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A COMPARISON OF PSYCHOLOGICAL WELL-BEING OF CHILDREN WITH CHRONIC ILLNESSES AND THEIR HEALTHY PEERS THROUGH CHILDREN'S DRAWINGS

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A COMPARISON OF PSYCHOLOGICAL WELL-BEING OF CHILDREN WITH CHRONIC ILLNESSES AND THEIR HEALTHY PEERS THROUGH CHILDREN'S DRAWINGS

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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ABSTRACT

A COMPARISON OF PSYCHOLOGICAL WELL-BEING OF CHILDREN WITH CHRONIC ILLNESSES AND THEIR HEALTHY PEERS THROUGH CHILDREN'S DRAWINGS

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Master of Science, Developmental Focused Clinical Child and Adolescent Psychology

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Psychological well-being of children with chronic illnesses is affected by illness process. Therefore, it is believed that a systematic attempt examining the psychological difficulties with multiple respondents and age-appropriate methods is important. The current thesis aimed to compare psychological well-being of children with chronic illnesses and their healthy peers through their drawings and parental reports. The participants consisted of 49 children with chronic illnesses, 66 healthy children (6-12 years) and their parents. Parents filled Demographic Information Form and Strengths and Difficulties Questionnaire (SDQ) while children were drawing Human Figure Drawings (HFD), Family Drawings and a picture of where they would like to be at that moment. According to the results of ANOVA and Chi-Square analyses; children with chronic illnesses had significantly higher numbers of emotional indicators on HFD than healthy children, parents of children with chronic illnesses reported significantly higher Emotional Symptoms scores on SDQ than parents of healthy children, and drawings of where they would like to be at that time

reflected different wishes of chronically ill and healthy children. In addition; results indicated that boys had significantly higher numbers of emotional indicators on HFD than girls regardless of health status, and also chronically ill boys had higher numbers of emotional indicators on HFD and emotional tone scores of Family Drawings than healthy boys. These results showed that chronically ill children, especially boys, had higher risks for emotional difficulties so their psychological well-being should be improved besides their physical well-being.

Keywords: Children, Chronic Illnesses, Hospitalization, Drawings, Psychological Well-Being

ÖZET

KRONİK BİR HASTALIĞI OLAN ÇOCUKLARLA SAĞLIKLI AKRANLARININ PSİKOLOJİK İYİ OLUŞLARININ RESİMLER YOLUYLA KARŞILAŞTIRILMASI

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Psikolojik iyi oluş, kronik hastalıklarla mücadele eden çocukların hastalık süreçlerinden etkilenen alanlardan biridir. Bu yüzden, çocukların yaşına uygun yöntemlerle yürütülen, çocukları ve ebeveynleri içeren sistematik çalışmaların önemli olduğu düşünülmektedir. Bu çalışma, kronik hastalığı olan çocuklarla sağlıklı akranlarının psikolojik iyi oluşlarını çocukların çizimleri ve ebeveynlerin yanıtları aracılığıyla karşılaştırmayı amaçlamaktadır. Çalışmanın örneklemini 6-12 yaşlarındaki 115 çocuk (49'u kronik hastalığı olan, 66'sı sağlıklı) ve ebeveynleri oluşturmaktadır. Ebeveynler Demografik Bilgi Formu ve Güçler ve Güçlükler Anketi (GGA)'ni doldururken, çocuklar da İnsan Çizimi (İÇ), Aile Çizimi ve o an nerede olmak istediklerinin çizimini yapmışlardır. Araştırmanın sonuçları, kronik hastalığı olan çocukların İnsan Çizimi'nde sağlıklı akranlarından anlamlı olarak daha fazla duygusal göstergeye sahip olduklarını göstermiştir. Aynı zamanda; kronik hastalıkla mücadele eden çocukların ebeveynleri, sağlıklı çocukların ebeveynlerinden anlamlı

olarak daha yüksek GGA-Duygusal Sorunlar alt ölçeği skoruna sahiptir. Çocukların o an nerede olmak istediklerine dair çizimleri ise, kronik hastalığı olan çocuklarla akranlarının farklı dilekleri olduğuna işaret etmektedir. Bunlara ek olarak, sağlık durumuna bakılmaksızın oğlan çocukların kız çocuklarından daha fazla duygusal göstergeye (İÇ) sahip olduğu görülmüş ve hasta gruptaki oğlanların sağlıklı gruptaki oğlanlardan daha fazla Aile Çizimi – Duygusal Ton ve duygusal gösterge (İÇ) skoruna sahip olduğu görülmüştür. Sonuçlar, kronik hastalıklarla mücadele eden çocukların akranlarına göre daha fazla duygusal zorluk yaşama riski altında olduğunu ve bu riskin oğlan çocuklarında daha yüksek olabileceğini göstermektedir. Bu yüzden, çocukların fiziksel iyi oluşlarının yanında psikolojik iyi oluşlarının da desteklenmesi önem taşımaktadır.

Anahtar Kelimeler: Çocuklar, Kronik Hastalıklar, İnsan Çizimi, Aile Çizimi, Psikolojik İyi Oluş

To all ill children who passed away while struggling for their survival,

to my only and lovely uncle who passed away last year…

'Mücadeleniz çok güzeldi…'

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CHAPTER 1

INTRODUCTION

Childhood chronic diseases and their treatments cause various consequences affecting many areas of the daily lives of children and parents (Yağcı-Küpeli et al., 2019). Having a chronic illness may be a life-threatening issue, and it is experienced as a loss and grief process for children and surrounding people (Oğuzhan & Erden, 2012). In addition to mourning for several loses caused by the illness, prolonged and worsening situations during the treatment process may increase children's anxiety about death (Saday-Duman, 2014). Also; ambiguous circumstances regarding the illness and treatment, and attempts that children have no control and knowledge about, have adverse effects on children's emotions (Erden, 2002).

Hospitalization may also be a difficult experience for chronically ill children because of the symptoms of illness, difficulties regarding the withdrawal from the family, changed daily routine and painful situations even if there are factors affecting hospitalized children positively such as age-appropriate play opportunities or maintaining family connection (Costa & Morais, 2017; Shields, 2001).

As numerous studies demonstrate, trying to deal with a chronic disease and hospitalization has psychological effects on children in addition to physical pain and difficulties. Psychological well-being of the ill children and their families is one of the areas affected by chronic illnesses and treatment processes (e.g. Pinquart, 2017; Wakefield et al., 2010). As Schonfeld and Lewis (1995) suggested professionals should aim to make the life of the child not only longer but also of better quality of (as cited in Saday-Duman, 2014), quality of life and psychological well-being of ill children should be improved in addition to their medical treatments. Psychosocial

support for children, their families, surrounding people and health-workers is important for overcoming the illness and treatment process in the best possible manner (Oğuzhan & Erden, 2012). Therefore; it is believed that conducting research in understanding the well-being of chronically ill children might be helpful for developing psychosocial support interventions and improving psychological well-being of children who are struggling with serious health problems.

1.1 Psychological Well-Being

There are essentially two ways of looking at the effects of being chronically ill, the first is how these conditions affect general well-being (e.g. Trzepacz et al., 2003; Noll et al., 1996), while the second approach involves the more typical paradigm of looking at the negative psychological outcomes of the condition (for e.g. Sibulwa et al., 2019). We will first look at the first perspective.

Psychological well-being (PWB) can be defined as the positive functioning through both inter- and intra-individual levels; that is, being related to others together with attitudes about the self, constitute psychological well-being. Even though there are some suggestions regarding what being psychologically well means, there is a need to establish well-validated models of psychological well-being (Burns, 2016). Burns mentioned two widely used models of psychological well-being, which are Ryff's model of PWB and Ryan and Deci's self-determination theory (SDT) (2016). Self-determination theory (Ryan & Deci, 2000, 2001) focuses on the needs of autonomy, competence, and relatedness (as cited in Burns, 2016). Similarly, Ryff's (1989) theoretical model of psychological well-being consists of six different

dimensions and these dimensions are self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life and personal growth.

Therefore; psychological well-being is a comprehensive and broad concept, and it has been studied using different measurement and dimensions in the literature. For example; Mangelli et al. (2002) suggested that chronic illness affects psychological well-being, and in their study they used Ryff's model of PWB and measured pain, disease activity, depression, anxiety and disability to reflect well-being. The literature regarding childhood chronic illnesses and psychological well-being include diverse ways of measurement for PWB and will be discussed in the following sections.

1.1.1 Measurement of Psychological Well-Being in Pediatric Psychology

Psychological well-being of chronically ill children and adolescents was studied through projective drawing techniques (e.g. Failo et al., 2018; Dolidze et al., 2013), interviews and thematic analyses (e.g. Sibulwa et al., 2019; Punpanich et al., 2011), scales and questionnaires (e.g. Salewski, 2003; Schwartz & Drotar, 2009; Law, 2002), or mixed-method design like that Zhu and Winkel (2014) using both questionnaire and interviews.

Researchers have used different ways of measurements for psychological well-being to examine several constructs or dimensions. Many studies investigated internalizing and externalizing symptoms or self-concept of children. To illustrate; Law (2002) found that anxiety and depression were negatively correlated to positive well-being dimension of psychological well-being, and he reported that consistency in the illness representations of diabetic adolescents and their mothers was assumed

to benefit psychological well-being. In addition to the assessment of symptoms, psychosocial (e.g. Sibulwa et a., 2019; Wakefield et al., 2010) or emotional well-being (Trzepacz et al., 2003; Noll et al., 1996), and peer relations (Buissonnière-Ariza et al., 2018) were among some factors investigated in relation to psychological well-being. According to a systematic review of Wakefield et al. (2010), children completing cancer treatment experienced both positive and negative psychosocial outcomes. For example; they might have high self-worth and improved social behavior, on the other hand, they might experience lower levels of psychological well-being and self-esteem or higher anxiety. To sum up; psychological well-being is a broad concept, and has different ways of measurements in the literature.

1.1.2 (Health-Related) Quality of Life of Ill Children

Quality of life and health-related quality of life are broad concepts being examined in well-being studies conducted with chronically ill children. Quality of life has many definitions but World Health Organization Quality of Life Group (WHOQoL) defined it as 'individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.' (1995, p. 1405). The group suggested that quality of life is a broad, multidimensional concept and includes six broad domains (physical domain, psychological domain, level of independence, social relationships, environment and personal beliefs like religion or spirituality) (WHOQoL, 1995). It is believed that quality of life of children has several differences from adults' in terms of assessment. For example; physical functioning could include being able to feeding themselves or activities like playing for children

while it includes working or cleaning the house for adults (Sezer, 2012). Sezer (2012) used Pediatric Quality of Life Inventory in order to assess quality of life of ill children, and she found differences between perceived quality of life of children with epilepsy and children with liver, hearth and leukemia diseases. Durualp et al. (2010) also found that children with chronic illnesses had lower quality of life scores (for physical and psychosocial health subtests) than healthy children according to evaluations of both children and their parents.

Health-related quality of life is another concept widely used in studies regarding childhood chronic illnesses and well-being. It was defined as a multidimensional concept including physical, emotional, mental and social behaviors of the ill person and as the perception of ill person about the effects of the illness and treatment (Bradlyn et al., 1996; Bradlyn, 2004; as cited in Yağcı-Küpeli & Küpeli, 2015). Several quality of life inventories (e.g. German quality of life questionnaire (KINDL) (Ravens-Sieberer & Bullinger, 1998)) and inventories specific to some illnesses (e.g. Pediatric asthma quality of life questionnaire (Juniper et al., 1999); Pediatric cancer quality of life inventory (Varni et al., 1998)) have been used to assess quality of life of children struggling with chronic illnesses (as cited in Yağcı-Küpeli & Küpeli, 2015). To illustrate, Clarke et al. (2010) examined health-related quality of life of children with leukemia after haemopoietic stem cell transplantation using Pediatric Quality of Life inventory (Varni et al., 2001); and they found that these children scored lower in all domains of health-related quality of life than non-transplanted group and population norms.

In light of these studies; it can be proposed that quality of life of children with chronic illnesses were affected negatively by their illnesses and related factors. Also;

it can be suggested that psychological well-being could be thought as a component of quality of life concept; similarly Barthel et al. (2018) assessed psychological well-being as a dimension of health-related quality of life in their study. They found that health complaints and mental health problems were negatively correlated with psychological well-being while good disease control was associated with better psychological well-being in chronically ill children.

In accordance with quality of life and psychological well-being of children, several psychological effects of chronic illnesses and hospitalization could be experienced by ill children and their families. It is believed that gaining knowledge about the possible psychological challenges and strengths these children and families experience would be helpful for developing psychosocial interventions and improving their psychological health.

1.2 Psychological Effects of Childhood Chronic Illnesses

In general, children and their families' psychological and physiological responses to serious illness, pain or treatment procedures could be defined as pediatric medical traumatic stress (PMTS) and it could include post-traumatic stress symptoms such as re-experience or avoidance (Kazak et al., 2006). According to pediatric medical traumatic stress model, not only the ill children but also their families, health workers and peers are affected by PMTS; and there are individual differences in psychological outcomes even if there may be also common responses children and families give to these subjective experiences (Kazak et al., 2006).

Sibulwa et al. (2019) investigated that the adolescents living with cancer had physical, psychological and social problems which might actually affect each other.

These problems that the adolescents reported themselves were related to physical challenges, social isolation, helplessness or self-concept (Sibulwa et al., 2019). Similarly; hospitalized children whose ages were between five and nine were shown pictures regarding the hospitalization experiences, and they were asked to tell a story for each picture. Children's stories primarily included the theme of being alone; and they also mentioned about uncertainty, being scared of what they know and not being at home as the outcomes of being alone (Wilson et al., 2010). They also reflected good possibilities regarding the hospital like getting better, playing or learning the hospital equipment (Wilson et al., 2010). Similar themes were examined also in the interviews including drawing and story-telling procedures with children aged between five and twelve and being treated for recurrence of cancer (Arruda-Colli et al., 2015). The uncertainty, perception of threat and loneliness were among the themes of children's reports (Arruda-Colli et al., 2015).

1.2.1 Behavioral Problems or Externalized Problems

Psychological difficulties chronically ill children might have were examined by researchers from several fields such as child psychiatry, clinical psychology, health psychology or nursing. İnal-Emiroğlu and Pekcanlar-Akay (2008) suggested that having a chronic illness in childhood is a risk factor for emotional difficulties even if there is no universal consequence for all ill children. For example; regarding the behavioral problems, Rukabyarwema et al. (2019) found that physically ill children had behavior problems in Rwanda, a country from African region. A meta-analytic review also showed that children with asthma had behavioral difficulties more than healthy children, and especially severe asthma should be considered as a risk factor for behavioral problems (McQuaid et al., 2001). A study conducted in

Ankara, Turkey supported previously mentioned studies in terms of its results regarding behavioral difficulties. According to Yıldız-Akkuş and Bütün-Ayhan (2020); behavioral problems were investigated in children with chronic diseases, and children with chronic kidney failure had more behavioral problems than children with diabetes and epilepsy. It was considered that this might be related to the fact that there had been much more restrictions and recurrent painful therapeutic attempts in the former (Yıldız-Akkuş & Bütün-Ayhan, 2020).

1.2.2 Internalizing Problems

In addition to behavioral difficulties; the effects of childhood chronic illnesses on internalizing symptoms like anxiety and depression has been examined by many studies. To illustrate; hospitalized children whose ages were between six and ten had significantly higher state anxiety than non-hospitalized children even if their trait anxiety levels were not significantly different (Delvecchio et al., 2019). Similarly; Hong-Kong Chinese children aged 7-15 and hospitalized for treatment of cancer reported high state anxiety, and nearly all children exhibited sadness and worry in different degrees (Li et al., 2009). As severity of illness increases, the anxiety and fear of children with cancer also increase (Saday-Duman, 2014); and anxiety is an emotion children and families have to deal with especially in terminal phase of the illness (Erden, 2002). In addition to difficulties children experience with anxiety; Altay et al. (2017) suggested that it is possible to decrease state anxiety of children undergoing treatment of cancer by using drawing, writing and story-telling techniques.

Depression was also found to be higher in chronically ill children than in their healthy peers; and chronic fatigue syndrome, fibromyalgia, cleft lip and palate, chronic headaches and epilepsy were the situations that the differences were strongest (Pinquart & Shen, 2010). Children with cancer had also significantly higher depression scores than their healthy peers (Çavuşoğlu, 2001; Sezgin & Ekinci, 2006; Durualp & Altay, 2012). Unfortunately, the increased risk of having depression and anxiety persisted beyond childhood; that is, associations of childhood chronic illnesses and depression and anxiety in adulthood were proved especially for cancer (Secinti et al., 2017).

However; there are also contradictory findings regarding depression and anxiety levels of chronically ill children. For example, a longitudinal study showed that depression and anxiety scores of children with cancer were low, and also these scores decreased over time while hope and quality of life levels increased (Germann et al., 2015). Also; an effectiveness study interestingly showed no decrease in depression and negative emotions after their intervention because of the floor effect; that is, their experimental and control groups both had very low scores on depression and negative emotions (Chaves et al., 2016). These contradictory results were explained by suggesting that the life-threatening illnesses may cause denial in patients; and as a more supported explanation, this may be a methodological artifact since most of the research was conducted with cancer survivors, after they succeed in recovering (Pinquart & Shen, 2010). In addition to denial; Adaletli (2009) suggested that the symptoms of depression might be overlooked because of their similarity to symptoms of the cancer and side effects of treatments. Therefore; there might be

contradictory results in research or overlooked symptoms in the field regarding the depression and anxiety of chronically ill children.

From a more general point of view; most of children with chronic illnesses did not experience clinical symptomatology even if they had elevated risk of distress (Barlow & Ellard, 2006). Similarly; diabetic children mostly maintained psychological well-being at similar levels to their peers' even if they might have risks of psychosocial difficulties (Reynolds & Helgeson, 2011).

These contradictory outcomes or complex psychological reactions might also be seen during the end of the treatment of a life-threatening illness. Children completing cancer treatment had negative outcomes like lower psychological well-being, lower self-esteem or increased anxiety as well as positive outcomes such as improved mental health, high self-worth or good behavioral conduct while preparing for becoming a cancer survivor rather than a patient (Wakefield et al., 2010).

The diversity of the psychological outcomes could be explained by several factors. Erdoğan and Karaman (2008) reported that factors related to children, families and the illness affected children's reactions to the illness. These factors were developmental level, previous personality and adjustment ability of children, psychological responses to separations, quality of relations with parents, social support systems, severity of illness, restrictions caused by the illness and the meaning of the illness for children and their families. Similarly; suggested correlates of psychological adjustment of children to their illnesses were child characteristics, familial and disease-related risk factors; and child characteristics had the strongest

correlation with psychological adjustment of children among those risk factors (Lavigne & Faier-Routman, 1993; as cited in Barlow and Ellard, 2006).

1.2.3 Self-Concept

Psychological and physical consequences of cancer affected also how adolescents perceive themselves (Sibulwa et al., 2019). Therefore; possible changes in self-concept might be among the effects of illnesses on children. Şen-Beytut et al. (2009) asked hospitalized children to draw what came to their mind when they heard the word 'hospital', and they suggested that they had lower levels of self-esteem. Pinquart (2012) also indicated that chronically ill children had lower self-esteem levels even if there were mostly small differences. In his meta-analysis, he found that children with chronic fatigue syndrome and chronic headaches, females and adolescents had strongest reductions in self-esteem levels (Pinquart, 2012). Also, low self-esteem was found to be among predictors of worse quality of life in young adulthood for cancer survivors (Langeveld et al., 2004), so it might be an important contributor of psychological well-being and it should be mentioned about while examining the psychological effects of chronic illnesses.

Children's drawings are important in terms of being a tool of reflecting their internal representations regarding the self or their environments so self-concept of ill children has been measured through their drawings in several researches. For example; hospitalized children with congenital heart defect drew themselves significantly smaller, used fewer colors than non-hospitalized children, and they omitted body parts like arms or hair while drawing themselves (Dolidze et al., 2013); which might be a reflection of their lower self-concept. Similarly; draw a person test

was used to assess ill children's self-representations, and it was found that children with cancer had significantly more negative self-representations than children with rheumatological conditions or cystic fibrosis (Failo et al., 2018). Failo et al. (2018) believed that some factors specific to cancer such as hair loss, isolation or worsening physical functioning might cause these children to view themselves as less adaptive. This result coincides with the finding of Yağcı-Küpeli et al. (2019) that cancer damaged all areas of functioning more than all other childhood chronic diseases. Results regarding the specific impairments of cancer might be considered along with other findings about effects of illness-related factors. To illustrate; illnesses limiting the daily life caused lower self-esteem than non-limiting illnesses in the follow-up study of Huurre and Aro (2002). Also; as treatment intensity increased, anxiety of childhood cancer survivors also increased and their positive health beliefs decreased (Kazak et al., 2010). When these findings are considered together, it is comprehensible that cancer symptoms and treatment might have more serious effects on self-concept of children and adolescents.

1.2.4 Social and Academic Difficulties

In addition to psychological difficulties and effects on self-concept, social difficulties arise from illness-related factors like physiological symptoms or treatment effects. Adolescents and young adults with cancer reported their difficulties about peer and family relationships' maintenance and development, peer support and intimate relationships in addition to difficulties in employment, education and financial stability (Warner et al., 2016). In another study; quality of peer relationships predicted depression, anxiety and anger in youth with chronic pain (Buissonnière-Ariza et al., 2018). The finding that association between pain severity

and functional impairment was moderated by relationship quality (Buissonnière-Ariza et al., 2018) indicates the importance of this issue especially for adolescents and youths.

The educational outcomes of ill children might also be negatively affected by illness and treatment processes. According to Layte and McCrory (2013); children with chronic illnesses did worse in reading and math tests, and there was an indirect effect of school absence on the association between chronic illness and math scores. Similarly, children with chronic illnesses had worse performance in math than same-aged healthy children (Martinez & Ercikan, 2009). When school-age children are hospitalized; their educational achievements are impaired, and this may cause psychological difficulties especially when there are long-lasting hospitalization periods. Therefore; hospital schools gain much importance in order to protect the health and education rights of children (Gültekin & Baran, 2005).

1.2.5 Developmental Considerations

All results mentioned above are more understandable when developmental factors are examined. According to Erikson (1963); children strive for mastery skills, exerting dominance on the environment and feeling competent at the ages of six to twelve. In later years (between ages of 12 and 20); they experience a role confusion, try to form a self-identity and peer groups gain importance (as cited in Abrams et al., 2007). While dealing with these developmental issues, it is possible to have psychological and/or social problems after being diagnosed with a life-threatening illness. As Houghton says, they are often ‘ordinary children facing extraordinary challenges’ (2005, p. 114). That is; it is possible that their feelings of mastery over

the environment, and their self-definitions are challenged by these life threatening circumstances.

It follows that; these developmental issues will be relevant to factors of psychological well-being discussed above (self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, personal growth) (Ryff, 1989). Therefore; it can be suggested that childhood chronic illnesses may affect children and adolescents' psychological well-being and mastery of developmental tasks negatively.

1.2.6 Gender-Related Effects

Although the gender differences in emotional development is not among the primary issues of the present study, it is important to consider them because it is known that there are diversities among different ages and genders in terms of emotion recognition, regulation or expression (e.g. Maguire et al., 2016). For example; it is found that females are better in emotion recognition or facial expression processing than males (Tottenham et al., 2011; McClure, 2000). The possible reasons behind these gender differences may be biological factors, social developmental factors like learning behaviors which are consistent with gender-roles and social learning like modeling (Chaplin, 2015). Therefore; culture, the context children live in and gender roles and expectations are also important factors for children's behaviors regarding their emotions. Both parents' and children's gender affect the emotion socialization and expression (Kennedy Root & Denham, 2010), and boys might be punished for their sadness or fear by their fathers (Garside & Klimes-Dougan, 2002) while girls experience punitive responses to their anger

expression from their parents (Chaplin et al., 2010). In Turkish culture; these gender differences may be observed because of the tendency that boys are more valued than girls due to utilitarian reasons like carrying on the surname or supporting family in future (Kağıtçıbaşı, 1981, as cited in Fişek, 1983). Although the long term follow up of this study (Ataca et al., 2005) indicated that this tendency was not as pronounced when measured 25 years later, psychological needs gained more importance thus the value of boys compared to girls was not the same (Ataca et al., 2005; Duman, 2016). However, it was reported that males still go to the school more than girls in Turkey, girls are expected to do more housework and of the children with special needs able to get schooling 62% are boys, while only 37% are girls (Ergün & Arık, 2020). Traditional gender roles and increasing religious emphasis disadvantage girls affording them lesser opportunities and power in society than boys (e.g., Bolak, 2002, as cited in Göncü et al., 2012). Thus, even though "value for children" for the two genders may have changed, gender differences in how children are treated are still observed in many areas. Therefore; cultural effects should not be overlooked while gender differences in emotional well-being are examined.

Gender differences in emotion expression are indicated also in a meta-analytic review which suggests that girls show significantly more internalizing emotions than boys while boys express externalizing emotions more than girls although the differences are small (Chaplin & Aldao, 2013). Age is also an important factor because the difference about externalizing emotions might be different (girls > boys) in adolescence (Chaplin & Aldao, 2013). Especially between the ages of 6 and 12, boys show more psychological problems than girls (Zahn-Waxler et al., 2008); and the results of a prevalence study conducted in Turkey has

shown that boys had more psychological problems than girls in the general population sample (Başgül et al., 2011). Although there is a debate regarding the reasons of these gender differences, one of the suggested reasons is that boys and girls respond differently to diverse risks and there is an interaction effect (Zahn-Waxler et al., 2008). Another reason proposed for these gender differences is that reactions of the environment differ according to child gender although they experience similar situations. That is; environmental factors combined with genetic factors are influential (Lahey et al., 2006). To give an example, for teacher student relationships, it has been reported that girls experience more closeness and boys are reported to have more conflicted relations with teachers (Acar et al., 2019). Furthermore, research has shown that supportive relationships reduce mental distress through direct effects and by moderating the mental reactions to traumatic events (Barber, 2001; Betancourt et al., 2012; Dimitry, 2012). Gender differences in terms of reactions to severe trauma like war have been reported in the literature although the findings are not consistent (Betancourt et al., 2012; Dimitry, 2012). Thus, it would be consistent to expect the two genders to have a different experience when faced with a trauma such as chronic illness.

Similar results regarding the gender differences on emotional reactions are demonstrated also for children with chronic illnesses. Desjardins et al. (2019) showed that female brain tumor survivors (mean age is 11) have more anxiety or depression symptoms than males. In addition; girls use rumination as a coping strategy more than boys (Hampel et al., 2005), and hospitalized girls have more regression scores than hospitalized boys (Kabukçu Başay et al., 2020). However; there are also results showing that males have increased risk of experiencing some

psychological difficulties. For example; a meta-analysis shows that children with chronic illnesses have elevated externalizing and total problems if the sample includes mostly males (Pinquart & Shen, 2011). In addition; hospitalized boys had higher anxiety scores on Child Drawing: Hospital than girls (Koçyiğit-Özlü, 2015). However, there are also results showing that emotional symptoms of chronically ill children did not differ by gender (Fettahoğlu et al., 2020; Çavuşoğlu, 2001; Glazebrook et al., 2003). Because of the mixed results, this issue should be considered and continued to be examined taking emotional development into consideration.

1.2.7 The Experiences of the Other Family Members

It is a well-known fact that outcomes of pediatric chronic illnesses affect not only the ill children but also other family members (Er, 2006). As can be expected, serious illness in any member of the family, especially in ayoung child has a very disrupting effect on the family. According to the psychosocial typology of illness developed by Rolland (1987), family system is affected by the illnesses that can be categorized into four characteristics which are onset, course, outcome and incapacitation.

First, that the illness has acute onset or gradual onset affects the adaptation of the family. The family has to deal with the changes more rapidly if the illness has acute onset, and families being more tolerant, more flexible to role changes and having problem management skills are more advantegous in dealing with acute onset illnesses (Rolland, 1987). Second; the course of the illness is important for psychosocial functioning of the family, and it can be progressive, constant or

relapsing. Progressive course of the illness may cause families to have decreased functionality, role changes and emotional exhaustion. Illnesses with constant course may result in exhaustion on family members although the illness has no biological changes and there are no additional role changes. Relapsing illnesses (like asthma) have uncertain time periods when symptoms are present or absent, and this ambiguity is difficult for families and requires flexibility in family systems (Rolland, 1987, 1994, as cited in Gökler, 2008). Third; the psychosocial effects of illnesses on families are affected by the outcome of the illnesses. The expectations of family members regarding whether the illness has a fatality risk is an important factor. This possibility of death may cause overprotection by family and secondary gains for ill person, especially for childhood chronic illnesses like hemophilia or asthma (Rolland, 1987). If the illness is expected to be terminal, the grief process begins even when the patient is alive (Gökler, 2008). Finally, the degree of incapacitation (e.g. decreased movement ability in muscle diseases) is also important for the stress level experienced by the family members (Rolland, 1987).

In addition to these illness characteristics; the time phases of illness is another dimension of psychosocial schema of illnesses. These developmental phases of the illness are crisis, chronic and terminal phases; and each of them has different difficulties and necessities. First, the crisis phase begins with the symptoms and includes the diagnosis period. The family tries to deal with symptoms, adapt to hospital issues and establish relationships with health workers. Also, families experience the loss of the identity of pre-illness family (Rolland, 1987). Second; the chronic phase is the period between the adjustment process and the last phase including the death issues. This phase is also named as ‘the long haul’ or ‘day-to-day

living with chronic illness' (Rolland, 1987, p. 4), and families try to maintain their lives with the illness and deal with the increased uncertainty. Third; the terminal phase is the period where death seems inevitable, and families struggle with the issues like separation, grief or recommencement of family life after the loss (Rolland, 1987).

Rolland (1987) also discusses the centripetal and centrifugal phases in the family life cycle being related to chronic illnesses. In the centripetal phases (e.g. when a newborn joins the family), family members focus on the common issue in the family and the boundaries with the environment consolidates while internal boundaries within the family loosen. In the centrifugal phases (e.g. when the child becomes an adolescent), boundaries with the environment loosen while the boundaries between family members become more clear (Combrinck-Graham, 1985, as cited in Gökler, 2008). Chronic illnesses cause families to experience the centripetal phase (Gökler, 2008). According to Rolland (1987); if the onset of the illness occurs in a centrifugal phase of the family, the usual developmental needs of achieving autonomy and separation are prevented. If the onset of the illness occurs in a centripetal phase of the family, the duration of this phase may be more than needed and the family may stick in this developmental phase. Therefore; the illness characteristics, time phases of the illness and components of family life cycle, and the interactions of these dimensions are important factors while the psychosocial functioning of the family members is examined in the systemic approach.

In addition to the systemic approach, the research investigating the psychological symptoms of family members may be included in this part discussing the experiences of other family members. There may be several effects like traumatic

stress or internalizing symptoms, and several factors may lead to elevated risk of these psychological outcomes in parents. According to Norberg et al. (2005); parents of children with cancer experienced traumatic stress symptoms (intrusion and arousal) especially during the treatment process, and low education level was associated with elevated risk of stress symptoms after the treatment. This was confirmed by the findings of high incidence rates of posttraumatic stress symptoms among mothers and fathers of children with cancer in treatment (Kazak et al., 2005). Parents of epileptic children also had a diagnosis of PTSD (10% of the sample) or partial PTSD (37.3% of participants) according to DSM-5 criteria, and mothers had elevated risks compared to fathers (Carmassi et al., 2018). In a more heterogeneous sample including different chronic illnesses; nearly 42% of parents reported psychological distress while 13.2% had PTSD diagnosis with all criteria, and 28.6% meeting all criteria except one symptom (Gudmundsdóttir et al., 2006). Gudmundsdóttir et al. (2006) also suggested that results regarding psychological distress were affected by unexpected changes for the family like interruptions in daily routines rather than the actual threat of the disease. Mothers of children who had undergone haemopoietic stem cell transplantation (HSCT) reported poorer mental well-being than mothers of non-HSCT children and population, and they mentioned about financial concerns (Clarke et al., 2010). Therefore; financial concerns, unforeseeable changes the disease causes in family life and daily routine are among factors influencing psychological difficulties of parents.

In addition to posttraumatic stress; depression and anxiety symptoms of parents were investigated by several studies. According to Toros et al. (2002); depression and anxiety scores of parents of children with chronic illnesses were

significantly higher than parents of healthy children. Similarly, Tuna et al. (2012) found that parents of ill children had higher depression scores than parents of healthy children even if there was no significant difference in terms of anxiety scores.

There may be additional risk factors for parents' negatively affected psychological well-being. According to Erdem et al. (2013), mothers of children with chronic illnesses experienced high burden of care, and this perceived burden of care was influenced by the age and additional health problem of the child, health problems of the mother, financial difficulties and the necessity of caring for other family members. In addition to these factors; being single parent of children with cancer constituted cumulative stresses for parents (Granek et al., 2012). In cases where cancer diagnosis of children recurred, caregivers reported they felt frustrated, threatened and loss of control (Arruda-Colli et al., 2015). Therefore; these additional risks also should be considered while examining effects of childhood chronic illnesses on parents.

Even if studies mentioned above mostly focus on the effects of childhood chronic illnesses on parents' psychological well-being, it is important to consider the possible bidirectional effects. For example, Noll et al. (2000) found that increased depression and anxiety scores of parents were associated with worse psychosocial functioning in children with juvenile rheumatoid arthritis. Beyond the correlations between symptoms of parents and children, it is important to view the psychological difficulties from a family perspective including cyclic transformational relations. Gökler (2008) suggested that family members should be considered as parts of a system in socioecological context while examining the reactions of families, and subjective perceptions regarding the illness and socioecological factors predicted

psychological functioning of children and parents. The finding that the cohesion and hierarchy in the family system transformed since the diagnosis according to perceptions of children with cancer supports the need for comprehensive assessment (Louchamp, & Sabatier, 2018).

Moreover, it was demonstrated that not only parents but also siblings of children with chronic illnesses struggled with psychological difficulties. They had risks for negative psychological outcomes especially if the disease affected daily functioning (Sharpe & Rossiter, 2002), and they were so distressed in the first weeks of the diagnosis (Houtzager et al., 2004). However, there are mixed results regarding the siblings' experiences of anxiety, depression, behavioral adjustment, peer and school problems (Barlow & Ellard, 2006), and actually they have a high adjustment ability through time (Houtzager et al., 2004).

In the light of all these studies regarding familial issues; it can be said that chronic illnesses influences the whole family system, and parents and siblings of chronically ill children may be affected negatively by the illness and treatment process. Therefore, their psychological reactions should not be overlooked while assessing their needs and planning psychosocial interventions.

1.2.8 Protective Factors and Possible Positive Outcomes

Because it is suggested that many families are getting through quite well (Kazak et al., 2006), and there are mixed results about some psychological effects of chronic illnesses; it is believed that the protective factors and issues which cause children and families cope with the difficulties better should be discussed. First of all, families may experience post-traumatic growth. Posttraumatic growth is a broad

concept and described as positive changes that happen because of the challenge with traumatic events (Tedeschi & Calhoun, 2004). According to a study conducted with cancer survivors, it was found that there was an association between posttraumatic growth and the age of children at time of diagnosis. That is; cognitive maturation was needed to process the traumatic issue (Koutná et al., 2017). When parents of children with cancer or type 1 diabetes were assessed in terms of posttraumatic growth (PTG) three years after the diagnosis, it was found that 62.7% of parents had minimum to a moderate level of PTG, and PTG total scores was higher in parents of children with cancer than parents of children with diabetes (Hungerbuehler et al., 2011). Also; 37.1% of parents of children who were admitted to intensive care unit (ICU) showed at least medium levels of PTG six months after the hospitalization in ICU (Rodríguez-Rey & Alonso-Tapia, 2019). Rodríguez-Rey and Alonso-Tapia (2019) suggested that resilience indirectly impacted PTG through positive emotions so increasing positive emotions and resilience of parents should be encouraged.

Benefit finding is another concept discussed in the literature regarding possible positive outcomes of the illness and treatment process. Helgeson et al. defined benefit finding as 'the positive effects that result from a traumatic event' (2006, p. 797). According to their meta-analysis; benefit finding was associated to better well-being, less depression and more avoidant and intrusive thoughts regarding the stressful event (Helgeson et al., 2006).

In case of chronically ill children; Chaves et al. (2013) found that benefit finding was positively correlated with some variables like positive affect, satisfaction with life, optimism and individual strengths, and children with life-threatening illnesses had highest benefit-finding scores at moderate severity of the illness rather

than low and high severity. It was also investigated that an intervention in which a wish of children with serious illnesses was granted increased benefit-finding of children according to parental reports (Chaves et al., 2016).

Germann et al. (2015) suggested that hope partially mediated the relation between anxiety/depression and quality of life. Also, hope was positively associated with coping efficacy of mothers of children with Duchenne/Becker muscular dystrophy, probably by affecting appraisals of uncertainty according to Bell et al. (2019). When previously mentioned findings about the negative effects of uncertainty are taken into consideration, it may be said that hope is helpful for mothers to cope with psychological outcomes of disease. Vicarious hope of parents, the hope of parents for the future of their children, was among predictors of child mental health and emotional impact of parents of children with cystic fibrosis (Wong & Heriot, 2008).

In addition, empathy and effective communication regarding illness or hospitalization help children and parents cope better with these stressful conditions. Being aware of possible psychological reactions of ill children and their family members, being honest and supportive and giving meaningful age-appropriate explanations may let children and their parents deal with their anxiety (Gültekin & Baran, 2005). Inadequate and unclear information usually lead to unrealistic scenarios about illness produced by parents, so parents should be informed properly (Gökler, 2008).

It would be important to mention also about the active participation of children during the treatment process and communication between families and

health workers. Children and adolescents struggling with diagnosis or treatment with their serious illness should be given information they need, and they should be incorporated into decision processes regarding their own treatment especially beginning with age of seven (Demir-Küreci & Örnek-Büken, 2016). According to Demir-Küreci and Örnek-Büten (2016), this incorporation enables them to have mutual trust and collaboration and adjust better to treatment. Gaining assent and giving necessary information in a supportive and empathetic way would be important also for protecting children's rights of expressing their own views about issues related to them and of accessing better health condition and services, defined by the Convention on the Rights of the Child (United Nations Children's Fund UK (UNICEF UK), 1989).

Social support and family cohesion are other issues that have been examined as factors helping ill children and their parents function well. Gökler (2008) suggested that family support significantly predicted posttraumatic stress symptoms of ill children while social support from peers and teachers predicted depressive symptoms of children. This was confirmed by the finding that adolescent and young adult survivors of cancer had difficulties with social relationships and they need support from family and peers (Kent et al., 2012, as cited in Warner et al., 2016). In addition, a longitudinal study investigated that the relationship between optimism and adjustment of the children and adolescents with cancer was mediated by the social connectedness with parents and peers (Ehman et al., 2019). Therefore; it could be said that support of friends and connectedness with their families may be protective factors for psychological functioning of children with chronic diseases.

Jackson et al. (2009) showed that the stage of illness process is an important factor for social support needed by families. They followed up parents of children with cancer for two years, and suggested that parents actually used internal familial modes of coping. That is, they were using previously known ways of coping and social support had a contributive effect instead of being a major factor (Jackson et al., 2009). Also, lack of social support was found as a predictor of impact of disease on the family at the diagnosis time while it was not related to distress or trauma symptoms of parents of children with chronic diseases (Gudmundsdóttir et al., 2006). Therefore; the factors affecting the relationship between social support and psychological outcomes should be taken into consideration while planning interventions.

1.3 COVID-19 and Possible Effects on Psychological Well-Being

The fact that COVID-19 pandemic emerged while the present study was proceeding created the need to discuss possible psychological effects of this pandemic on children and families. There have been reports of serious negative effects of pandemics on people and countries throughout the history; and these are health, economic, social and security effects (Rutherford & Chu, 2017). Psychosocial effects of pandemics have been discussed and the case of the COVID-19 outbreak appears similar to previous pandemics. Children are negatively affected by school closures, changed eating and sleeping habits, absence of outdoor activities; and elevated risks of child abuse, family violence and inequities experienced by underprivileged children (Ghosh et al., 2020). In addition, children who need special education and other treatments have elevated risks of not being able to receive treatments (Singh et al., 2020). While increased use of internet may lower well-being

of children (Adıbelli & Sümen, 2020), the media tools can also be a source of psychosocial support for families and peers during quarantine periods (Wigg et al., 2020).

These effects suggested by review studies has been confirmed by some studies that mostly utilized online interviews (e.g. Segre et al., 2021) and online surveys (e.g. Xie et al., 2020; Yeasmin et al., 2020). For example; 22.6% of 1784 school-aged children showed depressive symptoms, and 18.9% of them had anxiety symptoms; which were higher than the prevalence rates in China (Xie et al., 2020). Similarly; anxiety and depression symptoms were reported by Italian children and adolescents (6-14 years) (78% and 43.9%, respectively) (Segre et al., 2021). Also; prevalence rates of depressive symptoms, anxiety symptoms and comorbidity of them were seen as 43.7%, 37.4% and 31.3, respectively, among a high sample (8079 adolescents) (Zhou et al., 2020). Apart from children's own ratings, parental reports also reflect the difficulties and challenges children have been dealing with during this pandemic. 85.7% of 1143 parents, whose children were at ages between 3 and 18, suggested that they perceived children's emotions and behaviors had changed during the quarantine in Spain and Italy (Orgilés et al., 2020).

The risk factors affecting the incidence or extent of these possible effects gain importance in terms of prevention and intervention studies of professionals. For example, infection of a family member or friend with COVID-19 was associated with increased anxiety of children (Duan et al., 2020). Also, the fact that children and adolescents' graduation was affected by the pandemic was related to elevated depression while problem-focused coping style was associated with decreased depression in China (Duan et al., 2020). Social isolation and loneliness were also

among risk factors for depression of children and adolescents, and duration of being lonely had worse outcomes than intensity of loneliness (Loades et al., 2020). According to the study of Zhou et al. (2020); being female and studying at higher grades of school were risk factors for depression and anxiety of adolescents. Psychological difficulties were increased as awareness of coronavirus disease decreased among adolescents (Zhou et al, 2020). In addition to these factors; children living in urban areas were affected more than children living in the rural areas in terms of psychological problems (Yeasmin et al., 2020), and there were more severe situations when coexistence of family became problematic in quarantine period (Orgilés et al., 2020).

Familial effects should not be overlooked while discussing the effects of COVID-19 and quarantine. Parents' psychological well-being declined during restrictions according to their daily reports (Gassman-Pines et al., 2020). Families reported job losses and decreased income, together with increased burden of care (60%, 69% and 45% of participants, respectively); and their difficulties were associated with lower psychological well-being (Gassman-Pines et al., 2020). Parents who are frontline health workers or single have additional difficulties as in the example where basic needs like breastfeeding become a risk for the baby of health worker mothers, and children of these families struggle with unique issues (Ghosh et al., 2020).

The effects of stress and challenging issues on the family should be considered as relational rather than unique consequences. For example, parental difficulties were associated with higher stress, and parental stress was related to children's behavioral and emotional problems (Spinelli et al., 2020). This mediator

role of parental stress may be an example of the stressors' effects on the whole family.

It is also possible that families struggling with a chronic disease have unique problems during the COVID-19 pandemic. Having a chronic disease like diabetes, immune problems, adrenal insufficiency, lung diseases, cancer, neurologic problems or renal failure might be a risk for severe morbidity or mortality which is associated with COVID-19 in children (Evliyaoğlu, 2020). In addition to their elevated risk of worse physical health conditions, they might be also more susceptible to poorer psychosocial functioning. For example; it was found that children with chronic lung disease and their parents showed more anxiety about COVID-19 than healthy children and parents, and parents of children with chronic diseases used more mature coping strategies (problem-focused coping) to deal with psychological difficulties (Ademhan-Tural et al., 2020).

To sum up; although medical professionals have shown that children have minimal risks to be damaged physically from COVID-19, they are highly vulnerable to negative psychosocial effects of the pandemic-related conditions (Singh et al., 2020; Ghosh et al., 2020). Therefore; interdisciplinary prevention and interventions for these effects gain much importance for psychological well-being of children and parents, and it should not be overlooked the fact that psychological outcomes of the pandemic might affect results of scientific studies performed during this process.

1.4 Children's Drawings

As can be noted from the above discussed literature utilizing drawings in understanding the well-being or psychological effects on ill children has been a

somewhat popular method. Drawing is a natural way of communication for children. They express their feelings and perceptions through drawings, and drawing skills together with the cognitive development of children are important factors affecting their drawings (Farokhi & Hashemi, 2011). Since drawings have been utilized in the area literature and since it will be the method in the current study, a more detailed look at this method is required and follows.

1.4.1 Developmental Stages of Children's Drawings

As children grow up, their drawings become more detailed, more proportional and realistic (Telmaç, 2010). According to Lowenfeld (1947), the development of children's drawings consists of six stages. These are scribble stage (2 to 4 years), pre-schematic stage (4 to 6 years), schematic stage (7 to 9 years), dawning realism (9 to 11 years), pseudorealistic stage (11 to 13 years) and the period of decision (14 to 18 years) (as cited in Sullivan, 2015).

Beginning with the age of two, the scribbling stage children are satisfied by the motor movements and scribbles improve through the development from no differentiation to naming of scribbling (Lowenfeld, 1947; as cited in Sullivan, 2015).

In the pre-schematic stage, scribbling stage children begin to realize their relationship with the environment, and this effort makes them take pleasure. Children have a desire to describe their drawings at this stage, and they explain drawings related to their personality or development. Therefore; the thoughts or interests of children could be learned if a good communication is established (Telmaç, 2010).

The schematic stage (7 to 9 years): At this stage, children begin to develop schemas based on the previous gains understanding their environments. During the

schematic stage, human figures are drawn with the torso and details. Drawings also include a baseline or the edges of the paper are used as a baseline (Malchiodi, 2013; as cited in Yıldırım, 2018).

Dawning realism (9 to 11 years): Children have more awareness of the details and their environment while egocentric thinking is decreasing. The schematic representations may not be sufficient for children; and they began to try perspective or depth drawings (Malchiodi, 2013; as cited in Yıldırım, 2018). Three-dimensional space may be represented through overlapping in drawings (Lowenfeld, 1947; as cited in Sullivan, 2015). Moreover; drawings become more realistic in terms of details and colors, and this desire may make children anxious about their drawings so they may not want to show them (Telmaç, 2010).

The pseudorealistic stage (11 to 13 years): In this stage; children may utilize both visually minded creativity and non-visually minded creativity. The former includes the accurate perception of objects while the internal representations and emotions are important for the latter. In addition; children at this stage draw human figures more detailed and with awareness of figure proportions (Lowenfeld, 1947; as cited in Sullivan, 2015).

The period of decision (14 to 18 years): Because of this stage coincides with the adolescence period, there is an identity crisis. Therefore; they have a critical awareness about the environment and drawings, and this criticism may cause them withdraw their artworks. Adolescents want to be in relation to the environment and use drawings as a way of expression so the focus should be on the expression process rather than evaluation of drawings (Lowenfeld, 1947; as cited in Sullivan, 2015).

1.4.2 Utilization of Drawings for Research and Clinical Practice

Drawings of children are used both in clinical practice and researches in order to gain knowledge about them. Using drawings as a research tool may be beneficial to be able to conduct research with children rather than research on children, and drawings enable children to be active participants of research with a child-centered, art-based approach (Solorio, 2017).

There are many examples of studies which used drawings as a way of examination of children's psychological difficulties. It would be helpful to mention mostly used drawing methods which are human figure drawings and family drawings.

1.4.2.1 Human Figure Drawings

Human figure drawings are important for the personality and intellect assessment especially when verbal expressions are not useful (DiLeo, 1983; as cited in Skybo, Ryan-Wenger, & Su, 2007).

Beginning with Goodenough (1926); Koppitz (1968, 1989) and DiLeo (1970) developed theories and scoring systems about human figure drawings. According to Koppitz (1984), drawing becomes a way of communication and representation of self-concept, attitude, anxiety or conflict when children are asked to draw (as cited in Skybo et al., 2007). In Koppitz's method; children are provided with a blank paper and pencil, and they are asked to 'draw a one whole person. You can draw any kind of person you want to draw, but not a stick figure' (Skybo et al., 2007, p.15). Then, developmental and emotional assessment could be done systematically based on signs and symbols Koppitz has systematized (1968). Drawings are scored to evaluate

children's developmental level based on number of details included that are observed frequently by children of that age group. Drawings are also scored for presence of emotional indicators which need to be present in less than %15 of that age group and have clinical discriminatory value. Examples of these indicators are omission of parts, big figure or three or more figures drawn; and these scores should be supported by other observations although they provide strong cues about children (Skybo et al., 2007). It was shown that the level of emotional indicators was higher for children at high risk for emotional disturbance (Matto, 2002), children with ADHD (Saneei et al., 2011), children exposed to domestic violence (Backos, & Samuelson, 2017) and children who had suffered war trauma (Özer et al., 2018). Therefore; emotional indicators on Human Figure Drawings could be utilized for examining emotional difficulties of children in research. However, it should also be noted that drawings are suggested to be a general screening device for detecting the level of emotional disturbance, and a sign approach attempting to relate specific details in drawings to specific feeling states has not been validated (Motta et al., 1993).

In Turkey, the Koppitz system was examined with a large sample by Özer (2009a). Özer has shown that some emotional indicators Koppitz proposed were not under the 15% incidence for Turkish sample (2009a). That is, some indicators like absence of nose or absence of hands were seen in the drawings of more than 15% of children in some age groups while they were rare in Koppitz's norm studies. In addition; children attending state schools had more emotional indicators than children attending private schools at ages 5 and 6 (Özer, 2009a). Kağıtçıbaşı and Biricik also found that the performance of draw a person test was poorer in low

socioeconomic status (2013). Therefore; the effects of cultural variations and socioeconomic status should not be overlooked while assessing drawings of children.

Although the "The draw a person: Screening procedure for emotional disturbance test" (DAP:SPED) examining emotional difficulties of children developed by Naglieri et al. (1991) is frequently utilized in the literature, there is no data on its use in Turkey.

Emotional indicators of Koppitz were used to assess emotional problems of children in various studies. For example; Nas (2017) examined the psychological difficulties of children while passing from primary school to secondary school by using draw a person test. Also, Yıldırım (2018) utilized Koppitz's draw a person test to examine aggression in preschoolers' drawings. The studies including draw a person test as a tool to evaluate psychological difficulties of chronically ill children will be discussed later.

1.4.2.2 Family Drawings

In addition to human figure drawings, family drawings are widely preferred by researchers to examine family perceptions of children. To illustrate, preschoolers mostly drew their nuclear family members together but they had difficulties in planning and completing the drawing (Akgün & Ergül, 2015). In addition; Carmela et al. (2019) found that 88% of children of divorced parents integrated the father while depreciation was seen for mother figure, which might be related to the tendency of idealization of father. In a different study, it was found that 75.9% of children of mothers who scored higher on the marital discordance subscale of Parental Attitude Research Instrument (PARI) drew their whole family members as

different animals while 58.2% of children of mothers who scored lower on the subscale drew their family members as the same animals in the magical family drawing test (Familie in Tiere) (Telmaç, 2010).

There are many studies showing that family drawings represent familial perceptions of children (Dunn et al., 2002; Roe et al., 2006). Furthermore, these family representations show a relationship with the culture. Gernhardt et al. (2011) found that children of rural farming families drew more siblings, family members other than nuclear family and non-relatives compared to children from urban or middle-class families. The fact that they also depicted themselves next to nonrelative persons might be an example of multiple caregivers and relatedness in this cultural context.

Similar to human figure drawings, objective scoring methods for family drawings were developed. Kaplan and Main (1986) introduced a system to examine attachment organization of children as secure, avoidant, ambivalent or disorganized.

Based on studies of Kaplan and Main; Fury et al. (1997) proposed their global rating scales for attachment classification. In the family drawing global rating scales (FDGRS), drawings are rated according to eight scales Fury et al. (1997) developed. The validity and the relationship of attachment status and family drawings have been demonstrated in many studies (Behrens & Kaplan, 2011, Dallaire et al., 2012, Leon et. al, 2007, Pace et al., 2015).

Corman (1967) also developed an assessment system for family drawings. According to Corman's procedure; children are asked to imagine a family and draw it. Then, children are interviewed and asked several questions like who the

kindest/happiest or least kind/happy person is (as cited in Sharif et al., 2018). The examples of research Corman's procedure was used might be studies assessing family perception in children with cancer (Louchamp & Sabatier, 2018) and to see the possible effects of an intervention (Ruiz et al., 2017).

Kinetic family drawing is another widely used drawing method in the literature. Burns and Kaufman (1972) developed it to evaluate children's adjustment and development, and this method adds a dynamic factor to the drawing. Children are asked to draw their family doing something and this drawing provides with deeper information regarding the family system (as cited in Baxter et al., 2015).

Kinetic family drawings were also used in a wide range of research areas. For example; Anderson (2004) compared kinetic family drawings of first and second born siblings and found that second born children depicted more barriers between mother and themselves. In addition, Kim and Suh (2013) showed that kinetic family drawings of children who had internalizing problems differed in most subcategories than drawings of children who had not internalizing problems. For instance; children with anxiety or depression symptoms used more compartmentalization and drew on the edge of the paper. Also, kinetic family drawings were found to be helpful to examine trait anxiety levels of children diagnosed with attention deficit hyperactivity disorder (Çakır, 2017). Therefore; kinetic family drawing could be a useful tool to assess children's internalizing problems.

In addition; family or self representations of children who are victims of traumatic experiences were studied by numerous researches. Backos and Samuelson (2017) investigated that kinetic family drawings showed different themes when the

grounded theory analysis was conducted to assess drawings of children and their mothers who were exposed to intimate partner violence. To illustrate, children with posttraumatic stress disorder depicted incomplete figures, reflected negative interactions and isolation while children without posttraumatic stress disorder included shared activity, positive interactions, positive or mixed affects and incomplete figures in their drawings (Backos & Samuelson, 2017). In addition; children exposed to physical abuse drew more incomplete figures than children in control group (Veltman & Browne, 2003).

Family drawings showing poorer psychological adjustment scores also were associated with more risk of internalizing and externalizing problems in preschool children who are victims of sexual abuse (Giasson et al., 2014). Also; sexually abused children tended to exclude father figure in their kinetic family drawings, and depicted smaller figures for family members than non-abused children (Yılmaz, 2009). Similarly; omission of primary caregiver, distorted bodies and lack of details were observed in family drawings of abused children as compared to matched control group (Piperno et al., 2007). Based on these findings, it is possible to say that traumatized children express their feelings or needs in a striking way using their family drawings.

1.4.2.3 Drawings of Chronically Ill Children

Drawings had been a way of expressing themselves also for chronically ill children because health-related research also began to gain information from them with developmentally appropriate methods as drawings (Rollins, 2005). These drawing methods might be human figure drawing, (kinetic) family drawing, draw-

and-tell conversations as well as illness-related drawings like ‘child drawing: hospital’ or drawings of hospital, nurses or pain.

For example; human figure drawings of children with cancer and those of healthy children differed in terms of emotional indicators reflecting impulsivity, mistrust and anger. Children with cancer scored higher in these dimensions in their human figure drawings (Durualp & Altay, 2012). Stefanatou (2008) made children draw a person in hospital, and used Koppitz’s (1964) emotional indicators for scoring them. Shading of body and limbs (72%), absence of nose and mouth (68%) and hands cut off and absence of feet (64%) were common indicators in human figure drawings of children.

In addition; child drawing: hospital (CD:H) was developed to investigate emotional status of hospitalized children. Children are provided with white paper and eight crayons of basic colors, and they are asked to ‘draw a picture of a person in the hospital’ (Clatworthy et al., 1999, p. 10). Then; drawings are coded according to previously determined items like omission of body parts or shading, and the total score represents the projected anxiety of children (Clatworthy et al., 1999). It was found that there was a significant correlation between CD:H and other scales assessing distress (SEM and Frankl), which confirmed that CD:H is a useful measure (Aminabadi et al., 2011).

There are many examples of the Child Drawing: Hospital measure in the literature. For example; anxiety derived from drawings was higher in drawings of hospitalized children than those of attending doctor’s appointment. Regarding the scoring items, drawings of hospitalized children included more dependent positions,

less smiling, small people and more medical instruments (Burns-Nader, 2017). Also; when CD:H tool was applied to hospitalized children, it was seen that most of them were anxious. Their anxiety increased as the number of experienced procedures also increased, and decreased as the overall use of coping strategies of mothers increased (Burns-Nader et al., 2014).

Human figure drawing was also used to evaluate self-concept or self-image of children with chronic illnesses. For example; it was found that distortions, deletions, very small or very big figures and short arms were seen in drawings of children with neurofibromatosis type 1 (NF1) which is a genetic disorder (Cipolletta et al., 2017). Cipoletta et al. (2017) suggested that these could be interpreted as reflections of insecurity, guilt or lower self-esteem. In addition; self-drawings of children hospitalized for heart surgery indicated that they used fewer colors and drew smaller bodies and body parts than non-hospitalized children (Dolidze et al., 2013). Also, self-drawings of children with unilateral cerebral palsy had higher asymmetry than drawings of their classmates the same children produced (Nuara et al., 2019). When epileptic children were asked to draw what it is like to have a seizure, these drawings were also reflected low self-esteem and damaged self-concept (Stafstrom & Havlena, 2002). Therefore; it could be proposed that drawings are useful and powerful methods to assess self-concept of chronically ill children, as complementary tools to a comprehensive assessment. However, it should also be remembered that many of these studies utilized “sign approach” to drawings in their interpretations such as short arms or small figures reflecting poor self-image (Cipolletta et al., 2017) although this approach has not been empirically supported (Flanagan & Motta, 2007).

Emotional difficulties of hospitalized and/or chronically ill children were examined also using illness- or hospital-related drawings. For example; hospitalized children were asked to draw what came to their mind when they heard the word 'hospital'. According to these drawings; children hospitalized for acute problems had anxiety (92.9%) while children hospitalized for their chronic illnesses reacted with depression (57.1%) and lower self-esteem (53.8%) (Şen-Beytut et al., 2009).

In addition; when children were asked to draw a nurse, most of them depicted smiling faces; and drawings of children with chronic illnesses included more nurse duties like giving injection or attaches serum (Çalbayram et al., 2018). Similarly; hospitalized children were asked to draw themselves with a doctor or nurse while doing something. It was found that children perceived their relationships with doctor or nurses as close, intimate and cohesive (Corsano et al., 2012).

Illness drawing is another technique used in the literature. For instance; Wang et al. (2011) found that adolescents with congenital cardiac disease did not have enough knowledge about their illness according to drawings of their health problem. Lok and Menahem (2012) also suggested that nearly all children had limited knowledge of their heart disease, as their illness drawings investigated.

Drawings were used also together with writing or storytelling to examine psychological difficulties of chronically ill children. The study of Arruda-Colli et al. (2015) suggested that children with recurrent cancer dealt with the perceptions of threatening and uncertainty, using drawing and storytelling methods. Also, children were asked to tell stories about hospitalization according to the drawings of children in hospital. The themes of their stories included both positive and negative outcomes

of hospitalization even if themes of being alone, feeling mad, sad and scared were observed (Wilson et al., 2010).

In a few studies, apart from being a research tool for examination of psychological outcomes, drawings were used as a part of intervention program. For example; children were asked to draw a hospitalized child and write a story about it, and then mutual storytelling was utilized. Children with cancer had lower state anxiety after this program which included drawing, writing and mutual storytelling (Altay et al., 2017). Similarly; drawing and storytelling together with guided-imagination caused increases in happiness and relaxation levels of hospitalized children with cancer (Piasai et al., 2018).

Family drawing has also been found to be a useful tool to investigate family perceptions or emotional well-being of children with chronic diseases. To illustrate; kinetic family drawings of cleft palate children reflected feelings of anxiety and fear toward their families according to the study of Kasuya et al. (2000). There is also a revised version of kinetic family drawings (KFD-R) which aims to assess the family environment of children with cancer (Spinetta et al., 1981). Kinetic family drawings were scored according to individual items which constitute three areas of concern (communication, self-image and emotional tone), and KFD-R could be also used with the other family members (Spinetta et al., 1981). For example; siblings and mothers of children with cancer were given the KFD-R before and three months after a summer camp. Siblings and parents had improved family environment after attending the camp even if this improvement was not statistically significant in siblings and parents who experienced loss of the ill child (Packman et al., 2008).

Lastly; drawings could be used as a tool for closure or obtaining additional information about children's psychological well-being. For example; children with cancer were asked to draw a picture of wherever they would like to be at that time. This drawing was performed after children had finished the other drawings like a person picking an apple from a tree or the picture of their scariest image (Rollins, 2005).

To sum up; children with chronic illnesses are susceptible to negative psychological outcomes of the illness or hospitalization. They might have posttraumatic stress, anxiety, negative self-concept or social problems with peers or school life. Therefore; being aware of these possible psychological effects is important so that the overall health of the children could be better. Families of children with chronic illnesses are also prone to psychological difficulties like posttraumatic stress, anxiety or psychosocial problems. In order to be able to help these families cope with the illness and treatment process better, a comprehensive assessment of the possible outcomes gains importance. Children's drawings are among useful methods in terms of being age-appropriate and congruent with child-centered approach.

1.5 The Current Study

Human figure drawings, family drawings, and drawings of the picture where they would like to be at that time were applied to children in the present study. Koppitz's scoring method (1968) was chosen for scoring human figure drawings because it's adaptability in Turkish culture was examined by Özer with a big sample (2009a) and it was shown that emotional indicators could reflect emotional

difficulties of children who were at high risk for emotional disturbance (e.g. Matto, 2002; Backos & Samuelson, 2017; Özer et al., 2018). Family drawings were scored using KFD-R scoring system (Spinetta et al., 1981) because it was developed especially for studying childhood cancer, which is one of the serious childhood chronic diseases.

1.5.1 The Aim of the Current Study

The aim of the present study is to compare the psychological well-being of hospitalized children and that of their healthy peers using children's drawings and parents' reports on Strengths and Difficulties Questionnaire (SDQ). Also; a comparison of the scores of parents' reports and children's drawings was aimed so that the usage of these drawings and scoring methods in this sample could be examined. Since the current study coincided with the COVID-19 pandemic, it is possible that possible psychological effects of the pandemic on children and families will be observed and this will be discussed in terms of findings from studies conducted during non-pandemic periods.

1.5.2 The Significance of the Current Study

From the literature survey, it was observed that there have been studies in Turkey looking at the psychological consequences in chronically ill children (e.g. Yağcı-Küpeli & Küpeli, 2015; Toros et al., 2002; Yıldız-Akkuş & Bütün-Ayhan, 2020). Many of these studies have focused on looking at one or two dimensions of psychological problems. Although there are a few studies that utilized drawings with these populations, there has been no systematic attempt to look at drawings and other measures of psychological well-being. The current study will attempt to show the

importance of collecting data from multiple sources and looking at their relationships.

The importance of the present study is also about setting another example of using drawings of children struggling with chronic diseases in various hospitals in Turkey. Also; taking parental reports regarding their children's psychological difficulties enrich the intention of hearing children's own voices about themselves. Most importantly; interpretations of children's drawings can be made more accurately, and psychosocial interventions can be planned more purposively and easily thanks to researches in this field. The present study is important in terms of being a systematic attempt to show these important effects.

Therefore, the research hypotheses of this study are:

1- Regardless of health status, there will be a gender effect on all emotional variables. This will be observed as gender differences on number of emotional indicators, and differences on measures of difficulties on the SDQ.

2- The number of emotional indicators in the Human Figure Drawing Test of children with chronic illnesses will be higher than their same-aged healthy peers.

3- The difficulty scores in the Strength and Difficulties Questionnaire will be higher in reports of parents of children with chronic illnesses than the reports of healthy children's parents.

4- Family drawings of children with chronic illnesses will have higher scores on KFD-R scoring system than family drawings of healthy children.

5- The drawings of the pictures of where they would like to be at that time will reflect different wishes of ill children and their healthy peers.

6- Difficulty scores in parental reports will be positively correlated with emotional indicator numbers in Human Figure Drawings and communication, self-image and emotional tone scores of family drawings for both groups.

7- There will be an interaction effect of gender and health status on all emotional variables.

CHAPTER 2

METHOD

In this chapter; the methodological issues, which are participants, measurements, procedure and data analysis of the current study will be introduced respectively.

2.1 Participants

The present study consists of 230 participants in total (120 children and 110 parents). 10 pairs of children are siblings, so number of parents is different from number of children. However; 10 of them (5 children and their parents) are excluded because of the conditions which may affect the drawings of children such as mental retardation diagnosis of child or additional traumatic experiences like maternal cancer treatment or being exposed to extra familial stress and natural disasters for the last months. Therefore; the final sample of the current study includes 220 participants (115 children and 105 parents) who are composed of children with chronic illnesses and their parents (43%), and healthy children with their parents (57%).

The ages of children are between 6 and 12 (M = 9.43, SD = 2.07) because school-age period is the most suitable time period for drawings instruments in terms of cognitive development and motor abilities of school-age children (Skybo et al., 2007). One hundred of all parents participated in the study were mothers (87% mothers, 13% fathers). Also; 55.7% of children were girls while 44.3% of children were boys in the total sample. Parental education levels ranged from no experience with school to postgraduate degrees, and the average years of parental education was

10.38 (*SD* = 4.83). Both children and parents voluntarily participated in the study. Children with chronic illnesses were recruited through purposive sampling in Ankara and Adana, and healthy children were recruited using convenience sampling technique through matched sampling so that two groups were similar to each other in terms of demographic characteristics like age and gender of the children and years of parental education. These demographic characteristics are presented for both groups in the table 1 and table 2.

Table 1

Demographic Characteristics of Chronically Ill Children and Their Parents

	N	Percentage	Mean	Std. Deviation	Min.	Max.
Age of Children	49		9.39	2.14	6	12
Gender of Children						
Female	28	57.1				
Male	21	42.9				
Years of Parental Education	49		10.24	4.82	0	21

Table 2

Demographic Characteristics of Healthy Children and Their Parents

	N	Percentage	Mean	Std. Deviation	Min.	Max.
Age of Children	66		9.45	2.04	6	12
Gender of Children						
Female	36	54.5				
Male	30	45.5				
Years of Parental Education	66		10.48	4.86	0	21

In addition; presenting illness-related characteristics might be important while defining the sample of this study. Children with chronic illnesses were being treated mostly in oncology (28.5%), endocrinology (18.4%), immunology (14.2%) and nephrology (12.2%) departments. 51% of families reported they moved to a new city for treatment of the illness. Most of children (77.6%) were taken care of by their nuclear family (mother (38.8%) or both mother and father (38.8%)) while 20.4% of parents reported that the other family members like grandparents or aunt/uncles got involved in caring of their children.

While 34.7% of children with chronic illnesses were at the initial four months of the treatment, 53.1% of them had received treatment for minimum one year. Also; 34.7% of children with chronic illnesses were not able to attend school or they (4.1%) were taking courses at their homes. So, 38.8% of ill children were isolated from their school environments in this sample.

2.2 Measurements

In the present study, Demographic Information Forms for the parents of ill children (see Appendix C) and for parents of healthy children (see Appendix D) and Strengths and Difficulties Questionnaire (see Appendix E) were used to gain information about demographic characteristics and parental reports about children. Also; children were asked to draw Human Figure Drawings, Family Drawings and drawings of the picture of where they would like to be at that moment.

2.2.1 Demographic Information Forms: Demographic information form for parents of healthy children included questions regarding the parents' age and education level; children's age, gender, attendance to the school, how many siblings

they have, whether they have any diagnosis and whether they have had a negative experience lately affecting them psychologically. In addition to these items; parents of ill children were asked whether they moved for treatment, the diagnosis, time of diagnosis, duration of the treatment children received, who the caregivers are and whether children have any diagnosis other than the illness.

2.2.2 Strengths and Difficulties Questionnaire (SDQ): This questionnaire screens for positive and negative behaviors of children (aged 4-16) by five subscales through three-point Likert type. There are five items for each five subscales which are Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, Peer Problems and Prosocial Behaviors (Goodman, 1997). Four subscales (Conduct Problems, Inattention-Hyperactivity, Emotional Symptoms, and Peer Problems) are summed to define the Total Difficulty Score. This score ranges between 0 and 40 because each subscale has five items whose responses can be 0, 1 or 2. Higher scores indicate higher problems and higher prosocial behaviors. There are 5 reverse items in order to avoid informant bias. Although parents or teachers of children whose ages are between 4 and 16 can complete the SDQ, there is also a version where adolescents (11-16 ages) can complete the questionnaire themselves (Goodman et al., 1998).

SDQ is highly correlated with Child Behavior Checklist (CBCL) ($r = .87$, $p < .001$); that is, it can discriminate between high-risk and low-risk groups of children even if its length is shorter than CBCL (Goodman & Scott, 1999). Its internal consistency is found to be .80 for the total score of questionnaire, test-retest reliability is found as .76 for parent reports, and it has good psychometric properties according to the review study of Stone et al. (2010). It is frequently used in studies of

children dealing with chronic illnesses in the literature (e.g. Mertens & Marchak, 2015; Williams et al., 2013; Eilertsen et al., 2011).

Its Turkish adaptation study ‘Güçler ve Güçlükler Anketi (GGA)’ for the parent version was conducted by Güvenir et al. (2008). According to Güvenir et al., its internal reliability for total difficulty score is .84 for parent form ($\alpha = 0.84$), and its correlation with CBCL is found as .80 ($r = .80$, $p < 0.001$). Therefore; it is a reliable and valid measure also for Turkish sample. However; its internal consistency is not high for Peer Problems subscale in Turkish form so four-factor structure may be more suitable for Turkish children (Güvenir et al., 2008; Yalın, 2008). Its Turkish form includes items like ‘genellikle söz dinler, büyüklerin istediklerini yapar.’, ‘sıkça mutsuz, kederli ya da ağlamaklıdır.’ or ‘en az bir yakın arkadaşı vardır.’ (see Appendix E).

Also, there is an item like ‘Sıkça baş ağrısı, karın ağrısı ve bulantı şikayetleri olur’ (‘Often complains of headaches, stomach-aches or sickness’) which belongs to Emotional Symptoms subscale and describes psychosomatic symptoms. However, these symptoms could also be seen as physical effects of illness or treatment itself so it might not be suitable to consider these symptoms as psychosomatic symptoms in children with chronic illnesses. Therefore; this item was excluded from analyses in the present study, and the reliability analyses are presented in the results section.

2.2.3 The Human Figure Drawing Test: This test has been used widely in the literature and there are several coding systems. Koppitz (1968) developed a valid scoring system for emotional indicators of human figure drawings of children. Drawings are first scored according to whether the number of expected items is

present or absent in order to obtain a developmental score (see Appendix F). Then, how many emotional indicators (EI) are present in drawings is scored. Examples of emotional indicators may be shading of body, big figure or short arms (see Appendix G). The inter-rater reliability of the Koppitz's scoring system was found to be between 89% and 100% according to the review of Skybo et al. (2007).

Human Figure Drawings of Turkish children were also scored using Koppitz's system by Özer (2009a). Özer showed that the frequency of some indicators in Turkish children was higher than the accepted norms, so this might cause false positives while these indicators were being interpreted according to available norms. Also; there were effects of gender and school type (private or state school) on the number of emotional indicators. Therefore; cultural differences should be taken into consideration while interpreting Human Figure Drawings of Turkish children. The fact that a large sample of drawings was examined utilizing Koppitz' system in Turkey helps professionals interpret drawings of Turkish children with cultural sensitivity thanks to Özer (2009a).

In this study we will determine the presence or absence of EI's based on the indicator tables presented by Koppitz (1968) so that the results of this study will be comparable with the other studies utilizing Koppitz's system in the literature.

2.2.4 Family Drawing Test: Family drawings have been widely used for practice and research, and there are several coding systems which are mentioned in the introduction part. Spinetta et al. (1981) developed a scoring system (KFD-R) for Kinetic Family Drawings of children with cancer and their family members. It is especially valuable since it was developed for and with samples of children suffering

from cancer. In this scoring system, drawings are scored according to 19 negatively valenced items like the presence of barriers or exclusions, figure size or use of space on paper (see Appendix H). Each item can be scored as 0, 1 or 2; and possible total scores can be between 0 and 35. However, the item of use of color could not be scored because children were provided only with black pencils for the purposes of adhering to the procedure of Human Figure Drawings in the present study. Therefore; 18 items were coded and the highest possible total score was 33. Higher scores demonstrate more negative representations. In addition; at the beginning it was planned to use static family drawings considering the literature regarding family drawings of children without any chronic illnesses. However; the scoring manual of Spinetta et al. (1981) could be reached after the data was collected. Therefore; it should be noted that family drawings could not include action so the scores related to movement and activity could not be used in the current study.

The items in the scoring system utilized by Spinetta et al. (1981) constitute three wider categories which are communication, self-image and emotional tone. Therefore; there are 4 total scores obtained: communication, self-image, emotional tone and total scores for each drawing. Inter-rater reliability was found to be high by researchers utilizing this coding system. To illustrate; Packman et al. (1998) found inter-rater reliability as .94 for total score, and inter-rater reliability scores for other subscales (communication, self-image and emotional tone) were .92, .81 and .82 respectively. Therefore; it is a reliable and valid system and has been utilized by researchers studying childhood cancer (e.g. Rollins, 1990; Packman et al., 2008).

2.2.5 Closure Drawing: Rollins (2005) asked children draw a picture of where they would like to be at that time as closure drawing so that children can end the interview in a better way after drawing their scariest image and they might benefit by the possible effect of drawing and imagining activities on physiological responses like higher endorphin levels. In addition, these drawings might give some information about children's psychological well-being or adaptation. Being inspired by the study of Rollins (2005), all children were asked to draw a picture of wherever they would like to be at that moment in the present study.

2.3 Procedure

After ethical permission was received from TED University Human Subjects Ethics Committee, relevant departments of hospitals in Ankara and Adana were applied for permission for data collection process. After obtaining permissions, four different university and state hospitals were visited periodically. Children (6-12 ages) hospitalized for a chronic illness and their parents were visited to determine if they fit the research parameters and whether they would give permission to enter the room. Therefore; each test was administered to each participant individually.

First of all, parents were given the informed consent form (see Appendix A), and also the study was explained verbally. If the parent accepted the participation; the child was presented with the informed consent form for children prepared for the present study (see Appendix B), and the form was explained also verbally to the child. If child also gave assent for participation, the parent was given Demographic Information Form and Strength and Difficulties Questionnaire. If there was a difficulty regarding the literacy of parents, the form and questionnaire were

completed verbally. At the same time, the children were presented with 3 white A4 papers (21 × 29 cm), a lead pencil and an eraser. First of all, children were asked to do Human Figure Drawings. In order to have a valid measurement; each child was given the same instruction to 'draw a person who is a whole person and who is not a stick man', any evaluation or comment was not made and there was no time limitation. Secondly, children were asked to draw their family. For family drawings, there were also no time limit and any further comment was not made. Finally; children were asked to draw a picture of the place they would like to be at that time. At the end, a drawing book and crayons were given to children as a thank you gift. These gifts were presented also to hospitalized children sharing the same room with the participants.

Data from hospitals were collected during the months of November, December 2019 and January, February and March 2020. It was planned to start the data collection from healthy controls after the completion of this phase. Unfortunately, just as the second phase of data collection was beginning COVID-19 restrictions started; hence data collection process had to be different for healthy children and their parents. The process was run online by using the Qualtrics Program. The link was sent to voluntary parents of healthy children after the announcements regarding the study. Parents received informed consent form when they accessed the link, and they were faced with the demographic information form and Strength and Difficulties Questionnaire if they accepted participation in the study. Parents who had difficulties with reading or using the Internet were interviewed by phone or their older children helped them. At the same time, an appointment was made for each family for online interview with the child. The

online interviews were conducted via Zoom Program or other video call opportunities if the children voluntarily accepted to join the interview. In these meetings, children were presented with informed consent form prepared for children via screen sharing and the form was explained also verbally. If children accepted to participate to the study; they were asked to draw a human figure, their family and wherever they would like to be at that time in the same way explained above. Then; parents were asked to send the photographs of the drawings, and children were shown and sent the document of appreciation (see Appendix I) as incentive.

Although it changed according to parental or environmental effects in the hospital, the forms took approximately 10 minutes for each parent. There was no time limit for children's drawings, so the time passed during drawings ranged from 10 minutes to 1 hour. Whenever the child asked questions regarding their drawings, the response was 'do however you want' so that they could reflect their inner world onto the paper. They were also free to give up drawing whenever they want.

2.4 Scoring of the Drawings

2.4.1 Scoring of Human Figure Drawings: Firstly; drawings were scored according to presence or absence of 30 expected items to obtain a developmental score (DS). According to the number of present or absent items like torso, two-dimensional arms and legs or clothes (see Appendix F); the DS was obtained for each drawing. Secondly; drawings were scored using 30 emotional indicators (EI) presented by Koppitz (1968). According to emotional indicators like shading, big or small figure, the absence of mouth or big hands (see Appendix G); EI score of each drawing was obtained. Thus; each human figure drawing had a developmental score

and emotional indicators score. Examples of some of the developmental scores and EI's are provided in figures 1a and 1b. Figure 1a indicates Human Figure Drawing which is named as 'healed child' by the child who drew it. This drawing obtains point 4 for developmental score because of the absence of nose which is an expected item for 12-years old. In addition, figure 1b obtains 4 as developmental score because the torso could not be drawn as expected from 6 years boys and no extraordinary items are present. In order to examine these emotional indicators, the list provided by Koppitz (1968) is utilized. Koppitz (1968) utilizing a large normative sample determined 30 Emotional Indicators. In developing the system children's drawings were evaluated for all possible details and emotional indicators were developed using 3 main: 1) an item needed to be observed with unusual (less than %15) frequency in the normative group; 2) the item should not be affected by age or cognitive development; and finally 3) clinical validity, that is differences between a clinical and control group should be demonstrated. These 30 emotional indicators are:

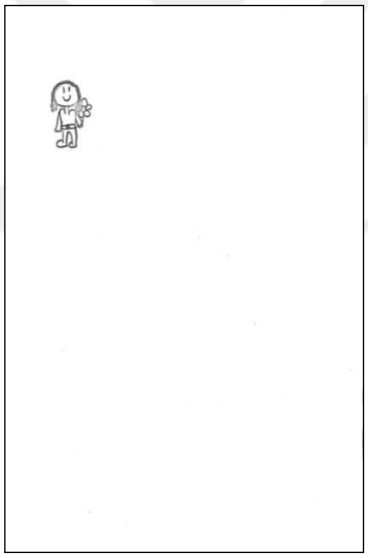
− Integrity	− Big hands	− Shading of face
− Hands cut of	− Shading of body or limbs	− Legs pressed together
− Shading of hands or neck	− Genitals	− Asymmetry of limbs
− Monster figure	− Slanting figures	− Min. 3 figures drawn
− Tiny figure	− Clouds	− Big figure
− No eyes	− Transparencies	− No nose
− Tiny head	− No mouth	− Crossed eyes

− No body	− Teeth	− No arms
− Short arms	− No legs	− Long arms
− No feet	− Arms clinging to body	− No neck

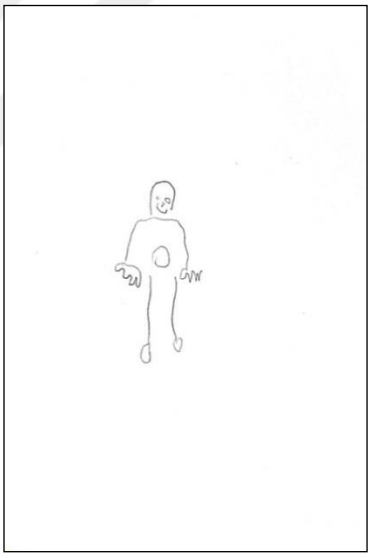
Each drawing was evaluated for the presence or absence of any of the Emotional Indicator items listed above, for each indicator present a score of 1 was given.

Figure 1

Human Figure Drawings



1a. 12 years, girl, oncology patient EI=2 (absence of nose, small figure (3.6 cm))



1b. 6 years, boy, immunology patient EI=4 (absence of torso and neck, poor integration of parts, big hands)

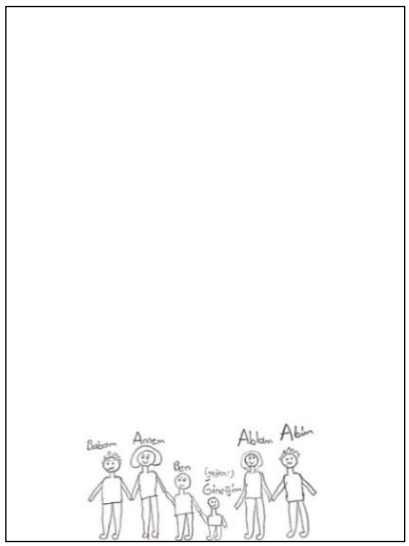
For the purpose of measuring the inter-rater reliability; 30 (15 for each group) drawings (26% of all human figure drawings) were selected randomly and were scored by the primary researcher and 2 graduate level clinical psychology students who were trained in the coding system and blind to which group the drawings belong to. Inter-rater reliabilities were obtained by looking at the Pearson correlations

between the three scorers. The reliabilities were found to be high for both developmental scores ($r(28) = .94$ and $r(28) = .94$, $p < .01$) and the total number of emotional indicators ($r(28) = .87$ and $r(28) = .83$, $p < .01$).

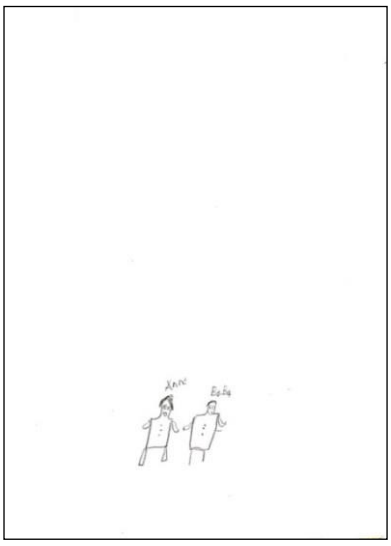
2.4.2 Scoring of the Family Drawings: Family drawings were coded according to 18 negatively valenced items as suggested by Spinetta et al. (1981). Items were scored as 0, 1 or 2 for each drawing; and the sum of these scores constituted a total score. The higher scores mean the more negative indicators of children, as mentioned above. In addition; several items constituted together the sub scores of the family drawings which are communication, self-image and emotional tone. For example; incompleteness of body, frequency of missing body parts, cross-outs, subject portrayal and figure size form the self-image scores of drawings (see Appendix H). Therefore; communication, self-image, emotional tone and total scores were obtained for each family drawing.

Figure 2

Family Drawings



2a. 11 years, girl, oncology patient



2b. 7 years, boy, oncology patient

For example; figure 2a obtains 0 point for communication sub score because there is no exclusion of a family member, there is no compartmentalization or barriers, the back of paper is not used by the child and body and facial position of the mother and child are facing viewer. However; the self-image sub score of the drawing is 4 because the bodies are incomplete and these minor body parts (hands) are missing on more than two people. Also; because of the absence of hair and hands, self-portrayal is depicted pejoratively. In addition to self-image sub score, the drawing obtains 3 point for the emotional tone sub score because less than ½ of the page is used, noses are absent, and drawing is below the developmental level due to facial incompleteness. Therefore; this drawing obtains 7 points in total (0+4+3). Also; the communication score of figure 2b is 2 because the child did not draw himself. Self-image score of it is 3 because of the absence of the figure of the child himself and both mother and father figures do not have hands and feet. This drawing obtains 3 also for emotional tone score because he uses less than the half of the paper, body incompleteness and absence of noses. Finally, the KFD-total score of the drawing becomes 8.

In order to measure the inter-rater reliability in the present study; a training meeting was first planned and the scoring method was discussed since it was a new system for all coders. Then; 30 (15 for each group) drawings (27% of all family drawings) were selected randomly and were scored by the primary researcher and 2 graduate level clinical psychology students to see inter-rater reliability of the scoring system in the present study. The inter-rater reliability was found to be .34 and .70 ($p < .01$) for communication score, .85 and .83 ($p < .01$) for self-image score, .77 and .74 for emotional tone, .80 and .78 ($p < .01$) for total scores.

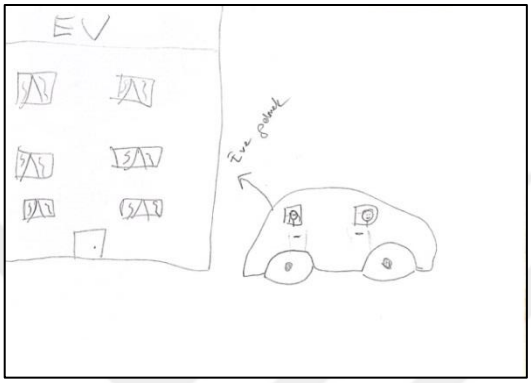
After obtaining these reliability scores; communication subscale which are composed of items such as compartmentalization, barriers, usage of front-back of paper, exclusions and body/facial position of the self and mother was discussed again for possible disagreements. The communication category of randomly selected 30 family drawings were scored again by three coders and the inter-rater reliability was found to be high ($r(28) = .88$ and $r(28) = .98$, $p < .01$).

2.4.3 Grouping of the Closure Drawing: Children were asked to draw a picture of where they would like to be at that moment after the Human Figure Drawing Test and Family Drawings. If they did not want to draw, their responses were noted. These responses and the places they drew were grouped according to their similarity or difference to each other.

The responses of home, their own room, the road to home or skating near home constituted 'the home' category (see figure 3a). The other responses like park, forest, going to the concert, restaurant or fair and meeting with friends or relatives were the examples of the 'travelling in town' category (see figure 3b). There were also responses like Paris, İstanbul, the sea, going to the holiday village or ski resort as well as 'umrah' or heaven; and these were included in the 'travelling out of town' category. Besides these; the school, course and the library were among the responses and drawings as can be seen in figure 3c. These were under the 'school' category. Lastly; a few responses like 'anywhere' or 'everywhere' were grouped under the category 'anywhere/everywhere'.

Figure 3

Drawings of the Places where Children would like to be at that Moment



3a. 12 years, girl, rheumatology and nephrology patient; 'home' category.

3b. 11 years, girl, endocrinology patient; 'travelling in town' category.



3c. 11 years, girl, urology patient; 'school' category.

To sum up; the responses and drawings of children were grouped into five categories which are home, travelling in town, travelling out of town, school and anywhere/everywhere.

2.5 Data Analysis

All analyses were conducted by using the program of IBM SPSS Statistics 22. First of all, Pearson correlation was used for examining inter-rater reliability, and reliability analyses of Strengths and Difficulties Questionnaire were conducted utilizing Cronbach's Alpha.

Secondly, independent samples t-tests and Chi-Square analysis were used in order to check whether the demographics differed between chronically ill and healthy groups.

Thirdly; the differences between chronically ill and healthy children, as well as female and male children, in terms of research variables were analyzed through several two-way ANOVAs. The Chi-Square test was used in order to see the difference between children's drawings of where they would like to be at that moment. Finally; correlation analysis was conducted to examine whether there is a positive correlation between children's drawings and their parental reports regarding their child's psychological difficulties.

CHAPTER 3

RESULTS

In this section; findings of the present study which were derived from the reliability analysis, assumption testing, descriptive statistics and hypothesis testing procedure will be reported respectively.

3.1 Preliminary Analyses

3.1.1 Reliability Analysis for SDQ

Conducting reliability analysis of Strengths and Difficulties Questionnaire (SDQ) was important for the present study because the item describing psychosomatic symptoms as an item of Emotional Symptoms subscale had to be excluded from the analyses in order to avoid interpreting the physical effects of illness or treatment as psychosomatic symptoms.

The reliability scores of SDQ in the current study are presented in Table 3, and it is similar, although somewhat lower to the scores of the Turkish adaptation study (Güvenir et al., 2008) which were reported as .73 (for emotional symptoms), .65 (for conduct problems), .80 (for inattention-hyperactivity), .37 (for peer problems), .84 (for total difficulty score) and .73 (for prosocial behaviors).

Table 3

Reliability Scores of SDQ Subscales and Total Difficulty Score (Cronbach's Alpha)

Subscales	SDQ
Emotional Symptoms	.63
Conduct Problems	.62
Inattention-Hyperactivity	.66
Peer Problems	.37
Total Difficulty Score	.72
Prosocial Behaviors	.62

After the "psychosomatic" item had been deleted, the reliability scores of Emotional Symptoms subscale and total difficulty score did not show an important change ($\alpha = .63$ and $\alpha = 71$, respectively.) Therefore, the exclusion of the item is possible for the analyses of the present study. In addition, mean scores of each subscale and total difficulty scores are used instead of total scores so that they would not change according to the number of items for each subscale. For this reason, mean scores of the subscales of Strength and Difficulties Questionnaire will be examined in the following analyses.

Reliability scores for subscales that were above .60 are considered acceptable. The reliability score for the Peer Problems subscale is quite low (.37), which was also the case in the original adaptation study (Güvenir et al., 2008). It was suggested that the 4 factor, 4 scale solution may be more acceptable, and this was applied in the present study. In addition; Prosocial Behaviors subscale is not in the scope of this study because the present study aims to investigate psychological difficulties of children, not their strengths. Also; SDQ-H scores will not be utilized because the comparison of hyperactivity scores of hospitalized children and their healthy peers

might not be suitable due to hospitalization situation since the children who were hospitalized had a limited status of activity. That is only the Emotional Symptoms and Conduct Problems subscales were utilized.

3.1.2 Assumption Testing

First of all; missing data analysis was conducted, and data whose drawings were missing (N = 4) were replaced with the group means of the missing variable. Also, the dependent variables were continuous, independent variables were categorical; and observations were independent in the current data.

After these primary analysis and assumptions were checked, necessary analyses were done to examine outliers, normal distribution for each necessary variable and multicollinearity. Outliers were checked for each cell in the analyses using boxplots, and the multivariate outlier was deleted from the data. Then; normality assumption was checked through boxplots, histograms and skewness-kurtosis values. Skewness and kurtosis values were between acceptable levels which are -1.5 and +1.5 according to Tabachnick and Fidell (2013). Therefore; it could be suggested that the data was mostly normally distributed according to skewness and kurtosis values which were within acceptable ranges. In addition; there was no multicollinearity problem according to collinearity statistics.

Lastly, homogeneity of variance was checked through ANOVA analyses, and presented under hypothesis testing headings below.

3.1.3 Descriptive Statistics

In order to gain general knowledge regarding the current data, descriptive statistics of demographics and the measurements were analyzed and presented in this section.

After the outlier data was excluded, the current sample consisted of 114 children and their parents (N = 114) in total. The ages of children were between 6 and 12 (M = 9.42, SD = 2.08). 55% of these children were girls, and others (45%) were boys. The average years of parental education was 10.43 (SD = 4.82). There were no significant differences between hospitalized children (M = 9.38, SD = 2.16) and healthy children (M = 9.45, SD = 2.04) in terms of their ages (t(112) = -.20, p = .841). Gender of the children also did not differ between these two groups (X^2(1, N = 114) = 0.03, p = .86). In addition to age and gender of the children, years of parental education were similar in both groups. Parents of hospitalized children (M = 10.35, SD = 4.81) did not differ from parents of healthy children (M = 10.48, SD = 4.86) in terms of their education level (t(112) = -.14, p = .887). That is; there were no significant differences between demographics of hospitalized and healthy children so the comparisons of these two groups were appropriate.

Since the data collection for the healthy group was able to be completed online, a preliminary analysis was completed to determine if the online completed drawings were different in terms of EI means compared to an earlier sample of healthy 6 to 12 year olds collected face to face. Mean EI score data was obtained from Özer (personal communication, 2021), 75 randomly selected subjects from the Özer (2009a) data were compared to the present healthy sample. It was found that the

healthy group in the present study had higher mean EI's (M = 2.39 n=66) compared to Özer's (M = 1.60 n=75) (2009a) sample ($t(139) = 2.71$, $p < .05$).

Before comparing these groups along with the hypotheses testing, descriptive statistics (mean, standard deviation, minimum and maximum values) are presented for each variable derived from drawings and questionnaire. Table 4 presents the descriptive statistics for scores in which Strengths and Difficulties Questionnaire (SDQ) scores represents descriptive scores derived from mean scores of subscales.

Table 4

Descriptive Statistics for all Scores

	Chronically Ill (n = 48)			Healthy (n = 66)		
	Mean *(SD)*	Min.	Max.	Mean *(SD)*	Min.	Max.
HFD-DS	3.44 *(1.47)*	0	6	3.50 *(1.37)*	0	6
HFD-EI	2.96 *(2.17)*	0	8	2.39 *(1.63)*	0	6
KFD-C	.51 *(.79)*	0	3	.46 *(.72)*	0	2
KFD-SI	3.79 *(2.47)*	0	7	3.47 *(1.82)*	0	6
KFD-E	2.19 *(1.02)*	0	4	1.86 *(1.20)*	0	5
KFD-T	6.49 *(3.32)*	0	12	5.78 *(2.80)*	0	11
SDQ-EP	.72 *(.43)*	0	1.50	.55 *(.48)*	0	2

SDQ-CP	.33	0	1.60	.29	0	1.20
	(.34)			*(.30)*		
SDQ-H	.60	0	1.60	.78	0	1.60
	(.44)			*(.45)*		
SDQ-T	2.51	.33	6	2.52	0	7
	(1.30)			*(1.50)*		

Note. HFD-DS: Human Figure Drawing-Developmental score; HFD-EI: Emotional Indicators; KFD-C: Family Drawing Communication score; KFD-SI: Self-image score; KFD-E: Emotional tone score; KFD-T: Total score; SDQ-EP: Strengths and Difficulties Questionnaire Emotional Problems; SDQ-CP: Conduct Problems; SDQ-H: Inattention-Hyperactivity; SDQ-T: Total Difficulty Score.

Table 5 demonstrates the Pearson correlations between these scores. The upper quadrant describes the correlation scores of chronically ill children while the lower quadrant shows the scores for healthy children indicated in grey.

Table 5

Pearson Correlations for all Scores

Variable	HFD (DS)	HFD (EI)	KFD (C)	KFD (SI)	KFD (E)	KFD (T)	SDQ (EP)	SDQ (CP)	SDQ (H)	SDQ (T)
HFD-DS	–	-.37*	-.08	-.25	-.25	-.29*	-.06	-.36*	-.19	-.29*
HFD-EI	-.54**	–	.24	.32*	.31*	.39**	-.06	.27	.42**	.33*
KFD-C	-.13	.03	–	.20	.11	.42**	.14	.39**	.41**	.47**
KFD-SI	-.32**	.39**	.01	–	.45**	.93**	.01	.14	.25	.20
KFD-E	-.49**	.45**	.06	.56**	–	.67**	-.14	.01	.12	.05
KFD-T	-.46**	.46**	.28*	.89**	.81**	–	-.00	.22	.32*	.28
SDQ-EP	.05	.02	-.00	.13	.13	.14	–	.14	.01	.50**
SDQ-CP	.01	-.00	-.07	-.08	-.07	-.11	.43**	–	.47**	.77**
SDQ-H	-.00	.03	-.07	.16	.01	.09	.41**	.49**	–	.78**
SDQ-T	.02	.02	-.06	.11	.03	.07	.77**	.76**	.83**	–

*$p < .05$; **$p < .01$. HFD-DS: Human Figure Drawing-Developmental score; HFD-EI: Emotional Indicators; KFD-C: Family Drawing Communication score; KFD-SI: Self-image score; KFD-E: Emotional tone score; KFD-T: Total score; SDQ-EP: Strengths and Difficulties Questionnaire Emotional Problems; SDQ-CP: Conduct Problems; SDQ-H: Inattention-Hyperactivity; SDQ-T: Total Difficulty Score.

As can be seen in Table 5, there are high significant correlations between KFD-T and KFD-SI (r = .93, p < .01 for ill children; r = .89, p < .01 for healthy children) and KFD-E (r = .67, p < .01 for ill children; r = .81, p < .01 for healthy children). In addition; SDQ-T is highly correlated with SDQ-CP (r = .77, p < .01) and SDQ-H (r = .78, p < .01) scores for chronically ill children; and SDQ-EP (r = .77, p < .01), SDQ-CP (r = .76, p < .01) and SDQ-H (r = .83, p < .01) for healthy children. For this reason, the total scores obtained on KFD (KFD-T) and SDQ (SDQ-T) scores will not be utilized in the analyses since they are a composite of the subscale scores and show a high level of correlation with their subscales.

In addition; Human Figure Drawing developmental score (DS) will not be used because it is not among the primary aims of the present study which intends to examine the emotional difficulties of children rather than developmental progress of them. The Developmental Score represents the visual spatial maturity of the children compared to their peers. However it can be noted that the DS of the chronically ill and healthy children did not show any significant difference (t(112) = -.23, p = .816).

3.2 Results regarding the Hypotheses

H1: Regardless of health status, there will be a gender effect on all emotional variables. This will be observed as gender differences on number of Emotional Indicators, and differences on measures of difficulties on the SDQ.

Several two-way ANOVAs were conducted to investigate the main effect of gender on emotional variables. Homogeneity assumptions were met for emotional indicator numbers (EI) on Human Figure Drawings (F(3,110) = 1.31, p = .27), emotional tone scores of Family Drawings (F(3,110) = .65, p = .58), SDQ-Emotional

Symptoms subscale ($F(3,110) = .76$, $p = .52$) and SDQ-Inattention-Hyperactivity subscale ($F(3,110) = .61$, $p = .61$). The homogeneity assumption was not met for KFD-Communication, KFD-Self-image and SDQ-Conduct problems scores; so the effects of gender on these variables are not reported here. The mean scores of both genders could be seen in Table 6.

Table 6

Mean Scores and Standard Deviations of Children on Emotional Variables

	Chronically Ill		Healthy	
	Male (*M*) (*SD*)	Female (*M*) (*SD*)	Male (*M*) (*SD*)	Female (*M*) (*SD*)
HFD-EI	4.28 *(2.17)*	1.92 *(1.54)*	2.49 *(1.47)*	2.30 *(1.77)*
KFD-C	.88 *(.94)*	.22 *(.51)*	.56 *(.81)*	.37 *(.64)*
KFD-E	2.48 *(.92)*	1.96 *(1.05)*	1.56 *(1.07)*	2.11 *(1.26)*
KFD-SI	3.99 *(2.32)*	3.63 *(2.60)*	3.40 *(1.77)*	3.54 *(1.89)*
SDQ-EP	.74 *(.45)*	.71 *(.41)*	.53 *(.53)*	.56 *(.45)*
SDQ-CP	.40 *(.37)*	.27 *(.31)*	.37 *(.38)*	.23 *(.20)*
SDQ-H	.64 *(.46)*	.57 *(.44)*	.87 *(.49)*	.71 *(.40)*

Note. HFD-EI: Emotional Indicators; KFD-C: Communication score; KFD-E: Emotional tone score; KFD-SI: Self-image score; SDQ-EP: Emotional symptoms; SDQ-CP: Conduct problems SDQ-H: Inattention-Hyperactivity score.

The main effect of gender on EI was significant ($F(1,110) = 14.89$, $p = .000$, $\eta 2 = .12$). Males ($M = 3.23$, $SD = 1.98$) had significantly more emotional indicators than females ($M = 2.14$, $SD = 1.67$), and 11.9% of the variance in emotional indicators was explained by children's gender. Because the other variables which met the homogeneity assumption did not show a significant gender effect, this hypothesis was partially supported.

H2: The number of emotional indicators in the Human Figure Drawing Test of children with chronic illnesses will be higher than their same-aged healthy peers.

In order to test this hypothesis, 2 (chronically ill vs. healthy groups) × 2 (female vs. male) ANOVA where hospitalized or healthy group and gender of children were independent variables; and number of emotional indicators (EI) in Human Figure Drawings was dependent variable. Homogeneity assumption of ANOVA was met for this analysis according to Levene's test of equality of error variances ($F(3,110) = 1.31$, $p = .27$) so two-way ANOVA could be conducted to test this hypothesis.

The results indicated that children with chronic illnesses had significantly higher scores on EI than scores of healthy children. In other words, group main effect was significant at .05 level ($F(1,110) = 4.58$, $p = .03$, $\eta 2 = .04$). Therefore; the number of emotional indicators in the Human Figure Drawing Test of children with chronic illnesses ($M = 2.95$, $SD = 2.17$) was significantly higher than their healthy peers ($M = 2.39$, $SD = 1.63$). The main effect of group indicated that this hypothesis was supported.

H3: The difficulty scores in the Strength and Difficulties Questionnaire (SDQ) will be higher in reports of parents of children with chronic illnesses than the reports of healthy children's parents.

2 (hospitalized vs. healthy groups) × 2 (girl vs. boy) ANOVA was conducted to test the main effect of group on mean scores of all subscales and total score of SDQ. According to the results, this hypothesis was partially supported.

Homogeneity of variance assumption was met for the analysis examining the effects on Emotional Symptoms subscale ((*F*(3,110) = .76, *p* = .52) among difficulty scores which were utilized in this study. Being ill or healthy significantly affected the scores on Emotional Symptoms subscale (*F*(1,110) = 4.02, *p* = .04, η2 = .03) As expected, reports of parents indicated that chronically ill children had significantly higher Emotional Symptoms scores (*M* = .72, *SD* = .43) than their healthy peers (*M* = .55, *SD* = .48). However, this hypothesis was partially supported because the other subscales of SDQ, mainly Conduct Problems showed no differences between the groups.

H4: Family drawings of children with chronic illnesses will have higher scores on KFD-R scoring system than family drawings of healthy children.

Homogeneity of variances assumption was checked, and met for dependent variables KFD-emotional tone (*F*(3,110) = .65, *p* = .58). However; KFD-communication and KFD-self-image did not meet the homogeneity assumption (*F*(3,110) = 5.77, *p* = .001; *F*(3,110) = 3.33, *p* = .02; respectively).

The main effects of group were not significant for any of these family drawing scores. The scores on KFD-communication (*F*(1,110) = .37, *p* = .54), KFD-

self-image ($F(1,110) = .70$, $p = .40$), KFD-emotional tone ($F(1,110) = 3.43$, $p = .07$) did not differ based on hospitalized or healthy groups. Therefore; this hypothesis could not be supported.

H5: The drawings of the pictures of where they would like to be at that time will reflect different wishes of ill children and their healthy peers.

According to the Chi-Square test, this hypothesis was supported. That is; chronically ill children drew different places and reflected different wishes than their healthy peers who responded to the question (X^2 (4, $N = 110$) = 14.67, $p = 0.005$). Children with chronic illnesses drew mostly their homes (45.7%) while only 14.1% of healthy children drew home. In addition; healthy children drew more pictures reflecting travelling in town (34.4%) (e.g. going to the park, restaurant or fair) and out of town (%34.4) (e.g. going to another city, holiday or the village) than children with chronic illnesses (23.9% and 15.2%, respectively). Also; the expected and observed values regarding the drawings of school are similar for both groups. Ill children (13%) drew the school, course or library in similar rates to healthy children (15.6%). 46 ill children and 64 healthy children responded this question so the sample included 110 children in total for this research question. The categories that the responses or drawings of children constituted and frequencies of these are presented in Table 7.

Table 7

Frequencies of Children's Wishes regarding the Place Where They would like to be

	Chronically Ill	Healthy
Home	21	9
Travelling in town	11	22
Travelling out of town	7	22
School	6	10
Anywhere/Everywhere	1	1
Total	46	64

To sum up; healthy children mostly wanted to travel in or out of the city (68.8% in total) while ill children mostly wanted to be at home (45.7%). These different wishes children reflected through their drawings supported this hypothesis. Also; the responses of healthy children reflect the possible effects of coronavirus pandemic. For example; a 10 years old boy said that 'I would like to play football with my friends at a time when coronavirus does not exist' or a 7 years old girl reported that 'I would like to go to the sea in Antalya because I would go there with my mom if the coronavirus did not exist'. Similarly; 9 years old boy said that 'I would like to go the car fair which is postponed because of the coronavirus'. Therefore; it is possible that these differences in the responses of two groups could be affected from the pandemic, and this will be discussed in the discussion section.

H6: Difficulty scores in parental reports will be positively correlated with emotional indicator numbers in Human Figure Drawings and communication, self-image and emotional tone scores of family drawings for both groups.

The Pearson correlation scores for both groups are presented in Table 5 above. As can be seen in Table 5, for the chronically ill group there is a significant

correlation between KFD-Communication score and SDQ-Conduct Problems (r = .39, $p < .01$). For the healthy groups the correlations between EI, KFD and the selected SDQ scores do not show a significant correlation. For this reason, this hypothesis was only partially supported.

H7: There will be an interaction effect of gender and health status on all emotional variables.

Several two-way ANOVAs were conducted to examine the interaction effect of gender by health status group on emotional variables which are EIs on HFD, Emotional tone, Communication and Self-image scores on KFD and SDQ-Emotional Symptoms and Conduct problems subscales. Homogeneity assumptions were met for emotional indicator numbers in Human Figure Drawings ($F(3,110) = 1.31$, $p = .27$), Emotional Tone scores of Family Drawings ($F(3,110) = .65$, $p = .58$) and SDQ-Emotional Symptoms subscale ($F(3,110) = .76$, $p = .52$).

There was a significant interaction effect between gender and health status group on emotional indicator numbers ($F(1,110) = 10.83$, $p = .001$, $\eta 2 = .09$) (see table 8). As can be seen in Figure 4, emotional indicators were significantly higher in hospitalized children ($M = 4.28$, $SD = 2.17$) than healthy children ($M = 2.49$, $SD = 1.47$) when the child was a male ($t(49) = 3.52$, $p < .01$). However; there were no significant difference between EIs of chronically ill females ($M = 1.92$, $SD = 1.54$) and healthy females ($M = 2.30$, $SD = 1.77$) ($t(61) = -.89$, $p > .05$). Therefore; it could be said that the effect of being chronically ill on emotional indicators varies depending on the gender of the child.

Figure 4

Mean Scores of Emotional Indicators on HFD by Gender and Group

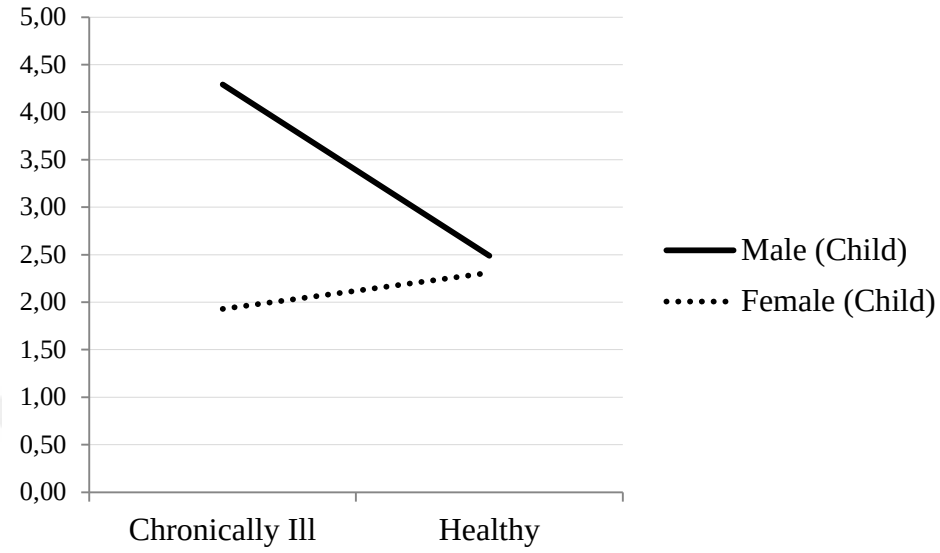


Table 8

Means, Standard Deviations and Summary of ANOVA Results

	Chronically Ill		Healthy		Group	Gender	Group×Gender
	Male	Female	Male	Female	$F(1,110)$	$F(1,110)$	$F(1,110)$
	(n = 21)	(n = 27)	(n = 30)	(n = 36)			
HFD-EI	**4.28**	**1.92**	**2.49**	**2.30**	4.58*	14.89***	10.83**
	(2.17)	(1.54)	(1.47)	(1.77)			
KFD-E	**2.48**	**1.96**	**1.56**	**2.11**	3.43	.00	6.42*
	(.92)	(1.05)	(1.07)	(1.26)			

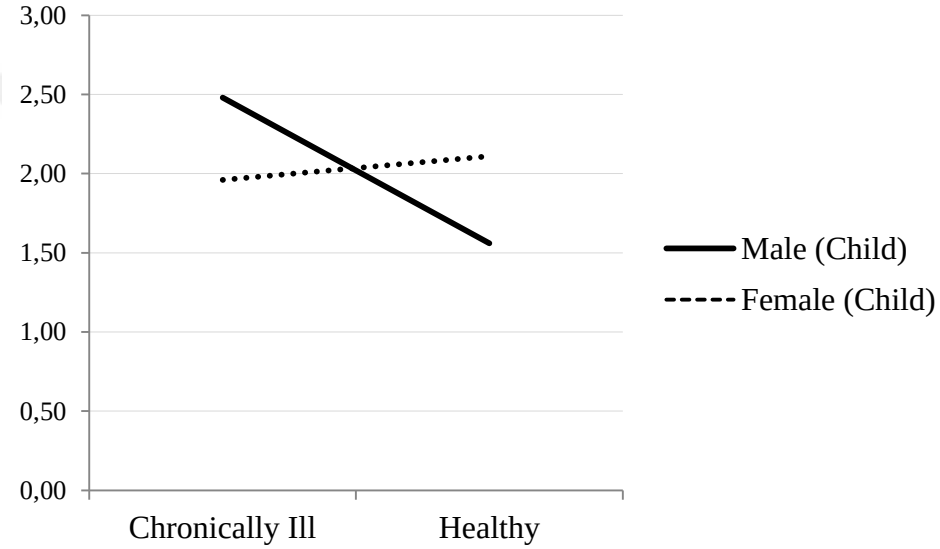
Note. HFD-EI: Emotional Indicators on Human Figure Drawing; KFD-E: Family Drawing-Emotional Tone score. The bold scores describe the means, and scores in parentheses demonstrate standard deviations. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

In addition; there was a significant interaction between the effects of gender and group on Emotional Tone scores of Family Drawings ($F(1,110) = 6.42$, $p = .013$, $\eta 2 = .05$) (see Table 8). The effect of being chronically ill was different for males and females also on Emotional Tone scores on KFD (see Figure 5). While there were

no differences between chronically ill females' and healthy females' Emotional Tone scores ($t(61) = -.48$, $p > .05$), chronically ill males ($M = 2.48$, $SD = .92$) had significantly higher scores on Emotional Tone than healthy males ($M = 1.56$, $SD = 1.07$) ($t(49) = 3.22$, $p = .002$).

Figure 5

Mean Scores of Emotional Tone on KFD by Gender and Group



Because the other emotional variables did not have a significant interaction effect of gender by group, the last hypothesis was partially supported.

CHAPTER 4

DISCUSSION

In our country, it is estimated that there are approximately 700.000 children (0-19 years) struggling with chronic illnesses (Turkey Disability Survey, 2002; as cited in Yıldız-Akkuş & Bütün-Ayhan, 2020). 1-2% of all children have chronic illnesses which restrict their daily living activities, and 10% of them have severe chronic conditions (Törüner & Büyükgönenç, 2015; as cited in Yıldız-Akkuş & Bütün-Ayhan, 2020). These chronic illnesses not only affect children's physical well-being but also may cause negative outcomes on psychological well-being of children and their families (e.g. Law, 2002; Pinquart, 2017). Being chronically ill in childhood is a risk factor for emotional difficulties (İnal-Emiroğlu & Pekcanlar-Akay, 2008), so it is believed that considering the psychological effects of chronic illnesses is important.

The current study attempted to fulfill a void in the literature on chronic illnesses on children in Turkey. It was aimed to investigate the psychological difficulties reflected on drawings of children with chronic illnesses systematically by collecting data from multiple sources.

4.1 Psychological Effects of Chronic Illnesses

4.1.1 Human Figure Drawings

As expected, the health status of children was reflected on the emotional well-being of children as reflected in their drawings. A higher level of emotional indicators has been shown for children at high risk for emotional disturbance (Matto,

2002), children with ADHD (Saneei et al., 2011), children exposed to domestic violence (Backos & Samuelson, 2017) and children who had suffered war trauma (Özer et al., 2018) to cite a few examples. In the present study, it was found that children with chronic illnesses had significantly higher numbers of emotional indicators on Human Figure Drawings than healthy children. This finding is in line with some previous findings indicating that emotional indicator numbers of long stay hospitalized children were higher than short stay or mainstream school children (Nyman et al., 2011); or scores like impulsivity, mistrust or anger which are derived from emotional indicators on Human Figure Drawings were higher in ill children than healthy children (Durualp & Altay, 2012).

4.1.2 Family Drawings

There are several studies indicating that the family and children's perceptions regarding their families were affected by children's life-threatening illnesses (e.g. Er, 2006; Louchamp, & Sabatier, 2018) although there are mixed results about the effects of chronic illnesses on siblings of ill children (Barlow & Ellard, 2006). However; no differences between Family Drawing scores of chronically ill and healthy children were observed in the current study. A possible explanation for this might be the fact that family drawings in the current study were obtained with the instruction of 'draw your family'. That is these were "static" drawings rather than "kinetic drawings" KFD-R (Kinetic Family Drawings-Revised) as utilized in the study with chronically ill children (Spinetta et al., 1981). This system was valuable in terms of being used particularly for children with cancer and their family members. The current study may not have reflected the subtleties found in kinetic drawings. In addition; the fact that healthy children were asked to draw their families in online

platforms due to coronavirus pandemic and the possible changes in family relationships caused by the pandemic might be another likely explanation for these insignificant results because it was shown that parents' psychological well-being decreased during restrictions caused by the pandemic (Gassman-Pines et al., 2020) and parental stress during the coronavirus pandemic was related to emotional and behavioral problems of children (Spinelli et al., 2020). There are also studies examining effects of quarantine period on parent-child relationships (e.g. Uzun et al., 2021), so this may have been a confounding factor since the two groups provided family drawings under differing conditions. It is conceivable that the family drawings obtained from the healthy group may not be reflective of "normal" state, since family dynamics may have been stressed during the pandemic and this was reflected in the drawings, thus minimizing the differences between the chronically ill group and the healthy group.

4.1.3 Strengths and Difficulties Questionnaire

Since SDQ is a general measure of children's psychological well-being and problems, it was expected that the chronically ill children would obtain higher scores on this instrument. This expectation was confirmed for some of the subscales; for example on the Emotional Problems subscale, parents of chronically ill children rated their children significantly higher than parents of healthy children in the present study. In this respect; parental reports appear to be in parallel with the ill children's own reflection indicating a higher level of emotional distress (as measured by Human Figure Drawings) than their healthy peers. This finding is similar to a previous study of Hysing, Elgen et al. (2009) who demonstrated that children with neurological problems had elevated scores on Emotional Problems, Inattention-

Hyperactivity and Peer Problems on SDQ; and children with asthma had increased scores on Emotional Problems and Hyperactivity-Inattention subscales compared to healthy children. Another population-based study conducted by Hysing, Sivertsen et al. (2009) found that chronically ill children had higher scores on all SDQ subscales than children without chronic illnesses. Therefore; this finding of the present study is in line with previous studies, and it is important in terms of investigating the parental perceptions regarding their children's psychological well-being.

However, this hypothesis was only partially supported in that scores of parents on SDQ-Conduct Problems subscale did not differ between two groups. This is a finding that would require further exploration. It is possible that for chronically ill children parents had different, possibly more tolerant expectations for conduct problems. That is, some behaviors that are considered to be "conduct problems" may be considered "not problematic" for ill children.

4.1.4 Closure Drawings

In the present study; when children were asked to draw a picture of wherever they would like to be at that time, children with chronic illnesses mostly drew their homes and themes like going to the restaurant, park, play center, school or the places which they believed they would like to go when they heal like mausoleum of Atatürk. It is congruent with the study of Rollins (2005) which investigated that children with cancer drew active or relaxing places and they desired for 'normalcy' when the same question was asked them.

In the current study; healthy children drew themes related to travelling in (e.g. farm, picnic with family, park, restaurant) or out of town (e.g. sea, holiday, Paris,

İstanbul), school and home. Therefore; they were almost similar to ill children in terms of ‘desire for normalcy’. It is considered that COVID-19 pandemic affected wishes of children without any chronic illnesses because they were also isolated from school and peers and they may have also had increased illness anxiety. To illustrate; it was seen that during the epidemic, preschool children drew mostly school and friends, which was interpreted as the effects of the social isolation and sudden termination of school during the COVID-19 pandemic (Alabdulkarim et al., 2021). Also, the desire for normalcy during coronavirus pandemic was seen in another study. Segre et al. (2020) asked children (6-14 years) what they want to do first when everything returned to normal, and children mostly said meeting friends again (62%), doing sports they liked most to do (18.3%), meeting with family members again and going to the sea. In the present study; there were reports of children like ‘I would like to go to the sea in Antalya because I would go there with my mom if the coronavirus did not exist’ or ‘I would like to play football with my friends at a time when coronavirus does not exist’, which were similar to the previous study (Segre et al., 2020) and reflecting the possible effects of coronavirus pandemic. It can be said that the children in the current study’s closure drawings probably did not reflect the “normal” drawings. To the best of my knowledge, it seems that there is not any study reflecting the ‘normal’ drawings of children who do not have traumatic experiences and in a non-pandemic period. Therefore; it would be interesting to ask healthy children to draw ‘‘where they wish to be’’ after the pandemic ends, so this is another area for further consideration.

4.1.5 Correlations between Study Variables and Illness Effect

It was expected that measures of emotional problems from the various instruments utilized in the study (Human Figure Drawings, Family Drawings, Strengths and Difficulties Questionnaire) would be inter-correlated if they were measuring the same construct, that is, emotional difficulties. However; there was only one significant correlation between scores utilized in analyses of the current study. The fact that the other scores derived from drawings and SDQ were not correlated with each other may be a sign that these instruments do not measure the same construct which is emotional difficulties. Many studies in the field (e.g. Stefanatou, 2008; Burns-Nader, 2017) have studied drawings of children and interpreted them as indicators of their emotional status. However the current study shows that this projective measure is not highly related to a traditional objective measure of emotional difficulties like SDQ. It is clear that drawings reflect a different aspect of emotional status. Further exploration of Human Figure Drawings emotional indicators and objective self report measures of anxiety and depression in ill children is needed. In addition; these insignificant correlations may be explained by the fact that parental reports and children's own views might not truly reflect each other. In the present study, insignificant correlations showed that the parental reports and children's reflections on drawings were different. This result also indicates the importance of taking children's own reports besides parental reports by using age-appropriate methods because it is known that parent and child reports may be different from each other (e.g. Rey et al., 1992; Salbach-Andrae et al., 2009).

4.2 Effects of Child Gender

4.2.1 Main Effect

In the current study, it was found that males had significantly higher number of emotional indicators on Human Figure Drawings than females regardless of the health status. This is consistent with an earlier study by Nyman et al. (2011) which stated that boys had higher emotional indicator numbers on Human Figure Drawings of their self and best friends than girls. Also; this finding is parallel to the studies (e.g. Zahn-Waxler et al., 2008; Başgül et al., 2011) showing that boys had more emotional problems than girls in childhood (6-12 years). This may also be related to gender differences in drawing ability because it was found that asymmetry in face and legs was seen more in drawings of boys (Tuman, 1999; Skybo et al., 2007), or girls drew more details than men in their drawings (Özer, 2009b).

In addition; there may be an effect of the fact that healthy children without exception produced their drawings during the pandemic period in the current study. It is possible that males may be more vulnerable to psychological effects of both chronic illnesses and emotionally stressful periods like pandemic, and this result may be a reflection of their increased emotional difficulties.

4.2.2 Interaction Effect

It is also found that there is an interaction effect of child gender; that is, males had more psychological difficulties than females when they are chronically ill. It is an interesting finding to note that boys who were ill showed more emotional difficulties than their healthy counterparts, while this effect was not reflected in girls. Emotional indicators on Human Figure Drawings and Emotional Tone scores on

Family Drawings (KFD-R scoring system) of ill males were significantly higher than those of healthy males although there were no significant differences between ill and healthy females.

There may be several explanations for this result. First; it was shown that boys had more psychological problems at school age period (6-12 years) (Zahn-Waxler et al., 2008) although girls might have more problems in adolescence (e.g. Zahn-Waxler et al., 2008; Chaplin & Aldao, 2013). Besides these developmental issues, gender differences in responses to diverse risks and reactions from the environment have been observed (Zahn-Waxler et al., 2008). Therefore; this significant interaction effect may be explained by the possibility that boys and girls may receive different reactions from the environment and give different responses to their chronic illnesses which is a risk and a very stressful situation.

Second; culture might have an effect on this observed differential gender effect in ill children. For example; males might be exposed to different responses when they became ill because of cultural effects specific to Turkey. In our culture, according to Kağıtçıbaşı (1981), boys tend to be more valued than girls in traditional family structure in Turkey because of the utilitarian approach regarding the future of the family, like carrying on the surname or giving support to parents (as cited in Fişek, 1983). With the passage of time and as psychological needs became more important, it has been reported that families' preference for boys has decreased (Ataca et al., 2005; Duman, 2016). However; males still go to school more than girls, and girls are expected to do housework in Turkey (Ergün & Arık, 2020) so gender differences in some areas are seen also at the present time. Therefore; it is possible that the cultural context might have an effect and the hospitalization or being

diagnosed with a serious illness of males might be perceived as more threatening especially in families coming from rural areas, and this in turn may be reflected in parents' perception of their children's problems being different for the two genders and the male child's responding with more emotional stress (HFD-EI's).

Emotion socialization research also indicates gender differences. It was found in a low-income sample that girls experienced more punitive responses from their caregivers than boys when they expressed their anger (Chaplin et al., 2010), or boys were punished by their fathers because of their sadness and fear while girls were rewarded for the same feelings (Garside & Klimes-Dougan, 2002). Girls with food allergy were also faced with unsupportive responses to their externalizing emotions (Parr, 2017). It is possible that the male and female child's emotional responses to a threatening disease may be receiving very different consequences from their environment. On the other hand, gender differences in emotion socialization practices may incline males to not be able to be aware or express their internalizing emotions due to gender role expectations.

As opposed to drawings of children, parental reports on SDQ did not indicate an effect of gender. This is similar to the study of Glazebrook et al. (2003) showing that gender differences on SDQ-Emotional Symptoms was not observed in child patients. However; it is contradictory to a previous study showing that females with cutaneous allergy had more SDQ-Emotional Symptoms and Conduct Problems scores than females without cutaneous allergy (Parent et al., 2018).

To sum up; significant gender differences were found by many researchers although pediatric psychology does not have consistent investigations regarding the

gender effects on children's adjustment to chronic illnesses (Miller & La Greca, 2005). Therefore; further research examining the possible effects of child gender on ill children's psychological functioning is needed.

4.3 Human Figure Drawings of Healthy Children in the Current Study

In the present study, it was observed that healthy children in this sample had more emotional indicators than those of the Turkish children in the study of Özer (2009a). This observation could be explained by the fact that emotional indicators were scored utilizing Koppitz's list in the present study in order to be comparable with the literature. However; Özer (2009a) showed that there are differences in the Human Figure Drawings of Turkish children in terms of the frequencies of some emotional indicators. That is; some indicators which are scored as emotional indicator according to Koppitz (1968) were observed on drawings of more than 15% of Turkish children in the study of Özer (2009a) so these may not reflect emotional difficulties, but rather reflect cultural differences. It was suggested by Özer (2009a) that the items that were observed with higher than %15 frequency should not be considered EI's. The scoring of EI's with Koppitz (1968) criteria may falsely appear to show a higher level of EI's for Turkish children.

Also, this observed difference may be explained by the different data collection methods used for healthy children because of the coronavirus pandemic in the present study. That is, the fact that drawings had to be produced during online meetings may be a factor affecting the level of emotional indicators on Human Figure Drawings of children without any chronic illnesses. Since no research is available comparing online and face to face drawing methods, it would be impossible

to conclude at this stage. It would be interesting to compare children's drawings which are collected through online platforms and face to face methods after the pandemic ends in order to examine whether there is an effect of online interviews.

Finally, this observed difference between the healthy group in the present sample and the earlier sample of Özer (2009a) may be a reflection of the children's responses to pandemic and lockdown conditions. It was shown that children had higher depression and anxiety symptoms in the coronavirus pandemic period (e.g. Xie et al., 2020; Segre et al., 2021) so the higher EI numbers of healthy children in the present study may reflect children's psychological responses to the pandemic.

4.4 Clinical Implications

As stated before; it is important to increase the quality of life of children struggling with chronic illnesses as well as extending the life span of them (Schonfeld & Lewis, 1995, as cited in Saday-Duman, 2014). Therefore; psychological well-being of ill children should be improved as a way of increasing their quality of life especially when they are hospitalized. For this purpose, to enable them to express their thoughts or emotions through age-appropriate ways like drawings or play may be important.

According to the results of the present study, both children themselves and parental reports indicated that chronically ill or hospitalized children had more emotional difficulties than their healthy peers. Therefore; it is critical that health workers and families become aware of the possible psychological reactions of children in order to minimize the possible negative psychological effects of this

process and not to overlook their psychological symptoms which may appear similar to the symptoms of illness or side effects of treatments.

Many studies of children in the literature utilize parental reports or observations since children are not considered to be able to comprehend cognitively many of the measurement styles typical in psychopathology or mental health. However, it is important to realize that children have a voice and agency and allow them to express themselves. It has been suggested that children's drawings are a way of communication and provide additional data that are not accessed otherwise (Motta et al., 1993). It has been indicated that:

> Parallel literature involving figure drawings as the projective measure is unavailable, leaving a gap in the knowledge base for practitioners and an unanswered question for researchers. Thus, practitioners should rely upon multiple measures and methods in assessment practice as a matter of course so as to provide checks and balances. (Flanagan & Motta, 2007, p.263)

The present study does provide this additional data or the voice of the children and this is important especially in a threating situation such as a critical illness.

These considerations are also necessary for protecting children's rights of expressing their own views regarding the issues related to them and accessing better health condition and services, as defined by Convention on the Rights of the Child (United Nations Children's Fund UK (UNICEF UK), 1989). Allowing children to express their thoughts or feelings in a threatening setting such as a hospital, being aware of their psychological symptoms will be the first step in providing the necessary psychosocial support and assuring that the rights of children are protected.

In addition; the finding from the present study indicating that children with chronic illnesses wanted to be at home, at ordinary places like restaurant or at school when they were asked to draw a picture of wherever they would like to be at that time. This may be a result of the feeling of isolation in addition to their illness, an example of children wanting to be in contact with their family members and friends. Similarly; healthy children (who were evaluated during pandemic and lockdown conditions) reported they also want to be together with their relatives or friends. It appears important to note that during times of crises such as illness or pandemic, children have a heightened need for contact and their emotional needs need to be considered.

In conclusion; being aware of hospitalized children's psychological symptoms and needs and the possible gender effects might be the most important clinical implication of this study. Considering the possible psychological effects; and providing with the required psychosocial support for all children, family members and health workers are essential because of the fact that children who are not showing any visible psychological symptoms may not necessarily mean that they have no psychological difficulties.

4.5 Strengths of the Current Study

The present study has several strengths. First of all, this study enables children to be active participants of research through a child-centered approach as stated by Solorio (2017). In addition to doing research with children rather than on children, drawings made it possible that children could obtain some satisfaction and express themselves while producing the drawings. Also; the participants of the

present study includes children with various chronic illnesses. In the literature, the non-categorical approach is suggested by some authors because the chronicity of the illnesses is important rather than specific effects of each illness (Vessey, 1999, as cited in Gökler, 2008). In addition to including various illnesses, the data was collected from four different hospitals in two cities which may make the data more representative. Therefore; investigating drawings and parental reports of children with various chronic illnesses in different cities and hospitals might have enabled an examination of the effects of chronic illnesses by minimizing the specific effects of some illnesses or environmental effects as much as possible.

One of the strengths of the current study is that the drawings were scored utilizing a reliable scoring system. This approach facilitated more formal scoring and this is important because a disadvantage of some of the drawing studies in the literature preferred 'eyeballing' rather than formal data analysis (Broadbent et al., 2019). In addition; data was collected from more than one source (both children and parents), and this made it possible to gain information about the usage of drawings and SDQ in the field. Lastly; it is important that the present study provides with an example of significant gender differences in chronically ill group. Discussing this gender effects through cultural considerations might be important in order to have a better understanding of ill children's emotional well-being in our country.

4.6 Limitations and Future Suggestions

Besides the strengths mentioned above, there are several limitations of the present study. Firstly; the fact that there are children with various chronic illnesses in the current sample, might be also a limitation because there are researchers

recommending examining chronic illnesses separately (Hentinen & Kyngas, 1998, as cited in Gökler, 2008).

Second limitation of the present study is that each child was visited once at hospitals. Because drawings reflect children's inner thoughts or feelings for that particular place and time (Guillemin, 2004), drawings were the products of that single time point. In addition; drawings of ill children might be affected by illness-related conditions such as pain or medical equipment on their hands. Therefore; if it was possible, multiple drawings produced by the same children at different time points would have been preferable.

Thirdly; the present study could not examine the psychological functioning of the parents and siblings. It is known that chronic illnesses affect the whole family system (e.g. Louchamp & Sabatier, 2018) and children's psychological well-being should not be considered independently from the familial issues because parents' symptoms might affect psychological functioning of ill children (e.g. Noll et al., 2000). Therefore; being able to make more comprehensive examinations would be more preferable.

Finally and possibly most importantly, the fact that the coronavirus pandemic emerged while the data collection of the current study was proceeding affected the data collection method and results of this study. This made it difficult to see the possible effects of chronic illnesses on children clearly because the healthy group was also in isolation and probably struggling with psychological effects of the pandemic as mentioned earlier. However, the current study hereby provides an example of drawings of children during the pandemic. In the present study, the

Human Figure Drawings produced in the online platforms during the pandemic had higher levels of emotional indicators compared with a previous study by Özer (2009a) who examined drawings collected face to face in Turkey. It may be meaningful to compare children's drawings collected by online and traditional face-to-face methods at the same time and scored by the same coders. Since the number of studies conducted in online platforms with children may increase in future, it would be helpful to observe the comparisons and possible differences.

Taking these results and limitations into consideration; several future suggestions could be made. Firstly, future research can be conducted by visiting the same children more than one time to be able to have more reliable multiple drawings. Secondly, Kinetic Family Drawings can be utilized in order to gain more detailed information regarding the family perception of children. Also; conducting future studies investigating the possible gender differences in emotional functioning of ill children is important to better understand the gender effect. For example, an investigation of parents' reports of their emotional reactions to their child's illness and a qualitative analysis of these reports based on gender can be illuminating. The final future recommendation could be replication of this study because the current study was affected by the beginning of the pandemic. To be able to observe how chronically ill children have been affected from the pandemic would also be meaningful because as said before, they are often ''ordinary children facing extraordinary challenges'' (Houghton, 2005, p.114) and they have a right to be also psychologically well while dealing with chronic illnesses affecting their whole life.

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APPENDICES

APPENDIX A. INFORMED CONSENT (for parents)

Gönüllü Katılım Formu (Ebeveyn)

Değerli Anne ve Babalar,

Bu çalışma TED Üniversitesi Klinik Çocuk ve Ergen Psikolojisi yüksek lisans programı öğrencisi Psikolog Işıl Çukurova tarafından, Prof. Dr. Nur Serap Özer danışmanlığında yürütülmektedir.

Bu çalışmanın amacı nedir? Çalışmamızın amacı kronik hastalıkların çocukların duygusal durumlarına olası etkilerini araştırmak ve çocukların çizdiği resimlerin bu duygusal etkileri yansıtıp yansıtmadığını incelemektir.

Sizin ve çocuğunuzun katılımcı olarak ne yapmasını talep ediyoruz? Bu amaçlar doğrultusunda; çocuğunuzun bir insan çizimi, aile çizimi ve nerede olmak istediğinin çizimini yapmasına ve sizin de kısa bir form ve anket doldurmanıza ihtiyaç duymaktayız. Çocuğunuz için bir zaman kısıtlaması bulunmamakla birlikte, size verilecek form ve anketin toplam 10 dakika civarında süreceği tahmin edilmektedir. Sizden çocuğunuzun katılımıyla ilgili izin istediğimiz gibi, çalışmaya başlamadan çocuğunuzun da katılımıyla ilgili rızası mutlaka alınacaktır. Katılım sonrasında çocuğunuza, bunu sizin ve onun istemesi halinde, bir resim defteri ve boya kalemi hediye edilecektir.

Sizden ve çocuğunuzdan alınan bilgiler ne amaçla ve nasıl kullanılacak? Sizden alacağımız cevaplar ve çocuğunuzun çizimleri kesinlikle gizli tutulacak ve sadece bilimsel amaçlarla kullanılacaktır. Çocuğunuzun ve sizin kimlik bilgileriniz hiçbir şekilde hiç kimseyle paylaşılmayacaktır. Sizin ve çocuğunuzun katılımları, kronik hastalıkların psikolojik etkilerinin ve bunların resimlere yansımasının saptanmasına çok önemli bir katkı sağlayacaktır.

Siz veya çocuğunuz çalışmayı yarıda kesmek isterseniz ne yapmalısınız? Bu çalışmaya katılım tamamen gönüllülük esasına dayalıdır. Herhangi bir nedenden ötürü siz veya çocuğunuz rahatsız olduğunuzu hissederseniz, çalışma derhal sonlandırılacaktır. Bu formu imzaladıktan sonra da, siz ve çocuğunuz çalışmadan ayrılma hakkına sahipsiniz. Bunun herhangi bir sonucu/yaptırımı olmayacaktır.

Bu çalışmayla ilgili daha fazla bilgi almak isterseniz: Araştırmayla ilgili sorularınızı aşağıdaki e-posta adresini kullanarak bize iletebilirsiniz.

Saygılarımızla,

Psk. Işıl Çukurova, e-posta: isil.cukurova@tedu.edu.tr

Bu çalışmaya tamamen gönüllü olarak katılıyorum ve çocuğum …….’nın da katılımcı olmasına izin veriyorum.

(Lütfen aşağıdaki iki seçenekten birini imzalayınız)

Evet, onaylıyorum …… Hayır, onaylamıyorum ……

Anne/Baba Adı-Soyadı: ……..... Tarih:

İmza:

APPENDIX B. INFORMED CONSENT (for children)

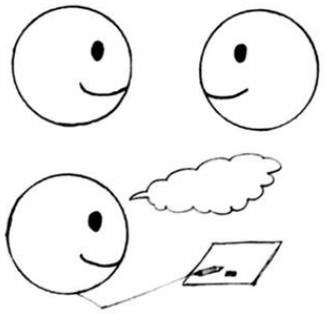
Gönüllü Katılım (Rıza) Formu (Çocuk)



Psikolog kimdir?
İnsanların kendilerini daha iyi hissetmeleri için onlarla konuşan ve onları anlamaya çalışan kişidir.



Neyi merak ettik ve bu çalışmanın amacı nedir?
Çocukların hasta oldukları zaman veya hasta olmadıkları zaman neler hissettiklerini ve neler çizdiklerini merak ettik. Bu çalışmanın amacı hislerini ve çizimlerini anlamaktır. Nasıl çizdiğin veya ne kadar güzel çizdiğin önemli değil. Elinden geleni yap yeter :)



Neler yapacağız?
Konuşacağız ve kurşun kalemi kullanarak resimler çizeceksin. İstersen ebeveynin de yanında olabilir.

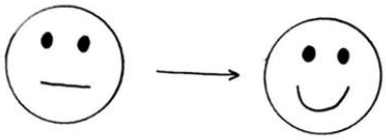


İsmim ve resimlerim başkalarına gösterilecek mi?
İsmin gibi sana ait olan bilgilerin hiç kimseye söylenmeyecek. Çizdiğin resimlerse; izin verirsen, sadece bilimsel amaçlarla ismin gizli tutularak paylaşılabilir. İstersen resimlerine yazmak için kendine bir takma ad belirleyebilirsin. :)



Çalışmaya katılmam ne işe yarayacak?
Çalışmaya katılman hem bizim için hem de diğer çocuklar için çok değerli. Bu çalışmanın sonunda, biz çocukların resimlerini daha iyi anlayabilir ve onlara daha çok yardımcı olabiliriz.

Eğer sen ve annen/baban isterseniz, biz de sana teşekkür etmek amacıyla bir resim defteri ve boyama kalemi hediye etmek istiyoruz.



Katılmak istemezsem ne olur?
Katılmak istemezsen çizimleri yapmayabilirsin ve istediğin zaman da yapmaktan vazgeçebilirsin. Bu kararının herhangi bir kötü sonucu olmayacak.



Sormak istediğin bir şeyler var mı?

Bana zaman ayırdığın için teşekkür ederim.

Psikolog Işıl Çukurova; isil.cukurova@tedu.edu.tr

İstediğin zaman, aşağıda sana uygun olan ifadeyi seçip işaretleyebilirsin.



Katılmak istiyorum.



Katılmak istemiyorum.

Adı-Soyadı: _____

Tarih: _____

APPENDIX C. DEMOGRAPHIC INFORMATION FORM (for parents of ill children)

Demografik Bilgi Formu

Katılımcı no:

Tarih:

Bu form, çalışmanın sonuçlarına yardımcı olacak özellikleriniz hakkında bilgi almak için hazırlanmış olup çalışma kapsamı dışında kullanılmayacak ve paylaşılmayacaktır. Katkılarınız için teşekkürler.

A. Ebeveyn Bilgileri

Çocuğun: annesiyim ( ) / babasıyım ( )

Yaşınız: …...

Eğitim durumunuz: İlkokul ( )

Ortaokul ( )

Lise ( )

Üniversite ( )

Yüksek lisans / doktora ( )

Gelir düzeyiniz: Düşük ( ) / Orta ( ) / Yüksek ( )

Tedavi için il dışından mı geliyorsunuz? Evet ( ) / Hayır ( )

Evetse; ailenizin diğer üyeleri de il değişikliği yaptı mı? Evet ( ) / Hayır ( )

B. Çocuğunuzla İlgili Bilgiler

Çocuğunuzun doğum tarihi: ……

Cinsiyeti: kız çocuğu ( ) / erkek çocuğu ( )

Çocuğunuzun kaç kardeşi var?: ……

Okula devam ediyor mu?: …… Kaçıncı sınıf?: …….

Son zamanlarda onu psikolojik olarak etkileyen önemli bir olay oldu mu? Evet ( ) / Hayır ( )

Evetse; kısaca bahseder misiniz?

…….

C. Tıbbi Bilgiler

Çocuğunuzun tanısı nedir?: …….

Tanı konulduğunda çocuğunuz kaç yaşındaydı?: ……..

Tedaviye ne zamandır devam ediyorsunuz?: ……

Çocuğunuza bu süreçte bakım veren kişi(ler) kimlerdir?: ……..

Çocuğunuzun kronik hastalığı dışında herhangi bir tıbbi veya psikiyatrik bir tanısı var mı?:

Evet ( ) / Hayır ( )

Varsa, nedir?: ……

APPENDIX D. DEMOGRAPHIC INFORMATION FORM (for parents of healthy children)

Demografik Bilgi Formu

Katılımcı no:

Tarih:

Bu form, çalışmanın sonuçlarına yardımcı olacak özellikleriniz hakkında bilgi almak için hazırlanmış olup çalışma kapsamı dışında kullanılmayacak ve paylaşılmayacaktır. Katkılarınız için teşekkürler.

A. Ebeveyn Bilgileri

Çocuğun: annesiyim ( ) / babasıyım ( )

Yaşınız: …...

Eğitim durumunuz: İlkokul ( )

Ortaokul ( )

Lise ( )

Üniversite ( )

Yüksek lisans / doktora ( )

Gelir düzeyiniz: Düşük ( ) / Orta ( ) / Yüksek ( )

B. Çocuğunuzla İlgili Bilgiler

Çocuğunuzun doğum tarihi: ……

Cinsiyeti: kız çocuğu ( ) / erkek çocuğu ( )

Çocuğunuzun kaç kardeşi var?: ……

Okula gidiyor mu?: …… Kaçıncı sınıf?: …….

Çocuğunuzun herhangi bir tıbbi veya psikiyatrik bir tanısı var mı?:

Evet ( ) / Hayır ( )

Varsa, nedir?: ……

Son zamanlarda onu psikolojik olarak etkileyen önemli bir olay oldu mu? Evet ( ) / Hayır ( )

Evetse; kısaca bahseder misiniz?

…….

APPENDIX E. STRENGTHS AND DIFFICULTIES QUESTIONNAIRE

GÜÇLER VE GÜÇLÜKLER ANKETİ (SDQ-Tur)

Her cümle için, Doğru Değil, Kısmen Doğru, Tamamen Doğru kutularından birini işaretleyiniz. Kesinlikle emin olamasanız ya da size anlamsız görünse de elinizden geldiğince tüm cümleleri yanıtlamanız bize yardımcı olacaktır. Lütfen yanıtlarınızı çocuğunuzun son 6 ay içindeki davranışlarını göz önüne alarak veriniz.

Çocuğunuzun Adı: ..... Kız / Erkek

Doğum Tarihi: .....

	Doğru Değil	Kısmen Doğru	Kesinlikle Doğru
Diğer insanların duygularını önemser.	☐	☐	☐
Huzursuz ve aşırı hareketlidir, uzun süre kıpırdamadan duramaz.	☐	☐	☐
Sıkça baş ağrısı, karın ağrısı ve bulantı şikayetleri olur	☐	☐	☐
Diğer çocuklarla kolayca paylaşır. (yiyeceğini, oyuncağını, kalemini v.s.)	☐	☐	☐
Sıkça öfke nöbetleri olur yada aşırı sinirlidir.	☐	☐	☐
Daha çok tek başınadır, yalnız oynama eğilimindedir.	☐	☐	☐
Genellikle söz dinler, büyüklerin isteklerini yapar.	☐	☐	☐
Birçok kaygısı vardır. Sıkça endişeli görünür.	☐	☐	☐
Eğer birisi incinmiş, morali bozulmuş yada kendini kötü hissediyor ise ona yardımcı olur.	☐	☐	☐
Sürekli elleri ayakları kıpır kıpırdır yada oturduğu yerde kıpırdanıp durur.	☐	☐	☐
En az bir yakın arkadaşı vardır.	☐	☐	☐
Sıkça diğer çocuklarla kavga eder yada onlarla alay eder.	☐	☐	☐
Sıkça mutsuz, kederli yada ağlamaklıdır.	☐	☐	☐
Genellikle diğer çocuklar tarafından sevilir.	☐	☐	☐
Dikkati kolayca dağılır. Dikkatini toplamakta güçlük çeker.	☐	☐	☐
Yeni ortamlarda gergin yada huysuzdur. Kendine güvenini kolayca kaybeder.	☐	☐	☐
Kendinden küçüklere iyi davranır.	☐	☐	☐
Sıkça yalan söyler yada hile yapar.	☐	☐	☐
Diğer çocuklar ona takarlar yada onunla alay ederler.	☐	☐	☐
Sıkça başkalarına (anne baba, öğretmen, diğer çocuklar) yardım etmeye istekli olur.	☐	☐	☐
Bir şeyi yapmadan önce düşünür.	☐	☐	☐
Ev, okul yada başka yerlerden çalar.	☐	☐	☐
Büyüklerle çocuklardan daha iyi geçinir.	☐	☐	☐
Pek çok korkusu var. Kolayca ürker.	☐	☐	☐
Başladığı işi bitirir, dikkat süresi iyidir.	☐	☐	☐

İmza: ..... Tarih: .....

Anne / Baba / Diğer (lütfen belirtiniz):

Yardımınız için teşekkür ederiz

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APPENDIX F. DEVELOPMENTAL SCORE OF HFD – SCORING ITEMS

1. Baş
2. Gözler
3. Göz bebekleri
4. Kaşlar ve kirpikler
5. Burun
6. Burun delikleri
7. Ağız
8. İki dudak
9. Kulak
10. Saçlar
11. Boyun
12. Gövde
13. Kollar
14. Kolların iki boyutlu olması
15. Kolların aşağı doğru olması
16. Kolların omuza doğru şekilde bağlanmış olması
17. Dirsek
18. Eller
19. Parmaklar
20. Doğru sayıda parmak
21. Bacaklar
22. Bacakların iki boyutlu olması
23. Diz
24. Ayak
25. Ayak iki boyutlu
26. Profil
27. Giysi: Bir parça veya hiç
28. Giysi: İki ya da fazla parka
29. Giysi: 4 ya da fazla parka
30. Boyutlamanın iyi olması

APPENDIX G. EMOTIONAL INDICATORS OF KOPPITZ

1. Parçaların bütünlüğünde zayıflık
2. Yüzün gölgelenmesi
3. Gövde ve uzuvların gölgelendirilmesi
4. Eller veya boyunda gölge
5. Uzuvlarda bariz asimetri
6. Eğik figür
7. Minik figür
8. Büyük figür
9. Transparanlık
10. Minik baş
11. Şaşı gözler
12. Dişler
13. Kısa kollar
14. Uzun kollar
15. Kolların vücuda yapışık olması
16. Büyük eller
17. Eller yok
18. Bacakların yapışık olması
19. Cinsel organlar
20. Canavar ya da korkunç figürler
21. Kendiliğinden üç ya da daha fazla figür çizimi
22. Bulutlar
23. Gözler yok
24. Burun yok
25. Ağız yok
26. Gövde yok
27. Kollar yok
28. Bacak yok
29. Ayaklar yok
30. Boyun yok

APPENDIX H. KFD-R SCORING SYSTEM

Item:	Possible scores:
A. Incompleteness of body	0-1-2
B. Frequency of missing body parts	0-1-2
C. Cross-outs	0-1-2
D. Conditions of nature	0-1-2
E. Subject portrayal	0-1
F. Use of color (cannot used in the present study)	0-1-2
G. Use of space on paper	0-1-2
H. Developmental level	0-1
İ. Use of stick figures	0-1
J. Facial completeness of subject	0-1-2
K. Compartmentalization	0-1-2
L. Barriers	0-1-2
M. Figure size	0-1-2
N. Used front-back of paper	0-1-2
O. Exclusions	0-1-2
P. Body position of patient	0-1-2
Q. Body position of mother	0-1-2
R. Facial position of patient	0-1-2
S. Facial position of mother	0-1-2

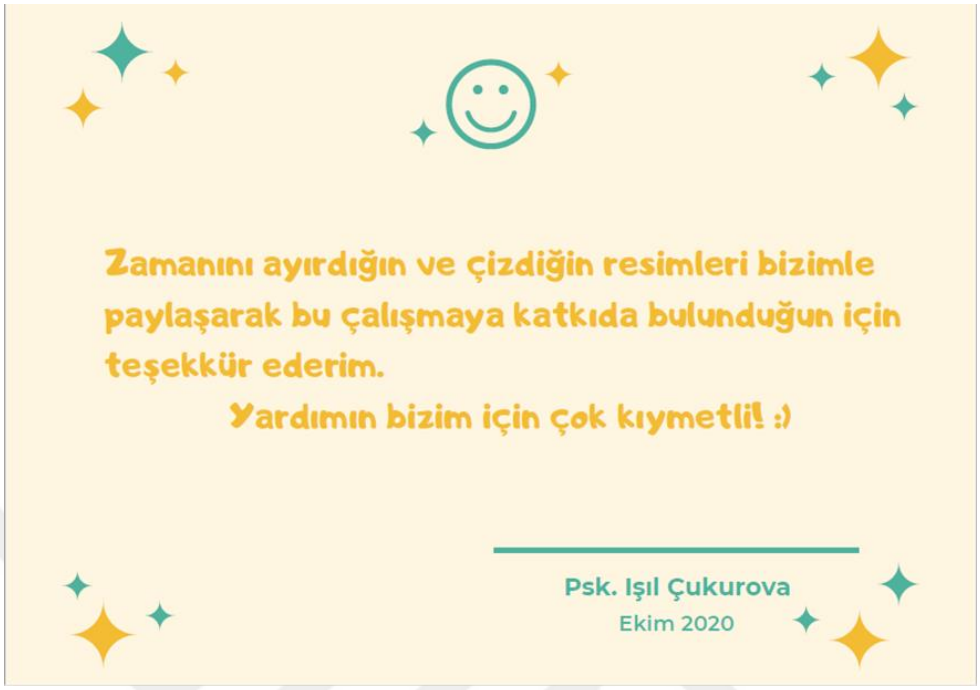
Subscales:

Communication: K, L, N, O, P, Q, R, S

Self-image: A, B, C, E, M

Emotional tone: D, F, G, H, I, J

APPENDIX I. DOCUMENT OF APPRECIATION



APPENDIX K. TEZ FOTOKOPİSİ İZİN FORMU

Anabilim Dalı: Psikoloji

YAZARIN

Soyadı: Çukurova

Adı: Işıl

Bölümü: Gelişim Odaklı Klinik Çocuk ve Ergen Psikolojisi

TEZİN ADI (İngilizce): A Comparison of Emotional Well-Being of Children with Chronic Illnesses and Their Healthy Peers through Children's Drawings

TEZİN TÜRÜ: Yüksek Lisans ■ Doktora ☐

1. Tezimin tamamından kaynak gösterilmek şartıyla fotokopi alınabilir. ■
2. Tezimin içindekiler sayfası, özet, indeks sayfalarından ve/veya bir bölümünden kaynak gösterilmek şartıyla fotokopi alınabilir. ■
3. Tezimden bir (1) yıl süreyle fotokopi alınamaz. ☐

TEZİN KÜTÜPHANEYE TESLİM TARİHİ: