessimism and depressive symptoms in children (Halmatov, 2016). In addition, there are studies showing that the intense use of dark red color in children's drawings is a sign of emotional control (Davido, 2012). It can be said that the child who cannot draw a pupil inside the eyeball in human drawings is not aware of his personality, is emotionally behind and his inner world is empty. A larger-than-normal head is seen in children who have difficulty establishing relationships with people and tend to be withdrawn (Çankırılı, 2011).

According to Venger's research, the use of dark brown, black, and gray colors is often a sign of a depressive state. If the color red is used with other dark tones, it is a

harbinger of depressive symptoms. Navy blue and purple colors are also a sign of low mood. If the child uses only 2-3 colors in his paintings, although there are other color options, this can be considered as a sign of depression. The pictures drawn on the bottom and left side of the paper represent the child's low self-esteem and depressive mood (Halmatov, 2016).

The drawing of the eyes as small dots in the drawn figures symbolizes the depressive and introverted structuring. Unscratched arms show depressive structuring. At this point, it can be thought that the child does not receive as much attention and care as he needs. Drawing the legs drawn in the figures as bent is also among the symptoms of depression (Davido, 2014). In figure drawings, the arms extended upwards are indicative of intense emotional expression. Sensitive, staccato, or pressed pictures are a sign of children's sensitive and fragile mental structure. The pictures are drawn on the right side of the page, the small size drawings and the excess of empty spaces indicate introverted structuring and depressive symptoms (Akkapulu, 2010). Very small drawings are the product of cowardly, introverted, and shy children (Yavuzer, 2016).

Within the scope of this study, while evaluating the depressive mood elements in children's drawings (Akkapulu, 2010; Çankırılı, 2011; Halmatov, 2015; Neuß, 1999; Skybo & Ryan-Wenger, 2007; Thomas & Silk, 1990; Williats, 2008; Yavuzer, 2016), considering the findings of the field experts in the literature, depression in the pictures drawn by the participants Scoring was done considering the following criteria:

Table 3: Depression Level Detection Scale from Children's Pictures

Substances	1 1-5 between points	2 6-10 between points	3 11-20 between points	4 21-30 between points	5 31 between points
For each oversized head in figure drawings (One point for each)					
Heavy use of black, gray and dark brown colors (One point each)					
Drawing the eye as a dot (One point for each)					
Use of dark red color (One point each)					
Drawing the figure with arms up (One point for each)					
Drawing figures in small and right side of the page in pictures (One point for each)					
No drawing of arms on human figure (One point for each)					
Painting on half of the drawing paper (One point for each)					
Using dashed lines in pictures (One point for each)					

4.4.3. Scoring According to Confidence in Children's Paintings

Self-confidence scoring was created by conducting a literature search. Accordingly, hands, arms, and feet are not drawn in children's drawings, figures are drawn on the left side of the page in pictures, figures are drawn on the bottom side of the picture paper, earth and skylines are not used, the eraser is used too much in drawings, small drawn pictures, and small human figures are symbols of low self-confidence (Çankırılı, 2011; Halmatov, 2016; Skybo & Ryan-Wenger, 2007; Yavuzer, 2016). In addition, the small drawing of the nose in the drawn figures was evaluated as 1 low self-esteem score. In the figures in the pictures made by the child, limbs such as the nose also develop in the shape of the nose that the child draws depending on his mental development. High self-perception is seen in children who draw larger noses than human faces in children's drawings. On the other hand, children with a very small noses have a lower self-perception than the real self, and these are children with low self-confidence (Çankırılı, 2011). In addition to these, 1 low self-confidence score was given for each hollow drawn body, since the body in children's drawings was not filled after it was drawn in two dimensions, indicating difficulty in self-definition and indicating low self-esteem (Akkapulu, 2010). The high scores obtained from the children's pictures obtained within the scope of this research were interpreted as low self-confidence of the child and a negative relationship between the scores and self-esteem.

Table 4: The Scale for Determining the Self-Confidence Level from Children's Pictures

Substances	1 1-5 between points	2 6-10 between points	3 11-20 between points	4 21-30 between points	5 31 between points
Each hand, arm, foot and leg not drawn in the pictures (One point for each)					
Drawing figures on the left side of the page (One point each)					
Figures drawn on the bottom of the picture paper (One point for each)					
Excessive use of the eraser in drawings (One point each)					
Small sketches and small drawn human figures (One point each)					
Each weak and faint line in the pictures (One point for each)					
Exaggerated drawing of ears in figures (One point for each)					
Not filling the inside of the body after it has been drawn in two dimensions in the drawings (One point for each)					
Each small nose drawn					

(One point for each)					
For each foot facing two different directions in figure drawings (One point for each)					
Each ear drawn exaggeratedly in the drawn figures (One point for each)					
Figure with hands hiding behind the drawings (One point for each)					

4.5. Analysis of Data

In this study, the pictures collected from the children were first analyzed with the content analysis method. Content analysis is a scientific approach that allows for the objective and systematic analysis of verbal, written, and other materials (Tavşancıl & Aslan, 2001). In content analysis, there are four stages: processing the qualitative research data obtained from the documents, coding the data, finding the themes, organizing the codes and themes, defining and interpreting the findings (Yıldırım & Şimşek, 2006).

In this study, the pictures drawn by the children were first pre-selected and it was evaluated whether the children drew a picture in accordance with the given instruction. Afterwards, the pictures were semantically analyzed by four researchers in order to ensure coding reliability and based on the relevant literature (Akkapulu, 2010; Burkitt et al. 2009; Cherney et al., 2006; Michaelides, 2005; Morra, 2008; Neuß, 1999; Yavuzer 2016). Using the pre-prepared code list, the children's statements about their pictures were evaluated. After the analysis, the newly emerged codes were also included in the list and the coding was completed. After this stage, the data were organized, grouped according to codes, and when appropriate, the data were presented by digitizing. Finally, the obtained findings were interpreted. In the study, the opinions of field experts were consulted for the coding list used in the evaluation of children's drawings.

In the meantime, the aim was to test the reliability of the researcher's objective assessment skill. In this process, in which observer reliability was tested, 5 drawings were randomly selected from among the data obtained from the study, and these drawings were re-evaluated by 3 different clinical psychologists according to the criteria used in the research. As a result of the evaluations, it was seen that there was no significant difference between the clues obtained by the researchers and observers from the drawings, and accordingly, the research process continued, considering that children's drawings were evaluated reliably.

In the interpretation of the drawings, the size of the picture, its position on the page, the proportion, the drawing style, and the drawing order of the human figure's limbs were interpreted by considering their size and smallness. In the section below, the scoring system created by scoring the anxiety, depression, and self-confidence in children's drawings is explained.

Since some features in a child's picture indicate both the child's anxiety and depressive state, low self-esteem, anxiety, and depression scores were assessed

separately. For example, weak and faint lines, incompletely drawn limbs, and using too many erasers are among the clues about the depressive state as well as revealing the child's anxiety.

Mann-Whitney U test was used to determine whether there was a significant difference in the analysis of the data. Descriptive statistical methods were used in the analysis of the data obtained, and the Man Whitney-U test was used in pairwise group comparisons. The analyzes were made in the SPSS package program and the statistical significance level was taken as $p < 0.05$.

4.6. Research Process

In the research, the process given in the table below was followed in the application process to discover the traumatic elements experienced in the child's emotional world through children's drawings.

Table 5: Research Process Program

Meet and Warm Up
Information • Talks about the effects of the earthquake, mutual sharing of views • Explaining and normalizing possible reactions after trauma • Recognizing and correcting incorrect assumptions
Drawing • Facilitating emotional expressions • Drawings about safe places or people when the sensory load of memories becomes heavy • Example: -"Picture what you experienced during and after the earthquake".
Recognition and development of social support resources • During the processing of the anxiety, fear and other emotions they experienced in the earthquake, were there any people who helped people who experienced the earthquake? Recognizing the sources of social support around them by asking questions.
Recognizing and increasing self-worth • "How would you help people after the earthquake? Making pictures on the subject and ensuring that they write about the subject" To enable the therapist to develop a sense of achievement and thus self-confidence by displaying the pictures in the classroom by highlighting a feature in which the child is successful. In group processes, attention should be paid to ensure that every child experiences this sense of achievement equally.
Noticing the change • Conversations about what has changed throughout the process • Past – Present – Future: Recognizing the difference between the beginning and the end of the process through painting, imagination
Finish and self-reward • At this stage, children can take pictures, etc., that they can take with them. produce products. For example, they may cut off a piece of a large and colorful awning they created as a group and take it home and keep it as a reward for their success throughout the process.
Re-make the earthquake-themed paintings after three months.

5. Results

The data obtained regarding the significant difference between the pre-drawing and post-drawing scores of the children are presented in Table 6.

Table 5: U-Test Result on the Difference in Pre- and
Post-Drawing Scores of Children's Anxiety Feelings

Size	Group	n	Mean Rank	Sum of Rank	U	p
Anxiety	Preliminary Drawing	34	42.54	612.00	54.000	.009
	Final Drawing	34	13.77	304.00		

*p <0.05

As can be seen in Table 5, a significant difference was found between the pre-drawing and final drawings of the children in the anxiety sub-dimension scores in favor of the pre-drawing (U= 54.000; p>0.05). Considering the mean rank, the last drawings of the children; (13.77), it is seen that the results obtained by the children in the final drawing scores are lower compared to the preliminary drawings (42.54). When the mean rank of the difference scores was examined, it was determined that this difference was in favor of the preliminary drawings. It can be argued that this finding is due to the fact that the preliminary drawings were made during the period of high anxiety immediately after the earthquake, and that the anxiety levels of the children decreased after the disaster in the final drawings made three months later.

Table 6: U-Test Result on the Difference between Preliminary and
Post-Drawing Scores Regarding Children's Feelings of Depression

Size	Group	n	Mean Rank	Sum of Rank	U	p
Depression	Preliminary Drawing	34	53.22	638.00	59.000	.000
	Final Drawing	34	26.23	312.00		

*p <0.05

In Table 6, a significant difference was found in favor of the preliminary drawing between the scores of the pre-drawing and final drawings of the depression sub-dimension (U= 59.000; p>0.05). Considering the mean rank, the last drawings of the children; (26.23), it was determined that the results obtained in the final drawing scores of the children compared to the preliminary drawings (53.22) were lower in this sub-title as well. When the mean rank of the difference scores was examined, it was determined that this difference was in favor of the preliminary drawings. Based on this finding, it can be argued that the high scores on depression levels in children's preliminary drawings stemmed from the fact that this study was conducted right after the earthquake. Afterwards, it is observed that this negative behavior decreases over time when the scores they get in the last drawing scores are examined.

Table 7: U-Test Result on the Difference in Preliminary and
Post-Drawing Scores Regarding Children's Self-Confidence Feelings

Size	Group	n	Mean Rank	Sum of Rank	U	p
Confidence	Preliminary Drawing	34	58.65	621.00	63.000	.001
	Final Drawing	34	19.01	344.00		

*p <0.05

In Table 7, a significant difference was found in favor of the preliminary drawing between the scores they got between the preliminary and final drawings regarding the self-confidence sub-dimension (U= 63.000; p>0.05). Considering the mean rank, the last drawings of the children; (19.01), compared to the preliminary drawings of the children (58.65), the results obtained in the final drawing scores were also found to be lower in this sub-title. As a result of the trauma caused by the earthquake, the child feels threatened about his place in the world and about himself. Feelings of value and security, seeing the world as meaningful and acceptable, finding other people good and helpful, unbreakable and invulnerable are all threatened. Such events are those that are outside of their daily experiences, do not fit into certain cognitive schemes, and are therefore incomprehensible, especially for children (Barash, 1990: 32; Catherine, 2019). Therefore, it explains that the findings regarding the preliminary drawing obtained immediately after the earthquake were higher than the final drawing scores.

6. Discussion and Conclusion

In this study, which aimed to determine the anxiety, depression, and lack of self-confidence experienced after the trauma caused by the earthquake on children, through their pictures, the behavioral disorders identification scale consisting of three sub-dimensions developed by the researchers was used. This scale is aimed to show that children's drawings can be a tool for mental health professionals to obtain clues about children's mental health findings and can be used by therapists as an assessment technique in psychotherapy sessions. Children's drawings evaluated through this scale had higher scores in the anxiety sub-dimension in their preliminary drawings immediately after the earthquake than in their final drawings made three months later. A high score means that their anxiety level is high. Especially the sound, vibration, light, etc. caused by a natural disaster such as an earthquake. It can be considered as a natural result of the process that children who live with stimuli and then continue their lives in this environment reflect their perceptions of trauma in their paintings. One of the attempts to prevent the long-term effects of post-traumatic anxiety, depression, and low self-esteem is to have the child share what happened to him after the trauma. Painting activities are one of these communication ways. Such practices will increase the child's ability to cope with events by providing the completion of some cognitive and emotional processes aimed at reducing the effects of trauma (Clark, 1997: 27).

When the results of the Mann-Whitney U test to determine whether there is a difference between the pre-and final drawings of children's depression levels were

examined, it was determined that high depression levels were higher in the preliminary drawings and this score decreased after three months. There are different studies supporting this result (Basnet, 2015). Another study supporting the high effects of the earthquake in the preliminary drawings is a study conducted with people who benefited from earthquake aid in Adapazarı, Gölcük, and İzmit after the 1999 Marmara Earthquake in Türkiye. The biggest problem expressed in this research is a nervous breakdown, insomnia, depression, and depression, etc. It is grouped under the category of psychological problems and constitutes 45% of the complaints among all other problem categories (Akaya et al., 2001: 38).

It was observed that the children's self-confidence scores were similarly high right after the earthquake, and their scores in this area decreased three months later when the drawings they made were examined three months later. It was determined that the children's features such as making small figures, making missing organs such as ears, hands, and arms decreased in the paintings they made after three months. In the interpretation of projective drawing, most of the researchers agree that the size of the human figures drawn is the most important indicator that directly reflects the child's self-esteem (Koppitz, 1968; Di Leo & Joseph, 1983; Thomas & Silk, 1990). He points out that larger-than-average numbers can be a sign of personality traits such as aggression or size. Small drawings that are much smaller than average for the relevant age group may indicate inadequacy, inferiority, low self-esteem anxiety, or depression. In line with these statements, the children transferred the clues about post-traumatic behavioral disorders to their pictures in the pictures they made just after the earthquake. Research results by Roysircar, G., & O'Grady, K. (2021) support this finding. According to the results of the House-Tree-Person (HTP) drawing test, which was conducted to determine the trauma-related lack of self-confidence in children after the earthquake that occurred in Haiti in 210, it was determined that self-confidence started to increase after a certain time. In addition to these, there are different studies on the elimination of depression, anxiety and stress disorders caused by the earthquake. There are different studies on the elimination of depression, anxiety and stress disorders caused by earthquakes. In one of these studies, a study on people who experienced major disasters such as earthquakes, it was seen that those who consumed micronutrient supplements had more successful results in reducing anxiety, depression and stress caused by the earthquake (Rucklidge, et al., 2021).

Based on this result, it can be argued that the scale prepared is valid and reliable. Based on the results of this research, it has been shown that children's drawings are a universal common language and can be used as the most appropriate tool to express children's experiences, mental states, and feelings, and it is possible to obtain clues from children's mental health data by using children's drawings.

Conflict of Interest Statement
The authors declare no conflicts of interest.

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