Effect of Sacred Space Environment on Surgical Patient Outcomes: A Pilot Study

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Abstract

This study's purpose was to create an alternative to the traditional environment for surgical patients in the operating room (OR). A caring-healing environment with nurse caring behaviors was designed according to Watson's theory of human caring. A post-test only design with comparison group was employed. The sacred space environment combined soft lighting, warmth, selected music, and an art mural in an OR. Data were collected on 50 patients in the comparison group and 50 patients in the experimental group using the Sacred Space Assessment Instrument. Results showed that a statistically significant difference existed when perception of sacred space and perception of nurse caring were compared by group. However, no statistically significant difference resulted on patient satisfaction by group.

Key Words: Sacred space environment, perceived nurse caring behaviors, patient satisfaction, sacred space assessment instrument, Watson's caring theory

Introduction

The shift from a mechanistic paradigm to a caring-healing paradigm in healthcare has called nurses to examine the way in which they provide care to patients. Caring is at the center of the nursing paradigm, which provides a philosophical and conceptual framework for defining evidence-based practice (Dorn, 2004).

The perioperative environment is often perceived as cold and evokes fear in patients. This pilot study created a caring-healing environment in an operating room (OR) where the nurse-patient relationship was honored and at the center of the paradigm of care.

The privileged bond between care provider and patient has been called a "sacred space" (Wright & Sayre-Adams, 2000). Utilizing Watson's (1985) theory of transpersonal caring as a theoretical framework for practice, caring behaviors of nurses identified by patients may be an impetus for a change in practice when they care for surgical patients. By altering the surgical environment with healing environmental modalities and with care provided by nurses taught in sacred space sessions, surgical patients may perceive that they are being cared for and protected during surgical care and are satisfied with care.

Purpose of Study

The purpose of this study was to compare the effect of a sacred space environment (independent variable [IV]) in the perioperative area on surgical patients' perceptions of sacred space (dependent variable [DV]), nurse caring behaviors (DV), and patient satisfaction (DV). This study also established beginning psychometric characteristics of the Sacred Space Assessment Instrument (SSAI).

Research Questions

Is there a difference in surgical patients' perceptions of the sacred space environment when one group is cared for in a perioperative sacred space environment and one group is cared for in the traditional perioperative environment?

Is there a difference in surgical patients' perceptions of nurse caring behaviors when one group is cared for in a perioperative sacred space environment and one group is cared for in the traditional perioperative environment?

Is there a difference in surgical patients' satisfaction when one group is cared for in a perioperative sacred space environment and one group is cared for in the traditional perioperative environment?

What are the reliability (Cronbach's alpha coefficient, test-retest) and validity (construct, content [expert and theoretical]) characteristics of the SSAI?

Hypotheses

H_1: Perceptions of the sacred space environment of surgical patients' cared for in a sacred space perioperative environment differs from the perceptions of patients' cared for in the traditional perioperative surgical environment.

H_2: Perceived nurse caring behaviors of surgical patients cared for in a sacred space perioperative environment differs from the perceived nurse caring behaviors of those cared for in the traditional perioperative environment.

H_3: Patient satisfaction for surgical patients cared for in a sacred space perioperative environment differs from the patient satisfaction of those cared for in the traditional perioperative environment.

Literature Review

The nursing research and scholarly literature related to caring in perioperative nursing revealed many studies and papers related to the concept of caring (Brilowski & Wendler, 2005; Burchiel, 1995; Dyson, 1996; Killen, 1996; Lewis, 2003) but few specific to care of surgical patients in a holistic healing environment (Felgen, 2004; Koloroutis, 2005; Watson, 2005). Caring nursing behaviors and caring models (Dorn, 2004; McCance, 2003) have been explored, but the application of these principles to perioperative nursing care has been limited.

The perioperative environment is often perceived as being technically centered with little emphasis on caring. Caring is often overshadowed by technical tasks that consume the time of surgical nurses. If caring is defined as the "essence" of nursing, it is imperative that perioperative nurses investigate the importance of their roles as educators and patient advocates in a challenging culture, including highly advanced technology. It is essential that perioperative nurses do not let caring, the essence of the profession, be undervalued by cost effectiveness, technological advances, and time constraints. If that becomes a reality, it is the investigators' contention that nurses will have lost the founding principles of nursing and the significance of nursing's professional role.

In a United States 2005 Gallop poll (2007), the public placed the nursing profession first in ethics. This information reinforced the importance of preserving the caring ethic and practice of nursing, which has gained the trust of the public (Watson, 2006). The shift to create a caring, healing environment with patient-centered care is supported by Magnet certification efforts (Koloroutis, 2005). Magnet status gives nurses a professional pride and a framework to practice healing, caring behaviors supported by a caring ethical nurse. It promotes nursing research and honors nursing as a unique body of knowledge. With Magnet designation, this Philadelphia, Pennsylvania suburban teaching hospital embraces the relationship-based model of care (Koloroutis). The Magnet hospital is committed to providing safe, quality patient care in the surgical arena. Caring-healing practices and a caring-healing environment may contribute to the goal of human wholeness and quality care (Dorn, 2004).

It is a goal of perioperative nurses to combine the science and art of perioperative nursing to provide the best quality care to patients by preserving their dignity and to provide physical and psychological comfort in a time of stress and uncertainty (Liu, 1998). As surgical patients experience a loss of control, perioperative nurses demonstrate a caring, professional manner through therapeutic presence and dialogue (Rudolfsson, Ringsberg, & von Post, 2003). Caring behaviors and actions, such as attentive listening, patient teaching, patient advocacy, therapeutic touch, and technical competency, are incorporated into the caring-healing process (Gray, Kee, & Parsons, 1993). In the context of a caring or caritas nursing framework, these caring behaviors become sacred nursing acts (Watson, 2008).

The mission of nurses is to create a caring environment through a caring-healing consciousness and to alleviate patients' suffering (Fredriksson, 1999). To create a healing environment, nurses must treat each person with respect and dignity, meeting the physical, emotional, and spiritual needs of patients. Nurses have opportunities to create a caring culture that supports patients' dignity and authenticity (Lewis, 2003).

Smith (1999) acknowledged that, "Caring is the art of nursing, the way of being, the component of the nurse in the sacred dance of healing with the patient. Caring becomes the ground of practice" (p. 20). Caring is at the center of the nursing paradigm, which provides a philosophical and conceptual framework for defining evidence-based nursing practice. Rooted in humanistic values, a caring philosophy has a basic concern for human dignity and recognizes the unique worth of each person (Dorn, 2004).

Professional perioperative nurses have a moral and ethical obligation to care for the physical, emotional, and spiritual needs of surgical patients. It is our opinion that nurses need to demonstrate caring behaviors that define the care of surgical patients within the surgical arena. Perioperative nursing is a unique area of practice with a specific body of knowledge to educate, inform, comfort, and alleviate stress in collaboration with other surgical team members to ensure a quality surgical outcome (Burchiel, 1995).

As nursing practice moves toward a caring paradigm, nurses seek creative ways in which to create healing environments for their patients. Nurses look to nursing roots for guidance and knowledge. Nightingale's environmental adaptation theory of mind-body-spirit integration with environmental factors, including auditory, visual, olfactory, sensory, tactile, and cognitive modalities, provides a framework for actualizing caring-healing practices in a transpersonal caring model (Watson, 1995). Watson (1999) stated, "These modalities are also comfort measures which serve to control pain, manage symptoms, soothe and relax, and to help create a sense of well-being through which natural healing can occur and the natural reparative processes can be facilitated" (p. 205). Such nursing arts have lain dormant in nursing practice and are now emerging as caring-healing modalities that allow nurses to tend to the physical as well as the emotional and spiritual care of patients (Watson, 2008).

The research on the healing power of symbolic art in the healthcare setting showed trees, mountains, and rivers as symbols related to comfort and healing (Karlson, 2006). Trees convey strength and shelter, mountains are seen as inspirational symbols of strength, and rivers often represent an effortless journey to a safe place. Landscape images, in particular, have re-

duced negative emotions such as fear, anger, and sadness. Nature scenes also have positive physiological effects on health indicators, such as lowered blood pressure and reduced muscle tension. Studies that monitor brain activity during exposure to nature scenes show that more alpha frequency brain activity (wakeful relaxation) occurs during that time (Ulrich, 2002).

Colors of nature also have different effects on emotion and can have a therapeutic effect on the healing of a person. Warm colors (red, yellow, orange) can help improve a depressed mood and stimulate metabolism. Cool colors (green, purple, blue) promote calmness and relaxation (Karlsen, 2006). For example, a blue, calm ocean scene may be helpful for someone who needs rest and healing.

The American Music Therapy Association (1998) defines music therapy as an established, healthcare profession that uses music to address physical, emotional, cognitive, and social needs of individuals of all ages. Jonas (2006) suggested that music can be designed to fit the individual needs of the person and the environment. Music can promote wellness, manage stress, alleviate pain, express feelings, enhance memory, improve communication, and assist with healing. Investigators report that music is non-verbal and moves through the auditory cortex to the center of the limbic system. This is where emotional experience and basic metabolic responses such as body temperature, blood pressure, and heart rate originate. Music used during the surgical experience might induce relaxation by having a strong, even rhythm and a tempo slightly lower than normal heart rate of 60 beats per minute. Music for the operating room staff should be 72 beats per minute, even in tempo, with a strong melodic line (Jonas). Calming musical instruments include: cello, harp, guitar, strings, flute, harpsichord and violin (Jonas).

Nightingale (1969) paid attention to the need for warmth and keeping the patients protected from unnecessary cold, "and common sense will point out, that, while purity of air is essential, a temperature must be secured which shall not chill the patient" (p. 14). Hypothermia is defined as a core body temperature of lower than 36 °C (96.8 °F) (Good, Norwood, Secrest, & Verble, 2006). A cold OR environment is often the first contributing factor to hypothermia in surgical patients. Nurses play a vital role in preventing hypothermia and reducing the physiological effects of hypothermia as well as providing comfort. Perioperative nurses need to be aware of the consequences of hypothermia, such as increased oxygen consumption and increased energy expenditure. Shivering increases oxygen consumption by 400% to 500% with increased mortality rate in patients less than 55 years of age, increased risks of cardiac events, increased need for blood products, problems with coagulopathy, increased incidence of surgical wound infection, and decreased medication metabolism. Nursing interventions to prevent hypothermia include applying warm blankets, socks, forced-air warming devices, and keeping the room temperature at 20 °C to 23.9 °C (68 °F to 75 °F) to provide optimal patient comfort (Good et al.).

The human-to-human relationship or healing-caring relationship between nurse and patient is a vital component in assisting patients to move from a state of disequilibrium and vulnerability to one of wholeness (Quinn, Smith, Ritenbaugh, Swanson, & Watson, 2003). The nurse-patient relationship allows patients to be put in the best condition for healing through the development of an authentic relationship based on trust, therapeutic communication, mutual respect, compassion, and the preservation of human dignity.

Theoretical Framework

The sacred space is an adaptation of Jean Watson's theory of transpersonal caring and the ten carative factors/caritas processes. The operationalization of this model may implement Watson's ten carative factors (1979) with evolved caritas (comes from the Latin word to cherish) processes (Watson, 2008).

These factors and processes provide a scientific-humanistic framework in which to investigate caring and environmental interventions relevant to nursing practice. The carative factors, or caritas processes, provide a philosophical foundation of the science of caring.

The researchers integrated these carative factors and processes (Watson, 2008, p. 31) (caritas processes 4, 6, 8, and 9) into the teaching module for the sacred space perioperative team members (Watson). Nurses have the privilege and honor to help others through assisting with the gratification of basic human needs, especially during times of vulnerability (Watson). The OR is an environment where meeting basic comfort needs may seem routine, but by applying caring principles and working from a caritas consciousness there is a sense of sacredness that is brought into nursing practice.

"The act of touching another person transcends beyond the physical body where the embodied spirit of another is deeply affected" (Watson, 2008, p. 145). Watson stated, "Each act we commit is part of a larger whole" (p. 144). Caritas nurses approach their work not as task-oriented but as sacred acts that allow them to "see with the heart's eye" (Martinsen, 2006, p. 11).

Caritas nurses design and create "space" for healing (Watson, 2008). The OR was designed by the sacred space perioperative team members to be a healing environment that attends to the comfort, safety, privacy, preservation of human dignity, and development of a caring-healing trusting relationship within an aesthetically pleasing environment to meet the needs of surgical patients.

Methodology

Design

This study used a post-test only design with a comparison group (Burns & Grove, 2005). The experimental conditions of the independent variable were composed of a protocol that incorporated the sacred space environment and nursing care provided by registered nurses (RNs) who attended sa-

cred space education sessions. The comparison group conditions were standard OR care. The sacred space environment was created after control group data were collected and before the nursing staff were exposed to the sacred space education sessions.

The sacred space environment was designed according to Watson's theory of human caring in relation to caring-healing environmental modalities. The room aesthetics incorporated a caring-healing environment. Dimmed lights with only peripheral lighting, selective music for surgical patients, room temperature between 68 °F to 75 °F, warm blankets, and an art mural with soothing colors of nature created the caring-healing environment.

Two educational sessions (Table 1) were taught to the core group of nurses who cared for the patients involved in this study. The core group consisted of 11 OR nurses who volunteered to participate in the study and completed the National Institutes of Health training and educational sessions so that they could obtain patient consent and collect data.

Subjects and Setting

OR 6 was the setting for this pilot study, where care for the experimental group took place for the duration of the study. The subjects in the experimental (n = 50) and comparison (n = 50) groups were surgical adult patients admitted to the gynecologic (OB-GYN) oncology and genitourinary (GU) services. Demographic characteristics of surgical patients (Table 2) and of the nursing staff (Table 3) were collected.

Ethical Considerations

The study was submitted to the licensed 666-bed community hospital's Institutional Review Board (IRB) and was approved with recommendations. Patient consent was obtained from the experimental group only. Patient consent was waived for the comparison group by the chairman of the IRB because this study presented no risks or harm to subjects and involved no procedures for which written consent is normally required outside of the research context. The sacred space data collection team informed both groups that this was a research study and that they were under no obligation to answer questions and could decline to participate or could withdraw from the study. The waiver or alteration did not adversely affect the rights and welfare of human subjects. Subjects' confidentiality was maintained. Completed instruments were coded with identification numbers; no patient names were identified. Consent forms were filed separately from instruments.

Instrumentation

The Sacred Space Evaluation (SSE) was developed by one investigator (Schmock, 2006) and measured perceived sacred space. The researchers received written permission from (Z.R. Wolf, personal communication, January 11, 2007) to use the Caring Behaviors Inventory 5 (CBI-5). The SSAI was composed of 25 items; it was constructed for administration to post-operative patients who recently reacted from general anesthesia. Part I (Sacred Space Evaluation, SSE) includes 18 items based on Watson's (1988; 2005) theory including environmental caring-healing modalities. Each SSE item used a 6-point scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Responses were summed to create a total Sacred Space Evaluation score. Part II (CBI-5) was oriented in the Caring Behaviors Inventory (CBI) (Wolf, Giardino,

Table 1
Educational Sessions for Sacred Study Perioperative Team

Time	Objective	Content Outline	Teacher/Learner Activities	AV/Equipment	Evaluation
60 min	Session 1 #1 & #2	Steps of nursing research process with application of research principles to formulating a research proposal	Lecture, folder with research articles	PowerPoint presentation	Steps of research process
	Session 1 #3	Definition of principles and concepts of Watson's theory of human caring with integration of/into nursing practice	Lecture, guided discussion	PowerPoint presentation	Short answer question test
	Session 2 #4	Process of obtaining informed consent for patients entering the sacred space environment Process of collecting data in the post-surgical area	Lecture, discussion, sample consent, data collection instrument	Handouts	Practice procedure with classmate
	Session 2 #5	Application of caring concepts to care of the surgical patient in the sacred space environment	Lecture, discussion, role play		Evaluation of role play
Test items:		Undergraduate research test questions			
Lesson evaluation:		Sacred space perioperative nurse team feedback			

Table 2
Demographic Characteristics of Sacred Space Patients in the Experimental and Comparison Groups (N = 100)

	Experimental					Comparison				
	M	SD	Range	n	%	M	SD	Range	n	%
Age*	58.2	14.5	61			57.6	16.2	64		
Gender**										
Female				44	88.0				43	86.0
Male				6	12.0				7	14.0
Marital Status										
Single				7	14.0				9	18.0
Married				32	64.0				30	60.0
Divorced				3	6.0				3	6.0
Widowed				6	12.0				7	14.0
Separated				2	4.0				1	2.0
Race										
African American				7	14.0				4	8.0
Asian				1	2.0				0	0.0
Caucasian				39	78.0				43	86.0
Hispanic				1	2.0				1	2.0
Native American Indian				0	0.0				0	0.0
Other				2	4.0				2	4.0
Education Level										
1st to 8th grade				0	0.0				0	0.0
9th to 12th grade				16	32.0				19	38.0
1 to 2 years of college				10	20.0				11	22.0
3 to 4 years of college				12	24.0				14	28.0
5 years of college and over				9	18.0				5	10.0
Did not answer				3	6.0				1	2.0
Highest Degree Earned										
High school diploma				14	28.0				18	36.0
Associates Degree				3	6.0				4	8.0
Bachelors Degree				15	30.0				12	24.0
Masters Degree				6	12.0				3	6.0
Doctorate Degree				3	6.0				2	4.0
N/A				9	18.0				11	22.0
Type of Procedure										
Prostatectomy				3	6.0				1	2.0
Nephrectomy				5	10.0				2	4.0
Ureteral Reimplantation				1	2.0				0	0.0
Vasectomy Reversal				1	2.0				0	0.0
Biopsy of Vulvar Lesion				3	6.0				2	4.0
Salpinoophorectomy				22	44.0				20	40.0
Total Abdominal Hysterectomy				18	36.0				17	34.0
Pelvic Node Sampling				3	6.0				6	12.0
Biopsy of Cervix				5	10.0				3	6.0
Partial Vulvectomy				1	2.0				2	4.0
Hysteroscopy				6	12.0				3	6.0
Omentectomy				2	4.0				1	2.0
Splenectomy				1	2.0				0	0.0
Appendectomy				1	2.0				0	0.0
Exploratory laparoscopy/laparotomy				2	4.0				4	8.0
Tumor debulking				1	2.0				2	4.0
Modified radical hysterectomy				3	6.0				0	0.0
Vaginal sling				0	0.0				1	2.0
Circumcision				2	4.0				1	2.0
Distal urethrectomy				0	0.0				1	2.0
Varicocele repair				0	0.0				1	2.0
Orchiectomy				0	0.0				2	2.0
Dilation and curettage				6	12.0				7	14.0
Resection abdominal mass				0	0.0				1	2.0
Small bowel resection				0	0.0				1	2.0
Repair abdominal hernia				0	0.0				1	2.0
Lysis of adhesions				0	0.0				2	4.0
Examination under anesthesia				0	0.0				1	2.0
Oophorectomy				0	0.0				1	2.0
Tubal ligation				0	0.0				1	2.0
Laser surgery				0	0.0				1	2.0
Sigmoid colectomy				0	0.0				1	2.0

* There was no significant difference ($p = .82$) between groups by age.

** There was no significant ($p = .76$) association between groups by gender.

Table 3
Demographic Characteristics of Sacred Space Perioperative Nurses (N = 11)

	M	SD	Range	n	%
Age	44.7	6.5	20		
Years in practice	22.2	7.8	22		
Years as perioperative nurse	7.1	5.0	15		
Gender					
Female				11	100.0
Male				0	0.0
Race					
African American				1	9.1
Asian				0	0.0
Caucasian				10	90.9
Hispanic				0	0.0
Pacific Islander				0	0.0
Other				0	0.0
Education					
RN, AD				1	9.1
RN, Diploma				4	36.4
RN, in progress or BSN				1	9.1
RN, with completion BSN				1	9.1
RN, with generic BSN				2	18.2
MSN, MA Nursing				1	9.1
PhD, DNSc, ND, EdD, or other Doctoral Degree				1	9.1
Membership					
AHNA				2	
ANA				1	
ANNA				1	
AORN				3	
STT				2	
Certification					
AHN-BC				1	
CNOR				3	
CPR				2	
NIH				11	
RNC				1	

Osborne, & Ambrose, 1994). The five items of the CBI-5 used a 6-point Likert scale (1 = never; 2 = almost never; 3 = occasionally; 4 = usually; 5 = almost never; 6 = always). CBI-5 items were summed to create a total perception of nurse caring score. Coulombe, Yeakel, Maljanian, and Bohannon (2002) tested the 42-item CBI to determine its completeness and to derive a shorter version. Six specific items were identified to explain most of the variance in the CBI score (N = 316, SD = 0.893), thus creating the CBI-6 assessment instrument. The Adult Primary Care practices CBI-5, a modification of the CBI-6, was used in a primary care practice study (Yavinsky, O'Brien, Staff, Maljanian, & Jaroszewski, 2006). The CBI-5 was used in this investigation.

Part III (Satisfaction) of the Sacred Space Assessment Instrument included two items that reflected patient satisfaction with the perioperative experience. Each response was rated according to the strongly disagree (1) to strongly agree (6) scale. Both items were summed to create a total satisfaction score. A demographic patient profile was also included in the complete instrument.

Test-retest reliability, convergent validity, and internal consistency reliability were tested on each section of the SSAI. The Cronbach's alpha coefficient for the SSE items (SSE, Part 1) was 0.897. This is an acceptable level for a newly developed psychosocial instrument (Burns & Grove, 2005, p. 274). To establish test-retest reliability, the SSAI was completed within a 12-hour period of time the day following the initial assessment on ten patients. Only two subjects completed the SSAI. Perceived nurse caring behavior scores (n = 8) showed no statistically significant difference. Perceived patient satisfaction total scores (N = 10) revealed no statistical significant difference. Further testing on the SSAI is

indicated in future research studies. For content validity (expert and theoretical), two experts in nursing theory and research examined the preliminary questions according to criteria by Burns and Grove for appropriateness, accuracy, and representation (p. 378). For the five item-CBI (SSAI, Part II), the Cronbach's alpha of 0.637 was obtained and for the two items of patient satisfaction (SSAI, Part III), the Cronbach's alpha was 0.923.

Procedures for Data Collection

Eleven sacred space perioperative nurses attended a 1-hour educational session (Session 1) to learn the principles of nursing research, patient consent, and data collection. After completing the educational session, the nurses collected data from 50 surgical patients in the comparison group and cared for them in the traditional OR setting. The original 11 sacred space perioperative nurses completed Session 2 of the educational sessions and then were oriented to the sacred space environment. Each nurse member of the sacred space perioperative team completed a demographic profile. Before surgery, subjects in the experimental group were asked to sign the consent form by one of the core group of sacred space perioperative nurses who cared for patients during surgery. Patients in the experimental group voluntarily signed the patient consent. Investigators obtained patient consent and collected data from 50 surgical patients (experimental group) who received care in the sacred space environment. The nurses completed the patient profile of the SSAI for patients.

A sacred space perioperative team member administered the instrument at the endpoint of the patients' recovery time, 2 to 3 hours post-operative for both comparison and experimental groups. Nurse team members were instructed to read each item to the patient and read the choices on the Likert-scaled responses. Patients were instructed to choose their answer and nurses circled responses on the instruments.

Results

SPSS for Windows, version 15 was used to analyze data. Descriptive statistics were computed on patient demographic attributes. The researchers' calculated descriptive statistics on total SSAI, total CBI-5, and total Satisfaction scores (Table 4).

T-tests were calculated to determine if a statistically significant difference existed on total scores of the SSE, perceived nurse caring behaviors, and perceived patient satisfaction scores by group. Groups differed at a statistically significant level on SSE scores and total caring behaviors scores. There was no statistically significant difference on total satisfaction scores by group (Table 4). Instrument results matched with the study's research questions.

The results of this study should be reviewed with caution since the SSE, 18-items, CBI-5, and Satisfaction 2-items (combined instrument SSAI, 25 items) were administered for the first time and in the early stages of instrument development. Future revisions of the SSAI will be performed; another study will be conducted to establish the content validity of the SSAI further.

To capture descriptions of the sacred space environment verbalized by patients, the sacred space perioperative team members recorded patient comments spontaneously offered during data collection. Overall patient satisfaction from their surgical experiences in the sacred space environment was described as a "wonderful experience," "helped alleviate my anxiety," "the care was over the top," "we are light years ahead in the operating room with this project," and "wonderful that everyone was so caring." The artwork and music was described as a "wonderful distraction," "beautiful," and "pleasant." Many patients

Table 4
T-Test Results on Perceived Scared Space Evaluation, Perceived Nurse Caring Behaviors, and Patient Satisfaction by Groups

	M	SD	Range	CI	T-value	df	p
			Sacred Space				
Experimental	103.85	6.64	97.21-110.49	100.74-106.96	9.61	37	<.01
Comparison	78.89	9.41	69.49-88.01	74.36-83.43			
			Caring Behaviors				
Experimental	29.87	0.61	23.75-35.99	29.69-30.05	2.80	87	.006
Comparison	29.05	1.91	20.14-30.96	28.45-29.64			
			Patient Satisfaction				
Experimental	11.88	0.53	11.35-12.47	11.73-12.03	0.88	95	.380
Comparison	11.75	0.86	10.89-12.65	11.50-12.00			

commented on the reassuring presence of the nurses and the comfort of nurses' touch as they drifted off to sleep, "The nurse was there for me and only me." Two OB-GYN surgical patients who were cared for in the sacred space environment and returned during the course of the research study requested the sacred space care for their additional surgical procedures as reported by their surgeons.

Discussion

The intent of this study was to create a milieu for surgical patients that would combine nurse-caring behaviors with caring-healing modalities in a physical and behavioral environment, named the sacred space, which would affect the outcomes of perceived sacred space, perceived nurse caring behaviors, and patient satisfaction. The researchers were not aware of previous studies that combined these elements to create a sacred space environment in the perioperative arena.

Because of the encroachment of increased technology in perioperative environments and the elimination of preoperative medications for surgical patients, there is a need to create caring-healing environments for surgical patients. The responsibility to create caring environments rests with perioperative nurses.

The results of this study showed that a statistically significant difference existed when perception of sacred space and perception of nurse caring were compared by group (sacred space versus traditional OR environments). However, no statistically significant difference resulted by group on patient satisfaction.

The findings support the creation of a sacred, caring-healing environment in the surgical arena. A caring-healing environment attends not only to the physical elements but also to the non-physical elements such as caritas consciousness, intentionality, and presence of the caritas nurse (Watson, 2008).

The 18-item SSE, CBI-5, and 2-item patient satisfaction instruments have not been tested thoroughly and additional testing of the SSAI will need to be conducted in future research. The SSAI requires further testing to establish reliability and validity.

The Sacred Space Model of Care (Figure 1) is an exemplar of care for nursing practice. By combining nurse caring behaviors with caring-healing modalities, nurses could provide patients with a high level of nursing care. The patient is at the center of the caring paradigm, encircled in a healing light of love, care, and compassion.

The importance of caring for patients in the sacred space environment was expressed by members of the sacred space perioperative team. They noted an overall sense of peace and completeness of care because of the established nurse-patient relationship and feelings that they had successfully met the physical, emotional, and spiritual needs of the patients.

The investigators assumed that the sacred space environment, a combination of nurse caring behaviors and healing environmental modalities, would provide quality care to patients while preserving their dignity, meeting their physical and psychological and spiritual needs, alleviating unnecessary suffering, and assisting them in achieving wholeness in their healing process.

Limitations

For the purposes of this study, a convenience sample was obtained. Patient selection was restricted to OB-GYN oncology patients and GU patients for both comparison and experimental groups. There was an unequal distribution of male and female patients. Due to the frequency of OB-GYN surgeries, there were more female patients that participated in the study.

The SSAI was created for this study and beginning psychometric testing was initiated. In order to establish validity and reliability of the instrument, further testing must be completed on the SSAI. The SSAI could be administered in other ORs or adapted to other areas of nursing where nurse-caring behaviors and healing-environmental modalities are being evaluated.

Other limitations to the study include the timing of data collection. Data were collected at the endpoint of the patient's surgical recovery, generally 1.5 to 2 hours post-operatively. Patients were still under sedation for pain control at the time of instrument administration. The timing of instrument administration was also based on the logistical constraints of the unit and availability of nurses. This may have affected subject responses.

Implications for Future Nursing Practice and Research

This evidence-based nursing research study has important implications for future clinical nursing practice, research, and education because of the integration of nursing theory and nurse caring behaviors with environmental factors that positively affect patient satisfaction. This study is grounded in Watson's theory of human caring (1985, 2008) and ten carative factors/caritas processes. When the study was designed, Watson defined her caring constructs as ten carative factors (Watson, 1985). During the implementation of the study, Watson (2008) redefined her caring construct as caritas processes. These caritas processes are theoretical concepts that are more integrative, defined, explicit, and expansive in the evolution of caring science. Watson developed the carative factors from a humanistic philosophy that is central to caring for others and is founded on a growing scientific base. These factors provide a scientific-humanistic framework for the implementation of caring behaviors and interventions in nursing education, practice, and research (Watson, 1988).

This study is grounded in the foundational values of the nursing profession as envisioned by Nightingale (Watson, 2005). Nightingale saw the interconnectiveness of self, humanity, environment, nature, and the spiritual essence of the soul. All of nursing was meant to be from a holistic framework. Nurses' "calling" beckons them to return to the principles of healing as defined by Florence Nightingale (1969). Nursing theory establishes the framework for practice

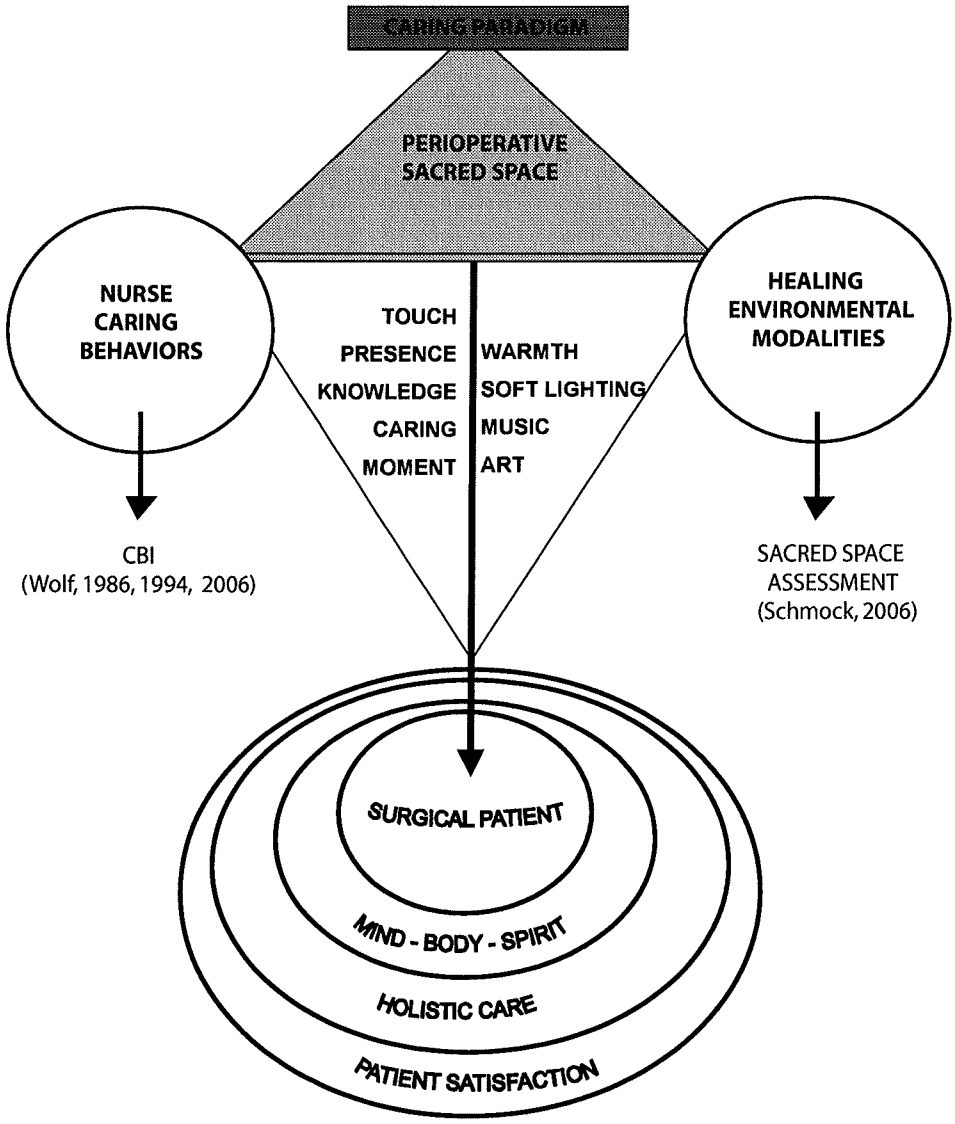

Figure 1. Sacred space conceptual model (Schmock, 2007).

through the nature of the person, the characteristics of the environment, the definitions of health, and the qualities of nursing as an ethical and caring profession.

The Sacred Space Care Model could be a prototype for integrating caring concepts and healing environmental modalities into nursing education, clinical practice, and research through didactic coursework related to caring concepts with a clinical component. A theoretical framework for teaching caring concepts and linking caring concepts into practice could include Watson's ten carative/caritas processes (1985, 2008). Nurse educators may integrate caring concepts into nursing curriculum development by adopting a theoretical framework that threads core nursing values into the cognitive, affective, and psychomotor domains of learning (Cullen & Cook, 2003). The focus of a caring-teaching module for nursing students and nurses might emphasize the importance of establishing a caring, therapeutic, nurse-patient relationship with attention to caring behaviors such as attentive listening, patient teaching, patient advocacy, therapeutic touch, and technical competency (Gray, Kees, & Parsons, 1993). An emphasis would be on relating principles of theory and caring behaviors to meet-

ing the needs of patients in a holistic, caring professional manner.

Other recommendations for future nursing research would be the replication of the Sacred Space Care Model to other ORs and areas of practice utilizing the SSAI. On-site visits from the primary investigators could coordinate teaching sessions that included caring behaviors grounded in Watson's caring theory (1985, 2008) and a research design incorporating a sacred space environment as a research protocol.

In conclusion, the effect of the sacred space environment on surgical patients and the sacred space perioperative team members has been a journey of care, compassion, and love. The sacred space environment allowed nurses to practice within the context of a caring, sacred model of nursing care with an emphasis on the ontological competences of the nurses. The sacred space perioperative team created a healing, loving light in this sacred space environment to honor and respect the personal journeys of surgical patients. Nurses are committed to carry this light of the sacred space to other surgical arenas, other areas of nursing practice, and institutions with the vision of returning to the foundational principles of a caring profession and changing nursing practice.

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