



The intraoperative experience in baccalaureate nursing education  
by Cheryl Lynn Koski

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF NURSING  
Montana State University

© Copyright by Cheryl Lynn Koski (1985)

Abstract:

Although many authors believe that the intraoperative (operating room) experience is a valuable clinical learning experience, little or no research to date has been done concerning the merits of a formal operating room experience in a baccalaureate nursing curriculum. This study was conducted for the purpose of examining the relationship between type of intraoperative learning experience and the development of comprehensive knowledge of the nursing care needs of the surgical patient in a baccalaureate nursing curriculum.

This study utilized a quasi-experimental design and a non-probability convenience sample. Forty-nine (n=49) junior-level nursing students enrolled in medical-surgical nursing courses in the Montana State University College of Nursing participated in this study. The subjects were divided into three groups: one control and two experimental. The control group consisted of those students who had not had an intraoperative clinical experience. The first experimental group consisted of those students who had an intraoperative clinical experience, which involved observation of the surgical procedure only. The second experimental group consisted of those students who also had an intraoperative clinical experience, but one which involved actual participation as well as observation. For each subject data were acquired on the age, sex, quarter in school, prior experience in the operating room and/or as a nurse's aide, prior education, and previous nursing courses taken. Subjects were pre-tested and post-tested. Each test measured level of knowledge concerning the nursing care needs of the surgical patient. A combination of descriptive and inferential statistics were utilized to analyze the data. Results of the analysis showed that Groups II and III, which had an intraoperative clinical experience, obtained higher mean post-test scores and higher mean change scores than Group I, which did not have an intraoperative clinical experience. It was concluded that an intraoperative clinical experience in a baccalaureate nursing curriculum appears to play a significant role in influencing the level of knowledge among junior-level nursing students. The major implication of this study is that the intraoperative experience cannot be dismissed by baccalaureate nursing educators as irrelevant or unimportant. The impact of this experience in undergraduate nursing education requires further investigation.

THE INTRAOPERATIVE EXPERIENCE IN BACCALAUREATE  
NURSING EDUCATION

by

CHERYL LYNN KOSKI

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF NURSING

MONTANA STATE UNIVERSITY  
Bozeman, Montana

October, 1985

MAIN LIB.  
N378  
K847  
Cop. 2

APPROVAL

of a thesis submitted by

CHERYL LYNN KOSKI

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and is ready for submission to the College of Graduate Studies.

10-17-85  
Date

Kathleen Ann Long  
Chairperson, Graduate Committee

Approved for the Major Department

10-17-85  
Date

Anna M. Shannon  
Head, Major Department

Approved for College of Graduate Studies

10-30-85  
Date

W. B. Malve  
Graduate Dean

## STATEMENT OF PERMISSION TO COPY

In presenting this thesis in partial fulfillment of the requirements for an advanced degree at Montana State University, I agree that the Library shall make it freely available for inspection. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by my major professor, or, in her absence, by the Director of Libraries. It is understood that any copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Signature Cheryl L. Koski

Date October 15, 1985

## TABLE OF CONTENTS

Chapter		Page
	Approval .....	ii
	Statement of Permission to Copy .....	iii
	Table of Contents .....	iv
	List of Tables .....	vi
	List of Figures .....	vii
	Abstract .....	viii
1	INTRODUCTION .....	1
	Statement of the Problem .....	2
	Statement of the Purpose .....	7
	Definitions .....	7
	Conceptual .....	7
	Operational .....	8
2	REVIEW OF THE LITERATURE .....	10
	Perioperative Experience in Baccalaureate Curriculums .....	10
	Nursing Care Needs of the Surgical Patient .....	19
	Summary .....	27
3	CONCEPTUAL FRAMEWORK .....	29
	Definition of Terms Related to the Models .....	29
	Principles of Learning Essential to the Models .....	31
	Model A .....	32
	Model B .....	39
4	METHODOLOGY .....	47
	Design .....	47
	Sample .....	49
	Instruments/Measures .....	50
	Data Production/Protocols .....	52
	Protection of Human Subjects .....	53
	Data Analysis Plan .....	55
5	FINDINGS .....	59
	The Sample .....	59
	Descriptive Analysis .....	62
	Examination of Demographic Variables .....	70
	Examination of Treatment Variables .....	74
	Discussion .....	78

TABLE OF CONTENTS - Continued

Chapter		Page
6	CONCLUSIONS .....	81
	Discussion .....	81
	Limitations .....	83
	Implications .....	83
	BIBLIOGRAPHY .....	88
	APPENDICES .....	97
	Appendix A - Introductory Statement .....	98
	Appendix B - Letter to Participants .....	100
	Appendix C - Agreement to Participate .....	103
	Appendix D - Demographic Questionnaire .....	105
	Appendix E - Knowledge of the Surgical Patient Test .....	108
	Appendix F - Instrument Content Areas .....	123

## LIST OF TABLES

Table		Page
1	Demographic Characteristics of Sample .....	60
2	Range of Scores on the Pre-test and the Post-test for Groups I, II and III .....	62
3	Frequency Distribution - Pre-test and Post-test Scores for Group I .....	64
4	Frequency Distribution - Pre-test and Post-test Scores for Group II .....	65
5	Frequency Distribution - Pre-test and Post-test Scores for Group III .....	66
6	Comparison of Mean and Standard Deviation on Pre-test and Post-test Scores .....	68
7	Analysis of Variance on Pre-test Scores among Groups I, II and III .....	70
8	t-Test on Mean Pre-test Scores among Groups I, II and III .....	71
9	t-Test on Demographic Variables .....	73
10	Analysis of Variance on Post-test Scores among Groups I, II and III .....	75
11	F-test on Post-test Variances among Groups I, II, and III .....	76
12	t-Test on Mean Post-test Scores among Groups I, II, and III .....	77

LIST OF FIGURES

Figure		Page
1	Model A - Schematic Model of Teaching-Learning Processes and Outcome of Baccalaureate Education in Nursing .....	33
2	Model B - Schematic Model of Perioperative Teaching and Learning Processes and Outcomes for Baccalaureate Nursing Education .....	40

## ABSTRACT

Although many authors believe that the intraoperative (operating room) experience is a valuable clinical learning experience, little or no research to date has been done concerning the merits of a formal operating room experience in a baccalaureate nursing curriculum. This study was conducted for the purpose of examining the relationship between type of intraoperative learning experience and the development of comprehensive knowledge of the nursing care needs of the surgical patient in a baccalaureate nursing curriculum.

This study utilized a quasi-experimental design and a non-probability convenience sample. Forty-nine (n=49) junior-level nursing students enrolled in medical-surgical nursing courses in the Montana State University College of Nursing participated in this study. The subjects were divided into three groups: one control and two experimental. The control group consisted of those students who had not had an intraoperative clinical experience. The first experimental group consisted of those students who had an intraoperative clinical experience, which involved observation of the surgical procedure only. The second experimental group consisted of those students who also had an intraoperative clinical experience, but one which involved actual participation as well as observation. For each subject data were acquired on the age, sex, quarter in school, prior experience in the operating room and/or as a nurse's aide, prior education, and previous nursing courses taken. Subjects were pre-tested and post-tested. Each test measured level of knowledge concerning the nursing care needs of the surgical patient. A combination of descriptive and inferential statistics were utilized to analyze the data. Results of the analysis showed that Groups II and III, which had an intraoperative clinical experience, obtained higher mean post-test scores and higher mean change scores than Group I, which did not have an intraoperative clinical experience. It was concluded that an intraoperative clinical experience in a baccalaureate nursing curriculum appears to play a significant role in influencing the level of knowledge among junior-level nursing students. The major implication of this study is that the intraoperative experience cannot be dismissed by baccalaureate nursing educators as irrelevant or unimportant. The impact of this experience in undergraduate nursing education requires further investigation.

## CHAPTER 1

### INTRODUCTION

Students in many schools of nursing have only a brief rotation through the operating room. In other schools, the student's entire operating room (intraoperative) experience consists of a single "follow-through" assignment, which generally involves observation of what happens to a patient in the surgical and recovery suites. Some schools of nursing have entirely eliminated the operating room experience.

The operation itself is the focal point of all that happens to the patient admitted to the hospital for a surgical procedure. There is no doubt that what happens to the patient in the surgical suite greatly affects the nursing care needs both preoperatively and postoperatively.

Nursing students must develop the ability to meet the needs of the total person. These needs include physical, psychosocial, and spiritual. Through a combination of didactic and clinical experience, nursing students learn to recognize these needs and how to assist the patient in meeting these needs.

Although many authors believe that the intraoperative experience is a valuable clinical learning experience,

little or no research has been reported concerning the merits of a formal operating room experience in a baccalaureate nursing curriculum. This study is designed to determine whether an intraoperative experience assists nursing students to learn to meet the comprehensive nursing care needs of the surgical patient.

#### Statement of the Problem

Over the last three decades, nursing practice and education have undergone many changes. Thirty years ago, state boards of nursing required students to have a rotation through the operating room (Wells, 1980). According to Wells (1980), the skills learned by the student facilitated the transition into the then primarily technical role of the registered nurse in the operating room.

Wells (1980) states that starting in the early 1960's, nursing education began to shift gradually away from technical nursing skills. Theoretical models of nursing emerged which focused on the psychological and physiological dimensions of the "whole patient" (Wells, 1980). According to Huff (1980), traditional nursing experiences, which had closely resembled a medical model, were replaced by an integrated and conceptual approach to teaching the nursing process. Huff (1980) states that today, the operating room rotation as a clinical nursing experience is virtually absent in baccalaureate nursing programs.

The impact of the removal of the operating room experience from the baccalaureate curriculum was observed by Patricia Armitage (1979), an instructor in medical-surgical nursing at Georgetown University School of Nursing, Washington, D.C. In the supervision of senior nursing students, Armitage (1979) observed the following: (a) students lacked an adequate understanding of the concept of asepsis; (b) preoperative teaching was done on an elementary level; (c) students were unable to alleviate some of the patient's fears of the unknown in describing the operating room environment, personnel, or equipment; (d) students knew little about anesthesia and its action on the body; (e) little knowledge was demonstrated by the students regarding stress and its action on body systems; and (f) students displayed little empathy toward patients' postoperative pain. In addition, Armitage (1979) asserts that without the experience of witnessing a surgical procedure, students lacked a genuine understanding of tissue trauma and the subsequent pain related to the healing process. Armitage (1979) found that students emphasized the basic tenets of postoperative care - coughing, deep-breathing, and turning, but with little specificity to the individual's surgical intervention.

Many nurses and nurse educators, as well as the Association of Operating Room Nurses (AORN) have expressed concern about the elimination of the operating room

experience from nursing education. The operating room is felt to be an essential component of a complete nursing education (Armitage, 1980; Friedman, 1979; Hercules, 1980; Huff, 1975; LaMontagne, 1982; Lindeman, 1980; Peers, 1970; Wells, 1980; Young, Takahashi, & Cheney, 1981). The AORN is committed to promoting the perioperative learning experience and asserts that the operating room challenges students to integrate the nursing process with anatomy, physiology, microbiology, and pharmacology (Young et al, 1981). In addition, the AORN maintains that in the operating room "...students can perfect skills in asepsis, time management, and team interaction for patient care" (Young et al, 1981, p. 920).

Armitage (1980) states that the perioperative experience allows students the opportunity to develop a more complete picture of the surgical patient. The advent of new techniques and new complex equipment used in the treatment of patients will necessitate more and more patients who enter hospitals for treatment be exposed to surgical therapy (Gruendemann, Shetler, Casterton, Hesterly, & Minckley, 1970). Gruendemann et al (1970) maintain that the time spent in the operating room forms the focal-point of hospitalization for the patient undergoing surgery and that all preoperative care should be geared toward this one event and all postoperative care should be based on what has taken place in surgery. Can nursing students adequately

understand what the patient will be experiencing if they have not at least witnessed this experience? Can nursing students adequately meet the bio-psycho-social needs of the surgical patient without this experience?

Atkinson and Kohn (1978) state that nursing judgements are based on knowledge of patient needs. According to Atkinson and Kohn (1978), the surgical patient faces a grave threat to the basic needs of a human being. These needs are physical, psychosocial, and spiritual (Atkinson & Kohn, 1978). Pleitez (1972) states that a surgical procedure whether major or minor, emergency or optional, always affects the patient physically and emotionally. According to Luckmann and Sorensen (1980), some alterations associated with surgery are the following: (a) the stress response is elicited; (b) the defense against infection is lowered; (c) the vascular system is disrupted; (d) organ functions may be disturbed; (e) the body image may be disturbed; and (f) life styles may change.

Atkinson and Kohn (1978) state that a basic understanding of operating room technique and intraoperative procedures is essential for the total care of the surgical patient. In addition, Atkinson and Kohn (1978) maintain that the professional nurse must have a knowledge of the operative site and procedure, the effects of operative trauma on the body, and the problems of recovery and rehabilitation. Knowledge in these areas is viewed by

Atkinson and Kohn (1978) as essential for the nurse to plan and manage the preoperative, intraoperative, and postoperative nursing care regimen of the surgical patient in order to meet individualized needs.

Knowledge of the nursing care of the surgical patient must be a vital component of nursing education programs. Knowledge of preoperative, intraoperative, and postoperative nursing problems as well as the bio-psycho-social needs of the surgical patient are essential in order to provide adequate care.

The perioperative period includes three phases - preoperative, intraoperative, and postoperative. The preoperative phase begins at the time the patient is admitted to the hospital for the surgical procedure and continues until the patient is transferred to the operating room. The intraoperative phase begins from entrance to the operating room until transfer to the recovery room. The postoperative phase begins at the time the patient is admitted to the recovery room until discharge from the hospital (Groah, 1983). The role of intraoperative clinical experience in assisting students to develop knowledge of the comprehensive nursing care needs of the surgical patient has not been reported. Therefore, a study that focuses on the intraoperative learning experience in the baccalaureate curriculum will assist in establishing the significance of this clinical experience in the development of knowledge in

students of the nursing care of the surgical patient. The present study will focus on the intraoperative learning experience of nursing students in a baccalaureate curriculum and its relationship to the development of knowledge regarding the nursing care needs of surgical patients.

#### Statement of the Purpose

The purpose of this study is to examine the relationship between type of intraoperative learning experience and the development of comprehensive knowledge of the nursing care needs of the surgical patient among junior nursing students in a baccalaureate nursing curriculum.

#### Definitions

##### Conceptual

Intraoperative Learning Experience - coordinated and planned didactic instruction and supervised clinical experience in care of the patient from entrance to the operating room until admission to the recovery room.

Comprehensive Knowledge of the Nursing Care Needs of the Surgical Patient - knowledge of the biopsychosocial needs of the surgical patient preoperatively, intraoperatively, and postoperatively.

Junior Nursing Students - students in the first year of upper division study (third year of the curriculum) at a college of nursing which prepares students for a Bachelor of Science Degree in Nursing.

Baccalaureate Nursing Curriculum - a four year program of study at a college of nursing which prepares students for a Bachelor of Science Degree in Nursing.

Operational

Intraoperative Learning Experience - coordinated and planned didactic instruction and supervised clinical experience in care of the surgical patient from entrance to the operating room to admission to the recovery room presented in the junior-level baccalaureate nursing curriculum at Montana State University College of Nursing. The courses included in this study are N356 (Medical-Surgical Nursing I) and N357 (Medical-Surgical Nursing II) at the extended campuses of Billings and Missoula.

Baccalaureate Nursing Curriculum - a four-year program of study at Montana State University College of Nursing which prepares the student for a Bachelor of Science Degree in Nursing.

Comprehensive Knowledge of the Nursing Care Needs of the Surgical Patient - knowledge of the biopsychosocial needs of the surgical patient preoperatively, intraoperatively, and postoperatively. Knowledge of the biopsychosocial needs of the surgical patient is measured by test scores attained on the "Knowledge of the Surgical Patient" test, developed by this investigator. This test includes the following areas:

- (1) Knowledge of human anatomy and physiology.
- (2) Knowledge of principles of asepsis.
- (3) Knowledge of anesthesia and its affect on the body.
- (4) Knowledge of nursing process as applied to the care of the patient preoperatively, intraoperatively, and postoperatively.
- (5) Knowledge of human responses to actual and potential health problems associated with surgery in surgical patients.

Junior Nursing Students - students in the first year of upper division study (third year of the curriculum) at Montana State University College of Nursing which is preparing the student for a Bachelor of Science Degree in Nursing.

## CHAPTER 2

### REVIEW OF THE LITERATURE

There is little literature which examines the relationship of the perioperative learning experience to the development of knowledge about the comprehensive nursing care needs of the surgical patient. However, a significant amount of literature addresses the individual areas of:

- (1) the perioperative experience in nursing education, and
- (2) the nursing care needs of the surgical patient.

#### Perioperative Learning Experience in Baccalaureate Curriculums

Huff (1980) states that the foundation of professional nursing is baccalaureate education. Porter and Feller (1979) state that undergraduate nursing education is concerned with "...preparing and producing a professional practitioner of nursing capable of providing quality service in the expanding health care delivery system" (p. 27).

To achieve the goal of a well-prepared nurse, Porter and Feller (1979) state that nurse educators are concerned with educative experiences which will promote excellence in learning. Clinical laboratory experiences are particularly significant in the education of nurses; they constitute the

essence of the academic program of study in baccalaureate programs of nursing (Porter & Feller, 1979).

According to Porter and Feller (1979), the planning and implementation of clinical practice by nurse educators has a profound effect on the proficiency of a graduate nurse. The acquisition of nursing knowledge and skills is affected by the structuring of clinical practice. In support of the need for structuring, Porter and Feller (1979) state that the "...clinical practicum constitutes 50 percent of the baccalaureate nursing students' program of study; therefore it is of utmost concern to nursing education that the clinical portion of a curriculum be planned and implemented to provide educationally sound learning experiences" (p. 27).

The National League for Nursing (NLN) Criteria for the Appraisal of Baccalaureate Nursing Programs (1977) does not specifically designate the amount and type of clinical experiences necessary in a nursing education program. However, the Criteria (1977) do require that the curriculum focus on the knowledge and practice of nursing and draw on relevant arts and sciences, and that "...the liberal and professional education requirements should be organized so that knowledge, understanding, and skills are developed progressively throughout the program" (p.14).

According to Young et al (1981), the perioperative experience includes three phases - preoperative,

intraoperative, and postoperative. The preoperative phase includes the period during which the patient is admitted to the surgical floor and is prepared physically, emotionally, and legally for the operation (Groah, 1983). During the preoperative phase, the emphasis is upon the correction of physiologic and psychologic problems that might increase surgical risk, thorough and complete explanations of the specific surgery, and instruction in and demonstration of exercises that will benefit the patient during the postoperative period (Groah, 1983).

The intraoperative phase includes the period during which the patient is transferred to the operating room, is anesthetized, and undergoes the surgical procedure (Groah, 1983). The emphasis during the intraoperative phase is on asepsis, hemostasis, and safe administration of anesthesia (Groah, 1983).

The postoperative phase includes the period during which the patient is observed and assisted in recovery from the anesthesia and from the stress of surgery itself (Groah, 1983). During the postoperative phase, maintenance of body system functioning, the alleviation of pain and discomfort, and adequate discharge planning and teaching is emphasized (Groah, 1983; Kneedler & Dodge, 1983).

Wells (1980) noted that although the perioperative experience includes three phases, many baccalaureate programs concentrated only on the preoperative and

postoperative phases. According to Hercules (1980), many nurses and nurse educators believe that the intraoperative or operating room experience is an essential component of a complete nursing education and that the operating room experience is a valuable part of the curriculum. Wells (1980) supports the need for intraoperative learning experience when she states that inclusion of the intraoperative experience allows students to study the person as a holistic being which will lead to the provision of comprehensive nursing care. Hercules (1980) asserts that students can learn in the intraoperative experience since "...a nursing diagnosis from the patient unit can be transferred to the operating room. Likewise, patient problems identified intraoperatively can become a basis for nursing care in other settings" (p.799).

McNeill (1975) reports that many nursing school curricula provide operating room experiences ranging from two to nine weeks; however, some programs provide only one-to-two day experiences of observation only. In this limited time, according to McNeill (1975), it is impossible to learn effectively about the surgical patient's needs and the techniques, skills, and attitudes required of the operating room nurse.

Experience in the operating room enables the student to reinforce the basic knowledge of anatomy and physiology and gain an understanding of the principles of aseptic technique

that can be applied to other areas of clinical practice (McNeill, 1975). In addition to enabling students to gain a better understanding of anatomy and physiology, experiences in the operating room enable students to gain a better understanding of the pathological condition that necessitated the surgical procedure (Sharp, 1980).

McNeill (1975) further states that experiences in the operating room assist the student in developing a more extensive knowledge of the surgical patient. This knowledge, when transferred into practice according to McNeill (1975), assists in developing a better understanding of the physical, emotional, and psychological needs of the surgical patient.

Atkinson and Kohn (1978) state that many generalist nursing behaviors may be learned from experiences in the operating room by focusing on what happens to the patient during surgical intervention. In addition, they state that participation in and observation of the nursing process in the operating room can offer the student an opportunity to:

- (1) investigate the nursing care process through assessment and implementation of nursing actions in the OR (operating room) that correlate the operative procedure with other aspects of patient care.
- (2) promote an understanding of the patient's total surgical experience by demonstrating the ability to assess physiological, psychological, and sociological patient needs through preparation of a nursing care plan.
- (3) reinforce basic knowledge of anatomy and physiology and gain knowledge of the total patient

experience as a basis for management of preoperative patient anxiety related to body image and postoperative pain related to site of incision and intraoperative procedure.

- (4) assist patients with the management of anxiety by assessing their needs for psychological support preoperatively and by anticipating their psychological and physiological needs in the postoperative recovery period through an understanding of the total surgical experience.
- (5) recognize the effects of preoperative medication, anesthesia, positioning on the operating table, site of incision, and operative procedure as a basis for planning the patient's postoperative recovery and rehabilitation.
- (6) develop an appreciation of the meaning of the surgical experience for patients and their families as a basis for correlating the intraoperative phase with establishment of priorities for teaching and planning all aspects of surgical patient care to promote continuity of care.
- (7) become a more effective communicator with patients through pre- and postoperative teaching based on knowledge of the intraoperative procedure as it relates to each individual patient and his or her family.
- (8) identify the members of the OR team and the legal responsibility of each member for the care of the conscious or the unconscious patient as a basis for establishing and maintaining inter- and intra-departmental functions that ensure continuity of surgical patient care.
- (9) participate in making collaborative decisions that demonstrate his or her willingness to cooperate with members of the OR team on behalf of the patient.
- (10) decrease the potential eventuality of an environmentally acquired infection by understanding the principles of aseptic technique and by demonstrating the ability to adhere to them (p. 6-7).

Many nurses who work on surgical units, according to Kneedler and Dodge (1983), may have limited knowledge of the

effects of intraoperative occurrences on patients and a limited knowledge of what transpires in the operating room. Crawford (1975) asserts that frequently such nurses or nurses without operating room experience do not understand patient needs since it is hard to understand what one has never been taught or experienced. Crawford (1975) warns that more apathy on the part of nurses involved in the care of preoperative and postoperative patients may be seen unless the operating room is returned to the nursing student's curriculum.

Although many authors believe the intraoperative experience is a valuable component in the baccalaureate nursing curriculum, Hicks (1975) identified five reasons why the operating room experience has frequently been omitted from nursing school curricula. The first reason discussed by Hicks (1975) is that with the vast increase in knowledge in nursing, it is no longer possible for students to have experiences with every type of patient and in every department of a hospital. As a result, it has been necessary to select representative experiences for students (Hicks, 1975).

A second reason cited by Hicks (1975) for exclusion of the operating room experience is that the nurse's role has changed. The nurse is no longer the 'handmaiden of the physician', "...but a colleague with a distinct contribution to the delivery of health care to individuals and families "

(Hicks, 1975, p. 633). With this changing role of the nurse, many nurse educators believe that the operating room experience focuses unnecessarily on technical tasks which are nonessential or can be learned elsewhere (Gruendemann et al, 1970).

The third factor discussed by Hicks (1975) is a combination of the impact of the knowledge explosion and the changing role of the nurse. This has led to the recognition by nursing educators that "...it is no longer possible, necessary, or practical to prepare practitioners for specialized professional nursing functions" (Chioni & Schoen, 1970, p. 50). Students cannot be prepared for everything in nursing practice because of insufficient time (Hicks, 1975). In response to the problems of time limitation and knowledge explosion, the National Commission for the Study of Nursing and Nursing Education (1970) proposed a two-tract system for the preparation of nurses: episodic practice which emphasizes the creative and restorative aspects of nursing and distributive practice which emphasizes the prevention of disease and the maintenance of health. This approach has led to the adoption by nursing faculties of an integrated approach to curriculum development (Elder & Smyth, 1970; Hicks, 1975). Courses have been developed to center on the learning objective rather than on the clinical unit where the student is assigned (Elder & Smyth, 1970). The extended experience

in the operating room has not fit with this integrated curriculum pattern and has tended to be omitted (Hicks, 1975).

The fourth reason cited by Hicks (1975) is the change in the operating room clinical experience itself which is often outside the control of the nursing education institution. Previously, students in the operating room were primary members of the operating team. With the proliferation of health care workers, students are now frequently so far removed from the operating table that they cannot even see the patient (Hicks, 1975). According to Hicks (1975), the learning needs of other health professionals in the operating room have superseded those of nursing students.

The final reason cited by Hicks (1975) for elimination of the operating room experience is the lack of faculty who are experienced in the operating room. The lack of proficiency among nursing faculty in the care of the patient intraoperatively has made nursing faculty hesitant to instruct students in this area. Also, nursing faculty are no longer able to remain with students while they are in the operating room due to the number of students and the variety of their experiences. This has also contributed to removal of the operating room experience from the curriculum (Hicks, 1975).

## Nursing Care Needs of the Surgical Patient

Atkinson and Kohn (1978) define needs as "...factors that must be controlled or redirected to restore altered function" (p. 33). Nursing judgements are based on knowledge of patient needs (Atkinson & Kohn, 1978). Atkinson and Kohn (1978) state that surgical patients face a grave threat to their physical, psychosocial, and spiritual needs. They describe the physical needs as the life-sustaining necessities such as food, water, oxygen, sleep, and warmth; psychosocial needs as the needs for security, belonging, inclusion, affection, recognition, self-esteem, identity, and control; and spiritual needs as the support of a person's religious views or belief in a supreme being(s) whose guidance influences a person's life.

In addition to altering the ability to meet the basic needs, surgery creates other specific problems for patients which affect them physically and emotionally (Hewitt, 1984; Pleitez, 1972; Saylor, 1975). Individuals confronted with surgery experience fear of the unknown, hopes for the future, an awareness of potential losses, and moments of crisis (Palmateer, 1983; Saylor, 1975).

According to Luckmann & Sorensen (1980), although each type of surgery creates its own specific problems, all surgery is associated with a number of systemic reactions by the patient. These reactions may include the following:

(a) eliciting the stress response; (b) lowering the

defense against infection; (c) disruption of the vascular system; (d) disturbed organ function; (e) disturbance in body image; and (f) changes in life style.

In general, the terms injury, stress, and trauma are used to denote any threat to a person's well-being (Marcinek, 1977). Murray (1975) defines stress as "... a physical and emotional state indirectly observable, always present, but intensified when internal or external environmental change or threat occurs" (p. 69) and stressor as "... an agent or factor that causes intensification of the condition of stress" (p.69). Stressors include cold, heat, radiation, infectious organisms, disease processes, mechanical trauma, forced muscular exercise, hemorrhage, pain, fear, imagined events, or intense emotional involvement (Selye, 1956).

Surgery is considered a stressor (Fraulini, 1983; Janis, 1958; Murray, 1977; Palmateer, 1983; Pleitez, 1972). Janis (1958), in his classic work regarding surgery and stress, states:

From a psychological standpoint, a major surgical operation constitutes a stress situation which resembles many other types of catastrophes and disasters in that the 'victim' faces a combination of three forms of imminent danger - the possibility of suffering acute pain, of undergoing serious body damage, and of dying (p. 10).

In Janis' investigation of the psychological effects of surgery, he reported that more than 75% of the patients expressed a moderately high degree of preoperative

anxiety. A greater number of patients expressed fear as the hour of surgery approached, and the level of patient fear was highest among those patients who were conscious when entering the operating room.

Surgery threatens homeostasis and elicits the stress response in individuals (Marcinek, 1977; Murray, 1977). Surgery is considered controlled trauma since it is performed under controlled conditions. However, any type of trauma, controlled or uncontrolled, elicits the stress response or general adaptation syndrome (Marcinek, 1977).

The general adaptation syndrome was first described by Selye (1956). According to Selye (1956), the stress response is a protective mechanism that enables a person to adapt to trauma and gradually regain homeostasis.

Individuals respond to stress differently, and one individual will react differently from situation to situation (Hewitt, 1984). Pleitez (1972) states that the psychophysiological reaction to a surgical procedure depends "... on the structure of the personality; on the nature, duration, course, and prognosis of the illness; on the surgeon-patient relationship; on the hospital milieu; and on the patient-staff relationships" (p. 137).

In general, however, the stress response following surgery includes several distinct physiologic reactions. The reactions following surgery are stimulation of the adrenal medulla by the sympathetic nervous system, increased

amounts of circulating epinephrine and norepinephrine, tachycardia, increased blood pressure, cool pale skin, bronchial dilatation, and increased blood sugar (Marcinek, 1977).

The anterior pituitary gland also increases its secretion of adrenocorticotrophic hormone (ACTH) following surgery. ACTH stimulates the adrenal cortex to increase its secretion of glucocorticoids (primarily cortisol) and mineralcorticoids (primarily aldosterone). Increased glucocorticoid production leads to gluconeogenesis which enables the body to meet the stress of surgery by providing energy in the form of glucose. Increased mineralcorticoid production assists in maintaining intravascular volume which is disrupted during surgery (Marcinek, 1977; McConnell, 1977).

When a patient is exposed to a surgical procedure, the first line of defense against bacterial invasion, the skin, is destroyed (Bruno, 1979; Byrner, 1979; Flynn & Rovee, 1982; Leonard, 1984; O'Byrne, 1979). As a result, the possibility of infection is an everpresent problem confronting the surgical patient. According to Lockett (1983), about one out of every twenty patients undergoing surgical procedures is likely to acquire postoperative wound infection. The acquisition of a postoperative infection increases the risk of morbidity and mortality to the surgical patient (Lockett, 1983).

Patients are also prone to respiratory complications postoperatively (Codd & Grohar, 1975; Johnson, 1975). The potential for the development of pulmonary congestion, atelectasis, or pneumonitis exists for any patient having general anesthesia and/or abdominal or thoracic surgery (Bakutis, 1972; Johnson, 1975).

The severing of blood vessels during surgery is associated with interruptions in the vascular system (Groah, 1983; Sladen, 1984). Despite the fact that the severed blood vessels are clamped by surgeons immediately, some blood loss always occurs during surgery (Kneedler & Dodge, 1983). Excessive blood loss can lead to shock and hemorrhage intraoperatively or postoperatively (Croushore, 1979; Groah, 1983; Kneedler & Dodge, 1983; McConnell, 1977; Parsons & Stevens, 1974; Sladen, 1984).

Organs are often either manipulated or removed during surgery. If the organs are manipulated, organ function may be temporarily disrupted during the postoperative period (Kneedler & Dodge, 1983; Metheny, 1975). Radical surgeries may alter the physiologic functioning of the entire body (Kneedler & Dodge, 1983). The administration of anesthetic agents may also interfere with several body functions (Holley, 1975).

Surgery can affect a person's body image. Gruendemann (1975) defines body image as "... one's conceptual profile of his body ('I-ness')" (p.636). Body image consists of

conscious and unconscious feelings, facts, and perceptions about one's body. Formation of body image begins in early childhood and continues to evolve throughout life (Gruendemann, 1975; McCloskey, 1976). Surgery can either enhance or disrupt a patient's body image. Surgical amputations of a limb or breast, disfiguring operations or removal of organs of symbolic importance may cause disturbances of body image. On the other hand, cosmetic surgeries may enhance a person's body image (Gruendemann, 1975).

Kneedler and Dodge (1983) state that surgery may necessitate changes or alterations in a patient's way of life during the immediate postoperative period. The patient's financial status, job, and recreational activities may also be affected by surgery (Atkinson & Kohn, 1983; Hewitt, 1984).

Each individual reacts to surgery in unique ways (Beyers & Dudas, 1984; Gruendemann, 1975; Kneedler & Dodge, 1983; Long & Phipps, 1985; Moidel, Sorensen, Giblin, & Kaufman, 1971; Pleitez, 1972). According to Moidel et al. (1971), "... the patient's reaction to surgery is based on his perception of the degree of immediate threat from the surgery, i.e. the physical, psychological, social, and financial sacrifices involved; his perception of the outcome of the surgery, i.e. the degree to which the surgery will ultimately improve his condition or disable him in some way;

and his usual behavior in response to a threat, i.e. withdrawal, denial, bravado, decisive action" (p. 458).

The nurse as an essential member of the health care team attempts to make surgery a more tolerable experience for the patient (Groah, 1983; Kneedler & Dodge, 1983; Long & Phipps, 1985; Smith & Germaine, 1975). Smith and Germaine (1975) state that every patient has the right to expect high quality care. The process of care requires careful, detailed planning and coordination as well as accurate assessment of the patient. Accurate assessment and planning ensure that the patient is given the maximum benefit of technical and personal care.

Kneedler and Dodge (1983) report that 45.2 percent of short-stay hospital patients have had surgery. However, Kneedler and Dodge (1983) state that nurses who work on surgical units have limited knowledge of the effects of intraoperative occurrences on patients and a limited knowledge of what transpires in the operating room.

The American Nurses Association (ANA) has identified the Standards of Medical-Surgical Nursing Practice. According to the ANA (1974), these standards provide a means for determining the quality of nursing care a patient receives. The ANA Standards (1974) require that nurses who are engaged in the practice of Medical-Surgical nursing should:

- (1) base nursing practice on principles and theories of bio-physical and behavioral sciences;

- (2) continuously update knowledge and skills, applying new knowledge generated by research, changes in health care delivery systems, and changes in social profiles;
- (3) determine the range of practice by considering the patient's needs, the nurse's competence, the setting for care, and the resources available; and
- (4) insure patient and family participation in health promotion, maintenance, and restoration (p.1).

The Association of Operating Room Nurses (AORN) Nursing Practices Committee developed the Patient Outcome Standards for Perioperative Nursing in November, 1983. The AORN's goal in developing these standards was to provide nurses with guidelines for giving the best possible care to a patient who experiences surgery (Botsford, 1984). There are six outcome standards that focus on prevention of high incidence problem areas for surgical patients (Botsford, 1984). The six standards developed by the AORN (1983) are:

- (1) The patient demonstrates knowledge of the physiological and psychological responses to surgical intervention.
- (2) The patient is free from infection.
- (3) The patient's skin integrity is maintained.
- (4) The patient is free from injury related to positioning, extraneous objects, or chemical, physical, and electrical hazards.
- (5) The patient's fluid and electrolyte balance is maintained.
- (6) The patient participates in the rehabilitation process (p.ii-1).

According to Botsford (1984); by integrating these outcome standards into practice, the nurse is able to observe

results of care given to a particular patient and measure to what extent his needs are met.

The surgical patient is an individual with interdependent physiological, psychological, and social needs (Kneedler & Dodge, 1983). According to Atkinson and Kohn (1978), in order to effectively meet the patient's requirements, nurses must have knowledge of the patient's needs, understanding of individuality, and realization of what an operation means to a patient.

A patient's needs are not likely to be satisfied by being connected to the newest machine, or simply by the nurse's understanding of the newest surgical procedure (Kneedler & Dodge, 1983). What the patient needs is personal contact, help in coping with fears and anxiety, and explanations other than those provided by the surgeon and anesthetist. These needs can and should be provided by the professional nurse.

#### Summary

In summary, many authors believe the intraoperative experience is a valuable component of baccalaureate nursing education. They state that in the operating room, students can learn many generalist nursing behaviors as well as be provided the opportunity to focus on patient responses to surgical intervention. Surgery creates several specific problems in the patient which make the needs of the

surgical patient unique. An intraoperative clinical experience allows the student the opportunity to recognize and meet the individualized needs of the surgical patient.

Although there are valid reasons for including an operating room experience for every student, other authors present sound reasons for the exclusion of such experience from baccalaureate nursing curriculums. The lack of adequate time to include experiences in many different areas of nursing, the changing role of the nurse, the lack of adequately prepared faculty, and the knowledge explosion in nursing are the major reasons identified in the literature.

A great deal of literature focuses on the nursing care needs of surgical patients. There is apparent concensus regarding the importance of preparing nursing students to deal with health care problems encountered by patients preoperatively and postoperatively.

## CHAPTER 3

### CONCEPTUAL FRAMEWORK

The conceptual framework for this study centers around the following concepts: teaching, learning, nursing, and man. These concepts have been applied to baccalaureate nursing education in general as well as to the perioperative experience in baccalaureate nursing education. Thus, there are two models for this study. Model A (see Figure 1, p. 33) depicts baccalaureate nursing education in general. Model B (see Figure 2, p. 40) depicts the perioperative experience in baccalaureate nursing education. Prior to discussing these models, the writer will define the relevant terms as they are used in the models and identify the principles of learning inherent in the models.

#### Definition of Terms Related to the Models

Teaching - a system of actions intended to induce learning (Dembo, 1977).

Learning - a process by which behavior is either modified or changed through experience or training (Dembo, 1977).

Nursing - the diagnosis and treatment of human responses to actual or potential health problems (ANA, 1980).

Science of Nursing - the identification, learning, and synthesis of the knowledge and skills specific to the cognitive, psychomotor, and affective domains of nursing practice (Rawnsley, 1980).

Art of Nursing - the application and incorporation into nursing practice of the knowledge and skills specific to the cognitive, psychomotor, and affective domains (Rawnsley, 1980).

Cognitive Domain - an area of nursing concerned with intellectual abilities; this area includes knowledge, understanding, and thinking skills (Bennett, 1980).

Affective Domain - an area of nursing concerned with feelings and emotions; this area includes attitudes, interests, appreciation, and methods of adjustment (Bennett, 1980).

Psychomotor Domain - an area of nursing concerned with motor skills (Bennett, 1980).

Baccalaureate Nursing Education - a four-year program of study at a college or university designed to provide the student with abilities necessary for the diagnosis and treatment of human responses to actual or potential health problems.

Man - a biopsychosocial being; a composite of physical, psychological, and social needs (Roy, 1980).

Didactic Instruction - a method of instruction in which the teacher imparts the facts, concepts, and principles to be learned to the student; reception learning.

Clinical Instruction - a method of instruction which involves actual participation in the care of patients by the student of nursing; experiential learning.

#### Principles of Learning Essential to the Models

The following principles of learning have been applied to the models. These principles were drawn from the work of Bigge (1964, 1982). Bigge (1964, 1982) described several principles of learning from a wide range of literature. The principles utilized in this conceptual framework from the work of Bigge (1964, 1982) are those applicable to this framework, and are as follows:

- (1) Active participation by a learner is preferable to passive reception when learning.
- (2) Repetitive practice is essential in the learning of certain skills, notably manual skills.
- (3) Transfer to new tasks will be better if, in learning, learners can discover relationships for themselves and if they have experience during learning of applying the principles within a variety of tasks.
- (4) Learning occurs more rapidly and knowledge is retained longer when students grasp relationships

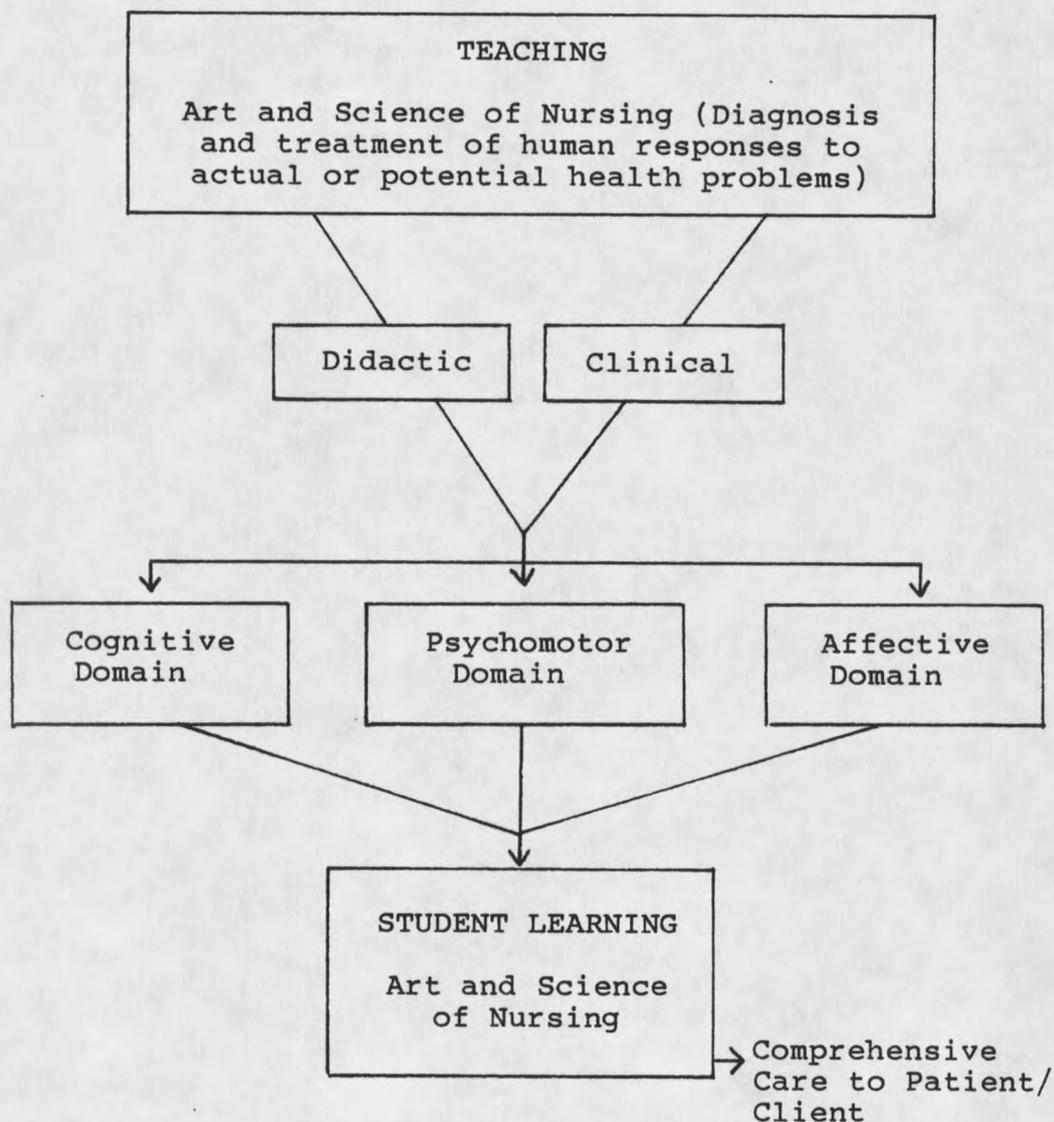
between facts, rules, principles, and generalizations for which they see some use.

Model A - Teaching-Learning Processes and Outcome  
of Baccalaureate Education in Nursing

Model A (see Figure 1, p. 33) is a schematic representation of baccalaureate nursing education in general. Nursing education programs at the baccalaureate level teach in order to promote or induce learning in the nursing student. Teaching is defined as a system of actions to induce learning (Dembo, 1977). According to Redman (1976), the teaching-learning process begins when a need for knowing or gaining an ability to do something is identified. Thus, one must have a goal for the learner before initiating teaching.

In this framework, the identified goal (or learning need) of baccalaureate nursing education is that the student of nursing learn the art and science of nursing in order to develop the ability to provide comprehensive care to patients/clients. Comprehensive nursing care means that the student learns to recognize nursing care needs that the patient is presently experiencing or that the patient may potentially experience. The nursing student must also learn to assist the patient/client in meeting these needs in order to provide comprehensive patient care. The goal of baccalaureate nursing education is to provide the student, upon completion of studies, with abilities necessary for

Figure 1. Schematic Model of Teaching-Learning Processes and Outcome of Baccalaureate Education in Nursing (Model A)



"...the diagnosis and treatment of human responses to actual or potential health problems" (ANA, 1980, p. 9).

In order to meet this final goal of the teaching-learning process in baccalaureate nursing education, nursing education programs teach the art and science of nursing through the use of two types of teaching methods - didactic and clinical. Didactic teaching for this study refers to classroom teaching in which the teacher imparts the facts, principles, and concepts to be learned by the student through lecture, seminar, and discussion. Two other names for didactic instruction are expository teaching or reception learning (Dembo, 1977). Clinical teaching in this study refers to a method of instruction which involves actual supervised experience by the student of nursing in the care of patients/clients. Another name for clinical instruction is experiential learning. Didactic instruction allows for the presentation of facts or concepts in an organized fashion. Clinical instruction allows for the application of facts and principles presented, practice, and active participation by the learner. It will be shown in this framework that each one of these methods is useful in learning specific skills essential to the development of the art and science of nursing.

According to Rawnsley (1980) nursing consists essentially of three domains of learning - cognitive, psychomotor, and affective. The cognitive domain is an area

of nursing concerned with intellectual abilities. It includes knowledge, understanding, and thinking skills (Bennett, 1980). The psychomotor domain is an area of nursing concerned with motor skills (Bennett, 1980). The affective domain is an area of nursing concerned with feelings and emotions. This domain includes attitudes, interests, appreciation, and methods of adjustment (Bennett, 1980).

Baccalaureate nursing education programs focus on teaching in these three domains of nursing. The development of cognitive, psychomotor, and affective skills in nursing assists the student in developing the art and science of nursing. As a science, nursing has been gleaned from the biological, physical, and social sciences. It is composed of sound scientific facts which the nursing student must learn. Rawnsley (1980) states that the art of nursing consists of successfully incorporating all three domains into practice. The nursing student must also develop the art of nursing. From this it is evident that baccalaureate nursing education is attempting to teach the student theory as well as the application of this theory to practice.

In teaching the domains necessary to develop the art and science of nursing, Redman (1976) has stated that each domain responds best to a particular method of teaching. Facts and concepts within the cognitive domain are taught best by written materials, audiovisual aids representing the

concepts, lectures, and discussion (Redman, 1976). A student cannot apply a theory until the student has knowledge of the theory. Likewise, a student cannot have knowledge of a theory until the student knows some facts upon which the theory is based. Thus, the didactic method is probably the most effective means of aiding the student to learn in the cognitive domain in nursing.

The clinical method of instruction is also important in assisting the student in learning within the cognitive domain in nursing. In the beginning of this conceptual framework, several principles of learning were identified. It was stated that learning is greater when the student can actually see the relationships between facts, concepts, and principles; learning is also enhanced when the student can actually apply the principles taught. Clinical experience allows the student this opportunity. The student can actually witness what has been previously taught didactically. Thus, learning in the cognitive domain is increased when both methods of instruction are utilized - didactic and clinical.

The teaching of attitudes and feelings is best accomplished through the clinical method of instruction (Redman, 1976). Learning of attitudes and feelings within the affective domain does not follow automatically from a knowledge of facts, but is best learned by actual involvement and experience with patients (Redman, 1976).

According to Bennett (1980), it is not enough to "tell" the student something he needs to know in the affective domain. It is not enough that the student "hears" what is being said but must also analyze the ideas in the conscious part of the mind (Bennett, 1980). This is most effectively accomplished in a clinical situation where the student interacts with patient stimuli and the student then receives immediate feedback. The student can develop feelings and attitudes from this interaction. The learning process in the affective domain then becomes strengthened. Thus, when learning feelings and attitudes, active participation is more advantageous than passive reception.

In the learning of motor skills within the psychomotor domain, Redman (1976) states that these skills are best learned by a demonstration of the skills with subsequent practice until they are perfected. Thus, the clinical method of instruction is an essential part of the learning of psychomotor skills. The student may be taught the principles of the skill didactically. However, complete learning in the psychomotor domain cannot take place until the student has the opportunity to actually practice the skill in a clinical situation. This is also in keeping with one of the principles of learning inherent in this model - practice is essential in the learning of skills.

From the above discussion, it is evident that both didactic and clinical instruction can be useful in the three

domains of nursing; both types of instruction assist the nursing student to develop the art and science of nursing. When exposed to clinical and didactic methods of instruction in all three domains of nursing, the student's opportunity to learn knowledge, skills, and attitudes relevant to the care of the patient is enhanced.

One component of the art and science of nursing which the student of nursing must learn is knowledge of the basic needs of all persons. Man (generic term) is defined by Roy (1980) as a biopsychosocial being. This means that every human being is a composite of physical, psychological, and social needs. The physical needs include all the physiologic processes of a human being, e.g., breathing, elimination, and circulation. The psychological needs are concerned with a person's feelings, thoughts, and emotions. The person's social needs relate to the interactions a person has with other people in his environment (Roy, 1980).

The nursing student must have knowledge of man's needs as well as experience in recognizing, identifying, and meeting these needs in order to practice the art and science of nursing and provide comprehensive care to the patient. It is this author's contention that through a combination of didactic and clinical experience, the student will develop knowledge of the biopsychosocial needs of the patient. The student will be taught man's needs didactically and will

also have experience clinically in recognizing, identifying, and meeting the needs. The student will thus be able to apply the theory taught in class in the clinical setting. The knowledge learned by the nursing student concerning the biopsychosocial needs of the patient will aid in the development of the art and science of nursing in the student.

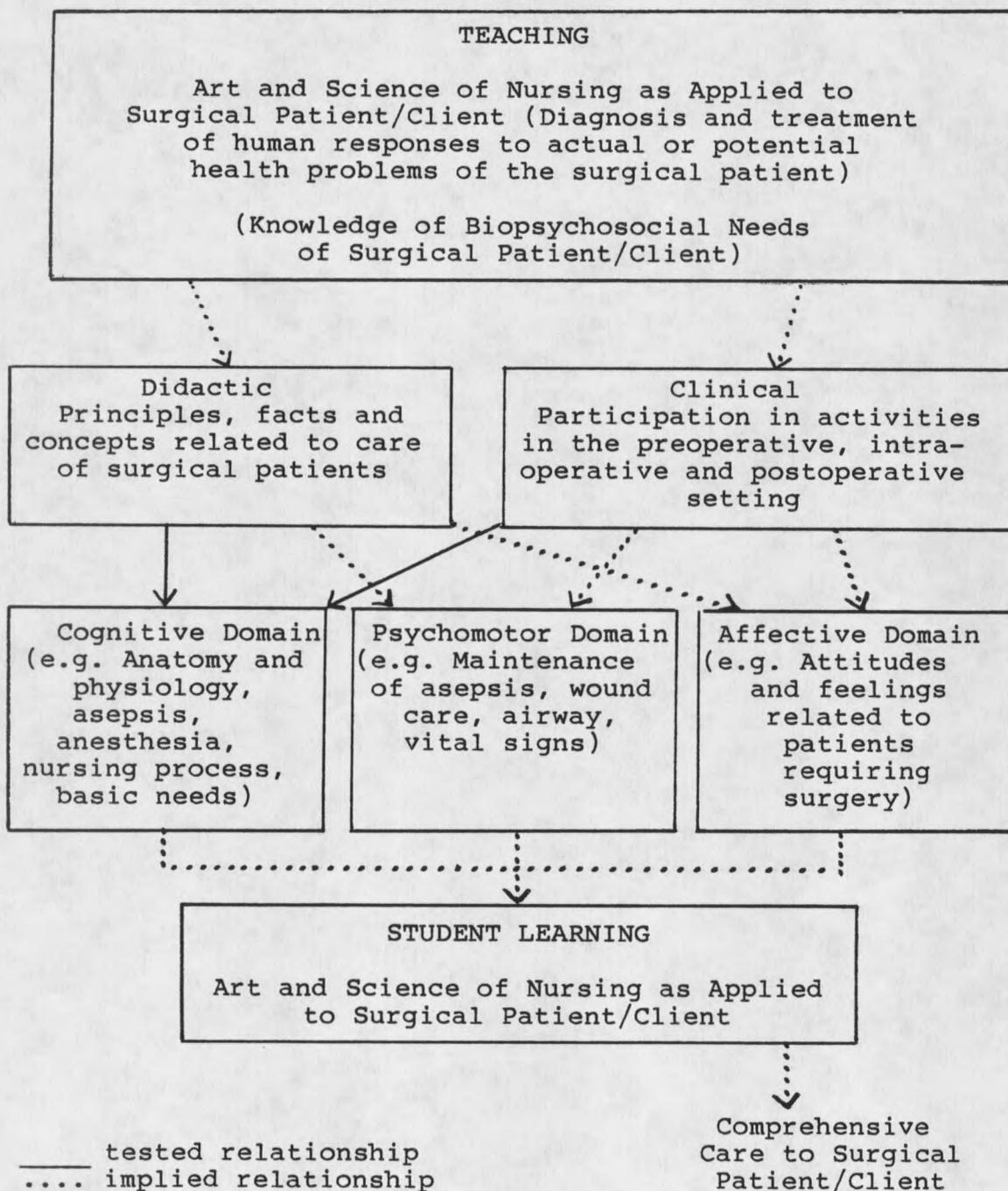
This study was designed to measure only the development of knowledge of the biopsychosocial needs of the patient; it did not assess psychomotor skills or affective development among students. Thus, the study focuses on measuring outcome in the cognitive domain. Model A indicates that once adequate learning in all three domains of nursing has occurred, and the student has successfully developed the art and science of nursing, the student is expected to be able to provide comprehensive care to the patient.

#### Model B - Perioperative Teaching and Learning Processes for Baccalaureate Nursing Education

The concepts described in Model A apply to Model B (see Figure 2, p. 40). However, Model B describes teaching and learning as it relates specifically to the care of the surgical patient.

In looking at Model B, it is noted again that teaching and learning are essential components of the model. The goal of the teaching-learning process with regard to the

Figure 2. Schematic Model of Perioperative Teaching and Learning Processes and Outcomes for Baccalaureate Nursing Education (Model B)



surgical patient is that the nursing student learns the art and science of nursing in order to develop the ability to provide comprehensive care to the surgical patient.

In order to assist the student in developing the ability to provide comprehensive care to the surgical patient, the student receives didactic instruction concerning the principles relating to the care of the surgical patient preoperatively, intraoperatively, and postoperatively. Didactic instruction includes concepts concerning specific needs of the surgical patient at various stages of the perioperative process. The didactic approach is common to most baccalaureate nursing education programs.

In the method of clinical instruction, baccalaureate nursing education programs differ. Many baccalaureate nursing education programs provide clinical experiences in the care of the surgical patient preoperatively and postoperatively only. The conceptual framework, however, depicts clinical experiences in the care of the surgical patient preoperatively, intraoperatively, and postoperatively. This is based on the author's conviction that the lack of an intraoperative clinical experience hinders the goal of the teaching-learning process with regard to the surgical patient. It is through the clinical method of instruction in each perioperative phase that the student grasps the relationships between facts and learns to apply

the theory taught in class concerning the care of the surgical patient.

In Model A, one sees that nursing consists essentially of three domains - cognitive, affective, and psychomotor. Nursing education programs focus on teaching skills specific to the surgical patient in each of the three domains of nursing. The development of cognitive, psychomotor, and affective skills specific to the surgical patient assists the student in developing the art and science of nursing as applied to the surgical patient. Each domain, as stated in Model A, responds best to a particular method of instruction. The cognitive domain is best taught didactically. The student receives instruction concerning the concepts, principles, and facts relating to the specific needs of the surgical patient. The concepts relating to the surgical patient cannot be applied in practice until the student has some knowledge of these concepts, facts and principles.

The psychomotor domain, as applied to the surgical patient, is best taught clinically. Nursing skills relating to the surgical patient are best learned by active participation. Demonstration of the skill may be provided in the classroom setting; the principles relating to the skill may also be taught didactically. However, practice in a patient care setting is essential in the learning of skills relating to the surgical patient.

According to the proposed conceptual framework, the lack of clinical experience intraoperatively will hinder the nursing student's learning process in the psychomotor domain. The student is didactically taught the skills necessary to meet the needs of the surgical patient intraoperatively. However, the student does not have the opportunity to practice these skills clinically. Practice in the clinical area is significant in the student's ability to learn in the psychomotor domain. Without practice, adequate learning of psychomotor skills may not take place. Inadequate learning of psychomotor skills may hinder not only the care the patient receives intraoperatively, but also preoperatively and postoperatively.

The affective domain as applied to the surgical patient is also viewed as best taught through the clinical method of instruction. The student of nursing cannot acquire the attitudes necessary to meet the needs of the surgical patient adequately if these needs are only explained or discussed in a classroom setting. Learning the affective domain abilities necessary in the care of surgical patients requires actual involvement with patients experiencing surgical procedures. Thus, lack of an intraoperative clinical experience is viewed as affecting development of the affective domain learning in the nursing student. Lack of development in the nursing student of affective domain abilities necessary to meet the needs of the surgical

patient can affect the care the patient receives throughout the entire perioperative process. For example, the student may not develop an appreciation of the amount of organ manipulation that occurs during the surgical procedure without an intraoperative clinical experience. Organ manipulation during the surgical procedure may substantially affect the level of postoperative pain the patient experiences. Without an adequate appreciation for organ manipulation and the resultant postoperative pain, the student may lack an adequate data base for empathetic communication and assessment of medication needs.

Both didactic and clinical methods of instruction, then, are essential in order to develop the art and science of nursing as applied to the surgical patient. Clinical teaching is essential to the development of affective and psychomotor skills. Cognitive skills, while usually best taught didactically, are also reinforced in the clinical area where the student actually applies the theory taught. According to the theories of learning basic to the presented models, knowledge is retained longer when students grasp relationships between facts, principles, and generalizations for which they see some use (Bigge, 1964, 1982). In other words, theory becomes more meaningful when it is put to practical use (Atkinson & Kohn, 1978). The combination of didactic and clinical experience, then, assists the student in developing the art and science of nursing as applied to

the surgical patient. The student develops knowledge of the theory relating to the surgical patient and the student learns to apply this theory in practice.

Model B depicts the contention that it is through both didactic and clinical experience in the care of the surgical patient preoperatively, intraoperatively, and postoperatively, that the student has the best opportunity to develop the cognitive, psychomotor, and affective skills necessary to develop the art and science of nursing as applied to the surgical patient. One component of the art and science of nursing that students will learn through a combination of didactic and clinical experience is the biopsychosocial needs of the surgical patient. The student will be taught didactically the biopsychosocial needs of the patient and will have experience clinically in recognizing, identifying, and meeting these needs. The knowledge gained by the nursing student strengthens the student's development of the art and science of nursing as applied to the surgical patient.

This study is only able to measure the knowledge level of nursing students as related to the biopsychosocial needs of the surgical patient. Thus measurement focuses on the cognitive domain. The conceptual framework, however, includes learning in the three domains of nursing specific to the surgical patient. It indicates that once the student has developed the art and science of nursing as applied to

the surgical patient, the student is expected to be able to provide comprehensive care to the surgical patient.

## CHAPTER 4

### METHODOLOGY

#### Design

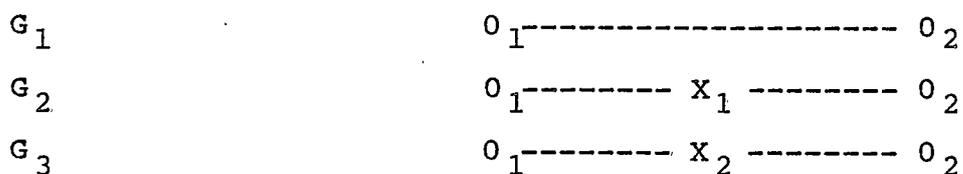
This study utilized a quasi-experimental design. The subjects were divided into three groups: one control and two experimental.

The control group consisted of those students who did not have an intraoperative (operating room) experience during their Medical-Surgical clinical rotation. This group was composed of students who completed N357 (Medical-Surgical Nursing II) but not N356 (Medical-Surgical Nursing I) on the Billings extended campus. The number of subjects in the control group was 15 (n=15).

The first experimental group consisted of those students who had an intraoperative (operating room) experience during their Medical-Surgical clinical rotation. The intraoperative experience in this group involved observation of the surgical experience only. This group was composed of those students who completed both N356 (Medical-Surgical Nursing I) and N357 (Medical-Surgical II) at the Missoula extended campus. The number of students in this first experimental group was 15 (n=15).

The second experimental group consisted of those students who also had an intraoperative (operating room) experience during their Medical-Surgical clinical rotation. However, the intraoperative experience in this group involved actual participation (gowning, gloving, scrubbing, etc.) as well as observation of the actual procedure. This group consisted of those students who completed N356 (Medical-Surgical Nursing I) at the Billings extended campus. The number of students in this second experimental group was 19 (n=19).

Subjects in each group were given a pre-test prior to their Medical-Surgical clinical rotation (either N356 or N357). Following completion of the Medical-Surgical clinical rotation (either N356 or N357); a post-test was administered. A diagrammatic representation of the design is provided below:



KEY

- $G_1$  = Billings Extended Campus - N357
- $G_2$  = Missoula Extended Campus - N356 and N357
- $G_3$  = Billings Extended Campus - N356
- $O_1$  = Pre-test
- $O_2$  = Post-test

$X_1$  = Observation Only

$X_2$  = Actual Participation and Observation

### Sample

This study utilized a non-probability convenience sample. The limited availability of appropriate subjects and financial constraints necessitated this approach. All junior-level nursing students enrolled in either N356 (Medical-Surgical Nursing I) or N357 (Medical-Surgical Nursing II) on the extended campuses of Billings and Missoula in the Montana State University College of Nursing constituted the sample employed for this study. Junior nursing students were utilized since the operating room experience, when present, is a component of the Junior-level Medical-Surgical nursing courses at Montana State University College of Nursing. All fifty-seven students enrolled in the relevant courses agreed to participate in this study. However, only forty-nine students actually completed all study instruments.

Students enrolled in N357 (Medical-Surgical Nursing II) at the Billings extended campus who had previously completed N356 (Medical-Surgical Nursing I) were excluded from participating in this study since these individuals had already completed the intraoperative (operating room) experience. Students who already possessed a license to

practice as a Registered Nurse were also excluded from participating in this study.

Background data were acquired on the age, sex, quarter in school, prior experience in the operating room and/or as a nurse's aid, and prior education of study subjects. Data were also acquired concerning previous nursing courses taken by each subject at Montana State University College of Nursing.

#### Instruments/Measures

There were two instruments used to collect data in this study. The first instrument used was a "Knowledge of the Surgical Patient" test (see Appendix E). The second instrument used in this study was a "Demographic Questionnaire" (see Appendix D). Both instruments were developed by this investigator.

The "Knowledge of the Surgical Patient" instrument was a paper and pencil test developed by the researcher to measure among junior nursing students the level of knowledge concerning surgical patients and their specific needs preoperatively, intraoperatively, and postoperatively. This test contained fifty (50) multiple choice questions which required the student to select one answer for each question. This test contained the following: three (3) questions from anatomy and physiology, nine (9) questions relating to principles of asepsis, nine (9) questions

concerning anesthesia and its effect on the body, eighteen (18) questions concerning the nursing process as applied to the care of the patient preoperatively, intraoperatively, and postoperatively, and eleven (11) questions relating to human responses to actual and potential problems associated with surgery in surgical patients. Areas of knowledge tested have been identified in the literature as important in order for the nurse to provide comprehensive nursing care to the surgical patient (Armitage, 1979; Kneedler & Dodge, 1983; Luckman & Sorensen, 1980; Smith & Germaine, 1975).

Content validity for the "Knowledge of the Surgical Patient" instrument was established prior to administration of the test to nursing students. An outline of the general content areas was developed by this investigator with the assistance of Marcia Stroud, R.N., M.N. Medical-Surgical Clinical Specialist, Cody, Wyoming (see Appendix F). Test questions were then developed from this outline. The test was reviewed for appropriateness of content by Vonna Koehler, R.N., M.N., Assistant Professor, Medical-Surgical Nursing, Montana State University College of Nursing; Ruth Saucier, R.N., M.N., Assistant Professor, Medical-Surgical Nursing, Montana State University College of Nursing; Juanita McGregor, R.N., B.S.N., Teaching Assistant, Montana State University College of Nursing; Bruce Larmer, R.N., B.S.N., Head Nurse - Operating Room, Montana Deaconess Medical Center, Great Falls, Montana; and Virginia

Stookesbury, R.N., Head Nurse - Operating Room, West Park Hospital, Cody, Wyoming.

Test-retest reliability of the instrument was examined prior to the instrument's use in the study. The test was administered to six senior nursing students at Montana State University College of Nursing at the Billings extended campus in November, 1984. The test was administered again two weeks later (December, 1984) to the same senior nursing students. Test-retest reliability was calculated, and found to be 0.96 ( $r=.96$ ). Minor changes were made in the instrument for the sake of clarity following review of test responses from the test-retest group.

The "Demographic Questionnaire" was a written questionnaire developed by the researcher in order to collect data on the demographic variables relevant in this study. The questionnaire contained items regarding the following: age, sex, quarter in school at Montana State University College of Nursing, prior operating room experience, prior experience as a Licensed Practical Nurse and/or as a nurse's aide, and nursing coursework completed at Montana State University College of Nursing.

#### Data Production/Protocols

The prepared test and questionnaire utilized in the study were taken by the investigator to the Missoula and Billings extended campuses at the beginning and completion

of the N356 and N357 (Medical-Surgical Nursing I and II) courses on the respective campuses during the Winter Quarter, 1985. Times were pre-arranged with nursing faculty for the investigator to administer the test and questionnaire. A classroom setting was utilized for administration.

The purpose of the test was explained to the subjects both verbally (see Appendix A) and in writing (see Appendix B) prior to test administration. All subjects were also required to sign a consent form (see Appendix C) prior to test administration if they elected to participate.

Completion of the test and questionnaire by the subjects took approximately one hour at each testing session. The investigator was present throughout the testing. Materials were collected by the investigator following completion of the tests and questionnaires at each session (pre-test and post-test). All study data were collected by the end of the Winter Quarter, 1985.

#### Protection of Human Subjects

The rights of subjects were protected throughout this study. The individuals who consented to participate were not exposed to any undue physical, psychological, and/or social stress or harm.

Three potential psychological risks related to participation were identified by this investigator. The

first psychological risk was a fear in the subjects that the test might affect their grade and standing at Montana State University College of Nursing, although this was not the case. The second potential psychological risk to participants was fear that scores on the test would not be kept confidential. The third potential risk identified was the possibility that taking the test could raise anxiety level in the participants. Participants' anxiety level may have been raised if they felt they did poorly on the test and were unfamiliar with the content relating to the care of the surgical patient; material which they would be required to know in the course of their studies.

These three risks were considered minimal and this investigator attempted to safeguard against them. Individual responses on the questionnaires and tests were identifiable only to this investigator by a study number placed on them. Subject signatures appeared only on the consent form. All results of the study are presented as grouped data.

Participation in this study was voluntary. Each subject received an explanation of the purpose of this study and was assured of voluntary participation as well as confidentiality. Subjects were also allowed to withdraw from the study at any point during it. Subjects were required to complete a consent form using their legal signature if they elected to participate in this study.

Signed consent forms are stored in locked files on the Billings extended campus of Montana State University College of Nursing and will be destroyed in three years. Completed tests and questionnaires are also stored in locked files and will be destroyed upon completion of this study. A copy of the introductory statement read by this investigator, the letter to individual participants, and the consent form can be found in Appendices A, B, and C respectively.

The Human Subjects Committee of Montana State University College of Nursing reviewed the proposal for this study. Approval was granted by this Committee for the study to be conducted by Cheryl L. Koski, R.N., B.S.N.

#### Data Analysis Plan

A combination of descriptive and inferential statistics was used to analyze the pre-test and post-test scores in the three groups. The following descriptive statistics were utilized: frequency distribution, range, mean, and standard deviation. Inferential statistics utilized were: t-test and analysis of variance.

A frequency distribution table was constructed for both the pre-test and post-test scores obtained by the subjects in each of the three groups. Each table consisted of the raw scores, the frequency with which each score was obtained, and the percentage with which each score was obtained.

The range of the scores obtained by the subjects on the pre-test and the post-test was calculated for each of the three groups. The highest and lowest scores for the pre-test and the post-test were identified for each of the three groups.

The mean was calculated for the scores obtained on the pre-test and the post-test for each of the three groups. The mean change score from the pre-test to the post-test was also calculated for each of the three groups.

The standard deviation of the scores obtained on the pre-test and the post-test was calculated for each of the three groups. The standard deviation was also calculated on the change score from the pre-test to the post-test for each of the three groups.

The influence of the relevant demographic variables on the scores obtained on the "Knowledge of the Surgical Patient" test was measured. A single-tailed t-test was used to examine the differences in mean scores on the pre-test among the three groups (Group 1 versus Group 2, Group 1 versus Group 3, and Group 2 versus Group 3). A one-way analysis of variance was also utilized to test the significance of the differences between the means on the scores obtained on the pre-test among the three groups.

A single-tailed t-test was also used to measure whether or not the mean change scores (post-test score minus pre-test score) differed among demographic sub-groups. Data

were collected on the following demographic variables: age (under 25 versus over 25), sex, quarter in school (first quarter versus second quarter versus third quarter), prior experience in the operating room (no prior experience versus prior experience), prior vocational and/or higher education (prior education versus no prior education), Licensed Practical Nurse (Licensed Practical Nurse versus non-Licensed Practical Nurse), prior experience as a nurse's aide (prior experience as a nurse's aide versus no prior experience as a nurse's aide), and prior completed coursework at Montana State University College of Nursing (completed N356, Medical-Surgical Nursing I, versus not completed N356; completed N357, Medical-Surgical Nursing II, versus not completed N357; completed N366, Maternal-Infant, versus not completed N366; completed N367, Pediatrics, versus not completed N367; completed N378, Community Health, versus not completed N378; and completed N386, Psychiatric Nursing, versus not completed N386). A t-test of the subgroup means was calculated for all demographic variables with sufficient subjects ( $n > 5$ ) in each category.

The effect of the intraoperative (operating room) experience on the mean post-test scores obtained by the three groups was examined. A one-way analysis of variance and single-tailed t-tests were utilized to examine the significance of the differences among the means on the post-test scores of the three groups. An F-test was used to

examine the variances of the post-test scores among the three groups. In calculating t-tests, correction was made for statistically significant differences in variances (significant F score).

## CHAPTER 5

### FINDINGS

#### The Sample

A total of fifty-seven (n=57) subjects agreed to participate in this study. Subsequently, forty-nine (n=49) subjects completed both the post-test and the pre-test. Reasons for non-completion of the post-test were withdrawal from school and absence from school on the scheduled day of testing.

Fifteen (n=15) subjects were in Group I (N357 - Medical-Surgical Nursing I, Billings extended campus). Fifteen (n=15) subjects were in Group II (N356 - Medical-Surgical Nursing I and N357 - Medical-Surgical Nursing II, Missoula extended campus). Nineteen (n=19) subjects were in Group III (N356 - Medical-Surgical Nursing I, Billings extended campus).

Demographic data about the sample is provided in Table 1. The sample consisted of three (n=3) males and forty-six (n=46) females. Thirty-eight (n=38) subjects were under the age of twenty-five (25), and eleven (n=11) subjects were over the age of twenty-five (25).

Table 1. Demographic Characteristics of Sample

<u>Sex</u>		<u>N356 - Med-Surg. I</u>	
Male	3 ( 6%)	Completed N356	0 (0%)
Female	46 (94%)	Not Completed N356	49 (100%)
<u>Age</u>		<u>N357 - Med-Surg. II</u>	
Under 25	38 (78%)	Completed N357	11 (22%)
Over 25	11 (22%)	Not Completed N357	38 (78%)
<u>Quarter of Junior Year</u>		<u>N366 - Maternal-Infant</u>	
First	19 (39%)	Completed N366	12 (24%)
Second	28 (57%)	Not Completed N366	37 (76%)
Third	2 ( 4%)		
<u>Prior Education</u>		<u>N367 - Pediatrics</u>	
Prior Education	10 (20%)	Completed N367	11 (22%)
No Prior Education	39 (80%)	Not Completed N367	38 (78%)
<u>Licensed Practical Nurse</u>		<u>N378 - Community Health</u>	
LPN	0 ( 0%)	Completed N378	9 (18%)
Non-LPN	49 (100%)	Not Completed N378	40 (82%)
<u>Experience as Nurse's Aide</u>		<u>N386 - Psychiatric Nursing</u>	
Prior Experience	21 (43%)	Completed N386	25 (51%)
No Prior Experience	28 (57%)	Not Completed N386	24 (49%)
<u>Years Experience as N.A. (n=21)</u>		<u>N366 Observed C-Sect. (n=12)</u>	
< 5 yrs. Experience	18 (86%)	Observed C-Section	9 (75%)
≥ 5 yrs. Experience	3 (14%)	Not Observed C-Sect.	3 (25%)
<u>Prior Operating Room Experience</u>		<u>N366 Cared for Post-op. C-Section (n=12)</u>	
Prior Experience	4 ( 8%)	Cared for C-Section	4 (33%)
No Prior Experience	45 (92%)	Not Cared for C-Sect.	8 (67%)
<u>Years Experience in O.R. (n=4)</u>			
< 5 yrs. Experience	4 (100%)		
≥ 5 yrs. Experience	0 ( 0%)		

\*n=49

Nineteen (n=19) subjects were first-quarter juniors at Montana State University College of Nursing, twenty-eight (n=28) were second-quarter juniors, and two (n=2) subjects were third-quarter juniors.

Ten (n=10) subjects who participated in this study had prior vocational and/or higher education, whereas thirty-nine (n=39) subjects had no prior education other than at Montana State University College of Nursing. Twenty-one (n=21) subjects had prior experience as a nurse's aide; eighteen (n=18) of these subjects had less than five (5) years experience as a nurse's aide whereas three (n=3) subjects had five (5) years or more experience as a nurse's aide. Four (n=4) subjects in this study had prior experience in the operating room, all with less than five (5) years experience.

Thirty-two (n=32) subjects who were included in this study had completed other coursework at Montana State University College of Nursing. This coursework included N357 (Medical-Surgical Nursing II), N366 (Maternal-Infant), N367 (Pediatrics), N378 (Community Health), and N386 (Psychiatric Nursing). Eleven (n=11) subjects had completed N357, twelve (n=12) subjects had completed N366, eleven (n=11) subjects had completed N367, nine (n=9) subjects had completed N378, and twenty-five (n=25) subjects had completed N386. Of the twelve (n=12) subjects who had completed N366 (Maternal-Infant), nine (n=9) had observed a

Cesarean Section in the operating room and four (n=4) had cared for a post-operative Cesarean Section.

### Descriptive Analysis

The following descriptive statistics were used to analyze the pre-test and post-test scores for all three groups: range, frequency distribution, mean, and standard deviation. The results of these analyses are presented in both written and tabular form.

Table 2 displays the lowest and highest scores obtained on the pre-test and the post-test for all three groups. The computed range of scores on the pre-test and the post-test for each group is also displayed.

Table 2.. Range of Scores on the Pre-test and Post-test for Groups I, II and III.

Group	Pre-test			Post-test		
	Lowest Score	Highest Score	Range	Lowest Score	Highest Score	Range
I	58	84	26	54	86	32
II	60	84	24	66	80	14
III	56	78	22	56	86	30

The lowest scores on the pre-test for Group I was fifty-eight (58); the highest score obtained on the pre-test was eighty-four (84). The range of scores on the pre-test for Group I was twenty-six (26). On the post-test, Group I's lowest score decreased to fifty-four (54); Group I's highest score increased to eighty-six (86). This resulted in an increase in a range of scores to thirty-two (32) on the post-test for Group I.

The lowest score obtained on the pre-test for Group II was sixty (60); the highest score obtained on the pre-test was eighty-four (84). The range of scores on the pre-test for Group II was twenty-four (24). The lowest score on the post-test increased to sixty-six (66) for Group II. The highest score on the post-test, however, decreased to eighty (80). The range of scores decreased to fourteen (14) on the post-test for Group II.

In Group III, the lowest score obtained on the pre-test was fifty-six (56), whereas the highest score on the pre-test was seventy-eight (78). The range of scores on the pre-test was twenty-two (22) for Group III. The highest score on the post-test for Group III, however, increased to eighty-six (86). The range of scores on the post-test for Group III increased to thirty (30).

A frequency distribution for the scores obtained on the pre-test and the post-test for Groups I, II, and III is displayed in Tables 3, 4, and 5 respectively. Each table

contains the score, the frequency with which each score was obtained, and the frequency percentage.

Table 3 shows that three (n=3) subjects in Group I obtained scores between 50-59 on the pre-test and two (n=2) subjects obtained between 50-59 on the post-test. Five subjects (n=5) obtained between 60-69 on the pre-test, whereas only four (n=4) subjects obtained between 60-69 on the post-test. On the pre-test, six (n=6) subjects scored between 70-79; the number of subjects scoring between 70-79 on the post-test increased to eight (n=8) in Group I. Only one (n=1) subject attained a score between 80-89 on both the pre-test and the post-test in Group I.

Table 3. Frequency Distribution - Pre-test and Post-test Scores for Group I.

Score	Pre-test		Post-test	
	Frequency	Percent	Frequency	Percent
0-9	0	0.00	0	0.00
10-19	0	0.00	0	0.00
20-29	0	0.00	0	0.00
30-39	0	0.00	0	0.00
40-49	0	0.00	0	0.00
50-59	3	20.00	2	13.00
60-69	5	33.33	4	26.67
70-79	6	40.00	8	53.33
80-89	1	6.67	1	6.67
90-100	0	0.00	0	0.00

\*n=15

Table 4 displays the frequency and percentage with which each score was obtained for Group II. Ten (n=10) subjects

obtained scores between 60-69 on the pre-test. In contrast, only one (n=1) subject obtained a score between 60-69 on the post-test. Four (n=4) subjects obtained a score between 70-79 on the pre-test. This number increased dramatically on the post-test where twelve (n=12) subjects, or eighty (80%) percent of the sample, obtained a score between 70-79. Only one (n=1) subject obtained a score between 80-89 on the pre-test, whereas two (n=2) subjects attained this score on the post-test.

Table 4. Frequency Distribution - Pre-test and Post-test Scores for Group II.

Score	Pre-test		Post-test	
	Frequency	Percent	Frequency	Percent
0-9	0	0.00	0	0.00
10-19	0	0.00	0	0.00
20-29	0	0.00	0	0.00
30-39	0	0.00	0	0.00
40-49	0	0.00	0	0.00
50-59	0	0.00	0	0.00
60-69	10	66.67	1	6.67
70-79	4	26.67	12	80.00
80-89	1	6.67	2	13.33
90-100	0	0.00	0	0.00

\*n=15

Table 5 presents a frequency distribution of the scores obtained on the pre-test and the post-test for Group III. On the pre-test, four (n=4) subjects obtained a score between 50-59; only one (n=1) subject obtained a score between 50-59 on the post-test. Seven (n=7) subjects

obtained a score between 60-69 on the pre-test, whereas only one (n=1) subject obtained a score between 60-69 on the post-test. Eight (n=8) subjects in Group III obtained a score between 70-79 on the pre-test. The number of subjects obtaining a score between 70-79 increased to 12 (n=12), or 63.16 percent, on the post-test. No subjects in Group III obtained a score higher than 79 on the pre-test. However, on the post-test, five (n=5) subjects obtained a score between 80-89. No subject in Group III achieved a score higher than 89 on the post-test.

Table 5. Frequency Distribution - Pre-test and Post-test Scores for Group III.

Score	Pre-test		Post-test	
	Frequency	Percent	Frequency	Percent
0-9	0	0.00	0	0.00
10-19	0	0.00	0	0.00
20-29	0	0.00	0	0.00
30-39	0	0.00	0	0.00
40-49	0	0.00	0	0.00
50-59	4	21.05	1	5.26
60-69	7	36.84	1	5.26
70-79	8	42.11	12	63.16
80-89	0	0.00	5	26.32
90-100	0	0.00	0	0.00

\*n=19

The mean and standard deviation of both the pre-test and post-test scores was calculated for all three groups. The mean change score (calculated by subtracting the pre-test mean score from the post-test mean score) as well as the

standard deviation from the mean change score from the pre-test to the post-test was also calculated for Groups I, II and III. The results of these calculations are displayed in Table 6.

Table 6 shows that on the pre-test, Group III obtained the lowest mean score,  $\bar{X}=66.21$ . Group II ranked second-highest with a mean score of 67.73. Group I obtained the highest mean score on the pre-test,  $\bar{X}=67.87$ .

Standard deviations of the pre-test scores indicate that Group II had the least amount of variance, S.D.=6.88. Group III ranked second in variation with a standard deviation of 7.08. Group I had the highest amount of variance on the pre-test, with a standard deviation of 7.84.

The rank order of the mean post-test scores among Groups I, II, and III is in reverse to that obtained on the pre-test. Group III obtained the highest mean on the post-test with a mean of 75.58. Group II ranked second-highest on the post-test with a mean score of 73.87. Group I obtained the lowest mean score on the post-test among the three groups with a mean of 69.73. Thus, the group that actually participated in the operating room (Group III) obtained the highest mean score on the post-test. In contrast, the group that was not in the operating room during their Medical-Surgical clinical experience (Group I), obtained the lowest mean score on the post-test.

Table 6. Comparison of Mean and Standard Deviation on Pre-Test Scores, Post-test Scores, and Change Scores for Groups I, II, and III.

<u>Group</u>	<u>N</u>	<u>Pre-test</u>		<u>Post-test</u>		<u>Pre-test - Post-test Change Score</u>	
		<u>Mean</u>	<u>Std.Dev.</u>	<u>Mean</u>	<u>Std.Dev.</u>	<u>Mean</u>	<u>Std.Dev.</u>
I	15	67.87	7.84	69.73	8.34	1.87	6.86
II	15	67.73	6.88	73.87	4.24	6.13	6.74
III	19	66.21	7.08	75.58	7.47	9.37	9.14

Table 6 shows that Group II had the least amount of variance on the post-test scores, with a standard deviation from the mean of 4.24. Group III ranked second with a standard deviation of 7.47. Group I had the highest amount of variance on the post-test, with a standard deviation of 8.34.

The results of the mean change scores from the pre-test to the post-test are also displayed in Table 6. Group I obtained a mean change score from the pre-test to the post-test of 1.87, with a standard deviation of 6.86. Group II obtained a mean change score of 6.13 with a standard deviation of 6.74. Finally, Group III obtained a mean change score from the pre-test to the post-test of 9.37, with a standard deviation of 9.14. These results indicate that Group III, consisting of those who actually participated in an intraoperative clinical experience, demonstrated the greatest increase in score from the pre-test to the post-test. Group I, which consisted of those having no intraoperative clinical experience, showed the least increase in scores from the pre-test to the post-test. Group II, which consisted of those who only observed during their intraoperative clinical experience, ranked second in mean change scores.

## Examination of Demographic Variables

The influence of relevant demographic variables on the scores obtained by Groups I, II, and III on the "Knowledge of the Surgical Patient" test was assessed. t-Tests and an analysis of variance were utilized.

An analysis of variance (ANOVA) and t-tests were calculated on the mean pre-test scores for Groups I, II, and III. Table 7 displays the results of ANOVA testing on the mean pre-test scores among Groups I, II, and III. A one-way analysis of variance computed on the mean pre-test scores for Groups I, II, and III was not significant at the .05 level of confidence. In other words, there was not a

Table 7. Analysis of Variance on Pre-test Scores among Groups I, II, and III.

	Sum of Squares	DF	Mean Squares	F Value	P Value
Total	2455.35	48			
Between Groups	29.53	2	14.76	0.28	NS
Within Groups	2425.82	46	52.74		

\*p = .05 level of confidence

n = 49

significant difference in the mean scores obtained on the pre-test among the three groups.

The results of single-tailed t-tests, which were used to calculate the differences in mean pre-test scores between groups (Group I vs. Group II, Group I vs. Group III, and Group II vs. Group III), were similar to the results obtained utilizing ANOVA testing. The differences in mean pre-test scores in each pair of groups were not significant at the .05 level of confidence. The results of the analysis utilizing the t-test to compare the mean pre-test scores among the three groups are displayed in Table 8. Since both the t-test and the ANOVA computed on the mean pre-test scores were not significant at the .05 level of confidence,

Table 8. t-Test on Mean Pre-test Scores among Groups I, II, and III.

Group	t Score	DF	P Value
I vs. II	0.050	28	NS
I vs. III	0.646	32	NS
II vs. III	0.630	32	NS

p\* = .05 level of confidence

Group I n = 15

Group II n = 15

Group III n = 19

it was concluded that the influence of demographic variables was fairly equally distributed among the three study groups.

A single-tailed t-test was used to examine the influence of the demographic variables on the mean change scores from the pre-test to the post-test for Groups II and III. Only those demographic variables whose quantity exceeded five ( $n > 5$ ) were measured. The results of this analysis are displayed in Table 9.

The effect of the demographic variables on the mean change score for Group I was not measured since Group I did not show any significant improvement from the pre-test to the post-test. As a result, there was no need to examine the effect of the demographic variables on Group I.

There were not sufficient subjects in each category ( $n > 5$ ) to measure the effect of the following demographic variables on the mean change scores: sex (male versus female), LPN (LPN versus non-LPN), prior experience in the operating room (prior experience versus no prior experience), years experience in the operating room (less than five years experience versus greater than five years experience), and N356 - Medical-Surgical Nursing I (completed N356 versus not completed N356). There were also not sufficient subjects in each category to measure the variables of N366 - Maternal-Infant (completed N366 versus not completed N366), N367 - Pediatrics (completed N367 versus not completed N367), observed Cesarean Section in

Table 9. t-Test on Demographic Variables

Variable	Group	Value	Mean Change Score	St. Dev.	N	T Score	DF	P Value
Age	II	Under 25	5.60	6.45	10	0.421	13	NS
		Over 25	7.20	7.95	5			
Quarter in School	II	First	3.71	6.16	7	1.337	13	NS
		Second	8.25	6.88	8			
Quarter in School	III	First	9.00	8.92	6	0.352	15	NS
		Second	10.73	10.01	11			
Prior Education	II	Prior Educ.	8.00	7.66	7	1.004	13	NS
		No Prior Educ.	4.50	5.83	8			
Nurse's Aide	III	Nurse's Aide	8.91	8.26	11	0.250	17	NS
		Non-N.A.	10.00	10.80	8			
N357 Med.-Surg. II	III	Completed	10.00	10.35	11	0.344	17	NS
		Not Completed	8.50	7.76	8			
N378 Comm. Health	II	Completed	8.25	6.88	8	1.337	13	NS
		Not Completed	3.71	6.16	7			
N386 Psych.	II	Completed	8.25	6.88	8	1.337	13	NS
		Not Completed	3.71	6.16	7			
N386 Psych.	III	Completed	9.50	10.02	12	0.080	17	NS
		Not Completed	9.14	8.15	7			

\*p = .05 level of confidence

\*Mean Change Score = Post-test Score Minus Pre-test Score

N366 - Maternal-Infant (observed C-Section versus not observed C-Section), and cared for postoperative Cesarean Section in N366 - Maternal-Infant (cared for C-Section versus not cared for C-Section) for Groups II and III.

Table 9 shows that within Group II and within Group III, there was not a significant difference in the size of change scores for the persons in the following demographic sub-groups: age, quarter in school, prior vocational and/or higher education, prior experience as a nurse's aide, N357 - Medical-Surgical Nursing II, N378 - Community Health, and N386 - Psychiatric Nursing. These findings lend support to the contention that demographic variables did not significantly influence the scores obtained on the "Knowledge of the Surgical Patient" test.

#### Examination of Treatment Variables

Analysis of variance and t-tests were utilized to examine the effect of the intraoperative (operating room) experience on the scores obtained by Groups I, II, and III on the "Knowledge of the Surgical Patient" test. An F-test was also calculated on the post-test variances.

A one-way analysis of variance computed on the mean post-test scores among the three groups was not significant at the .05 level of confidence. Table 10 displays the results of ANOVA testing on the mean post-test scores among Groups I, II, and III. Findings from ANOVA testing indicate

that there was not a significant difference between the means in the scores obtained on the post-test among the three groups at the .05 level of confidence. It should be noted, however, that the critical F value at the .05 level of confidence was 3.19. The F value obtained in this analysis was 3.03.

Table 10. Analysis of Variance on Post-test Scores among Groups I, II, and III.

	Sum of Squares	DF	Mean Squares	F Value	P Value
Total	2525.56	48			
Between Groups	294.26	2	147.13	3.03	NS
Within Groups	2231.30	46	48.51		

\*p = .05 level of confidence

n = 49

Table 11 displays the results of an F-test calculated on the post-test variances among the three groups (Group I vs. Group II, Group I vs. Group III, and Group II vs. Group III). Significant results were obtained at the .05 level of confidence among Group I vs. Group II ( $p < .01$ ) and among Group II vs. Group III ( $p < .05$ ). The findings indicate that there were significant differences between variances on the post-test scores for Groups I and II and for Groups II and

Table 11. F-test on Post-test Variances among Groups I, II and III.

Group	F Score	DF	P Value
I vs. II	3.873	14/14	< .01
I vs. III	1.248	14/18	NS
II vs. III	3.104	18/14	< .05

\*p = .05 level of confidence

Group I n = 15

Group II n = 15

Group III n = 19

III. However, Table 11 shows that there was not a significant difference in the variances on the post-test scores between Groups I and III.

A comparison of the mean post-test scores between paired groups utilizing single-tailed t-tests yielded different results than those obtained utilizing ANOVA testing. ANOVA testing resulted in no significant differences in the mean post-test scores among the three groups (See Table 10, p. 75). In contrast, t-tests yielded significant differences in the mean post-test scores between Groups I and III. However, no significant differences in the mean post-test scores were found between Groups I and II and between Groups II and III. The results obtained utilizing a t-test are displayed in Table 12.

Table 12. t-Test on Mean Post-test Scores among Groups I, II, and III.

Group	t Score	DF	P Value
I vs. III	1.710	28	NS
I vs. III	2.152	32	<.03
II vs. III	0.791	32	NS

\*p = .05 level of confidence

Group I n = 15

Group II n = 15

Group III n = 19

Table 12 shows that the difference in mean post-test scores between Groups I and III was significant ( $p < .03$ ) at the .05 level of confidence. These findings indicate that Group III, consisting of those who actually participated in the operating room experience, had a significantly higher mean post-test score than Group I, which consisted of those who did not have an intraoperative clinical experience.

Table 12 also shows that the differences in mean post-test scores among Groups I and III and among Groups II and III were not significant at the .05 level of confidence. These findings indicate that Group II, consisting of those who only observed during their intraoperative clinical experience, did not score significantly higher on the post-test than Group I, consisting of those who did not have an

intraoperative clinical experience. It must be noted, however, that the critical value of  $t$  at the .05 level of confidence was 1.761. In this analysis, Group I versus Group II obtained a  $t$  score of 1.710. In addition, this analysis indicates that Group III, consisting of those who actually participated during their intraoperative clinical experience, did not score significantly higher on the post-test than Group II, consisting of those who only observed during their intraoperative clinical experience.

It must be noted before concluding the discussion of the above results, that correction was made for the variances in calculating the  $t$ -tests on the mean post-test scores for Groups I and II and for Groups II and III. This was due to the fact that there was a significant difference in variances on the post-test scores among Groups I and II ( $F=3.873$ ,  $p < .01$ ) and among Groups II and III ( $F=3.104$ ,  $p < .05$ ) (see Table 11, p. 76).

#### Discussion

This investigator believes that a brief discussion of the inferential statistics utilized in this study is necessary. Inferential statistics were utilized in order to explore the data further. However, any results based on the inferential statistical analysis must be interpreted with caution. This is due to three factors: (1) the sample size in this study was small; (2) the variances on the mean post-

test scores among the three groups were not homogeneous; and (3) a random sample was not utilized in this study.

It should also be noted that the mean change scores from the pre-test to the post-test for each of the three groups were examined in terms of analysis of variance and t-tests. A decision was made, however, not to include the results of these analyses in this study due to the possibility of inflating the results. This was due to the fact that the group of greatest concern in this study, Group III (the treatment group which actually participated in an intraoperative experience), had the lowest pre-test score. Thus, the potential for change from the pre-test to the post-test was greatest for Group III.

This investigator was also aware of the fact that analysis of covariance may have been a useful technique for examining the difference in post-test scores among the three groups, while controlling for the difference in pre-test scores. However, given the small sample size, the lack of homogeneity of variances among the three groups, and the lack of a random sample, this form of statistical analysis was not pursued.

It would also have been possible to pursue analysis of this data using the non-parametric statistic Eta ( $E_{yx}$ ). This statistic would have allowed for a measure of association between the nominal level independent variable and the interval level dependent variable. However, given

the relative weaknesses of non-parametric approaches in measuring degree of association, this researcher selected parametric approaches.

## CHAPTER 6

### CONCLUSIONS

#### Discussion

The findings of this study indicate that an intra-operative (operating room) clinical experience in a baccalaureate nursing curriculum can have a significant role in influencing the level of knowledge among junior-level nursing students concerning the nursing care needs of the surgical patient. Specific study outcomes which relate to this conclusion are the following:

- (1) Groups II and III, groups which had an intraoperative clinical experience during the junior-level medical-surgical nursing course, obtained higher scores on the "Knowledge of the Surgical Patient" test than Group I, which did not have an intraoperative (operating room) clinical experience during the junior-level medical-surgical nursing course.
- (2) Ninety-three percent (93%) of the students in Group II and eighty-nine percent (89%) of the students in Group III, groups which had the intraoperative experience, scored between 70-89 on the post-test. However, only sixty percent (60%) of the

students in Group I scored between 70-89 on the post-test. The range of the post-test scores among the three groups was 54-86.

- (3) Both Group II and Group III, which had an intraoperative clinical experience, improved more than Group I, which did not have an intraoperative clinical experience, from the pre-test to the post-test on the "Knowledge of the Surgical Patient" test.
- (4) Demographic variables identified in this study (e.g. age, sex, quarter in school, prior experience as a nurse's aide) did not appear to have a marked influence on the scores obtained by the three groups on the "Knowledge of the Surgical Patient" test. The mean scores of subgroups formed on the basis of demographic variables did not show significant changes from the pre-test to the post-test.

The type of intraoperative clinical experience in a baccalaureate nursing curriculum can affect the level of knowledge among junior-level nursing students concerning the nursing care needs of the surgical patient. Results of this study showed that Group III, which actually participated in the operating room, obtained higher post-test scores than Group II, which only observed in the operating room, and

both Groups II and III obtained higher post-test scores than Group I, which did not have an operating room experience.

#### Limitations

The limitations of this study have been identified by this investigator. The "Knowledge of the Surgical Patient" test was developed by the investigator for the purpose of this study and has not been used in prior research. Thus, reliability and validity of the instrument have not been thoroughly established. However, content validity was addressed in developing the instrument, and a test-re-test reliability coefficient of  $r=.96$  was obtained in pre-testing. Inability to control extraneous variables related to teacher style and site of clinical experience must be considered limitations, as are the small size and non-random nature of the sample.

#### Implications

The findings from this study have implications for nursing education, clinical practice in nursing, and for further study and research in nursing. The first implication of this study relates to nursing education. Nursing education has undergone many changes over the last three decades, and the operating room as a clinical nursing experience is absent from many baccalaureate nursing education programs. Results from this study indicate that

the importance of this clinical practicum in preparing a competent practitioner of nursing may warrant examination. Based on findings from this study, an intraoperative clinical experience assists nursing students in developing knowledge of the comprehensive nursing care needs of the surgical patient. Baccalaureate nursing education programs may need to reevaluate their position as to the importance of this clinical experience. Since clinical practicum experiences are significant in educating nurses, exclusion of the intraoperative experience may affect not only the level of knowledge the graduate nurse has concerning the total nursing care needs of the surgical patient, but also the ability of the nurse to meet these needs and provide comprehensive patient care.

The second implication of this study is related to clinical practice in nursing. The provision of quality patient care is a goal not only of nursing education programs, but also of health care delivery systems. The findings of this study suggest that the lack of an intraoperative clinical experience results in decreased knowledge of the biopsychosocial needs of the surgical patient. The study's conceptual framework indicates that knowledge of the biopsychosocial needs of the surgical patient strengthen students' development of the art and science of nursing. Following the development of the art and science of nursing, students are expected to be able to

provide comprehensive care to the surgical patient. Without an intraoperative clinical experience, new nurses, upon graduation, may be less able to meet the biopsychosocial needs of surgical patients and provide comprehensive care. As a result, both nurses and the health care delivery system may fall short of the goal of providing quality patient care to the surgical patient. Clinical practice settings, in response to this problem, may need to find alternative means to assist new nurses and/or nursing students in developing the ability to provide competent care to the surgical patient. Two possible solutions may include: (1) increased orientation for new nurses who lacked an intraoperative experience during their baccalaureate nursing program; and (2) increased cooperation and work with nursing education programs to make operating room experiences available to baccalaureate nursing students.

The final implication of this study relates to further study and research in nursing. Clearly, the importance of the intraoperative clinical experience in baccalaureate nursing education programs needs further study. Although many nurse educators and members of the Association of Operating Room Nurses (AORN) have expressed their views concerning the importance of this clinical experience, very little research to date has been done. Findings from this study suggest that the intraoperative experience may be of value in nursing education programs, and this warrants

further investigation. The author believes that there are several specific areas in need of investigation:

- (1) The relationship of the intraoperative clinical experience to the development of empathy with surgical patients in nursing students.
- (2) The relationship of the intraoperative clinical experience to the ability of nursing students to provide comprehensive nursing care to the surgical patient; replication of the present study with a larger and random sample.
- (3) The refinement of the outcome measure including assessment of the validity and reliability of the "Knowledge of the Surgical Patient" test.

The questions raised in this study must be examined in future studies. Before any definitive statements or conclusions may be made about the value of the intraoperative clinical experience in baccalaureate nursing education programs, replication of the present study is necessary. This author has several recommendations for study replication:

- (1) This study should be repeated on all campuses of Montana State University College of Nursing.
- (2) This study should be replicated in other Colleges of Nursing to see if similar results are obtained.

- (3) A larger and random sample should be employed in future studies. This would allow for greater control over extraneous variables.

In summary, this study has shown that the intraoperative clinical experience can be a valuable clinical experience in baccalaureate nursing education. It may play a significant role in the development of knowledge among nursing students concerning the nursing care needs of the surgical patient. Lack of an intraoperative clinical experience may affect the ability of new nurses, upon graduation, to provide comprehensive care to the surgical patient. Thus, the merits of a formal intraoperative clinical experience, and the place of this clinical experience in baccalaureate nursing education, require examination by nursing educators and researchers.

BIBLIOGRAPHY

## BIBLIOGRAPHY

- American Nurses' Association (1980). Nursing: a social policy statement. Kansas City, MO: American Nurse's Association.
- American Nurses' Association (1974). Standards of medical-surgical nursing practice. Kansas City, MO: American Nurse's Association.
- American Nurses' Association (1975). Standards of nursing practice: operating room. Kansas City, MO: American Nurse's Association.
- Ammon, K.B. & Fowler, L.M. (1983). A perioperative elective for baccalaureate students. AORN Journal, 37(4), 754-764.
- Armitage, P.A. (1979). Nursing students return to the operating room. AORN Journal, 29(2), 710-764.
- Association of Operating Room Nurses (1983). AORN standards and recommended practices for perioperative nursing. Denver, CO: Association of Operating Room Nurses.
- Atkinson, L.J. & Kohn, M.L. (1978). Operating room technique. New York: McGraw-Hill Book Co.
- Bakutis, A. (1972). Anesthetic reactions. Nursing '72, 2(9), 16-21.
- Bennett, L.W. (1980). Writing performance objectives. Drake, Co: Career Publishing Co.
- Besst, J. & Wallace, H. (1979). Wound healing - intraoperative factors. Nursing Clinics of North America, 14(4), 701-712.
- Beyers, M. & Dudas, S. (1984). The clinical practice of medical-surgical nursing. Boston: Little, Brown & Co.
- Bigge, M.L. (1964). Learning theories for teachers (4th ed.). New York: Harper & Row.
- Bigge, M.L. (1982). Learning theories for teachers (3rd ed.). New York: Harper & Row.
- Boegli, E. & Boegli, G. (1972). Can preop learning be improved? AORN Journal, 16(5), 43-45.

- Botsford, J. (1984). Implementing outcome standards. AORN Journal, 40(4), 572-575.
- Breltung, J. (1977). Are you fudging on hand-washing routines? RN, 40(5), 71.
- Brooks, S.M. (1975). Intensive program gains new graduates for OR. AORN Journal, 21(4), 627-632.
- Bruno, P. (1979). The nature of wound healing. Nursing Clinics of North America, 14(4), 667-682.
- Burton, F. & Salminen, C. (1984). Back to basics: controlling postoperative infection. Nursing '84, 14, 43.
- Byrne, C. (1979). Clinical detection and management of postoperative wound sepsis. Nursing Clinics of North America, 14(4), 727-741.
- Caputo, A. (1981). Diane Robison: nurse and student. Today's OR Nurse, 3(6), 7-12.
- Chansky, M. (1984). Reducing patient's anxieties. AORN Journal, 40(3), 375-377.
- Chioni, R. & Schoen, E. (1970). Preparing tomorrow's nurse practitioner. Nursing Outlook, 18(10), 50-53.
- Codd, J. & Grohar, M. (1975). Postoperative pulmonary complications. Nursing Clinics of North America, 10(1), 5-15.
- Cooper, D. & Schuman, D. (1979). Postsurgical nursing intervention as an adjunct to wound healing. Nursing Clinics of North America, 14(4), 713-725.
- Cullen, D. & Cullen, B. (1975). Postanesthetic complications. Surgical Clinics of North America, 55(4), 987-998.
- Crawford, F.F. (1975). Unit nurse less apathetic if aware of OR procedures. AORN Journal, 30(3), 536-545.
- Croushore, T. (1979). Postoperative assessment: the key to avoiding the most common nursing mistakes. Nursing '79, 9(4), 47-50.
- Dembo, H. (1977). Teaching for learning: applying educational psychology in the classroom. Santa Monica, CA: Goodyear Publishing Co.

- Dixon, E. (1979). A formal future for the student. Nursing Mirror, October, 6-10.
- Dziurbejko, M. & Larkin, J. (1978). Including the family in preoperative teaching. American Journal of Nursing, 78(11), 1892-1894.
- Eisler, J., Wolfer, J., & Diers, D. (1972). Relationship between need for social approval and postoperative recovery and welfare. Nursing Research, 21(5), 520-525.
- Elder, N. & Smyth, K. (1970). An integrated curriculum. Nursing Outlook, 18(5), 63-65.
- Fay, M. (1976). Nursing process in the recovery room. AORN Journal, 24(6), 1069-1075.
- Fehlau, M. (1975). Applying the nursing process to patient care in the operating room. Nursing Clinics of North America, 10(4), 617-622.
- Flynn, M. & Rovee, D. (1982). Wound healing mechanisms. American Journal of Nursing, 82(10), 1544-1557.
- Fraulini, K. (1983). Coping mechanisms and recovery from surgery. AORN Journal, 37(6), 1198-1205.
- Fraulini, K. & Murphy, P. (1984). R.E.A.C.T. - A new system for postanesthesia recovery. Nursing '84, 14(4), 101-102.
- Friedman, F. (1980). OR experience for students: have we lost the battle? AORN Journal, 32(5), 227-233.
- Goski, Sister Marta (1975). Future of OR curricula: generalist preparation, further specialization. AORN Journal, 21(4), 639-640.
- Greenwood, B. (1982). Before and after post-op pulmonary care. Nursing '83, 12(12), 68-69.
- Grieg, J. (1975). Central objective is to understand patient's experiences. AORN Journal, 21(4), 636-639.
- Groah, L. (1983). Operating room nursing: the perioperative role. Reston, VA: Reston Publishing Co.
- Gruendemann, B.J. (1975). The impact of surgery on body image. Nursing Clinics of North America, 10(4), 635-643.

- Gruendemann, B., Shetler, M., Casterton, S., Hesterly, S., & Minckley, B. (1970). Operating room nursing in the basic curriculum: an opinion. AORN Journal, 11(6), 70-72.
- Hamilton, W. (1975). Common cardiovascular problems in the postoperative period. Nursing Clinics of North America, 10(1), 27-41.
- Haven, L. & Haven, G. (1975). Reducing the patient's fear of the recovery room. RN, 38(1), 28-29.
- Hazzard, M. & Thorndal, M. (1979). Patient anxiety: teaching students to intervene effectively. Nurse Educator, January-February, 19-21.
- Hellewell, J. (1972). The nurse's role in anesthesia - 1: preoperative preparation. Nursing Times, 68(14), 400-405.
- Hellewell, J. (1972). The nurse's role in anesthesia - 2: postoperative care. Nursing Times, 68(15), 443-446.
- Hellewell, J. (1972). The nurse's role in anesthesia - 3: respiratory failure. Nursing Times, 68(16), 467-470.
- Hellewell, J. (1972). The nurse's role in anesthesia - 4: cardiac arrest and resuscitation. Nursing Times, 68(17), 512-513.
- Hercules, P.A. (1980). OR experience teaches continuity of care. AORN Journal, 32(5), 799-805.
- Hewitt, D. (1979). Is that preop patient terrified? RN, 42(9), 44-47.
- Hewitt, D. (1984). Don't forget your preop patient's fears. RN, 47(10), 63-68.
- Hicks, F. (1975). Representative experiences sufficient for students. AORN Journal, 21(4), 632-636.
- Holley, H. (1975). Anesthesia, methods to recovery. AORN Journal, 21(5), 822-835.
- Homer, P. (1983). Caring for non-infected patients. Nursing, 2(20), 4-5.
- Huff, M.A. (1980). OR nursing for baccalaureate students. AORN Journal, 32(4), 648-652.
- Hunt, A. (1979). The individual approach. Nursing Mirror, October, 10-12.

- Janis, J.L. (1958). Psychological stress: psychoanalytic and behavioral studies of surgical patients. New York: John Wiley and Sons.
- Johnson, J., Dobbs, J., & Leventhal, H. (1970). Psychosocial factors in the welfare of surgical patients. Nursing Research, 19(1), 18-28.
- Johnson, M. (1975). Outcome criteria to evaluate postoperative respiratory status. American Journal of Nursing, 75(9), 1474-1475.
- Joy, E. & Barber, J. (1977). Psychological, physiological, and pharmacologic management of pain. Nursing Clinics of North America, 21(3), 577-593.
- Kapsar, P. (1976). The preoperative visit: OR nurses and patients interact. Hospitals, 50, 87-88.
- Kathol, D. (1984). Anxiety in surgical patients' families. AORN Journal, 40(1), 131-137.
- Kneedler, J. & Dodge, G. (1983). Perioperative patient care. Boston, MA: Blackwell Scientific Publications, Inc.
- Laird, M. (1975). Techniques for teaching pre- and post-operative patients. American Journal of Nursing, 75(3), 1338-1340.
- LaMontagne, C. (1982). Students are people too. Today's OR Nurse, 9, 32, 36-37.
- Leonard, M. (1984). At the surgical site: preoperational skin disinfection. Nursing Mirror, 159(16), 10.
- Levine, D. & Fiedler, J. (1970). Fears, facts, and fantasies about pre- and postoperative care. Nursing Outlook, 18(2), 26-29.
- Lindemann, C. (1980). How to work with nursing schools for OR experience. AORN Journal, 31(1), 17-20.
- Lockett, B. (1983). Postoperative wound care. Nursing, 2(11), 309-310.
- Long, B.C. & Phipps, W.J. (1985). Essentials of medical-surgical nursing: a nursing process approach. St. Louis: C.V. Mosby Co.

- Luckmann, J. & Sorensen, K.C. (1980). Medical-surgical nursing: a psychophysiologic approach. Philadelphia, PA: W.B. Saunders Co.
- Mackie, R., Peddie, R., Pendleton, R. (1984). Perioperative care plan guide. AORN Journal, 40(2), 192-201.
- Mahr, D. (1979). R.N. preceptors: do they help students in the OR? AORN Journal, 30(4), 724-730.
- Marcinek, M. (1977). Stress in the surgical patient. American Journal of Nursing, 77(11), 1809-1811.
- Mazza, J. (1981). Theatre? Why Not! Nursing Times, September, 3-6.
- McCaffery, M. (1981). When your patient's still in pain don't just do something: sit there. Nursing '81, 11(6), 58-61.
- McCloskey, J. (1976). How to make the most of body image theory in nursing practice. Nursing '76, 6(5), 68-72.
- McConnell, E. (1977). After surgery: how you can avert the obvious hazards ... and not so obvious ones. Nursing '77, 7(3), 32-39.
- McNeill, S. (1975). Without foundation one does not become a specialist. AORN Journal, 21(4), 622-624.
- Mehaffy, N.L. (1974). Assessment and communication for continuity of care for the surgical patient. Nursing Clinics of North America, 10(4), 625-633.
- Metheny, N. (1975). Water and electrolyte balance in the postoperative period. Nursing Clinics of North America, 10(1), 69-81.
- Mims, B.C. (1982). Internship prepares perioperative nurses. AORN Journal, 36(6), 986-990.
- Moidel, H.C., Sorensen, G.E., Giblin, E.C., & Kaufman, M.A. (Ed.). (1971). Nursing care of the patient with medical-surgical disorders. New York: McGraw-Hill Book Co.
- Murray, R.B. & Zentner, J.P. (1979). Nursing concepts for health promotion (2nd ed.). New Jersey: Prentice-Hall, Inc.

- Nail, F.C. & Singleton, E.K. (1983). Providing experiences for student nurses: perspectives for cooperating hospitals. The Journal of Nursing Administration, July-August, 20-25.
- National Commission for the Study of Nursing and Nursing Education (1970). An abstract for action. New York: McGraw-Hill Book Co.
- National League for Nursing (1977). Criteria for the appraisal of baccalaureate and higher degree programs in nursing (4th ed.). New York: National League for Nursing.
- Neuberger, G. & Reckling, J. (1985). A new look at wound care. Nursing '85, 15(2), 34-50.
- O'Byrne, C. (1979). Clinical detection and management of postoperative wound sepsis. Nursing Clinics of North America, 14(4), 727-741.
- Palmateer, L. (1983). Surgical-psychological crisis: awake and paralyzed. Today's OR Nurse, 4(10), 22-25, 27, 39.
- Parsons, M.C. & Stevens, G.J. (1974). Postoperative complications: assessment and intervention. American Journal of Nursing, 74(2), 240-244.
- Peers, J.G. (1970). "Plotting" the basic curriculum. AORN Journal, 12(3), 40-43.
- Peterson, S. (1975). Ten-week course affords instruction for complete care. AORN Journal, 21(4), 625-627.
- Pleitez, J.A. (1972). Psychological complications of the surgical patient. AORN Journal, 16(2), 137-146.
- Pomorski, M. (1983). Surgical care for the aged patient: the decision-making process. Nursing Clinics of North America, 18(2), 365-371.
- Porter, K.K & Feller, C.M. (1979). The relationship between patterns of massed and distributive clinical practicum and student achievement. Journal of Nursing Education, 18(6), 27-34.
- Rawnsley, M.M. (1980). Toward a conceptual base for affective nursing. Nursing Outlook, 28(4), 244-247.
- Redman, B.K. (1976). The process of patient teaching in nursing. Philadelphia, PA: J.B. Lippincott Co.

- Rickles, N. & Finkle, B. (1973). Anxiety: your and your patient's. Nursing '73, March, 23-26.
- Roy, C. (1980). The Roy Adaptation Model. In J.P. Riehl & C. Roy. Conceptual models for nursing practice (2nd ed.). New York: Appleton-Century-Crofts, 179-206.
- Saylor, D.E. (1975). Understanding presurgical anxiety. AORN Journal, 22(4), 624-636.
- Schumann, D. (1979). Preoperative measures to promote wound healing. Nursing Clinics of North America, 14(4), 683-697.
- Selye, H. (1956). The stress of life. New York: McGraw-Hill Book Co.
- Sharp, B.H. (1980). Student experience: benefits to patients. AORN Journal, 32(5), 815-817.
- Simonds, A. (1980). Preparing students in an OR. AORN Journal, 32(5), 830-834.
- Sladen, R. (1984). Vascular crisis in the postoperative period. Current Review to Nurse Anesthetents, 6(24), 187-194.
- Smith, B. (1978). Safeguarding your patient after anesthesia. Nursing '78, 8(10), 53-56.
- Smith, D.W. & Germaine, C.H. (1975). Care of the adult patient. Philadelphia: J.B. Lippincott Co.
- Syson-Nibbs, L. (1983). Victim of life's stresses. Nursing Mirror, 157(19), 33-35.
- Wells, P. (1980). Chapter promotes student OR experience. AORN Journal, 32(5), 844-857.
- Young, R., Takahashi, J., & Cheney, A. (1981). Project Alpha goes into action. AORN Journal, 34(5), 920-939.

APPENDICES

Appendix A

Introductory Statement

## INTRODUCTORY STATEMENT

Hello everyone. My name is Cheryl Koski. I am a Graduate Student at Montana State University College of Nursing on the Billings Extended Campus. I am conducting a research study in partial fulfillment of the requirements for my Master's Degree at Montana State University, and I would like you to participate in this study.

The study tests the relationship between the intraoperative (or operating room) experience and the development of comprehensive knowledge of the nursing care needs of the surgical patient in Junior Nursing Students. I have selected you to participate since you are currently enrolled in your Junior Medical-Surgical Nursing Course. If you choose to participate in this study, I am asking that you complete a test and questionnaire now and at the completion of your Medical-Surgical Nursing Course. You need to be present at both testing sessions. The test will take about one hour of your time, each time.

I am going to pass out the packets to you. If there are any licensed Registered Nurses here, please raise your hand since I am requesting that you do not participate in this study. (Packets then passed out.)

Please open the packets and read the letter addressed to Junior Nursing Students. (Students read letter.) Now take out the "Agreement to Participate Form". Please follow along while I read this to you. (Investigator reads consent form.) Are there any questions about the study or what I am asking you to do? (Investigator answers questions.) If there are no further questions, please sign the consent form using your full legal signature if you desire to participate in this study. If you do not desire to participate in this study, return the packet to me now.

Before you begin filling out the test and questionnaire, I would like to ask if there are any more questions since I won't answer them while testing is taking place. (Investigator answers any more questions.) You may now begin filling out the test and questionnaire. When you complete all the materials, please place them in the enclosed envelope. You may keep only the letter addressed to Junior Nursing Students if you would like. Hand the packet to me as you leave.

Appendix B

Letter to Participants

January 7, 1985

Dear Junior Nursing Student:

You are being asked to participate in a research study entitled "The Relationship of the Intraoperative Experience to the Development of Comprehensive Knowledge of the Nursing Care Needs of the Surgical Patient". This study is being conducted by Cheryl L. Koski, R.N., B.S.N., in partial fulfillment of the requirements for a Master's Degree in Nursing at Montana State University College of Nursing.

This study seeks to provide knowledge concerning whether or not the intraoperative (operating room) experience is valuable in assisting the nursing student to learn and meet the comprehensive nursing care needs of the surgical patient. This researcher believes that the knowledge obtained from this study will be important in assisting nursing education programs to develop well-prepared nurses.

You are being asked to participate in this study since you are presently enrolled in your Medical-Surgical nursing course at Montana State University College of Nursing. If you agree to participate in this study, you will be asked to complete a questionnaire which asks background information such as your age, sex, past education, and experience. You will also be asked to take a test at the beginning of your Medical-Surgical nursing course and at the completion of your Medical-Surgical nursing course. Completion of the questionnaire and the test will take approximately one hour, each time.

The information contained in the questionnaire as well as the scores obtained on the two tests will remain confidential and will in no way affect your standing at Montana State University College of Nursing. This investigator will assign a number to each student who agrees to participate in this study. Your name will appear only on the consent form. Signed consent forms will be kept in a locked file at Montana State University College of Nursing for a period of three years.

During the course of the study, the testing material and questionnaires will be kept in locked files and will be available only to this researcher. Upon completion of this study, all completed testing material and questionnaires will be destroyed. Only grouped results will be reported.

You are free to ask this researcher any questions concerning this study at any point during the conduction of this study. You are also free to withdraw from this study at any time. If you choose not to participate in this study or choose to withdraw from this study, it will in no way affect your status at Montana State University College of Nursing.

Your participation in this study will be greatly appreciated. Due to limited funding available to this researcher, reimbursement for participation in this study cannot be provided. Individual participants may, however, receive the results of this study and/or individual test scores. There are limited benefits that come directly to individual participants in this study.

If you agree to participate in this study, please sign the enclosed consent form and fill out the questionnaire and test contained in your packet. If you desire the results of this study and/or individual test scores, please check the appropriate boxes on the consent form. You should be aware that some students may feel anxious as a result of participating in this study, particularly if they do not feel that they know the content well. When you complete the enclosed material, please return the material to the packet and return it to this researcher.

Thank you very much for your assistance.

Sincerely,

*Cheryl L. Koski*

Cheryl L. Koski, R.N., B.S.N.  
Graduate Student  
Montana State University  
College of Nursing

Appendix C  
Agreement to Participate

## AGREEMENT TO PARTICIPATE

I (Name) \_\_\_\_\_ agree to participate in the research study "The Relationship of the Intraoperative Experience to the Development of Comprehensive Knowledge of the Nursing Care Needs of the Surgical Patient" conducted by Cheryl L. Koski, R.N., B.S.N., in partial fulfillment of her requirements for a Master's Degree in Nursing at Montana State University College of Nursing. I understand that participation in this study will in no way affect my status at Montana State University College of Nursing. I understand that I may withdraw from this study at any point during the study. I understand that all information will remain confidential and the signed consent forms will be kept in locked files at Montana State University College of Nursing. I understand that all data collected will be destroyed upon completion of this study and that no individual scores from the study will be reported. I realize that I will receive no reimbursement for participation in this study. I realize that participating in this study will take approximately one hour of my time on two separate occasions.

I would like the results of this study sent to me upon completion of this study.

Yes \_\_\_\_\_ No \_\_\_\_\_

I would like the test score sent to me upon completion of this study.

Yes \_\_\_\_\_ No \_\_\_\_\_

Signed \_\_\_\_\_ this \_\_\_\_\_ day  
of \_\_\_\_\_, 19\_\_\_\_.

Appendix D

Demographic Questionnaire

Study Number \_\_\_\_\_  
 Campus \_\_\_\_\_  
 Course \_\_\_\_\_

QUESTIONNAIRE

Please complete the following questions:

1. Age in years: \_\_\_\_\_.
2. Sex:        M \_\_\_\_\_        F \_\_\_\_\_
3. Quarter in School:    First \_\_\_\_\_    Second \_\_\_\_\_    Third \_\_\_\_\_
4. Do you have any prior vocational and/or higher education other than at Montana State University?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
  - a. If yes, briefly state your prior education and any degrees held.  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
5. Do you possess a license to practice as a Licensed Practical Nurse?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
  - a. If yes, how many years experience do you have? \_\_\_\_\_
6. Have you ever had any experience as a nurse's aide?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
 

If yes, how many years experience do you have?  
 \_\_\_\_\_
7. Have you ever had any experience working in an operating room prior to entering the nursing program?  
 Yes \_\_\_\_\_ No \_\_\_\_\_
  - a. If yes, how many years experience do you have?  
 \_\_\_\_\_

b. If yes, in what capacity was your experience?  
\_\_\_\_\_

8. Please check the courses you have already completed at Montana State University College of Nursing.

N356 Medical-Surgical I \_\_\_\_\_

N357 Medical-Surgical II \_\_\_\_\_

N366 Maternal-Infant \_\_\_\_\_

N367 Pediatrics \_\_\_\_\_

N378 Community Health \_\_\_\_\_

N386 Psychiatric Nursing \_\_\_\_\_

a. If you have completed N366 Maternal-Infant, did you observe a Cesaerian Section in the operating room?  
Yes \_\_\_\_\_ No \_\_\_\_\_

b. If you have completed N366 Maternal-Infant, did you care for a post-operative Cesaerian Section patient on the Obstetrical floor?  
Yes \_\_\_\_\_ No \_\_\_\_\_

Appendix E

Knowledge of the Surgical Patient Test

Study Number \_\_\_\_\_  
Campus \_\_\_\_\_  
Course \_\_\_\_\_

## KNOWLEDGE OF THE SURGICAL PATIENT

Please place the correct answer in the space provided to the left of the questions.

- \_\_\_\_\_ 1. On which bone is the greater trochanter found?
- a. Tibia
  - b. Humerus
  - c. Femur
  - d. Os inominata
- \_\_\_\_\_ 2. The fan-like portion of peritoneum which helps to hold the intestine in place is called the:
- a. Haustra
  - b. Mesentery
  - c. Omentum
  - d. Ligaments
- \_\_\_\_\_ 3. The lamina is a process found on which bone?
- a. Vertebra
  - b. Pelvic bone
  - c. Scapula
  - d. Mandible
- \_\_\_\_\_ 4. Preoperative teaching by the nurse would include which of the following?
- 1. An explanation of the physical preparation such as skin prep.
  - 2. Statement of the purpose of postoperative routines which must be done by the patient such as coughing and deep breathing.
  - 3. Technical description of the surgical procedure and the expected outcome.
  - 4. Explanation of routine recovery care.
- a. 1, 2, and 3.
  - b. 1, 2, and 4.
  - c. 3 only.
  - d. All of these.

- \_\_\_\_\_ 5. The operative permit implies informed consent. It is valid if signed by:
1. A patient who marks with an "x" if witnessed by two people.
  2. A minor, unwed parent.
  3. A legal guardian.
  4. Two nurses who have listened to vocal telephone permission.
- a. 1, 3, and 4.
  - b. 2 and 4.
  - c. 1, 2 and 3.
  - d. All of the above.
- \_\_\_\_\_ 6. In reviewing the chart preoperatively, nursing responsibilities would include notifying the physician if:
- a. The erythrocyte count is 6 mil/cu mm.
  - b. The leukocyte count is 5,500/cu mm.
  - c. The hemoglobin is 14 gm/dl.
  - d. The urine report indicates Ketonuria.
- \_\_\_\_\_ 7. Preoperatively, the nurse should carefully assess which of the following areas regarding the patient?
1. Use of drugs.
  2. Diet and sleep habits.
  3. Family support.
  4. Knowledge of operative risks.
  5. Level of anxiety.
- a. 1, 3, and 4.
  - b. 1, 4, and 5.
  - c. 1, 2, 3, and 5.
  - d. All of the above.
- \_\_\_\_\_ 8. You are told that the patient has smoked heavily for almost fifty years and has a chronic cough. What would be the most effective method of preoperative preparation?
- a. Administer oxygen and place a no smoking sign on the door.
  - b. Confiscate cigarettes, prohibit smoking, and teach the usual preoperative teaching items.

- c. Tell him to quit smoking and explain the danger of atelectasis.
- d. Realize that it is difficult to change habits and teach the usual preoperative teaching items.

\_\_\_\_\_ 9. Teaching leg exercises preoperatively will help prevent which of the following postoperative complications?

- a. Paralytic ileus.
- b. Muscle spasms.
- c. Stasis and clot formations.
- d. Vasogenic shock.

\_\_\_\_\_ 10. Which of the following nursing measures has the most potential for decreasing the patient's anxiety preoperatively?

- a. Allowing the patient time to express fears.
- b. Encouraging the family to visit as much as policy allows.
- c. Explaining the detail of the surgery to the patient.
- d. Taking the patient on a tour of the operating room suite.

\_\_\_\_\_ 11. The primary goal of the preoperative skin preparation is to:

- a. Decrease the number of organisms on the skin.
- b. Enhance the skin's natural defense against organisms.
- c. Improve the field of vision for the surgeon.
- d. Render the operative area free of organisms.

\_\_\_\_\_ 12. Which of the following statements regarding the surgical prep are correct?

- 1. Shaving the skin lessens the likelihood of wound infections by removing hair to which bacteria clings.
- 2. It is important to avoid cutting the skin while shaving.
- 3. Shaving should be done in the direction in which the hair grows.

4. The infection rate is higher when the shave is done 24 hours prior to surgery versus when the shave is done immediately before surgery.

- a. 1 and 2.
- b. 3 and 4.
- c. 4 only.
- d. All of the above.

\_\_\_\_\_ 13. Nursing actions which must be performed before the patient is taken to surgery include:

1. Insertion of an IV.
2. Removal of make-up and fingernail polish.
3. Checking the chart for history, physical, lab test results, and signed consent.
4. Having the patient urinate.

- a. 1 and 3.
- b. 2 and 4.
- c. 2, 3, and 4.
- d. All of the above.

\_\_\_\_\_ 14. Precautions taken after administering the pre-op medication are:

1. Observing the patient for respiratory or circulatory depression.
2. Cautioning the patient to remain in bed with the side rails up.
3. Reminding the patient not to smoke.
4. Allowing the patient water to avoid post-operative dehydration.

- a. 1 and 2.
- b. 3 and 4.
- c. 1, 2, and 3.
- d. All of the above.

\_\_\_\_\_ 15. Narcotic analgesics are given preoperatively to:

- a. Slow respirations to prevent hyperventilation.
- b. Permit a smooth induction of anesthesia.
- c. Reduce gastric motility.
- d. Relieve postoperative pain.

- \_\_\_\_\_ 16. Anticholinergic drugs are often given preoperatively. A common side effect of these drugs is:
- a. Dryness of mouth
  - b. Vertigo
  - c. Sedation
  - d. Constricted pupils
- \_\_\_\_\_ 17. The patient is transported to the operating room feet first with the transporter near the patient's head. The primary reason for this is:
- a. It gives the transporter the opportunity to talk to the patient while he is transporting the patient to the operating room.
  - b. It gives the transporter immediate access to the patient's airway in case of respiratory distress or vomiting.
  - c. It gives the transporter better control of the stretcher.
  - d. It will jolt the patient's feet rather than his head if the stretcher hits a wall or object during transportation.
- \_\_\_\_\_ 18. Anesthesiologists frequently request dentures be left in the patient's mouth when the patient is transported to the operating room. The most likely reason for this request is:
- a. Patients do not want to remove their dentures for cosmetic reasons.
  - b. There is really no sound reason for removing the dentures before a general anesthetic is administered.
  - c. Some forms of general anesthesia can be administered more easily if the dentures are left in the mouth.
  - d. There is less danger of misplacing the dentures if they are never removed from the patient's mouth during their hospital stay.
- \_\_\_\_\_ 19. The choice of anesthetic agent(s) used is determined by:

1. Age of the patient.
2. Presence of coexisting diseases.
3. Duration of the operation.
4. Sex of the patient.
5. Type and site of the operation.

- a. 1, 2, and 4.
- b. 1, 2, 3, and 5.
- c. 2 and 3.
- d. All of these.

\_\_\_\_\_ 20. Which of the following is true of spinal anesthesia?

1. It is produced by the injection or application of a local anesthetic agent along the course of a nerve, which stops the conduction of all impulses.
2. It is produced by the injection of a local anesthetic drug, in solution, into the subarachnoid space.
3. It is used for surgery of the lower limbs and upper abdomen.
4. After surgery, the patient should be kept in a supine position.

- a. 1 and 2.
- b. 3 and 4.
- c. 1, 2, and 3.
- d. 2, 3, and 4.

\_\_\_\_\_ 21. One of the last senses to leave the patient when he is anesthetized and the first to return is:

- a. Smell
- b. Vision
- c. Hearing
- d. Touch

\_\_\_\_\_ 22. When putting on sterile gloves in open-gloving technique, how do you grasp the first glove?

- a. By the folded edge of the cuff.
- b. By the top edge of the cuff.
- c. With sterile forceps.
- d. Under the cuff.

\_\_\_\_\_ 23. Sterile gowns worn by the surgical team are considered sterile:

- a. on the front from 3 inches below the neckline to table level and on the sleeves from the cuff to two inches above the elbow.
- b. on the front and back from 3 inches below the neckline to table level and on the sleeves from the cuff to two inches above the elbow.
- c. on the front from the neckline to table level and on the sleeves from the cuff to two inches above the elbow.
- d. on the front from neckline to table level and on the sleeves from the cuff to the shoulder.

\_\_\_\_\_ 24. When scrubbed personnel pass other scrubbed personnel in the operating room:

- a. They must turn either face-to-face or back-to-back.
- b. They must only turn face-to-face.
- c. They must only turn back-to-back.
- d. They must turn either back-to-back or side-to-side.

\_\_\_\_\_ 25. How high above a sterile field do you hold a container to pour a liquid?

- a. 1-2 inches.
- b. 3-5 inches.
- c. 6-8 inches.
- d. 10-12 inches.

\_\_\_\_\_ 26. Which of the following is not accomplished by a surgical scrub of the hands and arms?

- a. Decrease in total count of micro-organisms.
- b. Decrease in nutrients of micro-organisms.
- c. Leaving an antimicrobial film on the skin.
- d. Removal of all micro-organisms.

\_\_\_\_\_ 27. When doing a surgical scrub, what is the correct position of the hands and arms?

- a. Hands higher than elbows.
- b. Hands level with elbows.
- c. Hands lower than elbows.

- d. It is unimportant; there is no correct position.
- \_\_\_\_\_ 28. The circulating nurse in the operating room is responsible for all of the following except:
- Monitoring patient safety.
  - Maintaining aseptic technique.
  - Handing sterile instruments to the surgeon.
  - Acting as patient liaison in the operating room.
- \_\_\_\_\_ 29. Sponge counts are done prior to the beginning of an operation as well as when the surgeon begins to close the incision. The sponge count is done by:
- A scrub person and the circulating nurse.
  - Two circulating nurses.
  - The surgeon and the circulating nurse.
  - A scrub person and the surgeon.
- \_\_\_\_\_ 30. Improper positioning on the operating room table may cause:
- Damage to peripheral nerves and vessels.
  - Pressure sores.
  - Mechanical restriction of lung expansion.
  - Increased cardiac output.
- 1, 3, and 4.
  - 1, 2, and 3.
  - 2 and 4.
  - All of the above.
- \_\_\_\_\_ 31. Warm blankets may be placed on the patient during the immediate intraoperative and postoperative period. The primary reason for this is:
- To prevent intracellular to interstitial fluid shifts.
  - To prevent unnecessary exposure of the patient.
  - To prevent postoperative shivering which decreases oxygen consumption.
  - To prevent postoperative shivering which increases oxygen consumption.

- \_\_\_\_\_ 32. Mrs. Jones, 46 year old patient, is transported to the recovery room following surgery. Her family would be less anxious about her condition if they:
- a. Had been told during the preoperative period she would be in the recovery room until her condition had stabilized and that this is not unusual and is not an indication that something is wrong.
  - b. Realized that the recovery period is a very dangerous time for surgical patients and for that reason she would be better off there than the unit where the staff is not prepared to handle emergencies.
  - c. Were not told that she is in the recovery room because the average lay person associates that kind of special care with critical illness.
  - d. Were given special permission to visit her there so they could see for themselves that she was receiving the best of care.
- \_\_\_\_\_ 33. The baseline assessment for the patient arriving in the recovery room following surgery includes:
1. Vital signs and airway.
  2. Chest expansion and skin color.
  3. Level of consciousness and status of dressing.
  4. Patency of tubes.
- a. 1, 2, and 4.
  - b. 1, 3, and 4.
  - c. 1, 2, and 3.
  - d. All of these.
- \_\_\_\_\_ 34. The two most common respiratory complications following surgery include:
1. Chronic obstructive pulmonary disease
  2. Bronchitis
  3. Atelectasis
  4. Pneumonia
- a. 1 and 2.
  - b. 3 and 4.

- c. 1 and 4.
- d. 1 and 3.

- \_\_\_\_\_ 35. In the recovery room, patients are frequently monitored for the development of cardiac arrhythmias. Cardiac arrhythmias postoperatively may be related to:
- 1. Hypoxia
  - 2. Hypovolemia
  - 3. Stress
  - 4. Drugs
- a. 1, 2, and 3.
  - b. 1, 2, and 4.
  - c. All of the above.
  - d. None of the above.
- \_\_\_\_\_ 36. The most preferred route for giving pain medications in the recovery room is:
- a. Intramuscular
  - b. Intravenous
  - c. Inhalation
  - d. Subcutaneous
- \_\_\_\_\_ 37. Narcotics must be used with caution following surgery. Consideration must be given to:
- 1. Withholding morphine if the patient's respirations are under 12.
  - 2. The blood pressure of the patient.
  - 3. Withholding food and fluids to prevent nausea and vomiting.
  - 4. The side effects of narcotics which include: urticaria, restlessness, and nausea and vomiting.
- a. 3 only.
  - b. 1 and 2.
  - c. 1, 2, and 4.
  - d. All of the above.
- \_\_\_\_\_ 38. Mrs. Cooper, age 46, returns to the surgical unit after having abdominal surgery under general anesthesia. She complains to the unit nurse that her "throat hurts". The best response the unit nurse may give Mrs. Cooper is:

- a. "You are probably coming down with a cold. I will inform your doctor so that he is aware of your problem."
- b. "Your throat is probably just a little dry from not having anything to drink. Could you try taking a few sips of water."
- c. "Your throat is sore from the tube the anesthesiologist placed in your throat during surgery to assist you in breathing. The soreness will probably disappear in the next day or so."
- d. "You must mean your incision hurts Mrs. Cooper. You had surgery in your abdomen, not your throat."

\_\_\_\_\_ 39. Common effects of surgery on patients are:

1. The stress response is elicited.
  2. The defense against infection is lowered.
  3. Intracranial pressure is increased.
  4. Transient changes in life styles may occur.
- a. 1 and 2.
  - b. 1, 2, and 4.
  - c. 2 and 4.
  - d. All of the above.

\_\_\_\_\_ 40. Turning, coughing, and deep-breathing are important following surgery because:

1. Proper ventilation cannot occur if the patient lies in only one position.
  2. Mucous secretions blocking the bronchi will be expelled.
  3. Postoperative pain will be decreased.
  4. The patient's psychological well-being will be increased.
- a. 1 and 2.
  - b. 3 and 4.
  - c. 1, 2, and 3.
  - d. All of the above.

\_\_\_\_\_ 41. Which of the following statements is true of hemorrhage following surgery?

1. It will usually occur in the first 48 hours after surgery.
2. A tourniquet should be applied above the wound immediately.
3. It may be due to slipping of ligature, dislodging of a clot, or re-establishment of blood flow through vessels.
4. It is important to observe the patient for decreased blood pressure, increased pulse and respirations, restlessness, and cool, moist skin.
  - a. 1 and 2.
  - b. 3 and 4.
  - c. 2 only.
  - d. 1, 3, and 4.

\_\_\_\_\_ 42. T.E.D. stockings are worn by the patient postoperatively to prevent:

- a. Muscle spasm
- b. Paralytic ileus
- c. Thrombophlebitis
- d. Varicose veins

\_\_\_\_\_ 43. Which of the following should be done when caring for a surgical wound?

1. Cleanse from wound edges out.
2. Open the window to provide fresh air.
3. Use sterile technique.
4. Wash hands.
  - a. 1, 2, and 4.
  - b. 3 and 4.
  - c. 1, 3, and 4.
  - d. All of the above.

\_\_\_\_\_ 44. Which of the following are the responsibility of the nurse when changing a sterile dressing?

1. Careful description.
2. Careful observation.
3. Maintenance of rigid sterile technique.
4. Selection of appropriate dressing materials.

- a. 1 and 3.
- b. 2 and 4.
- c. 1, 2, and 3.
- d. All of the above.

\_\_\_\_\_ 45. Which of the following observations are to be made by the nurse when changing a dressing?

- 1. Swelling
- 2. Odor
- 3. Intention
- 4. Drainage
- 5. Color

- a. 1, 2, and 5.
- b. 1, 3, and 4.
- c. 2, 3, and 4.
- d. All of the above.

\_\_\_\_\_ 46. Early ambulation is considered helpful to prevent which of the following:

- 1. Abdominal distention
- 2. Depression and anxiety
- 3. General muscle weakness
- 4. Thrombophlebitis

- a. 1 and 4.
- b. 2 and 3.
- c. 1, 3, and 4.
- d. All of the above.

\_\_\_\_\_ 47. Wound infections may occur following surgery. Which of the following clinical manifestations is not an indication of a possible wound infection?

- a. Serous drainage from a penrose drain.
- b. Low grade temperature.
- c. Erythema around the incisional site.
- d. Tenderness of the incisional area.

\_\_\_\_\_ 48. What is the first thing the R.N. would do if the wound eviscerates?

- a. Allay the patient's anxiety.
- b. Call the physician.
- c. Go for help.
- d. Cover the wound with a moist, sterile dressing.

- \_\_\_\_\_ 49. Body-image disturbances may be the result of a surgical procedure. Which of the following would most clearly indicate that the person is "at-risk" for such a disturbance?
- a. The person does not confide in the staff.
  - b. The person does not have close relatives.
  - c. The person has had an organ removed.
  - d. The person states that the surgery had made him a different person.
- \_\_\_\_\_ 50. A patient who has a new mastectomy (removal of a breast) expresses hostility toward the nursing staff and accuses them of incompetence. What might be the basis for this reaction?
- a. An abnormal response to body change.
  - b. A severe psychological problem in adjustment requiring psychological counseling.
  - c. A normal response to a major body change.
  - d. Evidence of a critical personality.

Appendix F

Instrument Content Areas

## INSTRUMENT CONTENT AREAS

## I. General Content Areas

- A. Anatomy and Physiology
- B. Asepsis
- C. Anesthesia
- D. Bio-psycho-social needs of the Surgical Patient  
Preoperatively, Intraoperatively and  
Postoperatively

## 1. Biological Needs

- a. Cardiovascular
- b. Respiratory
- c. Genitourinary
- d. Gastrointestinal
- e. Endocrine
- f. Integumentary
- g. Neurological
- h. Eye, Ear, Nose and Throat

## 2. Psychological

- a. Fears
- b. Emotional Status
- c. Body Image

## 3. Sociological

- a. Family
- b. Work
- c. Recreation
- d. Financial

II. Needs of Surgical Patient Preoperatively,  
Intraoperatively, and Postoperatively (overall knowledge  
content of care of surgical patient).

## A. Preoperative Preparation

- 1. Psychological Aspects
- 2. Legal Aspects
- 3. Physiological Aspects
- 4. Preoperative Instruction

- a. Coughing and Deep Breathing Exercise
  - b. Turning Exercises
  - c. Extremity Exercises
  - d. Preparing for Anesthesia
5. Preoperative Care
- a. Skin Preparation
  - b. Gastrointestinal Tract
  - c. Rest and Sleep
  - d. Preop Early A.M. Care - Valuables
  - e. Preop Medications
6. Transporting to Surgery
7. Significant Others
- B. Intraoperative
1. Positioning
  2. Anesthesia
    - a. Benefits
    - b. Complications
      1. Cardiac Arrhythmias
      2. Cardiac Circulation
      3. Respiratory Depression
      4. Vomiting and Aspiration
      5. Loss of Protective Responses to Pain
      6. Malignant Hyperplexia
      7. Decreased Gastrointestinal Function
      8. Decreased Renal Function
      9. Possible Neurologic Complications
      10. Other complications, i.e.: corneal abrasions, damage to teeth.
3. Types of Anesthesia
- a. General
    1. Inhalation
    2. Intravenous
      - Advantages
      - Disadvantages
      - Nursing Precautions

## b. Regional

1. Topical
2. Local
3. Nerve Block
  - Advantages
  - Disadvantages
  - Nursing Precautions

## c. Spinal

1. Positioning
2. Effects and Complications

## d. Epidural Block

## C. Postoperative

1. Transporting from Operating Room
2. Admission to Recovery Room
  - a. Vital Signs
  - b. Positioning
3. Knowledge obtained from OR concerning:
  - a. Patient's General Condition
  - b. Type of Operation Performed and Why
  - c. Type of Anesthetic Agent
  - d. Complications Intraoperatively
  - e. Pathologic Disorders Encountered in Surgery
  - f. Symptoms or Complications to Observe For
  - g. Orders
4. Observations
  - a. Time Admission to Recovery Room
  - b. Absence of Reflexes
  - c. Level Responsiveness
  - d. Temperature and Vital Signs
  - e. Quality and Rate of Respirations
  - f. Skin Color and Dyspnea
  - g. Condition of Dressing
  - h. Presence of Drainage Tubes
  - i. IV
  - j. Blood Transfusion
  - k. Catheter
  - l. Unusual Symptoms

5. Transfer to Floor
  - a. Immediate Care Needs
    1. Respiratory Status
    2. Neurological Status
    3. Cardiovascular Status
    4. Wound
    5. Tubes - IV
    6. Position
6. Goals Postoperative Period
  - a. Maintenance Cardiovascular Function and Tissue Perfusion
  - b. Maintenance Respiratory Function
  - c. Nutrition and Elimination
  - d. Fluid and Electrolyte Balance
  - e. Renal Function
  - f. Rest, Comfort and Safety
  - g. Wound Healing
  - h. Movement and Ambulation
  - i. Psychological Support to Patient and Family
  - j. Discharge Planning
7. Postoperative Complications
  - a. Fever
    1. Pulmonary Complications
    2. Infection - Wound Dehiscence or Evisceration
    3. Urinary Infection
    4. Thrombophlebitis
  - b. Cardiovascular Collapse
    1. Hemorrhage
    2. Sepsis
    3. Cardiac Arrest and Myocardial Infarction
    4. Transfusion Reactions
    5. Pulmonary Embolism
    6. Adrenal Failure
  - c. Gastrointestinal

1. Gastric Dilatation
2. Paralytic Ileus
3. Fecal Impaction
4. Bowel Obstruction

d. Urinary

1. Retention
2. Failure

e. Miscellaneous

1. Hiccoughs
2. Acute Paratititis
3. Decubitus Ulcers
4. Emotional Disturbances
  - a. Grief Over Loss of Organ or Part
  - b. Body Image Disturbances
  - c. Prior Emotional Problems
  - d. Exhaustion and Extreme Debilitation

MONTANA STATE UNIVERSITY LIBRARIES



3 1762 10014662 8

X

Main  
N378  
K847  
Cop.2