Correlates of Adherence to Supervised Exercise in Patients Awaiting Surgical Removal of Malignant Lung Lesions: Results of a Pilot Study

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Patients undergoing thoracic surgery for malignant lung lesions often present with less than optimal functional status (Handy et al., 2002; Kenny et al., 2008; Visser et al., 2006). Low cardiorespiratory fitness (VO_{2peak}) has been consistently associated with increased risk of surgical or postsurgical complications in individuals with malignant lung lesions (Beckles, Spiro, Colice, & Rudd, 2003a, 2003b; Dales, Dionne, Leech, Lunau, & Schweitzer, 1993; Win et al., 2006). For such patients, risk of perioperative and postoperative complications can be stratified by fitness level, such that individuals with VO_{2peak} less than 15 ml/kg per minute are at higher risk for complications (Beckles et al., 2003a, 2003b; Dales et al.; Win et al.). Research also has shown that after surgery, patients often experience further declines in function and quality of life (Brunelli et al., 2003, 2007; Kenny et al.). Therefore, interventions aimed at improving VO_{2peak} prior to surgery could have a number of benefits for such patients.

To begin investigating that question, a pilot study was conducted to examine the feasibility of exercise training for patients undergoing thoracic surgery for removal of malignant lung lesions. The study found that participants who adhered to at least 80% of the exercises experienced significant improvements in cardiorespiratory fitness, whereas those with less than 80% adherence did not (Jones et al., 2007). This article presents the medical, demographic, and social-cognitive correlates of exercise adherence in the trial.

Using a theoretical approach is important for developing evidence-based approaches to facilitating behavior change (Wood, 2008). To date, no research has investigated the social-cognitive correlates of exercise adherence in patients with lung cancer. Furthermore, evidence from previous studies in patients with other forms of cancer has shown that medical and demographic variables are associated with exercise adherence (Courneya

Purpose/Objectives: To examine the demographic, medical, and social-cognitive correlates of adherence to a presurgical exercise training intervention in patients awaiting surgery for suspected malignant lung lesions.

Design: Pilot study, single-group, prospective design with convenience sampling.

Setting: Exercise training was performed at a university research fitness center in western Canada.

Sample: 19 patients awaiting surgical resection of suspected malignant lung lesions.

Methods: At baseline, participants completed a questionnaire including the Theory of Planned Behavior variables of perceived behavioral control, attitude, and subjective norm, as well as medical and demographic information. Participants were asked to attend five supervised exercise sessions per week during surgical wait time ($\overline{X} = 8 \pm 2.4$ weeks).

Main Research Variables: Theory of Planned Behavior variables and exercise adherence.

Findings: Adherence to the exercise intervention was 73% (range = 0%–100%). Correlates of adherence were perceived behavioral control ($r = 0.63$; $p = 0.004$) and subjective norm ($r = 0.51$; $p = 0.014$). Participants with greater than 80% adherence reported significantly higher behavioral control than participants with less than 80% adherence ($\overline{X}$ difference = 1.1; 95% confidence interval = 0.1–2.2; $p = 0.035$). Men had better adherence than women ($\overline{X}$ difference = 24.9%; 95% confidence interval = 0.4–49.4; $p = 0.047$).

Conclusions: Perceived behavioral control and subjective norm were the strongest correlates of exercise adherence. Women could be at risk for poor exercise adherence prior to lung surgery.

Implications for Nursing: This information could be useful for clinicians in their attempts to improve adherence to exercise interventions in patients awaiting surgery for malignant lung lesions.

et al., 2004, 2008). Identifying salient exercise beliefs and correlates of exercise adherence for this patient population could help inform practitioners and future research