Postanesthesia Care Unit Visitation Decreases Family Member Anxiety

Amy J. Carter, MSN, RN, CPAN, JoAnn Deselms, RN, CAPA, Shelley Ruyle, MSN, RN, CAPA, Marcella Morrissey-Lucas, BSN, RN, CPAN, Suzie Kollar, BSN, RN, CPAN, Shelly Cannon, BSN, RN, CPAN, Lois Schick, MN, MBA, CPAN, CAPA

Despite advocacy by professional nursing organizations, no randomized controlled trials (RCTs) have evaluated the response of family members to a visit with an adult patient during a postanesthesia care unit (PACU) stay. Therefore, the purpose of this RCT was to evaluate the impact of a brief PACU visitation on the anxiety of family members. The study was conducted in a phase I PACU of a large community-based hospital. Subjects were designated adult family members or significant others of an adult PACU patient who had undergone general anesthesia. A pretest-posttest RCT design was used. The dependent variable was the change in anxiety scores of the visitor after seeing his or her family member in the PACU. Student t-test (unpaired, two tailed) was used to determine if changes in anxiety scores (posttest score - pretest score) were different for the PACU visit and no visit groups. A total of 45 participants were studied over a 3-month period, with N = 24 randomly assigned to a PACU visit and N = 21 assigned to usual care (no PACU visit). Participants in the PACU visit group had a statistically significant (P = .0001) decrease in anxiety after the visitation period (-4.11 ± 6.4); participants in the usual care group (no PACU visit) had an increase in anxiety (+4.47 ± 6.6). The results from this study support the value and importance of PACU visitation for family members.

Keywords: family visitation, postanesthesia care, family needs, STAI, patient-centered care, PACU visitation, research.

© 2012 by American Society of PeriAnesthesia Nurses
have consistently indicated strong support for visitation practices and a need to know that their loved one is safe and comfortable. Surveys of nurses found objections to the practice because of concern that family members would be disturbed or frightened by the sights/sounds of a PACU and/or the presence of family members would disrupt patient care activities. This discrepancy between the perceptions of patients/family members and nurses about the relative benefits of visitation was clearly evident in a descriptive study of perceived needs of patients and families during the post-anesthesia period. Of a list of 10 needs of family members of PACU patients, visitation was ranked highly by family members (no. 2) but nurses ranked it low (no. 7) when asked to predict family members' perceived needs.

Despite advocacy by professional nursing organizations and individuals practicing in PACUs that allow family visitation to adult patients, only two intervention studies have evaluated PACU visitation. Both of the studies evaluated the impact of the PACU visitation on the patient and used a nonexperimental study design. To date, no randomized controlled trial (RCT) studies have evaluated the response of family members to PACU visitation of adult patients.

Purpose

The purpose of this RCT was to evaluate the impact of PACU visitation on the anxiety level of family members. The results of this study contribute to the evidence base for family visitation in PACU.

Materials and Methods

Study Design

A pretest-posttest RCT design was used to evaluate the effects of visitation in the PACU on family member anxiety. The intervention of interest was a 10-minute visit by one family member to the bedside of an adult PACU patient. The control group received a 10-minute tour of the perioperative surgical area surrounding but not including the PACU. The dependent variable was the difference between pre- and posttest anxiety scores of family members. Random assignment to groups was done using a computerized randomization scheme, with participants and investigators blinded to group assignment until after completion of the pretest anxiety measure.

Setting

The study was conducted in an 18-bed phase I PACU of a 400-bed not-for-profit community-based hospital in a large city in the midwestern United States. Usual care in the PACU included a restriction on visitation by family members during the patient’s stay. Before data collection, review and approval of the study was obtained from the institutional review board of the health system. Permission was obtained from the patient in the preoperative area to approach a family member of his or her choosing for participation in the study. Informed consent was obtained from the patients and their designated family member according to Federal guidelines.

Sample Selection

Participants for this study were a convenience sample of the designated adult family member or significant other of adult elective patients in the PACU after they had undergone general anesthesia. Inclusion criteria for family member/significant others included no flu-like symptoms or history of recent fever; not currently under a physician’s care for an acute health care problem; not known to be pregnant; able to independently and safely walk from the waiting room to the PACU with an escort; and the patient to be visited was physiologically stable, without postoperative complications, and had no requirement for isolation while in the PACU.

A minimum sample size of 44 was determined a priori based on power analysis for statistical testing with t tests (effect size of 0.78, power of 0.8, and alpha of 0.05) on the primary outcome variable (difference in family member pre- and posttest anxiety scores). Effect size was calculated and based on data from previous studies evaluating anxiety associated with PACU visitation and assumed a 20% difference in anxiety values between the two groups.

Instruments

A standardized adult anxiety survey (Spielberger State Trait Anxiety Inventory [STAI], state version only) was used as the pre- and posttest measure.
of anxiety. STAI is a self-report survey composed of 20 statements with a four-level Likert response scale representing how well the statement describes the respondent's feelings at that time (“not at all,” “somewhat,” “moderately so,” and “very much so”). Qualities examined in the statements are current feelings of worry, apprehension, nervousness, and tension. Responses are scored from 1 to 4, with potential total scores ranging from 20 to 80. Higher scores represent higher levels of anxiety, with scores >59 representing high anxiety states and <39 representing low anxiety states. The Y form of the STAI was used for both the pre- and posttest measurement of anxiety.

The STAI has been used in numerous clinical studies of anxiety in individuals with and without psychiatric diagnoses, including studies in perioperative care areas. Construct validity of the STAI has been previously determined in numerous studies, with most finding high Cronbach α > 0.8 scores and acceptable test-retest reliability (Pearson r > 0.4) for an instrument that was designed to measure the transient state of anxiety.

**Study Procedure**

Before study enrollment, seven investigators were trained in data collection procedures (obtaining informed consent, administration and scoring of anxiety survey, and completion of case report forms) by an experienced nurse researcher. Throughout the study, only investigators performed data collection procedures.

Within 45 minutes of the patient’s admission to the PACU unit, one consenting family member for each consenting patient completed the pretest standardized anxiety survey in a quiet room close to the surgery family room. The family member was then randomly assigned to either a 10-minute PACU visitation group or usual care group (no PACU visitation).

Family member participants assigned to the PACU visitation group were then accompanied by a study investigator into the PACU (Figure 1) and the bedside of their family member. Study investigators oriented the family member to the PACU surroundings and answered any questions. During the visit, the investigator remained close to the patient’s bedside to support family members, if needed.

Family member participants assigned to the usual care group (no PACU visitation) were accompanied by a study investigator on a 10-minute tour of the surrounding surgical care area that did not include the PACU area. The study investigator then accompanied them back to the quiet room where they completed the posttest standardized anxiety survey.

**Data Analysis**

Data were summarized with descriptive statistics. Changes in anxiety scores (posttest – pretest scores) were calculated, and the Student t test (unpaired, two tailed) was used to determine if anxiety scores were different for the PACU visit and no visit groups. The level of significance was P < .05. Data were analyzed with Stat View for Windows, version 5.0.1 (SAS Institute, Cary, NC).

**Results**

All but one of 49 family members who were asked to participate in the study over a 3-month period consented to participate. Data collection was not initiated in three family members because of various logistical problems (N = 2, patient transferred out of PACU before family member could complete the pretest; N = 1, family member not in the...
waiting room at the designated time for the pretest completion. Forty-five family members completed the study, with \( N = 24 \) randomly assigned to a PACU visit and \( N = 21 \) assigned to usual care (no PACU visit). Most of the study participants were spouses (78%) of the PACU patient, ranging in age from 31 to 69 years and averaging 52.2 ± 10.2 years (±SD [standard deviation]) (Table 1). Ages of the PACU patients of the family members averaged 50.4 ± 11.3 years. No differences were found in participant characteristics between groups (\( P > .05 \)).

Anxiety scores before the intervention (PACU visit; no PACU visit) ranged from 20 to 59 (mean ± SD = 30.7 ± 11.1); the scores after the intervention were 20 to 69 (30.1 ± 13.4). Pretest anxiety scores were 29.5 ± 9.1 and 32.0 ± 13.2 for the PACU visit group and no PACU visit group, respectively. Pretest anxiety scores were similar for the two groups (\( P > .05 \)). Posttest anxiety scores were 25.1 ± 7.6 and 35.8 ± 16.2 for the PACU visit group and the no PACU visit group, respectively. Most participants in the PACU visit group had decreases in their posttest anxiety scores (less anxiety; \( N = 16, 67\% \)), and most participants in the no PACU visit group had increases in their posttest anxiety scores (higher anxiety; \( N = 13, 62\% \)) (Table 2). The average decrease in anxiety scores after the PACU visitation was −4.4 (±6.8), whereas participants who did not visit the PACU had an average increase in anxiety scores of +3.8 (±6.1). The change in anxiety scores (posttest score – pretest score) between the visitation and no visitation groups was found to be statistically significant (\( t_{43} = −8.2, P = .0001 \)). Anecdotal comments by participants about the experience of a PACU visit or no PACU visit are summarized in Table 3.

### Discussion

This was the first RCT to evaluate the effect of a family member visit to an adult PACU patient on the family member’s anxiety level. Previous studies of adult PACU patients used nonexperimental designs and focused on the effect of the visit on the patient’s anxiety.\(^9,10\) Similar to this study, studies of patients’ anxiety before and after a family member’s PACU visit found significantly lower anxiety scores after the visit compared with the nonequivalent control groups.\(^9,10\) Baseline anxiety scores in the three studies were similar,

### Table 1. Demographic Information and Participant Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All Participants (( N = 45 ))</th>
<th>Visitation Group (( N = 24 ))</th>
<th>No Visitation Group (( N = 21 ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient age (y)*</td>
<td>50.4 ± 11.3</td>
<td>50.6 ± 11.1</td>
<td>50.3 ± 11.8</td>
</tr>
<tr>
<td>Family member age (y)*</td>
<td>52.2 ± 10.2</td>
<td>52.8 ± 9.1</td>
<td>51.6 ± 11.6</td>
</tr>
<tr>
<td>Gender of family member</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Female</td>
<td>31</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>Relationship of family member to patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse</td>
<td>35</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>Child</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Parent</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Cousin/aunt</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Significant other</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

*Mean ± standard deviation.

### Table 2. Changes in Anxiety Scores for 45 Family Members Assigned to a PACU Visit or No PACU Visit

<table>
<thead>
<tr>
<th>Change Scores</th>
<th>Visit (( N = 24 ))</th>
<th>No Visit (( N = 21 ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;−10</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>−6 to −10</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>−1 to −5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>+1 to +5</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>+6 to +10</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>&gt;+10</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
indicating that family member anxiety is present to a similar degree as the patient’s anxiety in the PACU. Two-thirds of family members in the no PACU visit group had increases in posttest anxiety scores, whereas two-thirds of family members in the PACU visit group had decreases in anxiety.

The findings of this study support the positive benefits previously found in family members who visit PACU patients.9,10 Although the reduction in STAI anxiety scores was significant and important, the unsolicited anecdotal comments by family members who participated in the study emphasize dramatically just how important the PACU visit was to them.

Clinical Implications
Contrary to some PACU nurses’ beliefs,5-8 a brief visit by family members during the patients’ PACU stay can be an important benefit to the family member. The results of this study, in combination with findings from previous visitation studies of patients, argue strongly for PACU policies to be less restrictive regarding visitation guidelines. A recent survey of PACU practitioners found that < 20% of PACUs allow routine visitation by family members of adult patients.2

If family members of surgical patients have reduced anxiety, family and patient satisfaction with the

Table 3. Anecdotal Comments of Family Member Participants Assigned to the Visitation or Usual Care (No Visitation) Groups

Visit group comments
- “I’m so glad I got to go back. That helped a lot.” (wife)
- “That was very nice to get to see her.” (husband)
- “It was wonderful and so nice to be with him every step of the way. I’ve been all over this hospital except the PACU, so now I can say that I have been there, too!” (wife)
- “My scores have changed. Going back to surgery and going under anesthesia was a worry. It’s good to see him and to be able to talk to him.” (wife)
- “I feel so much better now. I have confidence in Lutheran and his surgeon, but there is nothing like actually seeing my husband. To see him give me a big smile means a lot, and I know it helped him as well.” (wife)
- “It was an amazing experience. I feel so much better now. You can have a hundred people tell you she’s okay, but it’s not the same as seeing her face and her smile and having her tell me she’s okay. My eight-year old daughter was so worried about her and we were able to call her and have my wife talk to her. That helped so much for my daughter to hear her voice. That was wonderful. Thank you.” (husband)
- “To talk to my daughter was wonderful. You impacted her in a very positive way by letting me talk to her so soon after surgery.” (patient)
- “Who wouldn’t want to visit in the PACU?” (visitor) When it was determined that this visitor was in the PACU visitation, the visitor stated, “I feel like I won the lottery!”
- “I didn’t think a visit would change how I marked the second survey. To see my husband was wonderful.” (wife) Wife had tears and a big hug for the nurse. During wife’s brief time at bedside, patient repeatedly stated, “I love you.”

Usual care (no visit) comments
- “I really did want to visit. This brings back memories of when I was in Hawaii and in the hospital for five days. I was all alone and I would lie there at night wishing I could hear my family’s voices.” (husband)
- “I’m upset that I don’t get to go visit him.” (wife)
- “May I send him a note?” (wife) She wrote a love note to him and when it was shown to him he gave a big smile and wrote back, “Ditto.” The wife cried and held the note to her heart, stating, “Thank you so much.”
- “We talked about this and I did want to visit.” (significant other)
- “Our environment has gotten so sterile. These are natural processes, birth, death, ill health. We should be able to visit with our family. My son died at age two and we weren’t allowed to go see him (spoken tearfully). Yes, I want to see my wife.” (husband)
- “We go through these things together. What information one of us receives, the other one does also. We are a team.” (wife)
perioperative experience may increase. All but one visitor wanted to participate in the study, and most were hopeful of a visit with their loved one. Less restrictive visitation policies would allow for patient and family choice and respect patient rights.

Study Limitations

This study only evaluated family member anxiety and did not formally evaluate other family member, patient, or staff variables. Additional RCTs are needed to validate the findings of this study and evaluate patient and staff variables, such as patient and staff satisfaction and/or impact on workflow from visitation.

Another limitation was our efforts to eliminate any influence that spending time with the investigator might have on family member anxiety levels by having the control group spend an equal amount of time with the investigators by going on a sham tour of the surrounding area. The sham tour itself could have had some type of effect on the control group’s anxiety level, which would not occur in family members who just sat in the family room or waiting room.

Another limitation of our study was the age and relationship of the family member participants to the PACU patient. The average family member and patient ages were in the low 50s, with most visitors being spouses of the PACU patient. Future research should focus on older family members because these individuals may have different responses to a PACU visitation. Replication of this study in other types of PACUs other than phase I units would also be beneficial because patient, family member, and staff outcomes may not be the same in different PACU situations.

Conclusions

This study found that family members had significant decreases in anxiety levels after seeing their family member in the PACU compared with increases in anxiety levels for those who were not allowed to visit. Results from this study support the value and importance of PACU visitation for family members.

Acknowledgments

Special thanks to Marianne Chulay, PhD, RN, FAAN, for assistance with study design, data analysis, and manuscript preparation.

References

17. O’Brien J, Moser K, Riegel B, Frazier S, Garvin B, Kim K. Comparison of anxiety assessments between clinicians and


