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Postoperative nursing care contributions to symptom distress and functional status after ambulatory surgery

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The relationship of postoperative patient-perceived nurse caring behaviors to symptom distress and functional status in 100 adult ambulatory surgical patients was examined. These behaviors explained 9.3% to 18.2% of the variance in functional status on the 1st, 4th, and 7th day postsurgery, and 10% of the variance in symptom distress on the 7th postoperative day after controlling for ASA physical status classification, preoperative symptom distress, and preoperative functional status.

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As ambulatory surgery grows in response to the pressures of regulatory and economic incentives, so does the need to study the relationship of shortened stays on ambulatory surgery patient outcomes. However, little systematic research has been directed toward examining patient outcomes following ambulatory surgery, particularly symptom distress and functional status. Recent increases in the numbers of patients undergoing ambulatory surgery have had an enormous impact on the process of nursing care, the way in which nurses provide care, and the manner in which patients perceive this care. Further, the interpersonal process of care has been challenged as a result of cost-containment strategies (Taylor, 1995). The purpose of this study was to examine the relationship of preoperative and postoperative patient-perceived nurse caring behaviors to symptom distress and functional status 24 hours, 4 days, and 7 days postsurgery in ambulatory surgery patients.

Background Literature

Although the process of nursing care and its influence on patient care outcomes are believed to be profound, there has been minimal study of the relationship between patient-perceived nurse caring behaviors and patient outcomes in the ambulatory surgery setting. The caring contributions of nurses in ambulatory surgery settings are critical to successful patient outcomes as nurses provide supportive, physical, educational, and emotional care vital to patients' well-being. Rapid assessment and evaluation of patients using caring, interpersonal communication skills are critical competencies for the ambulatory perioperative nurse (American Academy of Ambulatory Care Nursing [AAACN], 1997). Nurses' interventions are designed to minimize symptom distress and optimize functional status through the provision of caring behaviors (American Nurses Association, 1995). It is important to demonstrate the effects of nurse caring behaviors, if nurses are to survive in an increasingly cost-conscious health care market.

Caring behaviors relate to the process of care and to the interaction between patient and provider. They include such aspects of care as an explanation of procedures, receipt of personal attention, psychological support, coping assistance, and interpersonal skills of the staff (Wolf, Giardino, Osborne, & Ambrose, 1994). These behaviors relate to the art of

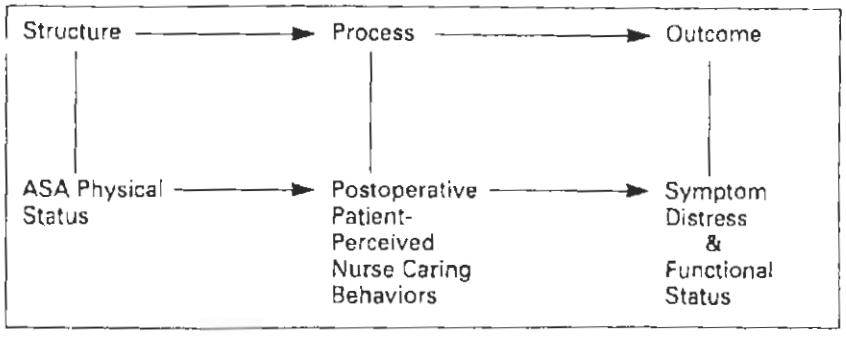
caring and do not require a physician's order. Along with caring behaviors, patient-provider interactions play an important role in patient outcomes (Richmond & Roberson, 1995). It is important that nurses clearly illustrate the outcomes of nurse caring behaviors on patient conditions and recovery, if they are to demonstrate that their caring behaviors are central components to successful health care delivery (Buerhaus, 1986; Sherwood, 1993).

Some researchers have begun to identify dimensions of nurse caring in select patient populations. For example, Wolf et al. (1994) described the dimensions of the process of nursing care using patient and nurse responses to the Caring Behaviors Inventory (CBI). This inventory includes the following dimensions: respectful deference to the other; assurance of human presence; positive connectedness; professional knowledge and skill; and attentiveness to the other's experience. These dimensions adequately reflect the processes of interpersonal care and were included in this research.

Only one study has examined the impact of nurses' caring behaviors on the health status of patients while hospitalized (Duffy, 1992). In this study, as nurse caring behaviors increased, health status increased as measured by the Sickness Impact Profile (SIP). Although not significant, these findings indicate a trend in the direction of the original research hypotheses. Duffy was able to demonstrate the effect of nurse caring behaviors on medical-surgical patients' satisfaction.

Unfortunately, little is known about the relation between the interpersonal nursing care process and the outcomes of care (Donabedian, 1988). The limited examination of patients' reactions or responses leaves undefined the outcomes of a caring nursing practice (Sherwood, 1993). To address these concerns, it is critical to measure outcomes and other variables using an integrative framework that examines the relationship of patient characteristics, provider characteristics, processes of care, and patient outcomes (Swan, 1996). The ultimate reason for evaluating patient care is improving patient health (Benson, 1992).

Figure 1.
Relationship of Co-Morbidity, Patient-Perceived Nurse Caring Behaviors, and Patient Outcomes



Donabedian (1966) conceptualized the evaluation of patient care in terms of structure, process, and outcome. The structural characteristics of the settings in which the care takes place can influence the process of care. Similarly, the process of care, both technical and interpersonal, will influence outcomes. Donabedian conceptualized outcomes as a change in health that can be attributed to the care being assessed (Donabedian, 1980). Donabedian's (1969) recommendation for a comprehensive approach to evaluating care included defining health and concurrent or coordinated assessment of all three components, to the extent that each of the elements is measurable under the constraints of a given situation. In addition, this framework identifies the point-of-care delivery one might target to assess the structural, process, and outcomes phenomena as patient, provider, and/or organization.

This conceptualization can be readily adapted to an analysis of patient outcomes in the ambulatory surgery setting. This study examined the relationship of preoperative co-morbidity (structure/patient), patient-perceived nurse caring behaviors (process/provider), symptom distress (outcome/patient), and functional status (outcome/patient) in patients having ambulatory surgery depicted in Figure 1.

Methodology

A prospective, single cohort design was used to examine the relationship of patient-perceived nurse caring behaviors and patient outcomes in ambulatory surgery adults.

Sample

A consecutive sample of 123 consenting adults from an urban academic medical center (AMC), a suburban community hospital (SCH), and a suburban teaching hospital (STH), who had undergone ambulatory surgery, either incisional inguinal hernia repair or laparoscopy for diagnostic or interventional reasons, were eligible for inclusion in this study. Laparoscopy and incisional hernia repair were chosen because of their relative frequency in the ambulatory setting and because they are significant enough to anticipate symptom distress and reduction in postoperative functional status. Of the 123 subjects, 10 were dropped from the study because their surgeries were canceled preoperatively; 11 because they were admitted to the hospital postoperatively; and one because of preoperative hospital admission. An additional subject was unavailable for the followup interviews. The final sample size was 100 subjects: urban academic medical center (n=35); suburban community hospital (n=57); suburban teaching hospital (n=8). This sample size was more than

sufficient to allow for an alpha level of .05, a power of .80, and a moderate effect size of .25 for multiple regression analyses and also compensate for anticipated attrition (Cohen, 1988). A natural attrition rate of 20% had been predicted due to expected reluctance to participate at one of the three follow-up telephone contacts, or unanticipated hospital admission. The actual attrition rate, however, was 26%.

The mean age of the patient sample was 42.6 years (SD=12.83; range= 22-64). The majority of the subjects were female (62%), white (72%), married (75%), and most had at least a high school education (63%). Forty-one percent had incisional inguinal hernia repair while 59% had laparoscopic surgery. Of the 59 subjects who had laparoscopy, 57 had the procedure for gynecologic reasons and two had the procedure for cholelithiasis. The American Society of Anesthesiologists' (ASA) Physical Status Classification was as follows: I (n=21); II (n=66), III (n=13) indicating patients' overall health and burden of co-morbid conditions. In general, 79% of patients had at least one preoperative co-morbidity such as hypertension, diabetes, or asthma.

There were no differences in educational level and employment status, or for baseline symptom distress and functional status. Given the similarity among sites in baseline symptom distress and functional status, data from all sites and subjects were combined in the analyses.

Instruments

The General Symptom Distress Scale (GSDS) (Lalonde, 1987) was used to measure preoperative and postoperative symptom distress. The 11 symptoms are pain, nausea/vomiting, bowel problems, urinary/bladder problems, cough, respiratory difficulties, swelling/fluid retention, skin problems, speech problems, mood, and activity level, for example, weakness, coordination, endurance. The GSDS requires the client to be interviewed either in person or by telephone. Each symptom is rated on a 4-point scale: 1-symptom relieved/not present last 3 days; 2-symptom not relieved but can be easily be ignored; 3-symptom present but intermittent, cannot be ignored but in a 24-hour period remains distressing for less than half the time; and 4-symptom present and constant, cannot be ignored and in a 24-hour period remains distressing for one half the time or more than one-half the time. The possible total scores range from 0 to 44, with a higher score representing more distress experienced by the patient. The internal consistency is low (Cronbach alpha = 0.52) (B. Lalonde, personal communication, January 19, 1995). For this study, the alpha coefficient preoperatively was 0.57, 24 hours postsurgery was 0.44, 4 days postoperatively was 0.68, and 7 days postoperatively was 0.61. It was not expected that the scale would have high internal consistency as the scale is intended to measure 11 independent symptoms. Construct validity was assessed on the basis of hypothesized interrelationships between select patient populations and responses to a single symptom. The construct validity hypotheses were supported by the data. The reliability matrix also confirmed the construct validity of the scale (B. Lalonde, personal communication, January 19, 1995).

The Functional Status Questionnaire (FSQ) (Jette et al., 1986) was used to measure preoperative and postoperative functional status. The FSQ was designed to provide a comprehensive assessment in ambulatory patients of physical, psychological, social, and role function. The FSQ consists of 34 questions and generates six multiple item scales including basic activities of daily living (ADL), intermediate ADL, mental health, social activity, social interaction, and role function. Most items are scored on ordinal scales from 1 to 4 or 1 to 6 (Jette et al., 1986). FSQ subscale scores are calculated and transformed into a score with a range from 0 to 100, with 100 representing maximum functional status. The internal consistency reliabilities for the six FSQ scale scores ranged from 0.64 to 0.82 (Jette et al., 1986). Test-retest reliability has not been reported. For this study, internal consistency reliabilities for the six FSQ scale scores ranged from 0.38 to 0.86 preoperatively, 24-hour postsurgery reliabilities ranged from 0.31 to 0.82, 4-day postoperatively reliabilities ranged from 0.61 to 0.85, and 7-day postoperative reliabilities ranged from 0.63 to 0.87.

The Caring Behaviors Inventory (CBI) (Wolf et al., 1994) was used to measure preoperative and postoperative nurse caring behaviors (for example, listening, instructing, treating with respect, including patient in decision making). The CBI was designed to assess the process of nurse caring. The CBI included 42 items, with a six-point Likert scale used to elicit responses (1=never, 2=almost never, 3=occasionally, 4=usually, 5=almost always, 6=always) (Z.R. Wolf, personal communication, January 20, 1995) and generates five multiple item subscales. The higher the score of identified nurse caring behaviors, the higher the patient's perception of receiving care. The CBI can be self-administered or administered by an interviewer either in person or by telephone. The alpha coefficient was .83. Test-retest reliability has not been reported. For this study, the overall alpha coefficient was .96 and internal consistency reliabilities for the five CBI subscale scores ranged from 0.63 to 0.96 preoperatively and from 0.89 to 0.98 postoperatively.

The ASA Physical Status Classification was used to categorize preoperative co-morbidities. Co-morbidity is any coexisting medical condition(s), for example, hypertension, diabetes, and/or asthma (Hirsh, 1994). Every patient is assigned an ASA physical status classification prior to administering anesthesia. This serves as a general measure of the patient's health, taking into account all of the problems the patient brings to the operating room, including systemic disturbances that may have caused the surgical illness. The ASA physical status classification consists of five categories I through V representing increasing severity of coex-

isting diseases. Instrument properties were validated through correlations with other existing classification schema such as the New York Heart Association grades I to IV. Classifications were reported as highly correlated, but no ranges were reported (Maunuksela, 1977).

Procedure

The study plan was approved by the University's Committee on Studies Involving Human Beings and by hospital-wide institutional review boards at the three participating institutions. Each subject gave written, informed consent before entering the study. All patients who met criteria for the study were approached by the principal investigator 1 to 5 days preoperatively, at the scheduled pre-admission testing visit, and provided with both verbal and written descriptions of the study. Data were collected preoperatively in person and three times postoperatively by telephone by the principal investigator. Two scales, the General Symptom Distress Scale (GSDS) and the Functional Status Questionnaire (FSQ), were administered preoperatively and postoperatively on days 1, 4, and 7. The Caring Behaviors Inventory (CBI) was administered postoperatively on day 1 and day 1. On the first day postsurgery, subjects were asked to recall their perception of preoperative nurse caring behaviors during the pre-admission testing visit. On the 7th day postsurgery, subjects were queried about their perception of postoperative nurse caring behaviors experienced in the recovery room. The decision to interview subjects on days 1, 4, and 7 correlated roughly with Kortilla's (1990) identification of levels of recovery in the perioperative period. The levels of recovery are home readiness, street fitness, and complete recovery. Kortilla suggested that home readiness is reached prior to discharge from the recovery room; street fitness when psychomotor skills are recovered to allow one to walk alone on the street; and complete recovery when one is able to drive a car or ride a bicycle.

Table 1.
Means, Standard Deviations, and Range of Scores for Symptom Distress Over Time

Level of ASA	Symptom Distress (Preoperative) Mean (SD)	Symptom Distress (24 Hours) Mean (SD)	Symptom Distress (4 Days) Mean (SD)	Symptom Distress (7 Days) Mean (SD)
I (n=21)	2.85 (3.36)	14.42 (2.74)	9.14 (3.96)	4.95 (3.08)
II (n=66)	4.24 (4.09)	13.07 (4.78)	10.06 (5.94)	6.12 (5.03)
III (n=13)	3.92 (3.77)	15.46 (5.76)	14.69 (8.36)	8.76 (5.84)
Range	0-18	6-27	0-31	0-19

Data Analysis

Multiple linear regression analyses were used to assess the relationship of preoperative and postoperative patient-perceived nurse caring behaviors on symptom distress for each postoperative time point, simultaneously holding constant preoperative co-morbidity and preoperative symptom distress. A model including values of preoperative co-morbidity and preoperative symptom distress was estimated. Then, the five preoperative nurse caring behavior subscales were added. A partial F-test was used to see if this set of variables increased significantly the explanatory power of the model. This process was repeated using the five postoperative nurse caring behavior subscales. Thus, this model aimed to assess the impact of postoperative recovery room patient-perceived nurse caring behaviors on symptom distress 24 hours, 4 days, and 7 days postsurgery.

The same series of multiple linear regression analyses were used to assess the relationship of preoperative and postoperative patient-perceived nurse caring behaviors on functional status (basic ADL, intermediate ADL, mental health, social activity, and social interaction) at each followup time point simultaneously holding constant preoperative co-morbidity and preoperative functional status.

Results

The means, standard deviations, and ranges for symptom distress, functional status, preoperative and postoperative patient-perceived nurse caring behaviors are displayed in Tables 1-3. The correlation matrix for symptom distress, functional status, and postoperative patient-perceived nurse caring behaviors over time are displayed in Table 4. Twenty-four hours after surgery, the only significant correlation was between social interaction and positive connectedness ($p \leq 0.05$). Four days postsurgery, there were significant correlations between symptom distress and respectful deference to others, assurance of human presence, and positive connectedness ($p \leq 0.05$). Also, mental health and social interaction were significantly correlated to respectful deference to others, assurance of human presence, and positive connectedness ($p \leq 0.05$). Also, mental health and social interaction were significantly correlated to respectful deference to others, assurance of human presence, positive connectedness, professional knowledge and skill, and attentive to other's experience ($p \leq 0.05$). Seven days after surgery, symptom distress and mental health were significantly correlated to respectful deference to others, assurance of human presence, positive connectedness, profes-

Table 2.
Means, Standard Deviations, and Range of Scores for Functional Status Subscales Over Time

Basic ADL Level of ASA	Preoperative Mean (SD)	24 Hours Mean (SD)	4 Days Mean (SD)	7 Days Mean (SD)
I (n=21)	98.41	71.96	93.65	99.47
	(5.30)	(27.58)	(10.27)	(2.42)
II (n=66)	97.64	65.66	89.57	95.79
	(9.03)	(22.63)	(12.45)	(7.97)
III (n=13)	97.43	51.29	82.06	89.75
	(4.86)	(26.67)	(14.01)	(13.18)
Range	55.60-100	0-100	44.40-100	55.60-100
Intermediate ADL				
I (n=21)	96.02	11.64	42.59	77.50
	(12.57)	(11.09)	(21.18)	(18.13)
II (n=66)	90.95	11.28	36.95	59.33
	(18.37)	(10.30)	(27.11)	(31.86)
III (n=13)	83.76	6.84	16.67	32.91
	(13.68)	(6.46)	(14.34)	(25.38)
Range	27.80-100	0-50	0-100	5.60-100
Mental Health				
I (n=21)	81.33	72.0	84.38	88.57
	(16.11)	(11.45)	(10.80)	(10.75)
II (n=66)	79.09	75.15	83.45	88.96
	(15.73)	(17.54)	(12.56)	(8.06)
III (n=13)	83.38	76.61	77.53	82.76
	(11.98)	(13.74)	(18.22)	(11.59)
Range	16-100	16-100	28-100	52-100
Social Activity				
I (n=21)	96.11	0	21.10	58.88
	(14.99)	(0)	(33.01)	(36.43)
II (n=66)	96.80	0.84	21.55	48.98
	(11.81)	(4.04)	(35.93)	(43.54)
III (n=13)	91.46	0	6.83	17.94
	(14.43)	(0)	(17.30)	(37.55)
Range	33-100	0-22.20	0-100	0-100
Social Interaction				
I (n=21)	86.85	68.19	80.76	85.52
	(11.39)	(16.32)	(11.97)	(10.15)
II (n=66)	86.12	70.66	80.66	86.42
	(10.00)	(17.20)	(12.62)	(9.71)
III (n=13)	83.07	63.69	74.15	85.23
	(8.96)	(17.08)	(15.19)	(7.89)
Range	44-100	24-100	40-100	52-100

Role Function	N	Mean	SD	Range
Role Function (Preop)	63	98.32	4.64	77.80 to 100
Role Function (24 Hours)	0			
Role Function (4 Days)	8	92.35	11.85	66.70 to 100
Role Function (7 Days)	27	83.74	16.66	44.40 to 100

sional knowledge and skill, and attentive to other's experience ($p \leq 0.05$). Also, social interaction was significantly correlated to respectful deference to others, assurance of human presence, and positive connectedness ($p \leq 0.05$).

Patient-Perceived Nurse Caring Behaviors

Patient-perceived nurse caring behaviors did not differ by ASA physical status classification. However, there was a significant increase in postoperative patient-perceived nurse caring behaviors compared to the preoperative measures on all subscale scores (p=0.0001) except subscale A (respectful deference to others) as illustrated in Figure 2.

Preoperative patient-perceived nurse caring behaviors did not explain any of the variance in postoperative symptom distress and functional status 24 hours, 4 days, or 7 days postsurgery.

Postoperative Patient-Perceived Nurse Caring Behaviors and Symptom Distress

The contribution of ASA physical status classification and preoperative symptom distress was significant and accounted for 18.5%, 21%, and 18.2% of the explained variance among symptom distress scores 24 hours, 4 days, and 7 days postsurgery respectively. The addition of postoperative patient-perceived nurse caring behaviors did not explain any of the variance in postoperative symptom distress 24 hours or 4 days postsurgery. In contrast, 7 days postsurgery, the addition of postoperative patient-perceived nurse caring behaviors increased R-square to 28.6%. Thus, 10.4% of the variability in symptom distress on the 7th postoperative day that could not be explained by ASA physical status classification or preoperative symptom distress, was explained by postoperative patient-perceived nurse caring behaviors. Results indicate that subjects with a higher rating of postoperative patient-perceived nurse caring behaviors experienced less symptom distress; and subjects with a lower rating of postoperative patient-

perceived nurse caring behaviors experienced more symptom distress.

Postoperative Patient-Perceived Nurse Caring Behaviors and Functional Status

Basic ADL subscale. ASA physical status classification and preoperative basic ADL did not account for any of the variance in basic ADL 24 hours or 4 days postsurgery. However, 7 days postoperatively ASA physical status classification and preoperative basic ADL accounted for 12% of the explained variance and postoperative patient-perceived nurse caring behaviors accounted for 10% of the explained variance. The variables together accounted for 21.9% of the variance in social interaction 7 days postoperatively.

Mental health. Four days postoperatively, ASA physical status classification and preoperative mental health accounted for 15.4% of the explained variance and postoperative patient-perceived nurse caring behaviors accounted for 9.3% of the explained variance in mental health. The variables together accounted for 24.7% of the variance. Seven days postsurgery, ASA physical status classification and preoperative mental health accounted for 28.7% of the explained variance, and postoperative patient-perceived nurse caring behaviors accounted for 12.6% of the explained variance in mental health. The variables together accounted for 41.3% of the variance.

Social activity. Seven days postoperatively, ASA physical status classification and preoperative social activity accounted for 7.8% of the explained variance and postoperative patient-perceived nurse caring behaviors accounted for 11.6% of the explained variance in social activity. The variables together accounted for 19.4% of the variance.

Social interaction. ASA physical status classification and preoperative basic ADL did not account for any of the variance in social interaction 24 hours or 4 days postsurgery. However, 7 days postoperatively ASA physical sta-

Table 3.
Means, Standard Deviations, and Range of Scores for Patient-Perceived Nurse Caring Behaviors - Preoperative and Postoperative

Level of ASA	Subscale	Preoperative Mean	Preoperative SD	Preoperative Range	Postoperative Mean	Postoperative SD	Postoperative Range
I (n=21)	Respectful deference to others (A)	4.80	1.04	3.10 to 6.00	4.65	1.40	1.70 to 6.00
	Assurance of human presence (B)	3.80	0.86	2.10 to 4.80	4.58	1.62	1.20 to 6.00
	Positive connectedness (C)	3.59	0.83	2.20 to 4.90	3.83	1.30	1.20 to 5.40
	Professional knowledge & skill (D)	2.61	0.39	2.00 to 4.00	5.08	1.38	2.00 to 6.00
	Attentive to other's experience (E)	3.79	0.83	2.50 to 4.80	4.76	1.70	1.00 to 6.00
II (n=66)	Respectful deference to others (A)	4.64	1.05	1.70 to 6.00	4.85	1.33	1.00 to 6.00
	Assurance of human presence (B)	3.68	0.99	1.10 to 6.00	4.77	1.31	1.00 to 6.00
	Positive connectedness (C)	3.42	0.86	1.00 to 5.40	4.05	1.16	1.00 to 6.00
	Professional knowledge & skill (D)	2.63	0.75	1.20 to 6.00	4.95	1.25	1.00 to 6.00
	Attentive to other's experience (E)	3.53	0.94	1.30 to 6.00	4.87	1.31	1.00 to 6.00
III (n=13)	Respectful deference to others (A)	4.46	0.88	3.50 to 6.00	4.67	0.86	3.50 to 6.00
	Assurance of human presence (B)	3.49	0.84	2.40 to 5.20	4.70	1.06	2.40 to 6.00
	Positive connectedness (C)	3.44	0.76	2.60 to 5.40	3.92	1.10	2.00 to 5.40
	Professional knowledge & skill (D)	2.49	0.35	2.00 to 3.00	5.20	0.66	3.80 to 6.00
	Attentive to other's experience (E)	3.44	0.78	2.50 to 4.80	4.94	0.88	3.50 to 6.00

Table 4.
Correlation Coefficients for Symptom Distress, Functional Status, and Postoperative Patient-Perceived Nurse Caring Behaviors Over Time

24 Hours	Respectful Deference to Others	Assurance of Human Presence	Positive Connectedness	Professional Knowledge and Skill	Attentive to Other's Experience
Symptom Distress	-0.11	-0.11	-0.10	-0.06	-0.05
Basic ADL	-0.10	-0.11	-0.13	-0.13	-0.16
Intermediate ADL	-0.05	-0.08	-0.04	-0.13	-0.10
Mental Health	0.16	0.17	0.18	0.10	0.14
Social Activity	0.05	0.03	0.11	-0.05	0.04
Social Interaction	0.16	0.14	0.20	0.06	0.07
4 Days					
Symptom Distress	-0.21	-0.21	-0.22	-0.13	-0.14
Basic ADL	0.04	0.07	0.04	0.04	0.01
Intermediate ADL	0.14	0.11	0.14	0.05	0.06
Mental Health	0.26	0.30	0.30	0.23	0.26
Social Activity	0.27	0.29	0.32	0.20	0.24
Social Interaction	0.27	0.29	0.32	0.20	0.24
7 Days					
Symptom Distress	-0.25	-0.24	-0.28	-0.20	-0.17
Basic ADL	0.09	0.15	0.13	0.10	0.09
Intermediate ADL	0.14	0.11	0.15	0.05	0.05
Mental Health	0.24	0.26	0.33	0.22	0.19
Social Activity	0.14	0.11	0.20	0.03	0.07
Social Interaction	0.23	0.21	0.29	0.17	0.18

$p<0.05$

tus classification and preoperative social interaction accounted for 9.7% of the explained variance.

Twenty-four hours postsurgery, postoperative patient-perceived nurse caring behaviors accounted for 14% of the explained variance in social interaction; and 4 days postoperatively, postoperative patient-perceived nurse caring behaviors accounted for 18.2% of the explained variance. Thus, postoperative patient-perceived nurse caring behaviors alone explained the variance in social interaction 24 hours and 4 days postsurgery.

Results indicate that subjects with a higher rating of postoperative patient-perceived nurse caring behaviors experienced higher levels of functional status; while subjects with a lower rating of postoperative patient-perceived nurse caring behaviors experienced lower levels of functional status.

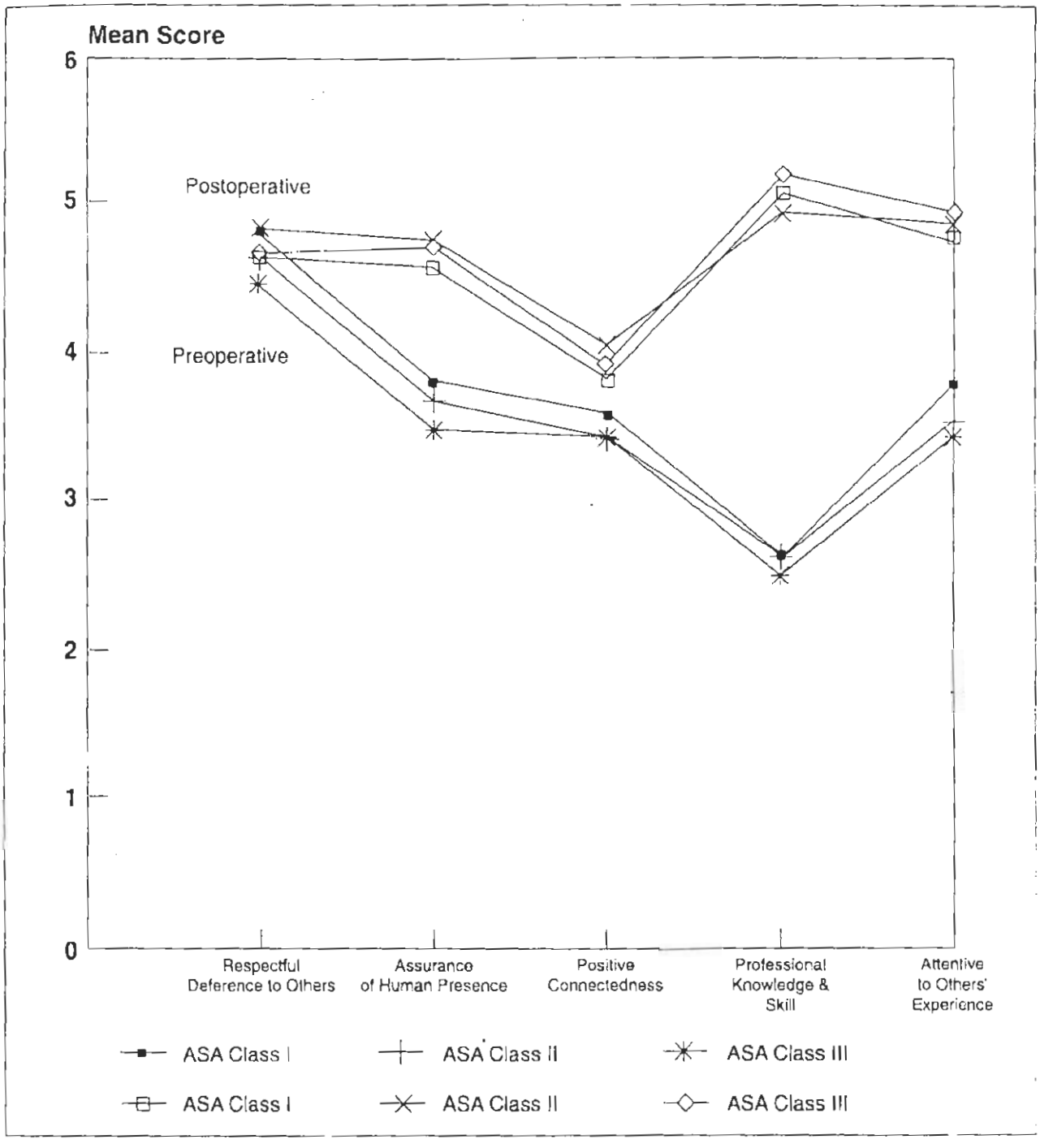
Discussion

The findings from this study indicate that patient outcomes after ambulatory surgery are influenced by postoperative patient-perceived nurse caring behaviors and ASA physical status classification.

It is evident that preoperative co-morbidity did not play a role in patient-perceived nurse caring behaviors. In this study, patient awareness of nurse caring behaviors was limited to nurses' postoperative behaviors in the recovery room. Nurses' activities preoperatively, such as teaching, were not perceived in the same manner as the physical interventions and monitoring that occurred in the recovery room. Preoperative preparation is important, but patients do not attach the same significance to these activities.

In this study, patients reporting a greater awareness of nurse caring behaviors in the recovery room had less symptom distress in the postoperative period. In addition, these same patients experienced a quicker return to their daily living activities, such as doing work around the house, grocery shopping, and visiting with relatives, as well as improved mental health. Nursing care plans that focus on and meet patients' perceived needs during each

Figure 2.
Patient-Perceived Nurse Caring Behaviors — Preoperative and Postoperative



phase of ambulatory surgery might be one strategy to foster interpersonal care and promote positive patient outcomes.

This study on a consecutive cohort of ambulatory surgery patients is unique in that it documents a different picture than has been presented in the empirical literature. While previous studies have focused on mortality and morbidity postsurgery, this study examined clinically significant, but less life-threatening patient outcomes.

Through the examination of the relationship between preoperative co-morbidity, patient-perceived nurse caring behaviors, symptom distress, and functional status, information was provided regarding the impact of interpersonal nursing care on selected postoperative patient outcomes. Few researchers have been able to demonstrate the connection between nurse caring behaviors and patient outcomes. In fact, many critics doubt the existence of such a link. Data from this research suggest that a connection exists and that its impact can be measured.

Symptom distress can interfere with functional status, self-care, and prescribed regimens. The findings of this study suggest that nurses can positively affect a patient's progress during recovery. Nurses' courteous attention toward and investment in patients' needs and security enhanced performance of postoperative recovery behaviors. Constant readiness on the part of the nurse and delivery of proficient and skillful care also contributed to achieving positive patient outcomes. Specifically, postoperative patient-perceived nurse caring behaviors played a role in improving functional status on the 1st, 4th, and 7th days postsurgery and decreasing symptom distress on the 7th postoperative day. The results of this examination of the relationship of symptom distress, functional status, and patient-perceived nurse caring behaviors suggest an important role for ambulatory perioperative nurses. Perioperative nurses in ambulatory surgery settings must recognize symptom occurrence and be able to differentiate the occurrence of a symptom from symptom distress. Inadequate attention has been given to the importance and assessment of symptom distress. Ambulatory surgery nurses must focus/investigate ways to assess and evaluate symptom distress, and use this knowledge to assist ambulatory surgery patients to manage and potentially reduce their symptom distress and enhance functional status.

The ambulatory surgery setting has been streamlined to be profitable. Future studies should investigate practical issues and clinical problems inherent in streamlining patients through the ambulatory surgery setting. These studies must examine the patient-nurse relationship as it affects postoperative recovery.

In addition, a future intervention aimed at enhancing preoperative and postoperative interpersonal care may add to the clinically relevant question of whether positive patient outcomes can be predicted before the patient leaves the ambulatory surgery recovery room.

Improving patient outcomes, and attention to symptom distress and functional status, require a deliberate and thoughtful approach to nursing care. Findings from this study provide an important step in building a body of knowledge to direct approaches to design nursing care to improve patient outcomes.■

References

American Academy of Ambulatory Care Nursing. (1997). *Nursing in ambulatory care: The future is here.* Washington, DC: American Nurses' Publishing.

American Nurses Association. (1995). *Nursing: A social policy statement.* Washington, DC: American Nurses Association.

Benson, D. (1992). *Measuring outcomes in ambulatory care.* Chicago: American Hospital Association.

Buerhaus, P. (1986). The economics of caring: Challenges and new opportunities for nursing. *Topics in Clinical Nursing, 8*(2), 13-21.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Donabedian, A. (1966). Evaluating the quality of medical care. *Milbank Memorial Fund Quarterly, 43*, 166-206.

Donabedian, A. (1969). Part II: Some issues in evaluating the quality of nursing care. *American Journal of Public Health, 59*(10), 1833-1836.

Donabedian, A. (1980). *Explorations in quality assessment and monitoring, Volume I: The definition of quality and approaches to its assessment.* Ann Arbor, MI: Health Administration Press.

Donabedian, A. (1988). Quality assessment and assurance: Unity of purpose, diversity of means. *Inquiry, 25*, 173-192.

Duffy, J. (1992). The impact of nurse caring on patient outcomes. In D. Gaut (Ed.), *The presence of caring in nursing* (pp. 113-136). New York: National League for Nursing.

Hirsh, R. (1994). An approach to assessing perioperative risk. In D.R. Goldmann, F.H. Brown, & D.M. Guarnieri (Eds.) (2nd ed.), *Perioperative medicine* (pp. 9-13). New York: McGraw-Hill, Inc.

Jette, A., Davies, A., Cleary, P., Calkins, D., Rubenstein, L., Fink, A., Kosecoff, J., Young, R., Brook, R., & Delbanco, T. (1986). The functional status questionnaire: Reliability and validity when used in primary care. *Journal of General Internal Medicine, 1*, 143-149.

Korttila, K. (1990). Recovery and home readiness after anaesthesia for ambulatory surgery. *Seminars in Anesthesia, 9*(3), 182-189.

Lalonde, B. (1987). The general symptom distress scale: A home care outcome measure. *Quality Review Bulletin, 7*, 243-250.

Maunuksela, L. (1977). Hemodynamic response to different anesthetics in open heart surgery. *Acta Anaesthesiologica Scandinavica*, (Suppl. 65), 18-46.

Richmond, L. & Roberson, E. (1995). The customer is always right: Patients' perceptions of psychiatric nursing actions. *Journal of Nursing Care Quality, 9*(2), 36-43.

Sherwood, G. (1993). A qualitative analysis of patient responses to caring: A moral and economic imperative. In D. Gaut (Ed.), *A global agenda for caring* (pp. 243-255). New York: National League for Nursing.

Swan, B. (1996). Classifying quality nursing care initiatives: A framework for ambulatory surgery nursing practice. *Nursing Economic$, 14*(6), 368-371.

Taylor, C. (1995). Rethinking nursing's basic competencies. *Journal of Nursing Care Quality, 9*(4), 1-13.

Wolf, Z., Giardino, E., Osborne, P., & Ambrose, M. (1994). Dimensions of nurse caring. *IMAGE: Journal of Nursing Scholarship, 26*(2), 107-111.