

A STUDY OF ANXIETY, GENDER, AND
PRE-SURGERY PREPARATION IN
SCHOOL-AGED CHILDREN

BY

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Bachelor of Science

Oklahoma State University

Stillwater, Oklahoma

1990

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
December, 1993

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ACKNOWLEDGEMENTS

Finally complete is a project in which many people spent countless hours helping me plan, execute and analyze. From the beginning, I believed in the purpose of this research and I was blessed with others who believed in it as well.

Dr. Ruth Tomes deserves my heartfelt gratitude for her valuable contributions throughout the duration of my research. Many sacrifices were made by Dr. Tomes to meet various deadlines. Her flexibility and dedication to this project, just one of the many she kept going, will always be remembered. Thanks must also be given to Dr. Patti Self and Dr. Carolyn Henry who agreed to serve on my committee amidst their already busy schedules and provided important professional advise and direction.

Thanks to Shirley Beckman, Child Life Specialist at Children's Hospital of Oklahoma for her willingness to help collect data and play phone tag. Without her input and help, I'm not sure this project would have been possible. Also to recognize from Children's Hospital are the physicians who agreed to give access to their patients, thankfully, they all understood the importance of student research. I would like to thank Lynda Dillwith, Senior

Secretary, for working after hours to make this text "presentable."

Emotional support was given by my family. To my brothers, Tyler and Brian, my aunt Kathy and grandfather "Popo" - thanks for your interest, curiosity and support of my studies over the last two and a half years. Very special thanks to my parents, Don and Mary, for giving me early in life the self confidence to take on such a task. It is because of their personal and educational values that I am who I am today.

Last but not least thanks to my husband, Todd, who didn't know he would be inheriting this project when he married me. In addition to computer skills and rides to Oklahoma City, he provided constant love and encouragement for a project that would have meant little to him if it didn't mean everything to me.

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CHAPTER I

INTRODUCTION

The purpose of this research was to increase our understanding of hospitalized children facing surgery. Specifically, the study was designed to investigate whether children who participate in a pre-surgery educational program experience lower levels of anxiety than children who do not. This information will be helpful to not only the social scientists in identifying sources of anxiety but to the medical community, in upgrading inpatient care. The current research also investigatee whether there is an interaction between children who participate in the program, children who do not participate in the program, and gender. The research sought to answer the question: What is the relationship between participation in a pre-surgery educational program, gender and the level of anxiety in hospitalized children?

Anxiety, defined as an emotional reaction evoked when the individual perceives a specific situation as threatening, regardless of whether there is actually danger present (Spielberger, 1972), can interfere with rational and logical thought processes if experienced at high levels (Reynolds & Richmond, 1985). Reynolds et al. (1985)

comment that physiological responses such as rapid heart rate, increased adrenalin flow, and increased perspiration may also be experienced by a person suffering from high anxiety. There are a variety of ways to define and measure anxiety but the majority of the literature concurs that it is a complex emotional state that may appear even when there is no real threat to the individual (Reynolds et al., 1985). This state of anxiety may affect thought processes and the ability to carry out daily routines.

There are two types of anxiety that may be associated with hospitalized children. The first is emotional distress and is experienced upon being placed in the strange hospital environment (Fosson, Martin, & Haley, 1990). Second, separation anxiety may be produced as a result of the separation from parents (Fosson et al., 1990; Newman, Klingbeil, & Abrams, 1988). Both kinds of anxiety greatly contribute to the total anxiety felt by children in the hospital. In addition, this anxiety may increase over time, becoming a potential problem for those with longer hospital stays (Tiedeman & Clatworthy, 1990).

Everyone experiences anxiety at low levels whether they are hospitalized or not. It is, in fact, very functional psychologically to feel anxious now and then (Eiser, 1984; Weininger, 1983). However, acceptable levels of anxiety must be understood and, for the most part, maintained in situations that are likely to produce elevated levels of fear and stress.

Hopeless feelings about their own fate tend to make children less able to deal with stress. For this reason, Honig (1986) says male children are more vulnerable to stress than female children. The same study noted that infant boys were likely to send out more distress signals to their caregivers than their female counterparts. In an article by Tiedeman and Clatworthy (1990), anxiety levels were measured at three points: admission to the hospital, discharge from the hospital and post-discharge from the hospital. School-aged boys yielded higher levels of anxiety at the three measurement points than school-aged girls. Instead, the girls anxiety in the 1990 study decreased from the first measurement point to the third measurement point.

Although medical doctors and nurses tend to a child's physical aches and pains, their practice traditionally leaves the child's psychological well-being unattended. However, great strides in attending to the psychological needs of children have been made over the last three decades providing a strong base for researchers (Denholm & Joschko, 1988). For instance, the law now requires that parents be told in plain English of risks in order to make informed and educated decisions regarding the treatment of their child (Cohen, 1988). In addition, it has been shown that the loosening of parental visitation rules, that once were limited, is beneficial in the child's hospital experience and recuperation process (Cohen, 1988; Faust,

Olsen, & Rodriguez, 1991; Fosson et al., 1990; Honig, 1986; Licamele & Goldberg, 1987; Newman et al., 1988; Weininger, 1983). With all these helpful measures focused on the parents, one may then ask: Who prepares the child? It is true that many doctors and nurses do keep the child, as well as the parent, well informed on what to expect and how the child will feel before and after surgery simply by debriefing them prior to the operation (Denholm, 1988). Other hospitals are using pamphlets, home visits by nurses, puppet play therapy, or videos outlining the surgical procedures the child will face (Eiser, 1984). Pre-surgery education programs have just recently been identified as worthwhile. As yet, these programs are lacking a substantial amount of support from the research literature.

A gap in the research seems to exist. While we have improved the conditions under which a child experiences hospitalization by tending to the level of separation anxiety, we now owe equal time to the level of emotional distress by educating the child about the new surrounding and hospital procedures.

In the current research, one objective was to determine if there are differences in the anxiety level of pediatric surgery patients receiving either pre-surgery education or no such education at all. Another objective was to study anxiety level as it appears by gender across the two options of pre-surgery education.

The following chapter includes a review of the related literature by types of pre-surgery preparation and gender and states the hypotheses for the present research. Chapter III and IV review methodology and results, respectively.

CHAPTER II

REVIEW OF THE LITERATURE

The medical needs of children are on the rise. In fact, the population of children with severe health limitations has approximately doubled in the past two decades (Yoos, 1988). This coincides with the great amount of research that has been developed on the effects of adolescent hospitalization and illness over the last 30 years (Denholm & Joschko, 1988). Hospitalized children must not only deal with possible physical changes in their bodies but also with anxiety and separation from friends and family (Newman, Klingbeil, & Abrams, 1988). Weininger (1983) emphasizes the pain that a hospitalized child may feel in an environment that is drastically unlike home. In addition, Licamele and Goldberg (1987) say that about 40% of all children under the age of 18 have some type of chronic illness. Most of these children have mild disorders but 7-10% have severe, disabling diseases which may require multiple hospitalizations. It is for these reasons that those of us involved with the study of child development must become aware of the importance in understanding what children experience in the hospital setting and what we can do to insure that the emotional

well-being of the child is not sacrificed.

Since the 1950s there have been an increasing number of improvements made in the medical management area which lead to a growing concern for the psychological aspects of hospital care. Newman et al. (1988) note that the emotional needs of the sick child require as much consideration as his or her drug therapy. It was mandated in 1971 that hospital pediatric units provide programs to alleviate adverse emotional reactions. Since this time, numerous studies have been done concentrating on a child's hospital experience.

Preparations

There are many combinations of methods used to prepare a child for upcoming medical procedures. The thought is that any kind of preparation is more beneficial than none at all. All preparation programs share the same objectives. Those objectives are to decrease anxiety and increase the understanding of the unfamiliar hospital environment, medical equipment, and staff by providing a tour of the operating room and inpatient unit, allowing the children to handle equipment, and presenting an opportunity for questions to be answered (Newman et al., 1988). All forms of preparations strive for at least one of these goals.

Weininger (1983) discusses play as the most valuable method a child has of coming to terms with himself and the world around him. Weininger says young children's play can

help adults recognize anxieties over events of situations that the child believes he or she will experience. This is possible because the child is likely to play out what he or she imagines will happen. This normal dramatic play helps the child cope with the fear of his impending fate. The adult benefits from watching how a child handles or speaks to a doll and gets clues about what frightens the child and what the child's needs are. Weininger (1983), Eiser (1984), and Yap (1988) all agree, not only does play provide information to adults but it "normalizes" as much as possible the hospital environment. He describes a play therapy program in New York that uses play to deal with the school-aged child's fear of mutilation and pain and the adolescent's fear of death.

Medical play therapy as described in Newman et al. (1988) utilizes anatomically correct dolls and real medical equipment. These methods have been shown to be effective intervention tools in pre-school and school-aged children.

Fosson, Martin, and Haley (1990) proposed that anxiety decreases following guided medical play. In one private 30 minute visit, the children in their experimental group examined an anatomically correct doll as well as medical equipment. The child was allowed to express feelings by taking on the role of doctor or nurse and manipulated equipment as he or she wished. Fosson and his colleagues found that although anxiety did decrease, it did not decrease in significant amounts. The lack of statistical

significance can be attributed to two things. First, the private medical play session took place in the patients own hospital room -- a room in which the child may not feel completely comfortable. If the play had taken place in a different and perhaps even livelier room, like a playroom, results may have differed. Secondly, the children only experienced one 30 minute session of guided medical play which was brief relative to the length of the childrens' hospitalization which had to be greater than four days to participate as a subject.

A study by Faust, Olson, and Rodriguez (1991) used a different method of surgery preparation. The 26 subjects in this study were exposed to 1 of 3 preparatory conditions: participant modeling alone, participant modeling with mother, and standard procedure control. Those children exposed to the participant modeling slide-tape alone or with mother watched a 10 minute slide-tape exhibiting a model (5-year old girl) undergoing surgery preparatory procedures and experiencing, then coping with, appropriate responses to the anxiety. Children in the standard procedure control group were given surgery information via a mock surgery exhibit and were able to then manipulate operating room equipment. The results indicated that children watching the slide-tape alone showed significant decreases in heart rate and sweating responses than the slide-tape viewers with mother and standard procedure control group. Arousal level in the

slide-tape alone group was also significantly decreased. Results also showed that significantly fewer distress signals (moaning, whimpering, crying, kicking, hitting, verbal and physical resistance to medical procedures, statements of fear and pain) were sent out by children in the slide-tape alone and slide-tape with mother groups than the standard procedure children. The authors conclude that information given without demonstrated coping skills (control condition) is not beneficial in preparing children for surgery and that modeling appropriate behavior reduces physiological and negative emotional responses.

Eiser (1984) named three types of preparation commonly used. One popular type is the distribution of leaflets informing parents and children about general hospital procedures. Another technique for surgery preparation is home visits by hospital personnel before hospitalization and continued support from the same, familiar person throughout hospitalization. Third is the popular method of preparation by a video tape which outlines medical procedures to be undertaken. She explains that time and time again, prepared children are less upset while awaiting entry to the operating room than unprepared children. There have been many conclusions drawn about using video tape as a preparation tool. All of them suggest benefits from viewing a film designed to lower the anxiety level of young patients. Eiser (1984) concludes, however, that although preparation through film is beneficial for

children of all ages, studies she reviewed show this method may be more beneficial for younger children than adolescents. The article closes by emphasizing that an issue to be examined is one of predicting the method of preparation that will be the most acceptable and helpful to children at different levels of cognitive development.

In addition to the "experts," children of all ages seem to agree that preparation for hospital procedures is helpful and welcomed. Denholm (1988) recorded positive and negative comments based on experiences of hospitalized adolescents. Children were asked to write about positive hospital experiences as well as negative experiences. Their answers were coded and nearly half (48%) of the positive comments were those describing nursing care and preparation, 19% were personal reflections, 16% were about patient interaction and 14% described activities and routine events. Denholm gives an example of a positive comment that was made by a 14 year old girl. She said she felt well-informed regarding the upcoming surgery as well as how she would feel before and after the surgery. With statements like this, one can easily see the positive impact of preparation through the eyes of young adolescents.

One notable critique stemming from this collection of research articles is the lack of standardized measurement. The materials used in each of these projects were formulated by the authors themselves or adapted from other

projects whose authors created them. By using standardized measures one can hope for increasingly more consistent results.

The emphasis on the importance of preparing children for surgery is repeated throughout recent research literature. Summarizing, the praises of pre-surgery education are not consistent in claiming one method to be the best. It is important for social scientists to continue the research in this area.

Gender

The relationship between gender and children's anxiety is not yet clear according to Tiedeman et al. (1990). Some researchers find no relationship, some find boys with higher anxiety and still a few have found higher levels of anxiety in girls. However, there is much less research literature available on gender in relation to anxiety as a result of surgical procedures and hospital experiences but several deserve to be mentioned.

In Denholm's (1988) study recording positive and negative descriptions of 66 adolescent's hospital experiences, gender became a noticeable factor. Female patients made the majority of negative comments regarding the nursing staff or nursing interventions. Comments include those like, "I did not like the way the nurses would be bothering me all the time especially when I was asleep, but if I did need them right away, one was never around" (p. 930). Another comment made by a female patient

was, "...having blood taken by a brute. The nurse, I swear, never smiled - when she was taking my blood she was so rough and she had nothing pleasant to say to distract me while the blood was being taken" (p. 932). In addition to these statements, Denholm mentions having several one-on-one conversations with his female subjects concerning the behavior of the nursing staff. The combination of these things led him to conclude that females felt the need to establish interpersonal relationships and develop friendships much more than male patients. Denholm said these needs are characterized by intimacy and dependency and developing these can be critical to the adolescent female patient. Male patients of the same age in Denholm's 1988 study were reported to base positive or negative reactions on nursing skill, level of activity, promotion of autonomy in the patient, and general availability.

Male children are more vulnerable than female children when it comes to dealing with stress says Honig (1986). As a result, boys have significantly higher rates of delinquency and bed wetting. In a study she conducted in a low-income metropolitan area, male toddlers sent out more distress signals and sought help more than female toddlers from their caregivers. For these reasons one may suspect that boys will react to stress due to hospitalization in similar ways.

A significant relationship between gender and children's anxiety as measured by the Child Drawing

Hospital instrument (Tiedeman and Clatworthy, 1990). Data were collected at admission to the hospital, discharge from the hospital, and after discharge from the hospital. Boys between the ages of five and 11 were significantly more anxious than girls their age at admission, discharge, and postdischarge. They also found that while the level of high anxiety in the boys did not change over time, the anxiety level of girls decreased significantly from admission to discharge. In addition to gender differences in the data, differences were also personally observed by Tiedeman and Clatworthy. Girls in their research project familiarized themselves with their environment, what the authors call "pre coping," while boys attempted to control their situation. Also, girls were seen to express themselves with verbal aggression where boys chose physical aggression as a means of expression.

Hospitalized girls and boys have very different ways of coping in the face of surgical procedures. The research reviewed here seems to agree that, in general, girls may experience lower levels of anxiety and stress than boys. However, social scientists need further research in this area as well. With more solid data, we can begin to make inferences about how to prepare children for hospitalization and surgery, but most important is to understand why we need to.

The current research tests three hypotheses:

1. There will be an interaction between pre-surgery preparation and gender on the Revised Children's Manifest Anxiety Scale.
2. There will be differences by gender on the Revised Children's Manifest Anxiety Scale.
3. There will be differences by pre-surgery preparation program participation on the Revised Children's Manifest Anxiety Scale.

CHAPTER III

METHODOLOGY

Subjects

Participants were 11 boys and 6 girls ranging in age from six to nine years (three 6-year olds, three 7-year olds, three 8-year olds and eight 9-year olds) who had been hospitalized in response to either elective or emergency pediatric surgery in Childrens' Hospital of Oklahoma City, Oklahoma during the spring, summer, or fall of 1993. A list of the types of surgery experienced by subjects are as follows: reconstruction of legs (1), skin graft (2), appendectomy (2), tibial de-rotation (1), ambulatory (1), intestinal surgery (1), hip surgery (1), revised shunt (1), leg surgery (1), mekies diverticulum (1), left ulna growth spunt (1), unnamed (4). Prior to surgery, the subjects were given the opportunity to participate in a pre-surgery educational program which was developed by the hospital and led by the Child Life Specialist. Forty-one percent of the children participated in this program and 58% did not due to personal choice or lack of time. Participation included watching a film, touring the operating and recuperating rooms, becoming acquainted with the surgical instruments as

well as the surroundings or a combination of the three. Patients who experienced difficult or complicated recoveries including, but not limited to, serious visible physical changes or burns were not asked to participate. Table 1 illustrates distribution of the subjects by preparedness status and gender. Of the boys, three were prepared and eight were unprepared. Four of the girls were prepared while two went unprepared.

TABLE I
NUMBER OF SUBJECTS PREPARED/NOT PREPARED BY GENDER

Gender	Prepared	Not Prepared
Male	3	8
Female	4	2

Sixty-four percent of the sample were Caucasian children, 21% were African American and 14% were Native American. Additional demographic information gathered included parental educational level. One hundred percent of the mothers had received at least a high school education. In fact, 50% had received higher than a high school diploma while 83% of the patients' fathers had received their high school diploma. Ninety-three percent of the children lived with their mothers, 50% had fathers in the home and 21% lived with stepfathers. Thirty-six percent of the children were experiencing surgery for the

first time while 50% had experienced between one and three surgeries prior to this hospitalization.

Instrument

The Revised Children's Manifest Anxiety Scale (RCMAS) by Reynolds and Richmond (1985) was used to identify children who could be manifesting anxiety or those who are not yet manifesting problems but might benefit from intervention (Reynolds et al., 1985). The RCMAS, a revised version of the original Children's Manifest Anxiety Scale by Castaneda, McCandless, and Palermo (1956) is a 37-item, self-report, yes/no scale requiring 10-15 minutes to complete. Although it is written at a third grade reading level, some children chose to have the instructions and items read aloud allowing them to answer verbally. The RCMAS yields a Total Anxiety score and 4 subscale scores which include Physiological Anxiety, Worry/Oversensitivity, Social Concerns/Concentration, and a Lie Scale which is designed to detect social desirability. For the purposes of this study, the Lie Scale was not included in the data analysis. The Total Anxiety score is a standard score with a mean of 50 and a standard deviation of 10, the t-score scale that is common in the area of personality assessment. Scaled scores from the subscales have a mean of 10 and a standard deviation of 3.

The RCMAS was normed on 4,972 children between 6 and 19 years of age. The sample contained 2,208 (44%) white males, 2,176 (44%) white females, 289 (5.8%) black males,

and 299 (6%) black females. All major geographic regions of the United States were represented by more than 80 school districts in 13 states. There was no information obtained about the SES although Reynolds and Richmond (1985) believe that the sample provided a thorough cross-section. In addition, the sample contained approximately 600 children who were classified as handicapped which included those children that were educably mentally retarded, learning disabled, or gifted. This sample is believed to be representative of the population at large and provides very good generalizability.

The RCMAS manual reports coefficient alphas for white and black males and females for each of the 12 age levels (ages 17-19 are collapsed due to low numbers) for the Total Anxiety score. Reliability estimates ranged from .76 for black females to .82 for black males with white males and females falling in between at .81 and .82, respectively. Test-retest reliabilities are reported for two samples in the RCMAS manual. The results suggest excellent reliability over short periods of time (.98 for three week interval between testings) and reasonable stability over longer intervals (.68 for nine month interval between tests). This supports the reasoning in using the RCMAS to assess chronic anxiety in children.

The RCMAS is considered a measure of trait anxiety. Under conditions of concurrent administration of the State Trait Anxiety Inventory for Children (STAIC) and the RCMAS,

convergent and divergent validity are reported (Reynolds, 1985). The RCMAS showed a large, significant correlation with the Trait scale of the RCMAS (.85). In addition, the manual reports a study using multitrait-multimethod procedures that provides support for construct validity of the RCMAS; however, Reynolds et al. (1985) do not provide statistics to support this assertion.

Procedure

The author of this project or the Child Life Specialist distributed the research packet (see Appendixes A, B, C, and D). The packet included a letter explaining the background and purpose of the research, an informed consent form, a demographic information sheet, and the RCMAS instructions and items. A pre-assigned subject number was written on each sheet of every packet to provide anonymity. Subjects and parents were approached within 48 hours after surgery and asked to read the letter, sign the consent form, and fill in the demographic information requested. This subject information included birthdate, gender, race, mother's education, father's education, mother's occupation, father's occupation, residents of the home, number of previous surgeries, type of surgery experienced, and identifying themselves as a pre-surgery educational program participant or non-participant. Attached to the letter, consent form, and demographic sheet was the RCMAS. The subject read the brief instructions on the anxiety form itself, turned the sheet over, and

answered the 37 yes/no items. The subject may have had the instructions and anxiety scale items read to them if they wished. Unlimited time to finish was given to the participant. The packet was collected by the researcher or the Child Life Specialist upon notification of completion by the subject or parent.

Limitations identified from this project that should be considered for future research include the need for a higher subject number. To achieve this, it is best for the author of the project to have access to a hospital and be familiar with the protocol of the facility. Not being associated with the hospital prior to conducting research may result in less experimenter control. Another facet of this research that possibly limited it was the presence of the subject's parents during the completion of the anxiety questionnaire. The children may have chosen answers not based on true feelings but on socially desirable responses.

Data Analysis

A 2 (gender) x 2 (preparedness) Analysis of Variance using the General Linear Model, Type III was used to analyze the data. Criterion for accepting hypotheses was at the .05 significance level. There was analysis on (1) a possible interaction between the type of treatment and gender on the Total Anxiety scale and subscales, (2) differences by gender on the Total Anxiety scale and subscales, and (3) differences by type of treatment on the Total Anxiety scale and subscales.

CHAPTER IV

RESULTS

The analyses examined the effect of gender and preparedness on the level of anxiety experienced by the children in the hospital. A 2 (gender) x 2 (preparedness) analysis of variance assessed the effects of the pre-surgery preparation program on the subjects' anxiety. The purpose was to find a possible interaction between type of treatment and gender on the anxiety scale. Also, to find differences by gender on the anxiety scale as well as differences by type of treatment on the anxiety scale.

Preliminary Analyses

Means of prepared girls were lower than any other group. Prepared boys, as a group, had the highest means from the RCMAS. Table II lists means and standard deviations from each of the four groups (prepared and nonprepared boys, prepared and nonprepared girls) on the Total Anxiety scale and three subscales.

The means for both prepared and non-prepared girls were lower than the means for both prepared and non-prepared boys on all four scales: Total Anxiety, Physiological Anxiety, Worry/Oversensitivity and Social Concern/Concentration. Table III lists the means which

were 48.00, 9.00, 8.83 and 9.33 for girls and 57.09, 11.27, 12.00 and 10.45 for boys, respectively.

Collapsed on gender, the means for all prepared children (51.71, 10.14, 9.86, 10.43, respectively) were less than the means for children who were not prepared (55.40, 10.70, 11.60, 9.80, respectively). The exception was the Social Concern/Concentration subscale as shown in Table IV.

Primary Analyses

Hypothesis one predicting an interaction between pre-surgery preparation and gender on the RCMAS was rejected. Hypothesis two which predicted differences by gender on the RCMAS was rejected. Also rejected was hypothesis three which predicted differences by pre-surgery preparation program participation on the RCMAS.

Table V shows the results of the ANOVA on the Total Anxiety scale. There was no significant interaction between gender and preparedness on the Total Anxiety scale ($F=0.16$, $p<.69$). In addition, no significant differences were found for gender ($F=1.15$, $p<.30$) or preparedness on the Total Anxiety scale ($F=-0.02$, $p<.89$).

Table VI illustrates the results from each of the RCMAS subscales. No significant interaction was found for gender and preparedness on the Physiological Anxiety scale ($F=0.82$, $p<.38$), nor was there statistical significance for gender ($F=1.03$, $p<.33$) or preparedness ($F=0.01$, $p<.94$) on this subscale. As for the Worry/Oversensitivity subscale,

no significant interaction can be reported for gender and preparedness ($F=0.02$, $p<.89$), gender ($F=1.53$, $p<.24$) or preparedness ($F=0.06$, $p<.06$). On the Social Concern/ Concentration subscale, again no significant interaction was seen between gender and preparedness ($F=0.00$, $p<.99$). Significant differences for gender ($F=0.75$, $p<.40$) and preparedness ($F=0.44$, $p<.52$) were not found.

TABLE II
 MEANS OF ANXIETY SCALES BY GENDER
 AND PREPARATION STATUS

Scale	Boys		Girls	
	Prepared n=3	Nonprepared n=8	Prepared n=4	Nonprepared n=2
Total Anxiety				
Mean	58.67	56.50	46.50	51.00
SD	18.15	14.00	14.27	16.97
Physiological Anxiety				
Mean	12.67	10.75	8.25	10.50
SD	4.04	4.59	3.40	3.54
Worry/Oversensitivity				
Mean	11.33	12.25	8.75	9.00
SD	6.03	3.96	3.59	4.24
Social Concern/Concentration				
Mean	11.33	10.13	9.75	8.50
SD	2.89	3.18	3.40	4.95

TABLE III
 MEANS AND STANDARD DEVIATIONS OF
 ANXIETY SCALES BY GENDER

Scale	<u>Boys</u> n=11	<u>Girls</u> n=6
Total Anxiety		
Mean	57.0909	48.0000
SD	14.2860	13.6088
Physiological Anxiety		
Mean	11.2727	9.0000
SD	4.3379	3.2863
Worry/Oversensitivity		
Mean	12.0000	8.8333
SD	4.2895	3.3714
Social Concern/Concentration		
Mean	10.4545	9.3333
SD	3.0120	3.5023

TABLE IV
 MEAN AND STANDARD DEVIATIONS OF ANXIETY
 SCALES BY PREPAREDNESS

Scale	Prepared n=7	Not Prepared n=10
Total Anxiety		
Mean	51.7142	55.4000
SD	15.9343	13.7775
Physiological Anxiety		
Mean	10.1428	10.7000
SD	4.0999	4.2176
Worry/Oversensitivity		
Mean	9.8571	11.6000
SD	4.5250	4.0055
Social Concern/Concentration		
Mean	10.4285	9.8000
SD	3.0472	3.3266

TABLE V
ANALYSIS OF VARIANCE RESULTS
FOR TOTAL ANXIETY

Scale	df	Mean Square	F	p
Gender	1	258.29	1.15	.3038
Preparedness	1	4.50	0.02	.8897
Gender/Preparedness	1	36.78	0.16	.6928

TABLE VI
ANALYSIS OF VARIANCE RESULTS
FOR ANXIETY SUBSCALES

Scale	df	Mean Square	<u>F</u>	<u>p</u>
Physiological Anxiety				
Gender	1	18.022	1.03	.3286
Preparedness	1	0.09	0.01	.9433
Gender/Preparedness	1	14.36	0.82	.3813
Worry/Oversensitivity				
Gender	1	28.16	1.53	.2377
Preparedness	1	1.12	0.06	.8083
Gender/Preparedness	1	0.36	0.02	.8897
Social Concern/Concentration				
Gender	1	8.51	0.75	.4008
Preparedness	1	5.00	0.44	.5173
Gender/Preparedness	1	0.00	0.00	.9912

CHAPTER V

DISCUSSION

This study examined the effects of gender and pre-surgery preparation on school-aged children's anxiety level. Subjects who had participated in the pre-surgery preparation program were expected to experience lower levels of anxiety as determined by the Revised Children's Manifest Anxiety Scale than the subjects who had not participated in the program. Likewise, girls were expected to experience lower levels of anxiety than boys according to research history. This leads to the expected interaction between gender and pre-surgery preparation. Prepared girls were expected to be the least anxious of all the groups. Although none of the interactions on the Total Anxiety scale or subscales proved significant, the resulting means were consistent with expectations. The trends were verified and strengthened with the results of this study.

The specific hypotheses are now discussed. The first hypothesis, which predicted an interaction between pre-surgery preparation and gender on the RCMAS, was not significantly supported. One clear explanation for nonsignificance may be the low subject number. It is

believed that had more time been available to gather subjects, a larger number would have pushed the results closer to significance. This is supported by the means of the scores from the RCMAS. As a group, prepared girls had the lowest anxiety scores on three of the four scales. The only scale this group did not have the lowest anxiety scores in was the Social Concern/Concentration subscale, in which non-prepared girls had the lowest scores. The second lowest anxiety scores as a group came from the non-prepared girls. The prepared boys had higher anxiety scores than the nonprepared boys in three of four scales. The only scale the non-prepared boys had highest anxiety scores in was the Worry/Oversensitivity subscale. These results were surprising as the non-prepared boys were expected to be the most anxious.

The second hypothesis which predicted differences by gender on the RCMAS was not statistically supported; however, the results again strengthen the trend present in the literature. As was discussed earlier and shown in Table III, boys anxiety scores averaged higher than girls anxiety scores, no matter what the preparation status. This study found results similar to those that Denholm (1988) reported. He found that females have a need to establish interpersonal relationships and friendships in the hospital to consider their experience a positive one whereas boys do not have that strong need. It is possible then that girls would benefit highly from a pre-surgery

preparation program, where they can form important relationships with staff members, nurses or doctors. These relationships, according to Denholm, prompt female patients to remember the hospital experience as positive. Unprepared girls may form these relationships as well through daily interactions with nursing staff.

Honig (1986) reported that male children are more vulnerable to stress than female children. The trends of this research would support this assertion. Honig added that boys will react to stress due to hospitalization by sending out distress signals at higher rates than girls. Further research could take the opportunity to investigate such signals.

Also in regard to gender, the results of this study support those found by Tiedeman and Clatworthy (1990) in which boys between the ages of five and eleven were significantly more anxious than girls at admission to the hospital, discharge from the hospital and two weeks after discharge from the hospital. Tiedeman and Clatworthy (1990) add that one reason for higher anxiety levels in boys may be their need to feel "in control." Since the patient has very little control over activities while in a hospital, it is understandable that boys are found having higher anxiety levels.

Finally, the third hypothesis which predicted differences by pre-surgery preparation program participation on the RCMAS was not proven. However, means

on the RCMAS for prepared children were less than the means for unprepared children (the exception is the Social Concern/Concentration scale). The results are consistent with results from the current research literature such as those cited by Fosson, Martin and Haley (1990). Fosson et al. found that although anxiety did decrease after medical play, it did not decrease in significant amounts, just as in this study.

One method of preparation in this research was a peer modeling tape in which the patients watched a child close to his or her age experience admittance, preparation, recovery and discharge from the hospital. Using modeling tapes, Faust, Olson and Rodriguez (1991) found that children prepared in this matter were better able to cope with anxiety than children who were prepared only verbally. They argued that the demonstration of appropriate behavior and coping skills reduces physiological and negative emotional responses. According to these explanations, the peer modeling tape used for this study can be said to have been effective in reducing patient anxiety. This method of preparation was also heralded by Eiser (1984) as one of the most beneficial tools designed to lower anxiety in young patients. She explained that prepared children are less upset while awaiting surgery than non-prepared children.

In analyzing positive and negative comments of hospitalized children, Denholm (1988) discovered that 48% of children's positive comments were those describing

nursing care and preparation. The means from the RCMAS in relation to preparedness would support this finding if we can assume that a less anxious child feels more positive about himself and his hospital experience than a child experiencing higher anxiety.

It is appropriate to give consideration to the environment in which the children were responding to the questionnaire. All children responded with at least one parent present. This may have influenced the children to give socially desirable responses. Also, some parents could have encouraged the child to change answers.

Only a small number of children were available to participate in the study over a long period of time; however, consent rate was 100%. Given the consistency of the research literature, higher subject participation would have added to the probability of reaching statistical significance. Using more than one hospital would have made it possible to recruit more subjects; however, every hospital has a different type of pre-surgery preparation program.

The implications are obvious. Boys tend to have higher anxiety than girls in a "patient" situation. Boys have the need to feel in control of their of their experience, a feeling which is often lost. An interesting project would be to provide a preparation program developed for boys where they would be give appropriate decision making power and a separate program for girls where

relationships and friendships with nursing staff and other patients may be started. Whichever pre-surgery preparation program a hospital chooses, it is apparent the program will reduce anxiety in both boys and girls and leave them better able to concentrate on a healthy recovery.

While no statistically conclusive evidence was found, points learned from this research may help researchers develop ideas in the future. Having children complete questionnaires in the parent's absence may increase the likelihood of truthful answers. Also, it is recommended that projects involving hospitalized children be conducted by those officially associated with the hospital itself for ease of access and knowledge of specific procedures and schedules.

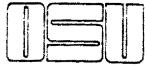
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APPENDIXES

APPENDIX A



Oklahoma State University

DEPARTMENT OF FAMILY RELATIONS AND CHILD DEVELOPMENT
COLLEGE OF HUMAN ENVIRONMENTAL SCIENCES

STILLWATER, OKLAHOMA 74078-0337
242 HUMAN ENVIRONMENTAL SCIENCES
405-744-5057 FAX 405-744-7111

Dear Parents or Legal Guardians,

During the Spring of 1993, Oklahoma State University Graduate Student Shannon Schultheis will be conducting her Thesis research under the direction of Shirley Beckman, Certified Child Life Specialist and Dr. Ruth Tomes. The research involves young children hospitalized for pediatric surgery at Children's Hospital of Oklahoma. The project is entitled, "A Study of Anxiety, Gender, and Pre-Surgery Preparation in School-Aged Children".

The purpose of this research is to increase our understanding of hospitalized children. Specifically, the study is designed to investigate whether children who participate in a pre-surgery educational program experience lower levels of anxiety than children who do not.

The purpose of this letter is to request permission from you to allow your child to participate in this study. A short 37-item, yes/no, self-report questionnaire to be completed by your child will be used to assess anxiety and takes 10-15 minutes to complete. There is also a demographic information sheet attached that you will need to fill in. If you do not feel comfortable answering one or more of the demographic information questions, please skip that question and go on to the next one.

All verbal or written communication regarding your child's participation in this study will be confidential. Results of the research project will be provided to parents of the children upon request. If you have any questions regarding this project, please contact Shannon Schultheis at (405) 377-8237 or Dr. Ruth Tomes at (405) 744-8349.

Thank you for taking the time to read this letter and answer my request. I am excited about this project and its contribution to a better understanding of children facing surgery.

Sincerely,

Shannon Schultheis
Graduate Student
Oklahoma State University

APPENDIX B

UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER
CHILDREN'S HOSPITAL
OKLAHOMA STATE UNIVERSITY

Individual's Consent to Voluntary Participation
in a Research Project

I understand that this study, entitled, "A Study of Anxiety, Gender, and Pre-Surgery Preparation in School-Aged Children" is under the direction of Shirley Beckman, Certified Child Life Specialist, with Shannon Schultheis, Oklahoma State University graduate student, and Dr. Ruth Tomes serving as co-principal investigators.

I understand that the purpose of this project is to collect information which may lead to our greater understanding of hospitalized children facing surgery. A short 37-item, yes/no questionnaire to be completed by my child will be used to assess anxiety and will take approximately 10-15 minutes to complete. A demographic information sheet is to be completed by the parent.

I understand that the information gathered on my child will remain confidential and my child will not be personally identified in this study. A code number will be assigned to my child and this code number will be used for identification purposes. I understand that the findings of this study will be reported for the group and not for the individual.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty. I may contact Shannon Schultheis for further information about this project at (405) 377-8237. I may also contact Dr. Ruth Tomes, 226 Human Environmental Sciences, Oklahoma State University, Stillwater, Oklahoma 74078. Telephone: (405) 744-8349.

I have read and fully understand the consent form. I sign it freely and voluntarily. Therefore, I _____, hereby authorize the investigators named above to include my child, _____, in their research project. I understand that I will be given a copy of this consent.

Signed: _____ Date: _____
(Subject's parent or guardian)

Principal Investigator: _____

Child's name: _____

APPENDIX C

DEMOGRAPHIC INFORMATION

Please answer the following questions. If you feel uncomfortable answering one or more of the questions, skip it and continue on to the next one.

Child's birthdate: ___/___/___ Child's gender: ___M ___F

Child's race: ___ African American ___ Hispanic
 ___ Asian ___ Native American
 ___ Caucasian ___ Other: _____

Mother's education: ___ Some high school education
 ___ High school diploma or GED
 ___ Some college or special training
 ___ College degree
 ___ Post-graduate work

Father's education: ___ Some high school education
 ___ High school diploma or GED
 ___ Some college or special training
 ___ College degree
 ___ Post-graduate work

Mother's occupation: _____

Father's occupation: _____

Who resides in the child's home? (Check all that apply)

<input type="checkbox"/> mother	<input type="checkbox"/> stepmother
<input type="checkbox"/> father	<input type="checkbox"/> stepfather
<input type="checkbox"/> brothers	<input type="checkbox"/> step-brothers
<input type="checkbox"/> (if so, how many?___)	<input type="checkbox"/> (if so, how many?___)
<input type="checkbox"/> sisters	<input type="checkbox"/> step-sisters
<input type="checkbox"/> (if so, how many?___)	<input type="checkbox"/> (if so, how many?___)
<input type="checkbox"/> grandmother	<input type="checkbox"/> other: _____
<input type="checkbox"/> grandfather	_____

How many previous surgeries has your child experienced?
 ___ 0 ___ 1-3 ___ 4-8 ___ 8 or more

Did your child participate in the pre-surgery preparation program given by the hospital?
 ___ yes ___ no

From what type of surgery is your child recuperating? _____

APPENDIX D

“WHAT I THINK AND FEEL” (RCMAS)

Cecil R. Reynolds, Ph.D. and Bert O. Richmond, Ed.D.

Published by



Name: _____ Today's Date: _____

Age: _____ Sex (circle one): Girl Boy Grade: _____

School: _____ Teacher's Name (Optional): _____

DIRECTIONS

Here are some sentences that tell how some people think and feel about themselves. Read each sentence carefully. Circle the word "Yes" if you think it is true about you. Circle the word "No" if you think it is *not* true about you. Answer every question even if some are hard to decide. Do not circle both "Yes" and "No" for the same sentence.

There are no right or wrong answers. Only you can tell us how you think and feel about yourself. Remember, after you read each sentence, ask yourself "Is it true about me?" If it is, circle "Yes." If it is not, circle "No."

	Raw Score	Percentile	T-Score or Scaled Score
Total:	_____	_____	_____
I:	_____	_____	_____
II:	_____	_____	_____
III:	_____	_____	_____
L:	_____	_____	_____

1. I have trouble making up my mind	Yes	No
2. I get nervous when things do not go the right way for me.....	Yes	No
3. Others seem to do things easier than I can.....	Yes	No
4. I like everyone I know	Yes	No
5. Often I have trouble getting my breath.....	Yes	No
6. I worry a lot of the time	Yes	No
7. I am afraid of a lot of things	Yes	No
8. I am always kind.....	Yes	No
9. I get mad easily	Yes	No
10. I worry about what my parents will say to me	Yes	No
11. I feel that others do not like the way I do things	Yes	No
12. I always have good manners	Yes	No
13. It is hard for me to get to sleep at night	Yes	No
14. I worry about what other people think about me.....	Yes	No
15. I feel alone even when there are people with me	Yes	No
16. I am always good	Yes	No
17. Often I feel sick in my stomach	Yes	No
18. My feelings get hurt easily	Yes	No
19. My hands feel sweaty	Yes	No
20. I am always nice to everyone	Yes	No
21. I am tired a lot.....	Yes	No
22. I worry about what is going to happen	Yes	No
23. Other people are happier than I.....	Yes	No
24. I tell the truth every single time	Yes	No
25. I have bad dreams	Yes	No
26. My feelings get hurt easily when I am fussed at.....	Yes	No
27. I feel someone will tell me I do things the wrong way	Yes	No
28. I never get angry	Yes	No
29. I wake up scared some of the time	Yes	No
30. I worry when I go to bed at night	Yes	No
31. It is hard for me to keep my mind on my schoolwork.....	Yes	No
32. I never say things I shouldn't	Yes	No
33. I wiggle in my seat a lot.....	Yes	No
34. I am nervous	Yes	No
35. A lot of people are against me	Yes	No
36. I never lie.....	Yes	No
37. I often worry about something bad happening to me.....	Yes	No

VITA 2

Shannon K. Schultheis

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF ANXIETY, GENDER AND PRE-SURGERY
PREPARATION IN SCHOOL-AGED CHILDREN

Major Field: Family Relations and Child Development

Biographical:

Personal Data: Born in Tokyo, Japan, April 15, 1968,
the first child of Don and Mary Strain; wife of
Todd L. Schultheis.

Education: Graduated from Putnam City High School,
Oklahoma City, Oklahoma, May 1986; received
Bachelor of Science Degree in Psychology from
Oklahoma State University in May 1990; completed
requirements for the Master of Science Degree at
Oklahoma State University in December 1993.

Professional Experience: Research Assistant,
Department of Family Relations and Child
Development, Oklahoma State University from
August 1991 to December 1993. Pre-Adolescent
Therapist, Oak Crest Counseling Center of
Stillwater from October 1993 to present.

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
FOR HUMAN SUBJECTS RESEARCH

Date: 02-26-93

IRB#: HES-93-020

Proposal Title: A STUDY OF ANXIETY, GENDER, AND PRE-SURGERY
PREPARATION IN SCHOOL-AGED CHILDREN

Principal Investigator(s): Ruth Tomes, Shannonn Schulthies

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved

APPROVAL STATUS SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT NEXT MEETING.
APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD APPROVAL. ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval are as follows:

Signature:

Maria S. Tilley
Chair of Institutional Review Board

Date: February 26, 1993



The
University of Oklahoma
Health Sciences Center

GRADUATE COLLEGE AND
OFFICE OF RESEARCH ADMINISTRATION

APPROVED: February 4, 1993
IRB #: 05284
TITLE: A Study of Anxiety,
Gender, and Pre-
Surgery Preparation in
School-Aged Children.

Shirley Beckman
CHO 3N109

Dear Ms. Beckman:

I have reviewed the above-referenced protocol and consent form, and hereby grant expedited approval. It is my judgment that the rights and welfare of individuals who may be asked to participate in this study will be respected; that the proposed research, including the process of obtaining informed consent, will be conducted in a manner consistent with the requirements of 45 CFR 46, as amended; and that the research involves no more than minimal risk to subjects.

As principal investigator of this protocol, it is your responsibility to insure that this study is conducted as approved. Any modifications to the protocol or consent form, initiated by you or by the sponsor, will require prior approval, which you may request in an amendment letter or memorandum to me.

It is a condition of this approval that you report promptly to me any serious, unanticipated adverse effects experienced by subjects in the course of this research, whether or not they are directly related to the study protocol. These adverse effects include, but may not be limited to, any experience that is fatal or immediately life-threatening, is permanently disabling, requires (or prolongs) inpatient hospitalization, or is a congenital anomaly, cancer or overdose. For multi-site protocols, the Board must be informed of serious adverse effects at all sites.

The approval granted here is effective for one year. Should you wish to maintain this protocol in an active status beyond that date, you will need to provide me with a progress report summarizing study results to date. IRB staff in the Office of Research Administration will request that progress report from you approximately ten weeks before the anniversary date of your current approval.

If you have questions about these procedures, or need any additional assistance from the Board, please contact IRB staff. Finally, please review your professional liability insurance to make sure your coverage includes the activities in this study.

Sincerely yours,

Laura I. Rankin MD
Laura I. Rankin, M.D. *pc*
Chair, Institutional Review Board

LIR/PAC/cj