2019

The Evaluation of Video Teaching on Preoperative Anxiety in the Outpatient Pediatric Surgical Patient

Jennifer Glenn

The Evaluation of Video Teaching on Preoperative Anxiety in the Outpatient Pediatric Surgical Patient

by

Jennifer B. Glenn

A thesis submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the
Master of Science in Nursing Degree

Boiling Springs, North Carolina

2019

Submitted by:	Approved by:
_____	_____
Jennifer B. Glenn, RN, BSN, CPN	Tina H. Lewis, DNP, FNP-C, ACHPN, CEN
_____	_____
Date	Date

Abstract

Preoperative anxiety is common among pediatric surgical patients. Numerous studies have evaluated measures to reduce preoperative anxiety in both adult and pediatric patients; however, limited research exists on the impact of preoperative video teaching in pediatric outpatient surgical patients.

Purpose: The purpose of this study was to evaluate the effect of preoperative video teaching on preoperative anxiety in pediatric patients age seven to 14 undergoing outpatient surgery.

Design and Methods: The study operated as a two group, post-test comparison study, in which a convenience sample of 60 patients were randomized to either the control (30 patients) or study (30 patients) groups. In addition, participants randomized to the study group were further analyzed as a pre-post comparison study of the effect of preoperative video teaching on state-anxiety. All patients enrolled in the study completed the State-Trait Anxiety Inventory for Children (STAI-CH), a 40-question survey that measures both state-anxiety, how you feel right now, and trait-anxiety, how you usually feel. Participants randomized to the study group then watched a short preoperative teaching video that described what the patient would experience on the day of surgery. Following viewing of the video, study participants again completed the State-Anxiety Inventory.

Results: A significant difference ($p = 0.048$) was noted in the study group between the pre-video state-anxiety score (32.43 ± 6.4) and the post-video state-anxiety score (30.75 ± 5.63). Differences in level of nervousness between the pre (1.68 ± 0.612) and post (1.43 ± 0.634) video state-anxiety scores were also significant ($p = 0.002$).

Conclusion: Preoperative video teaching can be utilized to decrease preoperative anxiety and nervousness in the pediatric outpatient surgical patients.

Keywords: preoperative anxiety, pediatric anxiety, State-Trait Anxiety Inventory

Acknowledgments

I am grateful for my Thesis Supervisor, Dr. Tina Lewis, whose expertise, understanding, guidance, and support made it possible for me to work on a topic of great interest to me. Without her continued guidance, this thesis would not have been possible.

I would like to express my gratitude to Mrs. Elizabeth Card of Vanderbilt University Medical Center, whose understanding of the Institutional Review Board and Nursing Research is invaluable.

I would like to thank the following Monroe Carell Jr. Children's Hospital at Vanderbilt staff for volunteering their time and energy to ensure a successful preoperative video: Caroline Hulsey, Jennifer Hulsey, Jonathon Dow, Danielle Mitchell, Connie Orr, Savannah Ramsey, Marissa Kirkendall, Leah Bergmann, Andrew Bigham, Rachel Engelhart, Benjamin Whitfield, Tammy Whitfield, Reiley Eilermann, Teagan Crotts, and Dr. David Ebenezer.

I would like to thank Kayln Wolfe and Katie Borgmann for assisting with the research process and ensuring all data was collected appropriately.

I would like to thank my parents, Chalmers and Robin Glenn, grandparents, Chalmers and Sylvia Glenn, and siblings (Mckenzie; Josh) for their continued love, support, and encouragement in my graduate school and thesis endeavors.

I would like to thank my husband, Drew Davis, for his continued love, understanding, and encouragement in my graduate school and thesis endeavors. In addition, I would like to thank Drew for the countless hours spent filming and editing the preoperative video that was used in this study.

Table of Contents

List of Figures

CHAPTER I

Introduction

Preoperative anxiety remains a top concern for nursing staff, as it can negatively impact both patient outcomes and overall patient satisfaction (Wotman et al., 2017). According to the most recent statistics from the Centers for Disease Control (as cited by Hall, Schwartzman, Zhang, & Liu, 2017), an estimated 48.3 million inpatient surgical procedures were performed in the United States in 2010, followed closely by the number of outpatient procedures.

Additionally, it is estimated that more than five million children in the United States undergo surgery annually, of which up to 75% experience preoperative anxiety (Perry, Hooper, & Masiongale, 2012). Preoperative anxiety is shown to prolong patient recovery, hospitalization, wound healing, increase use of narcotics and anesthesia, and impact patients' ability to understand healthcare information (Wotman et al., 2017). Research from Barker et al states "anxiety can cause tachypnea, increased blood pressure, hypothermia, arterial vasoconstriction, and decreased tissue perfusion through stimulation of the sympathetic response" (as cited by Bikmoradi et al., 2015, p. 575). Additional research indicates "school-age children may exhibit nightmares, restlessness, separation anxiety, developmental and nutritional issues, and fear of nursing and medical staff" (Caldwell & Ray, 2017, p. 104) as a result of preoperative anxiety. Therefore, it is imperative that methods to reduce preoperative anxiety are researched and established as best practice guidelines across healthcare settings.

Significance

Research has shown that proper preoperative education can greatly reduce preoperative anxiety for both patients and families (Kassai, et al., 2016). While the Rascal Flatts Surgery Center at Monroe Carell Jr. Children's Hospital at Vanderbilt (MCJCHV) does not currently assess preoperative anxiety in an official capacity or by using an approved anxiety assessment tool, patient Press Ganey surveys do provide insight into the overall patient experience. January to March 2019 Press Ganey scores for the MCJCHV Perioperative Department indicate only 84.9% of patients surveyed report being adequately prepared for their surgical procedure (Press Ganey Associates, Inc, 2019). It is possible that lack of thorough patient preparation may contribute to overall patient and family anxiety. Therefore, methods of preoperative preparation, such as preoperative video teaching, should be evaluated for effective preoperative anxiety reduction.

Purpose

The purpose of this MSN Thesis was to evaluate the effect of preoperative video teaching on preoperative anxiety, as measured by the State-Trait Anxiety Inventory (STAI-CH), in pediatric patients age seven to 14 undergoing outpatient surgery at Monroe Carell Jr. Children's Hospital at Vanderbilt in Nashville, Tennessee, United States.

Theoretical Framework

Rozzano C. Locsin's Theory of Technological Competency as Caring in Nursing, a middle range nursing theory, was used as the theoretical framework for this thesis, "The Evaluation of Video Teaching on Preoperative Anxiety in the Outpatient Pediatric

Surgical Patient", completed at Monroe Carell Jr. Children's Hospital at Vanderbilt in Nashville, TN. According to Locsin, there are three dimensions of technological value in theory: technology as completing human beings, technology as machine technologies, and technologies that mimic human beings and human activities (Locsin, n.d.). The theoretical dimension of technological value utilized for this study focuses on technology as machine technologies by which computers enhance nursing activities to provide patient care (Locsin, n.d.). Unfortunately, nursing resources are often limited, and thorough preoperative education may not be provided to patients in a timely or effective manner. For the sake of this research study, a preoperative video was utilized to provide preoperative education and provide information on the surgical experience. Nursing staff were then available to review information learned in the video with patients and answer any additional questions. (Figure 1)

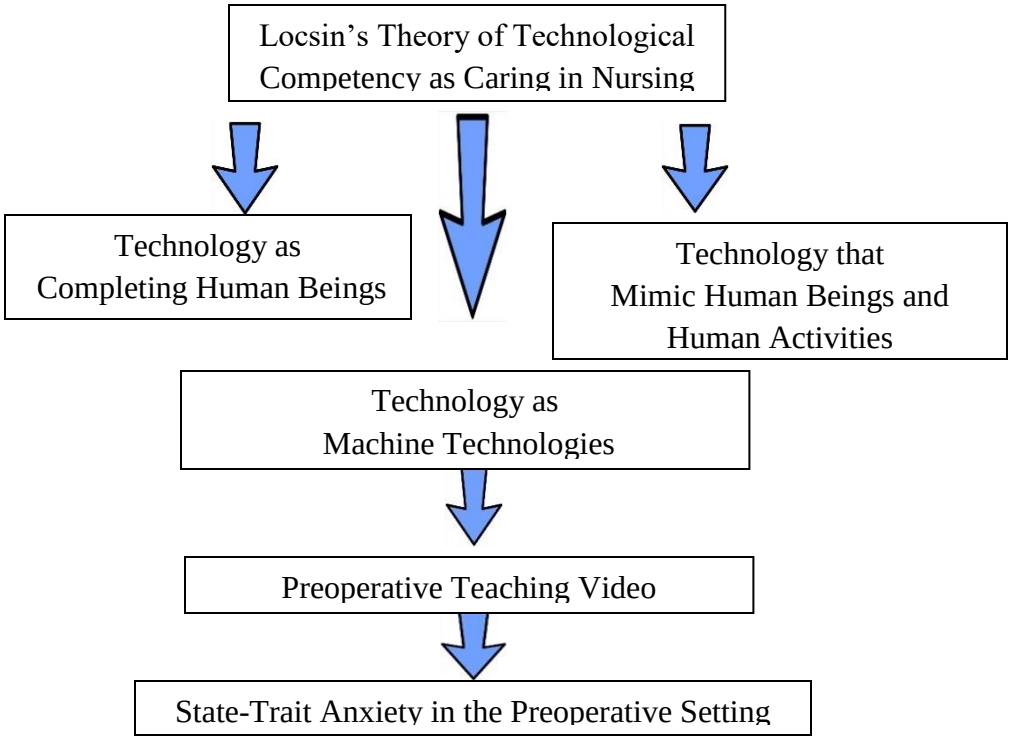

Figure 1. Locsin's Theory of Technological Competency as Caring in Nursing

Thesis Question

This MSN Thesis will aim to determine if utilization of preoperative video teaching reduces preoperative anxiety in outpatient pediatric surgical patients, as measured by the State-Trait Anxiety Inventory for Children (STAI-CH).

Definition of Terms

State-Anxiety: A transitory emotional state consisting of feelings of apprehension, nervousness, and physiological sequelae such as an increased heart rate or respiration (Wiedemann, 2001, p. 565).

Trait-Anxiety: The stable tendency to attend to, experience, and report negative emotions such as fears, worries, and anxiety across many situations (Gidron, 2013, para 1).

Closing

Patient anxiety in the preoperative setting remains a concern for the patients of Monroe Carell Jr. Children's Hospital at Vanderbilt and can negatively impact patient experience and patient outcomes. Through development and utilization of a preoperative teaching video, this study aimed to evaluate the effectiveness of preoperative video technology on reducing preoperative anxiety as determined by the State-Trait Anxiety Inventory for Children.

CHAPTER II

Literature Review

Measures to reduce preoperative anxiety in the outpatient pediatric surgical patient must be studied in today's healthcare environment. Acute situational anxiety, described as subjective fear influenced by an immediate situation or threat, is common in preoperative patients, and can often contribute to decreased patient outcomes including tachycardia, hypertension, increased pain, increased postoperative nausea, increased surgical risks, and prolonged hospitalization (Jaruzel & Gregoski, 2017). In particular, 50-75% of pediatric patients experience significant preoperative fear and anxiety, which is often associated with decreased levels of cooperation during anesthesia induction, decreased postoperative cooperation (Robinson, Baker, & Hossain, 2018), and increased postoperative behavior regression including nightmares and bedwetting (Perry et al., 2012). To reduce the negative outcomes associated with preoperative anxiety, measures to reduce anxiety in the preoperative setting, including utilization of video teaching, should be researched and implemented by members of the healthcare team.

Review of Literature

Preoperative anxiety and negative postoperative outcomes are a topic of concern in the healthcare environment. Multiple studies have been completed that evaluate the impacts of preoperative anxiety on patient outcomes and identify methods to reduce preoperative anxiety. The Cumulative Index for Nursing and Allied Health Literature (CINAHL), the Vanderbilt University Eskind Library, Google Scholar, and Science Direct were utilized to complete a thorough literature review in which measures of

anxiety, outcomes associated with preoperative anxiety, preoperative preparation, and preoperative video teaching were explored.

Measures of Anxiety

The State-Trait Anxiety Inventory for Children was developed by Dr. Charles D. Spielberger in 1969 to measure anxiety in elementary school children. The tool consists of two scales and evaluates both state-anxiety, how a child feels at a particular moment in time, and trait-anxiety, how a child generally feels. Test-retest reliability of the STAIC was calculated by Spielberger following administration of the tool to 246 elementary school children. Test-retest reliability of trait-anxiety was moderate, while test-retest reliability of state-anxiety was low, as anticipated for a scale designed to measure situational anxiety (Spielberger, Edwards, Lushene, Montuori, & Platzek, 1973). Validity of the trait-anxiety scale was determined by comparing trait-anxiety scores with scores on the Children's Manifest Anxiety Scale (CMAS) and the General Anxiety Scale for Children (GAS). Analysis of 75 children's trait-anxiety scores correlated 0.75 with the CMAS, and 0.63 with the GASC. Validity of the state-anxiety scale was determined following administration of the state scale to more than 900 children (Spielberger et al., 1973). Although Spielberger's research was initially focused on the measurement of child anxiety in a school setting, the STAIC has since become a common measurement of child anxiety in multiple arenas. While the tool has been used in healthcare, additional studies are needed to confirm the reliability and validity of the STAIC in a pediatric preoperative setting.

A 2017 integrative literature review by Jaruzel and Gregoski aimed to confirm reliability and validity of current measures of anxiety as they pertain to preoperative

patients. The Stress Response Theory, which describes the components of acute situational anxiety as the threat, the reaction, and the physiological response, was utilized as the theoretical framework for the review. According to the Stress Response Theory, when faced with a stressful situation such as surgery, patients are more likely to experience fear and anxiety, which may result in various physiological changes. A thorough search of the literature by Jaruzel and Gregoski (2017) identified five studies that measured the preoperative anxiety of 819 patients utilizing the following tools: the State-Trait Anxiety Inventory, the State Anxiety Inventory, the Standard Visual Analog Scale for Anxiety, the Visual Analog Scale, and the Anxiety Specific to Surgery Questionnaire. Analysis of the studies revealed four of the five tools reported a measure of reliability, while only three of the five tools reported a measure of validity. Inconsistencies in the reliability and validity of these tools as measurements of preoperative anxiety should be addressed to ensure preoperative anxiety is accurately captured and treated. In conclusion, "further research aimed at establishing a reliable and valid instrument to measure acute situational anxiety in the preoperative period of hospitalization is warranted (Jaruzel & Gregoski, 2017, p. 34).

Outcomes Associated with Preoperative Anxiety

Although current tools may not accurately capture preoperative anxiety, it is apparent that preoperative anxiety does exist, and is often associated with negative patient outcomes. A 2003 study by Li and Lam evaluated the impact of preoperative anxiety levels on children during the anesthesia induction and postoperative periods. Following approval from the Research Ethics Committee, a pre- and post-test study was utilized to measure state-anxiety in a convenience sample of 112 children undergoing an

elective outpatient surgery. The State Anxiety Scale for Children was utilized to measure anxiety at the time of admission, and again four hours after the operation. In addition, The Cooperation Scale, a five-point behavioral scale, was utilized to measure levels of cooperation during anesthesia induction and postoperative recovery. Study results indicated children with low levels of cooperation were associated with high levels of state-anxiety (Li & Lam, 2003). Discussion of study results confirmed a need to minimize children's anxiety in the preoperative setting in an attempt to improve patient cooperation during both the induction and postoperative phases.

A 2011 study at Yonsei University Health System in South Korea aimed to evaluate the impact of preoperative anxiety on intraoperative outcomes. Following study approval from the Institutional Review Board, 100 patients undergoing an elective thyroidectomy were consented and enrolled in the study. Patients with a history of psychiatric illness were excluded from the study. In the preoperative area, patients enrolled in the study completed the State-Trait Anxiety Inventory. While in the operating room, the depth of anesthesia was measured for study patients using the bispectral index, which categorizes the levels of anesthesia as light sedation, moderate sedation, or deep sedation. The amount of anesthesia required to reach each level of sedation was then calculated. Results of the study indicated patients with increased levels of both state- and trait-anxiety required more anesthesia to reach light and moderate sedation levels. Higher levels of only trait-anxiety, however, were associated with an increased amount of anesthesia required to reach a deep level of sedation (Kil et al., 2012). Although this study had several limitations, including utilization of a subjective measure of anxiety, overall study results supported a positive association between preoperative anxiety and

decreased patient outcomes. Therefore, efforts to reduce preoperative anxiety should be entertained.

A third study of patients at four university-affiliated hospitals in the United States and Canada explored the relationship between preoperative anxiety and post-cardiac surgery mortality and major morbidity. After obtaining study approval from the Institutional Review Board and patient consent, 148 eligible patients completed the Hospital Anxiety and Depression Scale (HADS), a 14-item self-questionnaire that measures both anxiety and depression. Following cardiac surgery, the incidence of mortality or major morbidity, including stroke, renal failure, prolonged ventilation, deep sternal wound infection, and the need for reoperation, were measured. The prospective multi-center study revealed that "significant levels of patient-reported preoperative anxiety independently predicted a greater risk of in-hospital mortality or major morbidity in elderly patients undergoing cardiac surgery" (Williams et al., 2013, p. 138). Although the study revealed a correlation between preoperative anxiety and negative patient outcomes, limitations to the study may have influenced study results. First, causality of mortality and various morbidities of cardiac patients enrolled in the study cannot be confirmed. Second, patients with higher levels of preoperative anxiety self-reported lower overall health status which could impact mortality and morbidity. Third, the severity of depression was calculated, but not considered as a factor in mortality or morbidity. Lastly, the study was limited to elderly patients over the age of 70 (Williams et al., 2013). Therefore, additional research is needed to confirm the relationship between preoperative anxiety and postoperative mortality and major morbidity in all age groups.

A study of 5,553 German patients undergoing a radical prostatectomy (RP) between 2014 and 2016 evaluated the impact of anxiety on surgical, oncological, and functional outcomes. Surgical outcomes included Length of Stay (LOS), blood transfusions, and complications within three months of RP, while oncological outcomes focused on tumor recurrence, and functional outcomes included urinary continence and return of erectile function at three and 12 months following surgery. After proper enrollment in the study, and prior to surgical intervention, study participants completed the Patient Health Questionnaire-4 (PHQ-4), a validated four-question tool used to assess depression and anxiety. Of the 5,553 patients assessed, 28% reported abnormal levels of anxiety, with 7.5% reporting moderate to severe anxiety. Analysis of the impact of anxiety levels on surgical outcomes indicated "patients with moderate to severe depression and anxiety had a significantly longer LOS and higher overall and Clavien-Dindo grade I and III complication rates that patients with normal or mild depression and anxiety" (Pompe et al., 2018, para. 12). Increased levels of anxiety were also associated with worse short- and long-term urinary continence rates, and increased use of proerectile medications. Preoperative anxiety was not determined to be a significant factor in tumor recurrence (Pompe et al., 2018). Strengths of the study included the large number of study participants, and the evaluation of multiple adverse outcomes. A limitation of the study, however, was the use of the short PHQ-4 questionnaire which does not differentiate between state and trait anxiety, and may therefore be skewed due to a recent cancer diagnosis or need for surgery. To improve this study, the State-Trait Anxiety Inventory should have been utilized. Despite this limitation, the study did confirm the

need to assess and reduce preoperative anxiety in an attempt to improve postoperative patient outcomes.

A two-year study of 176,827 patients undergoing hip replacements, knee replacements, hernia repairs, or varicose vein procedures, utilized both hospital- and patient-reported anxiety tools to predict postoperative outcomes. One measure of anxiety allowed patients to self-report various healthcare conditions, including depression, on a list of 12 conditions on a Patient Reported Outcomes Measure form. An additional measure of patient-reported anxiety was the EuroQoL Group, Rotterdam (EQ-5D) tool, which measures health over five dimensions, including anxiety or depression. Hospital recorded anxiety was identified for patients with an official medical diagnosis of anxiety disorder or depression. Results of the study indicated a positive correlation between anxiety and wound complications after surgery. In addition, patients with increased anxiety were found to have longer postoperative hospital stays, increased bleeding, and increased urinary complications (Britteon, Cullum, & Sutton, 2017). Although this study had a large sample size, there were weaknesses noted. To obtain better data on preoperative anxiety, a single validated measure of anxiety should have been utilized. Despite this weakness, results of the study are comparable to other studies, and emphasize the importance of anxiety assessment and intervention in the preoperative area.

Preoperative Preparation

Previous review of current literature reveals negative outcomes associated with preoperative anxiety. Efforts to reduce preoperative anxiety through improved patient preparation should be researched and implemented in an effort to improve patient

outcomes. A 2012 study by Guo, East, and Arthur, aimed to evaluate the effect of preoperative education on postoperative outcomes in patients undergoing cardiac surgery. In this study, a randomized control trial was utilized to compare two groups of study participants: one group that received usual care, and one group that received usual care plus preoperative education. After inclusion and exclusion criteria were determined, eligible patients were consented for the study and asked to complete a baseline anxiety assessment using the Hospital Anxiety and Depression Scale (HADS). Patients were then randomly assigned to one of the two study groups. In addition to receiving usual care, patients assigned to the study group received an informational pamphlet, as well as 20 minutes of verbal education. On the seventh day after surgery, the HADS scale was again administered to patients in both the control and study groups. Comparison of baseline and follow-up HADS scores indicated the mean anxiety scores in the control group were higher than those in the preoperative education group. In addition, while both groups had reduced anxiety scores at follow-up, patients in the preoperative education group had a greater decrease in anxiety than patients in the control group. Additional analysis revealed no difference in postoperative pain between the control and study groups. However, participants in the control group experienced more sleep disturbances due to pain. Although positive outcomes were noted in this study, limitations existed. Study groups were not blinded, creating a potential for desirability bias or study contamination. In addition, the study was conducted in two hospitals. While standards of care and provided preoperative teaching were identical, differences in environmental factors between the two facilities may have impacted study data (Guo et al., 2012).

Overall, the study provided additional support for the utilization of preoperative education to reduce preoperative anxiety.

Additional support of preoperative education is found in a 2013 study of 158 Turkish patients that compared patients' level of knowledge with patients' preoperative anxiety. A 23-question "Patient Information Form" was used to gather information on patients' descriptive characteristics and level of knowledge about their disease and surgery. The State-Trait Anxiety Inventory (STAI) was also utilized to measure patient anxiety. Data for both tools was gathered by the researcher before patients went to surgery. Data collected from the Patient Information Form revealed 87% of patients were aware of surgical risks and benefits, 86% were advised on the type of surgery, and 86% received information about checking in to the hospital. In addition, 95% of patients surveyed stated they knew whom to contact with concerns, 89% received information about their surgery from their physician, and 74% of patients found this information to be accurate. Data related to anxiety revealed 83% of patients were not anxious about anesthesia, and 69% were not anxious about surgery. Collected STAI data revealed that higher state- and trait-anxiety scores were identified in patients that felt preoperative information was inadequate or partly adequate (Alacadag & Cilingir, 2018). Analysis of this study revealed positive implications between effective preoperative preparation and reduced preoperative anxiety. Additional research is needed, however, to confirm these findings.

A 2017 study of 72 female surgical patients aimed to investigate the effects of preoperative education on preoperative anxiety. Following approval from the Institutional Review Board and National Cancer Institute, patients meeting eligibility

criteria were consented and enrolled in the study. In a preoperative visit scheduled 15 days before surgery, baseline anxiety was obtained using the Beck Anxiety Inventory (BAI). Study patients were then randomly assigned to one of two groups: Group A received thorough, complete information about their scheduled anesthesia and surgery, while Group B did not. Two hours after the baseline BAI, a second BAI was completed. Comparison of Group A and B revealed reductions in anxiety, blood pressure, and heart rate in the group that received preoperative education (Lemos, Lemos-Neto, Barrucand, Verçosa, & Tibirica, 2019). Discussion of the findings indicated the importance of reducing preoperative anxiety through thorough preoperative education, as "fear of the unknown is one of the most important sources of anxiety among surgical outpatients present to a pre-anesthetic consultation, especially before invasive surgery" (Lemos et al., 2019, p. 4). In addition, the study confirmed previous findings that preoperative education provided one to two weeks before surgery, but not on the evening before surgery, significantly reduces preoperative anxiety. The findings therefore suggest that preoperative education should be a standard of care to reduce preoperative anxiety (Lemos et al., 2019).

In 2017, a large teaching hospital in northwest Iran compared the effects of verbal education and an educational booklet on preoperative anxiety in patients undergoing hernia or cholecystectomy surgery. Sixty patients aged 20 to 50 were enrolled in the study and randomly assigned to one of three study groups: Group A received verbal education, Group B received booklet education, and Group C received no education. Data on preoperative anxiety was self-reported and collected on the day of hospital admission for all study participants via a demographic information questionnaire and the

State-Trait Anxiety Inventory (STAI). Following initial completion of the study questionnaires by all study participants, study interventions were implemented. Immediately before transferring patients to the Operating Room, anxiety was again measured on all study participants through completion of the state-anxiety component of the STAI. Analysis of study data revealed no significant differences in trait-anxiety between the three groups before the intervention. After the intervention, however, there was a significant difference in state-anxiety scores between the three study groups, although no significant differences were noted between the two intervention groups (Amini, Alihossaini, & Ghahremani, 2019). Discussion of the results indicated preoperative education, regardless of method, drastically reduces preoperative anxiety. For healthcare providers that face time restrictions and are unable to provide face-to-face education, other methods of education, including booklet education, can be utilized to effectively reduce preoperative anxiety. Due to the small study sample size, additional research may be needed to compare the effectiveness of various preoperative education methods.

Although limited, studies do exist that examine the impact of preoperative education and preparation on pediatric anxiety. A 2015 study in a Turkish university hospital aimed to determine differences in satisfaction and anxiety levels between children in a control and study group. A quasi-experimental study of 73 children between the ages of seven and 12 was completed. Children that had had a prior surgery were excluded from the study. During the study, patients were randomly allocated to either the control or study groups. Patients in the control group received standard preoperative preparation, while patients in the intervention group participated in a

preoperative preparation program that included verbal and written education for both the patient and their parent. Throughout the study, multiple tools were utilized to measure satisfaction and anxiety of the pediatric patient and their primary caregiver in both the control and study groups. The Characteristics of Children and Caregivers Data Form was completed by the primary caregiver the day before surgery. The PedsQL Health Care Parental Satisfaction Scale was completed by the primary caregiver just prior to discharge. The STAI was completed twice by the caregiver, once on the day before surgery, and once just prior to discharge. Lastly, the Koppitz Human Figure Drawing Test was completed by the pediatric patient before discharge. Analysis of study findings revealed significantly higher parental satisfaction scores of caregivers in the interventional group. In the interventional group, parental state-anxiety decreased significantly preoperatively to postoperatively. Additionally, anxiety and anger were found to be higher in patients in the control group, than those in the experimental group (Bartik & Toruner, 2018). Results of the study confirm prior research, and indicate a preoperative preparation program does successfully reduce preoperative anxiety in pediatric patients.

An additional study reviewed aimed to verify the effect of preoperative education on preoperative anxiety in children. Following approval by the Research Ethics Committee, 118 children between the ages of two and eight years were enrolled in a randomized, parallel-controlled, prospective, and double-blinded trial. Study participants were randomly enrolled to either the basic preparation group (BPG) or the psychological preparation group (PPG). Patients in the BPG group received standard surgical preparation on the day of surgery. Patients in the PPG group received standard surgical

preparation, completed a psychological interview, and were read a story entitled "Gaspar in the Hospital." The story followed a child character, Gaspar, through a surgical experience, and highlighted his courage and independence. On the day of surgery, all patients and parents in both the control and study groups were asked to evaluate their current anxiety. The parents assessed their anxiety through the Visual Analogue Scale, while the patients assessed their anxiety through the modified Yale Preoperative Anxiety Scale. Results of the study indicated both parents and children from the PPG group had significantly lower levels of anxiety at the time of surgery compared to parents and children from the BPG group. Although the study concluded that psychological preparation did indeed reduce preoperative anxiety, it did not specify which aspect of the program was most beneficial (Meletti, Meletti, Camargo, Silva, & Módolo, 2018). Additional studies could therefore evaluate the difference in effectiveness of a psychological interview or story book on preoperative anxiety. Future studies could strengthen findings by examining the extent of benefits of a psychological preparation program on postoperative outcomes.

Preoperative Video Teaching

While previous literature confirms preoperative education does successfully reduce preoperative anxiety, additional information is needed to determine if the method of preoperative education impacts preoperative anxiety. Since the 1990s, video teaching has been evaluated as a tool to provide effect preoperative education. According to a 1993 article in the Association of PeriOperative Registered Nurses (AORN) Journal, preoperative educational videos have many benefits. Video teaching provides thorough, standardized information on surgical risks, complications, and side effects. Video

teaching allows for review, and gives patients time to formulate questions about their care and learn at their own pace. Video teaching can be viewed in a comfortable, relaxed learning environment, which may improve comprehension of teaching. In addition, family support may also be enhanced by watching preoperative videos. Lastly, preoperative video teaching can reduce hospital costs by reducing the amount of hours spent providing in-person education to patients (Yale, 1993). Although the advantages described are likely, the article did not provide factual data to support the findings. To improve the validity of the findings, data and research should be collected to confirm the true benefits of video preoperative teaching.

A 1997 study at the Albuquerque Veteran Affairs Medical Center evaluated the impact of preoperative videotape education on preoperative anxiety and patient satisfaction. By utilizing continuous video technology, "improved patient outcomes were reflected in greater availability, accessibility, and consistency of patient education delivered" (Maller, Twitty, & Sauve, 1997, p. 85). Video viewers were asked to complete a six-item questionnaire that compared video education to traditional in-person education. One hundred percent of study participants found the video to be helpful, and 100% preferred watching the video rather than attending an in-person preoperative education class. Although preoperative anxiety was not specifically measured in this study, improved patient satisfaction was noted in patients that watched the preoperative video. While the study resulted in positive opinions of preoperative video teaching, additional measures of anxiety and patient satisfaction utilizing validated tools may have improved the strength of the study.

As video technology continues to advance, additional studies have evaluated the effectiveness of preoperative video teaching on preoperative preparation and anxiety reduction. A more recent study, conducted from 2013-2015, aimed to evaluate the impact of preoperative video teaching on 100 patients undergoing pelvic reconstruction study at the Female Medicine and Reconstructive Surgery Clinic. The study focused specifically on patient preparedness, as opposed to preoperative anxiety. The study functioned as a single-blind, randomized, stratified clinical trial, by which study participants were randomized to arm 1 or arm 2 following informed consent. Patients were then stratified within each arm by age: less than 65 or greater than 65. Participants randomized to the control group were given the routine preoperative packet, while participants randomized to the study group were given the routine preoperative packet and asked to watch a 10-minute preoperative educational video. Study participants were then asked to complete an 11-question Preoperative Preparedness Questionnaire (PPQ). Findings of the study revealed that overall, women undergoing pelvic reconstruction surgery reported a high rate of preoperative preparedness. Although the PPQ is not fully validated, results showed that the use of preoperative video education did not prove to increase patient preparedness in this particular study. Additional discussion of study results revealed preoperative preparedness in this particular patient population may have been attributed to additional preoperative visits, increased time spent with the health care team prior to surgery, and previous surgical experience (Greene et al., 2017). To further evaluate the effect of preoperative video teaching, measures of patient anxiety, postoperative complications, and other patient outcomes should be investigated in future similar studies.

A prospective comparison study of 200 patients undergoing cataract surgery at a hospital in the United Kingdom assessed the effects of a patient-information video on preoperative anxiety. The control group for the study consisted of 100 consecutive patients that did not watch the preoperative video, while the study group consisted of 100 consecutive patients that did watch the preoperative video on the day of their surgery. The Amsterdam Preoperative Anxiety and Information Score (APAIS) and Visual Analog Scale (VAS) were both utilized to measure preoperative anxiety in both groups. Findings of the study revealed a significant decrease in patient anxiety in the study group compared to the control group, as measured by the VAS. Similarly, APAIS scores revealed patients in the control group were found to be significantly more worried than patients in the intervention group (Ahmed, Pilling, Ahmed, & Buchan, 2019). While the effectiveness of video education on preoperative anxiety was confirmed, it is possible that the study may have been strengthened through randomization of patients to either the control or study groups. The study was effective, however, in accurately capturing patient anxiety through two validated anxiety tools.

In 2017, a study at a research hospital in Turkey investigated the effect of preoperative video teaching on anxiety and patient satisfaction in patients scheduled for spinal anesthesia. One thousand two hundred ninety-two patients were screened for eligibility, with 198 patients ultimately being enrolled in the study following written consent. All participants enrolled in the study were asked to complete both the State-Trait Anxiety Inventory (STAI) and a Visual Analog Scale (VAS) prior to the standard anesthesia evaluation. Study patients were then randomized to two study groups. Group 1 received written, verbal, and video preoperative teaching, while Group 2 received only

written and verbal preoperative teaching. After receiving preoperative education, all study participants were again asked to complete the state-anxiety component of the STAI, as well as the VAS. Following data collection, results were analyzed. No difference in patient anxiety was noted between groups 1 and 2 at the time of initial assessment, as determined by both the STAI and VAS tools. Significant findings were, however, noted in the state-anxiety scores following study intervention. These findings therefore support the effectiveness of video-based information on the alleviation of preoperative anxiety (Cakmak et al., 2018). Although positive findings were noted, the study did acknowledge limitations. Only patients undergoing spinal anesthesia were included in the study. In addition, varying demographic data may have impacted preoperative anxiety levels, and should be considered in future studies.

A similar study in 2017 aimed to explore the effectiveness of online educational teaching when added to standard preoperative education, and the subsequent impacts to preoperative anxiety. The study functioned as a randomized clinical trial of 118 first-time daystay (outpatient) surgery patients. Patients were randomized to one of two groups. The control group received preoperative education via a standard pre-procedure phone call. In addition to receiving the standard preoperative phone call, patients randomized to the study group also watched a video in which the surgical experience was described. Patients enrolled in the study measured preoperative anxiety using a Visual Analog Scale (VAS) at baseline, immediately following preoperative education, and again immediately before surgery. According to data analysis, “anxiety VAS scores for the video group remained relatively stable throughout the three time periods, while those in the control group significantly increased anxiety from baseline to pre-surgery”

(Frodema et al., 2017, p. e44). Future research may include utilization of preoperative video teaching in inpatient surgical patients, and pediatric daystay patients.

Despite multiple articles supporting preoperative video education in adult surgical settings, limited articles were found in which preoperative video teaching was evaluated in the pediatric setting. One 2018 study did, however, aim to evaluate the effectiveness of an educational video on patient anxiety in pediatric patients scheduled for a magnetic resonance imaging (MRI) exam. A randomized controlled trial of 50 pediatric patients aged six to 17, was conducted in the MRI suite of a large New York teaching hospital. Following proper consent and assent procedures, patients were randomized to either the control or study group. Patients enrolled in the study group received routine care by MRI staff, while patients enrolled in the interventional group received routine care and watched a seven-minute MRI educational video. Patients enrolled in both groups were asked to complete a 10-question Visual Analog Scale measure of anxiety before and after their MRI scan. Analysis of the study findings revealed improved relaxation and understanding of the MRI procedure among patients in the interventional group. In addition, nearly all of the patients enrolled in the study group self-reported the video was helpful for them. While the study proved video teaching to be an effective method of anxiety reduction, limitations existed in the study. At the time of the study, MRI staff were not provided formal education tools. Therefore, variation in verbal education provided by MRI staff may have existed. In addition, the authors recognized that while the results were promising, additional research was needed to evaluate the effectiveness of an MRI video on younger patients (Hogan et al., 2018).

Summary of Current Literature

Completion of a thorough literature review reveals the need for additional research to evaluate the effectiveness of video education on preoperative anxiety in the outpatient pediatric surgical population. Limited studies of preoperative anxiety exist on patients in the United States. Analyzed literature was noted from Hong Kong, China, Korea, Canada, Germany, England, Turkey, Brazil, and Iran. While the information obtained in each of these studies supports the positive association between preoperative education and preoperative anxiety reduction, varying environmental and cultural factors may impact preoperative anxiety on patients in the United States. Therefore, additional research is needed to validate the impact of preoperative reduction techniques on patients at a hospital such as Monroe Carell Jr. Children's Hospital at Vanderbilt, located in Nashville, Tennessee, United States.

Studies are needed to better evaluate the impact of preoperative video teaching on pediatric patients. While research supports the utilization of video teaching in a preoperative setting, minimal studies focus on pediatric patients. Research does exist, however, on various other techniques utilized to reduce pediatric preoperative anxiety, including use of play therapy, music, and distraction techniques. However, these studies do not focus on preoperative education or preparedness. Therefore, it is imperative that studies examine the potential positive impacts of preoperative teaching on this vulnerable patient population. Through completion of the described research study, the principal researcher aims to provide additional support for the use of preoperative video teaching in the pediatric surgical setting.

CHAPTER III

Methodology

Preoperative anxiety remains a concern for pediatric patients and is often associated with unfavorable postoperative outcomes (Perry et al., 2012). This study evaluated preoperative anxiety levels on 60 outpatient pediatric surgical patients using the State-Trait Anxiety Inventory for Children (Appendix A) and aimed to determine the impact of preoperative video teaching on preoperative anxiety.

Study Design

This study operated as a two group, post-test comparison study in which a convenience sample of participants were assigned to either the control or study group. In addition, those participants assigned to the study group were further analyzed as a pre-post comparison study of the effect of preoperative video teaching on a child's state-anxiety.

Setting

This study was conducted in the preoperative waiting area of a large, level-one children's hospital in Nashville, Tennessee, United States. The study site performs an average of 80 surgeries per day on Monday through Friday, for a total of over 20,000 pediatric surgeries per year. Of these 80 total surgeries per day, roughly 60 surgeries are outpatient procedures in which the pediatric patient arrives from home and is discharged home following surgery. The additional 20 patients are current hospital inpatients or are scheduled to be admitted following surgery. Common outpatient surgeries performed at the study site include ear tube placement, tonsillectomies, circumcisions, cardiac catheterizations, orthopedic surgeries, endoscopies, and bone marrow biopsies.

Additional surgeries performed include organ transplants, tumor resections, spinal fusions, and appendectomies, all of which are considered inpatient surgeries.

Sample

Sixty pediatric patients, representing approximately 20% of the weekly surgical outpatient volumes, were utilized in this study. Thirty patients were randomly assigned to the control group, while an additional 30 patients were randomly assigned to the study group. Subjects were eligible for study participation if they provided assent, were English speaking, were seven to 14 years old, were scheduled for outpatient surgery, and if their legal guardian/parent consented to study participation. Children were excluded from the study if they or their legal guardian declined study participation, were younger than age seven or older than age 14, did not speak English, or were developmentally delayed. Children that were current hospital inpatients or were scheduled to be admitted to the hospital following their procedure were also excluded from study participation.

Intervention and Materials

The preoperative teaching video utilized in the study was created by the principal researcher in collaboration with administrators, Registered Nurses, and Child Life Specialists of the Holding Room, Operating Room, and Post Anesthesia Care Unit (PACU) of the study site. Using an eight-year-old actress, her mother, and various other members of the healthcare team, the six-minute preoperative video described what the patient would experience on the day of surgery from the time of hospital arrival to the time of patient discharge. The preoperative video was narrated by the eight-year-old actress, and informed patients of who they would meet, what they would see, and what they would feel during their surgical experience. Scenes from the waiting area, intake

area, Holding Room, Operating Room, and PACU were all included. The preoperative video was available for viewing on a hospital provided electronic tablet, and was viewed by study participants and their families in the preoperative waiting area.

Measurement Methods

Developed in 1970 by Charles D. Spielberger, Ph.D., the State-Trait Anxiety Inventory for Children (STAI-CH) is a 40-question survey that measures both State (S) and Trait (T) anxiety in school-aged children. Form C-1 measures State Anxiety and consists of 20 questions that measure "how you feel right now, at this very moment." A sample State question is "I feel very calm, calm, or not calm." Form C-2 measures Trait Anxiety and consists of 20 questions that measure "how you usually feel." A sample Trait question is "I feel like crying hardly-ever, sometimes, or often." Scoring for each item on the STAI-CH ranges from a value of one to three. Thus, the scores on both the S-Anxiety and T-Anxiety surveys range from a minimum of 20 to a maximum of 60. Higher scores on the S-Anxiety Inventory (C-1) indicate higher levels of State Anxiety, while higher scores on the T-Anxiety Inventory (C-2) indicate higher levels of Trait Anxiety.

Research indicates scores on the Trait Anxiety test are relatively immune to conditions of the current environment, while scores on the State Anxiety test are more influenced by the immediate environment. A 1989 study determined the alpha reliability of the S-Anxiety Inventory to be 0.82 for males and 0.87 for females. The alpha coefficients of the T-Anxiety Inventory were found to be 0.78 for males and 0.81 for females. Although the test-retest reliability of the T-Anxiety Inventory is moderate, the test-retest reliability of the S-Anxiety Inventory is low, as is expected for a survey that

measures anxiety of the current environment or situation.

Data Collection Procedures

Study enrollment and data collection occurred in July 2019. Pediatric patients that met eligibility criteria were approached in the preoperative waiting area and informed of the study by one of four members of the research team, each of whom were current staff in the Holding Room/PACU, and were trained on the study protocol, human subjects' protection, and informed consent procedures. The research team member then obtained informed parental consent (Appendix B) and patient assent (Appendix C) for study participation on children and guardians that were interested in the study. The consent and assent forms were completed electronically via REDCap, a secure, web-based, HIPAA-compliant, data collection platform with a user management system allowing project owners to grant and control varying levels of access to data collection instruments and data for other users. Following completion of consent and assent forms, patients enrolled in the study were assigned a unique subject ID number via REDCap. Patients that were randomized by the assignment of an odd number in REDCap were assigned to the control group, while patients that were randomized by the assignment of an even number in REDCap were assigned to the study group.

Following proper enrollment in the study, participants in both the control and study groups were asked to complete the STAI-CH. Upon completion of the STAI-CH Inventory, patients randomly assigned to the study group were then asked to watch the preoperative teaching video. After viewing the preoperative teaching video, patients in the study group again completed the State portion of the Anxiety Inventory. The post-video survey also included two questions requesting (1) patients to rate their enjoyment

of the preoperative video on a Visual Analog Scale ranging from “No, I was bored” to “Yes, it was fun”, and (2) parents to rate how helpful the video was for their child on a five-point Likert Scale ranging from “Strongly Agree” to “Strongly Disagree.” All STAI-CH Inventories were completed in the preoperative waiting area via REDCap.

Protection of Human Subjects

This study was completed following approval from the Institutional Review Boards at the University and Vanderbilt University Medical Center. Patients that met study eligibility requirements were informed by the research team that study participation was voluntary, and there was no penalty for refusing to participate in the study. Pediatric patients and their families were notified that they would receive excellent care regardless of their participation in the study, and could withdraw from the study at any time without penalty.

Prior to data collection, all legal guardians and children enrolled in the study completed consent and assent forms, and were given the opportunity to have all questions answered by a member of the trained research team. Guardians and children were then provided a printed copy of their consent and assent forms for their personal records. All data collected in the study was handled confidentially. No personal health information was collected or linked to the study data. All data collected in the study was stored securely and accessible only to the research team.

There were no anticipated risks of the study. In the event of unintended anxiety from study participation, patients enrolled in the study had access to current non-pharmacological and pharmacological interventions, such as Child Life Specialists,

Hospital Chaplains, Hospital Social Workers, and pre-medications as appropriate for the individual patient.

Data Analysis

All data were analyzed with SPSS for Windows. Descriptive statistics were utilized to determine mean and median anxiety scores on both the State and Trait Anxiety Inventories. Both state and trait anxiety scores were calculated and compared between the control and study groups. A paired-samples t-test was then used to analyze the difference in pre-video and post-video state-anxiety in study patients. A P value of <0.05 was considered statistically significant.

CHAPTER IV

Results

Preoperative anxiety was evaluated in 60 pediatric patients undergoing an outpatient surgical procedure at a large children's hospital in Tennessee. Patients in both the control and study groups completed the State-Trait Anxiety Inventory for Children (STAI-CH). Patients randomized to the study group then watched a preoperative teaching video and again completed the State-Anxiety Inventory. Data was then analyzed to determine the effect or preoperative video teaching on preoperative anxiety in the outpatient pediatric surgical patient.

Sample Characteristics

A total of 79 children were assessed for eligibility and informed of the research study. Nineteen children/parents declined study participation for reasons including "I have been here multiple times and know what to expect," "I don't want to participate," and "I am afraid my child will have increased anxiety if she knows what will happen." Sixty patients agreed to study participation and were randomized to either the control group (30 patients) or study group (30 patients). Of the 60 patients enrolled in the study, two patients, one from each the study and control groups, withdrew due to difficulty completing the State-Trait Anxiety Inventory for Children (STAI-CH). Due to a technical difficulty, a third patient's survey was incomplete and subsequently excluded from data analysis. Of the 57 patients that successfully completed the study, 38 ranged in age from seven to 11 years old, and 19 fell in the 12 to 14 age group. The three patients that did not successfully complete the study were all in the seven to 11 age range. No other specific age or demographic data was collected in the study.

Major Findings

Anxiety scores on both the State and Trait-Anxiety Inventories range from a minimum of 20 to a maximum of 60, with an increased score indicating increased anxiety. Descriptive statistics reveal the mean state-anxiety score was 33.76 ± 8.14 in the control group, 32.43 ± 6.4 in the study group prior to watching the preoperative video, and 30.75 ± 5.63 in the study group after watching the preoperative video (Figure 2).

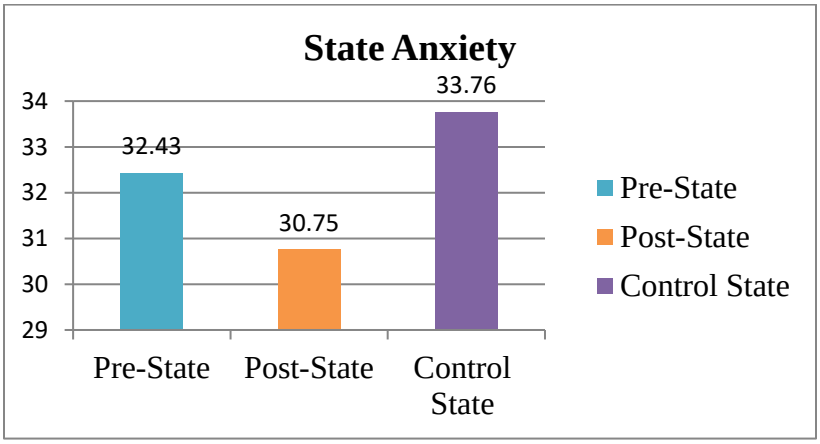

Figure 2: State-Anxiety

An independent-samples t-test revealed no statistically significant difference in the mean baseline state-anxiety scores between the control and study groups ($p = 0.5$). Further analysis via a paired-samples t-test revealed a statistically significant difference in the pre- and post-video state-anxiety scores for participants in the study group ($p = 0.048$).

Additional descriptive statistics indicate the mean trait-anxiety score was 33.55 ± 7.75 for the control group and 36.5 ± 6.24 for the study group (Figure 3).

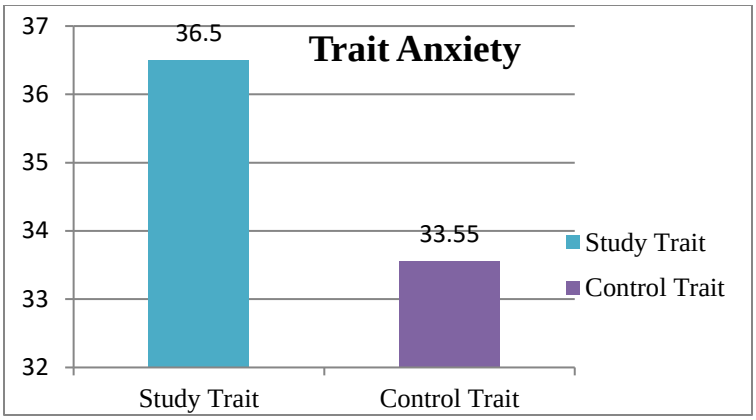

Figure 3: Trait-Anxiety

Further, a Pearson Correlation of 0.467 indicated a medium positive correlation between baseline state and trait anxiety (Figure 4). Therefore, as trait-anxiety increases, so does state-anxiety.

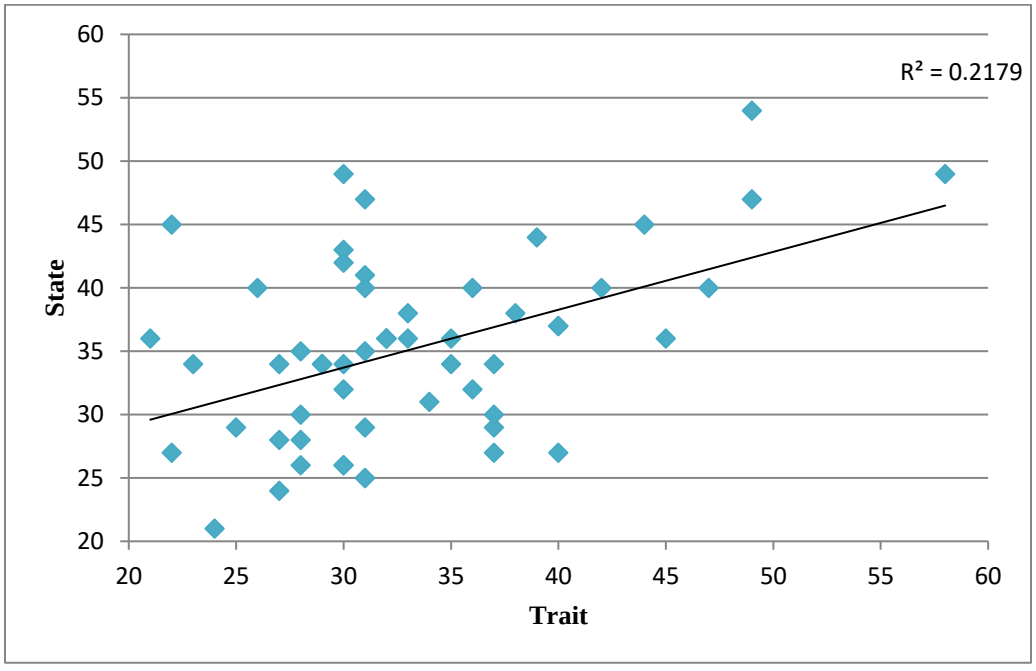

Figure 4: State-Trait Correlation

Additional analysis indicates state-anxiety decreased in 17 of 28 patients (61%) enrolled in the study group, remained the same for two patients (7%) enrolled in the study group, and increased for nine patients (32%) enrolled in the study group. Of the specific feelings measured in the State-Anxiety Inventory, scores decreased in 14 of 20 (70%) categories, remained the same in 4 of 20 (20%) of categories, and increased in 2 of 20 (10%) of categories (Figure 5).

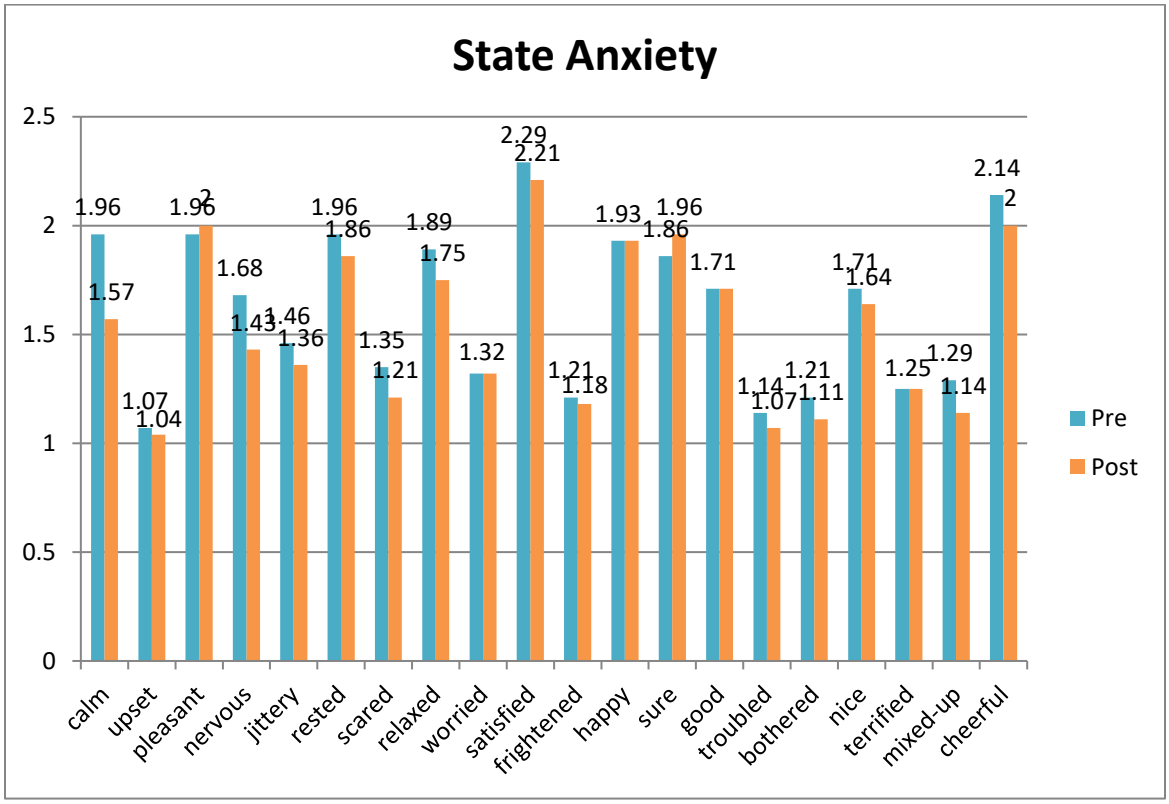

Figure 5: Variations in State-Anxiety Between Pre- and Post-Video Intervention

Specifically, variations in the level of nervousness (1.68 ± 0.612; 1.43 ± 0.634) and level of calm (1.96 ± 0.131; 1.57 ± 0.108) between the pre-video State-Inventory and post-video State-Inventory were both found to be statistically significant, with $p = 0.002$ and $p = 0.001$ respectively.

Further analysis revealed that on a Visual Analog Scale from 0 to 100, where 0 = "No, I was bored" and 100 = "Yes, it was fun," patients enrolled in the study rated their enjoyment of the video as a mean of 83.10. Additionally, on a five-point Likert Scale from "Strongly Disagree" to "Strongly Agree", 92% of parents of children randomized to the study group "Agree" or "Strongly Agree" that the preoperative teaching video was beneficial for their child. The remaining 8% of parents of children randomized to the study group stated they were "Not Sure" if the preoperative teaching video was beneficial for their child.

Summary

Surgery may cause significant preoperative anxiety for pediatric patients. Preoperative video teaching, however, can be utilized to decrease preoperative anxiety in pediatric patients undergoing an outpatient surgery. Following viewing of a preoperative teaching video, overall state-anxiety was reduced in the study group by an average of 4.2%, and patients reported they were less nervous and more calm. In addition, parents felt the preoperative video was beneficial for their child.

CHAPTER V

Discussion

This study evaluated the impact of preoperative video teaching on preoperative anxiety in the outpatient pediatric surgical patient. Sixty patients were enrolled in the study, with thirty patients being assigned to the study group, and thirty patients being assigned to the control group. Fifty-seven of the sixty enrolled patients successfully completed the State-Trait Anxiety Inventory for Children. Data was analyzed for differences in preoperative anxiety before and after preoperative video teaching in the study group, and revealed decreased anxiety following viewing of the preoperative teaching video.

Implication of Findings

Previous studies reveal proper preoperative education can greatly reduce preoperative anxiety for both patients and families (Kassai et al., 2016). Although a 2018 study determined video teaching improved relaxation in pediatric patients undergoing an MRI (Hogan et al., 2018), no other studies were discovered in an extensive literature search that evaluate the impact of preoperative video teaching on preoperative anxiety in outpatient pediatric surgical patients. Video-based preoperative information was, however, shown to alleviate preoperative anxiety in adult patients undergoing spinal anesthesia (Cakmak et al., 2018), and in adult patients undergoing cataract procedures (Ahmed et al., 2019). The results of this study indicate preoperative video teaching can reduce preoperative anxiety in outpatient pediatric surgical patients and are supported by findings from previous studies.

Application to Theoretical Framework

Rozzano C. Locsin's Theory of Technological Competency as Caring in Nursing, a middle range nursing theory, was used as the theoretical framework for this study. The theoretical dimension of technological value utilized for this study focused on *technology as machine technologies* by which computers enhance nursing activities to provide patient care (Locsin, n.d.). In addition to reducing preoperative anxiety among pediatric patients, the preoperative video was utilized to provide preoperative education, enhance patient knowledge and expectations of the surgical experience, and reduce preoperative anxiety. Nursing staff was then available to review information learned in the video with patients, and answer any additional questions

Limitations

The results of this study are not without limitations. First, the State-Trait Anxiety Inventory for Children, although validated for use in children, is a lengthy survey with words that were challenging for multiple patients to understand. Therefore, it is possible that anxiety levels were not accurately captured due to misunderstanding of survey questions. Second, preoperative anxiety is multifactorial. While the preoperative video provided an overview of the surgical experience, it may not have addressed specific concerns held by individual patients. Additionally, further research may focus on variations in video content specific to patient surgery. Third, demographic information was not collected during the study. It is possible that level of anxiety may vary by age, sex, culture, socioeconomic status, scheduled surgery, and previous surgical experience. Additional studies are therefore needed to analyze differences in various patient populations. Additionally, level of baseline surgical preparation, which may impact

preoperative anxiety, was not assessed prior to the study. Lastly, the preoperative video was utilized on a wide age range of patients (seven to 14 years) in the study. Future videos should be created to target various age ranges including young children, teenagers, and adults.

Implications for Nursing

As technology continues to become more commonplace in today's society, it can be used to benefit the nursing profession. Preoperative video teaching is inexpensive and convenient, and can be used by hospitals and nurses to help reduce preoperative anxiety in pediatric patients. Further, by reducing preoperative anxiety, postoperative outcomes such as PACU length of stay can also be improved (Perry et al., 2012), and may benefit hospitals in regards to staff satisfaction, throughput, and staffing. Additionally, preoperative video teaching can be viewed multiple times, and gives patients time to formulate questions about their care and learn at their own pace; therefore providing nursing staff more time to focus on patient specific tasks in addition to general patient education. Nursing staff should acknowledge, however, that preoperative video teaching may also increase anxiety in certain patients, and should be evaluated for use on an individual basis.

Recommendations

In addition to reducing preoperative anxiety in outpatient pediatric surgical patients, preoperative video teaching may also influence parental anxiety, as previous studies show a strong correlation between parental and child anxiety (Burstein, Ginsburg, & Tein, 2010). Future studies are needed to evaluate the impact of preoperative video teaching on both patient and parent preoperative anxiety. Additionally, preoperative

video teaching should be further evaluated for effects on patient satisfaction and postoperative outcomes including pain and length of stay.

Conclusion

Preoperative anxiety remains a concern for millions of pediatric patients and healthcare workers worldwide. Preoperative video teaching can reduce preoperative anxiety in pediatric outpatient surgical patients, and should be assessed for use in pediatric surgical settings. In addition, preoperative video teaching was proven to be enjoyable to pediatric patients, and also improved parental perception of child anxiety. Additional studies are needed to compare preoperative video teaching's impact on preoperative anxiety with other current forms of preoperative education.

References

Ahmed, K. J., Pilling, J. D., Ahmed, K., & Buchan, J. (2019). Effect of a patient-information video on the preoperative anxiety levels of cataract surgery patients. *Journal of Cataract & Refractive Surgery*, *45*(4), 475-479. doi:10.1016/j.jcrs.2018.11.011

Alacadag, M., & Cilingir, D. (2018). Presurgery Anxiety and Day Surgery Patients' Need for Information. *Journal of PeriAnesthesia Nursing*, *33*(5), 658-668. doi:10.1016/j.jopan.2017.06.125

Amini, K., Alihossaini, Z., & Ghahremani, Z. (2019). Randomized Clinical Trial Comparison of the Effect of Verbal Education and Education Booklet on Preoperative Anxiety. *Journal of PeriAnesthesia Nursing*, *34*(2), 289-296. doi:10.1016/j.jopan.2018.06.101

Bartik, K., & Toruner, E. K. (2018). Effectiveness of a Preoperative Preparation Program on Children's Emotional States and Parental Anxiety. *Journal of PeriAnesthesia Nursing*, *33*(6), 972-980. doi: 10.1016/j.jopan.2017.09.008

Bikmoradi, A., Seifi, Z., Poorolajal, J., Araghchian, M., Safiaryan, R., & Oshvandi, K. (2015). Effect of inhalation aromatherapy with lavender essential oil on stress and vital signs in patients undergoing coronary artery bypass surgery: A single-blinded randomized clinical trial. *Iranian Journal of Nursing and Midwifery Research*, *19*(6), 574-580. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4280720/

Britteon, P., Cullum, N., & Sutton, M. (2017). Association between psychological health and wound complications after surgery. *British Journal of Surgery*, *104*(6), 769-776. doi:10.1002/bjs.10474

Burstein, M., Ginsburg, G. S., & Tein, J. (2010). Parental Anxiety and Child Symptomatology: An Examination of Additive and Interactive Effects of Parent Psychopathology. *Journal of Abnormal Child Psychology, 38*(7), 897-909. doi:10.1007/s10802-010-9415-0

Cakmak, M., Kose, I., Zinzircioglu, C., Karaman, Y., Tekgul, Z. T., Pektas, S., … Bozkurt, P. S. (2018). Effect of video-based education on anxiety and satisfaction of patients undergoing spinal anesthesia. *Brazilian Journal of Anesthesiology (English Edition), 68*(3), 274-279. doi: 10.1016/j.bjane.2018.01.004

Caldwell, R. M., & Ray, R. (2017). Utilization of iPad Technology to Decrease Pediatric Preoperative Anxiety. *Journal of Pediatric Surgical Nursing, 6*(4), 103-112. doi:10.1097/jps.0000000000000152

Frodema, K., D'Ascoli, S., Fidalgo, S., Haraty, L., Hurley, L., & Garb, J. (2017). Effectiveness of Pre-Surgery Video in Reducing Anxiety in Daystay Surgical Patients. *Journal of PeriAnesthesia Nursing, 32*(4), e43-e44. doi: 10.1016/j.jopan.2017.06.011

Gidron, Y. (2013). Trait anxiety. In Encyclopedia of Behavioral Medicine. Retrieved from https://link.springer.com/referenceworkentry/10.1007%2F978-1-4419-1005-9_1539

Greene, K. A., Wyman, A. M., Scott, L. A., Hart, S., Hoyte, L., & Bassaly, R. (2017). Evaluation of patient preparedness for surgery: a randomized controlled trial. *American Journal of Obstetrics and Gynecology, 217*(2), 179.e1-179.e7. doi:10.1016/j.ajog.2017.04.017

Guo, P., East, L., & Arthur, A. (2012). A preoperative education intervention to reduce anxiety and improve recovery among Chinese cardiac patients: A randomized controlled trial. *International Journal of Nursing Studies*, *49*(2), 129-137. doi:10.1016/j.ijnurstu.2011.08.008

Hall, M. J., Schwartzman, A., Zhang, J., & Liu, X. (2017). *Ambulatory surgery data from hospitals and ambulatory surgery centers: United States, 2010* (102). Retrieved from https://www.cdc.gov/nchs/data/nhsr/nhsr102.pdf

Hogan, D., DiMartino, T., Liu, J., Mastro, K. A., Larson, E., & Carter, E. (2018). Video-based Education to Reduce Distress and Improve Understanding among Pediatric MRI Patients: A Randomized Controlled Study. *Journal of Pediatric Nursing*, *41*, 48-53. doi:10.1016/j.pedn.2018.01.005

Jaruzel, C. B., & Gregoski, M. J. (2017). Instruments to measure preoperative acute situation anxiety: An integrative review. *American Association of Nurse Anesthetists*, *85*(1), 31-35. Retrieved from http://digitaleditions.sheridan.com/publication/?i=381779&article_id=270479 8&view=articleBrowser&ver=html5#{%22issue_id%22:381779,%22view%2 2:%22articleBrowser%22,%22article_id%22:%222704798%22}

Kassai, B., Rabilloud, M., Dantony, E., Grousson, S., Revol, O., Malik, S., ... & Pereira de Souza Neto, E. (2016). Introduction of paediatric anaesthesia comic information leaflet reduced preoperative anxiety in children. *BJA: British Journal of Anaesthesia*, *117*(1), 95- 102.).

Kil, H., Kim, W., Chung, W., Kim, G., Seo, H., & Hong, J. (2012). Preoperative anxiety and pain sensitivity are independent predictors of propofol and sevoflurane requirements in general anaesthesia. *British Journal of Anaesthesia, 108*(1), 119-125. doi:10.1093/bja/aer305

Lemos, M. F., Lemos-Neto, S. V., Barrucand, L., Verçosa, N., & Tibirica, E. (2019). Preoperative education reduces preoperative anxiety in cancer patients undergoing surgery: Usefulness of the self-reported Beck anxiety inventory. *Brazilian Journal of Anesthesiology (English Edition), 69*(1), 1-6. doi:10.1016/j.bjane.2018.07.004

Li, H. C., & Lam, H. Y. (2003). Paediatric day surgery: impact on Hong Kong Chinese children and their parents. *Journal of Clinical Nursing, 12*(6), 882-887. doi:10.1046/j.1365-2702.2003.00805.x

Locsin, R. C. (n.d.). *Technological competency as caring in nursing: A model for practice.* Retrieved from https://nursing.fau.edu/uploads/docs/852/Locsin_Technological%20Competency%20Jerusalem(5).pdf

Maller, C. E., Twitty, V. J., & Sauve, A. (1997). A video approach to interactive patient education. *Journal of PeriAnesthesia Nursing, 12*(2), 82-88.

Meletti, D. P., Meletti, J. F., Camargo, R. P., Silva, L. M., & Módolo, N. S. (2018). Psychological preparation reduces preoperative anxiety in children. Randomized and double-blind trial. *Jornal de Pediatria*. doi:10.1016/j.jped.2018.05.009

Perry, J. N., Hooper, V. D., & Masiongale, J. (2012). Reduction of Preoperative Anxiety in Pediatric Surgery Patients Using Age-Appropriate Teaching Interventions. *Journal of PeriAnesthesia Nursing*, *27*(2), 69-81. doi:10.1016/j.jopan.2012.01.003

Pompe, R., Krüger, A., Karakiewicz, P., Preisser, F., Graefen, M., Huland, H., & Tilki, D. (2018). The impact of anxiety and depression on surgical and functional outcomes in patients who underwent radical prostatectomy. *European Urology Supplements*, *17*(2), e979. doi:10.1016/s1569-9056(18)31511-2

Press Ganey Associates, Inc. (2019). Performance scorecard. Retrieved March 2019, from https://scorecard.improve.pressganey.com/Breakout/Index?serviceId=3&cssid=105461&questionid=0&demotype=Demo2&scoreDemoFilter=21&ranksDemoFilter=21&isCahps=False&aggregationTypeIsCahps=False&measureType=Overall&source=Goals

Robinson, E. M., Baker, R., & Hossain, M. M. (2018). Randomized Trial Evaluating the Effectiveness of Coloring on Decreasing Anxiety Among Parents in a Pediatric Surgical Waiting Area. *Journal of Pediatric Nursing*, *41*, 80-83. doi:10.1016/j.pedn.2018.02.001

Spielberger, C. D., Edwards, C. D., Lushene, R. E., Montuori, J., & Platzek, D. (1973). State-trait anxiety inventory for children.

Wiedemann, K. (2001). Anxiety and anxiety disorders. International Encyclopedia of the Social & Behavioral Sciences, 1, 560-567. Retrieved from https://doi.org/10.1016/B0-08-043076-7/03760-8

Williams, J. B., Alexander, K. P., Morin, J., Langlois, Y., Noiseux, N., Perrault, L. P., … & Afilalo, J. (2013). Preoperative Anxiety as a Predictor of Mortality and Major Morbidity in Patients Aged >70 Years Undergoing Cardiac Surgery. *The American Journal of Cardiology, 111*(1), 137-142. doi:10.1016/j.amjcard.2012.08.060

Wotman, M., Levinger, J., Leung, L., Kallush, A., Mauer, E., & Kacker, A. (2017). The Efficacy of Lavender Aromatherapy in Reducing Preoperative Anxiety in Ambulatory Surgery Patients Undergoing Procedures in General Otolaryngology. *Laryngoscope Investigative Otolaryngology, 2*(6), 437-441. doi:10.1002/lio2.121

Yale, E. (1993). Preoperative Teaching Strategy. *AORN Journal, 57*(4), 901-908. doi:10.1016/s0001-2092(07)69091-7

Appendix A

State-Trait Anxiety Inventory for Children

State-Trait Anxiety Inventory for Children™

Developed by Charles D. Spielberger, Ph.D.
in collaboration with C.D. Edwards, J. Montuori, and R. Lushene

Published by Mind Garden, Inc.

info@mindgarden.com
www.mindgarden.com

HOW-I-FEEL QUESTIONNAIRE

Developed by C.D. Spielberger, C.D. Edwards, J. Montuori, and R. Lushene

STAIC Form C-1

Name: _____ Age: _____ Date:_____

DIRECTIONS: A number of statements which boys and girls use to describe themselves are given below. Read each statement carefully and decide how you feel *right now*. Then put an X in the box in front of the word or phrase which best describes how you feel. There are no right or wrong answers. Don't spend too much time on any one statement. Remember, find the word or phrase which best describes how you feel right now, *at this very moment*.

1. I feel	❑ very calm	❑ calm	❑ not calm
2. I feel	❑ very upset	❑ upset	❑ not upset
3. I feel	❑ very pleasant	❑ pleasant	❑ not pleasant
4. I feel	❑ very nervous	❑ nervous	❑ not nervous
5. I feel	❑ very jittery	❑ jittery	❑ not jittery
6. I feel	❑ very rested	❑ rested	❑ not rested
7. I feel	❑ very scared	❑ scared	❑ not scared
8. I feel	❑ very relaxed	❑ relaxed	❑ not relaxed
9. I feel	❑ very worried	❑ worried	❑ not worried
10. I feel	❑ very satisfied	❑ satisfied	❑ not satisfied
11. I feel	❑ very frightened	❑ frightened	❑ not frightened
12. I feel	❑ very happy	❑ happy	❑ not happy
13. I feel	❑ very sure	❑ sure	❑ not sure
14. I feel	❑ very good	❑ good	❑ not good
15. I feel	❑ very troubled	❑ troubled	❑ not troubled
16. I feel	❑ very bothered	❑ bothered	❑ not bothered
17. I feel	❑ very nice	❑ nice	❑ not nice
18. I feel	❑ very terrified	❑ terrified	❑ not terrified
19. I feel	❑ very mixed-up	❑ mixed-up	❑ not mixed-up
20. I feel	❑ very cheerful	❑ cheerful	❑ not cheerful

HOW-I-FEEL QUESTIONNAIRE

STAIC Form C-2

Name: _____ Age: _____ Date:_____

DIRECTIONS: A number of statements which boys and girls use to describe themselves are given below. Read each statement carefully and decide if it is *hardly-ever,* or *sometimes*, or *often* true for you. Then for each statement, put an X in the box in front of the word that seems to describe you best. There are no right or wrong answers. Don't spend too much time on any one statement. Remember, choose the word which seems to describe how you usually feel.

1.	I worry about making mistakes	❑ hardly-ever	❑ sometimes	❑ often
2.	I feel like crying	❑ hardly-ever	❑ sometimes	❑ often
3.	I feel unhappy	❑ hardly-ever	❑ sometimes	❑ often
4.	I have trouble making up my mind	❑ hardly-ever	❑ sometimes	❑ often
5.	It is difficult for me to face my problems	❑ hardly-ever	❑ sometimes	❑ often
6.	I worry too much	❑ hardly-ever	❑ sometimes	❑ often
7.	I get upset at home	❑ hardly-ever	❑ sometimes	❑ often
8.	I am shy	❑ hardly-ever	❑ sometimes	❑ often
9.	I feel troubled	❑ hardly-ever	❑ sometimes	❑ often
10.	Unimportant thoughts run through my mind and bother me	❑ hardly-ever	❑ sometimes	❑ often
11.	I worry about school	❑ hardly-ever	❑ sometimes	❑ often
12.	I have trouble deciding what to do	❑ hardly-ever	❑ sometimes	❑ often
13.	I notice my heart beats fast	❑ hardly-ever	❑ sometimes	❑ often
14.	I am secretly afraid	❑ hardly-ever	❑ sometimes	❑ often
15.	I worry about my parents	❑ hardly-ever	❑ sometimes	❑ often
16.	My hands get sweaty	❑ hardly-ever	❑ sometimes	❑ often
17.	I worry about things that may happen	❑ hardly-ever	❑ sometimes	❑ often
18.	It is hard for me to fall asleep at night	❑ hardly-ever	❑ sometimes	❑ often
19.	I get a funny feeling in my stomach	❑ hardly-ever	❑ sometimes	❑ often
20.	I worry about what others think of me	❑ hardly-ever	❑ sometimes	❑ often

Scoring Key for STAI for Children

Scoring Instructions for STAIC Form C-1

Fold this paper in half and line up next to the appropriate item numbers on the answer sheet. Be sure you are on the correct side of the answer sheet (Form C-1). Total the scoring weights shown for the marked responses.

Total Score for C-1 _____

1.	1	2	3
2.	3	2	1
3.	1	2	3
4.	3	2	1
5.	3	2	1
6.	1	2	3
7.	3	2	1
8.	1	2	3
9.	3	2	1
10.	1	2	3
11.	3	2	1
12.	1	2	3
13.	1	2	3
14.	1	2	3
15.	3	2	1
16.	3	2	1
17.	1	2	3
18.	3	2	1
19.	3	2	1
20.	1	2	3

Scoring Instructions for STAIC Form C-2

All Items on the A-Trait scale are scored as follows:

1 point for "hardly ever"

2 points for "sometimes"

3 points for "often"

Total Score for C-2 _____

For Publications:
We understand situations exist where you may want sample test questions for various fair use situations such as academic, scientific or commentary purposes. No items from this instrument may be included in any publication without the prior express written permission from Mind Garden, Inc. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

For Dissertation and Thesis Appendices:
You may not include an entire instrument in your thesis or dissertation, however you may use the four sample items specified by Mind Garden. Academic committees understand the requirements of copyright and are satisfied with sample items for appendices and tables. For customers needing permission to reproduce the four sample items in a thesis or dissertation, the following page includes the permission letter and reference information needed to satisfy the requirements of an academic committee.

Online Use of Mind Garden Instruments:
If your research uses an online survey platform, you will need to meet Mind Garden's requirements by following the procedure described at mindgarden.com/mind-garden-forms/58-remote-online-use-application.html.

All Other Special Reproductions:
For any other special purposes requiring permissions for reproduction of this instrument, please contact info@mindgarden.com.

mind garden

www.mindgarden.com

To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

State-Trait Anxiety Inventory for Children

The four sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

I feel upset
I feel relaxed
I worry too much
I notice my heart beats fast

Sincerely,

Robert Most
Mind Garden, Inc.
www.mindgarden.com

Glenn State Trait Anxiety

Record ID _____

How-I-Feel Questionnaire. STAIC Form C-1. DIRECTIONS: A number of statements which boys and girls use to describe themselves are given below. Read each statement carefully and decide how you feel right now. Then put an X in the box in front of the word or phrase which best describes how you feel. There are no right or wrong answers. Don't spend too much time on any one statement. Remember, find the word or phrase which best describes how you feel right now, at this very moment.

I feel	○ very calm ○ calm ○ not calm
I feel	○ very upset ○ upset ○ not upset
I feel	○ very pleasant ○ pleasant ○ not pleasant
I feel	○ very nervous ○ nervous ○ not nervous
I feel	○ very jittery ○ jittery ○ not jittery
I feel	○ very rested ○ rested ○ not rested
I feel	○ very scared ○ scared ○ not scared
I feel	○ very relaxed ○ relaxed ○ not relaxed
I feel	○ very worried ○ worried ○ not worried
I feel	○ very satisfied ○ satisfied ○ not satisfied
I feel	○ very frightened ○ frightened ○ not frightened
I feel	○ very happy ○ happy ○ not happy
I feel	○ very sure ○ sure ○ not sure

I feel	○ very good ○ good ○ not good
I feel	○ very troubled ○ troubled ○ not troubled
I feel	○ very bothered ○ bothered ○ not bothered
I feel	○ very nice ○ nice ○ not nice
I feel	○ very terrified ○ terrified ○ not terrified
I feel	○ very mixed-up ○ mixed-up ○ not mixed-up
I feel	○ very cheerful ○ cheerful ○ not cheerful

How-I-Feel Questionnaire. STAIC Form C-2. DIRECTIONS: A number of statements which boys and girls use to describe themselves are given below. Read each statement carefully and decide if it is hardly-ever, or sometimes, or often true for you. Then for each statement, put an X in the box in front of the word that seems to describe you best. There are no right or wrong answers. Don't spend too much time on any one statement. Remember, choose the word which seems to describe how you usually feel.

	hardly-ever	sometimes	often
I worry about making mistakes	○	○	○
I feel like crying	○	○	○
I feel unhappy	○	○	○
I have trouble making up my mind	○	○	○
It is difficult for me to face my problems	○	○	○
I worry too much	○	○	○
I get upset at home	○	○	○
I am shy	○	○	○
I feel troubled	○	○	○
Unimportant thoughts run through my mind and bother me	○	○	○
I worry about school	○	○	○
I have trouble deciding what to do	○	○	○
I notice my heart beats fast	○	○	○
I am secretly afraid	○	○	○
I worry about my parents	○	○	○

My hands get sweaty	○	○	○
I worry about things that may happen	○	○	○
It is hard for me to fall asleep at night	○	○	○
I get a funny feeling in my stomach	○	○	○
I worry about what others think of me	○	○	○

Is this child randomized to watch a video?
○ Yes
○ No

Thank you for participating in the study!

Here is the video

How-I-Feel Questionnaire. STAIC Form C-1. DIRECTIONS: A number of statements which boys and girls use to describe themselves are given below. Read each statement carefully and decide how you feel right now. Then put an X in the box in front of the word or phrase which best describes how you feel. There are no right or wrong answers. Don't spend too much time on any one statement. Remember, find the word or phrase which best describes how you feel right now, at this very moment.

I feel	○ very calm ○ calm ○ not calm
I feel	○ very upset ○ upset ○ not upset
I feel	○ very pleasant ○ pleasant ○ not pleasant
I feel	○ very nervous ○ nervous ○ not nervous
I feel	○ very jittery ○ jittery ○ not jittery
I feel	○ very rested ○ rested ○ not rested
I feel	○ very scared ○ scared ○ not scared
I feel	○ very relaxed ○ relaxed ○ not relaxed
I feel	○ very worried ○ worried ○ not worried

Confidential

I feel	○ very satisfied ○ satisfied ○ not satisfied
I feel	○ very frightened ○ frightened ○ not frightened
I feel	○ very happy ○ happy ○ not happy
I feel	○ very sure ○ sure ○ not sure
I feel	○ very good ○ good ○ not good
I feel	○ very troubled ○ troubled ○ not troubled
I feel	○ very bothered ○ bothered ○ not bothered
I feel	○ very nice ○ nice ○ not nice
I feel	○ very terrified ○ terrified ○ not terrified
I feel	○ very mixed-up ○ mixed-up ○ not mixed-up
I feel	○ very cheerful ○ cheerful ○ not cheerful
Did you enjoy the video?	No, I was bored — Yes, it was fun *(Place a mark on the scale above)*

This video was helpful for your child.

○ Strongly disagree
○ Disagree
○ Not sure
○ Agree
○ Strongly agree

Would you like to leave a comment?

_____

Date of IRB Approval: 06/05/2019

Institutional Review Board

VANDERBILT

Appendix B

Parental Consent

Confidential

Glenn e-consent

Record ID _____

Name of Participant: _____
(First Last)

Age of Participant: _____

The following information is provided to inform you about the research project and your participation in it. Please read this form carefully and feel free to ask any questions you may have about this study and the information given below. You will be given an opportunity to ask questions, and your questions will be answered. Also, you will be given a copy of this consent form.

_____

1.) What is the purpose of this study?

The purpose of the study is to evaluate the effect of video teaching on pre-operative anxiety in children undergoing an outpatient surgical procedure at Monroe Carell Jr. Children's Hospital at Vanderbilt. 60 eligible patients will be enrolled in the study, with 30 patients being assigned to the control group and 30 patients being assigned to the study group. Participants enrolled in the study group will receive pre-operative video teaching, while participants enrolled in the control group will not. Enrollment in the control and study groups will be randomized.

You do not have to be in this research study. You may choose not to be in this study and get other treatments without changing your healthcare, services, or other rights. You can stop being in this study at any time. If we learn something new that may affect the risks or benefits of this study, you will be told so that you can decide whether or not you still want to be in the study.

2.) Procedures to be followed and approximate duration of the study:

This study will be completed in the pre-operative waiting area. Following enrollment in the study, children in both the control and study groups will be asked to complete the State-Trait Anxiety Inventory. If your child is assigned to the study group, he/she will be asked to watch a short video explaining the surgical experience. Following video completion, your child will be asked to again complete the State Anxiety Inventory.

It is anticipated that the study will require approximately 30 minutes of your child's time.

3.) Expected costs:

There is no cost to you for taking part in this study.

4.) Description of the discomforts, inconveniences, and/or risks that can be reasonably expected as a result of participation in this study:

There are no anticipated risks in this study. In the event of unintended anxiety from study participation, your child will have access to current non-pharmacological and pharmacological interventions, such as Child Life Specialists, Hospital Chaplains, Hospital Social Workers, and pre-medications, as appropriate for the individual patient.

5.) Unforeseeable risks:

Because this treatment (video) is investigational, meaning non-FDA approved, there may be unknown or unforeseeable risks associated with participation.

6.) Compensation in case of study-related injury:

If it is determined by Vanderbilt, Gardner-Webb University, and the Investigator that an injury occurred as a direct result of the tests or treatments that are done for research, then you and/or your insurance will not have to pay for the cost of immediate medical care provided at Vanderbilt to treat the injury.

There are no plans for Vanderbilt or Gardner-Webb University to pay for any injury caused by the usual care you would normally receive for treating your illness or the costs of any additional care. There are no plans for Vanderbilt or Gardner-Webb University to give you money for the injury.

7.) Good effects that might result from this study:

There are no direct benefits associated with participation in this study. The study may help us understand the effect of video teaching on pre-operative anxiety. The Institutional Review Boards at Gardner-Webb University and Vanderbilt University Medical Center have determined that participation in this study poses minimal risks to participants.

8.) Study Results:

The study results will not be shared with study participants.

9.) Alternative treatments available:

Not watching the video.

10.) Compensation for participation:

There is no payment for participating in this study.

11.) Circumstances under which the Principal Investigator may withdraw you from study participation:

Participants may be removed from the study if the Principal Investigator determines that watching the preoperative video does not prove to be beneficial for your child, or causes any undue distress.

12.) What happens if you choose to withdraw from study participation?

Participation in this study is voluntary. Your child has the right to withdraw from the study at any time. There will be no consequences for withdrawing participation in the study. All study procedures will stop at the time of withdrawal request. If your child chooses to withdraw, you may request that any of your child's data that has been collected be destroyed unless it is in a de-identified state. All patients will receive the same excellent standard care.

If you wish to withdraw your child from the study, please contact Jennifer Glenn at 615-936-4121 or 615-936-4060, or a member of your child's medical team, and ask to be withdrawn from the study. There is no penalty for withdrawing.

13.) Contact information:

If you should have any questions about this research study or possible injury, please feel free to contact Jennifer Glenn, RN, BSN, CPN at 615-936-4121 or my Faculty Advisor, Dr. Tina Lewis, DNP, FNP-C at 704-406-2633.

If the research design of the study necessitates that its full scope is not explained prior to participation, it will be explained to you after completion of the study. If you have concerns about your rights or how you are being treated, or if you have questions, want more information, or have suggestions, please contact Dr. Sydney Brown at 704-406-3019

For additional information about giving consent or your rights as a participant in this study, to discuss problems, concerns, and questions, or to offer input, please feel free to call the Vanderbilt University Institutional Review Board Office at (615) 322-2918 or toll free at (866) 224-8273.

14.) Confidentiality:

All efforts, within reason, will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. Your child's data will be anonymous which means that your child's name will not be collected or linked to the data. Upon completion of the study, all study data will be submitted to a representative at the Hunt School of Nursing at Gardner-Webb University. The data will be stored in a secure location for three years, after which time it will be destroyed

15.) Privacy:

Your information may be shared with Vanderbilt or the government, such as the Vanderbilt University Institutional Review Board, Gardner-Webb University Institutional Review Board, or Federal Government Office for Human Research Protections, if you or someone else is in danger, or if we are required to do so by law.

If you decide not to take part in this research study, it will not affect your child's treatment, payment, or enrollments in any health plans, or affect your ability to get benefits. You will get a copy of this form after it is signed.

Statement by person agreeing to be in this study:

○ I have read this consent form and the research study has been explained to me verbally. I fully understand the contents of this document, all my questions have been answered, and I freely and voluntarily choose to take part in this study.

Parent/Legal Guardian Name:

_____
(First Last)

Date:

_____

Parent/Legal Guardian Name:

_____

Date of IRB Approval: 06/05/2019

Institutional Review Board

VANDERBILT

Date:	_____
Second Parent/Legal Guardian Unavailable	○ Applicable
Consent obtained by (please enter full name and title):	_____ (Completed by study personnel at time of consent.)
Date:	_____

Appendix C

Child Assent

Confidential

Glenn assent 7-11

Record ID _____

This assent document applies to children ages 7 to 11 years old.

SCRIPT: Hi. My name is ..... I talked to your Mom/Dad/Caregiver and they said it was okay for you to talk to and work with me today. Today, my job is to have one group of kids watch a video that teaches them about what will happen while they are here for surgery today. Another group of kids will not watch the video. Whether or not you watch the video, we will be asking you some questions that tell us how you feel. At any time, if you decide you do not want to watch the video or answer our questions, you just let me or your parents know. We will not make you watch the video or answer the questions, and no one will get made at you.

Name of participant: _____

Age: _____

1. Why are you doing this research?

We are doing this research study to see if watching a video about what you will experience while you are here today helps you feel less nervous or scared about your surgery.

2. What will I do and how long will it take?

One group of kids will watch a video that teaches them about what will happen while you are here for surgery today. Another group of kids will not watch the video. Whether or not you watch the video, we will be asking you some questions that tell us how you feel. Once you have answered our questions, your job will be finished.

3. Do I have to be in this research study and can I stop if I want to?

You do not have to be in this study and can tell us anytime if you do not want to be in it any longer. We will not get mad if you do not want to be in the study anymore. If you do not want to watch the video or answer our questions, you can tell your nurse, your doctor, your parents, or me.

4. Could it make me sick (or sicker)?

No. Watching the video will not make you sick.

5. Will anyone know that I am in this research study?

Only your parents, your nurses, your doctors, and your hospital staff will know that you are in this study.

6. How will this research help me or other people?

This study will help us find out if watching a video about what to expect on the day of your surgery helps kids feel better or not as scared about their surgery.

7. Can I do something else instead of this research?

If you decide you do not want to be a part of this study, you will still be cared for very well by everyone. No one will get mad at you if you decide you do not want to do this study.

8. If I have questions, who can I talk to?

If you have any questions, you can ask me at any time. You can also ask your parents, your nurse, or your doctor.

After hearing and/or reading this, are you willing to work with me today? If you are, will you please type your name in the box below. If not, you will not be in our study, and we will not get mad at you.

Signature of patient/volunteer _____

Date: _____

Consent obtained by (please enter full name and title) _____

Date _____

Glenn assent 12-14

Record ID

_____

This assent document applies to children age 12 to 14 years old.

Name of participant:

_____

Age:

_____

1. Why are you doing this research?

We are doing this research study to see if watching a pre-operative teaching video helps reduce your anxiety before your surgery.

2. What will I do and how long will it take?

If you decide to do this study, you may watch a pre-operative teaching video or you may not. One group of kids will watch a video that teaches them about what will happen while you are here for surgery today. Another group of kids will not watch the video. Whether or not you watch the video, we will be asking you some questions about your anxiety. Once you have answered our questions, you will be done with the study.

3. Do I have to be in this research study and can I stop if I want to?

No. You do not have to be in this study if you do not want to. At any time, if you do not want to be in the study, you can tell us that you do not want to watch the video or answer our questions, and we will withdraw you from the study. We will not be disappointed or unhappy if you decide you do not want to be in the study. You have the choice to decide if you want to be in the study, and during the study, if you decide you don't want to do it anymore, you can withdraw at any time.

4. Could it make me sick (or sicker)?

No. Watching the video will not make you sick.

5. Will anyone know that I am in this research study?

Only your parents, your nurses, your doctors, and the hospital staff that are directly involved in taking care of you will know that you are in the study.

6. How will this research help me or other people?

This study will help us find out if watching a video about what to expect on the day of your surgery helps reduce your anxiety when you have surgery.

7. Can I do something else instead of this research?

If you decide not to be in this research study, you will not be punished. You will receive the same great care as if you had not been a part of the study.

8. Who do I talk to if I have questions?

If you have any questions, you can ask me at any time. You can also ask your parent or caregiver, your nurse, or your doctor.

After hearing and/or reading this, are you willing to work with me today? If you are, will you please type your name in the box below. If not, you will not be in our study, and we will not get mad at you.

Signature of patient/volunteer _____

Date _____

Consent obtained by (please enter full name and title) _____

Date _____