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EFFECTS OF A **PERIOPERATIVE** NURSING COURSE ON STUDENT ATTITUDES  
TOWARD THE ROLE OF THE NURSE IN THE OPERATING ROOM

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**Abstract:** **Perioperative** nursing is a highly specialized field of nursing practice requiring knowledge and skills not included in baccalaureate nursing programs. The purpose of this research was to study the effects of a perioperative nursing course on student attitudes and knowledge in relation to the perioperative role. Two scales were developed and refined specifically for use in the study. Subjects were nursing students from two classes in a baccalaureate nursing program at a large Midwestern university. Students were tested before and after a perioperative nursing course. Changes in attitude toward the **perioperative** nurse post course were not significant. Knowledge of the role function of the **perioperative** nurse post the courses showed greater dispersion but were not statistically significant. Results are discussed in relation to theory and previous research.

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## Introduction

Perioperative nursing is a specialized area of nursing that encompasses care of the patient before, during, and after surgery. This area of nursing evolved from operating room nursing to a professional specialty requiring scientifically based, skilled nursing practice. **Only** registered professional nurses can specialize in perioperative nursing. The perioperative nurse collaborates with others to provide patient care throughout the operative experience, although the primary nursing responsibility is care of the surgical patient during the **intraoperative** phase.

Specialized knowledge, skills, and competencies are required to assume the professional perioperative practice role. Entry into this practice role is often restricted to nurses who have clinical experience and a strong desire to become a surgical nurse. This paper reports on a clinical elective course in perioperative nursing developed for baccalaureate nursing students in a large Midwestern school of nursing. The course has been offered for more than 20 years and has been continuously revised to reflect changes in perioperative nursing practice.

The major purposes of the course are to increase knowledge of surgical asepsis and to introduce the students to the role of the perioperative nurse. Both the professional and technical role components of the nurse are emphasized. Through collaboration with nursing service, the course provides opportunities for nursing students to practice in the operating room. Expected outcomes of the course are knowledge and beginning skills, as well as increased understanding of the patient's surgical experience. However, student attitude change **has not**, so far, been measured as a specific course outcome.

The experience component of the course is assumed to play a major part in development

of students' knowledge and attitudes toward the role and functions of the perioperative nurse. A desired outcome of the course is to increase the number of nursing graduates who choose perioperative nursing as a career. Nursing education research suggests that many factors, including nursing school experiences, influence which fields nursing graduates consider as career choices. This study was designed to assess if there was a change by the end of the course in students' (a) attitudes toward the role of the perioperative nurse and (b) knowledge of the role functions of the perioperative nurse role.

### Role Theory

According to role theory, expected norms of a role include the knowledge, attitudes, and behaviors that persons within a role must have. Role performance refers to the behaviors or actions related to the position, and expected norms influence which specific behaviors will be done. Hardy and Conway (1988) stated that attitudes toward the performance of roles are formed from informal life experience and formal educational processes. Attitudes toward roles predispose individuals to anticipate certain behaviors from those persons in a particular role. McGuire (1969) pointed out that individuals are not totally aware of the cognitive, experiential, and affective aspects that lead them to their choices. For this study, an assumption was made that student attitude change in relation to a specific setting can occur as a result of clinical experience in that setting.

### Related Research

Reports of studies on the development of student roles in relation to professional nursing are abundant in the literature. However, few studies have addressed student attitudes toward the

role and function of the **perioperative** nurse. West (1985) studied student nurses' perceptions of the British OR nurse before and after a 6-week experience in the operating room. She found that before the course most students perceived the nurse as a "handmaiden to the surgeon." After the course students were more likely to perceive the nurse as competent, **efficient**, knowledgeable, and self-controlled in stressful situations. However, although the students had a better understanding of the practice role of the OR nurse as a result of the course, West inferred that their attitude toward the role still was not positive because only 6% of the students would elect to work in an OR setting.

In a study of the effects of a clinical clerkship (practicum) on the attitudes of 84 medical students toward the anesthesiology specialty, researchers Samara, Davis, Pandt, and Cohen (1983) found that the course significantly improved graduating students' attitudes toward physicians in this specialty. These students spent their **first** week observing and learning from residents and the next three weeks in "hands-on" experience administering anesthesia under supervision. There was a significant positive change in the attitude scores of the students toward the role of the anesthesiologist after the **clinical** practicum course.

Romer, Lorentzen, and Galuska (1987) examined role identification by students in health service **administration** and health education, specifically the effects of field practicums on the match between student and faculty role definitions. Student role expectations generally matched those of the faculties; however, the study did not describe changes resulting from the practicum or internship on student perceptions of their professional role.

Most studies have examined the short-term effects of attitude change following a planned

learning experience. Role conceptions of student nurses have been examined before and after clinical courses and upon graduation from a nursing program. Itano, Warren, and Ishida (1987) compared baccalaureate nursing student role conceptions and feelings of role deprivation between a program utilizing preceptors and a traditional clinical program. Results showed no differences in the change scores of role conceptions or role deprivation between students participating in the preceptorship program and those who did not,

Experience opportunity is a significant contributor to student perception of the role functions of nurses. Goldenberg and Iwasi (1993) studied 242 senior nursing students before and after a senior clinical preceptorship experience to determine effects of the experience on attitudes. Comparisons were made between participants in a 3-year college program and a 4-year, university baccalaureate program. Results were mixed and it was not clear that the preceptorship had influenced professional role socialization or attitude change.

Research on student attitude change and role orientation has shown mixed results, although many specific courses and clinical experiences have been developed to provide opportunities for students to learn about particular settings by participation. It appears that preceptors have a role in facilitating nursing students' knowledge of components of nursing practice. The purpose of this study was to determine if there was a difference in attitude among baccalaureate nursing students toward the role and role functions of the perioperative nurse after completing a clinical course in perioperative nursing.

## Method

### Sample

A convenience sample of 33 baccalaureate nursing students enrolled in the 6-week clinical elective was utilized. Students were from two different offerings of the course and were identified as group A (N=18) and group B (N=15). The sample was limited to students who had completed the junior year of clinical nursing courses in the baccalaureate program and were seriously interested in working in the O. R. after graduation.

### Measurement

Two instruments were constructed for this study. The Role Function Scale assessed knowledge of the functions of the perioperative nurse. The Attitude Scale measured attitudes of students toward the role of the perioperative nurse.

Perioperative nurse role functions were identified from AORN Standards of Recommended Practice (AORN, 1986) and perioperative nurse competencies (Hercules, Kneedler, and Roth, 1986). Thirty-two role and practice statements were included on the Role Function Scale. Respondents rated each of the 32 role functions from their perspective on a five-point scale (5=strongly agree to 1=strongly disagree).

The Attitude Scale was constructed using a bipolar semantic differentiation technique. Twenty opposing evaluative adjectives related to the concept of perioperative nursing were listed (e.g., Happy/Sad, Unpleasant/Pleasant, Chaotic/Ordered, etc.). Relevant adjective pairs were selected from Osgood, Suci, and Tannenbaum (1957). Using a seven-point Likert scale, a value between 1 (strongly disagree) and 7 (strongly agree) was obtained for each of the 20 items.

Scores for each of the adjective pairs were summed to produce a positive attitude toward the perioperative nurse.

Before using the instruments in this study, they were evaluated by administering them to nursing students in prior classes. Internal consistency and reliability were assessed employing Cronbach's Alpha. Although the reliability for both scales at pre and post administrations were acceptable, revisions were made (see Table 1). These revisions resulted in scales with alphas

Table 1  
Summary Statistics: Original and Revised Role Function and Attitude Scales

Pre/Post	N of Items	M	SD	Alpha
<b>Role Function Scale</b>				
pre	32	141.69	9.01	.86
post		144.88	9.10	.90
<b>Attitude Scale</b>				
pre	20	120.69	7.97	.73
post		118.12	13.95	.87
<b>Revised Scales</b>				
<b>Role Function Scale</b>				
pre	29	134.45	8.80	.92
post		137.91	8.95	.94
<b>Attitude Scale</b>				
pre	19	117.58	9.06	.81
post		115.70	15.79	.92



ranging from .81 to .94. The final Attitude scale consisted of 19 opposing adjectives. Seven of the pairs of adjectives were randomly reversed to reduce bias. Role function scale items were reduced from 32 items to 29. The resulting high measures of reliability shows significant strength of the scales. Pre course and post course scales were administered to two groups of baccalaureate students. The original scale was administered in 1985. Revised scale was administered to summer session students in 1986.

Demographic data were collected on an attached sheet and included age, gender, previous OR experience, and experience as a surgical patient.

### The Course

The 6-week course is designed so that students receive 24 hours of instruction before beginning their clinical practice in the OR. Demonstrations of procedures and videotapes are utilized during this 1-week period. Students are then assigned to a preceptor who works in the OR where students will receive their clinical experience. The preceptors are perioperative staff nurses who have volunteered to serve in this capacity and have been oriented to the goals of the course (Huff, 1980).

For the next five weeks students are in didactic classes six hours a week and in the clinical area for 24 hours weekly. Didactic classes emphasize the AORN Standards and Recommended Practices for Perioperative Nursing (AORN, 1986). All students have experience in the preoperative area in the operating room, as well as a brief experience in the postanesthesia care unit. Students participate in all aspects of the perioperative role with their preceptors. To ensure that all students receive similar experiences each week, guides and check lists are used by

the students, preceptors, and faculty. Students are assigned to either a teaching or private hospital for clinical experience. Both hospitals provide preceptors who work on a one-to-one basis with the student.

Upon completion of the course, students may choose to work for pay in the operating room where they were assigned for clinical experience. All students are offered a part-time summer job as “student nurse extem” (a position that allows the nursing student to participate as a team member in the O. R.) for the remainder of the summer.

### Procedure

Data were collected on each student twice during the 6-week course. The Attitude Scale and Role Function Scale administered on the first day of class and on the last day of class. Because two different classes comprised samples that did not represent the same population, baseline data for the two groups were compared for each variable measured. In addition, the type of facility where students gained their perioperative nursing experience was considered in analyses.

### Results

The 33 students in the sample were all female, with an average age of 24 in group A and 23 in group B, a difference that was not significant. All had observed a surgical procedure as part of their required school assignment. One student in group A had worked as an employee in an operating room. Twenty-five percent of the sample had been surgical patients and could “recall the nurse’s role.” All participants were juniors in the B.S.N. program.

A repeated measures ANOVA was used to test for difference in attitude and knowledge of the perioperative nursing role. (Table 2) There was a significant group by time interaction for both subscales, but there was no significant difference in attitude or knowledge before and after the course across both groups.

Table 2

Repeated Measure ANOVA for Difference Between Groups Before and After  
a Perioperative Nursing Course

Source of Variation	Sum of Squares	DF	Mean Squares	F Ratio	Sig. of F
<b>ATTITUDE SCALE</b>					
Within Cells	3879.67	31	125.15		
Time	131.36	1	131.36	1.05	.31
Group by Time	1276.82	1	1276.82	10.20	.003*
<b>ROLE FUNCTION SCALE</b>					
Within Cells	1354.70	31	43.69		
Time	150.01	1	150.01	3.43	.073
Group by Time	360.62	1	360.62	8.25	.007*

\* = Significant

Inspection of all means (Table 3) revealed that knowledge of the role increased over time for Group A, but Group B remained essentially unchanged. The mean attitude score for group A also increased after the course. Interestingly, attitude in Group B decreased from pre to post course, with greater variation in post course scores.

Students in both groups A and B were assigned to either a university teaching or a private hospital for clinical practice with their preceptor. Scores of students from Groups A and B who

Table 3

Pre and Post Course Mean Scores and Standard Deviations by Group and for Total Sample

Variable	Group A M (s.d.)	Group B M (s.d.)	Total Group M (s.d.)
ROLE SCALE			
pre course	133.56 (9.31)	135.53 (8.32)	134.46 (8.80)
post course	141.28 (6.37)	133.87(10.08)	137.91 (8.95)
ATTITUDE SCALE			
pre course	124.56 (10.19)	123.40 ( 8.42)	124.03 ( 9.31)
post course	130.56 ( 7.92)	111.73 (17.47)	122.00 (16.04)

were assigned to a teaching hospital were compared with scores of students in groups A and B from private hospitals. There were no significant differences between groups on either scale before or after the course. When mean scores were compared for positive or negative effect, Group B showed slightly lower mean scores post course toward the role functions of the perioperative nurse. (Table 3) Higher scores suggest more positive attitude toward the variable. Lower scale scores suggest more negative attitude toward the variable. Figures 1 and 2 depict the interaction of scores before and after the course.

There were no significant relationships between any of the study variables and demographic variables. All students in each group were offered summer jobs in the operating room after the perioperative nursing course. Upon completion of the course, 14 students from Group A chose to work in the operating room as a student nurse extem. After completing the course, 10 students from Group B accepted student nurse extem positions in the operating room.

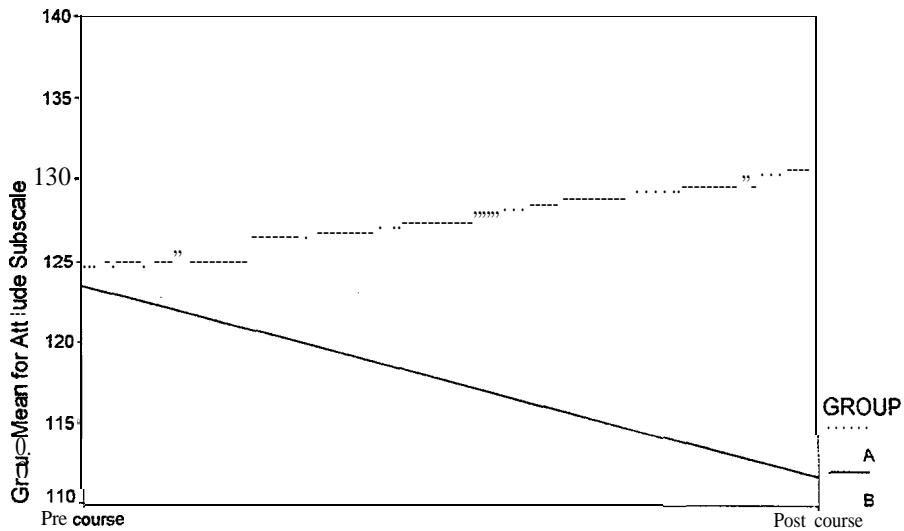


Figure 1: Interaction Plot of Pre and Post Test Scores on Student Attitude Toward the Perioperative Nurse Scale

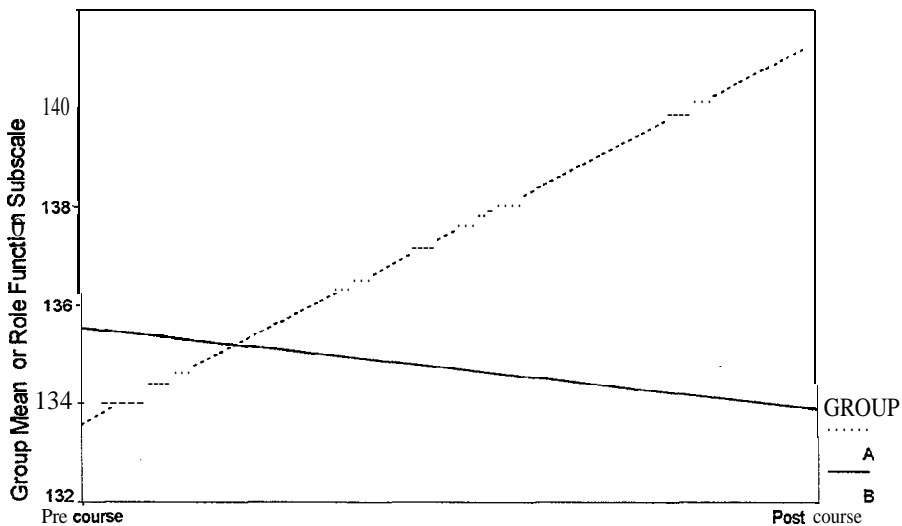


Figure 2: Interaction Plot of Pre and Post Test Scores on Knowledge and Attitude Toward the Role Function of the Perioperative Nurse

### Discussion

Study results show an increase in knowledge of role functions of the perioperative nurse in Group A. Patterns of behavior and technical activities performed by the professional nurse in the O. R., described on the Role Scale, met the expectation of this group. Group A also demonstrated a higher mean score post course on attitude toward the perioperative nurse. The attitude of students was very positive in that the maximum score on this scale was 133. These findings support those of Samara et al ( 1983). Attitudes toward the role were more positive after the course experience. Among the 18 students in group A, 14 chose to work after the course as a student nurse in the O.R.

Group B remained essentially unchanged in Role Function knowledge scores post course. Mean scores on the Attitude Scale declined among students in group B. Similar to findings of West (1986), the Group B students understood the practice role of the perioperative nurse, and their attitude toward the nurse in O. R. became less positive after the course. As students in this group participated in the practice roles, critical attitudes toward observed role performance might have increased.

This slight variation in quantitative scores pre and post course might be explained in relation to course content. The focus of the course was on AORN Standards of practice for the perioperative nursing role. Of the 15 students in Group B, 10 chose to work in the O. R. post course. Students were asked to say why they would not choose to work in the O.R. post course. The most frequent answers were the amounts of pay and limited availability of work hours. The variability of scores among students in Group B on the Attitude scale might be explained.

Conclusions of this study are, first, that having a course in perioperative nursing can increase student knowledge of the role of the perioperative nurse and, second, student attitude can change after a course in perioperative nursing. In this study, overall attitude remained unchanged before and after the course although an increase in attitude was noted in one group.

Formal educational courses that allow students to participate in the actual setting through a clerkship or a clinical course have been advocated for increasing perceptions of opportunity for professional practice (Rothrock, 1989; Brooks, 1991; Magarian, 1993; Greenberg & Jewitt, 1993). A course that **includes** opportunities to function in the **perioperative** nurse role is a strategy that can be used to increase the likelihood that the operating room **will** be viewed as an option upon graduation. Preceptors are an additional consideration when examining the attitudes of students toward the role.

Because the study took place in one school of nursing, the findings are limited to subjects who meet the criteria for this study. The small sample size, **all** female sample, and students from two different course offerings are additional limitations to generalization of the findings.

### Recommendations

Similar investigations should be conducted in other specialized elective courses to validate the findings of this study. Use of a control group would strengthen such a study. In addition to quantitative data, qualitative measures might help explain attitude changes after experiences in the O. R.

The results of this study have provided a beginning confirmation of how a hands-on clinical experience might be linked with positive attitudes toward a nursing specialty. With increasing

need for qualified professional nurses in the perioperative nursing field, it is imperative that nursing students have exposure to this specialized role. The hope is that this experience can lead to an increase in the numbers of professional nurses who seek employment in the field of perioperative nursing.

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