

# Factors That Affect Intention to Avoid Strenuous Arm Activity After Breast Cancer Surgery

Teresa S. Lee, PhD, Sharon L. Kilbreath, PhD, Gerard Sullivan, PhD, Kathryn M. Refshauge, PhD, Jane M. Beith, PhD, and Lynne M. Harris, PhD

**L**ymphedema is feared by many women after breast cancer surgery (Collins, Nash, Round, & Newman, 2004). Generally chronic and incurable, lymphedema is characterized by swelling and symptoms of discomfort, pain, and heaviness in the upper limb, affecting normal functional use of the arm (Armer, Fu, Wainstock, Zagar, & Jacobs, 2004; Baron et al., 2002; Ridner, 2005; Schrenk, Rieger, Shamiyeh, & Wayand, 2000). The visibility of the swollen arm also adversely affects body image and may cause psychological distress, anxiety, and poor self-esteem for breast cancer survivors (Greenslade & House, 2006; Tobin, Lacey, Meyer, & Mortimer, 1993). Together, these symptoms greatly reduce quality of life (Ridner, 2005).

It makes sense that women would fear lymphedema and want to protect their arms from known risk factors, such as skin infection (Soran et al., 2006). However, why some women consider strenuous forms of arm activity a risk factor for lymphedema is unknown (Karki, Simonen, Malkia, & Selfe, 2004), particularly when the evidence shows no association between the two (Ahmed, Thomas, Yee, & Schmitz, 2006; Kilbreath, Refshauge, Beith, & Lee, 2006; McKenzie & Kalda, 2003) and actually supports the use of resisted arm exercise to aid recovery (Ahmed et al.; Kilbreath et al.; McKenzie & Kalda). In fact, evidence suggests that arm exercises may reduce the risk of lymphedema as a result of enhanced lymphatic return and regeneration of secondary lymphatic channels (Box, Reul-Hirche, Bullock-Saxton, & Furnival, 2002; Johansson, Tibe, Weibull, & Newton, 2005; Lane, Dolan, Worsley, & McKenzie, 2007; Moseley, Piller, & Carati, 2005). Conversely, failure to exercise and inactivity of the affected arm may result in poor lymphatic clearance and stasis of the lymphatic system in the affected arm (Trettin, 1992). Considering that pain and shoulder restriction are more prevalent than lymphedema 6–12 months after surgery (Thomas-Maclean et al., 2008), prevention through exercise and activity is recommended. In

**Purpose/Objectives:** To explore the factors that contribute to women's intention to avoid strenuous arm activity after breast cancer surgery.

**Design:** Cross-sectional survey.

**Setting:** Three hospitals located in eastern Australia.

**Sample:** 175 patients with breast cancer.

**Methods:** A survey, based on Protection Motivation Theory, was used to assess whether treatment variables, demographic variables, arm advice, fear, or coping attributes predicted women's intentions to avoid strenuous arm activity.

**Main Research Variables:** Intention to avoid strenuous arm activity, presence of arm or chest symptoms, receipt of arm care advice, and fear of lymphedema.

**Findings:** Seventy percent of participants reported an intention to avoid strenuous activity with their affected arm and reported more arm and chest symptoms than participants who did not avoid strenuous arm activity. Women who perceived that they were vulnerable to lymphedema and women who received advice about arm care were more likely to avoid strenuous arm activity.

**Conclusions:** Fear of lymphedema and receipt of arm care advice motivated women's intention to avoid strenuous arm activity.

**Implications for Nursing:** Information about lymphedema distributed to patients by healthcare professionals should be updated to reflect evidence and address the risk of developing lymphedema relevant to the patients' surgery.

particular, strenuous arm exercises against resistance are necessary for recovery of arm strength and may even counteract the effects of bone mineral loss caused by adjuvant therapy for breast cancer (Cheema, Gaul, Lane, & Fiatarone Singh, 2008). Avoidance of such activity may result in prolonged arm weakness, scapula-humeral dysfunction, osteopenia, and, potentially, lymphedema (Cheema et al.).

Protection Motivation Theory (PMT) (Rogers, 1983) is a social cognition model chosen for this study to explore why some women intend to avoid strenuous