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# Promoting Adaptation of the Young Child During an Outpatient Surgical Admission Assessment

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PROMOTING ADAPTATION OF THE YOUNG  
CHILD DURING AN OUTPATIENT  
SURGICAL ADMISSION ASSESSMENT

By

Mary C. Mitus

A THESIS

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ABSTRACT

PROMOTING ADAPTATION OF THE YOUNG  
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Hospitalization is considered to be a particularly stressful experience for a young child. Historically, efforts aimed at reducing the stress of hospitalization have focused on preadmission tours and orientation programs. Little research has been done on the effects of the nurse's initial intervention at the time of admission on the stress behaviors of the pediatric patient.

This study used an experimental design to investigate whether the timing of a child's admission physical assessment, either before or after an interview with the child's parent(s), had an effect on the upset and cooperation behaviors exhibited by the child during the physical exam.

Thirty-two children, age 12 to 36 months, who were scheduled for elective outpatient surgery were randomly assigned to control and experimental groups. Children in the experimental group were examined after a short interview between the nurse and the child's parent(s). Control group subjects were examined before the interview. All subjects were videotaped during the physical exam and later evaluated on an upset behavior rating scale and a cooperation rating scale.

The hypothesis of the study was that children who were examined after the interview would exhibit less upset behaviors and be more cooperative with the examining nurse. It was hypothesized that these children would demonstrate less stress behavior because they were given the opportunity to orient to the surroundings and feel somewhat comfortable with the nurse while their parents were being interviewed. Analysis of the data indicated there were no significant differences between the two groups for either behavior scale.

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## Chapter 1

### Introduction

The major regulatory and cost containment efforts of the past decade, along with the popularity of the Health Maintenance Organization movement in the United States, have produced an increased demand for outpatient services provided by acute care hospitals. The most significant shift from inpatient to outpatient services has occurred within the field of surgery.

As early as 1980, Medicare promised 100 percent reimbursement for certain surgical procedures performed on an outpatient basis. In 1981, Blue Cross-Blue Shield promoted ambulatory surgery as a means of saving thirty to fifty percent of surgical costs. Presently, at least 200 procedures are routinely performed on an outpatient basis. It is estimated that, by 1990, at least 60 percent of surgical care will be provided as an outpatient service (Curtain, 1984).

In no area is this shift more evident than in the delivery of health care to children. High cost and declining utilization have plagued the viability of inpatient pediatric units within the general hospital since the late 1970's. In many of these hospitals, up to 50 percent of the activity now involves the delivery of outpatient services, especially outpatient surgery.

Whether the encounter is on an inpatient or an

outpatient basis, hospitalization often places the child in a uniquely vulnerable position. Some of the causes of this vulnerability have been documented in recent literature; they include: medical conditions that often cause anxiety, pain, and fear; separation from family and familiar home environment; disruption in the continuity of normal development; limited understanding and a limited capacity to verbalize thoughts and feelings; and limited control over health care decisions (Sadosky, 1980). These stresses are recognized as harmful to children, producing a variety of negative effects depending on the child's age and other factors.

Children less than 5 years of age are particularly vulnerable because their problems are more complex and management of them more difficult. This is due, in part, to variations in the child's level of comprehension and ability to express himself. In addition, often the part of the body affected in surgery is one for which there normally is a heightened anxiety: the mouth, the eye, the genital region, and the anal area (MacCarthy, 1981).

Adapting to the stress of hospitalization is difficult for the young child because he does not have a fully developed repertoire of coping mechanisms. Although measures such as parent participation in care and therapeutic play programs have helped to decrease the stress of separation and provide the child with a means of dealing with his concerns, additional methods are needed

to lessen the impact of a variety of unavoidable stresses imposed by hospitalization.

A stay in the hospital can be a valuable and positive experience for the young child if the right kind of support is given to him, the support that takes into account his age, intelligence, and emotional maturity (MacCarthy, 1981). Historically, this support has been provided by pediatric nurses and a variety of playroom volunteers. More recently, child life specialists have developed sophisticated programs to assist the child as he adapts to the stress of a hospital stay.

Most pediatric outpatients are not afforded the luxury of contact with a child life specialist. In these settings, where the emphasis is on cost containment and efficiency, the nurse must focus on the psychosocial care of the child in addition to the physical care. During a hospital stay for outpatient surgery, there are numerous opportunities for the nurse to make a positive impact upon the child. The admission interview is the first of these opportunities.

The first encounter that a child has with health care personnel in the hospital is very influential; in many cases it sets the tone for the entire hospital stay (Klinzing, 1979). To help make this initial contact a positive one, the nurse may attempt to gain the confidence and trust of the young child by first engaging in conversation with the parents, allowing the child some

time and space to adapt to the new environment. During these first minutes of the admission process, the child is also able to see that his parents have developed a relationship with the nurse. Following the interview portion of the admission process, the nurse must complete a physical exam of the child, including measurement of height, weight, and vital signs. This sequence of events can be contrasted to other instances where the physical exam is done before or during the interview with the parents. Lack of cooperation from the child and the display of upset behavior, such as crying or screaming, indicate that the physical exam portion of the encounter may be more stressful than the interview portion.

The purpose of this study was to determine if there is a relationship between the sequence of two events during the preoperative outpatient admission process, interviewing the parents and examining the child, and the stress level of a 12 to 36 month old child during the physical exam, as indicated by the child's behavior and cooperation with the admitting nurse.

## Chapter 2

### Literature Review

Research abounds on the subject of the psychological and emotional impact of hospitalization on children. A review of the literature by Vernon et al in 1965 lists 246 studies, articles, and reports between 1945 and 1965 on the incidence of emotional repercussions of hospitalization and their prevention or modification (MacCarthy, 1981). In a review of the literature appearing since 1965, Thompson (1986) identifies more than 300 research reports on the subject. Study of this topic, however, actually began at the turn of the century.

Dr. Mason Knox studied the effects of chronic hospitalization of infants in the institutions of Baltimore. His report, published in 1914, showed that infants who remained in such hospitals for a period of a year had a mortality rate of 90 percent. His study did not include measures to control for the various causes of infant death, but did show that the 10 percent who survived were those taken out of the institution for brief periods of time.

Research continued to confirm the hazards of chronic hospitalization with studies of children reared in institutions and orphanages, but a thirty year gap exists in publications of research on this topic.

In the 1940's, research efforts focused on documenting

the negative effects of separating children from their parents. In 1946, Spitz demonstrated that babies in large orphanages had, in addition to poor growth and development, rather severe disturbances in affect which lasted for a long period of time. These infants were essentially without mothering and lacked attention. When these babies were recognized as not gaining weight, someone was assigned the job of holding them and providing the kind of attention they would receive at home. Reportedly the effect was often to produce a rapid improvement in weight gain and to cause associated minor illnesses to disappear. Although the study lacked the control of a quasiexperimental or experimental design, the results coincided with the observations of Levy (1945), Senn (1945), and Jackson (1942).

Work in the late 1940s and 1950s continued to describe the psychosocial implications of separation, but expanded to delineate the problem as it related specifically to hospitalization and pediatric surgery. Jessner (1948), in a descriptive study, observed sixty tonsillectomy and adenoidectomy patients during the brief period of hospitalization and for several months thereafter. Initially, twenty-eight appeared well adjusted to the hospital, but later this number dropped to only fifteen. Nineteen of the sixty displayed moderately poor adjustments in the hospital, with many residual fears and phobias, while thirteen were very poorly adjusted and developed

major emotional difficulties. A sample of convenience was used for the study. Little control over extraneous variables was exhibited by the researcher.

In England, Robertson (1952) pioneered the effort to change the rigid visiting policies in hospitals with a film called "A Two Year Old Goes to the Hospital". The film depicts the mental trauma of hospitalization on a young child. In a follow-up report, he documented a descriptive study which implied a causal relationship between distress and maternal separation (Robertson, 1953).

Robertson's work prompted England's Central Health Services Council of the Ministry of Health to appoint a committee (the Platt Committee) to make recommendations on the welfare of children in the hospital. The Platt Report, published in 1959, made a detailed series of recommendations about the "nonmedical" aspects of the care of patients from 0 to 16 years of age. Included in the list were unrestricted visiting policies and provisions for rooming-in for parents of young children.

In the United States, a classic study by Prugh et al (1953) offered further evidence of the psychological effects of hospitalization in children. In this study, two groups of 100 children were selected. A control group received care under the "traditional practices" of the day, while an experimental group participated in a program of psychological preparation, frequent parental



visitation, and special play opportunities. The study revealed that 92 percent of the control group and 68 percent of the experimental group displayed "significant difficulties" in coping with the stress of the hospital setting.

Methodological weaknesses in Prugh's research include the use of matching to select the control and experimental groups and lack of control over extraneous factors such as previous hospitalizations. Measures of the child's anxiety were in the form of numerous observations by a variety of professionals. No interrater reliability factors were presented.

Research in the 1960s began to examine the effect of psychological preparation and special supportive care procedures on hospitalized children's stress reactions and adjustments. In a related series of experiments, Mahaffy (1965) and Skipper et al (1968) took a different approach from previous investigators by concentrating the preparatory efforts on the mothers rather than the children who were having minor surgery.

In a well-designed experiment, Skipper (1968) used eighty patients between the ages of 3 and 9 years admitted to the hospital for tonsillectomy with no previous hospital experience. The patients were randomly assigned to control and experimental groups. The experimental interaction focused on the mothers of the children. Results demonstrated that the experimental group (whose

mothers received special supportive care and communication) seemed to experience both physiologically and psychologically less ill effects from the operation and hospitalization and made a more rapid recovery than control group children. A competing hypothesis limits the study. It cannot be determined if some of the positive effects for the children may have resulted from the preparation and support they received directly from the experimental nurse while in their mothers' presence rather than, or in addition to, the indirect effects of the mothers' lowered distress and improved coping.

The 1970s marked an effort toward refining the concept of preparation for the hospital. In 1971, Plank described a systematic program to aid hospitalized children through play and appropriate educational activities to cope with their problems of separation from home and parents, anxiety about medical treatments, and the effects of increased dependency, pain, and immobilization. Also documented was the specialized training that a newly established hospital "child care worker" was to receive, thus establishing the profession of the child life specialist. Under Plank's leadership, the American Association for Child Care in Hospitals (Association for the Care of Children's Health) was established.

The first of the studies to employ filmed modeling with hospitalized children was that of Vernon (1973) who tried to prepare children for anesthesia induction. Half

of the subjects saw a film that depicted children responding calmly to anesthesia induction, the control group saw no film. It was reported that the experimental group showed less fear on induction, but it is unclear whether the film or simply the additional attention and support caused the positive effects.

Melamed and Siegel (1975) investigated sixty children between the ages of 4 and 12 years who were admitted to two children's hospitals for elective surgery. Thirty matched subjects were assigned to the experimental or control group. Prior to surgery, the experimental group saw a preparatory film, the others saw a non-preparatory control film. The group viewing the preparation film had lower anxiety scores on a variety of measures and fewer behavioral problems one month after discharge. A strength of the study is the multidimensional measures that were used to assess the children's emotional responses to hospitalization and surgery.

Also in 1975, Wolfer and Visintainer reported that children who received psychological preparation and supportive care were significantly more cooperative about hospital procedures, less resistant to the induction of anesthesia, and less likely to display upset behavior on the ward than a control group who did not receive such intervention. Eighty children who were scheduled for minor surgery and their parents were randomly assigned to two groups in a 400 bed Catholic, general hospital.

Anxiety was measured by pulse rates and ratings of upset behavior and cooperation with four separate events during the hospital stay. A limitation of the study is the possibility of observer bias, as reported by the researchers. In addition, Wolfer and Visintainer question whether the positive effects associated with their intervention resulted from the process and content of the preparation or from the supportive interaction between the research nurse and child.

Recent studies have continued to build on the findings of earlier research. Citing the work of Vernon (1973), and Wolfer and Visintainer (1975), Fassler (1980) successfully separated two components of preparation programs, the information the child receives and the increased emotional support caused by the attention and the teaching techniques, to evaluate the relative effectiveness of each component alone and in combination. Forty-five children, age 6 to 12 years, who had been admitted for minor surgery were randomly assigned to one of three groups. One group received information and emotional support, another emotional support without information, and the third no emotional support or information. Results suggest that a program of intervention that includes emotional support as well as information about the hospital can reduce preoperative anxiety. A larger sample size would strengthen the validity of the study.

Caire and Erickson (1986), in a descriptive study, collected data on the effects of auditory tapes to reduce acute distress in pediatric patients during cardiac catheterization. Observation by the medical staff as well as patient's own subjective experience indicated that the tapes were a useful means of distraction to help the patient tolerate the stress of the procedure. The results of the study are questionable due to the large variation in age (less than 1 year to over 13 years) and the small size of each sample. Interrater reliability for the observations was not discussed.

Additional descriptive research by Broome (1986) explored the relationship between the level of fear of medical experiences reported by children and their observed behavior in low and high threat medical situations. One hundred and twenty-eight children who participated in a preschool health screening clinic were interviewed using a 12-item Medical Fears Questionnaire. Their behavior was rated during the interview (low threat) and when they received an immunization (high threat). The results indicated that children who were higher in fear were more likely to demonstrate negative behavior in both situations. The research methodology supported the hypothesis. One of the limitations of this study was a lack of a counterbalancing design. The study would have been stronger if half the children would have received the immunization first and the interview second, with the

other half experiencing the interview first and the immunization second.

LaMontagne (1987) replicated earlier research (LaMontagne, 1984) with a descriptive study that examined the ways children coped with surgery in relation to their locus of control beliefs, age, and the amount of preoperative information given them by their parent(s) and surgeon. Forty-two children were interviewed preoperatively and rated as using avoidance modes, active modes, or a combination of avoidance-active coping. Results showed that all three independent variables related to children's adopted coping strategy. The results also showed that locus of control and parent and/or doctor information were associated with more effective coping strategies.

Throughout most of the literature on the psychological effects of hospitalization on children, the length of the child's exposure to the hospital is assumed to be one to several days. For a growing number of cases, this is no longer true. Pediatric minor surgery has become almost exclusively an outpatient service.

Only recently has research focused on the outpatient visit to a health care facility as a site for potential intervention. There is a need for continued research in the field of psychosocial care of the child in the hospital, specifically the child who enters the hospital for outpatient surgery. Interventions must focus not only

on those programs that are provided by the child life specialist, but also those methods that can be used by the nurse who will undoubtedly be the person to impact the child the most.

## Chapter 3

### Theoretical Framework

#### Theoretical Framework

Research supports the belief that hospitalization causes anxiety in children, independent of their illness. The goal of a number of studies has been to develop methods to alleviate this stress. Skipper and Leonard (1968) proposed that reducing a child's stress could have profound effects on his social, psychological, and even physiological responses to hospitalization. Investigations into reducing the stress of hospitalization have often focused on a child's coping or adaptation skills. Murphy and Moriarity (1976) made an in-depth study to systematically examine the behaviors of children. They viewed coping as a process of adaptation in relatively difficult circumstances. In 1984, Caty et al began a systematic documentation of the coping behaviors of young hospitalized children in order to facilitate further research on adaptation to the hospital.

Nursing theory has also been based on human adaptation. Roy (1984) developed a model of nursing based on Helson's adaptation theory that contributes to the application of nursing intervention to reduce stress of the hospitalized child. The basic concepts in Roy's framework are clearly defined.

Roy defines man as an adaptive system that contains biological, psychological, and social components, as well



as internal processes that act to maintain the goals of the person. These internal processes function to help man adapt to stress, or stimuli.

Environment is described as "all conditions, circumstances, and influences surrounding and affecting the development and behavior of persons or groups" (Roy, 1984). Health is considered "a state and a process of being and becoming an integrated and whole person" (Roy, 1984).

The goal of nursing within this model is simply to promote adaptation. Adaptation is defined by Helson as a process of responding positively to environmental changes in such a way as to decrease responses necessary to cope with stimuli and increase sensitivity to respond to other stimuli. He further describes three classes of stimuli: (1) focal stimuli, or stimuli immediately confronting persons; (2) contextual stimuli, or all other stimuli present, either within persons as their internal condition or coming as input from the environment; and (3) residual stimuli, such as beliefs, attitudes, or traits which have an indeterminate effect on the present situation (Helson, 1964).

According to Roy, man adapts to stimuli within four modes: physiological, self-concept, role-function, and interdependence modes. The nurse assesses the client in each of the adaptive modes to select areas of concern, either ineffective behavior that requires intervention or

adaptive behaviors that need reinforcing. For each of these concerns, the nurse determines the focal, contextual, and residual stimuli contributing to each behavior. Nursing approaches are then selected to assist the person in coping with the stimuli. Behavioral outcomes are evaluated and nursing approaches are modified as necessary.

The adaptation model provides a useful framework for research on the psychosocial effects of hospitalization on children. The young child, as an adaptive system, is in constant interchange with his environment, striving to adapt to stress and maintain his safety and integrity while working toward the goals of autonomy and initiative (Erickson, 1963).

An admission to the hospital for surgery produces stress that is beyond the young child's ability to cope without assistance. The nurse would focus on the self-concept mode of adaptation to assess the child's anxiety related to a change in environment, a change in time schedule, and fear of impending harm to his body. The interdependence mode of adaptation would be assessed to analyze separation anxiety as the child fears separation from his parents.

The focal stimulus is the admission to the hospital for surgery. The contextual stimuli include the child's age, developmental level, previous hospitalizations, the strange, new environment, fear of medical instruments,

etc. Residual stimuli may include the fact that the child is normally very active and loud, or very shy and withdrawn.

Interventions to help the child adapt to the stress of hospitalization will most likely be directed at manipulating the contextual stimuli. During the outpatient preoperative admission process, interviewing the parents first before attempting the physical exam of the child may affect the child's perception of the situation, allowing him time to become familiar with the environment and see that his parents have developed a relationship with the nurse. This intervention manipulates contextual stimuli in an attempt to make the stress of hospitalization easier to cope with.

#### Hypothesis Development

The admission process for outpatient surgery can be divided into two parts: a physical exam of the child and an interview with the parent(s) to obtain historic and current health information about the child. The interview, which lasts approximately 5 to 10 minutes, is conducted by the admission nurse in the treatment room with the family situated around the exam table. The physical exam of the child occurs on this exam table. The exam includes measurements of height, weight, cardiac rate, respiratory rate, and temperature (axillary), and listening to lung sounds. The weight is obtained at the end of the exam.

The study involved manipulating the sequence of the two parts of the admission process--interview first and physical exam second, or physical exam first and interview second--and observing the child's behavior during the exam. Often, the young child who is anxious will resist the nurse during the physical exam and display a variety of upset behavior ranging from clinging to his parent, to crying, to screaming and kicking. It is this behavior that was evaluated during the experiment.

#### Hypothesis Statement

Young children being admitted for outpatient surgery who receive the physical exam after their parents are interviewed will demonstrate less stress behaviors than children who receive the physical exam before their parents are interviewed.

#### Definition of Terms

Young children: Male and female children between 12 months and 36 months of age.

Outpatient surgery: Surgical procedure that does not require an overnight stay at the hospital: surgery on ears, eyes, nose, throat, hernia repair, orthopedic repairs, and genitourinary repairs.

Physical exam: Measurements of cardiac rate, respiratory rate, height, weight, and axillary temperature, and assessment of lung sounds and overall appearance.

Parent: Significant adult who accompanies the child to the hospital and signs the surgical permit.

Interview: Question and answer session lasting approximately 10 minutes between the admitting nurse and the parent(s) where demographic and health information about the child is obtained.

Stress behaviors: Upset behaviors ranging from relaxed position and smiling to clinging to the parent or nurse to kicking and screaming. Cooperation behaviors ranging from active participation and no crying to avoidance, kicking, and screaming.

## Chapter 4

### Methodology

#### Design

A two group experimental design was used to study the simple hypothesis. The subjects were randomly assigned to either a control or experimental group. The independent variable was the timing of the child's physical exam during the admission process, either before or after the interview with the child's parents. The dependent variable, the child's stress level, was measured by observations of upset behavior and cooperation with the admitting nurse during the physical exam.

#### Population and Sample

The study was conducted in a general hospital in a metropolitan area, servicing children 0 to 16 years of age in a moderate size pediatric unit and in an outpatient surgery department. The admission assessment and interview took place in the admission room of the ambulatory surgery unit.

Over a four month period, thirty-two children were randomly assigned to either group. Subjects were screened to meet the following criteria: (1) aged 12 to 36 months, (2) are members of English speaking families, (3) have no psychological condition requiring special care, and (4) are to be admitted for minor outpatient surgery (surgery on ears, eyes, nose, throat, or hernia repair, orthopedic repairs, and genito-urinary repairs).

### Protection of Human Rights

Approval to undertake the project was obtained from the Hospital Review Board and from the Human Research Review Committee at Grand Valley State University. In addition, informed consent was obtained from the parents of the subjects before admission to the outpatient department. An explanation of the study and a consent form (see Appendix A) were presented to the parents as they registered for the surgery. The consent form was signed by the parent and witnessed by the admission clerk. The explanation assured the parents that participation in the study was purely voluntary and would not harm their child, either physically or emotionally, and that refusal to participate would in no way affect the care of their child. The parents were informed that information obtained for the study was confidential and that names would not be used in the report.

The use of a video camera was also explained to the parents. They were informed that their child's right to privacy would be maintained. The children were not told about their participation in the study during their hospital stay.

Subjects were assigned a code number for the remainder of the study. The assessment sheets and the video tapes were kept locked in a location inaccessible to the hospital staff and the public.

## Instruments

Two main aspects of children's adaptation to the hospital were examined: manifest upset behavior and cooperation with exam procedures. The Upset Behavior Rating was used to measure upset behavior. The Cooperation Rating measured cooperation during the admission assessment (Wolfer, 1975, McGrath, 1979).

The Upset Behavior Rating (see Appendix B) is a five-point scale designed to reflect the emotional state of a child at a given time, primarily in terms of verbal and nonverbal expressions of fear, anxiety, or anger. The scale consists of three sets of descriptive phrases. Each set describes the behavior that would score a rating of one, three, or five, respectively. The subjects were given a single rating based on the set of phrases that most closely described their behavior. A rating of one indicated little or no fear or anxiety (calm appearance, no crying, no verbal protest); a rating of three, a moderate amount (some temporary whimpering and/or mild verbal protest); and a rating of five indicated extreme emotional distress (agitated, hard crying or screaming and/or strong verbal protest). Withdrawn or frozen behavior was also considered extreme distress.

The Cooperation Rating (see Appendix C) is a five-point scale indicating the degree to which a child cooperates with a procedure. It was used in the same manner as the Upset Behavior Scale. A rating of one



indicated complete cooperation including participation in and assistance with the procedure. A rating of three indicated mild or initial resistance or passive participation without assistance. A rating of five indicated extreme resistance, strong avoidance, and the necessity to restrain the child.

### Validity

Internal and construct validity for the Upset Behavior Scale and the Cooperation Scale have been established by Wolfer and Visintainer in 1975. The scales have a very high predictor validity. They have been used with over 800 subjects and have repeatedly been able to significantly differentiate between control and experimental groups using a 0.05 level of significance (Wolfer, 1986).

### Procedure

Admission assessment sheets were randomly assigned a letter code, "A" meaning physical first and "B" meaning parent interview first. These sheets were placed in a stack on a clipboard in the admission area. The forms were used on the basis of the arrival times of the subjects; the nurse used the top sheet when a subject was to be admitted.

The control group subjects were greeted and then examined by the admitting nurse. The admission assessment included measurements of height, weight, temperature, cardiac rate, and respiratory rate, as well as assessment

of general appearance and lung sounds. Minimal interaction with the parent(s) took place before the physical assessment. After the exam, the nurse obtained health history information from the parent(s) and concluded the admission process.

Subjects in the experimental group were greeted and then allowed to sit with their parents as the nurse proceeded with the parent interview. Minimal interaction took place between the nurse and the child during the interview. After the interview, the physical exam of the child was conducted as with the control group.

The physical exam portion of the admission process was video-taped. Numbers were randomly assigned to the subjects and used to identify the exams. Immediately before the physical exam, the camera was turned on and the identification number was stated. Behavioral observations and ratings were done by two separate observers after conclusion of data collection.

Interrater reliability for this study was established at 91% by having two raters evaluate every subject on both scales. The ratings of one evaluator were used for the study.

Observer bias was eliminated by the use of randomly assigned numbers to identify the subjects in the video tape. The evaluators had no indication of what group the subjects had been assigned to.

### Training for the Nurses

The nurses involved in the research project were trained on the procedure for admitting both groups of subjects. Attempts were made to standardize the admission process as much as possible.

The nurses were instructed to process the control group subjects (physical exam first) in the following manner:

-Greeting: Smile, say hello to child using his name, then say hello to the parent(s) and introduce self.

-Say to parent(s): "I need to examine (child's name); I need to weigh him, listen to his heart, and take his temperature. Please bring him over to the exam table."

-Position child in front of you, allowing the parent to remain close by.

-Say to child: "I am going to listen to you with this. It won't hurt you." Show the stethoscope to the child and then obtain the cardiac rate, respiratory rate, and assess lung sounds.

-Say to child: "I am going to see how long you are." Measure the height with a tape measure with child lying on the exam table.

-Say to child: "I am going to check your temperature." Take an axillary temperature with electronic thermometer.

-Say to child: "I am going to see how much you weigh." Weigh child using the electronic infant scale.

-During the physical exam, restrict verbal interaction

with the parents to simple instructions.

-After physical exam, redress child and proceed with the interview portion of the admission process.

The nurses were instructed to process the experimental group subjects (interview first) in the following manner:

-Greeting: Smile. Say hello to the child using his name. Say hello to the parent(s) and introduce self.

-Say to parent(s): "I need to ask you some questions about (child's name). Please have a seat next to the exam table."

-Complete the interview portion of the assessment. Do not interact with the child during the interview.

-Say to parent(s): "I need to examine (child's name); I need to weigh him, listen to his heart, and take his temperature. Please bring him over to the exam table."

-Continue as outlined for the control group.

Chapter 5  
Data Analysis

Techniques

Demographic information yielded nominal scale data. The independent variable is also nominal level data. The dependent variable measures in the form of observation scales yielded ordinal level data.

The computerized statistical program SPSS-X was used to analyze the data. The techniques used were the Mann-Whitney U test and the Chi-Square test for independence.

The Mann-Whitney U test was used to compare the means between the two groups for the upset behavior rating and the cooperation rating. It was also used to analyze whether previous hospitalization affected the scores on either of the rating scales.

The Chi-Square test is used to demonstrate if there is a dependency between factors which will show a relationship. This test was applied to both of the rating scales and the two age categories. It was also applied to the behavioral scales by the two groups, control versus experimental.

Due to the unequal distribution of males and females within the two groups and because the sample size did not allow for sufficient numbers for an age by sex by group breakdown, sex was not included in the analysis.

### Characteristics of Subjects

Thirty-two children participated in the study. Fifteen were assigned to the control group and seventeen were in the experimental group. Twenty-five or 78% of the subjects were male while seven or 23% were female. The subjects were divided into two age groups: 12 to 23 months old or 24 to 36 months old. 47% of the subjects fell into the younger age category. Twelve of the children (37%) were hospitalized previously (see Table 1).

Table 1

### Characteristics of Subjects

Characteristics of sample	n	Percent
Control group	15	47%
Experimental group	17	53%
Sex		
Male	25	78%
Female	7	23%
Age		
12 to 23 months	15	47%
24 to 36 months	17	53%
Previous Hospitalization		
Yes	12	37%
No	20	63%

The control group was composed of 87% males and 13% females. Twice as many children in this group fell into the older age category as in the younger age group. Nine subjects (60%) had been hospitalized previously (see Table 2).

71% of the experimental group subjects were male. Ten children (59%) were aged 12 to 23 months while seven (41%) were aged 24 to 36 months. 18% of the subjects in this group had a previous hospital experience (see Table 3).

Table 2

Characteristics of Control Group

Characteristics of Group	n	Percent
Total Number	15	100%
Sex		
Male	13	87%
Female	2	13%
Age		
12 to 23 months	5	33%
24 to 36 months	10	67%
Previous Hospitalization		
Yes	9	60%
No	6	40%

Table 3

Characteristics of Experimental Group

Characteristics of Group	n	Percent
Total Number	17	100%
Sex		
Male	12	71%
Female	5	29%
Age		
12 to 23 months	10	59%
24 to 36 months	7	41%
Previous Hospitalization		
Yes	3	18%
No	14	82%

Results

The Mann-Whitney U test was used to compare the means between the two groups for the upset behavior rating and the cooperation rating. A probability level of  $p < .05$  was established for the analysis. The test showed there were no significant differences between the two groups for either behavior scale. Probabilities of 0.156 and 0.4023 were demonstrated. Thus, the research hypothesis was not supported (see Table 4).



Table 4

Mann-Whitney U Scores for Behavioral Scales by Group

Upset Rating	n	U	Z	2-tail Probability
Control	17	91.5	-1.419	0.156
Experimental	15	91.5	-1.419	0.156
Cooperation Rating				
Control	17	106.5	-0.838	0.4023
Experimental	15	106.5	-0.838	0.4023

A Mann-Whitney U test was also applied to the two rating scales by previous hospitalization. This analysis demonstrated that previous hospitalization had no effect on either behavior rating. Probabilities for both tests were greater than 0.05 (see Table 5 and Table 6).

Table 5

Mann-Whitney U Scores for Upset Rating by Hospitalization

Upset Rating	n	U	Z	2-tail Probability
	32	97.0	-0.934	0.350

Table 6

Mann-Whitney U Scores for Cooperation Rating  
by Hospitalization

Cooperation Rating	n	U	Z	2-tail Probability
	32	86.5	-1.377	0.168

The Chi-Square analysis confirmed the results of the Mann-Whitney U test of the hypothesis. The test was applied to determine the relationship between the behavioral scales and the two groups, control versus experimental ( $p < .05$ ). Probabilities for the upset rating and the cooperation rating were  $p < .5216$  and  $p < .4645$  respectively (see Table 7).

Chi-Square analysis was also used to determine the relationship between the behavior scales and the two age groups ( $p < .05$ ). The test demonstrated that age did have an affect on the behavioral ratings. The younger age group (12 to 23 months) scored higher on both rating scales than did the older age group (24 to 36 months). Upset rating probability was  $p < 0.0198$  and cooperation rating probability was  $p < 0.0198$  (see Table 8).

Table 7

Chi-Square Analysis of Behavioral Ratings to Group

	Chi-Square	df	Significance
Upset Rating	3.22091	4	0.5216
Cooperation Rating	3.58902	4	0.4645

Table 8

Chi-Square Analysis of Behavioral Ratings to Age

	Chi-Square	df	Significance
Upset Rating	15.26797	4	0.0042
Cooperation Rating	11.69688	4	0.0198

## Chapter 6

### Discussion

#### Summary of Results

This experimental study was designed to investigate the effect of a nurse intervention at the time of admission on a young child's stress behaviors during that admission. The hypothesis tested stated that a young child being admitted for outpatient surgery who received the physical exam portion of the admission procedure after his parent(s) were interviewed would demonstrate less stress behaviors during the examination than if the physical exam were performed before the parent interview.

The research hypothesis was not supported. Mann-Whitney U analysis and Chi-Square testing demonstrated that there were no significant differences in the behavioral ratings based on the timing of the physical exam.

Mann-Whitney U analysis applied to investigate the effect of previous hospitalizations on either behavioral scale demonstrated that previous hospitalization was not a significant factor in the outcomes of the rating scales.

Age, however, was found to influence the scores on both the Upset Behavior Rating and the Cooperation Rating. The younger age group scored higher on both scales. In other words, the younger child demonstrated more upset behavior and less cooperation with the admitting nurse regardless of assignment to control or

experimental group. Chi-Square testing demonstrated this result.

### Discussion

The outcome of the study related to the research question was surprising. It seems logical to assume that given the opportunity to inspect and adapt to the surroundings and the nurse, the child would act less anxious during the admission process. It was hoped that allowing the child to quietly sit with his parents during the interview would help the child feel more at ease with the admitting nurse.

In principle, the hypothesis may still be valid. Perhaps the time allotted for the parent interview (5 to 10 minutes) is simply not long enough to produce the calming effect on the child that is desired. Given the child's almost certain anxiety and fear, it may be unrealistic to think that this few minutes could influence the child's perspective on the whole situation.

Another possible explanation is that regardless of the nurse's interventions at the time of admission, the young child will react according to how stressed his parent(s) are at the time. Studies of parental responses to children's hospitalization indicate that the event is generally perceived as stressful. In separate studies, Skipper (1966) and Skipper, Leonard, and Rhymes (1968) each found approximately 60% of parents to rate their fear or anxiety as "intense" the day before their child's

surgery. Frieberg (1972) found that all of the 25 parents she interviewed felt at least some degree of anxiety during their child's hospitalization, even in the absence of a specific frightening event.

Research supports a relationship between parental anxiety and children's responses. Significant correlations between maternal and child anxiety have been reported during outpatient medical examinations (Heffernan and Azarnoff, 1971), in the period before hospitalization (Vardaro, 1978), and during hospitalization itself (Skipper, 1966).

Observations by this researcher during the study found that the children seemed to act in the same manner from their first encounter with the secretary and the nurse right through the entire admission procedure. Children who acted upset and uncooperative (crying and clinging to their parents) as they entered the Ambulatory Surgery Unit and were greeted by the nurse seemed to carry on with this behavior through the admission process. Perhaps these children were reacting to their parents' anxiety level.

It is not surprising that the younger age group scored higher on both the Upset Rating Scale and the Cooperation Scale. Even though a span of twenty-four months in the ages of the subjects is small, the developmental levels of the children may have been quite different. The subjects in the younger age category may have been exhibiting behaviors indicative of a stronger reaction to stranger

anxiety. Stranger anxiety generally begins around the eighth month and becomes more prevalent by the tenth month. Infants at 12 months of age tend to show fear when an unfamiliar adult comes near them and attempts to pick them up or take them from their mothers' arms (VanderZanden, 1985). According to theorists on human attachment, this response diminishes by the time the infant is 24 months old.

In 1969, John Bowlby (cited in Scarr, Weinberg & Levine, 1986) identified four phases in the development of attachment in infants. Phase three, occurring from 7 to 24 months of age, signals the emergence of an enduring and affectionate attachment to a specific person. During this phase, the infant protests when a person to whom he/she is attached leaves. Phase four begins when the infant reaches 24 months of age. At this stage, the child becomes more willing and better able to interact with peers and unfamiliar adults.

The younger children may also have been more sensitive to their parents' anxiety at the time of admission. Research by Wright and Alpern (1971) demonstrated that the relationship between parental anxiety and children's upset behavior is more evident in younger children.

#### Limitations of the Study

Limitations of the study center around uncontrolled factors that may have influenced the behavior of the subjects during the taping of the physical exam. Although

attempts were made to standardize the admission process and the interactions between the nurses and the subjects, differences in the personalities and styles of the nurses undoubtedly affected the subjects' behavior in some instances. Some nurses found it difficult to limit their interactions with the children and did not follow the instructions as precisely as outlined in the training sessions.

It was also difficult to control the parents' behavior during the physical exam. The parents were invited to stand next to the exam table and help hold their children as needed, but there were a few parents who attempted to entertain or distract their children during the physical exam. This may have influenced the behavior of the subjects during the taping.

Lastly, some of the children recognized the video camera and the fact that they were being photographed. Indeed, some parents encouraged their children to "smile for the camera." This may also have had an effect on the children's behavior.

An additional limitation of the study involves the two behavioral rating scales. Both instruments have been used extensively on children aged 3 to 14 years, but have not been used on children under 3 years of age. The wide variations in development from 12 to 36 months and the presence of stranger anxiety in the younger age group may have influenced the ratings on both of the scales.



### Implications for Nursing Practice

Although the results of this study do not support manipulating the sequence of events during the admission process, it may be worthwhile to have the child arrive several minutes ahead of time for surgery to allow more time for the child to adapt to the surroundings and the personnel. This time could take the place of the preadmission orientation program that is generally offered several days prior to admission. Most hospitals are finding that the popularity of outpatient surgery has caused a decrease in the attendance of the preoperative program.

Nurses working with children in an outpatient hospital setting may want to consider the relationship between parental anxiety and children's upset behavior. Efforts to decrease the anxiety of the parents before and during the hospital encounter could help to reduce the anxiety experienced by the children during the hospital stay.

### Recommendations for Future Research

Further research is needed on how to reduce the stress level of young children during an outpatient hospital encounter. Future researchers could repeat this study using a larger sample size and a more defined age group. A larger sample size would allow an analysis of sex differences as well as age differences. Limiting the age of the subjects would enable the researcher to focus on supportive behaviors that may be different depending on

the age of the child. Parental involvement in the admission process may be very supportive for the younger child.

The study could also be repeated allowing more time for the child to adapt to the surroundings before the physical exam, or expanding on the idea of incorporating an orientation program into the routine admission process.

The results of this study prompt some interesting questions. Why were there over three times as many males as females having surgery over a four month period? What differences might have been seen between the sexes on the two behavioral scales? What effect does a child's age have on stress behaviors when the child is between 12 and 24 months old? And finally, what is the correlation between the Upset Behavior Scale and the Cooperation Scale? Perhaps using one of the instruments or combining them would be more effective. A secondary analysis of the data should be done to answer these questions.

Nurses must continue to research methods to influence the psychosocial health of children in the hospital setting. They must keep in mind that most children encounter the hospital on an outpatient basis and the outpatient nurse is often the one professional who has the opportunity and the ability to make the encounter a positive and valuable experience.

## Conclusion

An experimental design was used to investigate whether the timing of a young child's admission physical exam, either before or after the initial parent interview, would affect the child's stress level during the exam. An outpatient surgical setting was used to study the hypothesis. The child's stress level was evaluated by rating the child's upset behavior and degree of cooperation with the admitting nurse.

Analysis of the data demonstrated no significant relationship between the timing of the physical exam and the stress behaviors of the subjects. It was shown that the younger children acted more upset and were less cooperative than the older children. Further studies are needed to expand the findings of this research.

APPENDIX

Appendix A

UPSET BEHAVIOR RATING

1	2	3	4	5
Relaxed muscles covered Alert but not hyper-vigilant.		Tense muscles Watchful, wide-eyed.		Withdrawn, completely, curled up with arms drawn in (not asleep).
Voice steady well-modulated.		Voice unsteady or quivering.		Hyper-vigilant.
No pallor or flush.		Circumoral pallor.		Voice loud and stacatto.
No sweating.		Restless, frequent movement. Spastic movements.		Increased restlessness, constant movement.
Steady, purposeful movement.		Hair twirling, Thumb sucking, Whimpering.		Marked sweating, Pallor, Flushed.
Relaxed, open position.		Haltingly responds to questions or comments.		Does not respond to interactions.
Initiates interactions, Smiles, Asks questions Responds readily and clearly to questions.		Requires frequent contact, holding hands, or verbal reassurance or looks at others. Does not cling to parents.		Clings to mother or nurse.  Increased crying and escape when approached by adult. No eye contact. Screaming or crying in response to questions or eye contact.
				Repeated questioning.

Appendix B

COOPERATION RATING

1	2	3	4	5
Participates in activity (for blood test: extends arm, makes fist, holds still) (for preoperative medication: chooses site, holds still, clasps hands) (for transport: climbs onto litter, fixes covers or straps), no verbal protest, no restraint needed.	Requires verbal restraint, initially resists activity, then cooperates.	Strongly resists procedures (pushes needle away, grabs the technician's or nurse's hand during the procedure of blood test or preoperative medication) (during transport: tries to get off litter), requires continuous, firm restraint by one or more people.		
Resumes previous activity immediately after procedure. No crying or verbal protest.	Verbal protest or whimpering.	Mild protest, especially at beginning, responds to comfort measures, cooperates.	Screaming or hard crying as protest.	
For transport: shows interest in the ride and the attendants.	Crying, but comforted with verbal support, and resumes activity two minutes after procedure.	Continued crying or clinging to mother or nurse.	Not easily comforted by either verbal or physical contact.	
	In transport, begins to show interest in surroundings after verbal comfort.	Does not resume activity or show interest in the surroundings.		

Appendix C

INFORMED CONSENT FOR RESEARCH PROJECT

Your child is one of several children who have been selected to participate in a study about pediatric outpatient surgery. A videotape will be made of your son or daughter during the admission physical exam. A nurse will later view the tape and observe your child's behavior. Care will be taken to maintain privacy at all times. Your child will not be aware of his/her involvement in the project.

No names will be used in the study. Identifying information will consist of age, sex, previous hospitalization, etc. All information will be confidential.

Participation in the study is purely voluntary and will not harm your child in any way. You are free to withdraw your approval at any time. Refusal to participate in the study will not affect the care your child receives today.

If you have any questions, we will be happy to answer them for you.

Thank you for your cooperation.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Witness \_\_\_\_\_

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