

## RESEARCH

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## ARAŞTIRMA

Açık Erişim

**Evaluation of Children's Anxiety During the Pandemic Based on Their Drawings***Pandemi Sürecinde Çocukların Kaygı Durumlarının Çizimleri Üzerinden Değerlendirilmesi***Fatma Nur Aras Kemer** **Authors Information****Fatma Nur Aras Kemer**Research Assistant, Hacettepe  
University, Ankara, Turkey  
[fatmanuraras@hacettepe.edu.tr](mailto:fatmanuraras@hacettepe.edu.tr)**ABSTRACT**

The coronavirus outbreak which emerged in late 2019 and originated in Wuhan and spread all over the world, was declared by the World Health Organization as a pandemic in 2020. During the pandemic the increasing number of infected and dying individuals, negative reflections in the media and news, unemployment and decreasing income have had negative effects on the mental health of individuals, and this increased their anxiety levels. It is seen that children are as negatively affected by the pandemic as adults. The aim of the study is to reveal the level of anxiety of children during the pandemic, how they experience this anxiety, the main factors that increase their anxiety and their level of knowledge about the coronavirus. For this purpose, a qualitative study was conducted with nine primary school students using the drawing technique and semi-structured online interview method. The pictures drawn by the children were analyzed by using document analysis, and the transcripts of the interviews by descriptive analysis method. As a result of the research, it was revealed that children had limited knowledge about the coronavirus, their fears and anxiety were high, and they also experienced different negative emotions such as anger, sadness, and restriction. The findings were discussed within the scope of the relevant literature, and in this context, suggestions were made for future research and applications.

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2019 yılının sonlarında Wuhan'da ortaya çıkan ve tüm dünyaya yayılan koronavirüs salgını, 2020 yılında Dünya Sağlık Örgütü tarafından pandemic olarak ilan edilmiştir. Pandemi sırasında enfekte olan ve ölen birey sayısının artması, medyadaki olumsuz yansımalar ve haberler, işsizlik ve azalan gelir; bireylerin ruh sağlığını olumsuz etkilemekte ve kaygı düzeylerini artırmaktadır. Çocukların da salgından yetişkinler kadar olumsuz etkilendiği görülmektedir. Çalışmanın amacı, çocukların pandemi dönemindeki kaygı düzeylerini, bu kaygıyı nasıl yaşadıklarını, kaygılarını artıran başlıca faktörleri ve koronavirüs hakkındaki bilgi düzeylerini ortaya koymaktır. Bu amaçla dokuz ilkokul öğrencisiyle resim çizme tekniği ve yarı-yapılandırılmış çevrimiçi görüşme yöntemi kullanılarak nitel bir araştırma yapılmıştır. Çocukların çizdikleri resimler doküman incelemesiyle, görüşme dökümleri ise betimsel analiz yöntemiyle analiz edilmiştir. Araştırma sonucunda çocukların koronavirüs hakkında sınırlı düzeyde bilgi sahibi oldukları, korku ve kaygılarının yüksek olduğu, ayrıca öfke, üzüntü, kısıtlanmışlık gibi farklı olumsuz duygular da yaşadıkları ortaya çıkmıştır. Elde edilen bulgular ilgili literatür kapsamında tartışılmış ve bu bağlamda ileride yapılacak araştırma ve uygulamalar için önerilerde bulunulmuştur.

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## INTRODUCTION

The coronavirus (COVID-19), which emerged in Wuhan, China towards the end of 2019 and affected the world in a short time, affected humanity in all aspects (Jihola, 2020; Karataş, 2020) and was declared as a pandemic by the World Health Organization in 2020. At the last point, the number of cases worldwide is 110.749.023 and the total number of deaths is 2.455.131 (World Health Organization, 2021). Examining coronavirus cases from all over the world, Due to the unpredictability of how the virus will evolve (Wang, Hozumi, Yin & Wei, 2020), the effects of the pandemic are thought to will been long-lasting (Bozkurt, Zeybek, & Aşkın, 2020; Wang, Zhang, Zhao, Zhang & Jiang, 2020) .

Social isolation, negative news coverage by media, decreases in income, increase in the number of infected individuals and deaths during the pandemic have had profound psychological effects on individuals all over the world (Orru, Ciacchini, Gemignani, & Conversano, 2020; Pakpour & Griffiths, 2020). When the previous pandemic studies are examined; fear of getting sick, uncertainty, the possibility of infecting themselves or their relatives, the unreliability of the area they live in, lack of knowledge about ways to protect themselves from the virus, etc. factors seem to trigger people's fear and anxiety (Carleton, 2016; Choi, Hui, & Wan. , 2020; Taylor, Agho, Stevens, & Raphael, 2008). Research conducted during the Corona period also supports this knowledge (Cao et al., 2020; Gerhold, 2020; Wang et al., 2020). It has been seen that children as well as adults are psychologically affected by the pandemic and the crisis experiences caused by this process (Akoğlu & Karaaslan, 2020; Çaykuş & Mutlu Çaykuş, 2020; Demirbaş and Koçak, 2020; Duan et al., 2020; Orgilés, Morales, Delveccio, Mazzeschi, and Espada, 2020; Yoshikawa et al., 2020). Like adults, children's lack of experience in accessing the necessary resources to meet their psychological needs, cause them to be significantly affected by mass traumas such as pandemic (American Academy of Pediatrics, 2015; Chrisman, & Dougherty, 2014).

During pandemics, children may feel negative emotions such as anxiety, fear, sadness, and anger, and these emotions can affect their lives in many ways (Boelen & Spuij, 2013; Mazza et al., 2020; Turkish Psychiatric Association, 2020). In children's lives, anxiety results in academic difficulties (Greco & Morris 2004; Metallidou & Vlachou, 2007; Muroff & Ross 2011), sleep disorders (Chorney, Detweiler, Morri & Kuhn, 2008; Köse, Yılmaz & Gökteş, 2018), decline in life satisfaction (Çivilidağ, Yanar, Kızıllırmak & Denizli, 2018; Mahmoud, Staten, Hall, & Lennie, 2012), aggression (Kurtyılmaz, Can & Ceyhan, 2017), anger (Cole, 2009), incompetence in problem solving skills (Dereli, Angın, & Karakuş, 2012; D ' Zurilla & Nezu, 2007), communication problems (Berkun, 2003, Çakmak 2018, Hamzadayı, Bayat, & Gölpınar, 2018) and a decrease in self-confidence levels (Çakmak 2018; Jalongo & Hirsh, 2010). These problems caused by anxiety in children's lives make it important to determine the anxiety experienced by children during the pandemic and ways to deal with anxiety.

Although there are studies in the literature that deal with the anxieties of adults during the pandemic (Sahoo et al. 2020; Sheylin et al. 2020; Stein, 2020; Wang & Zhao, 2020) and the effects of the pandemic on children (Phelps & Sperry, 2020; Usta & Gökcan, 2020; Yoshikawa et al., 2020), the number of studies investigating children's anxiety during the COVID-19 pandemic is quite limited. Duan et al. (2020) conducted a study with 3613 participants, 359 of whom were children, and found that 91% of the participants were very anxious and 94% of them acted very cautiously to protect themselves from the coronavirus. In addition, the anxiety levels of adolescents were higher than that of children. Pinar Senkalfa et al. (2020), in a study conducted with cystic fibrosis (CF) patients and healthy children, and their mothers during the coronavirus process, stated that healthy children aged 13-18 years had higher

anxiety than children with CF of the same age. Xie et al. (2020) conducting a study on 2330 students under quarantine, revealed that 19% of the participants were quite anxious. These studies used anxiety scales and were limited to children's responses to the scales. Therefore, related studies only reveal numerical values related to the level and prevalence of children's anxiety, and this is generally expressed as low, medium, or high. No study in the literature reveals, explains, or describes children's anxieties about coronavirus in a qualitative way. This stud has tried to reveal more clearly the other emotions children experience with their anxiety about coronavirus and the main factors that trigger their anxiety.

This study aim to reveal the level of anxiety of children during the pandemic, how they experience this anxiety, the main factors that increase their anxiety and their level of knowledge about the coronavirus. For this purpose, the technique of drawing pictures as well as the interview method was used in the study with the purpose to enable children to express their anxieties in the best way. It is expected that this study will contribute to the literature by revealing more clearly to what extent and how children experience emotions due to coronavirus, and determining the main factors affecting their anxiety, rather than how much children show anxiety.

## METHOD

### Research Model

The case study design, one of the qualitative research designs, was used in the study. Yin (2014) defines the case study as in-depth investigation of a current phenomenon in its real-life context. In this study, the phenomenon of coronavirus has been investigated in depth in the context of children's life.

### Participants

Demographic information about the participants is given in Table 1.

Table 1. Study group

	City	Grade Level	Age	Gender
P1	Şırnak	4	10	Female
P2	Şırnak	2	7	Female
P3	İstanbul	2	8	Female
P4	Ankara	2	7	Male
P5	Şırnak	2	8	Female
P6	Konya	3	9	Male
P7	Van	3	8	Female
P8	Kayseri	2	8	Male
P9	Kayseri	1	7	Female

Nine primary school students from six different provinces were selected by snowball (chain) sampling method, one of the purposeful sampling methods (Patton, 2018). In this context, nine students who are enrolled in primary schools affiliated to the Ministry of National Education constitute the study group of the research. In determining the sample, two criteria, having the opportunity to participate in the online study and volunteering of the students and their parents were determinant. The number of participants was determined according to the saturation point of the research. Six of the students included in the study are girls and three of them are boys. One of the students is 1st grade, five of them are 2nd grade, two of them are 3rd grade and one of them is 4th grade.

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## **Data Collection Tools**

First of all, in the research, giving instruction to the children, "I want you to draw a picture of the coronavirus on paper. Draw whatever you imagine in your head, however you want. You are completely free about how to draw." They were asked to draw a picture and explain the picture they drew. Later, using the semi-structured interview form developed by the researcher, based on the pictures children were asked questions such as where the coronavirus could be found, what could happen if they had contact with it, what kind of creature it was, what it felt, what are the ways of protection, and what to do when exposed.

## **Data Collection**

For the study, first ethical permission dated 12.01.2021 and numbered E-35853172-600-00001405221 was obtained from Hacettepe University Senate Ethical Commission. Then an informed consent form was obtained from the children and their parents to ensure voluntary participation. Ethical principles such as confidentiality of the interview records and children's personal information obtained during the data collection were also taken into consideration. Since the pictures they draw reflect the inner world of the children (Einarsdottir, Dockett & Perry, 2009; Yavuzer, 2017), the data were obtained by drawing pictures. In addition, semi-structured interviews were conducted in order to support and enrich the data obtained from the pictures by enabling children to express their emotions and diversification of methods in data collection was provided (Merriam, 2013; Yıldırım & Şimşek, 2018).

Due to the risk situation of the children, they were asked to draw pictures in online interview, and then the data were obtained by asking questions in the semi-structured interview form. It was tried to eliminate the confounding variables that could affect the research results as much as possible. For this purpose, children were provided with A4 papers, charcoal pencils, erasers and crayons before the interview. Later, they were asked to draw a picture of the coronavirus on the paper as they wanted; It was explained that they are free how to draw it, whether to use crayons and how long to finish drawing. They were told to express when they finished their pictures. It was also explained to the children that every picture made, every answer given was valuable for the research, and that the pictures would not be evaluated in terms of beauty or the accuracy of the answers. During the study, online communication was maintained and external factors that could affect children were tried to be kept under control. For this purpose, the parents were asked to ensure that the children were alone during the study and to keep the factors that could distract them away from their environment.

## **Analysis of Data**

The online interviews with the children were video-recorded by the researcher. First of all, the pictures drawn were examined by document analysis method based on the categories created as a result of the literature review. Then, the records of the semi-structured interviews on the pictures drawn by the children were examined using the descriptive analysis method, and the findings were interpreted. The themes and codes from the answers given by the participants were created by the researcher based on the literature review. Examining the literature, pressing while drawing (Abdi, Jalili, Tavakoli, &

Naderpour, 2004; Halmatov, 2016; Handler & Reyher, 1965; LaRoque & Obrzut, 2006; Reynolds & Rauphous, 2003; Yavuzer, 2017), excessive use of red color (Abdi, Jalili, Tavakoli & Naderpour, 2004; Clatworthy, Simon, & Tiedeman, 1999; Halmatov, 2016; Venger, 2007), excessive use of eraser (Halmatov, 2016; Handler & Reyher, 1965; Koppitz, 1968; Venger, 2007; Yavuzer, 2017), drawing eyes large (Clatworthy, Simon, & Tiedeman, 1999; Çankırılı, 2012; Venger, 2007) and more detail (Halmatov, 2016; Yüksel et al., 2016) was revealed as anxiety indicators in children's drawings. At the beginning of the interview, the expressions used by the children while describing the pictures they drew were also included in the appropriate themes and codes. Findings obtained from picture analysis and interview recordings were discussed in relation to each other within the framework of appropriate literature.

### Validity and Reliability Study

In order to increase credibility in the research, three experts studying in the field of psychological counseling and guidance were consulted during the preparation of semi-structured interview questions and the analysis of the data. In addition, both examining the pictures drawn by the children and interviewing them used in data collection so as to ensure using different methods in combination. In order to increase the transferability of the research, purposive sampling method was used and detailed description criteria were provided by quoting participant statements for the presentation of findings. In order to increase the consistency, consistency analysis was carried out at various stages such as preparing the interview questions, determining the evaluation criteria for the pictures, collecting and reporting the data. Finally, for the confirmability, the findings obtained as a result of the research were compared with the raw data and a confirmation analysis was carried out (Yıldırım & Şimşek, 2018).

## RESULTS

### Findings Regarding the Evaluation of Anxiety states Based on the Pictures Drawn by Children

The categories determined as a result of the literature review are shown in Table 2 together with their percentages in the children's drawings.

**Table 2. Anxiety Indicators in Pictures**

	Drawing by pressing the pen	Excessive use of red color	Drawing eyes large *	Excessive use of eraser	More detail	%
P1	X	***	X	X (9**)	X	80
P2			-	(0)		0
P3	X			X (19)		40
P4		X	-	X (18)	X	60
P5			X	(2)		20
P6	X			X (21)		40
P7	X		-	X (11)	X	60
P8		X	-	(1)		20
P9	X			(0)		20
N	5	2	2	5	3	
%	56	22	33	56	33	

\* The anxiety indicator "big eyes" was evaluated for children who included a human figure in their picture or drew eyes on a virus.

\*\* Numbers in parentheses show the number of times children use erasers while drawing their pictures.

\*\*\* Gray colored cells mean that the relevant anxiety indicator was not found in the picture.

Examining the pictures within the scope of the literature, it was seen that five of the children drew their pictures by pressing, and that five children used the eraser a lot. Six of the children included eye drawing in their painting and two of them drew large eyes. Three of the children included a lot of detail in their drawings and two of them used the color red too much. It can be said that children who draw by pressing, use the eraser a lot, create big eyes, give more details, and use the color red predominantly may have anxiety. When the children are evaluated individually according to the pictures they draw by considering the percentages of the anxiety indicators; It can be said that P1 experienced severe anxiety, P4 and P7 high level of anxiety, P3 and P6 moderate anxiety, P5, P8 and P9 low anxiety, and P2 no anxiety at all.

### Findings Regarding the Evaluation of Anxiety States through Interviews with Children

In this part; the themes, codes and references and percentages of the codes were given in tables, and the findings were explained.

#### *Children's information and opinions about the location of the coronavirus*

After talking to the children who finished their pictures on what they used in their pictures in general, the questions prepared by the researcher were asked to the children. First of all, "Where does the coronavirus you draw live?" children were asked. The codes extracted from the answers given by the children, along with their reference and percentages, are given in Table 3.

**Table 3. Where the Coronavirus Lives**

Theme	Code	Reference	%
The place where it lives	In world	1	11,11
The place where it lives	In İstanbul	1	11,11
The place where it lives	In Chine	1	11,11
The place where it lives	In the dumps	1	11,11
The place where it lives	In the human body	1	11,11
The place where it lives	In it own world	1	11,11
The place where it lives	Everywhere	3	33,33

As seen in Table 3, some children "It lives in China, but it came to our neighborhood as well. (P2)" or "It lives in İstanbul. (P9)", they stated that the coronavirus only lived in some geographical regions. Some children "It lives all over the world. (P1)" or "It lives outside, everywhere. (P8)", they stated that the coronavirus could occur anywhere in. In terms of where the coronavirus lives, one of the children said as follows "It lives in the garbage, on the food we buy. It lives on iron surfaces then it lives everywhere. (P6)" pointing to the dirty places. "The coronavirus I drew first goes to my hands, from my hands to my mouth, and from my mouth to my lungs and wants to live there (Figure 1). (P4)" stated that the coronavirus lives in the human body. Another said, "The virus has a world of its own and lives there. It is a world that we cannot see. (P7)", she described the world of coronavirus separately from people.



**Figure 1. Picture drawn by P4 (It is seen that P4 projects a worried facial expression on the hand drawn by his.)**

As a result, although each of the children has different information about the environment where the coronavirus lives, it has been seen that most of the children feel more threatened because they are close to the coronavirus.

#### *Children's information and opinions on the food source of coronavirus*

The question "What is the coronavirus feeding on?" was asked the children. The codes extracted from the answers given by the children, along with their reference and percentages, are given in Table 4.

<b>Table 4. Food Source of Coronavirus</b>			
<b>Theme</b>	<b>Code</b>	<b>Reference</b>	<b>%</b>
Food source	I don't know	1	11,11
Food source	Microbe/Bacteria	2	22,22
Food source	Human	6	66,67

As seen in Table 4, in response to this question, one of the children stated that s/he had no knowledge of the subject, "I don't know, but it infects people. (P6)". Some children said that the coronavirus feeds on microbes or bacteria. Some children "It feeds on bacteria in the garbage (P3)" said that the coronavirus feeds on microbes or bacteria. Some stated that the coronavirus feeds on humans or some parts of the human. For example; "The coronavirus feeds on our lungs. (P4)", "The virus feeds on people's blood. (P7)", "It is fed by food, and its food is people. (P5)". As a result, looking at the answers given by the children who stated that the coronavirus feeds on humans, it is seen that more than half of them feel the perception of danger and threat.

#### *Children's knowledge and opinions on the effects of the coronavirus*

Asking children, “What is the coronavirus in the picture trying to do?”, the codes extracted from the answers given by the children to the question, along with their references and percentages, are given in Table 5.

Theme	Code	Reference	%
Effects	Contagious	2	15,38
Effects	Kill	3	23,08
Effects	Make sick	8	61,54

As seen in Table 5, some of the children pointed to the contagiousness of the coronavirus and said, “I drew this virus on my father's head. Because my father goes to work, it can spread from someone else, it can infect us as well. (Figure 5) (P1)” pointing to the contagiousness of the coronavirus. Others said, “The coronavirus is very dangerous and is trying to infect us. It sticks to our lungs and tries to make us sick. (P4)” and stated that the coronavirus caused diseases by being transmitted. However, some children pointed out the lethality of the coronavirus as “Trying to infect and kill people. (P2)” and “Trying to destroy the world. (P5)”. As a result, the children stated that the coronavirus was contagious and threatening their health.

#### ***Children's information and opinions on the consequences of contact with coronavirus***

The children were asked, “Is it possible to touch it? What happens if we touch it?” The codes extracted from the answers given by the children to the question, along with their references and percentages, are given in Table 6.

Theme	Code	Reference	%
Contact	Contagious	1	9,09
Contact	Make sick	5	45,45
Contact	Kill	5	45,45

As seen in Table 6, the children gave answers as “Yes, it is possible to touch. If we touch it, it can deprive us of our health and kill us. (P1)”, “If it gets on our hands and we put our hands in my mouth, it will stick to our lungs. If it sticks too much, we are taken to the hospital. (P4)”, “I don't think it's possible for us to (touch) it because it's so small we can't touch it. If we touch it unknowingly, we will catch the virus, get sick and increase the risk of dying. (P6)” As a result, the children stated that as a result of their contact with the coronavirus, the coronavirus can infect them and make them sick or even kill them.

#### ***Children's knowledge and opinions on the features of the coronavirus***

Asking children, “What kind of creature is the coronavirus? (Good, bad, beneficial, harmful, cruel, helpful, etc.)”, the codes extracted from the answers given by the children are given in Table 7 together with their references and percentages.

Theme	Code	Reference	%
Characteristics	Cruel	2	22,22
Characteristics	Horrible	3	33,33
Characteristics	Pernicious	4	44,44

As can be seen in Table 7, the children answered the question by defining with adjectives such as "harmful", "bad", "cruel", "dangerous", "terrible", etc. Some examples are as blow: "It is a harmful, evil

and cruel creature. (P1)", "It is a dangerous creature full of bacteria (P3)", "The coronavirus is bad, it is cruel and it wants to kill people. (P4)", "It is a disease-spreading creature, it tries to harm. (P7)" As a result, it was seen that all of the children described the coronavirus with negative adjectives and described this virus as cruel, dangerous and deadly.

**Children's information and opinions on the ways of protection from coronavirus**

Asking children, "What would you do if the coronavirus wanted to play with you?" The codes extracted from the answers given by the children to the question, along with their references and percentages, are given in Table 8.

Theme	Code	Reference	%
Ways to Protect	Cleaning	6	37,50
Ways to Protect	Mask	3	18,75
Ways to Protect	Social Distance	7	43,75

As can be seen in Table 8, when asked about ways to protect against coronavirus, the children expressed the importance of social distance with their answers such as "I will run away. (P1)", "I never even come close to it. (P6)", Using a mask by saying "We must wear a mask to be protected from it...(P2)"; paying attention to cleanliness with answers such as "I always try to pay attention to my cleanliness (P1)", "...we should wash our hands with soap. (P2)" "It's a scary virus, but I wash my hands thoroughly with soap and water and prevent it from harming me. (P4)".

Apart from this question, it was seen that the children used different ways of protection while describing the pictures they drew. For example;



**Figure 2. Picture drawn by P5**

"Here is the germ belly and ear (bottom left picture drawn in blue and red)... Here is the germ in the eye (Human head with red eye on the upper left) and these are the germs (picture like a blue cloud drawn on the top and the picture with red), this mask the child wearing it (the child with the red pencil in the upper middle), ..., this is the child with the virus (the picture of a child drawn in red in the lower middle). (P5)"

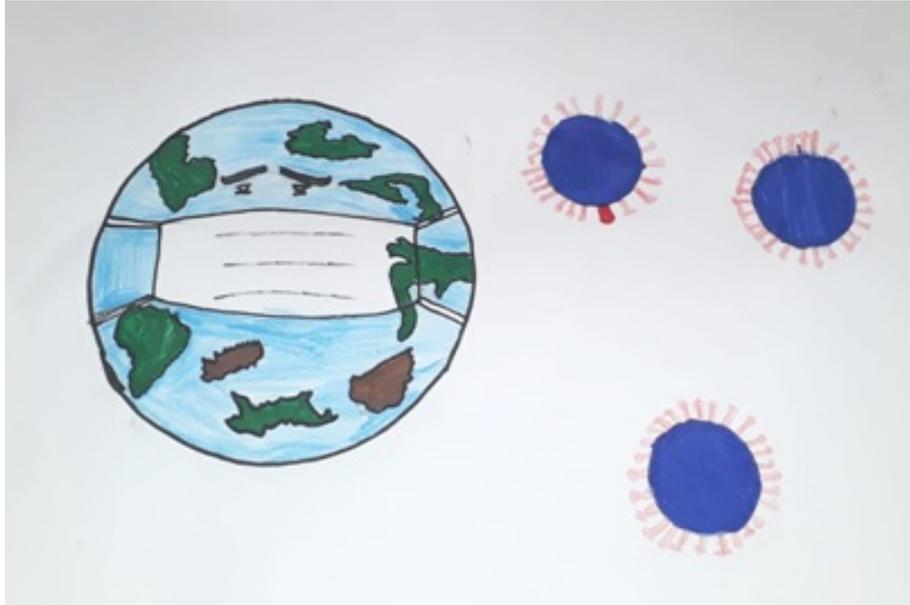


Figure 3. Picture drawn by P7

“My painting says this: Coronaviruses want to come into the world and make us sick. But since the world wears a mask, it is not possible for it to infect us. But it may come, so we have to be careful. (P7)”



Figure 4. Picture drawn by P3

“The bacteria here are trying to get on this kid's hand. But the child immediately goes and washes his hands with soap and water and removes the bacteria. (P3)”

As a result, it has been seen that children do not have enough knowledge about coronavirus and ways to protect themselves from it. While the majority of children emphasized that social distance is important to protect from coronavirus, very few of them mentioned cleaning and masks.

#### *Children's information and opinions on the ways to fight against coronavirus*

Asking children, “If you have to fight the coronavirus, how do you beat it?” The codes extracted from the answers given by the children to the question, along with their references and percentages, are given in Table 9.

**Table 9. Ways to Fight against Coronavirus**

Theme	Code	Reference	%
Ways to Fight	Quarantine	1	11,11
Ways to Fight	Mask and gloves	1	11,11
Ways to Fight	Hospital	1	11,11
Ways to Fight	Healthy eating	1	11,11
Ways to Fight	Cleaning	5	55,56

As can be seen in Table 9, a small number of the children answered the question by expressing the importance of quarantine, healthy nutrition and, if necessary, getting support and help in the hospital during the recovery process of individuals infected with coronavirus. Some examples are blow: “I protect myself in my room for 14 days. My mother leaves my meals at the door of my room. I stay away from contacting them. (P1)”, “I can beat him by keeping my health. I have to eat healthy and I have to be clean. (P3)”, “I go to the hospital and beat him. (P5)”. Most of the children gave examples that mostly included ways of protection from coronavirus as follows “...I wash my hands with water, soap and disinfectant (coronavirus). (P4)”, “I wash my hands constantly, I always use disinfectant and cologne; I wear my mask and gloves. (P7)”. As a result, it was seen that most of the children experience confusion about the methods of protection against coronavirus and how to fight it, and they have limited knowledge about how to fight it in case of catching the coronavirus.

**Children's knowledge and opinions on the emotions of the coronavirus**

The children were asked, “How do you feel when you look at the coronavirus in the picture? (anxiety, fear, happiness, worry, nervous, joy, surprise, anger, etc.)” The codes extracted from the answers given by the children are given in Table 10 together with their references and percentages.

**Table 10. Emotions stemming from Coronavirus**

Theme	Code	Reference	%
Emotions stemming from it	Restricted	1	10
Emotions stemming from it	Anger	1	10
Emotions stemming from it	Sadness	1	10
Emotions stemming from it	Fear	5	50
Emotions stemming from it	Anxiety	6	60

As seen in Table 10, the children answered the question and stated that they felt a wide variety of (negative) emotions such as “limited”, “nervous/anger”, “sadness”, “fear” and “worry/anxiety”. Some examples as follows "I feel fear, anxiety, and anger. (P1)", “When I look at the coronavirus in the picture, I start to get nervous, I feel like it will stick to my lungs. (P4)”, "I'm worried that I might get coronavirus myself. (P6)" “I feel bad. Because I can't go out, we can't hug our family, we can't kiss anyone, and we miss our cousins. I am worried that I will not see them again (P7)”.

In addition to the answers given to this question in the interview, it was seen that the children reflected their feelings such as sadness and anxiety on the pictures and colors they drew. For example, P1 describes the picture s/he drew as follows:



Figure 5. Picture drawn by P1

“This person (large-drawn and colorful) represents the whole world, s/he very sad. The colors on it also mean countries. (P1)”- P1, who is also sad about the coronavirus outbreak, thinks that people all over the world are as sad as him/her.

“This is my mother (the woman in the red dress), this is me (the girl in blue, between mom and dad), this is my dad (the boy in orange), and these are both my brothers (the two little boys in the lower right corner). (P1)”– Considering that the color red is an indicator of anxiety, it can be said that P1 is concerned about his mother's health.

“I drew this virus above my father's head. Because my father goes to work, it can be transmitted from someone else, and it can infect us. (P1)” - P1 seems very worried about the transmission of the coronavirus to him/her and his/her family, as his/her father went to work and came into contact with many people, even though he did not want to be there.

As a result, it is seen that children experience mostly anxiety and fear among many negative emotions, and they are worried about their own and their relatives' health.

**Children's views on the renaming of the coronavirus**

Asking the children “If you had a name for the coronavirus, what would you name it, why?”, the codes extracted from the answers given by the children to the question, along with their references and percentages, are given in Table 11.

Table 11. Renaming of the Coronavirus			
Theme	Code	Reference	%
Renaming	Dark world	1	11,11
Renaming	Spreads evil	1	11,11
Renaming	The worst bacteria in the world	1	11,11
Renaming	Nastiness	1	11,11
Renaming	Father	1	11,11
Renaming	Weapon virus	1	11,11
Renaming	Contagious microbe	1	11,11
Renaming	Batman	1	11,11
Renaming	Jumpy	1	11,11

As seen in Table 11, the children gave such responses to the question asked as "Dark world, because it is trying to take our loved ones away from us and kill them. (P1)", "It spreads evil. Because it was bad, I would have given it that name. (P2)", "I would name it the worst bacteria in the world. Because it is very dangerous and can kill people. (P3)", "I used to nastiness, because it does very bad things. (P4)", "Father, because it is a bad person... (P5)", "The weapon is a virus. Why, because it sickens and kills whoever passes it on. (Figure 6) (P6)", "I used to put contagious microbes. Because it is a contagious disease. (P7)", "Batman, because he got it from a bat. (P8)", "It's jumpy because it infects people by jumping. (P9)".



**Figure 6. Picture drawn by P6**

As a result, when the expressions of the children were evaluated, it was seen that the different and creative names they gave pointed to their anxiety states, including the danger they perceived and the fear of losing their loved ones.

## **DISCUSSION**

The study aim to reveal the level of anxiety of children during the pandemic, how they experience this anxiety, the main factors that increase their anxiety and their level of knowledge about the coronavirus. As a result of the study, taken the data obtained into account, it was seen that the anxiety level of more than half of the children was high. It was observed that the children reflected their anxieties with the drawings they made and although they had some difficulties in some of the questions asked in the interview, they also expressed that they experienced different negative emotions along with anxiety. For example; when the question "How do you feel when you look at the coronavirus in the picture?" was asked to the children, many children had difficulty in answering the question at first, and when the researcher reminded them of emotions such as "anxiety, fear, happiness, worry, joy, anger, surprise", the children expressed their feelings. Fear and anxiety were seen more intensely among the emotions expressed by the children. Children's lack of experience in reaching the necessary sources of psychological support causes them to be significantly affected by such mass traumas.

In the research, five children (P1, P3, P6, P7, P9), who put too much pressure on the pen while drawing their pictures, described the coronavirus as a negative and scary creature in their interviews, and expressed their concerns by saying that they cannot see their relatives easily. The findings support the view that

drawing with pressure is an indicator of anxiety, as stated by Halmatov (2016), Reynolds and Rauphous (2003), and Yavuzer (2017). Handler and Reyher (1965) in their literature review about anxiety indices in figure drawings revealed that drawing with pressure is an indicator of anxiety. Likewise, Abdi, Jalili, Tavakoli, and Naderpour (2004) stated in their study that children with high anxiety press the pencil more in their pictures. LaRoque and Obrzut (2006), on the other hand, found in their study that children with high and low levels of anxiety use the pencil more pressure than children with moderate anxiety. In this sense, it can be said that the finding of higher anxiety levels in children who draw pictures by pressing the pencil in this study is consistent with the results of the studies in the literature.

In the interviews of the five children (P1, P3, P4, P6, P7) who used the eraser a lot while drawing pictures, they defined the coronavirus as harmful and cruel, and stated that they were afraid of and anxious about the coronavirus. Halmatov (2016), Koppitz (1968), Venger (2007) and Yavuzer (2017) stated that excessive use of the eraser in children's drawings may be an indicator of anxiety. In addition, the existence of studies revealing that excessive use of the eraser is an indicator of anxiety in the literature review of Handler and Reyher (1965) about anxiety indices in figure drawings shows parallelism with the data obtained in this study.

Two of the children (P1, P5), who included eye drawing in their paintings, drawn the eyes bigger. These children said in the interview also that they felt fear, anxiety, concern and anger in the face of the coronavirus. Halmatov (2016) stated that large drawn eyes can be a sign of anxiety as well as uneasiness and need for help. Clatworthy, Simon, and Tiedeman (1999) stated that children with increased anxiety may draw big eyes because they will experience suspicion and overstimulation. In support of this information, the data obtained from the drawings and interviews of the children in this study indicate that they experience anxiety.

Three children (P1, P4, P7), who gave a lot of detail in their drawings, also expressed that they were irritated about the coronavirus in the interview. Halmatov (2016) stated that giving too much detail in pictures can be an indicator of anxiety. Yuksel et al. (2016) stated in their study that children who have just started primary school and experienced anxiety in this process include more details in their pictures. In this study, children's drawings and answers to interview questions show that they experience anxiety.

Two children (P4, P8), who mainly use red in their paintings, stated that they were afraid by defining coronavirus as cruel and desinential. While Halmatov (2016) describes the excessive use of red color in drawings as the presence of temporary anxiety; Clatworthy, Simon, and Tiedeman (1999) agree that the predominant use of the color red indicates a high level of anxiety. Abdi, Jalili, Tavakoli, and Naderpour (2004) stated that children with high anxiety used the color red more in their pictures. In addition, the red color causes an avoidance orientation in individuals (Elliot et al., 2009). Studies show that avoidance orientation causes anxiety (Spielberg, Heller, Silton, Stewart, & Miller, 2011; Lazarus, 1991). Therefore, it can be stated that the color red affects anxiety negatively. In this study, in accordance with the literature, as a result of interviews with children who gave weight to the color red in their drawings, it was seen that their anxiety levels were high.

Apart from the anxiety indicators seen in the pictures drawn by the children, findings obtained from the interviews with the children also support the view that they experience anxiety. The children participating in the study answered the question of where the coronavirus lives, saying that the virus came to their neighbourhood, it could be anywhere and threatened them. Similarly, to the question of what the coronavirus feeds on, the majority of children expressed the perceived danger by saying that the

coronavirus feeds on humans or parts of humans. Considering the definitions of anxiety, it is seen that anxiety arises as a result of situations perceived as danger and threat (France & Robson 1997; Morgan, 2010; Spielberg & Vagg, 1995). Examining the answers of the children, it can be said that they feel anxiety because they think that the coronavirus has come close to them and has become dangerous and that they feel threatened by feeding on humans.

When asked about what the coronavirus is trying to do, more than half of the children answered that the coronavirus threatens their health, while nearly half of them stated that the coronavirus is deadly. Similarly, to the question asked about the consequences of contact with the coronavirus, children answered that the coronavirus could be health-threatening and deadly. In addition to these, in response to the question asked about what kind of creature the coronavirus is, they described the coronavirus as "brutal, dangerous and deadly". Wheaton, Berman, Franklin, and Abramowitz (2010) stated that the thought of having a serious illness and its negative consequences will cause anxiety in individuals. The thought that the coronavirus is trying to infect them may cause children to perceive the virus as a threat to their health. In addition, considering that thought of death increases anxiety levels of individuals (Köylü, 2004; Tanhan, 2007), the fact that children talk a lot about the lethal effect of the coronavirus can be considered as one of the factors that reflect their anxiety.

Most of the children participating in the study answered the question about ways to protect themselves from the coronavirus, saying that social distance should be observed. In general, it has been observed that children talk very little orally about the use of masks and cleaning, but they express this more clearly with their pictures. On the other hand, when asked about the form of the struggle, it was seen that very few of the children expressed the importance of quarantine, healthy nutrition and, if necessary, getting help from the hospital in the fight against coronavirus. While answering this question, most of the children emphasized cleanliness, which is effective in protecting from coronavirus. In this sense, it can be said that children have a confusion of information about ways to protect themselves from coronavirus and methods of struggle. When people do not have sufficient knowledge in the situations they encounter in their lives, they experience negative emotions and anxiety accompanies these emotions (Çivilidağ, Yanar, Kızırmak, & Denizli, 2018). The fact that children do not have sufficient and correct information about ways to protect themselves from coronavirus and methods of fighting the virus can be associated with their anxiety.

When the children participating in the research were asked how they felt when they looked at the coronavirus in the picture they drew, many of them stated that they directly experienced anxiety; some of them expressed this feeling as uneasiness and anxiety. Some children stated that they experienced the feeling of fear along with anxiety. One of the elements of anxiety is fear (Cüceloğlu, 2000). Fear experienced by individuals during the pandemic caused them to feel anxious (Fitzpatrick, Harris, C. ve Drawve, 2020; Gyasi, 2020). In this study, it can be said that the children who expressed their fear about the coronavirus also experienced anxiety in parallel with the information obtained from the literature.

It is seen that when children are asked to give a new name to the coronavirus, children often associate the coronavirus with death and give it a name. Thought of death has a negative effect on the psychology of individuals and can increase the level of anxiety (Karaca, 2000; Köylü, 2004; Tanhan, 2007). Children's naming the coronavirus associated with death may be associated with their negative effects and anxiety from the current pandemic.

## **Limitations and Recommendations**

The following are the limitations that can be mentioned for this study:

- Sample of the study is limited to 6 girls and 3 boys selected by snowball sampling method, studying in primary school (1st, 2nd, 3rd, 4th grades) in the 2020-2021 academic year. The research was carried out in a qualitative research design; interview and document analysis methods were used in research. Data collection was terminated when the saturation point was reached.
- The research was carried out at a time when the number of coronavirus cases surged in Turkey, there was lockdown, schools was closed, and teaching undertaken remotely and online. The fact that it is difficult to reach students in such a period of time can be considered as a limitation of the research.
- The document analysis in the research is limited to the pictures drawn by the children during the online interview.
- The fact that children draw pictures during online interviews can be considered as another limitation due to the security measures stemming from the pandemic. The parents were asked to provide these measures by explaining the necessary precautions for confounding variables that may impair the validity and reliability of the research, and the environment arrangement could not be provided by the researcher.
- The fact that questionnaires were not used to measure children's anxiety in the study and that only qualitative methods were used can be considered as a limitation of the study. Since the sample group in the study consisted of primary school students, quantitative methods were not preferred in order to ensure that literacy status and concentration times of the children were not confounding variables.

In line with the findings obtained from the literature reviews and the results of the research and the limitations of the research, following suggestions are presented for future research or applications:

- Even though a limited number of students were reached in the study, it was determined that the anxiety level of most of the participants was high. In this respect, repeating the study with more children may contribute to the generalizability of the study. The application of quantitative methods as well as qualitative methods in future studies may contribute to both reaching more participants and increasing generalizability.
- New theoretical and practical studies can be done to reduce the anxiety of children or to prevent their anxiety levels from being too high. Programs can be planned in accordance with the developmental period in which children are informed and express their feelings. In addition, various processes can be carried out through psychoeducation, psychodrama, individual and group counseling practices, or guidance works.
- Semi-structured application programs can be developed by testing effectiveness of the studies on children. Practitioner training can be given to school psychological counselors in order to prepare and execute these programs.
- In this period of uncertainty, if schools continue to remain closed or reopen after opening, school counselors may conduct these services online to address children's concerns. In this case, it may be beneficial for school counselors to improve themselves in using online meeting resources, benefiting from technology and the internet, and gaining necessary skills.

- In case schools reopen and students are more exposed to anxiety about the coronavirus, it may also be beneficial to organize trainings for teachers to help them approach students and help them express their feelings.
- In order to prevent children from worrying excessively due to the situations experienced during the pandemic process, to express their concerns and to manage it, parent training programs can be organized including how parents should behave and what to do in this regard.

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### **About Authors**

**Fatma Nur Aras Kemer.** She graduated from Erciyes University Psychological Counseling and Guidance undergraduate program in 2016. Following it she received her master's degree in Gazi University, Psychological Counseling and Guidance Program in 2019. She is currently continuing her doctorate education at Hacettepe University Psychological Counseling and Guidance Program. She also is working in Hacettepe University Faculty of Education, Department of Psychological Counseling and Guidance as a research assistant since 2017.

### **Author Contributions**

The author of the study conducted and reported the research alone.

### **Conflict of Interest**

It has been reported by the author that there is no conflict of interest.

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### **Ethical Statement**

Permissions were obtained from the Hacettepe University Senate Ethics Committee (12.01.2021; E-35853172-600-00001405221) in order to conduct the research and to initiate the data collection process. Research and publication ethics were complied with in the process of conducting and reporting this study. Any behavior that may be unethical has been avoided.

**Ethics Committee Name:** Hacettepe University Senate Ethics Committee.

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