

Preoperative Preparation: A Puppet Show

by

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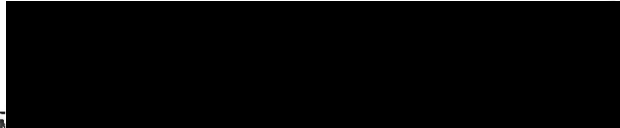
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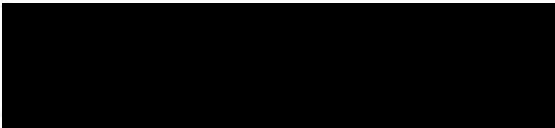
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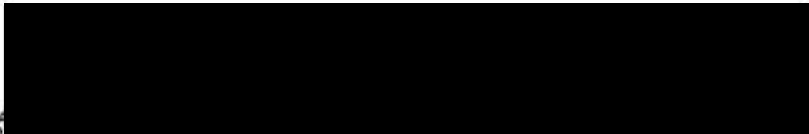
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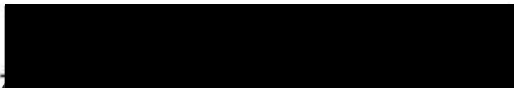
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Preoperative Preparation: A Puppet Show

For decades it has been known that hospitalization and surgery are difficult experiences for children. Research indicates that children experience anxiety about these events, and they conceive of and respond to them in a number of different ways (Duffy, 1972; Gallert, 1958, Jessner, Blom, & Waldfogel, 1952; Prugh, Staub, Sandi, Kirschbaum & Lenthau, 1953; Sharman, 1985). The anxiety experienced by children in the hospital can cause emotional reactions and disturbances when they return home, adversely affect their future emotional development, and can prolong their illness and recovery (Duffy, 1972; Jessner et al., 1952; Nagera, 1976; Sharman 1985). The problem for pediatric/family nurses is this: How can the hospital experience be made less traumatic for children?

Review of the Literature

Developmental Level of Children Aged Three to Seven

In order to understand the stresses that confront children hospitalized for surgery, it is important to understand their developmental level. According to Erikson (1963), children between three and seven are primarily in the stage of "initiative versus guilt," when they become interested in the ability to initiate activities and to give those activities direction. They enjoy the accomplishment that comes from initiating and finishing activities. During this stage, children also begin to experience guilt and fear punishment.

Piaget suggests that children between three and seven are in the

preoperational stage of cognitive development, which is characterized by egocentrism, centrism and irreversibility. Egocentrism is the inability to consider other people's points of view. Centrism is the inability to see more than one aspect of a situation at a time. Children in this stage are not yet capable of taking two separate elements of a situation and relating them; thus all events that occur in their lives are separate and unrelated to other events. The third characteristic, irreversibility, is the inability to recognize that undoing one event could take the child back to a previous situation.

Temperament

Another area of importance, is the effects of temperament on the stress experienced by children undergoing surgery. Thomas and Chess (1977) define temperament as the "how of behavior" (p. 9). Temperament can be considered the behavioral style of an individual, in this case a child (McDevitt & Carey, 1977; Thomas & Chess, 1977; Willis, et al., 1983).

In one of their earlier studies, Thomas, Chess and Birch (1968) identified nine aspects of temperament. The first is activity, or the motor component of behavior. The second is rhythmicity, which can be defined as predictability. The third is approach and withdrawal, which reflects the initial response to stimuli. The fourth aspect is adaptability, or the response to a new or altered situation. Threshold of responsiveness is the fifth aspect; this is the intensity level of a stimulation needed to get a noticeable response. The sixth aspect is the intensity of reaction; this is determined by how much energy is present in the response. The seventh

aspect is quality of mood, i.e., how much joyful, pleasant and friendly behavior is present. The eighth aspect of temperament is distractability, which is how effective extraneous stimuli are in interrupting present behavior, and the ninth and last aspect is attention span and persistence. Attention span refers to the length of time an activity is pursued; persistence refers to the continuation of an activity in the face of obstacles.

On the basis of assessment of these nine aspects of temperament, Thomas et al. (1968) designated three diagnostic clusters: the difficult child, the easy child and the slow-to-warm-up child. The difficult child displays irregularity in biological function, little adaptability to change, negative withdrawal responses to new stimuli, and intense mood expressions that are generally negative. The easy child is characterized by high adaptability to change, regularity in biological functions, positive approaches to new stimuli, and mild or moderately intense moods that are usually positive. The slow-to-warm-up child has less tendency to exhibit irregularity of biological functions, displays a combination of negative responses to new stimuli, and demonstrates slow adaptability after repeated contact. Carey (1970) who developed the infant temperament questionnaire, added an additional diagnostic - intermediate, which can be divided into intermediate high and intermediate low and is used to describe children who do not fit in the other diagnostic clusters.

Thomas and Chess (1977) give two reasons why understanding an individual child's temperament is important for health care workers.

First, this understanding allows health care workers to give information about the child's temperament to the parents, which will decrease their anxiety level because they will understand of their child better. Second, health care workers who understand a child's temperament are in a better position to minimize the distress and/or trauma of medical treatment.

Children's Conceptualizations of Hospitalization and Surgery

Understanding the developmental level of children between three and seven makes it possible to understand their conceptualization of hospitalization and surgery. Most importantly, children believe that hospitalization and surgery are the result of some wrong-doing and that they are being punished (Blom, 1958; Nagera, 1978; Vernon et al., 1965). In addition, children view the separation from parents as abandonment, and see that abandonment as resulting from the lost love of their parents (Blom, 1958; Jessner et al., 1952; Meng, 1980; Prugh et al., 1952; Robertson, 1958; Smith & Autman, 1985). They also view this separation as an attack (Blom, 1958; Jessner et al., 1952; Vernon et al., 1965).

Other conceptualizations include fear of pain, mutilation, castration and death; and fear of narcosis and injections. Children are also afraid of spatial and psychological isolation and physical constraints (Blom, 1958; Byers, 1987; Gellert, 1958; Jessner et al., 1952; Meng, 1980; Nagera, 1978; Prugh et al., 1952; Vernon et al., 1965).

Behavioral Reactions of Children to Hospitalization and Surgery

A variety of behavioral responses to hospitalization and surgery have been noted in the literature. Prugh et al. (1953) organized these

responses in relation to age and noted that children ages two to four show changes in toilet and feeding behavior; sleep disturbances in the form of nightmares, insomnia and restlessness; open, acting-out, aggressive behaviors; and restlessness, hyperactivity and irritability, which can be seen in the form of rocking, thumb sucking or aggressive behavior.

Children ages four to six show "phobic manifestations" (p. 90), in which the children demonstrate somatization reaction in the form of urinary frequency, diarrhea, vomiting and dizziness.

Jessner et al. (1952) found six different types of severe reactions of children to hospitalization and surgery: disturbances in eating, sleeping and speech patterns; tics and mannerisms not normal to the child; various fears including those related to hospitals - white coats, bodily harm and death; aggressive behaviors; increased dependency; and bedwetting and soiling. Sharman (1985) found similar behaviors.

In addition, Nagera (1978) noted three groups of behaviors common among hospitalized children: regressive behaviors such as diminished capacity to control sphincters, thumb sucking, infantile language and an increased demand for attention; disturbances in sleep; and hysterical conversion reactions such as aphonia, disturbances in vision and disturbances in walking.

Preoperative Preparation

Preoperative preparation has been found to help children and their parents adjust to and cope with hospitalization and surgery (Davis, 1977; Goldman et al., 1966; Johnson, 1974; Johnson & Stockdale, 1975; Luciano,

1974; Petrillo, 1972; Smith & Autman, 1985; Whiton, 1972). One method suggested for preparing children for hospitalization and surgery is a preadmission or preoperative puppet show. Petrillo and Sanger (1980) point out that children ages three to seven are highly imaginative and thus are more interested in and have greater comprehension when dramatic play is incorporated into teaching.

Shaw (1970) suggests that the puppets should demonstrate the events that will occur in relation to surgery, and the children should then be allowed to experiment with the objects they will encounter (e.g., the oxygen mask). Other researchers/authors (Davis, 1977; Luciano, 1974; Petrillo, 1972; Whitson, 1972) list items that need to be addressed, including equipment that the children will see and feel (e.g., stethoscope, sphygmomanometer, thermometer, ECG electrodes); where their parents will wait and how far they can accompany them; the apparel of the operating room personnel and doctors; events surrounding anesthesia - more specifically, the oxygen mask, the difference between induced sleep and night-time sleep, and reassurance that the child will not wake up during the operation; the recovery room and the return to the hospital room; the nature of the discomfort the child will experience postoperatively; postoperative diet restrictions and discharge from the hospital. Petrillo (1972) also suggests that children be reassured that no one is to blame for their current condition. Davis (1977) says it is helpful to inform a child of the hospital bracelet that has his name on it, the hospital bed and the pajamas. Whitson (1972) stresses the overall importance of informing

children about what they will see, hear and feel pre- and postoperatively.

Gaps in the Literature

Although there has been a great deal of research on children's views of and reactions to hospitalization and surgery and many articles on the "how tos" of puppet therapy, little research has examined the effects of puppetry as a preoperative teaching strategy.

Only one study published has reported the effects of puppet therapy on children who were hospitalized for cardiac catheterization (Cassell & Paul, 1967). Puppet therapy was given on three separate occasions to children ages 3 to 11, to teach children about cardiac catheterization, demonstrate that hospital personnel empathized with their situation, and give them an opportunity to release their emotions. The puppet therapy used not only showed children what to expect during the procedure, but also allowed them to participate by playing the part of different puppet characters. The children who received the therapy were rated by the cardiologist as being less disturbed by the cardiac catheterization than most children observed, and they expressed greater willingness to return to the hospital indicating that puppet therapy can reduce children's anxiety about stressful and strange situations.

While the Cassell and Paul (1967) study produced promising results, it was a descriptive study with no formal comparison group. Therefore, outcomes must be viewed with caution.

Conceptual Framework

The study reported here was a controlled experimental study of the

effectiveness of preoperative teaching in the form of a puppet show. This study was based on the view that stress, resulting from real and imagined threats, is manifested in the physical and psychological reactions of children facing surgery and this stress can be alleviated through adequate preoperative preparation. This view is based on the conceptualization of threats, stress and preoperative preparation.

A threat may be defined as any "indication of impending danger or harm" that a person perceives (Morris, 1979, p. 1340). The threat may be real, in that actual harm is imminent, or it may be imagined. In other words, any event a person perceives as having the potential to cause him physical or psychological harm is a threat.

While a threat is the event or thing that the person perceives as causing him harm, stress is the response to that threat. Stress can be either physical or psychological. Miller and Keane (1978) define stress as the emergency response of the body that comes into play when a person foresees or imagines danger. Hospitalization and surgery are threats and therefore elicit stress. Preoperative preparation is any preparation, either psychological or physical, that a patient receives prior to surgery to prepare him for the surgery.

Clearly, these concepts are interrelated. Threats are impending danger, in this case hospitalization and surgery. Stress is the response to the danger, and preoperative preparation is the method used to teach patients about the threat in order to decrease or alleviate stress. In this study, preoperative preparation will be psychological in nature and prepare

children for surgery by informing and teaching them about the threats that they will encounter before and after surgery. (A diagram of this conceptual framework is in Appendix A).

Hypothesis

It was hypothesized that children who received preoperative preparation in the form of a puppet show prior to surgery would experience less stress than children who did not receive this intervention, as measured on the morning of surgery by the "What I Think and Feel" scale and six days post discharge by Vernon et al.'s Posthospital Behavioral Questionnaire.

Methods

Design

The design for the study was experimental. The independent variable was a puppet show, and the dependent variable was the stress experienced by children prior to surgery and six days after hospital discharge, as indicated by anxiety and behavioral manifestations. Extraneous variables, which included socioeconomic status, temperament, age and sex, were controlled by blocking, randomization and homogeneity of groups. Sex was controlled by blocking. There were four blocks. Children were assigned to each block depending on sex and their association with either the control or experimental groups. Male children were in the control or experimental group (two blocks), and females were in the control or experimental group (two blocks). Children were assigned to experimental and control groups by randomization.

Socioeconomic status and temperament were controlled by randomization. Age was controlled by homogeneity of groups by including only children aged three to seven (children in the preoperational stage of development).

Threats to internal validity are minimal because of the control mechanisms employed. However, there are two major threats to external validity: 1) It is questionable whether the results of this study will be generalizable to children who are having surgeries other than orthopedic surgeries since the puppet show addresses issues specific to this type of surgery; 2) It is also questionable whether the results could be generalized to children who receive treatment from fee-for-service hospitals since the hospital in which the data was collected does not require payment and may have a very different clientele.

Setting and Sample

The study was conducted in a 40-bed, non-profit, pediatric hospital that specializes in orthopedic and burn care. Families of patients admitted to the hospital apply for admission and do not pay for any care received. Applicants are accepted on the basis of type of care needed and their financial resources.

The standard admission procedure is as follows: Patients are admitted on Monday mornings. At this time, they are seen by the dentist and admitted by the nurse. They are then served lunch and parents attend a parent meeting. In the afternoon, patients are seen by a surgeon and are taken to a conference where the entire health care team (nurses,

pediatrician, physical therapist, social workers, prosthetic therapist, surgeons, and dieticians) assess the patient's needs and discuss the plan for treatment.

The sample for this study included children aged three to seven who were admitted to the hospital for orthopedic surgery. In order to be included, children were required to have general anesthesia and to recover from surgery at the same hospital (some children recover at a different hospital). In addition, children were required to be mentally coherent. Children with diseases or birth defects that affect their mental capacity such as cerebral palsy or Down's syndrome were excluded. Subjects were also required to be able to speak English, and their parents were required to speak and read English.

Subjects were randomly assigned to the experimental and control groups in accordance to their sex by assigning them a number on admission and consulting a table of random numbers designating the study group.

Intervention

A puppet show was the form of preoperative teaching used in this study and was given on the day of hospital admission to children in the experimental group. The puppet show was held in a large conference room using a wood puppetry stage. There were two scenes: the first was a scene of a hospital room, and the second a scene of a recovery room. Props included: 1) a thermometer, 2) an infant blood pressure cuff, 3) a stethoscope, 4) a medicine cup colored red, 5) pajamas, 6) two oxygen

masks - one clear and one colored black, 7) an intravenous infusion set complete with jelco, 8) a cast and 9) a gurney. There were four puppets, representing a patient, a mother, a floor nurse and a surgical nurse. The puppets were made of colored fabric and human doll heads and hands. The mother puppet was yellow, the patient puppet was pink, the floor nurse was white, and the surgical nurse was green with a surgical hat. The puppet show walked the patient-puppet through the events surrounding surgery and takes approximately 10 to 15 minutes.

The events included in the show included: 1) the collection of data on vital signs, and the thermometer, stethoscope, and sphygmomanometer; 2) transportation to the operating room; 3) how far parents accompanied their child; 4) where parents waited; 5) the apparel of operating room personnel and doctors; 6) the events of anesthesia including the black anesthetic mask and the fact that the child would not wake up during surgery; 7) the recovery room as a special wake-up room and the possibility of an intravenous infusion; 8) the return to the hospital room; and 9) when the child would be discharged. One important psychological issue was also covered: the event of hospitalization was not caused by the child, nor was it punishment for any previous or present behavior or thoughts.

Data Collection Measures

Three tools and a demographic data sheet were used to collect data. The tools included the Behavioral Style Questionnaire (BSQ), which is designed to determine the child's temperament; the What I Think and Feel

Scale, used to measure children's anxiety in a variety of situations; and Vernon et al.'s Posthospital Behavioral Questionnaire (PBQ), designed to determine the effects of hospitalization and surgery on children after discharge. The demographic data sheet included items such as parents' marital status and yearly income, race, and the number of times the child had been hospitalized. The demographic data sheet was used to determine the homogeneity of the sample.

Behavioral Style Questionnaire. In 1978, McDevitt and Carey developed the BSQ to measure children's temperamental characteristics or their individual "behavior style" as it interacted with the environment (p. 245). The scale consists of 100 items and is completed by a parent. It examines nine variables of temperament: activity, rhythmicity of biological functions, initial approach - withdrawal, adaptability, intensity, mood, persistence, distractability and sensory threshold. These temperament variables are then split up into four diagnostic categories: the difficult child (arrhythmic, intense and predominantly negative in mood, low in approach and adaptability); the easy child (approaching, adaptable, rhythmic, mild and positive); the slow-to-warm-up child (low in approach, activity and adaptability, and negative, but variable in rhythmicity and mild in intensity); and the intermediate child (who does not fit into the other three categories). The scale takes approximately 25 minutes to complete and 15 minutes to score.

The scale was standardized on 350 children who were primarily middle-class, white Americans. The means and standard deviations

provided for scoring the BSQ were determined from this sample.

Test-retest reliability of the BSQ was determined by testing 53 of the 350 subjects used for standardization a second time after a period of one month. The reliability coefficient ($r=0.89$) proved adequate for this research tool. Internal consistency was determined by the K-R 20 formula to determine all possible split half reliabilities. Reliability for the total instrument was reported to be 0.84.

Construct validity was determined by conducting a cluster analysis of the three temperament types described by Thomas et al. (1963) in the New York Longitudinal Study (N.Y.L.S.). Separate profile scores for easy, difficult, and slow-to-warm-up children on the BSQ corresponded with the findings from the N.Y.L.S.

What I Think and Feel Scale. The second scale used in this study was the "What I Think and Feel" Scale (Reynolds & Richmond, 1978). This is a revision of the Children's Manifest Anxiety Scale (CMAS), which was designed to measure the child's tendency to experience anxiety in a variety of situations (Castaneda et al., 1956). The underlying conceptualization of the CMAS and the "What I Think and Feel" scale is that various events and situations are related directly and indirectly to the anxiety experienced by children and manifested in their performance and behavior. The "What I Think and Feel" scale was designed to be self-administered to children grades 3 - 12 and read to younger children.

The test is composed of two parts: The Anxiety Scale, which consists of 28 items, and the Lie Scale, which consist of 9 items. All 37 items

require a "yes" or "no" response. Scores are determined by adding the "yes" responses. In this study, "no" responses were given a higher score; therefore, higher scores indicate less anxiety. The total scale takes approximately 25 minutes to complete. The Anxiety Scale takes approximately 15 minutes to complete.

In recent literature, Brown and Kodadek (1987) raised questions about the effectiveness of the Lie Scale section of the "What I Think and Feel" scale for children in the preoperational stages of development. They noted that children "below the stage of concrete operations [are] not capable of lying in the adult sense of the word" (Brown & Kodadek, 1987, p. 88). Brown and Kodadek (1987) found that as expected, younger children scored higher on the Lie Scale than older children. They attributed this difference to the lack of insight of children in the preoperational stage; that is, when children make or agree with statements such as "I never get angry" or "I like everyone", they are doing so due to a lack of insight and are not lying in the adult sense of the word (p. 91). For this reason, the Lie Scale section of the "What I Think and Feel" scale was not used in this study.

The What I Think and Feel scale was standardized on 329 children grades 1 - 12. Subjects were drawn from a small urban community in one state in the southeastern United States. Cross validation was conducted on a second sample of 167 second, fifth, ninth, tenth and eleventh graders from a different district within the same state. Information on the socioeconomic status of students in these schools was not provided.

Internal consistency reliability for the Anxiety Scale of the "What I

"Think and Feel" scale was determined by using the KR₂₀ formula. The reliability coefficient reported for the 329 children was .85. On cross-validation using the 167 children, internal consistency reliability was .85. These reliability coefficients are adequate for basic and applied research.

Validity for the entire "What I Think and Feel" scale has not been reported. However, 25 of the 28 items on the anxiety scale were retained from the original Children's Manifest Anxiety Scale. Criterion-related validity was determined for the CMAS by administering it at the same time as the State Trait Anxiety Inventory for Children (STAIC). The validity coefficient for the CMAS and the A State section of the STAIC was .47, and for the CMAS and the A Trait section, .38. The validity coefficients for these tests are acceptable. Content validity on the remaining three items was determined by review of a panel of experts. These items were judged adequate indicators of anxiety.

Posthospital Behavioral Questionnaire. The Vernon et al. Posthospital Behavior Questionnaire (PBQ) was used to determine posthospital adjustment. This scale consists of 28 behaviors cited in the literature as occurring after hospitalization in children. The questionnaire contains six separate sections or factors: 1) general anxiety and regression; 2) separation anxiety; 3) anxiety about sleep; 4) eating disturbances; 5) aggression toward authority; and 6) apathy-withdrawal. The questionnaire is designed to be filled out by parents after the child is discharged from the hospital and takes approximately 15 minutes to complete. The parents

answer each question with one of the following responses: "much less than before" (1); "less than before" (2); "same as before" (3); "more than before" (4); and "much more than before" (5). The questionnaire is scored by

The questionnaire was standardized on 387 children who had been hospitalized for one of the following diagnoses: orthopedic disorders, miscellaneous congenital defects, congenital cardiovascular disorders, neurological disorders, respiratory infections, renal disorders, hernias, gastroenteritis, ENT disorders, traumatic lesions, ophthalmological disorders, tumors, diabetes, asthma, toxin ingestion, burns, appendicitis, and hemotological disorders. The questionnaires were mailed to the children's parents and filled out 6 days post-hospitalization. Ages of the children ranged from 1 year to 16 years. The sample consisted of 212 boys and 175 girls. Race and socioeconomic status of the sample are unknown.

Internal consistency reliability of the questionnaire was determined by computing Cronbach's alpha for each factor. Coefficients were as follows: 1) general anxiety: .73; 2) separation anxiety: .72; 3) sleep anxiety: .63; 4) eating disturbances: .46; 5) aggression: .55; and 6) apathy-withdrawal: .62. The reliability coefficients are not adequate individually to be used in basic or applied research; however, the Cronbach's alpha for the total score ($r=.82$) is adequate.

Construct validity for the questionnaire was determined by conducting a factor analysis of the questions to determine if items adequately measured the concepts presented in the PBQ. All items in the questionnaire adequately reflected one concept.

Procedures

Parents of subjects were asked to participate in the study on the day of hospital admission. Informed consent was obtained from the parents, and the demographic data sheet and the Behavioral Style Questionnaire were given to the parents to complete and be collected by the researcher on the day of surgery. Subjects were then randomly assigned to the experimental and control groups. Subjects in the experimental group were given the puppet show on the afternoon of hospital admission. Those in the control group continued with regular admission procedures. On the morning of surgery, subjects from both experimental and control groups were read the statements on the What I Think and Feel scale and were asked to give either a "yes" or "no" response.

Six days after hospital discharge, the parents of the subjects were contacted by phone and asked the questions on the Posthospital Behavioral Questionnaire. Parents were thanked for participating in the study and the relationship was terminated.

Results

Sample

The initial sample for this study included 25 children. However, 7 children were dropped because of cancelled surgery. Two surgeries were cancelled because of illness and infection, and the others were cancelled because of the decision of parents and the health care team to employ alternative treatments. This left a sample of 18 children - 10 males and 8

females. Twelve of the children were in the experimental group and 6 were in the control group. Fourteen of the children were white and 3 were before. Four of the children had never been hospitalized before. Children in this sample fell into four temperament groups: slow-to-warm-up ($n=2$), difficult ($n=3$), easy ($n=3$), and intermediate ($n=10$). The age distribution varied and is shown with other demographic data on the children in Table 1.

Most of the children (58.82%) came from families where the parents were married and living with their spouse. Seven children came from single parent families, and one parent did not indicate any significant other. The total yearly income of the families did not vary as expected: 37.50% of the families earned \$30,000 - \$34,999, and 43.75% of the families earned between \$10,000 - \$24,999 (see Table 2).

Upon examining the "What I Think and Feel" scale, it became evident that two of the subjects had responded with response set bias by answering 90% of the questions with the same response and two children had not answered any statements. Therefore, hypothesis testing and testing of exploratory data was done without these four children leaving a sample size of $N = 14$: 9 in the experimental group and, 5 in the control group, 8 males, and 6 females. Demographic data of this sample ($N = 14$) and the sample above ($N = 18$) are compared in Tables 1 and 2.

Reliabilities of Scales

Alpha reliabilities for the "What I Think and Feel" scale (WITF) and Vernon et al.'s Posthospital Behavioral Questionnaire (PBQ) were

Table 1

Demographic Data of Children in Sample

Demographic Variables	n = 18		n = 14	
	Frequency	%	Frequency	%
No. in experimental	12	66.7	9	64.3
No. in control	6	33.3	5	35.7
Race				
White	14	82.4	12	92.3
Hispanic	3	17.7	1	7.7
Times hospitalized				
0	4	26.7	3	27.3
1	2	13.3	2	18.2
2	4	26.7	3	27.3
3	2	13.3	1	9.1
4	2	13.3	1	9.1
5	1	6.7	1	9.1
Age distribution				
3	4	22.2	4	22.2
4	5	27.8	3	21.4
5	3	16.7	2	14.3
6	1	5.56	1	7.1
7	5	27.8	4	28.6
Temperament group				
Slow-to-warm-up	2	11.1	0	0
Intermediate	10	55.6	8	57.1
Easy	3	16.7	3	21.4
Difficult	3	16.7	3	21.4

Table 2

Families Demographic Data

Demographic variable	n = 10		n = 14	
	Frequency	%	Frequency	%
Parent's marital status				
married	10	58.8	7	53.9
single	7	41.2	6	46.2
Families yearly income				
5,000 - 9,999	1	6.3	1	8.3
10,000 - 14,999	2	12.5	2	16.7
15,000 - 19,999	3	18.8	1	8.3
20,000 - 24,999	2	12.5	2	16.7
25,000 - 29,999	0	0	0	0
30,000 - 34,999	6	37.5	6	50.0
35,000 - 39,999	0	0	0	0
40,000 - 44,999	1	6.3	0	0
more than 45,000	1	6.3	0	0

determined for the sample ($N = 14$). A KR_{20} was conducted for the WITF and gave an alpha of .84, and a Cronbach's alpha was conducted for the PBQ which revealed an alpha of .79. Both alpha reliabilities are adequate for basic and applied research.

Hypothesis

It was hypothesized that children who received preoperative preparation in the form of a puppet show prior to surgery would experience less stress than children who did not receive this intervention, as measured on the morning of surgery by the "What I Think and Feel" scale and six days post discharge by the Vernon et al.'s Posthospital Behavioral Questionnaire. It was expected that children in the experimental group (those children who saw the puppet show) would have higher scores on the WITF and lower scores on the PBQ indicating less anxiety. A t test was conducted to determine the differences between the experimental and control groups. As shown in Table 3, the means for the experimental group are slightly higher on the WITF; however, results obtained on the WITF and PBQ are not significant. The hypothesis was not supported.

Exploratory Analysis

In addition to the hypothesis, a t test was conducted to determine any differences between males and females in the experimental and control groups and their anxiety levels as measured by the WITF and the PBQ. As shown in Table 3, mean scores for the WITF were lower for girls and higher for boys, and the mean scores for the PBQ were lower for girls and higher for boys. However, these differences are not significant.

The different temperament groups of the children were also examined

Table 3

T Test Results, Means, and Standard Deviations on the WITF and PBQ for the Experimental and Control Groups and Males and Females

	Experimental (n = 14)	Control (n = 14)	Males (n = 14)	Females (n = 14)
WITF				
<u>M</u>	43.33	38.15	42.35	40.33
<u>SD</u>	3.91	7.53	5.42	6.56
t		1.44		.61
p		.2		.6
PBQ				
<u>M</u>	89.64	89.11	90.33	88.27
<u>SD</u>	6.94	6.58	6.41	7.24
t		.14		.55
p		.9		.6

Note. WITF: What I Think and Feel scale; the higher the scores the lower the anxiety; range = 0 - 56. PBQ: Posthospital Behavioral Questionnaire; the higher the scores the higher the anxiety; range = 0 - 140.

in relation to the WITF and the PBQ. An analysis of variance was conducted to determine if children of different temperaments were more or less anxious. Children who fell into the intermediate, easy and difficult temperament groups were analyzed. There were no children in the slow-to-warm up cluster. It was expected that "difficult" children would be more anxious than other children. The mean scores on the WITF were lower for difficult children than for the intermediate or easy children; mean scores on the PBQ were higher for difficult children (see Table 4). However, these differences were not significant for either the PBQ (ANOVA, $F = 3.4$, $df = 2$, $p = .07$) or the WITF (ANOVA, $F = .35$, $df = 2$, $p = .71$).

Correlations were also conducted to detect any relationships between age and hospitalization and anxiety. It was expected that older children would experience less anxiety and that children who had been hospitalized more times would experience less anxiety. One significant relationship was found between the WITF and the number of hospitalizations ($r = -.71$; $p = .01$). As shown in Table 5, all other correlations were not significant. The relationships between age and anxiety for both the PBQ and the WITF was not significant.

Anecdotal Data

One additional question was asked that did not relate to the dependent variables or the experimental or control groups: Is there a relationship between sex and the various temperament groups? A Chi Square analysis revealed no significant results ($\chi^2 = 0.8993$; $df = 2$; $p = 0.64$).

Table 4

Mean Scores for Temperament Groups on WITF and PBQ

	Intermediate (n = 14)	Easy (n = 14)	Difficult (n = 14)
WITF			
<u>M</u>	42.00	42.66	38.92
<u>SD</u>	6.63	3.79	6.00
PBQ			
<u>M</u>	86.05	93.83	94.13
<u>SD</u>	4.99	8.55	3.82

Table 5
Correlations Between Age and Hospitalization and WITF and PBQ

	Hospitalizations	Age
WITF		
r	-0.71	0.44
p	.01	.11
PBQ		
r	-0.24	-0.37
p	.48	.19

Note. Direction of relationships are read opposite for the WITF and PBQ because of opposite scoring methods. (WITF: higher score indicates lower anxiety; PBQ: higher score indicates higher anxiety).

Two questions were added to the Posthospital Behavioral Questionnaire and were asked on the 6 day post-discharge phone interview. The first of these questions asked: Are there any behaviors, either positive or negative, that we have not discussed that you have noticed since your child has been discharged? The responses of the parents were categorized into two groups: 1) negative behaviors such as increased whining, will not take care of self, throwing food, more selfish, more aggressive, severe separation anxiety, and yelling; and 2) positive behaviors such as gets along better with sister, more controlled, and general behavior much better. Positive behaviors were given a score of 1, and negative behaviors were given a score of 2. A t test was conducted to determine if there was a difference between positive and negative behaviors in the experimental and control groups. Since this question was based only on the results of the PBQ, the test was conducted using the entire sample (N=18). No significant results were obtained ($t = -1.11$; $p = 0.2851$) However, the reported mean for the experimental group was lower (mean = 2.0) than the reported mean for the control group (mean = 2.3).

The second question added to the Posthospital Behavioral Questionnaire was asked only of the experimental group and asked: Has your child mentioned any parts from the puppet show from the time they saw it until now (6 days post discharge)? The results were analyzed by type and frequency of responses and included all 18 subjects. Parents reported that 33.33% of the children did not mention anything about the puppet show. However, 41.67% mentioned the black anesthetic mask. In addition,

8.33% mentioned the puppet characters, 8.33% mentioned the taking of vital signs and 8.33% reported that their child paid more attention to the puppet show than the routine slide show.

Discussion

As reported in the results section, the hypothesis of the study was not supported and only one significant correlation was found. However, the direction of means on the t tests and analysis of variance, the direction of the correlations, and the results obtained from questions added to the Posthospital Behavioral Questionnaire do have interesting implications.

Although mean scores did not significantly differ on the PBQ between the experimental and control groups, the higher mean obtained on the WITF for the experimental group does suggest that the experimental group experienced less stress. One possible reason why mean scores are different for the WITF and not for the PBQ is that the puppet show only helps to decrease anxiety immediately prior to surgery and has little affect on posthospital behavior. Further research with a larger sample is needed to determine if this trend is consistent.

The direction of means for the WITF and the PBQ for males and females also has interesting implications. Means indicate that males were less anxious prior to surgery, but demonstrated more anxiety after hospitalization, while females demonstrated more anxiety just prior to surgery and less after discharge. One explanation for this pattern is that males manifest their anxiety at a later time, while girls manifest their

anxiety at the time of surgery and have less difficulty after leaving the

A third interesting direction in means, although not significant, was found in the analysis of variance between the WITF and PBQ and the different temperament groups. For both the PBQ and the WITF, the direction of means suggest that difficult children experience more anxiety than intermediate or easy children. More research with a larger sample which includes children in the slow-to-warm-up group is necessary to determine the generalizability of this pattern.

The direction of relationships found when examining the correlations between age and the WITF and the PBQ were as expected. The results indicate that the older children experience less anxiety. According to the literature, one of the major causes of anxiety for the child in the preoperational stage of development is separation anxiety (Blom, 1958; Jessner et al., 1952; Meng, 1980; Prugh et al., 1952; Robertson, 1958; Smith & Autman, 1985). As the child grows older this threat is diminished.

The significant correlation found between the WITF and the number of times hospitalized was not expected. It suggests that the more times a child is hospitalized the more anxiety they experience. Since the direction of relationship between the PBQ, which measures anxiety post-hospitalization, and number of times hospitalized was not the same as the relationship between the WITF and hospitalization, one question becomes apparent: Is it hospitalization that is associated with increased anxiety, or surgery? Because the WITF was given immediately prior to

surgery, results indicate that surgery causes more anxiety. Further researcher that separates the variables of hospitalization and surgery is necessary.

In addition to the data presented above, two questions were added to the Posthospital Behavioral Questionnaire and analyzed. The first of these questions asked: Are there any behaviors, either positive or negative, that we have not discussed that you have noticed since your child has been discharged? This question was added to ensure that all behaviors observed by the parents were discussed with the researcher. Although no significant results were found, children in the experimental group were the only children whose parents reported any increase in positive behaviors thus accounting for the lower mean score.

Parents of children in the control group reported no positive change in behaviors.

The second question, which was directed only to the experimental group was added to determine if there were any aspects of the puppet show that stood out in children's memory implicating greater importance. Interestingly, out of 8 children who responded, 5 mentioned the black anesthetic mask. This result coincides with the literature, which states that narcosis is one of the major threats to children having surgery (Blom, 1958; Jessner et al., 1952). Further research is needed to determine if it is the induction mask that is significant to the children or the color.

Summary

Limitations

The most pronounced limitation of the study was the small sample

size. It is very difficult, if not impossible, to make any generalizations based on a sample of 18 subjects. This also could have been a major contributing factor as to why the hypothesis was not supported and only one significant relationship was found. It is entirely possible, especially upon examination of the direction of the means, that significant results would have been obtained with a larger sample.

Another limitation related to external validity is the ability of the results to be generalized to any population other than orthopedic surgery patients. The sample consisted of children having only orthopedic surgeries. A replicate or similar study including children having a variety of surgeries would alleviate this limitation.

Another limitation of the study was related to internal validity - more specifically blocking. Because of the small sample size blocking did not offer the control it was designed to. Again, this limitation could be overcome by a larger sample.

Suggestions for Further Research

Although results from this study were not significant, important implications gave rise to suggestions for further research, such as: 1) Do male children manifest their anxiety in relation to hospitalization and surgery at different times than females? 2) Do childrens' temperaments affect the amount of stress they experience and does it affect the way they cope with the stress of hospitalization and surgery? If so, how can nurses be better prepared to assist parents and children of different temperaments through hospitalization and surgery? 3) Does preoperative

puppet teaching alleviate the stress experienced by children hospitalized for surgery?

Implications of Research to Nursing

This study was designed to assist nurses and other health care professionals alleviate the stress experienced by children which results from threats associated with hospitalization and surgery through the preoperative preparation of a puppet show. The puppet show outlined in this study took approximately 10 - 15 minutes and was conducted by one nurse. With training, any person (nurse, doctor, social worker, volunteer) can give the puppet show. It is not time consuming or expensive, but may offer the children the type of teaching needed to help them cope with the stress of hospitalization and surgery. Further research on the effects of preoperative puppet teaching is needed.

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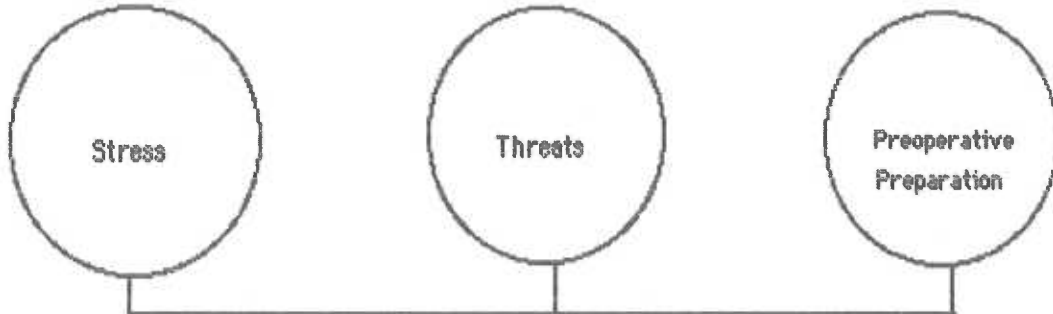
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APPENDIX A
CONCEPTUAL FRAMEWORK

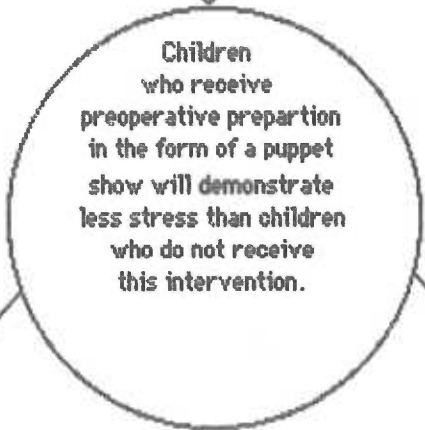
Appendix A
Conceptual Framework

Concepts:



Stress is the result of real and imagined threats manifested in the physical and psychological reactions of a child who is facing surgery and can be decreased or alleviated through adequate preoperative preparation.

Theory



Hypothesis

Dependent Variable :
Stress

Independent Variable :
Puppet Show

APPENDIX B
DEMOGRAPHIC DATA SHEET

Appendix B
Demographic Data Sheet

1. Circle your marital status.

- A. Single, not living with partner.
- B. Single, living with significant other.
- C. Married, living with husband.
- D. Divorced, less than one year.
- E. Divorced, 1 to 3 years.
- F. Divorced, 3 or more years.
- G. Widowed, less than one year.
- H. Widowed, 1 to 3 years.
- I. Widowed, 3 or more years.

2. Circle your total yearly income.

- A. Less than \$4,999.
- B. \$5,000 to \$9,999
- C. \$10,000 to \$14,999
- D. \$15,000 to \$19,999
- E. \$20,000 to \$24,999
- F. \$25,000 to \$29,999
- G. \$30,000 to \$34,999
- H. \$35,000 to \$39,999
- I. \$40,000 to \$44,999
- J. Greater than \$45,000

3. Circle race.

- A. Hispanic
- B. Black
- C. White
- D. Chinese
- E. Japanese
- F. Other

4. Indicate number of times your child has been hospitalized for surgery

APPENDIX C
INFORMED CONSENT

Oregon Health Sciences University
Consent Form

TITLE

You are being asked to allow your child to participate in a study entitled "Preoperative Preparation: A Puppet Show".

PRINCIPAL INVESTIGATOR

The study is being done to fulfill the partial requirements for a Master's degree in Nursing for the researcher, Kama J. Meighan, R. N. The researcher is working under the direction of Marie Scott-Brown, R.N., Ph.D., Jenny Gahooly, R.N., MA. and Renee Menkins, R.N. MA.

PURPOSE

The purpose of this study is to conduct research to determine if preoperative preparation in the form of a puppet show will decrease and/or alleviate the stress experienced by children who are hospitalized for orthopedic surgeries. Sex and the child's temperament will also be examined in this study to determine if children of different sexes and temperaments experience more or less anxiety in relation to hospitalization and the puppet show. Anxiety created by the hospital experience will be measured by the child's own report of anxiety and by the child's behavior after surgery and after discharge from the hospital. Duration of your child's participation will be variable depending on his/her discharge date.

PROCEDURES

As the parents of the subject, you will be asked to fill out three questionnaires which will give the researcher information about the subject's family and their behavior. The first questionnaire deals with general information about the family (e.g. marital status of parents), and will be filled out prior to your child's surgery. The second questionnaire asks questions regarding your child's behavior and will help determine your child's temperament, and will also be filled out prior to surgery. This questionnaire will take approximately thirty minutes. The third and last questionnaire, which asks about your child's behavior after discharge from the hospital, will be administered over the phone six days after hospital discharge. This questionnaire takes approximately fifteen minutes to complete. Your child will also be asked to answer "yes" or "no" to questions read by the investigator which are

designed to measure your child's anxiety. The questionnaire will be given to the child before surgery on the day of surgery. This questionnaire will take approximately 10 to 15 minutes.

During the course of the study, your child will be assigned randomly to an experimental or control group. Those children in the experimental group will see the puppet show on the first afternoon of admission. Those children in the control group will not see the puppet show. However, all children will still respond to the questions measuring their anxiety and parents will fill out the three questionnaires. Parents are asked not to discuss the puppet show with their children until after they actually see the puppet show.

RISKS

The puppet show may increase your child's anxiety regarding hospitalization and surgery. However, past research that has used puppets as a method to teach children about various events about hospitalization and surgery suggests that it is more likely to reduce anxiety.

BENEFITS

If your child sees the puppet show, the possible benefit is that their anxiety regarding hospitalization and surgery will be decreased and they will be able to cope better with these experiences. If your child does not see the puppet show, they may not personally benefit from the research, but will contribute to new information that will benefit hospitalized children in the future.

This study will assist health care professionals in finding new and effective ways to help children cope with the stress of hospitalization and surgery.

CONFIDENTIALITY

All information obtained will be kept strictly confidential. No names will be used. In addition, neither your name nor your identity will be used for publication or publicity purposes. However, the records obtained may be reviewed by regulating agencies - specifically Oregon Health Sciences University Master's Research Committee and Dissertation Committee.

LIABILITY

The Oregon Health Sciences University, as an agency of the State, is covered by the State Liability Fund. If you suffer any injury from the research project, compensation would be available to you only if you establish that the injury occurred through the fault of the University, its officers or employees. If you have further

questions, please call Dr. Michael Beard at (503) 279-8014.

OTHER

Kama J. Meighan has offered to answer any questions you might have and is available at (503) 665-6764. Participation in this study is voluntary. You may refuse to allow your child to participate or may withdraw them from the study at any time without affecting your relationship with or treatment at the Oregon Health Sciences University or Shriner's Hospital for Crippled Children. If you choose to withdraw from the study, please contact Mrs. Meighan at the above number.

You will receive a copy of this consent prior to hospital discharge. Your signature below indicates that you have read the foregoing and agree to allow your child to participate in this study.

Subject Name
(Child's Name)

Parent(s)/Guardian's Signature

Witness/Researcher

Date

APPENDIX D
BEHAVIORAL STYLE QUESTIONNAIRE

Appendix D
Behavioral Style Questionnaire

by

Sean C. McDevitt, Ph.D. and William B. Carey, M.D.

DATA SHEET

Child's Name _____ Sex _____

Date of Child's Birth _____ Present Age _____
month day year

Rater's Name _____

Relationship to the Child _____

Date of Rating _____
month day year

RATING INFORMATION

1. Please base your rating on the child's recent and current behavior (the last four to six weeks).
2. Consider only your own impressions and observations of the child.
3. Rate each question independently. Do not purposely attempt to present a consistent picture of the child.
4. Use extreme ratings where appropriate. Avoid rating only near the middle of the scale.
5. Rate each item quickly. If you cannot decide, skip the item and come back to it later.
6. Rate every item. Circle the number of any item that you are unable to answer due to lack of information or any item that does not apply to your child.

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Almost never 1	Rarely 2	Usually does not 3	Usually does 4	Frequently 5	Almost always 6			
17. The child does not acknowledge a call to come in if involved in something.	almost never	1	2	3	4	5	6	almost always
18. The child responds to mild disapproval by the parent (a frown or shake of the head).	almost never	1	2	3	4	5	6	almost always
19. The child settles arguments with playmates within a few minutes.	almost never	1	2	3	4	5	6	almost always
20. The child shows strong reaction to things, both positive and negative.	almost never	1	2	3	4	5	6	almost always
21. The child had trouble leaving the mother the first three days when he/she entered school.	almost never	1	2	3	4	5	6	almost always
22. The child picks up the nuances or subtleties of parental explanations (example: implied meanings).	almost never	1	2	3	4	5	6	almost always
23. The child falls asleep as soon as he/she is put to bed.	almost never	1	2	3	4	5	6	almost always
24. The child moves about actively when he/she explores new places.	almost never	1	2	3	4	5	6	almost always
25. The child likes to go to new places rather than familiar ones.	almost never	1	2	3	4	5	6	almost always
26. The child sits quietly while waiting.	almost never	1	2	3	4	5	6	almost always
27. The child spends over an hour reading a book or looking at the pictures.	almost never	1	2	3	4	5	6	almost always
28. The child learns new things <u>at his/her level</u> quickly and easily.	almost never	1	2	3	4	5	6	almost always
29. The child smiles or laughs when he/she meets new visitors at home.	almost never	1	2	3	4	5	6	almost always
30. The child is easily excited by praise.	almost never	1	2	3	4	5	6	almost always
31. The child is outgoing with strangers.	almost never	1	2	3	4	5	6	almost always
32. The child fidgets when he/she has to stay still.	almost never	1	2	3	4	5	6	almost always
33. The child says that he/she is "bored" with his/her toys and games.	almost never	1	2	3	4	5	6	almost always

Almost never 1	Rarely 2	Usually does not 3	Usually does 4	Frequently 5	Almost always 6
----------------------	-------------	--------------------------	----------------------	-----------------	-----------------------

- | | | | | | | | | | |
|---|-----------------|-------------------------|---|---|---|---|---|---|------------------|
| 34. The child is annoyed at interrupting play to comply with a parental request. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 35. The child practices an activity until he/she masters it. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 36. The child eats about the same amount at supper from day to day. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 37. Unusual noises (sirens, thunder, etc.) interrupt the child's behavior. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 38. The child complains when tired. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 39. The child loses interest in a new toy or game the same day. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 40. The child becomes engrossed in an interesting activity for one half hour or more. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 41. The child cries intensely when hurt. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 42. The child reacts strongly to kidding or light-hearted comments. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 43. The child approaches children his/her age that he/she doesn't know. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 44. The child plays quietly with his/her toys and games. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 45. The child is outwardly expressive of his/her emotions. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 46. The child is enthusiastic when he/she masters an activity and wants to show everyone. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 47. The child is sleepy at his/her bed-time. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 48. The child stops an activity because something else catches his/her attention. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 49. The child is hungry at dinner time. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 50. The child holds back until sure of himself/herself. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |

Almost
never
1

Rarely
2

Usually
does not
3

Usually
does
4

Frequently
5

Almost
always
6

-
51. The child looks up when someone walks past the door-way. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
52. The child becomes upset if he/she misses a regular television program. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
53. The child reacts strongly (cries or complains) to a disappointment or failure. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
54. The child accepts new foods within one or two tries. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
55. The child has difficulty getting used to new situations. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
56. The child will avoid misbehavior if punished firmly once or twice. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
57. The child is sensitive to noises (telephone, doorbell) and looks up right away. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
58. The child prefers active outdoor play to quiet play inside. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
59. The child dislikes milk or other drinks if not ice-cold. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
60. The child notices differences or changes in the consistency of food. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
61. The child adjusts easily to changes in his/her routine. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
62. The child eats about the same amount at breakfast from day to day. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
63. The child seems to take setbacks in stride. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
64. The child cries or whines when frustrated. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
65. The child repeats behavior for which he/she has previously been punished. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
66. The child looks up from playing when the telephone rings. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always
67. The child is willing to try new foods. almost _____:_____:_____:_____:_____:_____ almost
never 1 2 3 4 5 6 always

never

1

2

does not

3

does

4

5

always

6

- | never | 1 | 2 | 3 | 4 | 5 | 6 | always | | |
|--|-----------------|-------------------------|---|---|---|---|--------|---|------------------|
| 68. The child needs encouragement before he/she will try new things. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 69. The child cries or whines when ill with a cold or upset stomach. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 70. The child runs to get where he/she wants to go. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 71. The child's attention drifts away or lapses when listening to parental instructions. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 72. The child becomes angry with one of his/her playmates. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 73. The child is reluctant to give up when trying to do a difficult task. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 74. The child reacts to mild approval from the parent (a nod or smile). | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 75. The child requests "something to eat" between meals and regular snacks. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 76. The child rushes to greet the parent or greets loudly after absence during the day. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 77. The child looks up when he/she hears voices in the next room. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 78. The child protests when denied a request by the parent. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 79. The child ignores loud noises when reading or looking at pictures in a book. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 80. The child dislikes a food that he/she had previously seemed to accept. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 81. The child stops what he/she is doing and looks up when the parent enters the room. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 82. The child cries for more than a few minutes when hurt. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 83. The child watches a long (1 hour or more) TV program without getting up to do something else. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |
| 84. The child spontaneously wakes up at the usual time on weekends and holidays. | almost
never | ___:___:___:___:___:___ | 1 | 2 | 3 | 4 | 5 | 6 | almost
always |

Almost
never
1

Rarely
2

Usually
does not
3

Usually
does
4

Frequently
5

Almost
always
6

-
85. The child responds to sounds or noises unrelated to his/her activity. almost never 1: 2: 3: 4: 5: 6 almost always
86. The child avoids new guests or visitors. almost never 1: 2: 3: 4: 5: 6 almost always
87. The child fidgets when a story is being read to him/her. almost never 1: 2: 3: 4: 5: 6 almost always
88. The child becomes upset or cries over minor falls or bumps. almost never 1: 2: 3: 4: 5: 6 almost always
89. The child interrupts an activity to listen to conversation around him/her. almost never 1: 2: 3: 4: 5: 6 almost always
90. The child is unwilling to leave a play activity that he/she has not completed. almost never 1: 2: 3: 4: 5: 6 almost always
91. The child is able to fall asleep when there is conversation in a nearby room. almost never 1: 2: 3: 4: 5: 6 almost always
92. The child becomes highly excited when presented with a new toy or game. almost never 1: 2: 3: 4: 5: 6 almost always
93. The child pays attention from start to finish when the parent tries to explain something to him/her. almost never 1: 2: 3: 4: 5: 6 almost always
94. The child speaks so quickly that it is sometimes difficult to understand him/her. almost never 1: 2: 3: 4: 5: 6 almost always
95. The child wants to leave the table during meals to answer the doorbell or phone, almost never 1: 2: 3: 4: 5: 6 almost always
96. The child complains of events in school or with playmates that day. almost never 1: 2: 3: 4: 5: 6 almost always
97. The child frowns when asked to do a chore by the parent. almost never 1: 2: 3: 4: 5: 6 almost always
98. The child tends to hold back in new situations. almost never 1: 2: 3: 4: 5: 6 almost always
99. The child laughs hard while watching television cartoons or comedy. almost never 1: 2: 3: 4: 5: 6 almost always
100. The child has "off" days when he/she is moody or cranky. almost never 1: 2: 3: 4: 5: 6 almost always

for 3 to 7 year old children

Developed (1975) by Sean C. McDevitt, Ph.D. & William B. Carey, M.D.

Child's Name _____ Date of Rating _____

Age at rating: _____ years, _____ months. Sex _____

Category score from Scoring Sheet:

Profile: Place mark in appropriate box below:

	Activity	Rhythm.	App/With	Adapt.	Intens.	Mood	Persist	Distract	Thres
6	high	arryth.	withdr.	slowly	intense	negative	nonpers	low dist	low
+1 S.D.	4.31	3.43	3.93	3.27	5.17	3.99	3.56	4.70	4.58
Mean	3.56	2.75	2.99	2.55	4.52	3.31	2.87	3.89	3.98
-1 S.D.	2.81	2.07	2.05	1.83	3.87	2.63	2.18	3.08	3.38
6	low	very Rhyth.	app.	very adapt.	mild	positive	high per	non-distrac	high

Diagnostic Clusters

Easy		rhthm.	apl.	adapt.	mild	positive
Difficult		arrvthm.	withdr.	slowly adapt.	intense	negative
Slow to Warm up	low		withdr.	slowly adapt.	mild	negative

Definition of diagnostic clusters used for individual scoring:

Easy - Scores greater than mean in no more than two of difficult/easy categories (rhythmicity, approach, adaptability, intensity & mood) and neither greater than one standard deviations.

Difficult - 4 or 5 scores greater than mean in difficult/easy categories (as above) This must include intensity and two scores greater than one standard deviation)

Slow to warm up - as defined above, but if either withdrawal or slow adapt ability is greater than one standard deviation, activity may vary up to 3.93 and mood may vary down to 2.97.

Intermediate - all others. Intermediate high - 4 or 5 diff/easy categories above mean with one 1 standard deviation, or 2 or 3 above mean with 2 or 1 standard deviation. Intermediate low - all other intermediates.

This child's diagnostic cluster _____ date of scoring _____
 Scored by _____

BEHAVIORAL STYLE QUESTIONNAIRE SCORING SHEET

NAME _____ DATE OF RATING _____ AGE _____

TOTAL	1						2						3						4						5						6																																																																																																																			
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6																																																																																																														
60	5	4	3	2	1		81	2	3	4	5	6	61	2	3	4	5	6	71	2	3	4	5	6	81	2	3	4	5	6	91	2	3	4	5	6	101	2	3	4	5	6	111	2	3	4	5	6	121	2	3	4	5	6	131	2	3	4	5	6	141	2	3	4	5	6	151	2	3	4	5	6	161	2	3	4	5	6	171	2	3	4	5	6	181	2	3	4	5	6	191	2	3	4	5	6	201	2	3	4	5	6																																												
12	6	5	4	3	2	1	11	6	5	4	3	2	1	21	6	5	4	3	2	1	31	6	5	4	3	2	1	41	6	5	4	3	2	1	51	6	5	4	3	2	1	61	6	5	4	3	2	1	71	6	5	4	3	2	1	81	6	5	4	3	2	1	91	6	5	4	3	2	1	101	6	5	4	3	2	1	111	6	5	4	3	2	1	121	6	5	4	3	2	1	131	6	5	4	3	2	1	141	6	5	4	3	2	1	151	6	5	4	3	2	1	161	6	5	4	3	2	1	171	6	5	4	3	2	1	181	6	5	4	3	2	1	191	6	5	4	3	2	1	201	6	5	4	3	2	1
10	1	2	3	4	5	6	11	1	2	3	4	5	6	12	1	2	3	4	5	6	13	1	2	3	4	5	6	14	1	2	3	4	5	6	15	1	2	3	4	5	6	16	1	2	3	4	5	6	17	1	2	3	4	5	6	18	1	2	3	4	5	6	19	1	2	3	4	5	6	20	1	2	3	4	5	6	21	1	2	3	4	5	6	22	1	2	3	4	5	6	23	1	2	3	4	5	6	24	1	2	3	4	5	6	25	1	2	3	4	5	6	26	1	2	3	4	5	6	27	1	2	3	4	5	6	28	1	2	3	4	5	6	29	1	2	3	4	5	6	30	1	2	3	4	5	6
10	1	2	3	4	5	6	11	1	2	3	4	5	6	12	1	2	3	4	5	6	13	1	2	3	4	5	6	14	1	2	3	4	5	6	15	1	2	3	4	5	6	16	1	2	3	4	5	6	17	1	2	3	4	5	6	18	1	2	3	4	5	6	19	1	2	3	4	5	6	20	1	2	3	4	5	6	21	1	2	3	4	5	6	22	1	2	3	4	5	6	23	1	2	3	4	5	6	24	1	2	3	4	5	6	25	1	2	3	4	5	6	26	1	2	3	4	5	6	27	1	2	3	4	5	6	28	1	2	3	4	5	6	29	1	2	3	4	5	6	30	1	2	3	4	5	6

Instructions to scorer: 1) Check off above responses on questionnaire. 2) For category score add checks in 6 columns and multiply sums by factors indicated. Resulting products are added and divided by number of items rated, producing category score. 3) Nine...

APPENDIX E
WHAT I THINK AND FEEL SCALE

Appendix E
"What I Think and Feel" Scale

1. I have trouble making up my mind.
2. I get nervous when things do not go the right way for me.
3. Others seem to do things easier than I can.
4. Often I have trouble getting my breath.
5. I worry a lot of the time.
6. I am afraid of a lot of things.
7. I get mad easily.
8. I worry about what my parents will say to me.
9. I feel that others do not like the way I do things.
10. Its hard for me to get to sleep at night.
11. I worry about what other people think about me.
12. I feel alone when there are people with me.
13. Often I feel sick in my stomach.
14. My feelings get hurt easily.
15. My hands feel sweaty.
16. I am tired a lot.
17. I worry about what is going to heppen.
18. Other children are happier than I.
19. I have bad dreams.
20. My feelings get hurt easily when I am fussed at.
21. I feel someone will tell me I do things the wrong way.
22. I wake up scared some of the time.
23. I worry when I go to bed at night.
24. It is hard for me to keep my mind on my schoolwork.
25. I wiggle in my seat a lot.
26. I am nervous.
27. A lot of people are against me.
28. I often worry about something bad happening to me.

APPENDIX F
VERNON'S POST-HOSPITAL BEHAVIORAL QUESTIONNAIRE

Vernon et. al. Posthospital Behavioral Questionnaire
(PHBQ AD) Instruct.

Instructions

Please answer each of the questions on the following pages by comparing the way your child has been behaving in the first week after coming home from the hospital with the way he (or she) usually behaved before coming to the hospital.

Mark the one square following each question which best describes your child's behavior since his return home. The headings at the top of the page show what the different boxes mean. If your child has shown some change in the behavior, even if only a little bit, put a check mark (✓) in the square that indicates the change most true of your child. Use the middle square ("same as before") only if your child has shown no change at all in the area, or if the question does not apply because your child is either too young or too old.

Example

Much less than before	Less than before	Same as before	More than before	Much more than before
-----------------------------	------------------------	----------------------	------------------------	-----------------------------

1. Does your child want a favorite toy or animal with him at bedtime?

			✓	
		✓		

2. Does your child need help getting dressed?

For the first example, the child wanted an animal at bedtime more than before coming to the hospital so a check was placed in the fourth square.

For the second example, the child dressed himself without help for some months before hospitalization and continued to do this after his return home so the middle square, "same as before", was checked.

	Much less than before	Less than before	Same as before	More than before	Much more than before
1. Does your child make a fuss about going to bed at night?					
2. Does your child make a fuss about eating?					
3. Does your child spend time just sitting or lying and doing nothing?					
4. Does your child need a pacifier?					
5. Does your child seem to be afraid of leaving the house with you?					
6. Is your child uninterested in what goes on around him (or her)?					
7. Does your child wet the bed at night?					
8. Does your child bite his (or her) finger nails?					
9. Does your child get upset when you leave him (or her) alone for a few minutes?					
10. Does your child need a lot of help doing things?					
11. Is it difficult to get you child interested in doing things (like playing games, with toys, and so on?)					
12. Does your child seem to avoid or be afraid of new things?					
13. Does your child have difficulty making up his (or her) mind?					
14. Does your child have temper tantrums?					

	Much less than before	Less than before	Same as before	More than before	Much more than before
15. Is it difficult to get your child to talk to you?					
16. Does your child quarrel or fight with brothers or sisters? (Note: leave blank if has no brothers or sisters.)					
17. Does your child seem to get upset when someone mentions doctors or hospitals?					
18. Does your child follow you everywhere around the house?					
19. Does your child spend time trying to get or hold your attention?					
20. Is your child afraid of the dark?					
21. Does your child have bad dreams at night or wake up and cry?					
22. Is your child irregular in his (or her) bowel movements?					
23. Does your child have trouble getting to sleep at night					
24. Does your child seem to be shy or afraid around strangers?					
25. Does your child have a poor appetite?					
26. Does your child tend to disobey you?					
27. Does your child break toys or other objects?					
28. Does your child suck his (or her) fingers or thumbs?					

We would also like your answers to the following questions about _____

29. Are there any other ways in which your child has been acting differently than he (or she) did before becoming ill? If "yes", please describe them. If "no" write "none".

30. Who answered the questions on the last few pages? (ENCIRCLE ONE ANSWER)

- 1-Mother only 2-Father only 3-Mother and Father together 4-Other

31. Was this the first time he (or she) had been away from home for as much as one day? (ENCIRCLE ONE ANSWER)

- 1-Yes 2-No

32. Had he (or she) ever been in a hospital for as much as one day before this last time? (ENCIRCLE ONE ANSWER)

- 1-Yes 2-No

33. Did he (or she) ever attend nursery school, kindergarten, or summer play school before coming into the hospital this last time? (ENCIRCLE ONE ANSWER)

- 1-Yes 2-No

34. Did he (or she) ever attend grade school before coming into the hospital this last time? (ENCIRCLE ONE ANSWER)

- 1-Yes 2-No

35. Does he (or she) have any brothers? (ENCIRCLE ONE ANSWER)

- 1-None 2-Yes-all younger 3-Yes-all older 4-Yes-both younger and older

36. Does he (or she) have any sisters? (ENCIRCLE ONE ANSWER)

- 1-None 2-Yes-all younger 3-Yes-all older 4-Yes-both younger and older

71	72	73	74	75	76	77	78	79	80
----	----	----	----	----	----	----	----	----	----

APPENDIX G
PUPPET SHOW SCRIPT

Scene 1

(Nurse comes into child's room to prepare him/her for surgery.)

- Nurse: Suzy, I need to get you ready for surgery now.
First we're going to measure your blood pressure.
You know what this special cuff feels like?
- Suzy: Yea. It gets all full of air and hugs my arm real tight. Then the air slowly leaks out, and it stops hugging my arm.
- Nurse: Right! and even though it feels funny, it doesn't really hurt, and even though it looks alittle like a balloon when it blows up it NEVER pops like a balloon.
Do you know what this is called? (Holds up stethoscope?)
- Suzy: No.
- Nurse: This is called a stethoscope.
- Suzy: A what!!
- Nurse: A stethoscope. I use it to hear your blood pressure and to hear your heart.
- Suzy: Oh.
- Nurse: Let me show you. (Nurse wraps BP cuff around the child's arm and puts the stethoscope over the brachial artery and takes blood pressure).
That's how it's done.
- Suzy: But I didn't hear anything.
- Nurse: You weren't supposed to, but I did. Take this and put it in your ears. Now take this end and put it right here on your chest.
(Helps child with stethoscope). Do you hear anything?
- Suzy: Yea!! That's neat.
- Nurse: Have you ever seen one of these before? (Holds up a thermometer)

Suzy: (Child shakes head no.)

Nurse: This is a thermometer.

Suzy: A thermometer?

Nurse: Yes. It tells me how warm or cold your body is. This one is electronic and beeps when it has finished measuring your temperature. Let's measure your temperature. (Nurse takes the child's temperature. Thermometer beeps.) Your temperature is just right. Now, I need you to go to the bathroom for me.

Suzy: O.k. (She leaves the scene for a second and comes back.)

Nurse: Now, let's put these special pajamas on (holds up pajamas),

Suzy: Why?

Nurse: Because all people that have surgery wear these special pajamas. You can put your own clothes back on when you come back from surgery and feel like it. (Child changes into pajamas.)
You need to drink this for me now.

Suzy: What is it?

Nurse: Special medicine that helps you calm down. It tastes a little like cherries.

Suzy: Well, o.k. (Suzy drinks the medicine.)

Nurse: Now you're all ready to go.

Suzy: (Crying)

Nurse: Are you alright?

Suzy: A little scared, and I don't know what I did wrong to have to have this surgery!

Nurse: Suzy, you're not having surgery because you were a "bad girl" or because you did anything wrong. You're having surgery to help you get better and you know what?

Suzy: What?

Nurse: It's o.k. to be scared and it's o.k. to cry; other children feel this way too.
(Pause. Nurse hugs child).
When the operating room nurse comes in, she will have on special clothes on that we call scrubs.

Suzy: Scrubs?

Nurse: Hummuh. (Nurse shakes head yes.)

Suzy: Why does she wear scrubs?

Nurse: To keep the dirt away and help keep things really clean.

Nurse: The nurse is going to take you to surgery now. Good luck.
(Floor nurse leaves.)

Scene II

(OR nurse comes in with gurney.)

Nurse: Hi Suzy!

Suzy: Hi.

Nurse: There's a couple of things I want to tell you about before we go.

Nurse: When you go downstairs, the nurse or doctor is going to poke your arm with a small needle to give you special medicine.

Suzy: (Grimace and shake)

Nurse: This needle pokes your arm then comes right back out in the same spot. When it comes out it leaves a VERY thin tube in your arm. Hooked to that tube is a bigger tube that connects with a bag. (Nurse shows child some tubing and an IV bag.) This bag contains food and water and gives it to you when you're asleep. When you're awake and eating and drinking on your own they will take the tube out.

Suzy: O.k. (Covers head and shakes.)

Nurse: If they don't give you the special sleeping medicine through the tube, they will use one of these (nurse holds up black mask). It goes like this (puts mask over Suzy's face).

Suzy: I see.
Will I ever wake up from surgery?

Nurse: Yes. When you wake up, you'll be in a different room with strange sounds and strange things to look at. You'll also have one of these on (holds up O2 mask). But instead of giving you sleeping medicine it'll be giving you super-good air that will help you wake up so you can go back to your room and see your parents.

Suzy: Are you sure I won't wake up during the operation.

Nurse: Yes, I'm sure. The doctro will make sure that you have enough medicine so you won't wake up. Also, when you wake up, it's very possible you'll have a cast on.

Suzy: What's that?

Nurse: It's a special kind of hard bandage that helps hold your arm or leg still so it will heal faster.

Suzy: How long will that last?

Nurse: Well that depends on a lot of things. It'll probably stay on a few weeks, but your doctor will be able to tell you after surgery.
Now I need you to move onto this strethcher.

Suzy: (Moves to stretcher.)

Nurse: Well Suzy, it's time to say goodbye to your mom and dad.

Suzy: Goodbye!!! (Sits up) I thought they were going to stay with me all the time.

Nurse: No not during the operation, but the nurses and doctors will be there. When you wake up after surgery you can come back to your room and see them. They'll be waiting right here.

Suzy: Are you sure they can't come?

Nurse: Yes. (Child hugs mom goodbye.)

Scene III

(Child wakes up in recovery room.)

Suzy: (Snoring, Jump up) Where am I!! (a little terrified)

Nurse: You're in the special wake up room. How do you feel?

Suzy: Funny! (grumpy) My tummy feels yukky, and what's on my arm!!

Nurse: As you wake up more you'll start to feel better, and that thing on your arm is your cast - your special hard bandage. Would you like to go back to your room with your mom?

Suzy: Yes!!!

Nurse: O.K. we're going to move you onto this gurney and we'll take you back to your room.

Scene IV

(Child is back in own room)

Suzy: Mom!!!! (Jumps up and hugs mom)

Mom: I'm right here. How are you?

Suzy: Better now that you're hear.
(nurse comes in)

Nurse: How do you feel Suzy?

Suzy: Funny. I'm thirsty. Can I have something to drink?

Nurse: You can have some ice chips and then a little later you can have some juice or pop.
(nurse leaves the room)

Suzy: Mom?

Mom: Yes.