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PATIENT SATISFACTION PERSPECTIVES WHEN UNDERGOING AN INVASIVE EXTRA CAPSULAR CATARACT EXTRACTION WITH AN INTRA OCULAR LENS IMPLANT WHILE CONSCIOUSLY SEDATED

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"Every voyage is at risk. At the point when you are about to let go of the lines, you have to be very clear about what the vision is and whether it is important enough to take the risk. If not, then you're in trouble from the start."

N. Thompson, Master Navigator, Polynesian Voyaging Society

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ABSTRACT

Problem: Patient's perspectives regarding health care rendered when undergoing an invasive procedure while consciously sedated has not been explored. Research is needed to provide patient's perception of satisfaction before, during and following an invasive extra capsular cataract extraction (ECCE) with an intra ocular lens implant (IOLI) while consciously sedated.

Purpose: The purpose of this study was to construct and introduce a psychometrically reliable and valid instrument to measure a patient's level of satisfaction when undergoing an ECCE with an IOLI while consciously sedated; and to conduct and present a pilot study of its' reliability.

Method: An integrative review of the literature (ROL) was conducted to identify factors thought to be associated with satisfaction, and a content valid instrument (Patient Satisfaction Survey [PaSS]) was generated. Two professional nursing experts instrument construction then evaluated the instrument for face validity. Psychometric analysis of the PaSS's reliability included: (a) determination of frequencies (numbers and mean scores; (b) factor reduction analysis using SPSS 10; (c) determination of estimates of reliability (coefficient alpha); and (d) inter item (question and concept) reliability (Cronbach alpha) measures.

Factors that were hypothesized to relate to satisfaction were analyzed using: (a) frequencies (numbers, percents, means [preoperative, intraoperative, and postoperative] and standard deviations; and (b) potential

association with scores. The results were then compared to findings in the ROL.

Sample: A post-procedure PaSS was given to 500 patients just prior to discharge to be used to evaluate patient perceived satisfaction of care when undergoing an ECCE with an IOLI while consciously sedated. Patients willing to participate completed and returned this survey to their clinic nurse the day following their surgery with no identifiable data on it. The clinic nurse routed these surveys to the primary researcher. Three hundred nine survey forms were returned between May 1, 2003 and December 31, 2003 of which 305 are included in this study.

Analysis: Content validity was assured using themes generated from an integrative ROL review and expert opinion. Data collected retrospectively from 305 PaSS forms were analyzed using concept factor reduction; estimates of reliability; inter item reliability; and frequencies; along with comparing these findings with the ROL.

Results: Content and face validity were confirmed. The presence of 2 factors and 2 themes were revealed. A Pearson correlation coefficient of $p \geq 0.689$ was significant at $p \leq 0.01$ for factor variable reliability. Internal consistency of questionnaire findings were found to be $p \geq 0.91$, or highly significant by Cronbach alpha measures.

Conclusion: The PaSS is valid and reliable, it measures these concepts consistently. The five concepts identified in the ROL were not confirmed by

the analysis; but rather the responses suggest that the scale should focus primarily on the factor themes of 'caring' and 'comfort.' No subject determinants were identified as in the ROL. The scale did not demonstrate discriminate validity.

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LIST OF ABBREVIATIONS

CS	Conscious Sedation
ECCE	Extra Capsular Cataract Extraction
HMO	Health Maintenance Organization
Intra-Op	Intraoperative
IOLI	Intra Ocular Lens Implant
JCAHO	Joint Commission of Accreditation of Hospital Organizations
Pre-Op	Postoperative
Post-Op	Preoperative

CHAPTER I
INTRODUCTION

Statement of the Problem

Extra capsular cataract extraction (ECCE) procedures with conscious sedation (CS) are not without significant risks (Gross, Bailey, Chaplan, Connis, Corte, Davis, et al., 1996) and require patient acceptance and cooperation. A patient's perceptions about health care availability; quality of care; nursing and medical care rendered; communication; and environmental conditions coupled with CS have not been explored (Joint Commission on Accreditation of Hospitals Organization [JCAHO], 1998). Research is needed to provide an understanding of the patient's point of view regarding satisfaction before, during and following an invasive ECCE with an intra ocular lens implant (IOLI) while consciously sedated.

Background

Conscious sedation is a pharmacological induced fluid state with or without analgesia used to decrease anxiety and to assist patients in tolerating unpleasant procedures while maintaining their ability to respond to verbal stimuli (Foster, 2000). There has been a steady increase over the past decade in the use of CS to perform invasive procedures, in both inpatient (Habib, Mandour, and Balmer, 2004) and outpatient settings (Walker, et al., 2003). This trend in health care practice has generated an increasing number of guidelines and recommendations by various health

related organizations (Algren and Algren, 1997). The advancement of health science and technology has resulted in the perfection of magnetic radiologic imagery (Frush, Bisset, and Hall, 1996); angiointerventional procedures (Payne, 1998), intra-uterine vitro fertilization (Trout, Vallerand and Kermmann, 1998), and a number of other therapeutic and diagnostic procedures. These procedures are now being performed outside of the operating room with the use of CS. Nursing measures to assess satisfaction with CS are urgently needed.

One aim of this research was the development of a psychometrically valid and reliable instrument to measure patient's level of satisfaction with CS. Specifically, satisfaction will be assessed in a population of participants undergoing an ECCE with an IOLI using a content valid measure developed by the investigator. Conceptually and psychometrically valid and reliable measures of the satisfaction concepts in this population are currently unavailable.

Today the vast majority of invasive procedures performed in the United States use a form of CS (Rex, Imperiale and Portish, 1999; Early, Saifuddin, Johnson, King, and Marshall, 1999). This intervention is used to assist in making the procedure physically and emotionally comfortable for the patient (Somerson, Husted, and Sicilia, 1995). Invasive procedure acceptance on the part of the patient is essential for proper treatment (Lalos, Hovanec-Lalos, and Weber, 1997). Relatively few clinical trials have looked

at patient satisfaction or factors that influence dissatisfaction (Ristikankare, Hartikainen, Heikkinen, Janatuinen, and Julkunen, 1999). One means of assessing the level of a patient's satisfaction is using a post procedural telephone follow-up interview (Law, DiplPsychology, 1997). This technique provides a means to continue patient evaluation, identify patient concerns or problems, and assess patient satisfaction regarding care provided from the patient's perspective (Petersen, 1992).

A second method used to assess patient satisfaction is by the use of a written survey. Patients evaluate perceived levels of care via an instrument and return the survey to the facility (Perrott, Yuen, Andersen and Dodson, 2003). This method can assist in assuring patient confidentiality, especially if no identifying data is placed on the survey.

This investigation is similar to that of Tarazi and Philip (2003), in that it evaluates patient satisfaction perspectives before, during and following an invasive procedure using a written survey. The difference is that this study included only ECCE with an IOLI procedures with CS and employed a content valid Patient Satisfaction Survey (PaSS) generated by the investigator.

In order to control for potential confounding variables such as, anxiety, physical discomfort, and varying types of sedatives the investigation focused on a single invasive procedure. Extra capsular cataract extraction with an

IOLI was chosen because of the volume of potential participants and convenience.

Patient Acceptance and Cooperation

An appropriate level of sedation and analgesia is essential for patients during invasive ophthalmic procedures to ensure patient acceptance and cooperation (Stermer, Gaitini, Yudashkin, Essaian, and Tamir, 2000). This is especially true due to the delicate nature of the procedure.

Patient acceptance and cooperation is essential for the achievement of optimal patient outcomes (Mahajan, Johnson, and Marshall, 1996). Patients need to keep their eye and head still during the actual procedure to prevent unwarranted trauma. Injury may result from any invasive procedure; however, an injury to the eye structures may result in catastrophic undesirable outcomes, such as blindness.

Patient Perception

Perception plays a crucial role in the way patient's rate satisfaction. Patients perceptual rating of adequacy of their needs and desires does not always coincide with that of their health care provider as noted in the Jowell, Eisen, Onken, Bute and Ginsberg (1996) study. The Lalos et al. study (1997), of 99 patients showed an 89.9% satisfaction rate with the use of meperidine and midazolam titrated to somnolence. The study by Schutz, Lee, Schmitt, Almon, and Baillie (1994), noted 280 of their 328 patients, or 85%, were satisfied with the amount of sedation they received.

Curley's (1996), Synergy or Certification Model was set up to promote optimal patient outcomes; however, it does not provide a means to measure a patient's perspectives of the procedure or their degree of satisfaction or dissatisfaction. Lalos et al. (1997), and Putinati, Ballerin, Corbetta, Trevisani, and Potena (1999), discuss patient satisfaction with CS for a colonoscopy and bronchoscopy. Although Lalos et al. (1997) and Putinati et al. (1999) did not assess for perceived satisfaction from a patient's perspective, as their questionnaire included the same two qualitative questions: "Were you satisfied with the degree of sedation you experienced during the procedure?" and "Would you have liked deeper sedation?" A simple answer of "yes" to question one was used to determine a patient's overall satisfaction rate. An answer of "no" to question one or "yes" to question two was used to determine that some degree of dissatisfaction occurred.

Statement of Purpose

The purpose of this study was to construct an instrument to measure patient perceived satisfaction with content validity; and to conduct a pilot study to examine its reliability. The patient satisfaction concepts were generated as part of the review of the literature (ROL). These concepts included: (a) accessibility and convenience, (b) quality of experience perceived, (c) nursing-medical care, (d) communication (teaching and explanation), and (e) environment (private and comfortable). The second part of the investigation was to examine relationships between subject

characteristics identified in the ROL and satisfaction. These five characteristics included: (a) age, (b) gender, (c) ethnicity, (d) level of education, (e) first time versus same previous procedure influence, and (f) type of health care membership status.

Hypotheses

Hypothesis 1

A reliable and valid scale can be developed to measure patient satisfaction.

Hypothesis 2

Relationships exist between subject demographic characteristics and satisfaction scores on the PaSS.

Significance of the Study

Documented patient satisfaction data is important to the health care facility and its providers (Swinehart, and Smith, 2004). The results of outcome studies can be used to verify patient perceived quality of care rendered, according to Pascoe's (1983) expectancy theory. Positive outcome data reassures staff that optimal care is being provided; while less than expected ratings suggest that a change in the care giving processes may be warranted. Patient satisfaction may be enhanced by provider friendliness according to Tarazi and Philip's study (2003). Therefore, provider friendliness may predict higher patient satisfaction ratings. Dansky,

Colbert and Irwin (1996) have documented that satisfaction data is also essential for quality management processes.

Summary

Health care facilities are competing for customers in an open market (Wong, 1998). Our health care system allows patients, for the most part, flexibility to choose the physician and facility of their choice when it comes to receiving health care. Tarazi and Philip's study (2003) of 200 subjects, found that patients share their experiences with their friends, neighbors, and family members. Satisfied patients, often unaware, recruit future customers for a health care facility by sharing experiences (Burroughs, Davies, Cira, and Dunagan, 1999). And according to Tarazi and Philip's (2003) study, providing a high level of care consistent with patient desires and wishes can prove to be a determinant factor in recruiting and maintaining a set number of satisfied customers.

CHAPTER 2
REVIEW OF THE LITERATURE

A PubMed, Medline and CINAHL search for articles published between the dates of January 1996 and January 2001 was performed using the key words, procedural sedation, CS and satisfaction. This time period was chosen to limit the volume of data written and to focus on current literature and clinical trials. There were 117 articles published during the above time frame about CS in acute care and outpatient settings. Forty-six articles were selected for analysis. Articles pertaining to the following were not reviewed: animal studies, administration of CS by anesthesia providers, duplication of PubMed and Medline articles, ICU/CCU managed care, pain management, and topics unrelated to CS. A secondary search from bibliographies of selected articles was performed to identify articles prior to 1996.

The results of this review were updated using a second PubMed, Medline search for articles published between February 2001 and February 2004 using the same key words, procedural sedation, CS and satisfaction. Sixty-six articles were published during this period about CS and satisfaction in acute care and same day surgery facilities. Twenty-two articles were selected and reviewed. Articles pertaining to the following were not reviewed: animal studies, administration of CS by anesthesia providers, duplication of PubMed and Medline articles, ICU/CCU managed care, pain management, and topics unrelated to CS. A secondary search from

bibliographies of selected articles was performed to identify articles prior to February 2001. The following is a synthesis of the findings generated by this review.

Procedural Sedation

The use of CS has significantly increased as a direct result of the advancement of medical science and technology (Messinger, Hoffman, O'Donnell. and Dunsworth, 1999). As evidenced by a ROL, CS use is becoming more prevalent for patients undergoing therapeutic and diagnostic procedures. Institutional CS guidelines need to be consistent as a standard of care for all units including clinical, environmental, and staff-related requirements (Sectish, 1997). The shift is on. Conscious sedation is fast becoming the preferred method of anxiety and pain relief for invasive procedures (Mokhashi, and Hawes, 1998; Murphy, 1996). Conscious Sedation doesn't require anesthesia providers or highly specialized equipment, and it enables clinicians to perform many new therapeutic and diagnostic procedures in hospital and clinic settings (JCAHO, 1998).

This advancement has perfected therapeutic and diagnostic procedures such as percutaneous radiologic and endoscopic gastrostomy tube placement (Wollman and D'Agostino, 1997; Liacouras, Mascarenhas, Poon and Wenner, 1998), angiointerventional procedures (Payne, 1998), magnetic radiologic imagery (Frush et al., 1996), and abdominal cosmetic surgery (Rosenberg, Palaia, and Bonanno, 2001) to name a few. These

therapeutic procedures and diagnostic testing techniques were performed in the operating room under the care of an anesthesia provider or were unperfected eight to fifteen years ago.

Yes, the health care system continues to experience rapid change. Curley (1996) believes problems in providing health care have been impacted by staffing ratios, cost regulations, and patient outcomes. These concerns coupled with the drive to maintain one's competency have made a significant challenge for nurses. Competency can be defined as the ability to perform basic measurable and tangible acts (Crabill, Mundy, Piombino, Raymond, and Rooks, (1995, p. 2). According to Curley (1996), nurses made a commitment, in the mid to late seventies, to provide appropriate care for their patients by setting up an ongoing credentialing and recertification process. Credentialing and recertification has become nursing's method to ensure nursing practice is fulfilling patient requirements. Curley's Synergy or Certification Model is based on meeting individual patient needs. Therefore, patients' needs drive nurse competencies through certification and ongoing credentialing. When nursing competencies are derived from patient needs and requirements, optimal patient outcomes ensue. Synergy occurs when patient needs are met by competencies due to these optimal patient outcomes.

Conscious Sedation

Curley (1996) believes moving these procedures too less acute settings have influenced nursing practices associated with the patient's sedation needs. This change has not occurred based on a foundation of evidence. Health care facilities are revisiting conscious (also called procedural) sedation guidelines to provide a consistent standard of care that's comparable from one unit to another to meet state requirements and those of the JCAHO (Sectish, 1997). To assist in validating appropriate JCAHO guidelines for CS; and to approach the clinical, environmental, and staff-related requirements from an evidence-based point of view one needs to consider: (a) how is CS different;(b) how do current guidelines need to be altered; (c) what are the essential components of a CS system; (d) what documents a competent provider; (e) what system wide standards are needed; and (f) what are the benefits of CS. The state of the science related to each of these questions is addressed below.

How is Conscious Sedation Different

Conscious sedation is the administration of systemic medications by any route to produce sedation, with or without analgesia during a procedure (JCAHO, 1998). The purpose is to lessen anxiety and allow patients to tolerate unpleasant situations or procedures with less risk to cardiovascular and respiratory function (Froehlich, Thorens, Schwizer, Preisig, Kohler, Hays, et al., 1997). Conscious sedation leads to a sedated state where patients:

(a) keep their protective airway reflexes intact; (b) maintain their vital signs within normal limits; and (c) are able to follow commands (Trout, Vallerand and Kermmann, 1998).

Patients generally tolerate CS well with less physical discomfort and anxiety about and during the procedure, but these positive effects don't come without potential risks (Higgins, Hearn, and Maurer, 1996; Murphy, 1996). Studies show that CS can progress to deep sedation, which causes patients to be unable to follow commends, lose protective airway reflexes, or experience unstable cardiovascular and respiratory function (JCAHO, 1998; Gross, Farmington, Bailey, Ny, Connis, Woodinville, et al., 2002).

Keep in mind, that according to JCAHO (1998), CS doesn't include: (a) general anesthesia; (b) peripheral nerve blocks, local or topical anesthesia, or up to 50% nitrous oxide, when other systemic sedatives or analgesics are administered; and (c) oral premedication for anxiolysis or analgesia in adults (for example, 1 to 2 mg of Lorazepam taken orally) (Lang and Hamilton, 1994).

How Do Current Guidelines Need to be Altered

Every health care facility's CS mission aims to provide comparable levels of care for all patients undergoing sedation (Murphy, 1996; JCAHO, 1998). To meet JCAHO requirements for a consistent standard of care throughout a facility regardless of the location, facilities need: (a) comparable guidelines for CS that encompass all units within a facility (Algren and

Algren, 1997); (b) knowledgeable and competent staff who manage the consciously sedated patient (Kost, 1999); (c) equipment to continuously monitor the patients' cardiopulmonary function throughout the procedure and postprocedure (Kost); and (d) a treatment plan and emergency equipment for adverse occurrences should they arise (Algren and Algren).

In our health care environment, our services are expanding, resources are stretched (Mokhashi and Hawes, 1998) and we need to expedite diagnoses and procedures in a competitive economic environment. These factors boost the number of requests to perform therapeutic and diagnostic procedures even for the higher-acuity patients (Jagoda, and Campbell, 1998) who have an increasing number of abnormal laboratory values.

Departments and units within an institution where consciously sedated patients are managed need to standardize care parameters for all patients (Foster, 2000). Providing a comparable level of care among the units in every institution requires collaborative acceptance, support, ongoing staff development, and quality improvement monitoring (Jagoda and Campbell).

What Are the Essential Components of a Conscious Sedation System

The Joint Commission has established CS standards aimed at protecting the patient (Jagoda and Campbell, 1998). Every accredited facility's CS standard of care reflects the guidelines and recommendations of JCAHO (1998). These guideline standards ensure CS is addressing: (a) risks and benefits; (b) physical history and evaluation; (c) agent selection and

range of sedation; (d) resuscitation readiness; (e) monitoring and continual assessment; (f) recovery; and (g) discharge criteria (American Academy of Pediatrics, 1992; Trout et al., 1998).

Risks and Benefits

Patients have the right and need to be informed of the risks, benefits, and alternatives to CS (Algren and Algren, 1997). Because of the risks involved, clinicians should ask these questions before proceeding: (a) does the patient need sedation (Higgins et al., 1996); (b) will the sedation lessen anxiety, physical discomfort, or both (Froehlich et al., 1997); (c) would an alternative diagnostic method such as guided imagery achieve a comparable result (Bechler-Karsch, 1993).

Physical History and Evaluation

A preprocedural patient assessment must be performed and documented within 30 days before the procedure. When the assessment is performed in advance, a clinician needs to record in the patient's chart that there's been no change in the patient's medical history or physical condition before starting the procedure (Gritter, 1998). The history should include: (a) current medications (Gross et al., 2002); (b) previous allergic responses to medications or latex products (Gritter, 1998); (c) preprocedural nothing-by-mouth status (Kost, 1999); (d) history of substance abuse, which may influence the dosage requirement of sedation pharmaceuticals (Gross, 2002); (e) presence of major organ abnormalities such as chronic obstructive

pulmonary disease, coronary artery disease, diabetes mellitus, and renal failure (Gross, 2002); and (f) baseline vital signs (Kost 1999). Verification should also take place of the availability of a responsible adult to take them home (Foster, 2000).

Agent Selection and Range of Sedation/Resuscitation Readiness

It's best to select CS agents according to the procedure, familiarity of the provider, and information from the patient's history and physical assessment (Gross et al., 1996). Providing patient-specific dose requirements enhances care quality and patient satisfaction keeping patient discomfort to a minimum (Murphy, 1996). Resuscitative equipment must be readily available in any location where patients receive CS (Algren and Algren, 1997). This requires careful assessment and planning for all areas in every institution that provides CS when performing procedures (Frush et al., 1996). A process also needs to be in place for regularly testing of equipment and checking it before each sedation procedure to ensure proper functioning (American Academy on Pediatrics, 1992).

Gross et al. (1996), the authors of the American Association of Anesthesiology guideline policy state the continuum of CS ranges from full awareness to light sedation to CS. As the depth of sedation increases, so does the patient's potential to progress to deep sedation, loss of airway protective reflexes, and inability to follow commands (Kost, 1999). If the patient progresses to deep sedation, the nurse should immediately call an

anesthesia provider to assist and manage the patient's airway (Gross et al., 1996).

Monitoring and Continual Assessment

Continuous monitoring and recording of vital parameters (blood pressure, electrocardiogram, pulse, respiratory rate, and oxygen saturation level), and level of consciousness is essential at least every 5 to 15 minutes during the procedure and until the patient reaches established recovery criteria (Higgins et al., 1996; Trout et al., 1998). The monitoring practitioner or the department may increase the frequency of assessment when indicated by the nature of the procedure or the patient's acuity.

Recovery

Recovery is the time frame from the end of the procedure until the patient has returned to their baseline and is ready for discharge home. Ambulatory sedated patients are assessed comparable to inpatients for recovery purposes. The use of an objective anesthesia recovery scoring system is ideal, with the exception of patients in critical care areas. Consider patients recovered when they return to and maintain an acceptable score (Wooden, 1996), as set by the anesthesia department or a physician's written order.

When reversal agents are required an established and appropriate recovery time frame is required to ensure that resedation doesn't occur (Frush et al., 1996; Greenwald, 2004). Reversal agents wear off more

quickly, due to a shorter half-life, than the analgesics and sedatives that they are reversing (Messinger, Hoffman, O'Donnell, and Dunsworth, 1999). When patients who haven't fully recovered are transported from one department to another, a qualified staff member needs to accompany and continue monitoring their vital parameters and level of consciousness for potential delayed untoward effects (Foster, 2000).

Discharge Criteria

Facility discharge criteria requires recording the mode of transportation home and the name of a responsible person to whom the patient is discharged in the medical record. Give both verbal and written discharge instructions to the patient and responsible adult (Algren and Algren, 1997). The patient may forget the instructions because some sedatives produce an amnesic effect. Ideally patients are discharged with a responsible adult; however, a select group of patients may be unable to be accompanied home by a responsible adult following CS. During these circumstances, a patient may be discharged home on their own provided they meet appropriate predefined institutional criteria. Patients should be advised against driving a vehicle, operating mechanical equipment, or signing legal documents for a minimum of 24 hours following sedation. And, verify that each patient has ready access to emergency contact numbers where they can reach assistance around-the-clock (Somerson et al., 1995).

What Documents a Competent Provider

The JCAHO (1999) mandates that hospital-based practitioners are competent providers who provide CS should be credentialed by the facility in which they practice. Nurses who provide care for patients receiving CS need to be clinically competent to provide adequate sedation and recognize and respond to potential risks (Curley, 1996). Some experts also believe that all licensed practitioners providing CS should be credentialed by the facility in which they practice (Pierzchajlo, Ackermann and Vogel, 1997). A nurse may administer CS if they are permitted by their state Nurse Practice Act and institutional policy (Kost 1999).

Leaders are marketers of knowledge and therefore, need to educate staff nurses about the facility's CS guidelines (Ramsborg, 1993). These guidelines include: (a) procedural steps such as medication administration, monitoring, and documentation; (b) sedative medications and their effects and adverse effects; (c) potential risks and how to recognize and respond to them; and (d) how to operate the required monitoring devices and resuscitative equipment (American Academy of Pediatrics, 1992). Inappropriate sedation management commonly results from fear of cardiovascular or respiratory depression, and from underestimating or overestimating individual patient requirements (Jagoda and Campbell, 1998). Therefore in order for CS guidelines to be effective, nurses need to be knowledgeable and clinically competent (Curley, 1996).

What System Wide Standards Are Needed

Individual departmental care should meet a consistent standard for all units administering CS in a given facility (Jagoda and Campbell, 1998). Some departments may increase monitoring standards due to the nature of the procedure or patient acuity; however, the basic guidelines must be met. It is essential to provide minimum, comparable guidelines for each unit, with competent staff, and adequate physical resources to accommodate the trend toward providing more procedures and diagnostic tests on an outpatient basis.

Developing a facility care plan process that crosses all departments ensures that individual units provide a comparable level of patient monitoring and care for sedated patients (Wong, 1998). Continuity of care requires coordinated linkages that transport across settings and providers (Sparbel and Anderson, 2000). Continuous quality improvement (CQI) surveys can verify comparable and continuity of care among departments (American Academy of Pediatrics, 1992). When generic survey forms are incorporated it makes it easier to assess for continuity of patient care compliance, at-risk and potential at-risk areas, and patient outcomes (Jagoda and Campbell, 1998).

What Are the Benefits of Conscious Sedation

Conscious sedation is a relatively safe and cost-effective means to provide sedation or analgesia to outpatients undergoing modern therapeutic

and diagnostic procedures (Kaldenberg and Becker, 2003). Conscious sedation can provide needed comfort and sedation for a short duration and can occur in both inpatient and outpatient settings (Algren and Algren, 1997). Patients recover quickly and can perform their activities of daily living faster than if they receive a general anesthetic (Rogge, Elmore, Mahoney, Brown, Troiano, Wagner, et al., (1994).

Since sedation is a continuum process, it's not always possible to judge how each individual patient will respond (Gross et al., 1996). Therefore, each institution needs to develop their own patient-care guidelines whenever there's risk for loss of protective reflexes and/or consciousness (Gross et al., 2002). These guidelines need to include: (a) adequate trained providers present to perform the procedure, and (an additional trained provider) to monitor the patient; (b) all necessary equipment for resuscitative care; (c) monitoring vital parameters such as: blood pressure, cardiac and respiratory rates, oxygenation and level of consciousness; (d) documentation of preprocedural, intraprocedural, postprocedural and discharge care; and (e) monitoring of patient outcomes (JCAHO, 1999; Gross, 2002).

Sedation Versus No Sedation

According to Ristikankare, Hartikainen, Janatuinen, and Julkunen (1999), and Rex et al. (1999), the vast majority of invasive procedures performed in the United States use a form of CS. However, CS does not come without risks (Kost, 1999). These risks include cardio-pulmonary

depression and the potential for aspiration (Jagoda et al, 1998; Higgins et al., 1996). The Ristikankare et al., article goes on to state that more controlled clinical trails are needed to adequately justify routinely offering CS for every patient.

The Early, Saifuddin, Johnson, King, and Marshall (1999), study stated that there are a number of advantages in performing some invasive procedures without sedation. They sought to describe patient determinates/correlates when no sedation was administered in three different practice settings, and to look for patient characteristics that might predict a willingness to try it. Before and after questionnaires were completed on four hundred thirty-four adult outpatients. Demographic data were collected and used to assess patient willingness to have an invasive procedure without CS. Ten or 2.3% of these patients actually underwent an invasive procedure unsedated. However, 16.9% stated on their preprocedure questionnaire that they would be willing to forfeit sedation during an invasive procedure. This percentage increased to 22.6% on the postprocedure questionnaire. An analysis of demographic data showed that male gender, holding a college degree, possessing a low anxiety score, and receiving lower doses of sedation during the procedure were good predictors of undergoing a future invasive procedure without sedation.

Theoretical Framework

An integrative ROL was conducted related to satisfaction that delineated concepts to satisfaction. Theoretical framework concepts were created; which were thought to be associated with satisfaction. A content valid measure of satisfaction was developed consisting of items to operationalize each concept in the framework. The next step tested psychometric reliability and validity on the measure (PaSS). A new conceptual framework was generated from the factor reduction themes of caring and comfort associated with satisfaction. Unable to assure the other concepts are not related to dissatisfaction because there were no dissatisfied respondents. The theoretical framework is depicted in Figure 1 on page 29.

Psychometric Analysis

Hypothesis 1

An integrative ROL was conducted to identify factors thought to be associated with satisfaction, and a content valid instrument (PaSS) was generated. Two professional nursing experts in instrument construction then evaluated the instrument for face validity. Psychometric analyses of the PaSS's reliability included: (a) determination of frequencies (numbers, and means scores; (b) factor reduction analysis using SPSS 10; (c) determination of estimates of reliability (coefficient alpha); and (d) inter item (question and concept) reliability (Cronbach alpha) measures.

Hypothesis 2

Factors that were hypothesized to relate to satisfaction were analyzed using: (a) frequencies (numbers, percents, means [preoperative, intraoperative, and postoperative] and standard deviations), and (b) potential associations with scores. The results were then compared to findings in the ROL.

Satisfaction

Care quality is a major concern when providing any form of health care service. Health care managers remain in a continual rules and regulations state of flux in a competitive health care environment (Wright, 2003). Trying to maintain the equilibrium between service quality and expenditures with limited resources creates a challenge for all health care institutions in today's market (Merkouris, Papathanassoglou, & Lemonidou, 2004). Monitoring and evaluating patient satisfaction's primary purpose is to improve care quality. Patient satisfaction has become an outcome measure in health care (Stutts, 2001). Wolosin (2003) stated, patient satisfaction literature in outpatient settings tends to be sparse; and a limited number of such reporting can be found in health related literature reviews. More patient satisfaction clinical trials are warranted using concepts taken from the ROL and JCAHO suggested recommendations.

Weiland (1992), believes health care facilities are using a variety of marketing strategies in the escalating business of health. These strategies

are assisting businesses to survive and expand in a market with increasing competition and decreasing health care dollar reimbursement. Continuous quality improvement (CQI) is one such marketing strategy. Continuous quality improvement practices are internal to an organization and driven by management (Sinoris, 1990). Business organizations need to start by finding out what customers feel about the services provided prior to initiating change in the form of a CQI program (Weiland, 1992).

Once an ambulatory surgery center sets its CQI parameters, the next step is to establish a reliable mechanism of measuring outcome performance against those preset goals. Besides monitoring unforeseen outcomes and patient safety, patient satisfaction might be included. One example might be to track the number of patients receiving medication for post procedure nausea and vomiting (Smith, 2001, p. 106). It is a documented fact that a common side effect of narcotics is nausea (Algren and Algren, 1997). Using the premise that nausea may lead to patient dissatisfaction, and that agents are available to treat nausea translates into improved patient satisfaction (Smith, 2001, pp. 107).

Theoretical Satisfaction Concepts

John (1992) found patients were more likely to be satisfied when they were given a greater choice of facility selection. This study also noted that about one-half of all patients consulted an outside opinion prior to a health care system selection. Kaldenberg and Becker's (1999) study noted ease of

obtaining an appointment and parking convenience were somewhat important; but, not as important as staff friendliness. Burroughs et al. (1999) found comparable patient satisfaction ratings as Kaldenberg and Becker's in ease of appointment scheduling and convenience of parking. And the Whitworth, Pickering, Mulwanyi, Ruberantwari, Dolin, and Johnson study (1999), also showed health care accessibility and cost as the primary conceptual determinants as to whether subjects followed through with needed opthalmic procedures.

Holland, Counte, and Hinrichs (1995), reported personnel courtesy and customer perceived quality of care predicted satisfaction ratings. Patient's perceptions about staff concern for their comfort was associated with satisfaction in the Kaldenberg and Beck (2003) study. However, patient's perceptions do not always coincide to that of their health care providers. Tarazi and Philip (2003) found patient perceived staff friendliness received the highest ratings in care provided.

Cleary and Mc Neal (1988) believed the concept of providing care on a personal level is associated with higher patient satisfaction; and this is especially true when displayed with empathy, caring and personal communication. Tarazi and Philip's (2003) cataract study found friendliness of operating room staff rank ordered as number one, followed by the physician visit following surgery as number two.

Nijkamp, Nuijts, Borne, Webers, Horst, and Hendrikse's (2000) study of 150 ophthalmic patients found that satisfaction correlated with perceived preprocedure expectations and quality of care received. Preoperative education is a key driver here, as it assists in setting expectations in a surgical cataract setting. This finding emphasizes the need for nurses to educate patients and provide information about realistic expectations.

Preoperative teaching and procedure explanation were found to be associated with satisfaction in the Holland et al. (1995), and Kaldenberg and Becker (2003) studies. Swan, Richardson, and Hutton's (2003), field study reported that an aesthetic environment generated a higher number of positive patient evaluations. Holland et al. (1995) study found physical privacy and physical environment significant. A comfortable waiting room was rated of significant importance in the Tarazi and Philip (2003) cataract study. Cleanliness also was found significant in the Kaldenberg and Becker (2003), study of 70, 079 patients; but, not as significant as staff friendliness. Stutts (2001) believes monitoring and evaluating customer satisfaction ultimately leads to improving patient quality care. The degree in which health care facilities satisfy patients can be a huge determinant of one's viability in the current competitive market (Yavas and Shemwell, 1996).

Potential Satisfaction Correlates

Relatively few clinical trials have looked at patient satisfaction or predictor correlates that may influence patient satisfaction or dissatisfaction

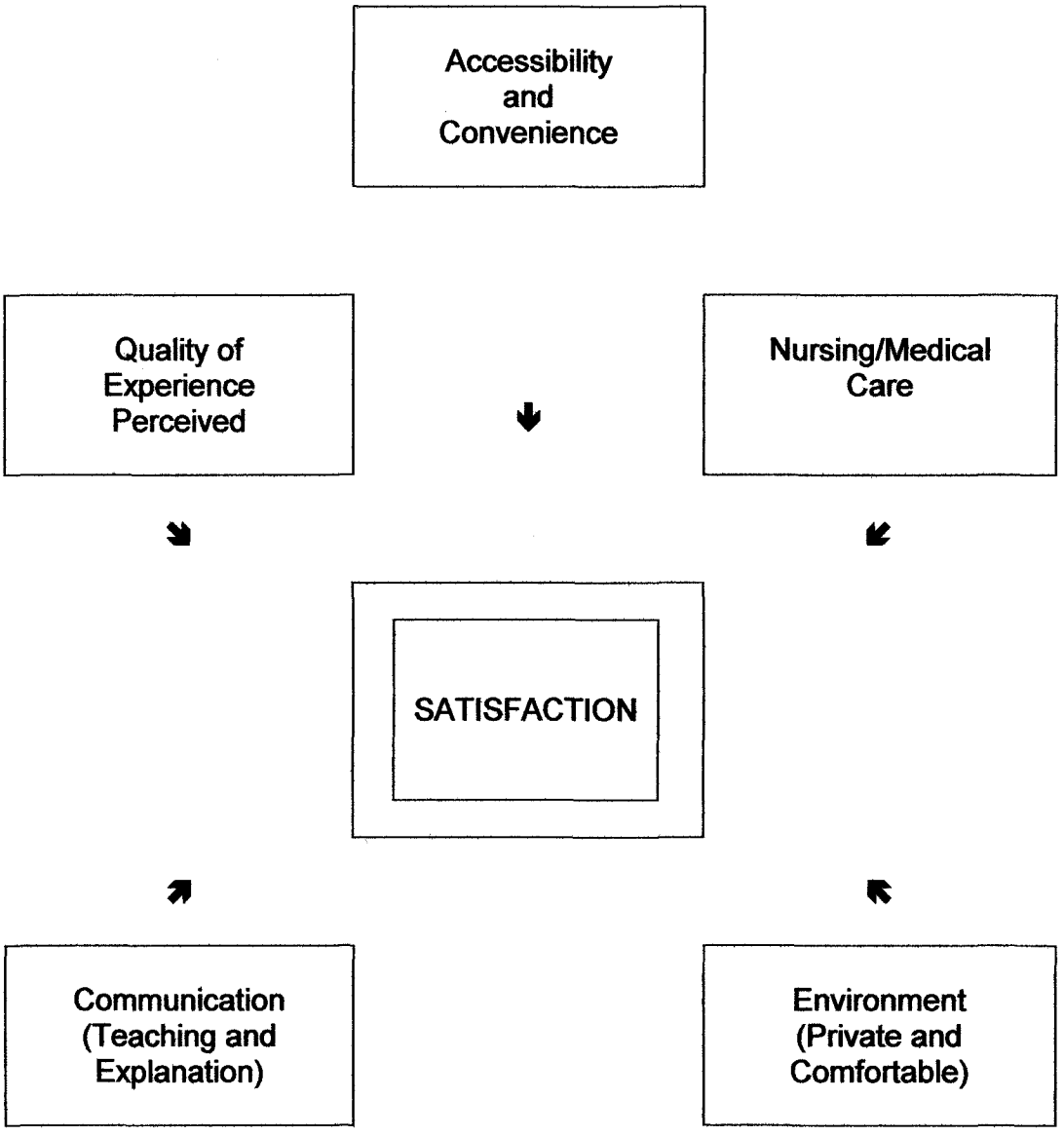
(Ristikankare et al., 1999). According to the Froehlich et al. (1997) study of 150 patients, male gender, and shorter procedure duration were associated with patient tolerance and less procedure pain. However, patient satisfaction ratings were similar in all groups. Multivariable analysis revealed that a higher education level and longer procedure duration were associated with patient dissatisfaction according to the Schultz et al. study (1994). This investigation that included 328 patients found no difference in patient satisfaction scoring in respect to patient age and gender. Lalos et al. (1997) reported their satisfied and dissatisfied patient groups differed only when there was an outpatient history of prescription narcotic use. This study's level of satisfaction ratings also found no significant difference in satisfaction dependent on age, gender, and history of previous invasive procedure experiences.

Kaldenberg and Becker's (1999), study included 36,078 patients involved in 275 ambulatory surgery centers across the country. Their findings showed female patients tended to be more satisfied than males, and the elderly provided higher ratings than younger patients. However, the potential influence of ethnicity, education, martial status and income were less conclusive. This study also concluded that socio-demographic characteristics were minor predictors of patient satisfaction. Stutts (2001) concurred that there is not an associated pattern between patient satisfaction and ethnicity, education, or age. However, a lower income level appeared to

lead to lower patient satisfaction rating scores. And, Reshef and Reshef (1997) reported culture influenced health behavior correlate differences and level of patient satisfaction in their opthalmic study.

Figure 1, on page 29, describes the theoretical framework generated from the literature related to patient satisfaction. These concepts from the ROL were used to delineate the criteria and items for the instrument selection.

Figure 1: PaSS Concepts



Satisfaction Defined

Walsh and Walsh (1999) believe satisfaction is a subjective concept with undefined variables and boundaries. A conceptual definition of patient satisfaction is yet to be accepted (Williams, Coyle and Healy, 1998). The Concise Oxford English Dictionary (2003), defines satisfaction as an individual perception of adequate, sufficient, meeting one's desire, need, or expectation. The words perception, adequate, sufficient, and expectation have subjective rather than an objective connotation. For purposes of this study, satisfaction is defined as confident acceptance of anything that proves to be dependable or true reflecting the patient's perception of: (a) accessibility and convenience, (b) nursing/medical care, (c) environment (private and comfortable), (d) quality of experience, and (e) communication (teaching and explanation). Patient satisfaction is a subjective concept that can be measured using a proxy measure (a numerical score reflecting the quality of the experience).

Measures of Satisfaction

Although a multitude of patient satisfaction surveys exist there are significant theoretical and methodological issues associated with their validity and reliability (Williams et al., 1999). In part this is true, because of the lack of a consensus of the conceptual definition of satisfaction (Thompson and Sunol, 1995). Furthermore, their usefulness in promoting positive changes in the health care industry has also been in question (Williams et al., 1999).

A literature search was conducted for patient perceived satisfaction instruments. No instruments including those from Risser (Cottrell and Grubbs, 1994), Spielberger (Spielberger, 1983), and Attkisson and Greenfield (Attkisson and Greenfield, 1996) deal with conceptual notion of satisfaction selected for this investigation related to patient perceived satisfaction when undergoing an invasive procedure while consciously sedated. Existing instruments are global in nature, and are not specific to patient satisfaction relating to invasive procedures used for this study. The Early et al. (1999), study dealt with sedation satisfaction, and estimated correlates of patients willing to undergo an invasive procedure without sedation. And the Putinati et al. (1999), study copied the Early et al. two-research questions.

Instruments used for community-based assessments of satisfaction were also explored. Community instruments used in other competitive health care facilities were checklists devised by each facility. Again, these checklist type instruments did not address the conceptual notion of satisfaction used in this investigation. These instruments were global in nature and inflexible in form (Swinehart and Smith, 2004).

Patient Satisfaction Survey Construction and Development

An instrument with both content and face validity was constructed. The PaSS is a proxy measure of satisfaction. It was derived and based on

the conceptual definition of satisfaction, generated following an analysis of the literature.

The original PaSS instrument consisted of 16 items, and was intended to be applicable in the adult population, and to be useful in evaluating care received from an ambulatory health care perspective. The original instrument was revised in order to obtain more specific data relating to an invasive procedure while consciously sedated. This resultant measure consisted of 16 items in six categories. Eight items were stated in order to obtain a satisfied response and eight items were stated in order to obtain a dissatisfied response. This technique was instituted in order to make these subjects think about their response prior to answering, and at the recommendation of two graduate faculty colleagues that reviewed this instrument for completeness and clarity. A pilot study consisting of ten surveys administered by registered nurses revealed that when these questions were read to patients over the telephone the day following their invasive procedure, the patients became easily confused and had difficultly in responding. In addition some of the items were too long (wordy). Lastly, the procedure process was not completely covered in the three areas of care. These three areas of care consist of: before, during and following their invasive procedure are process driven (Tarazi and Philip, 2003). The three areas of care were included in order to look for variables that may warrant improvement or change during the care process.

The tool was revised and the six scales reduced to five to prevent redundancy. The number of items however was increased from 16 to 22, and the items were changed to reflect a satisfied response instead of one-half seeking a satisfied response while the second-half initiating an unsatisfied response because of feedback from respondents regarding confusion with the previous form. The items were also shortened from sentences to phrases written at the sixth grade reading level.

At this point a second pilot study of ten surveys was administered to patients having an ECCE with an IOLI. Subjects in this second pilot found all items clear and complete. However, these middle to elderly aged patients following an ophthalmic procedure had difficultly in reading the print size of the questions. Therefore the font size was increased so that the measure was readable.

Measure of Satisfaction

The PaSS was constructed to measure concepts associated with patient satisfaction generated from a ROL. A content valid instrument (PaSS) was developed with a total of 22 question items. The five subscale component concepts include: (a) accessibility and convenience, (b) quality of experience perceived, (c) nursing-medical care, (d) communication (teaching and explanation), and (e) environment (private and comfortable). These five concepts are proposed to determine a patient's level of satisfaction with each

health care visit. The conceptual definitions of these concepts are provided in Table 1.

Table 1. PaSS Concept Definitions

1. *Accessibility and Convenience* - measures the availability for obtaining health care and the convenience of physically getting to said location.
2. *Quality of Experience Perceived* - is the patients overall perception of the quality of care received during the visit.
3. *Nursing-Medical Care* - is the quality of care received directly from the nurse and physician as perceived by the patient.
4. *Communication* - includes patient teaching and explanation. Patients evaluate these two areas according to their respective level of understanding.
5. *Environment* - encompasses privacy and comfort. Patients rate the environment in relation to the degree of privacy and level of physical comfort received.

Demographic Factors Associated with Satisfaction

The second purpose of this study was to identify factors associated with satisfaction or dissatisfaction when undergoing an invasive ophthalmic procedure while under CS using the PaSS scale. From the ROL six demographic factors were identified that might influence a subject's level of satisfaction. These six factor determinants were: (a) age, (b) gender, (c) ethnicity, (d) level of education, (e) prior cataract procedure (experience), and (f) type of health plan membership. Each of these potential determinants were included on the PaSS questionnaire.

Summary

As the market of ambulatory services increases, so does the competition (Bopp, 1990; Pavia, 2002). To compete successfully, outpatient settings are being required to demonstrate that they deliver high quality service at an affordable cost (Stutts, 2001). This is where patient satisfaction plays a role. Health regulators, providers, and researchers have advocated that patient satisfaction is an effective measure of healthcare quality (Donabedian, 1988). Patient loyalty is connected to patient satisfaction (John, 1992). Satisfied patients tell others about their positive experience, which recruits referrals and facility profitability (Burroughs, Davies, Cira, and Dunagan, 1999). And according to Hall and Dornan (1990), satisfied patients are more likely to adhere to treatment recommendations, which generate fewer legal disputes and higher outcome ratings. Consistency in conceptual

definitions of satisfaction and the development of reliable and valid tools to measure satisfaction is essential to the achievement of goals related to patient satisfaction. A content valid tool with face validity the PaSS is available to consistently operationalize satisfaction. Identification of factors associated with satisfaction is also critical.

CHAPTER 3
METHODOLOGY

Research Design

This research study employed a descriptive retrospective design. The dependent variable was operationalized as satisfaction or dissatisfaction with CS as measured on the PaSS a content valid instrument with face validity. The independent (predictor) variables were factor scores reflecting a subject's level of satisfaction. Potential determinant (demographic) variables such as the subject's: (a) age, (b) gender, (c) ethnicity, (c) level of education, (d) first time or previous cataract experience (procedure), and (e) type of health care membership hypothesized to influence a participant's satisfaction were also measured.

Sample

Sample Size Estimation

In order to estimate the sample size needed to result in confidence in the findings from this investigation the number of classificatory and predictor variables that would be analyzed were determined. Too few cases would increase sampling error and reduce confidence in the findings. Traditional power analysis calculations were not possible because inadequate information was available about effect size. However, an adequate sample size for analysis can be calculated using alternative methods and comparing the results for consistency. The first calculation method is to use the formula

N = $\geq$ 50 + 8 times the number of variables in the survey (personal communication, R. Randall, March 20, 2003). There are 28 variables in this study, therefore the minimum sample size can be calculated as [50 + 8(28)] = 274. A second simple method is 10 times the number of variables (Randall). This would calculate out to 10(28) = 280 subjects. These two methods suggest a minimum of about 300 subjects were needed to be enrolled from this population.

Sample Selection

Three-hundred nine ethnically and gender diverse subjects belonging to a mid-pacific health care plan requiring an ECCE with an IOLI type of procedure were recruited for this study.

A sample of convenience was used to obtain subjects belonging to the same health care plan in the western part of the United States. Inclusion criteria include: (a) adults above the age of 21 years; (b) ability to read and speak English; (c) participants undergoing an ECCE with an IOLI; and (d) subjects willing to participant. Exclusion criteria included: (a) sensitivity to the study medication agents (Habib et al., 2004); (b) subjects currently taking barbiturates or analgesics; patients with a diagnosis of dementia or currently taking a psychotropic agent (Habib, 2004); and (c) patients refusing to participant (Schultz et al., 1994). Recruitment was by approaching subjects in a clinic setting prior to being scheduled for an invasive ophthalmic

procedure. Subject selection consisted of individuals meeting the above inclusion and exclusion criteria.

Instrument

The investigator developed a content and face valid instrument. The PaSS was used as the proxy measure for satisfaction. A seven point Likert scale of one through seven followed each question. Instructions stated: we want to know your perception of care you received before, during and after your cataract surgery. Please use the scale provided where: 1 = poor, 2 = somewhat fair, 3 = fair, 4 = average/expected, 5 = good, 6 = very good, and 7 = excellent (Appendix A). Totaling scale responses created scores. See Table 2, PaSS Item Scoring.

Table 2. PaSS Item Scoring

Item Numbers	Original Response Value	Scored Value
1 through 22	7 6 5 4 3 2 1	7 6 5 4 3 2 1

Procedure

Adult Outpatient Post-Procedure Follow-up

PaSS data was used to measure patient satisfaction prior, during and following an ECCE with IOLI procedure while receiving CS. In addition to a

local anesthetic, a combination of midazolam and propofol for sedation and fentanyl for analgesia was used for all participants. Amounts of each drug were titrated to effect by one of five credentialed nurse practitioners.

All patients that underwent an ECCE with IOLI from May 1, 2003 through December 31, 2003 were invited to participate. In addition to their discharge teaching, subjects that indicated an earlier interest in participating in this study were asked if they still wanted to be a part of this research investigation by post anesthesia care unit nurses. All affirmative responses were provided a survey (Appendix A) and cover letter (Appendix B).

Subjects were shown a copy of the PaSS and instructed to: (a) complete the six demographic questions with a single answer; (b) rate their care preoperatively, intraoperatively and postoperatively by circling a 1 through 7 Likert scale numerical response provided that best represented their perceived satisfaction with the care they received during this invasive procedure today; (c) leave no unanswered questions; and (d) refrain from placing any personal data on the forms that might identify them.

These participants were then asked to take the surveys home, complete them at their leisure, and to return the surveys to their clinic nurse the following morning during their first postoperative visit with their physician. This was the time patients returned their completed PaSS forms if they chose to participate in this study. Five hundred surveys were distributed in order to

assure that minimum sampling requirements were met. Three hundred nine completed PaSS forms were returned.

For purposes of anonymity a coded number, of one to 309, known only to the principle investigator was used to identify each participant's data. No names, medical record or telephone numbers or other identifying data appeared on the survey collection documents. Number coding with no identifying data was selected to prevent subject identity (Streubert and Carpenter, 1999, p. 34).

Analyses

The hypotheses served as a framework for the analyses. The first hypothesis is: it is possible to develop a valid and reliable scale to measure patient satisfaction. The second hypothesis can: (a) theoretical concepts; and (b) potential subject characteristics be identified that are associated with satisfaction. The descriptive and inferential statistical procedures to address each of these hypotheses are presented in Table 3.

Table 3: Summary of Analyses Organized by Hypothesis

Hypothesis	Purpose	Psychometric Analysis
Hypothesis 1 A reliable and valid scale can be developed to measure patient satisfaction.	Develop a valid and reliable scale that measures: (a) patient satisfaction; and (b) theoretical concepts from the ROL	Face Validity Nursing expert evaluation Factor Reduction Analysis using SPSS 10 Estimates of reliability Coefficient alpha Inter Item reliability Cronbach alpha Frequencies Numbers Mean Scores
Hypothesis 2 Relationships exist between subject demographic characteristics and satisfaction scores on the PaSS	To determine relationships exist between subject demographic characteristics and satisfaction scores on the PaSS	Frequencies Numbers Percents Means Scores Multiple Regression Compare Concept and Demographic Findings with the ROL

Human Subjects

The Institutional Review Boards of a mid sized HMO in the mid Pacific and the University of Hawaii at Manoa approved the study prior to its implementation. Since no patient identifying information was given to the nurse researcher the two institutional review boards considered this to be exempt research. Therefore, written patient consent forms were not deemed necessary. This decision assisted in maintaining patient anonymity. However, this study was explained to patients verbally in the clinic setting prior to their procedure, and asked if they would like to be included.

Consent

The University of Hawaii at Manoa and a mid-pacific health maintenance organization's (HMO) Institutional Review Boards were asked for study approval. Written informed consents were not obtained in order to maintain patient anonymity (Streubert and Carpenter, 1999, p. 34). Subjects willing to participate in the study were asked to complete all demographic and PaSS questions and to return their completed surveys the morning following their procedure. To secure storage, protection and destruction of the PaSS data was noted in the Internal Review Board (IRB) applications (Denzin and Lincoln, 2000, p. 139). No attempt was made to convince subjects to undergo their procedure without sedation. All subjects in this study received an intervention (conscious sedation), and independently completed the PaSS questionnaire.

Risks

There were no physical risks to participants. All subject identification data were kept confidential and no identifying information was included on collected materials. The HMO's Research Board, in cooperation with the University of Hawaii Clinical Research Center granted Internal Review Board approval.

CHAPTER 4
FINDINGS

The findings are organized according to the hypotheses and the subheading, as shown in Table 3. First, the descriptive findings are presented. These data were analyzed by frequencies consisting of numbers, percents, and means. The second section addresses the validity and reliability of the PaSS. Face validity was affirmed using nursing expert evaluation. The PaSS scale reliability was evaluated using SPSS 10 and the following procedures: (a) factor reduction; (b) descriptive analysis; (c) estimates of reliability computed using coefficient alpha; and (d) inter item reliability was determined using a Cronbach alpha procedure; and (e) comparing the findings of this study with that presented in the ROL.

Finally the data related to potential concept determinants were analyzed using: (a) frequencies consisting of numbers and mean scores; and (b) inter item/factor reliability via Cronbach alpha.

Five hundred subjects indicated an interest in participating in this study. Three hundred nine completed the PaSS and returned it the following morning. However, following raw data analysis and factor reduction 4 surveys, and 3 PaSS questions were discarded; leaving 305 surveys and 19 questions included in the statistical analysis.

Descriptive Statistics

Frequencies

The demographic characteristics of the 305 study subjects are presented in Table 4.

Table 4. Subject Demographic Characteristics

	Mean	Standard Deviation	n		Percent
			Valid	Missing	
Age in Years	72.16	9.05	305	0	100
Gender		0.51	305	0	100
Female	-	-	154	-	50.5
Male	-	-	150	-	49.2
Transvestite	-	-	1	-	0.3
Ethnicity	-	3.76	305	0	-
Level of Education	3.29	1.81	305	0	-
ECCE with IOLI	1.57	0.50	305	0	100
First	-	-	174	-	57
Second	-	-	131	-	43
Type of Member	1.01	8.08	305	0	100
HMO	-	-	303	-	99.3
Quest	-	-	2	-	0.7

The subject range was 47 to 93 years with a mean age of 72 years. Patient gender was found to be 50.5 percent female, 49.2 percent male, and 0.3 percent transvestite.

The ethnicity of the subjects is described in Table 5.

Table 5. Ethnicity Demographics and PaSS Mean Scores

	N	Percent	PaSS Mean Scores		
			Pre-Op	Intra-Op	Post-Op
White	103	33.8	6.66	6.73	6.75
Black, African-American	3	1.0	-	-	-
American Indian or Alaska	-	-	-	-	-
Asian Indian	3	1.0	-	-	-
Japanese	74	24.3	6.47	6.65	6.61
Native Hawaiian	31	10.2	6.70	6.83	6.82
Chinese	34	11.1	6.46	6.51	6.52
Korean	13	4.3	6.50	6.57	6.45
Guamanian or Charmorro	-	-	-	-	-
Filipino	18	5.9	6.76	6.85	6.84
Vietnamese	-	-	-	-	-
Samoan	6	2.0	-	-	-
Other Asian	2	.7	-	-	-
Other Pacific Islander	2	.7	-	-	-
Some Other Race	13	4.3	6.55	6.56	6.53

Ethnicity for the participants during this seven-month time frame for this private health care plan undergoing an ECCE with an IOLI showed Caucasians consisted of 33.8 percent, Japanese 24.3 percent, Chinese 11.1 percent, native Hawaiian 10.2 percent, Filipinos 5.9 percent, and the remaining eight groups were less than 5 percent each with 3 exceptions. There were no American Indian or Alaskans, Guamanians or Charmorros, nor Vietnamese subjects in the study.

Education level of participants is described in Table 6.

Table 6. Level of Education Demographics and PaSS Mean Scores

Level of Education	N	Percent	PaSS Mean Scores		
			Pre-Op	Intra-Op	Post-Op
Left High School before Graduation	41	13.4	6.52	6.63	6.60
High School Graduate	101	33.1	6.67	6.76	6.74
Some College	51	16.7	6.66	6.72	6.68
Associate Degree	21	6.9	6.72	6.69	6.83
Bachelor's Degree	39	12.8	6.62	6.74	6.78
Graduate Degree	36	11.8	6.39	6.58	6.46
Other	16	5.2	6.30	6.51	6.46

Thirty-three point one percent completed high school, and 13.4 percent left high school prior to graduating. Over 16 percent had obtained some college, and 12. 8 and 11.8 percent had earned Bachelor and Graduate degrees respectively.

Subjects having a previous ECCE with IOLI were 43 percent, while 57 percent were having their first cataract extraction procedure. Two or 0.7 percent were Quest members while 303 or 99.3 percent were from the same HMO.

Hypothesis 1

A reliable and valid scale (PaSS) can be developed to measure patient satisfaction.

Validity

Content validity was assured because the measure was developed following an integrative ROL to generate the conceptual definition of satisfaction. Face validity was addressed by having two nursing professors with backgrounds in statistics and expertise in patient satisfaction review the PaSS questions and provide recommendations in question wording, types of question format, number of questions, and demographics to be included. One nursing professor specialized in qualitative statistics while the second possessed a strong background in quantitative measures. Their recommendations directed the pilot investigations that were discussed in a prior section of this dissertation.

Descriptive Analysis

When reviewing the PaSS scale raw data, the researcher noted 109 survey answers were marked different from the 1 to 7 Likert scale survey figures provided. Upon further examination it was noted that this occurred in 4 out of the 22 PaSS survey questions. That is subjects wrote in a different response answer to some of these 4 survey questions. Subject/survey 1 answered question 16 with, 'non-applicable' (N/A) instead of with a Likert scale number of 1 through 7. Subject/survey 7 answered question 13 with a 'question mark' (?) instead of providing a 1 through 7 answer; and question 21 with a N/A response instead of the provided Likert scale number of 1 through 7. Subjects 143 and 146 also answered question 21 with a N/A response in lieu of a Likert scale response provided. When setting up survey illegible criteria responses, surveys with responses different than those provided should be discarded in order to maintain uniformity in answer criteria. These 4 surveys (1, 7, 143, and 146) did not meet the inclusion criteria, and were discarded. See Table 7 for answer marking specifics.

Table 7. PaSS Frequency Break Down By Question(s)

Case	Question	Type of Response				Total(s)
		Yes	No	?	N/A	
1	13	-	-	1	-	1
7	13	-	-	-	1	1
	19	-	-	-	1	1
Multiple	19	8	59	29	9	105
143	21	-	-	-	1	1
146	16	-	-	-	1	1
Total(s)		8	59	30	12	109

In addition, the PaSS item question 19 was noted to have 4 different types of answer discrepancies. Eight subjects answered "yes," 59 answered "no," 29 responded with a "question mark" (?), and nine replied with a "N/A." This means those providing non Likert-scale answers to question 19 consisted of 105 such responses or 33.98 percent in 4 different answer type categories other than the expected Likert scale response provided. As mentioned earlier prior to the survey, responses noted to be different than those provided meant such surveys or question items did not meet study inclusion criteria. Therefore, question 19 that produced 105 aberrant responses was discarded. This left 21 survey question items, prior to factor reduction, and a total of 305 surveys met inclusion criteria for analysis in this investigative research, as shown in Table 7 above.

Factor Reduction

When looking at the Alpha Factoring extraction method with Promax rotation, two reduced factors were noted with no question item fall out. Qualitative analysis produced a theme for each of two reduced factors. The theme for factor 1 was identified as care or caring. The theoretical concepts identified from a integrative ROL included concepts II (quality of perceived experience), III (nursing-medical care rendered), and IV (communication in the form of patient teaching and procedure explanation). Comfort surfaced as the primary theme for factor 2. The theoretical concepts for comfort are

concepts I (accessibility and convenience), and IV (environmental privacy and comfort).

A second point of interest was that survey question 4 (Pre-op instructions was clear) a IV or a communication concept overlapped into both factor 1 (a theoretical care or caring concept) and factor 2 (a theoretical comfort concept).

The third point of interest was that survey question 21 (Easy to obtain follow-up appointment) was a I or a convenience (comfort) concept nested in the caring (theme) factor 2; while the other two convenience concepts belonging to concept I can be found in factor 2 (comfort). Please see the Extraction Method: Alpha Factoring with Promax Rotation in Table 8.

Table 8. Extraction Method: Alpha Factoring with Promax Rotation

Construct	n	Factor 1	***Accessibility*** and Convenience/Quality of ***Experience*** Perceived/Nursing-Medical ***Care/Communication*** (Teaching and Explanation)
IV*	**4***		Pre-op instructions were clear
III	6		Satisfied with nursing care
III	7		Satisfied with medical (MD) care
IV	10		Explanation of procedure was clear
III	11		Nurses friendly and courteous
III	12		Good surgical job
II	13		Received an adequate amount of sedation
II	14		Satisfied with overall care
II	17		Nurses took time to care for my needs
IV	18		Discharge instructions were clear
III	20		Nursing care excellent
I	21		Easy to obtain follow-up appointment
III	22		Medical (MD) care excellent
Construct	**n**	**Factor 2**	***Accessibility*** and Convenience/***Communication*** (Teaching and Explanation)/***Environment*** (Private and Comfortable)
I	1		Easy to obtain a surgical appointment
V	2		Pre-op area gave me privacy
V	3		Pre-op area was comfortable
IV*	**4***		Pre-op instructions were clear
I	5		Easy to obtain a medical referral
V	8		Operating room gave me privacy
V	9		Operating room was comfortable
V	15		Post-op area gave me privacy
V	16		Pot-op area was comfortable
Construct	**n**	**Fall Out**	*None*

r12 = .689

While looking at the wording for question 4 it was noted that one key word (clear) can be found in the other two concept (IV questions of 10, and 18. And, a second key word (instructions) can be noted in question 4 and 18. Looking at question 21 (Easy to obtain follow-up appointment), of concept I shows that the key words (easy and obtain) can be noted in all three questions (1, 5, and 21). In addition, questions 1 and 21 share the word 'appointment,' while question 5 uses 'medical referral.' Statistical etiology for question 4 to overlap between factor 1 and factor 2; and for question 21 of concept 1 to fall in factor 1 while the other two concept I questions fall in factor 2 is unknown.

When eliminating questions 4 (Pre-op instructions were clear) a caring concept, and question 21 (Easy to obtain follow-up appointment) a comfort concept from the PaSS scale, all of the questions from (the caring) concepts II, III and IV can be noted in factor 1. It can also be noted that all (comfort) concepts I and IV can be noted in factor 2. This resulted in 19 of the original 22 questions are included in the statistical analysis.

Estimates of Reliability

SPSS 10 verified that the Pearson correlation coefficient finding for all-caring questions belonging to factor 1 (concepts II quality of perceived experience, III nursing-medical care rendered, and IV communication in the form of patient teaching and procedure explanation) to be significant at $p \leq 0.01$. These data are described in Table 9.

Table 9. Satisfaction by PaSS Scale Concept

Factor/Theme	Concept	Concept Mean	Pearson Correlation
Factor 1 Caring	II Quality of Experience III Perceived Nursing-Medical Care IV Communication (Teaching and Explanation)	6.73 6.82 6.68	$P \geq 0.01$
Factor 2 Comfort	I Accessibility and Convenience V Environment (Privacy and Comfort)	6.51 6.50	$P \geq 0.01$
Factors 1 & 2 Caring & Comfort	I Accessibility and Convenience II Quality of Experience III Perceived Nursing-Medical Care IV Communication (Teaching and Explanation) V Environment (Privacy and Comfort)	6.66	$P \geq 0.01$

The Pearson correlation coefficient finding for all comfort questions (belonging to factor 2 (concepts I accessibility and convenience, and V environmental privacy and comfort) to be significant at $p \leq 0.01$. And, when combining caring factor 1 concepts with comfort factor 2 concepts also was noted to be significant at the $p \leq 0.01$ (shown in Table 9 above).

Inter Item Reliability

The inter item reliability of each concept was assessed using SPSS 10, Cronbach's alpha coefficient. A summary of these data is presented in Table 10.

Table 10. Cronbach's alpha Reliability Coefficients

Factor/ Theme	Constructs	N		Cronbach alpha
		Cases	Items	
Factor 1 Caring	II Quality of Experience III Perceived Nursing-Medical Care IV Communication (Teaching And Explanation)	305	11	0.9434
Factor 2 Comfort	I Accessibility and Convenience V Environment (Privacy and Comfort)	305	8	0.9123
Factors 1 & 2 Caring & Comfort	I Accessibility and Convenience II Quality of Experience III Perceived Nursing-Medical Care IV Communication (Teaching and Explanation) V Environment (Privacy and Comfort)	305	19	0.9495

The 'caring' factor concepts of II, III, and IV had a Cronbach alpha of 0.9434, the comfort factor concepts of I and V had a Cronbach alpha of 0.9123, and the combined factor concepts had a Cronbach alpha score of 0.9495. The values obtained were all greater than 0.80, indicating strong inter item agreement and internal reliability.

Hypothesis 2

Relationships exist between subject demographic characteristics and satisfaction scores on the PaSS.

Frequencies

SPSS 10, alpha factoring, promax analysis reduction was conducted to establish the key concept factors on the PaSS. Through qualitative analysis on the part of the investigator one theme was noted for each of the two different factors. These findings are summarized in Table 9.

The theme for the first factor surfaced as care; while the major theme for the second factor was identified as comfort. Caring factor theoretical concept mean scores were found to be 6.73 for concept II, 6.82 for concept III, and 6.68 for concept IV; and, comfort factor theoretical concept mean scores were 6.51 for concept I, and 6.50 for concept V; and caring and comfort combined theoretical mean scores were 6.66, as shown in Table 9.

Comparative Findings

Age, gender, ethnicity, level of education, experiencing a previous ECCE with an IOLI, and type of health plan membership demographic

characteristics did not prove to be associated with patient satisfaction or dissatisfaction as suggested in the ROL. These data are presented in Table 4. The mean PaSS score ratings preoperatively, intraoperatively, and postoperatively are presented in Tables 5, 6 and 11 (Age, Gender and ECCE Experience PaSS Mean Scores).

Table 11. Age, Gender and ECCE Experience PaSS Mean Scores

	n	Percent	PaSS Mean Scores		
			Pre-Op	Intra-Op	Post-Op
Age in Years					
47 to 54	10	3.28	6.42	6.46	6.28
55 to 64	51	16.72	6.55	6.76	6.71
65 to 74	108	35.41	6.72	6.82	6.81
75 to 84	119	39.02	6.57	6.63	6.62
85 to 93	17	5.57	6.34	6.41	6.40
Gender					
Female	154	50.49	6.58	6.73	6.70
Male	150	49.18	6.60	6.67	6.64
Transvestite	1	0.33	7.00	7.00	7.00
ECCE Experience					
First Cataract Surgery	174	57.00	6.06	6.70	6.64
Had a Previous Cataract Removed	131	43.00	6.64	6.70	6.72

Since subject rating scores were all in the "very good" range (above 6 on a 1 to 7 Likert scale) there was no variance between any of the correlates preoperatively, intraoperatively, and postoperatively.

Limitations

The PaSS scale, for patient perceived satisfaction was evaluated within a single population. The breadth and scope of the PaSS instrument scale was also limited to measure satisfaction in a specific group of patients under going an ECCE with an IOLI in one geographic location using a group of subjects from a single HMO. This limits generalizability of the findings.

The limited time frame, May 1, 2003 through December 31, 2003, when subjects were recruited and assessed for satisfaction may also limit the validity of the findings. Lack of inclusion of adequate sample numbers from each of the U.S. recognized ethnic groups also limits generalizability to populations outside the state of Hawaii awaits further assessment of the instrument in these populations. No majority ethnic makeup exists in the State and a larger number of Hawaiian, and Asian adults are represented in this study than would be expected in mainland geographic locations.

Discussion

Patient satisfaction potential predictor variables and theoretical concepts were generated from an analysis of data based studies in the literature over the past 10 years. These potential predictor determinants and theoretical concepts of satisfaction vary slightly from study to study

theoretical concepts of satisfaction vary slightly from study to study depending upon the study size, type of invasive procedures included, funding sponsor, subject cultural characteristics and researcher beliefs.

The descriptive findings were analyzed by frequencies consisting of numbers, percents, and mean scores. This study consisted of an elderly population with a mean age of 72 years. Like this study, Lalos et al. (1997) found no significant difference in satisfaction dependent on age. However, Kaldenberg and Becker's (1999) study, reported elderly subjects were more satisfied than younger patients. Gender revealed there were 154 females, 150 males, and 1 transvestite. There were a fairly equal number of females to males with no difference in mean score satisfaction ratings. However, according to the Froehlich et al. (1997) study of 150 patients, male gender, and shorter procedure duration were associated with greater patient tolerance and less procedure discomfort. However, patient satisfaction ratings were positive and similar in all groups. Kaldenberg and Becker's study showed female respondents were more satisfied than males. Ethnicity was higher for Hawaiian and oriental ancestry; while it contained less than the national average for African Americans. Alaskan or American Indians, Guamanians or Charmorros, and Vietnamese had no representation. Ethnic category subject numbers tended to be small; but, ethnicity satisfaction level scoring for all groups in this study were all in the very satisfied range. Level of education displayed a well-distributed mix with mean satisfaction scores all

in the very good range regarding level of education. The Schultz et al. study (1994), reported that higher education level and longer procedures were associated with patient dissatisfaction. Education level was not shown to be associated with dissatisfaction in this study. In fact, very satisfied scores were found in all education levels. Subjects experiencing a previous ECCE with an IOLI were 131 compared to 174 having their first cataract extraction procedure. Like the Laos et al. study, this pilot found no difference between respondent satisfaction ratings between subjects experiencing a previous (ECCE with an IOLI) invasive procedure compared to those having their first invasive (cataract extraction) procedure. In fact, satisfaction mean score ratings for both groups preoperative, intraoperative, and postoperative all had mean satisfaction scores in the very satisfied range. And, HMO membership was 303 compared to 2 state health plan members.

The subject satisfaction age determinant was noted to be high. In fact, the age determinant like the other 4 subject satisfaction predictors were also high with no variance. This finding cannot rule out the possibility of a homogenous population; or the possible influential amnesic effect of the sedative agent midazolam. Other possibilities might be a combination of theoretical concepts consisting of a single type of non-life threatening invasive procedure, small clinic size setting used, method of nursing care provided and degree in which staff satisfy patients (Yavas and Shemwell, 1996), nursing-medical subject interchange with strong technical and

communication friendly skills (Tarazi and Philip, 2003), bonding between subjects and health care staff (Cleary and Mc Neal, 1988), an aesthetically pleasant and comfortable environment that proved to be readily accessible, convenient (Swan et al. 2003) and private (Holland et al. 1995), geographic location, and cultural beliefs (Reshef and Reshef, 1997), in addition to age (Kaldenberg and Becker, 1999).

Content validity was assured because the measure was developed following an integrative ROL to generate the conceptual definition of satisfaction. Face validity was verified by two nursing professors with backgrounds in statistics and expertise in patient satisfaction. They reviewed the PaSS questions and demographics. In addition, their recommendations were incorporated into the PaSS questionnaire.

The five theoretical concepts of the PaSS instrument were generated during the integrative ROL. Unfortunately, not all five of these theoretical concepts can be noted in every published clinical trail. The primary reason for this is the lack of a universal definition of the subject concept of patient satisfaction; along with different types of invasive procedures included, sponsor funding, and researcher's preferences.

When using the Alpha Factoring extraction method with Promax rotation two main factors and themes emerged. Themes were identified as 'caring' for factor 1 and 'comfort' for factor 2. Care concepts included: (a) perception of care quality provided; (b) nursing and physician interactions;

and (c) teaching and procedure explanations (communication). Comfort concepts were: (a) facility and appointment accessibility and convenience; and (b) environmental privacy and aesthetically and comfortable surroundings and furniture.

Statistical analysis using SPSS 10 confirmed the Pearson correlation coefficients for factor 1, factor 2, and for both factor questions combined to be significant at $p \leq 0.01$ for reliability. SPSS 10 also showed inter-item (question) reliability via Cronbach alpha to be above 0.80 or highly reliable. Overall mean satisfaction scoring of 'very good,' or 6.66 on a Likert scale of 1 through 7 may have been influenced by a homogenous population, subject demographic potential predictors and/or theoretical determinant concepts as cited in the literature were not identified.

In agreement with the Tarazi & Philip study findings, these ophthalmic ambulatory surgery patients tended to give higher satisfaction ratings to health care services received. This may be due in part to an older adult population and a relatively small ambulatory surgical center. As noted in the ROL, patients gave the highest mean ratings to items concerned with technical aspects of care; and to health care providers that responded to their needs and demands. Care concepts included: (a) perception of care provided; (b) nursing and physician interactions; and (c) teaching and procedure explanations (communication). The PaSS patient satisfaction lowest mean score ratings were comparable to published findings. These

lowest mean score ratings were given to physical comfort services such as accessibility, convenience, privacy, and furnishings (environment).

Summary

Summery findings outlined below are based on the primary hypothesis for this research study.

Hypothesis 1

The hypothesis in chapter one suggested that a valid and reliable Instrument could be developed to measure: (a) patient satisfaction; and (b) theoretical concepts generated from the ROL.

Content and face validity were demonstrated. The measure was developed following an integrative ROL to generate a conceptual definition of patient satisfaction that was operationalized in the PaSS. Face validity was verified by two nursing colleagues with backgrounds in statistics and expertise in patient satisfaction.

When using the Alpha Factoring extraction method Promax rotation 2 factors and 2 themes emerged. These 2 themes were identified as 'caring' for factor 1 and 'comfort' for factor 2. Thus, the 5 concepts (care accessibility and convenience; perceived experience quality; nursing-medical care rendered, communication in the form of teaching and procedure explanation; and environmental conditions of privacy, comfortable furniture with an aesthetic atmosphere) identified in the ROL were not confirmed by the

analysis; but, rather the responses suggested that the scale should focus primarily on caring and comfort.

Pearson product-moment correlation for factor 1, factor 2, and both factors combined were significant at $p \lesssim 0.01$ for inter factor variable reliability. This finding affirms that the scale should be scored as a whole, instead of in factor sections.

According to Cronbach alpha, testing of PaSS question inter item reliability was above $p \gtrsim 0.91$ or highly reliable for factor 1, factor 2, and for both factors combined. This confirms that the scale measures the concepts consistently.

Overall mean satisfaction scores were 6.66 on a Likert scale of 1 through 7. Thus, no variability was demonstrated. Therefore, discriminate validity was not demonstrated.

Hypothesis 2

Relationships exist and can be demonstrated between subject demographic characteristics and PaSS satisfaction scores.

Descriptive findings were analyzed by frequencies consisting of numbers, percents and mean scores. No variance occurred between any of the subject determinants: (a) age, (b) gender, (c) ethnicity, (d) prior procedure experience versus first time experience, and (e) type of health plan membership). No satisfaction scoring difference was noted preoperatively, intraoperatively and postoperatively. Multiple regression

analysis revealed no relationships were demonstrated between PaSS and the patient demographic characteristics suggested in the ROL.

CHAPTER 5
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

In this chapter is a summary of the findings followed by a statement of conclusions and recommendations are provided.

Background

This investigative study's purpose was to construct and introduce a psychometrically reliable and valid instrument to measure satisfaction from a patient's perspective since there was no such tool available after reviewing the literature. The second part was to conduct and present a pilot study of its' (PaSS) reliability, and explore theoretical concepts and subject demographic factors related to satisfaction.

This study was designed to develop a valid and reliable scale that measures (a) patient satisfaction; and (b) theoretical concepts from the ROL. In addition, it examined potential existing relationships between subject demographic characteristics and PaSS satisfaction scores. Psychometric analysis consisted of testing: (a) validity; (b) factor reduction; (c) estimates of reliability; (d) inter item reliability; and (e) frequencies for hypothesis 1; and (a) frequencies; and (b) comparative findings with the ROL for hypothesis 2.

Subjects were asked preoperatively if they would be willing to voluntarily participate in a patient satisfaction research study. They were assured that there would be no identity risks or personal compensation. And,

any benefit found would not benefit them at this time, but may modify future patient care and service.

Subjects were again approached prior to discharge on the day of their procedure asking if they still would like to participate in this study. Patients willing to participate were asked to take the PaSS questionnaire home, complete it at their leisure, and return it to their clinic nurse the following morning during their first postoperative clinic visit. Clinic nurses routed these completed surveys without subject identifying data to the primary researcher.

Five hundred subjects indicated an interest in participating in this study. Three hundred nine responded by completing the PaSS and returning it the following morning, between May 1, 2003 and December 31, 2003. However, following raw data analysis and factor reduction 4 surveys, and 3 PaSS questions were discarded leaving 305 surveys and 19 questions included the statistical analysis.

Hypotheses

PaSS face validity was assured by two nursing colleagues with expertise in statistics and patient satisfaction backgrounds. Factor reduction was analyzed using SPSS 10. Two factors and 2 factor themes ('care' and 'comfort') were identified after discarding 3 PaSS questions and 4 surveys that did not meet inclusion criteria. Estimates of reliability showed a Pearson correlation coefficient of $p \geq 0.689$ that was significant at $p \geq 0.01$. Internal item reliability of questionnaire findings was found to be $p \geq 0.91$by

Cronbach alpha. Subject mean score ratings were all above 6 ("very good') on a Likert scale of 1 through 7.

Finally all of the data related to potential subject demographic determinant variables showed high patient satisfaction mean scoring preoperatively, intraoperatively and postoperatively. The average subject mean score was 6.66 ('very good') on a Likert scale of 1 though 7. No range of scores existed. No respondents were dissatisfied. Therefore, this study was not able to identify subject predictor demographic characteristics as noted in the ROL.

Conclusions

Hypothesis 1

The investigators' hypothesis suggested that a valid and reliable scale could be developed to measure: (a) patient satisfaction; and (b) theoretical concepts from the ROL.

1. Content and face validity was demonstrated. The measure was developed following an integrative ROL to generate a conceptual definition of patient satisfaction that was operationalized in the PaSS. Content and face validity were verified by two nursing professors with backgrounds in statistics and expertise in patient satisfaction.
2. When using the Alpha Factoring extraction method with Promax rotation 2 factors and 2 themes were noted. These themes were identified as 'caring' for factor 1 and 'comfort' for factor 2. Thus, the 5

concepts identified in the ROL were not confirmed by the analysis rather the responses suggested that the scale should focus primarily on comfort and caring.

3. Pearson correlation coefficients for factor 1, factor 2, and for both factors combined to be significant at $p \leq 0.01$ for reliability. This finding affirms that the scale should be scored as a whole.
4. Inter item (question) reliability via Cronbach alpha to be above 0.80 or highly reliable for factor 1, factor 2, and for both factors combined. This affirms that the scale is measuring the concept consistently.
5. Overall mean satisfaction scores were 6.66 on a Likert scale of 1 through 7. Thus, no variability was demonstrated. Thus, discriminate validity was not demonstrated.

Hypothesis 2

Relationships exist between subject demographic characteristics and PaSS satisfaction scores.

Descriptive findings were analyzed by frequencies consisting of numbers, percents, and mean scores. Multiple regression revealed no relationships were demonstrated between PaSS and patient demographic characteristics.

Significance to Nursing

The significance of this investigation to nursing research is availability of a potentially reliable and valid measure of satisfaction to assess patient

satisfaction when undergoing an ECCE with an IOLI while consciously sedated. This instrument may be used in inpatient and outpatient settings with relative ease. Health care professionals do not need extensive training to administer this survey and patients with a sixth grade education level can read, answer, and return it accurately. When administered to an adequate number of subjects the demographic data may help identify factors that are associated with satisfaction/dissatisfaction correlates during the preoperative, intraoperative and postoperative process when undergoing an invasive procedure while consciously sedated. Respondent ratings may be shared with CQI coordinators, care providers, and used for marketing purposes. Dissatisfied scores may result in modifying care provided.

Recommendations

The recommendations below were generated from analysis of the findings from clinical trials in the ROL and findings from this pilot study. The following recommendations are proposed:

1. A universal definition of satisfaction is needed to assist in clearing up misconceptions of variable parameters and boundaries of what is patient satisfaction. Until a universal definition is recognized and accepted researchers will continue to set their own individual parameters and boundaries of what is and is not perceived patient satisfaction or dissatisfaction. As discussed in the ROL, concept fragmentation will continue to be noted in future clinical trials until a

universal definition is formulated and accepted by the health care community.

2. This investigative study should be replicated with ambulatory and inpatient facilities performing ECCE with an IOLI in different geographic locations. This study included only ambulatory subjects, in a single health care plan, in one geographic location in the middle of the Pacific Ocean. The ethnic mix in this study was shown to be different than that of the United States.
3. This instrument wording should be modified and tested for reliability with populations having different types of invasive procedures. The procedure wording can easily be changed to identity and measure subjects level of satisfaction when under going different invasive procedures. Measuring subjects having different invasive procedures may verify or limit the overall use of this instrument scale.
4. Relationships with the concepts of care/caring (Examples: staff friendliness, and communication), and comfort (Examples: convenience, comfort, and privacy) should continue to be explored in future patient satisfaction clinical trials. Suggested satisfaction predictors noted in the ROL generated theme concepts known as care/caring and comfort. Further research and exploration is warranted here to credit or discredit these new theoretical concepts.

5. Health care setting size should also be studied regarding potential perceived patient satisfaction influence. The ROL stated smaller facilities generated higher subject satisfaction ratings. This suggested predictor needs to be tested in more facilities varying in size and used as comparisons.

Appendix A. PaSS Questionnaire (Page 1)

Please fill in the following about yourself.

1. I am _____ years of age

2. ____ Female ____ Male

3. Ethnicity (Please check only one)

___ White ___ Black, African Am. ___ Am. Indian or Alaska Native

___ Asian Indian ___ Japanese ___ Native Hawaiian

___ Chinese ___ Korean ___ Guamanian or Charmorro

___ Filipino ___ Vietnamese ___ Samoan

___ Other Asian ___ Other Pacific Islander ___ Some other race _____

4. Amount of Education (Please check only one)

___ Left High School before graduation ___ Completed Bachelor's Degree

___ High School Graduate ___ Completed Graduate Degree

___ Some College ___ Other: _____

___ Completed Associate Degree

5. I have ____ have not ____ had a cataract procedure before this time.

6. ____ Quest Member or ____ Kaiser Permanente Member?

We want to know your perception of care you received before, during and after your cataract surgery. Using a scale of: 1 = poor, 2 = some what fair, 3 = fair, 4 = average/expected, 5 = good, 6 = very good, 7 = excellent, please circle the following :

Appendix A. (Continued) PaSS Questionnaire (Page 1)

Experience Before Cataract Surgery:

1. I found it easy to get an appointment for this problem 1 2 3 4 5 6 7
2. The pre op area gave me privacy 1 2 3 4 5 6 7
3. The pre op area was comfortable 1 2 3 4 5 6 7
4. "Pre-surgery instructions" were clear and complete 1 2 3 4 5 6 7
5. It was easy to get a referral to my eye doctor . 1 2 3 4 5 6 7
6. I was satisfied with the nursing care I received . 1 2 3 4 5 6 7
7. I was satisfied with the care I received from my doctor 1 2 3 4 5 6 7

Please continue on the next page

Appendix A. PaSS Questionnaire (Page 2)

We want to know your perception of care you received before, during and after your cataract surgery. Using a scale of: 1= poor, 2 = some what fair, 3 = fair, 4 = average/ expected, 5 = good, 6 = very good, 7 = excellent, please circle the following:

Experience During Cataract Surgery:

8. The operating room gave me privacy	1	2	3	4	5	6	7
9. The operating room temperature and table were comfortable	1	2	3	4	5	6	7
10. Explanation of the procedure was clear	1	2	3	4	5	6	7
11. Nurses were friendly and courteous	1	2	3	4	5	6	7
12. My doctor did a good surgical job	1	2	3	4	5	6	7
13. I was satisfied with the amount of sedation I was given	1	2	3	4	5	6	7
14. I was satisfied with my overall care	1	2	3	4	5	6	7

Experience Following Cataract Surgery:

15. The post op area gave me privacy	1	2	3	4	5	6	7
16. The post op/recovery bed was comfortable . .	1	2	3	4	5	6	7
17. Nurses took time to care for my needs	1	2	3	4	5	6	7
18. Discharge instructions were clear and complete	1	2	3	4	5	6	7
19. I would have preferred more sedation	1	2	3	4	5	6	7
20. The nursing care was excellent	1	2	3	4	5	6	7
21. It was easy to get a follow-up appointment . .	1	2	3	4	5	6	7
22. The medical care I received was excellent . .	1	2	3	4	5	6	7

Appendix A. (Continued) PaSS Questionnaire (Page 2)

Mahalo for completing this survey.

Appendix B. PaSS Subject Introduction Letter

Aloha,

We are sincerely interested in having our patients receive friendly, quality care when visiting the Kaiser Ambulatory Surgery Center. Evaluating the treatment you received will help us to maintain and improve upon our services.

We want to know how you felt following your eye surgery at Kaiser Medical Center. This should take about 10 minutes. Approximately 400 people are being asked to participate. For the purpose of this research, satisfaction is defined as your feeling about the treatment you received.

This is a voluntary patient satisfaction study. You may stop at any time. You will not be identified in any way. Responses are anonymous. Although you may not receive direct benefit, filling out the survey will help us provide better treatment. If you have any questions about this project you may contact Fred Foster, MS, CRNA at (808) 922-3002. If you have any questions about your rights as a participant you may contact: 1) the Committee on Human Studies, (808) 539-3955, University of Hawaii, 2540 Maile Way, Honolulu, Hawaii 96822; or 2) Kaiser IRB (808) 432-0000, Kaiser Permanente, 3288 Moanalua Road, Honolulu, Hawaii 69819.

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