The effect of drawing and writing technique on the anxiety level of children undergoing cancer treatment

Naime Altay, PhD RN *, Ebru Kilicarslan-Toruner, PhD RN, Çigdem Sari, RN
Gazi University Health Sciences Faculty Nursing Department, Ankara, Turkey

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**A B S T R A C T**

**Purpose:** To determine the effect of the drawing and writing technique on the anxiety level of children undergoing cancer treatment in hospital.

**Method:** Research was conducted in the haematology-oncology clinic of a university hospital, using a quasi-experimental design (pre-and-post intervention evaluations of a single group). The sample comprised 30 hospitalised children aged 9–16 years. Data were collected with Socio-demographic form, clinical data form, and the State Anxiety Inventory. The institution gave written approval for the study and parents provided written consent. Drawing, writing and mutual story-telling techniques were used as part of a five-day programme. Children were asked to draw a picture of a hospitalised child and write a story about this drawing. After drawing and writing, mutual storytelling were used to more constructive story with positive feelings. The drawing, writing techniques was implemented on the first and third days of the programme and mutual storytelling was implemented on the second and fourth days. Data were reported as percentages and frequencies and the intervention effect analysed with the Wilcoxon test.

**Results:** The average age of children was 12.56 years ± 2.67 and 76.7% were girls. The mean age diagnosis and mean treatment duration were 11.26 years ± 3.17 and 16.56 months ± 20.75 respectively. Most of the children (50%) had leukaemia and were receiving chemotherapy (66.7%). In most cases (76.7%) the mother was the primary caregiver. Scores on the State Anxiety Inventory were lower indicating lower anxiety-after the intervention (36.86 ± 4.12 than before it (40.46 ± 4.51) (p < 0.05).

**Conclusion:** The therapeutic intervention reduced children’s state anxiety.

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1. Introduction

The diagnosis and treatment of children’s cancer is an important health problem that involves many stressful experiences for child patients. The incidence of childhood cancer is 138.5 and 169 per million in Europe and the USA respectively (National Cancer Institute, 2011; Stiller et al., 2006) and in Turkey it is 115.6 per million (Stiller et al., 2006). The survival rate for children’s cancer is increasing in line with developments in cancer treatment (Robison et al., 2009).

The nature of the diagnosis and treatment process and the likelihood of complications make it necessary to hospitalise children for lengthy periods (Harper et al., 2015). Hospitalisation can be a frightful, irritating and unpleasant experience for children. Children undergo extreme stress during the process of diagnosis and treatment which involves long periods of hospitalisation (Hicks and Lavender, 2001; Penkman et al., 2006); it is a particularly challenging period for children and affects them physically, socially, emotionally and psychologically (Durualp and Altay, 2012; Enskar and Von Essen, 2008; Kim and Im, 2015; Kucukoglu and Celebioglu, 2013).

Changes occur in hospitalisation and a number of physical and psychological indications come into view while monitoring children for longer periods (Enskar and Von Essen, 2008; Muglia-Wechsler et al., 2014; Stam et al., 2006; Williams et al., 2006). Research on the physical, emotional and psychological effects of cancer on children (Li et al., 2010) found that children experienced a high level of anxiety during cancer treatment. The same research showed that more than half of the children were at high risk for depression. Furthermore, most of the children undergoing...
treatment in hospital said during the interviews that they were sad and anxious (Li et al., 2010). Hospitalisation of children diagnosed with cancer causes stress and anxiety (Coyne and Conlon, 2007; Li et al., 2007).

Factors which contribute to children’s anxiety about hospitalisation include the unfamiliarity of the hospital environment and its formalities, the new routine and concerns about abandoning their friends and families (Buckley and Savage, 2010; Coyne, 2006; Tunney and Boone, 2013). Anxiety disorders affect both the healing process and coping skills, and also cause behavioural changes (Li and Chung, 2009). Children can find it difficult to give voice to their feelings and emotions (Rollins et al., 2012; Wilson et al., 2010) and so verbal and non-verbal therapeutic communication techniques such as drawing and storytelling are sometimes used to evaluate the psycho-social conditions of children.

Asking children to do a drawing and write a story about what has been drawn is a commonly used therapeutic communication technique which gives children an opportunity to express their perceptions of the disease and their feelings visually as well as verbally (Malchiodi, 2012; Goldner et al., 2015). Children of school age prefer to express their feelings and thoughts by means of drawings rather than words (Durualp and Altay, 2012; Matsumori, 2005). Durualp and Altay (2012) showed in that drawing helped children with cancer to express their feelings and communicate better with their peers. Mutual storytelling could be used as a method of communicating with the children. The child is asked to tell a self-created story with a beginning, a middle, and an end. While listening to the story a counselor analyses its themes and psychological meaning for children. The counselor then responds with a story in which the characters are the same and the plot is similar, but in which the ending represents a healthier resolution than the ending child’s story. (Slivinske and Slivinske, 2014). These technique can be applied by health professional who are experts and educated in the field about the subject in order to interpret the child’s drawings and writings appropriately in many environments such as school, hospital, home.

Children may refrain from asking questions and verbalising their feelings because of the disease, treatment process, or fear of the unknown. They are unable to form a clear picture of their disease owing to their stage of development and draw their emotions (SenBeytut et al., 2009; Cavuşoğlu, 2013). They can experience frequent, intense emotional changes owing to, for example, anxiety about the unknown. It has been suggested that children’s drawings and accompanying stories can be used to evaluate emotional changes in children with cancer who have been hospitalised for treatment, and to plan appropriate treatment for such changes. The aim of this study was to determine the effect of storytelling, using the combined drawing and writing technique, on the anxiety levels of children undergoing cancer treatment in a hospital. The hypotheses were as follows.

- **H₀**: There is no difference between the state anxiety of children before and after using the combined drawing and writing technique for storytelling.
- **H₁**: There is a difference between the state anxiety levels of children before and after using the combined drawing and writing technique for storytelling.

2. Methods

2.1. Sample and study design

The research was carried out in the haematology and oncology clinic of a university hospital between 6th January 2015 and 30th June 2015 using a quasi-experimental design (pre- and post-intervention evaluations of a single group). All the children who met the research criteria were included in the sample. The inclusion criteria were as follows: a) the child agreed to take part in the research and his or her parents gave written consent to the child’s participation; b) age between 9 and 16 years; c) had already received two or more courses of chemotherapy. The exclusion criteria were as follows: a) child had experienced significant life event other than his or her disease (such as parents’ divorce, death of a parent, moving house etc.) within the last six months; b) had not received more than one course of chemotherapy; c) in the terminal phase. Exclusion criteria were selected according the factors which could affect the child’s anxiety level including important life-events, terminal stage of illness and aggressive treatment (Compas et al., 2012). Thirty-five children who met the criteria between the dates given above were eligible to take part; however two were unable to draw and three declined to participate. The sample thus consisted of 30 children.

2.2. Data collection

Descriptive data were collected and the State Anxiety Inventory was administered. All data collection forms were completed by the researchers during face-to-face interviews with the children.

2.3. Descriptive data collection form

The descriptive data collection form consisted of questions about socio-demographic variables (age, gender, family structure and schooling; four questions) and questions about the disease and treatment process (age at diagnosis, treatment, hospitalisation period and information about caregivers; six questions). This form was completed on the first day of the research after consent had been obtained from children and their families. The form took about ten to 15 min to complete.

2.4. The state anxiety inventory for children

The State Anxiety Inventory was used to examine how the state anxiety of the five days program is changed. The child’s anxiety can change instantaneously in stressful environments such as hospitals (Karlsson et al., 2014). The State Anxiety Inventory was developed by Spielberger (1973) and translated into Turkish by Ozusta (1995). The inventory can be adapted for the 9–16 years age group. There is no time limit for completion of the Inventory and it can be administered to groups or on an individual basis. The Inventory consists of 20 items describing emotions and behaviours; respondents indicate how often they experience each using a four-scale where 1 = ‘never’, 2 = ‘sometimes’, 3 = ‘a lot’ and 4 = ‘always’. Scores on the Inventory vary from 20 to 80 and high values indicate high anxiety. A validation study showed that mean scores for state anxiety were higher in a group diagnosed with anxiety disorder than in a control group. A study of the validity and reliability of the Turkish version of the Inventory reported Cronbach’s alpha = 0.81 (Ozusta, 1995). The inventory was administered on the first and fifth days of the intervention, which was designed to reduce anxiety in children with cancer undergoing a treatment. The inventory takes ten minutes to administer.

2.5. Procedure

A five-day therapeutic programme was used to reduce the anxiety of children undergoing cancer treatment. Instead of one therapeutic play, we preferred to implement a programme to understand the effect of continuous therapeutic play. The drawing and
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