Choosing between lumpectomy with radiation versus mastectomy is difficult for women with early-stage breast cancer, and doubt can decrease women’s confidence and satisfaction. As a result, the current study surveyed satisfaction before and after surgery in a convenience sample of women with early-stage breast cancer from a single practice. All women received either total mastectomy or lumpectomy plus radiation based on their informed choice of surgical options. The surgeon and the principal investigator educated patients about both surgeries at the time of consent. Participants answered a survey about satisfaction with their decision making before their chosen surgical procedure and again by telephone six months later. Participants felt that they had made an informed choice at the time of decision (87%) and at follow-up (93%). In addition, most women were satisfied with their choice of surgical procedure at time of decision (87%) as well as six months after surgery (96%). This study allowed women to significantly participate in their care through surgical decision making, which improved satisfaction. Nurses are uniquely positioned to support women with early-stage breast cancer in their decision-making process.

At a Glance

- When possible, surgical treatment for stage 0, I, or II ductal or lobular breast cancer should be based on the patient’s preference rather than the surgeon’s.
- Implementing a tool or process to assist with shared decision making may improve patient satisfaction.
- Nurses play a crucial role in advocating for patients’ ability to make surgical treatment decisions.

According to the National Cancer Institute ([NCI], 2011), survival rates for mastectomy are equal to lumpectomy for women with stage 0, I, or II ductal or lobular carcinoma. NCI (2011) stated, “Women with relatively small breast cancers who were...
treated with breast-conserving surgery plus radiation therapy were as likely to be alive and disease-free 20 years later as women treated with mastectomy” (para. 1). The authors hoped that providing this important survival information to patients with breast cancer would increase their confidence in decision making for surgical treatment. Therefore, the current study sought to determine (a) whether women with stage 0, I, or II ductal or lobular carcinoma of the breast were satisfied with their decision to receive surgical treatment for their tumor and (b) whether patients’ satisfaction with their choice of surgical treatment changed over time.

**Literature Review**

Table 1 provides a summary of relevant literature involving patient decision making. The current nursing research is a replication of a Dutch study by Koedoot et al. (2001). Participants in the original study were women diagnosed with early-stage breast cancer who were given the choice of mastectomy or lumpectomy followed by radiation. Participants (N = 141) were included from three different hospitals and received a questionnaire to assess their decision making. The results of Koedoot et al.’s (2001) study showed that 55 patients (39%) were uncertain in their decision making. Koedoot et al. (2001) suggested that the questionnaire should be investigated more thoroughly and expanded for use in examining patient decision making in other populations.

In validation of a decisional conflict scale, O’Connor (1995) used a telephone survey to question the knowledge, attitudes, and practice of 360 women (aged 50–69 years) regarding breast cancer screening. The questionnaire was designed to study the decision-making process in patients undergoing screening for breast cancer and measures their level of decisional conflict. The decisional conflict scale was correlated to a knowledge test about the risks of breast cancer. O’Connor (1995) concluded that the decisional conflict scale met acceptable standards of reliability and validity, with a test-retest reliability coefficient of 0.81 and internal consistency coefficients ranging from 0.78–0.92.

In a study by Sepucha, Belkora, Aviv, Mutchnik, and Esserman (2005), two different templates were used to improve the quality of breast cancer treatment decisions. Sepucha et al. (2003) noted that patients received a large amount of information pertaining to diagnosis, prognosis, treatment choices, and implications of treatment at the time of surgical consent. The authors developed a consultation-recording template that outlined process issues, diagnosis and prognosis, treatment choices, treatment implications, values and preferences, and next steps for patients to take. The consultation-recording template was tested in a pilot study and then used in three clinical trials involving different settings (Sepucha et al., 2003). The authors concluded that the consultation-recording template helped to improve treatment decisions for patients with breast cancer and could be adapted for different clinical settings (Sepucha et al., 2003).

In a cluster randomized trial including 20 surgeons and 201 women with newly diagnosed early breast cancer (Whelan et al., 2004), the patients either received standard surgical education or were assigned to a decision board to allow them to articulate their preference for treatment. Whelan et al. (2004) reviewed prior studies from the early 1980s demonstrating that breast conservation therapy (i.e., lumpectomy plus radiation) resulted in equivalent survival to mastectomy for patients with early-stage breast cancer. The results showed that the group of patients who received the decision board had higher knowledge scores and less decisional conflict; in addition, those patients were more satisfied with their decisions (Whelan et al., 2004).

Hawley et al. (2007) looked at the characteristics of patients with breast cancer in the Detroit and Los Angeles metropolitan areas and their actual involvement in the breast cancer treatment decision-making process of 277 surgeons. Hawley et al. (2007) compared the actual decisional involvement of the patients with their preferred level of involvement; they decided that tools are needed to assist patients in decision making.

**Table 1. Review of Literature on Decision Making in Breast Cancer Treatment**

<table>
<thead>
<tr>
<th>STUDY</th>
<th>N</th>
<th>METHOD</th>
<th>FINDINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawley et al., 2007</td>
<td>1,101</td>
<td>Survey</td>
<td>Patients had variations in their actual involvement in surgical decision making and their preferred level of involvement.</td>
</tr>
<tr>
<td>Janz et al., 2004</td>
<td>101</td>
<td>Patient interviews</td>
<td>Study showed the need for better communication between patients and clinicians. Higher education was associated with higher preferred levels of control in patient decision making.</td>
</tr>
<tr>
<td>Koedoot et al., 2001</td>
<td>141</td>
<td>Survey</td>
<td>Respondents were uncertain about their decision between mastectomy or lumpectomy.</td>
</tr>
<tr>
<td>Lally, 2009</td>
<td>18</td>
<td>Patient interviews</td>
<td>Patients associated having treatment options with a better prognosis.</td>
</tr>
<tr>
<td>O’Connor, 1995</td>
<td>360</td>
<td>Survey</td>
<td>Construct validity was tested on the instrument with the known-groups approach. The decisional conflict scale was correlated to a knowledge test about the risks of breast cancer. High decision uncertainty was correlated with feeling less informed about options, risks, and benefits in decision making.</td>
</tr>
<tr>
<td>Sepucha et al., 2003</td>
<td>24</td>
<td>Survey</td>
<td>Templates were developed to improve the quality of breast cancer treatment decisions.</td>
</tr>
<tr>
<td>Whelan et al., 2004</td>
<td>201</td>
<td>Decision board</td>
<td>Patients who received the decision board had higher knowledge scores about their treatment options and were more satisfied with their decisions.</td>
</tr>
</tbody>
</table>
because many cancer treatment options involve complicated clinical algorithms. Hawley et al. (2007) also noted that younger and more educated women were more likely to prefer more involvement in the surgical decision-making process.

In a qualitative study of 18 women, open semistructured interviews were conducted after surgical consultation but prior to patient decision making (Lally, 2009). More educated and younger women desired more information from their surgeons and had higher participation in decision making compared to older and less-educated women. In addition, Lally (2009) found that women associated having a surgical option with a better prognosis for their breast cancer.

Identifying women who want to be more or less involved in their surgical decision making for breast cancer and matching those patients’ desires with the amount of involvement extended to them by clinicians may increase their satisfaction (Lally, 2009). As a result, the current qualitative study explored the thoughts and behaviors of newly diagnosed women with breast cancer undergoing surgical treatment.

Sample Selection

The current study recruited patients from one site, an outpatient cancer clinic. A pilot study consisting of 30 patients was conducted to test the questionnaire (Connelly, 2008). Convenience sampling was used to recruit participants. The sample consisted of women aged 18 years or older who had stage 0, I, or II breast cancer with ductal or lobular carcinoma of the breast. No patients with inflammatory breast cancer were included. All participants spoke English. The hospital research committee and the University of Arizona Institutional Review Board reviewed and approved the current study. All participants signed an informed consent and an authorization form for the use and disclosure of protected health information to participate in the research project. Patients were referred for participation in the study by their surgeon during their preoperative clinic visit at the Arizona Cancer Center (a National Cancer Institute–designated facility) and a division of the University Medical Center North in Tucson, AZ. All participants shared the same surgeon, who described the risks and benefits of both procedures to the patients, as was her current practice.

Measure

The current study used a nine-item survey to measure participants’ comfort with their decision to have either a lumpectomy plus radiation or a total mastectomy to treat breast cancer. The survey was taken from Koedoot et al.’s (2001) study, which asked 141 patients with breast cancer about their treatment preferences. Koedoot et al. (2001) found their decisional conflict survey to be reliable and valid. The survey uses a Likert-type scale from 1 (strongly agree) to 5 (strongly disagree) to rate individual items; the score is not totaled. Level of significance (LOS) was set at $p < 0.05$.

Methods

This single-group before-and-after study measured participants’ comfort with their decision to have either a lumpectomy plus radiation or a total mastectomy to treat breast cancer. Consenting participants received the questionnaire from one of the researchers. The questionnaires took three to five minutes to complete. Completed questionnaires were placed in sealed envelopes and collected by the principal investigator. The questionnaires were coded by number so that patients’ names never appeared on the actual survey. The sealed envelope contained a list with an arbitrary number assigned to each participant. The list recorded the name, address, age, telephone number, and planned procedure for each participant. The researchers called the participants about six months after their surgical procedure and administered the same questionnaire via telephone. The surveys were analyzed and compared using a t test, a paired samples test, and a paired samples correlation (see Table 2).

Findings

A convenience sample of 30 women chose to participate. The mean age of participants was 60.7 years (range = 31–82 years). Of the 30 participants, 18 chose lumpectomy with radiation, 10 chose mastectomy, and 2 were undecided at the time of the initial survey. One participant who chose lumpectomy was later advised to have a mastectomy after further workup by the surgeon; another who chose lumpectomy was found to have metastatic disease and was no longer a surgical candidate. The follow-up consisted of 19 participants (Lacovara & Arzouman, 2006). The investigators called patients at home and asked them to participate in phase 2 of the study; not all

<table>
<thead>
<tr>
<th>Table 2. Survey Results at Time of Decision and Six Months Later</th>
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<tbody>
<tr>
<td><strong>STATEMENT</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>My preference will certainly be a total mastectomy.</td>
</tr>
<tr>
<td>My preference will probably be a total mastectomy.</td>
</tr>
<tr>
<td>I am in doubt and still thinking.</td>
</tr>
<tr>
<td>My preference will probably be a lumpectomy and radiation.</td>
</tr>
<tr>
<td>My preference will certainly be a lumpectomy and radiation.</td>
</tr>
<tr>
<td>I have no preference for one or the other treatment.</td>
</tr>
<tr>
<td>This decision is hard for me to make.</td>
</tr>
<tr>
<td>I feel I have made an informed choice.</td>
</tr>
<tr>
<td>I am satisfied with my decision.</td>
</tr>
</tbody>
</table>

N = 19

* Score was based on a scale from 1 (strongly agree) to 5 (strongly disagree).

could be reached. Nineteen women ultimately completed the second survey.

The confidence interval (CI) for “My preference will probably be a total mastectomy” was 0.05–1.22 (LOS < 0.01). The CI for “My preference will probably be a lumpectomy and radiation” was −1.4 to −0.18 (LOS = 0.02). Finally, the CI for “This decision is hard for me to make” was 0.2–1.91 (LOS = 0.02).

Each participant remained satisfied with her choice, but some uncertainty persisted. In addition, participants still felt strongly that their decision was difficult at follow-up (X = 2.58; SD = 1.17). The other responses were nonsignificant. Most participants felt they had made an informed choice before surgery (87%); the number increased to 93% six months later. Most participants also were satisfied with their choice of surgical procedure before surgery (87%); their satisfaction increased to 96% at follow-up. Causation was not addressed.

Limitations

Limitations of the current study included a single site and single surgeon versus a multisite and multisurgeon setting and convenience sampling versus random sampling, thus weakening the design. Women’s comfort levels in their decision making varied but were not explored. The surgeon’s explanation of the patients’ tumors and their BRCA1 or BRCA2 status may have affected their decision making and satisfaction (Lacovara & Ray, 2007). Other variables that may have affected the results but were not studied included postsurgical complications (e.g., pain, formation of a seroma, pathology result of the surgical margins) and patients’ prior experiences with medical personnel. In addition, the sample was small with a high degree of attrition (57%) between the time of decision and follow-up.

Nursing Implications and Conclusions

A large percentage of participants in the current study were satisfied with their decision making for surgical treatment of early-stage breast cancer. In addition, the women’s satisfaction with their decision increased six months following initial surgery. However, a small minority (13% at the time of decision and 4% at follow-up) were not satisfied. The current study allowed women to significantly participate in their care through surgical decision making, which improved their satisfaction before and after the procedure. Nurses play an important role in educating patients about their choices and supporting their decisions. The evidence shows that the survival rate is the same for mastectomy and lumpectomy; therefore, nurses should act as educators and advocate for promoting patient decision making. In addition, nurses should support patients when they make their treatment decision.

Author Contact: Jane E. Lacovara, MSN, RN, CNS-BC, CMSRN, can be reached at jlacovara@umcaz.edu, with copy to editor at CJONEditor@ons.org.

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