Tell Me About It: Drawing as a Communication Tool for Children With Cancer

Judy A. Rollins, PhD, RN

As health-related research on children shifts from seeking information about children to seeking information directly from them, researchers recognize the need for developmentally appropriate methods such as drawing to help children communicate their experiences. This international study sought to (a) explore and compare the nature of stressors of everyday life and disease that children with cancer in the United Kingdom and the United States experience, (b) explore and compare the coping measures they use to manage these stressors, and (c) examine the use of drawing to enhance communication. Participants included 22 children ages 7 to 18 years, 13 boys and 9 girls receiving treatment for cancer in the United Kingdom and the United States. Quantitative and qualitative methods were used within a grounded theory approach and included drawing to accompany the traditional grounded theory methods of interview and observation. Findings indicate that children, regardless of their ethnicity and other cultural components, respond to the childhood cancer experience in a similar manner. The use of drawing enhanced communication through direct visual expression and/or through verbal expression via the "campfire effect."

Key words: *childhood cancer, drawing, stress, communication, psychosocial*

New treatments for childhood cancer have resulted in significant advances in lives saved. Overall survival has improved yearly since 1973. It is estimated that by the year 2010, 1 in 250 young adults will be a survivor of childhood cancer (Keene, Hobbie, & Ruccione, 2000). However, physical cure has been bought at a price. Much physical, social, economic, and psychological cost is exacted from the children and their families to buy this extraordinary success.

Stress and coping in childhood cancer has been a popular topic of investigation for a number of researchers. In some instances, children have been asked to complete lengthy questionnaires, which may not specifically capture the true nature of their experience and, in some cases, may cause discomfort (Phipps, Fairclough, & Mulhern, 1995). In other studies, parents have been asked to complete observation measures regarding stress and coping in their child with cancer, providing data on the parents' perceptions, which, although of immense value, may not accurately reflect the nature of the child's experience. According to the United Nations Convention on the Rights of the Child, children should be encouraged and enabled to make their views known on issues that affect them (Bellamy, 2003). In recent years, there has been a growing awareness and acknowledgment that children have strong feelings about, reactions to, and the right to full participation in events in their lives. Thus, health-related research on children is shifting from seeking information about children to seeking information directly from them (Carter, 2002; Docherty & Sandelowski, 1999).

Artistic expression is a developmentally appropriate means of communication for children. Drawing, often referred to as the universal language of childhood (Rubin, 1984), can serve as a valuable tool that enables

DOI: 10.1177/1043454205277103

Judy A. Rollins, PhD, RN, is a researcher and consultant with Rollins & Associates, Inc., and an adjunct instructor in the Department of Family Medicine at Georgetown University School of Medicine, Washington, DC. Address for correspondence: Judy A. Rollins, PhD, RN, 1406 28th Street, NW, Washington, DC 20007; e-mail: rollinsj@msn.com.

children to express their experiences. Children typically view drawing as a nonthreatening and enjoyable activity. Furthermore, children, particularly young ones who may not have the cognitive ability to express themselves in words, usually express themselves more naturally and spontaneously through actions such as drawing (Malchiodi, 1999).

An international comparative study was conducted at 2 treatment centers for children with cancer, 1 in the United Kingdom and 1 in the United States. Study aims were (a) to explore and compare the nature of stressors of everyday life and disease that children with cancer in the United Kingdom and the United States experience, (b) to explore and compare the coping measures they use to mange these stressors, and (c) to examine the use of drawing to enhance communication (Rollins, 2003). This exploratory study used the grounded theory method (Glaser & Strauss, 1967). Historically, few grounded theory studies have involved school-aged children because they often are difficult to engage in lengthy conversation, even about topics of interest to them (Instone, 2000). Thus, a critical component to this research and the focus of this article is the use of drawing to accompany the traditional grounded theory methods of interview and observation.

Literature Review

Children's drawings have intrigued psychologists, educators, art historians, and artists for more than 100 years (Golomb, 1992), and parents probably long before. Undeniably, drawing has been recognized as one of the most important ways that children express themselves and repeatedly has been linked to the expression of personality and emotions. A child's drawing is thought to reflect his or her inner world, depicting various feelings and relating information concerning psychological status and interpersonal style (Malchiodi, 1998). Mental health professionals and others have used drawing techniques with children that are not specifically designed to assess, diagnose, or evaluate the child but to provide a way for the child to communicate issues, feelings, and other experiences and to explore, invent, and problem solve through self-expression. Rubin (1984, p. 10) pointed out that although certain art therapy techniques often are best left to certified art therapists, "Many people can—and should—offer children art materials in situations of medical stress."

Drawing offers a means of nonverbal communication while supporting the ego, according to art therapy pioneers such as Kramer (1971). Provided that certain ego functions are intact, the act of drawing seems to have unique powers to mobilize energies not otherwise available for a form of expression that makes considerable demands on a child's ego and fosters the development of structure and integration (Ulman, Kramer, & Kwiatkowska, 1977). Art, instead of inhibiting verbalization, tends to expand the individual's power of expression in both words and pictures (Naumburg, 1966).

Although children can use any opportunity to draw as a means of communicating, certain drawing techniques have shown promise in promoting expression and enhancing communication. Illuminative artwork (Spouse, 2000) offers a simple method. In this method, the individual is asked to render a drawing based on a certain topic or theme. The facilitator does not impose his or her analysis of the individual's work but instead encourages the individual to use the artwork as a communication tool. Illuminative artwork can be used in much the same way as metaphors are used to express tacit or preconscious feelings about experiences, followed up by asking the individual to explain their significance.

Winnicott (1971), a pediatrician, developed a technique called the "squiggle game" in which the child and therapist create a scribble (ie, squiggle) through drawing together as a way for the child to tell a story about the images created. A similar method, "draw-and-write," involves inviting children to draw pictures and then write about what is happening in their pictures (Pridmore & Lansdown, 1997). Data are richer and more insightful than those obtained through writing alone. This method has proven effective in exploring young children's perceptions about health and illness; it helps the less verbally able to communicate their own health perceptions because the method allows them to draw and then to seek adult help to express their thoughts in writing. Oakley, Bendelow, Barnes, Buchanan, and Husain (1995) used this technique to collect information from children about their knowledge of and attitudes toward cancer and their understanding of health and health-related behaviors to inform future health promotion work.

The use of projective drawing techniques is increasing in research and assessment in children's health care settings. It is assumed that the figure drawn is a unique expression of a child's experiences and preferences (Machover, 1949). Over time, a series of draw-

ings by the same individual demonstrates constant structure and form, although content may vary. Thus, although clothing, details, and accessories (content) may change, the size of figures, lines, and placement (form) remain stable. Such techniques allow children to freely express their perceptions and experience, unbiased by right or wrong answers, cultural influences, or the expectations of the researcher or clinician (Welsh & Instone, 2000). The Kinetic Family Drawing (KFD) projective drawing technique has become especially popular in research with children in health care settings over the past 3 decades (eg, Instone, 2000; Rollins, 1990; Spinetta, McLaren, Fox, & Sparta, 1981). Developers of the technique, Burns and Kaufman (1972), found kinetic (action) drawings more informative than those obtained from the traditional akinetic instructions.

Children can use drawing to maintain communication with the treatment team at times when relationships are strained by anger, withdrawal, fatigue, and feelings that are too emotionally charged to be expressed with words (Councill, 1993). Drawing also can bring out mixed, poorly understood feelings, in an attempt to bring them to order and clarity (Bentley, 1989; Dalley, Case, & Schaverien, 1987). Councill (1999), an art therapist who works with children with cancer, has found that the following drawing activities are capable of generating important information from children with cancer: (a) free drawings (ie, with no directive given by the therapist), especially when children reflect their choices of subject and the meaning or artwork; (b) bridge drawings (Hays & Lyons, 1981) to understand the child's expectations of the future and the relative threat or security he or she feels; (c) volcano drawings to help understand how a child manages anxiety (Cox, 1993); and (d) Person Picking an Apple from a Tree (PPAT) drawings to gain understanding of coping ability and resourcefulness (Gantt, 1990; Lowenfeld, 1957).

Drawing offers a tool to monitor the child's emotional and developmental state and progress. For example, children who are stressed tend to show more emotional indicators in their drawings than children who are not stressed (Sturner, Rothbaum, Visintainer, & Wolfer, 1980). Rae (1991) uses the ipsative method to analyze children's drawings for the purpose of assessment. The ipsative method is a procedure whereby psychosocial adjustment and coping are assessed using the child's own drawings as a standard for comparison. Rather than looking solely at traits, content, or themes in a single drawing, the therapist evaluates children's psychosocial and emotional progress as a function of the changes in their drawings over time. Because children's emotional status can change quickly over time, repeated drawings can offer a more realistic, multidimensional assessment of functioning at a particular time or over a length of time.

A child's drawing can be a window not only to the child's feelings about his or her illness but also to cognitive and developmental maturity, coping styles, and personality (Councill, 1999). How children are adapting to their illness and the strengths and limitations of their personalities can often emerge in their drawings. A child's artwork also can assist the medical team in assessing the degree of impairment and progress or regression when neurologic involvement is present.

Methods

Quantitative and qualitative methods were used within a grounded theory approach (Glaser & Strauss, 1967). Triangulation, the use of multiple referents to draw conclusions about what constitutes the truth (Polit, Beck, & Hungler, 2001), was used to enhance credibility.

Participants

The target population for participants included children ages 7 to 18 years, boys and girls, receiving treatment for cancer at the U.K. site in the Midlands region of England and at the U.S. site in the middle Atlantic region of America. Over the 6-month data collection period in 2000, a total of 22 children were interviewed (plus 6 children in the pilot testing of the instruments): 11 children at the U.K. site and 11 children at the U.S. site participated in the study. Demographic and diagnostic characteristics of the participants can be found in Table 1.

The majority of the children were in either the youngest or oldest age groups. As a total sample, nearly 60% of the participants were boys; however, the U.S. sample had considerably more boys (73%) compared with the U.K. sample (46%). Ethnicity of the U.K. sample was almost exclusively white, contrasting to the U.S. sample with only about one third of the sample white. For the total sample, more than 60% of the children were white and 18% were Hispanic. Two black/African American children, one Muslim, and one Roma child rounded out the sample.

Table 1. Demographic and Diagnostic Characteristics of Participants

Variable	U.K. (n = 11) f (%)	U.S. (n = 11) f (%)	Total (N = 22) f (%)
Age (in years)			
7-9	5 (46)	4 (36)	9 (41)
10-12	2 (18)	2 (18)	4 (18)
13-15	1 (9)	1 (9)	2 (9)
16-18	3 (27)	4 (36)	7 (32)
Gender			
Boy	5 (46)	8 (73)	13 (59)
Girl	6 (54)	3 (27)	9 (41)
Ethnicity			
White	10 (91)	4 (36)	14 (64)
Hispanic	—	4 (36)	4 (18)
Black/African American	—	2 (18)	2 (9)
Muslim	—	1 (9)	1 (4)
Roma	1 (9)	—	1 (4)
Diagnosis			
Acute lymphocytic leukemia	5 (46)	6 (54)	11 (50)
Acute myeloid leukemia	1 (9)	1 (9)	2 (9)
Hodgkin's lymphoma	2 (18)	2 (18)	4 (18)
Brain tumor	2 (18)	—	2 (9)
Wilms's tumor	1 (9)	—	1 (4)
Osteogenic sarcoma	—	1 (9)	1 (4)
Orbital rhabdomyosarcoma	—	1 (9)	1 (4)
Length of time since initial diagnosis			
0-6 months	4 (36)	—	4 (18)
7-12 months	3 (27)	1 (9)	4 (18)
13-18 months	2 (18)	4 (36)	6 (27)
19-24 months	1 (9)	3 (27)	4 (18)
25 or more months	1 (9)	3 (27)	4 (18)
Relapsed	—	2 (18)	2 (9)
Marital status of parents			
Married	8 (73)	8 (73)	16 (73)
Single parent	3 (27)	3 (27)	6 (27)
Siblings			
0	2 (18)	3 (27)	5 (23)
1	5 (46)	3 (27)	8 (36)
2	2 (18)	4 (36)	6 (27)
3 or more	2 (18)	1 (9)	3 (14)
Others living in household			
Grandparent	1 (9)	3 (27)	4 (18)
Niece	—	1 (9)	1 (4)
Employment status			
Mother	6 (54)	6 (54)	12 (54)
Father	7 (64)	6 (54)	13 (59)
No response–father	1 (9)	5 (46)	6 (27)

NOTE: Percentage figures may not add up to 100% because of rounding.

Fully half of the total sample of children (46% of the U.K. sample and 54% of the U.S. sample) had a diagnosis of acute lymphocytic leukemia (ALL), the most common type of childhood cancer. The largest group of children had been diagnosed 13 to 18 months before, with the U.K. sample representing more newly diagnosed children. All participants were currently in treatment. Two children with ALL in the U.S. sample had relapsed, 1 for the fourth time. A child with ALL in the U.K. sample was suspected of relapse, but, at the time of interview, relapse had not been confirmed.

In both the U.K. and U.S. samples, nearly three fourths of the participants' parents were married. For the total sample, 5 (23%) of the participants were only

1. I'm going to ask you to do three drawings.
2. If at any time you want to stop, it is okay. You don't need to say why. No one will be mad at you and nothing bad will happen.
3. First, please draw a person picking an apple from a tree.
4. Please think of and draw the scariest experience, thought, feeling, or dream you have had since you became ill.
5. Please tell me about your drawing.
6. What helped you at that time?
7. Please draw a picture of where you would like to be right now if you could be anywhere you wanted to be. It can be a real place or a make believe place.
8. Please tell me about your drawing.
9. What advice would you give to children who just found out that they have cancer?
10. Is there anything else you would like to add?

Figure 1. Interview Guide

children, 36% had 1 sibling, 27% had 2, and 14% had 3 or more. The majority of U.K. children (46%) had 1 sibling; in the U.S. sample, the majority (36%) had 2 siblings. Four (18%) of the total sample had a grandparent living in the household, and 2 had a niece, with a greater number of U.S. participants having others living in the household than those participants in the United Kingdom. Employment status was similar in both countries, with more than half of the mothers and fathers reporting being employed. In 6 instances (1 in the U.K. and 5 in the U.S. sample), the father's employment was left blank.

With the exception of certain areas (eg, gender, ethnicity), participants' demographic and diagnostic characteristics were very similar. Because of the small sample size, further statistical analysis was omitted.

Instruments

Six instruments were used, which included the 2 primary sources of data in grounded theory research: interviewing and observation. Drawing tools included a projective drawing technique and 2 illuminative drawing techniques.

Interview. An unstructured formal interview using an interview guide that contained a set of general questions and a topical outline was used with the children for a one-time audiotaped interview (see Figure 1) but, as is the case in grounded theory, was not rigidly adhered to by the interviewer. Open-ended questions were used initially to identify concepts. Questions were developed to probe areas of uncertainty surrounding the children's reports of stressors and coping strategies and considered previous interviews, generating additional questions. The interview was incorporated with the requests for drawings.

Focused (or semistructured) interviews with a play specialist and a child life specialist were used to gather specific psychosocial information about each child. Additional unstructured interviews were conducted with nurses and other hospital or clinic personnel (eg, doctors, social workers, chaplains) and parents. Applying grounded theory's principle of theoretical sampling, these interviews were conducted during fieldwork when clarification of data was needed.

Observation. An unstructured observational approach as a participant observer was selected, with the extent of participation evolving over time. Aspects of an activity to be observed included (a) the physical setting, (b) the participants, (c) activities, (d) frequency and duration, (e) process, and (f) outcomes. Observations were recorded in field notes.

Drawing of a Person Picking an Apple from a Tree (PPAT). The PPAT is a projective technique, a method for obtaining psychological measurements through

self-report with a minimum of the participant's conscious cooperation. Viktor Lowenfeld (1939, 1947) first described the technique in a study he conducted on children's use of space in art. With the exception of Furth (1988), who included some examples but no discussion of PPATs in his book *The Secret World of Drawings*, little had been written about the drawing until Gantt and Tabone's (1998) use of the drawing as an assessment procedure in the development of the Formal Elements Art Therapy Scale (FEATS). Their instructions were followed for administration:

> We hand the artist the paper so that he or she decides the orientation of the paper and say simply, "Draw a person picking an apple from a tree." If the person asks whether it should be a man or a woman, we repeat the same words emphasizing the word "person." We do not place a time limit on doing the drawing. (p. 13)

As per Gantt and Tabone's instructions, for all drawings, children were offered white drawing paper (12 by 18 in.) and 12 colors of felt-tip markers (red, orange, blue, turquoise, green, dark green, hot pink, magenta, purple, brown, yellow, and black). One exception was made: Gantt and Tabone use the scented Sanford "Mr. Sketch" watercolor markers. Because children who are ill may be affected by scents, nonscented Sanford "Mr. Sketch" watercolor markers were used. These materials were used for subsequent drawings as well.

Drawings were scored using the Formal Elements Art Therapy Scale (Gantt & Tabone, 1998), which consists of 14 individual scales. The scales have been used primarily with an adult psychiatric population and, according to Gantt, 10 of the scales are inappropriate for a population comprised of children and/or individuals with medical as opposed to psychiatric diagnoses (L. Gantt, personal communication, February 1, 1998). The authors state their intentions to develop finer gradations for this scale for use in rating children's drawings; however, at the time of this study, the development of a scale specifically for rating children's drawings had not taken place.

One of the 4 scales identified as appropriate for use with children and of particular interest to this study was Scale 8, the Problem-Solving Scale, which art therapists have found especially useful in understanding the child's coping ability and resourcefulness (Councill, 1999). The Problem-Solving Scale measures whether and how the drawn person gets the apple out of the tree. Problem solving can be related to affect and can reflect feelings of helplessness and coping ability. Considerations include: How effective is the solution for getting the apple out of the tree? Is the method used realistic?

Drawings are scored on a continuum of 0 to 5 (Gantt & Tabone, 1998). Regarding reliability, Gantt and Tabone (1998) tested the prototype under several different conditions. Raters' performances were consistent across trials, with most scales having an interrater reliability of .90 and above (Gantt, 1990), as computed using an intraclass correlation (Guilford & Fruchter, 1978). To establish validity, the authors obtained a sample of 25 adult patients with psychiatric diagnoses. Using an analysis of variance, they found that 10 of the 12 scales distinguished between 2 or more groups (Gantt, 1990). The Problem-Solving Scale distinguished each group (4 diagnostic groups and 1 control group) from every other one. Gantt and Tabone intend to repeat this validity study using a larger sample and the illustrated manual and to conduct a factor analysis to determine which scales give the most information.

Scariest Image Drawing. Sourkes (1995, 1999) developed this structured art technique to help therapists working with children with life-threatening illness to pose questions earlier in the therapy process and with more specificity than might be done through verbal means alone. The child is asked, "Think of the scariest experience, thought, feeling, or dream that you have had since you became ill and please draw it." Through the use of this illuminative technique, the therapist invites the child to bring out the extreme fear, often the very image that he or she is most afraid to express.

Closure Drawing. Children were asked, "Draw a picture of wherever you would like to be right now if you could be anywhere in the world. This can be a real place or a make believe place." The author designed this illuminative drawing technique for three purposes: (a) to help to end the session on a brighter note after the child had been discussing the "scariest thing," (b) to help learn more about the child, and (c) to possibly have a physiologic benefit because research findings indicate that activities such as engaging in drawing, imagining, and so on can raise endorphin (Goldstein, 1980), immunoglobulin A (Lambert & Lambert, 1995; Lane, 1990), and oxygen saturation levels (Collins & Kuck, 1991; Standley & Moore, 1995).

Background Information Form. Parents were asked to complete a brief form to provide background information. Items included names, gender, and ages of persons living in the child's home; parents' occupations; child's diagnosis; and date of diagnosis (see description of participants in Table 1).

Procedure

Ethical approval was sought and obtained from the NHS Trust Ethics Committee at the U.K. site and the Institutional Review Board at the U.S. site. To enable data collection in the United Kingdom, the author sought and was provided with a contract offering an honorary appointment on the Oncology Ward at the U.K. site. Families of children with cancer who were hospitalized or attending clinic were invited to have their child participate in the study. Two versions, 1 for the United Kingdom and 1 for the United States, of consent/assent forms and a colorful, easy-to-read brochure that outlined the study details were developed. In addition to differences in details, such as contact individuals involved in the study, the wording in the U.K. version was anglicized with the use of the British spelling of words and British terminology and phrases, whereas the U.S. version used the American spelling of words, terminology, and phases. Written materials were reviewed with parents and children, and questions were sought and answered.

On parental consent and child consent or assent, children attending clinic were taken to a comfortable room that provided privacy. With 2 exceptions, children who were hospitalized were interviewed in their rooms or, if on an open ward, with the curtains drawn around their beds. One child (UK3) was interviewed in the hospital playroom at the child's request. The second child (US11) was interviewed in a quiet corner of a laboratory waiting area approximately 30 miles from the U.S. study site. All but 3 children were interviewed alone. UK2, a Roma child, was very shy but was willing to be interviewed if a trusted nurse assistant could be present. Both parents were present for UK3's interview at his request, and 1 parent (mother) was present during the last quarter of US3's interview, with the consent of the child.

After some initial conversation to help establish rapport, the array of colored markers was spread out and the child was handed a 12 in. × 18 in. piece of white paper (to allow the child to choose whether the drawing's format would be horizontal or vertical). The child was asked to complete a PPAT. According to protocol, the child was not asked questions about this drawing, although some did make comments. The child was thanked and the drawing was set aside. The child was then asked to complete the Scariest Image drawing. After the child indicated that the drawing was complete, the child was asked, "Please tell me about your drawing." After this was discussed, the child was asked what helped her or him during this scary time. Finally, the child was asked to complete a Closure drawing. When the child indicated that the drawing was complete, he or she was asked, "Please tell me about your drawing." At the completion of the interview, the child was thanked for participating and the younger children (ie, 7-12 years) were presented with one or two pop-up cards (which were made while the child was engaged in drawing) to decorate as they pleased. Children who expressed interest were instructed in how to create the pop-ups and created 1 or 2 with assistance. Interviews were audiotaped and ranged in time from 30 minutes to 2 hours, with a mean of 45 minutes.

Data Analysis

Interviews, drawings, and observations provided several sources of data for analysis. Systematic, detailed records of field notes were made after each interview and reviewed at regular intervals during fieldwork to help guide future interviews. Children's responses to "Please tell me about your drawing" were captured on audiotape as part of the interview data for the illuminative drawings. A transcription service transcribed the tapes. Using the grounded theory method, data collection and analysis were performed simultaneously (LoBiondo-Wood & Haber, 1998). Each source initially was analyzed individually using methods recommended for the approach or tool, compared with other sources to note relationships, and finally examined as a whole.

PPAT drawings were analyzed using the FEATS scoring system (Gantt & Tabone, 1998). An art therapist assisted in scoring the drawings; when disagreement occurred, discussion continued until consensus was reached. Scores from U.K. and U.S. participants were compared and combined. Although analyzing and discussing symbolic content was beyond the scope of this study, the art therapist was asked to comment on PPATs as a means to support FEATS findings or as factors of interest perhaps to be explored at a later time. The

Table 2. Problem Solving: Frequency and Percentage for U.K., U.S., and Combined Samples

Score	Characteristics	U.K. (n = 11) f (%)	U.S. (n = 11) f (%)	Combined (N = 22) f (%)
0	Tree, apple, and/or person missing or cannot be identified.	0 (0)	0 (0)	0 (0)
1	Person does not have the apple in hand, or no apples in a container or on the ground.	3 (27)	1 (9)	4 (18)
2	Person has apple in hand but not apparent how he/she got it, or apples appear to be falling into container or on ground or person.	0 (0)	2 (18)	2 (9)
3	Person appears to have picked apple, but solution is unreasonable.	2 (18)	2 (18)	4 (18)
4	Person on the ground or other reasonable type of support and is reaching for the apple.	1 (9)	1 (9)	2 (9)
5	Person on the ground or other reasonable type of support or standing on ground with arm extended and apple in hand.	5 (46)	5 (46)	10 (46)
	Total	11 (100)	11 (100)	22 (100)

NOTE: Total percentage figure may not add up to 100% because of rounding.

qualitative data obtained from illuminative drawings were analyzed together with interview transcripts and observations. Open coding was used in the initial analytical process, which was followed by constant comparison of data. Codes in the data were clustered to form categories, which were expanded and developed or collapsed into one another. Theory was constructed through this systematic process.

Results and Discussion

Many of this study's findings on stress and coping in childhood cancer are not new. However, the results and the research process used to reach them revealed new ways of looking at certain concepts and, in some cases, reframing them, to provide greater understanding of the nature of stress and coping for children with cancer. As anticipated, the children's drawings provided a rich complementary source of data.

Drawings of a Person Picking an Apple from a Tree (PPATs)

Scores for Scale 8, the Problem-Solving Scale, ranged from 1, "The person does not have the apple in hand, or there are no apples in a container or on the ground" to 5, "The person is on the ground, or some other reasonable type of support (eg, ladder, rock), or is standing on the ground with arm extended, and the apple is actually in hand." Table 2 presents criteria for scoring and frequency and percentage for participants.

Nearly half of the U.K. and U.S. participants scored 5 on this scale. UK scores (M = 3.5) were slightly lower than U.S. scores (M = 3.6). Scores ranged from 1 to 5, with a median of 4. Although scores are not assigned a category, Gantt and Tabone (1998) implied that depressed individuals will be unable to see the obvious potential in a situation. According to this interpretation, the majority of the participants were resourceful, indicating adequate coping ability.

Low score. UK10, a 9-year-old boy who had been diagnosed with ALL 3 months earlier, scored 1 on this scale (see Figure 2). The person does not have the apple in hand and there are no apples in a container or on the ground. The art therapist offered the following comments:

> Filled everything in. Tree constricted, stifled, no room to grow. Two colors of apples. Perhaps two red ones on one side represent his two sisters; three green on other side may represent the child and his parents. Red and black on self may be reflection of the trauma he has/is experiencing. Very heavy picture indicates that child wanted to express self. Black tree trunk. Appears to be trying to contain himself.

Middle score. US7, a 17-year-old boy who was diagnosed with ALL 2 years earlier, rated a 3 on the Problem-Solving Scale (see Figure 3). The person appears to have picked the apple, but the solution is not reasonable (eg, giving the person an excessively long

Figure 2. A 9-Year-Old Boy Scored 1 on the Problem-Solving Scale (UK10)

arm, or drawing a small branch with the apple on it coming straight out of the middle of the trunk). The art therapist offered the following comments:

> Branches coming out side of tree bringing apples to him. Broken lines, anxiety. Shrieking, exploding tree. Root system strange, not part of the tree, may indicate boundaries overstepped. Figure, empty block feet may represent buffer, "v" in pants may indicate sexual issues. Impression: he seems really angry, an explosive adolescent putting on a "front" for how he is feeling.

This teenager has been/is very much the father's focus. There were many family issues going on with older sister who had moved back home with her young child. His father mentioned that he had told his son to avoid contact with girls because of immunosuppression. This adolescent had an avid interest in drama, which was apparent throughout the interview. Although he was very charming, at times it seemed as if anger were just under the surface. His acting skills seemed to allow him to keep it there.

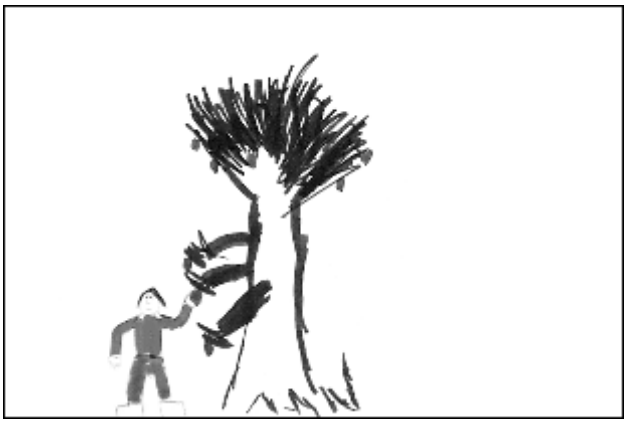

Figure 3. A 17-Year-Old Boy Scored 3 on the Problem-Solving Scale (US7)

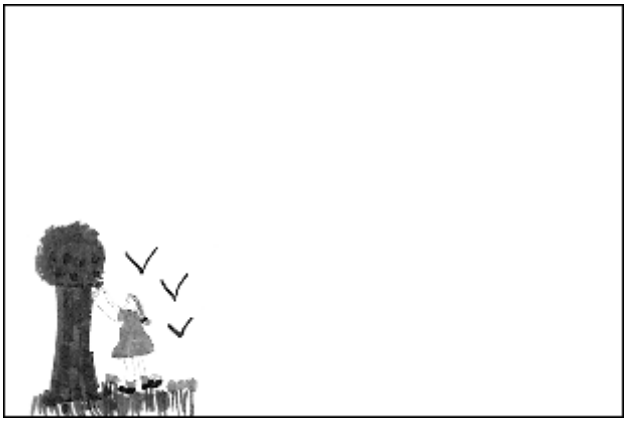

Figure 4. A 12-Year-Old Girl's PPAT Received a Score of 1 on the Space Scale (UK7)

High score. UK7, a 12-year-old girl with a brain tumor diagnosed almost 2 years earlier, scored 5 on the Problem-Solving Scale (see Figure 4). To rate a 5, the person must be on the ground or some other reasonable type of support (eg, a ladder, a rock) and the apple must actually be in hand. This participant displayed resourcefulness and solved the problem of picking an apple from a tree. The art therapist offered the following comments:

> Ghost-like figure (but colored in) with shoes turned in opposite direction—one facing past, one facing future. Apples on the ground. Ominous birds. Heavy strokes.

As mentioned earlier, it was beyond the scope of this study to dwell on symbolism in the children's drawings, especially when using projective drawing techniques designed to simply be scored by a rating scale. However, Figure 4 is so rich in content that some exploration was undertaken. For example, there are apples on the ground. Perkins (1977) noted that children with cancer often will depict fruit trees, such as apple trees, losing their fruit.

Other aspects of the drawing are worthy of comment. This child's prognosis was poor, and although at the time her parents would not discuss her pending death with her or allow her doctor or anyone else to do so, her PPAT seems to reflect an awareness of her situation. Kubler-Ross (1983) pointed out that this awareness is often preconscious and not a conscious, intellectual knowledge: "It comes from the 'inner, spiritual, intuitive quadrant' and gradually prepares the child to face the forthcoming transition, even if the grown-ups deny or avoid this reality" (p. 134).

With one foot in the past and one in the future, this child fairly accurately depicted the status of her health at that moment. Her condition was beginning to deteriorate, but she was still feeling good enough to be going on a "Make a Wish" trip to Disney World the following week. She was especially keen to "swim with the dolphins."

The birds are another element of interest. Bach (1966, 1975, 1990) noted a specific configuration of elements that may appear in the drawing of children close to death. She observed that children who are dying begin to direct attention in their expressive work to the upper left-hand section of the paper, perhaps including a road or pathway leading to that area. This area of the paper, according to Bach, represents the movement of the sun to the west at the end of the day and, for dying children, may represent leaving life. Although no road or path is present in UK7's drawing, the birds seem to be heading in that direction. Perhaps being in the lower left quadrant with a suggestion of upward movement to the upper left quadrant is similar symbolically to the "one foot in the past and one foot in the future" noted above. Bach also has consistently observed objects, paths, and so on moving within or toward the lower left quadrant as representing "downhill" trends, toward darkness and the unknown. Was this child, through a simple drawing, expressing her awareness of her current condition and of what lay ahead?

As their PPAT drawings depicted, despite indications of depression or fatigue, many children in the study were still capable of perceiving themselves as resourceful and somewhat in control. Problem solving, as a response that is oriented either toward the source of stress or toward one's emotions or thoughts, is a form of engagement coping, as opposed to disengagement coping, which is a response that is oriented away from the stressor or one's emotions/thoughts, for example, denial, social withdrawal (Compas, 2001). Adaptability and other temperamental characteristics may facilitate the use of problem-solving skills and emotion-regulation strategies, whereas high levels of inhibition may constrain the use of active, approach-oriented coping (Compas, 1987). For example, children who are inhibited may be less able to generate and enact coping strategies that involve engaging with and approaching threatening stimuli (eg, seeking information, active problem solving). According to Compas, Connor-Smith, Saltzman, Thomsen, and Wadsworth (2001), coping that involves engagement with the stressor or one's emotional reactions is generally associated with better functioning and fewer emotional, behavioral, and health problems.

Similarity of FEATS scores between U.K. and U.S. participants suggests that children, regardless of their ethnicity and other cultural components, respond to the childhood cancer experience in a similar manner. An analysis of the features in the children's PPATs and the ways they may be related to the concept of childhood cancer as a culture could be of interest for future analysis.

Illuminative Drawings

In analyzing the interview data alongside the children's drawings, the author found, as did Ulman (1992) and many others, that children used drawing as a form of symbolic communication and at times used drawing as a means to help "discover" difficult issues in a "safe" way. Participants approached the illuminative drawings in two distinct ways: "direct expression" and what the author calls "the campfire effect." Regarding this distinction, in some cases, children's drawings incorporated the direct expression of a thought, feeling, or idea within the imagery of the drawing itself. For example, some participants' drawings depicted needles. When they were asked, "Tell me about your drawing," needles and the discomfort and/or fear caused by them were the topics of the explanation. Once these images and words were shared, the topic seemed to reach a natural point of closure and participants were ready to move on.

Table 3. Comparison of the Frequency of Use of the Campfire Effect Versus Visual and Verbal Description Only by U.K. and U.S. Participants and Combined

Participants' Use of Illuminative Drawing	UK (n = 11) f (%)	US (n = 11) f (%)	Combined (N = 22) f (%)
Campfire effect	7 (64)	10 (91)	17 (77)
Visual and verbal description only	4 (36)	1 (9)	5 (23)
Total	11 (100)	11 (100)	22 (100)

NOTE: Total percentage figure may not add up to 100% because of rounding.

In other cases, the imagery in the drawing merely provided a starting point for unrepresented content that the child wanted to communicate. For example, some participants drew images of times when they were afraid and then launched into discussions of sometimes seemingly unrelated issues with which they were currently experiencing. This phenomenon was seen as "the campfire effect"—the result of an activity or experience that provides a focal point shared by the individuals involved that serves to increase conversation in both quantity and intensity. According to lighting experts, light can dictate the activity in the room it is illuminating (*Lighting News*, 2002). Bright light creates motion and activity and is ideal for getting going in the morning but not for relaxing. For relaxation, keeping the perimeter of the room darker and having a brighter area in the center of the room will produce a "campfire effect" that will draw people to the brighter area. The Architectural Association of Ireland (2002) claims that "the campfire effect" has the potential to bind people together on a spiritual level. Much like sitting around a campfire, "sitting around the drawing," so to speak, allowed the drawing and not the child to serve as an object of focus for both the child and the author. This transfer of focus from the child to the drawing seemed to relax the child by relieving the pressure of being the object of direct verbal communication.

Some differences were found regarding frequency of use of the campfire effect between U.K. participants and U.S. participants, with U.S. participants' frequency of use higher than that of the U.K. participants (see Table 3). Although the small sample size rules out the application of further statistical analysis, it is interesting to note that a full 77% of the total participants used this drawing opportunity to launch into discussions beyond the image drawn.

"Scariest Image" drawings. Drawing topics clustered into two major themes: (a) negotiating the roadmap and (b) missing out. These themes are described in Table 4. By definition, as the overriding theme or category, negotiating the roadmap was discussed by all U.K. and U.S. participants. Missing out was depicted and/or discussed by 77% of the total participants. The frequency of missing out was somewhat higher for U.K. participants (82%) than for the U.S. participants (73%). Topics of scariest experience, thought, feeling, or dream drawings and their frequency are presented in Table 5.

Whether it was pain, nausea and vomiting, or fatigue, every child interviewed mentioned one or more physical aspects of cancer and/or its treatment as difficult. One child (UK2) drew hair loss as the worse thing that she had faced. The 15-year-old girl from a traveling family who had very little to say depicted through drawing what she remembered when she woke up one morning to find her long dark hair on her pillow (see Figure 5).

Children drew and described a variety of procedures common with cancer diagnosis and/or treatment. Five participants produced drawings of surgical procedures, such as biopsies or Hickman catheter placements. Although only 3 participants' drawings included needles, for younger children particularly, "needles" were often the first thing mentioned. One 9-year-old boy (UK5) depicted a large needle in his drawing and related his needle history since diagnosis:

> I've had two. Two since my operation and I had about five before it. Replacing the cannula in my hand was the worst; it kept on not getting into my veins and then I remember they kept trying to get into my veins and they couldn't. I screamed, but I didn't break the window. I was so loud I thought for sure I would break the window. (UK5)

Other children drew specific events. For 5 of the children, the scary event was a near-death or out-of-body experience or a nightmare. Two study participants

Table 4. Description of Stressor Themes

Theme	Description
Negotiating the roadmap	Any feature of cancer and its treatment, eg, pain, dealing with the medical equipment, nausea and vomiting, hair loss, fatigue
Missing out	Anything that a child with cancer misses or misses out on as a result of cancer and its treatment, eg, friends, family, events, school, food, developmental milestones such as getting a driver's license, or freedom from legitimate fears, including the fear of the ultimate missing out: death

Table 5. Topics in Scariest Experience, Thought, Feeling, or Dream Drawings

Topics	U.K. (n = 11) f (%)	U.S. (n = 11) f (%)	Combined (N = 22) f (%)
1. Surgical procedure	2 (18)	3 (27)	5 (23)
2. Significant event (out of body, near death, dream)	3 (27)	2 (18)	5 (23)
3. Needles	2 (18)	1 (9)	3 (14)
4. Fear of death, "What is going to happen to me?"	2 (18)	1 (9)	3 (14)
5. Getting chemotherapy	1 (9)	1 (9)	2 (9)
6. Hospitalization in general	0 (0)	2 (18)	2 (9)
7. Hair loss	1 (9)	0 (0)	1 (4)
8. Missing school	0 (0)	1 (9)	1 (4)
Total	11 (100)	11 (100)	22(100)

NOTE: Total percentage figure may not add up to 100% because of rounding.

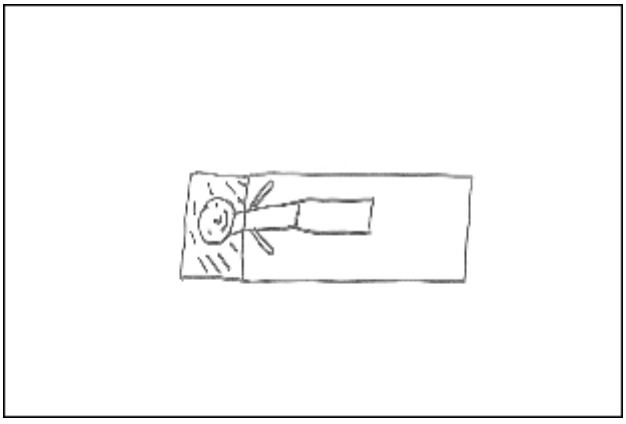

Figure 5. A 15-Year-Old Girl Was Frightened When She Woke Up One Morning and Found Her Hair on Her Pillow (UK2)

described near-death experiences. A 17-year-old boy provided a vivid commentary of what had occurred 2 years earlier, to accompany his drawing (see Figure 6):

> This is me when I am dying. . . . I had just been diagnosed and they were giving me platelets. However, I am allergic to platelets. I have to get pre-medicated with Benadryl 25 mg, whenever I get platelets. That is what that yellow bag is. Well, my minister just happened to be there. I broke out in hives, that is what all of the red spots are. They are huge and you could see them erupt on my arm. Well, after a while what happened was that they were getting so big that I passed out. My Dad was sitting there and the last thing I remember screaming was, "I want my Mom, I want my Mom." My Dad was right there and my Mom had gone home for the night. My Dad was just devastated . . . he was scared out of his mind. He was crying. Then I blanked out and looked down and saw myself. It was literally one of those things where you hear it on TV, one of those that you see on the 700 Club or something. Then I saw my minister and me, I saw them stick me with something and I sucked back in. They stuck me with epinephrine or something. They pumped me full of Benadryl. They had called my Mom and told her that they expected me to die that night and I almost did because I went into shock. Anaphylactic shock, I think that is what it is called. (US7)

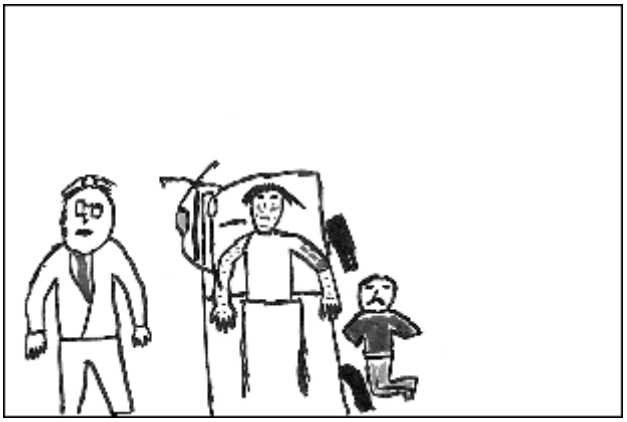

Figure 6. A Teenager Depicts His Out-of-Body Experience, Which Occurred Shortly After Diagnosis (US7)

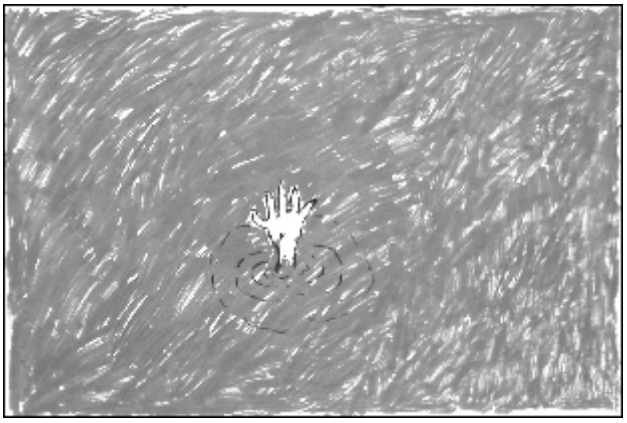

Figure 7. A 16-Year-Old Swimmer Depicts Her Dream in Which the Swimming Pool Filled With Blood (UK11)

A 16-year-old girl (UK11) drew (see Figure 7) and talked about her nightmare from the early days following her diagnosis of ALL:

> I am a swimmer and they just told me I had to have a line in and I thought, Oh gosh, I am not going to be able to swim and so swimming was on my mind. I had this dream that I was in the swimming pool and I was with a cannula and I was swimming and then I whacked it on the side and the whole pool started sinking down and drowning me. So the swimming pool just filled up with blood. (UK11)

Another teenager drew and described a dream that he had recently experienced that he said he suspected might be related to his treatment (see Figure 8):

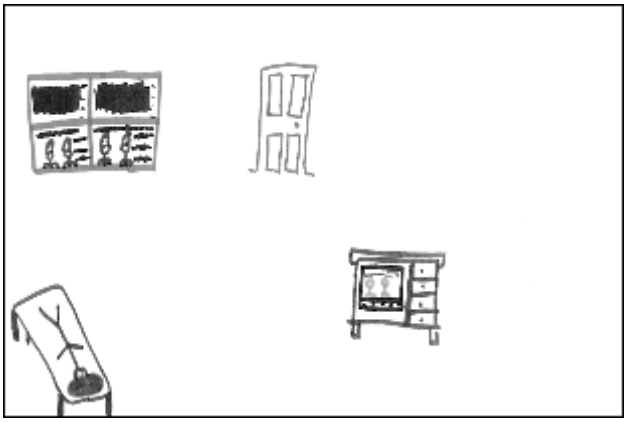

Figure 8. "Little People" Visited a Teenage Boy in His Dream and He Woke Up Screaming (US10)

> In my dream I was lying down on the couch in my living room and there was a window. I was looking out the window and there were these little people that looked like Leprechauns, but they weren't Leprechauns. They were just staring at me really weird. It was really scary and I started screaming. In my dream, it was just getting dark. They were staring at me for some reason and I just woke up. I woke up screaming. I think they were examining me or something. Or putting a curse on me or something. (US10)

Although fatigue itself was not the topic of any child's scariest drawing, the act of rendering the scariest drawing, through the campfire effect, brought the issue of fatigue to the surface for 8 of the children. For example, a 17-year-old youth with osteogenic sarcoma (US4), after drawing many of the items involved in his treatment, said that the worse thing he had to deal with was feeling sick most of the time. He had been coming to the clinic for chemo at the end of each week and afterward felt "like I have the flu every weekend." At times he was nauseated, but most of the time what he experienced he described as fatigue: just feeling tired and "wiped out."

Several others spoke of not being able to go to school or getting behind in their schoolwork, giving as a reason not that he or she was sick but rather because of being just too tired. Said an 11-year-old boy with ALL:

> So usually I stay in my room a lot, watching TV or playing Nintendo, and my mom, she doesn't want me to stay in there all cooped up in there,

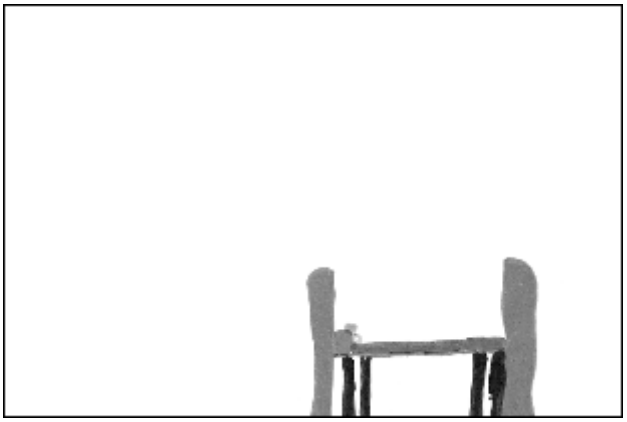

Figure 9. An 11-Year-Old Girl Drew Herself After She Collapsed and Was Comatose for 2 Weeks (UK9)

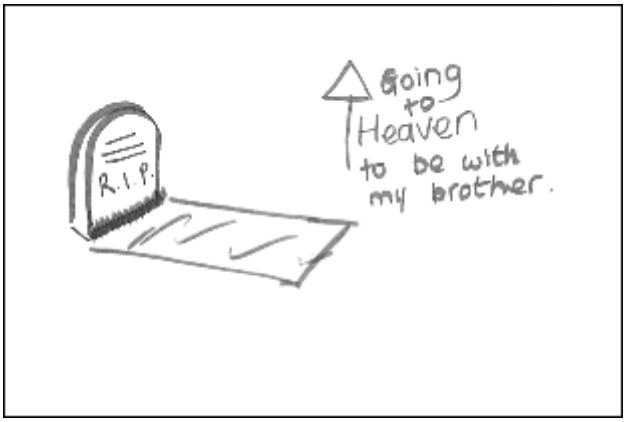

Figure 10. A 16-Year-Old Girl Expressed Her Fear of Dying (UK4)

> and she wants me to like go outside and you know a lot of times I don't want to go outside. I'm too tired and just want to stay in my room. (US1)

Many of the children talked about and drew pictures of things they had missed or were missing out on. Two participants identified missing out on food as a major issue. An 8-year-old boy with acute myeloid leukemia who had just completed 86 days of isolation for a bone marrow transplant said that he missed many things—friends, being outside, school, but for him one of the hardest things was the food limitation. Children also mentioned missing out on previously enjoyed activities such as swimming for a 17-year-old girl (UK11) who prior to diagnosis was on a swim team, developmental markers such as getting a drivers' license for a teenage boy (US4), and long-anticipated events such as a trip to an awards ceremony for an 11-year-old girl (see Figure 9): "I was meant to go to London for a day and I collapsed. I'd won this competition about drawing. We all had to draw a picture about something we wanted and I was meant to pick up the award" (UK9).

Note how "flat" she appears in the bed, as if she is barely there, with only her head exposed. This feature was echoed in several other drawings of children in hospital beds.

The serious nature of the disease was not lost with most participants, particularly older children. For 3 participants, missing out on a carefree childhood, free from serious threat and fear, was the topic of their scariest drawings. These participants expressed fear of death as the topic of their drawings. In Figure 10, a 16-year-old girl (UK4) drew her fear of dying and "going to heaven to be with my brother." Her brother was struck and killed by an automobile when she was 6 years old.

A 12-year-old girl with a brain tumor admitted that her scariest moment since diagnosis was when she "found out." She said that she was scared of dying and, in fact, still is. In discussing her drawing (see Figure 11) she said, "This is how I looked; I was a frightened girl" (UK7).

A 16-year-old boy also used the drawing to depict and talk about the fear of death that he felt when undergoing a node biopsy (see Figure 12): "I didn't know I had it (Hodgkin's lymphoma) then. This is me thinking about what is going on. This is me on the table and that is afterwards. This is what I am thinking" (UK6).

Closure drawings. In response to, "Draw a picture of wherever you would like to be right now if you could be anywhere in the world," participants typically produced drawings reflecting active or relaxing places to be. However, when viewed as a whole, the group of drawings all seemed to represent a desire for nothing especially out of the ordinary, only a longing for normalcy.

Pictures of amusement or theme parks were common. Others chose to draw relaxing places, such as the beach or the mountains. Of interest, in ancient Greece, the emphasis was on the total wellness of the body, which was expressed in environments. These environments not only healed the physical ailments of the body but also made whole the spirit and the mind. Frequently these environments centered around water elements or moun-

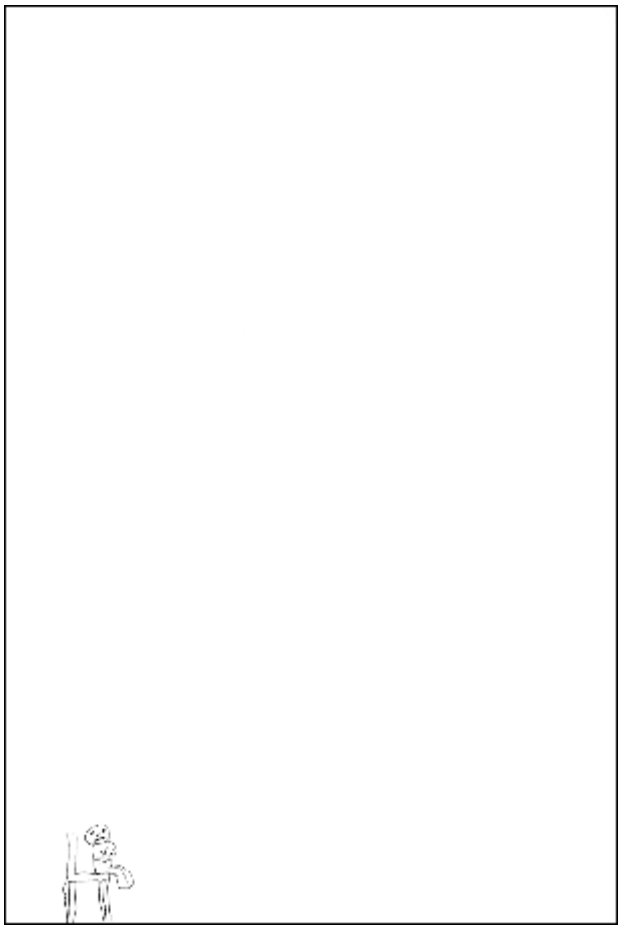

Figure 11. A 12-Year-Old With a Brain Tumor Described Through Drawing and Words Her Initial and Ongoing Fear of Dying (UK7)

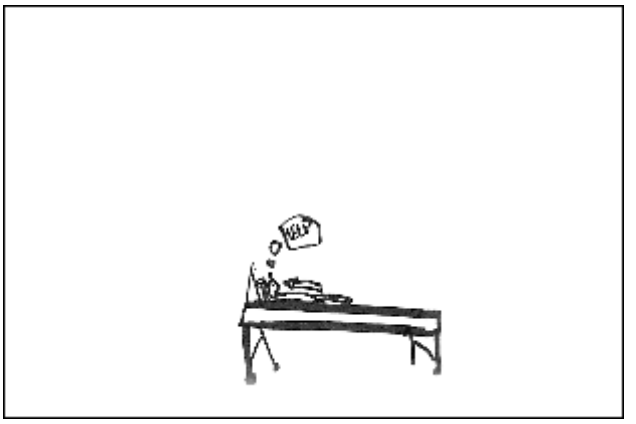

Figure 12. A 16-Year-Old Boy Expressed How He Looked and Felt After a Node Biopsy (UK6)

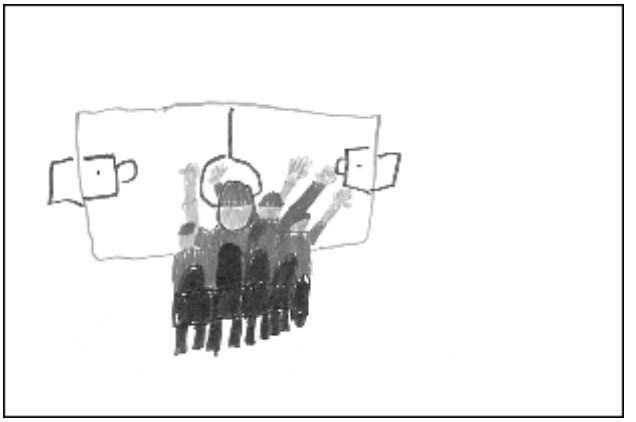

Figure 13. A 9-Year-Old Boy Wanted to Be Playing Football (UK6)

tains, which were believed to increase the harmony between the mind and body and restore the body's natural rhythms (Shepley, Fournier, & McDougal, 1998).

Some children yearned not for something exotic but something normal and depicted common age-appropriate activities. For example, a teenage girl wanted to be at a disco with her friends and talked about other activities she enjoyed with her friends. For a 9-year-old boy, playing football was where he wanted to be (see Figure 13).

The campfire effect occurred in closure drawings as well. When the boy who drew the football scene in Figure 13 was asked to talk about his drawing, he said that he used to be the best football player on the team, but now he is the last one to get picked, because, "I can't run as fast anymore" (UK1). It suddenly occurred to him that he was "tired all the time" since he had been in treatment. He had not previously made the connection between his illness and treatment causing fatigue; he simply thought that he was "no good" at football anymore. Thus, he was happy to hear that it was not his ability, but his current situation, that was causing the difficulty.

One of the closure drawings revealed a real longing and sadness. A teenager who had moved and changed schools depicted through his drawing and interview data just how very much he yearned to return to his old neighborhood if he could be anywhere in the world he wanted to be (see Figure 14). He missed just being with his buddies; he knew that they cared about him. Although changes of this nature typically are difficult for all children, and especially teenagers, the coinciding diagnosis of cancer compounded the stress of the event, leaving the teenager isolated from an important source of support at his time of greatest need.

Figure 14. A 17-Year-Old Boy Depicted the Apartment Building Where He Used to Live (US11)

Limitations

Although the number of participants was appropriate for this study's methodology, a larger number would have allowed more sophisticated statistical analysis. A larger sample size and more diversity among participants also would have allowed a greater ability to generalize findings to a larger population. Also, it could have been beneficial to have drawings from the same children at different times. Children's drawings are "in the moment"; it would have been interesting to have their perceptions along points of their journey for comparison with their other drawings and with drawings of other children with cancer.

Future Research

Regarding future research incorporating the use of drawing, it would be interesting to look at various elements in children's PPAT drawings. For instance, it was interesting to note that some children drew holes in their trees and that drawings of children with brain tumors had apples on the ground. What, if anything, might be the significance of this? Also, are children reporting depression or fatigue in their PPATs? What is the significance of images of sickly trees? It might also prove interesting to use other projective drawing techniques as well as develop additional illuminative drawing techniques specifically for use with children with cancer.

Nursing Implications

Although what the nurse or parents perceive to be the child's fears, wishes, or concerns are important, children must have the opportunity to express their own perceptions. Only then can we say that the child has been heard in all "matters affecting the child" (United Nations, 1989). If we are serious about respecting this right, then we must look at ways in which children's voices can be heard (Qvortrup, 1997).

Participants had little difficulty expressing through drawing their appraisal of what was stressful. More than one study participant expressed the notion that he or she had never really thought through the experience until drawing and talking about it in the interview. Although children were asked to reflect on experiences that had already taken place, it is theorized that, if given the opportunity to draw, children with cancer attempting to appraise a current stressor and available coping resources would find the process helpful in sorting out their thoughts. A drawing provides the boundaries of the piece of paper, serving much the same purpose as a list of tasks that must be done. All that one must deal with is in one place, not scattered about generating anxiety. Seeing "the full picture" tends to make what is difficult seem more manageable.

Nurses can use drawing as a simple method to gather important information from a child from the child's perspective. The request for a drawing is typically well received by children; in this study even teenagers were willing to draw. Materials are readily available—a pencil, crayon, pen, or other simple drawing device and a piece of paper are all that are required. The danger of overinterpretation because of a lack of art therapy knowledge and skills can be overcome through 3 means: (a) using projective techniques with valid and reliable scales, (b) using the illuminative artwork technique by asking children to draw and then to talk about their drawings, and (c) consulting with an art therapist for clarification when needed.

Nurses can promote the use of sketchbooks for every child with cancer. If possible, professional hardcover sketchbooks should be used. Professional quality communicates the importance of and respect for what will be inside. Children are more likely to save their drawings when they are together in one place. They can look back over time and reflect on their progress. A sketch-

book can be written in as well, thus having the potential to serve as a journal.

The act of drawing in this study, coupled with good listening skills, helped children express their thoughts, feelings, and concerns, quite possibly to a much greater extent than would interview alone. Nurses may want to consider using drawings to assess fatigue and other symptoms/stressors. Children also readily drew pictures about their frightening nightmares. How much are children with cancer holding in when they are not provided with an opportunity to communicate in the language children know best? We learn first through images, then we learn the words for these images, and then we learn to hide our thoughts—often until and unless we are given opportunities to go back to the language of images. Many of these images are breaking into children's much-needed sleep, perhaps exacerbating fatigue.

Facilitating drawing with children would be a useful topic for the education of pediatric nurses. Although most coursework includes information about facilitating play with children, play and art, although similar, have significant differences. The aim of art is to make a symbolic object that contains and communicates an idea (Kramer, 1971). Art leaves behind a tangible product, a lasting mark on the world. The product becomes important, not only for communication of feelings and experiences but also as a visible legacy, a quality that can be particularly important during life-threatening circumstances such as cancer: "In cases of terminal illness the art product survives as permanent proof of the child's existence" (Malchiodi, 1999, p. 17).

Negotiating the roadmap of childhood cancer is an enormous emotional as well as physical journey. Determining what each individual child perceives as stressful and developing ways to either eliminate the stressor or help the child cope with what cannot be changed are important. Psychosocial and biobehavioral research on outcomes other than neurocognitive disabilities is notably missing from cooperative clinical trial group studies (Reaman, 2004). Nursing research must explore both psychosocial and physical issues to inform pediatric oncology nursing best practice. Nontraditional research tools such as drawing are frequently needed to gather significant data, especially when study participants are children. Children may experience significant and immediate benefits from engaging in research that involves drawing, bringing such investigations to an advantage for those who choose to participate.

Acknowledgments

I would like to acknowledge the International Society of Nurses in Cancer Care and the Paediatric Oncology Division of the Leicester Royal Infirmary for funding this study, professors Mel Chevannes and Mark Johnson for their guidance and encouragement, the children who so graciously shared their experiences, and the assistance from the dedicated team members at the U.K. and U.S. sites who lovingly care for these children. A special note of deep appreciation goes to Dr. David Heney, Senior Lecturer in Paediatric Oncology and Medical Education, Children's Hospital, Leicester Royal Infirmary, who so generously shared with me his time, knowledge, support, and passionate commitment to children with cancer.

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