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The Effects of Smoking Habits on Lymphedema Severity and Upper Limb Functionality in Patients with Unilateral Mastectomy

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Objectives: Smoking is known to reduce wound healing, increase the risk of infection, and reduce angiogenesis by inhibiting vascular endothelial growth factor. All these factors can be associated with the development of lymphedema. The aim of this study was to investigate the effects of smoking habits on lymphedema severity and upper limb functionality in patients who have undergone unilateral mastectomy as part of breast cancer treatment.

Methods: The study included 75 participants who have undergone unilateral radical or modified radical mastectomy. Participants were divided into non-smoker (n=59) and smoker (5 and more cigarettes per day) (n=16) groups according to their smoking habits. Participants' detailed demographic and medical history were recorded, the severity of lymphedema was determined according to the volumetric difference between the affected and unaffected upper extremities, upper extremity functionality was assessed with the 'Disabilities of the Arm, Shoulder, and Hand Questionnaire–Short Form (DASH)'.

Results: The study groups were homogeneous in terms of age, education level, marital status, mastectomy type, number of axillar lymph node dissection, chemotherapy and radiotherapy treatments ($p>0.05$), although the smoker group had higher body mass index values ($p=0.027$). Smoker group had statistically higher volumetric difference and DASH scores than non-smoker group, respectively ($p=0.016$, $p=0.037$).

Conclusion: The results of this study reveals that smoking may have negative effects on lymphedema severity and DASH scores in patients who have undergone unilateral mastectomy. DASH scores may be influenced by the volumetric difference between the affected and unaffected extremities. Further studies with larger sample sizes are needed to better understand the effects of smoking on lymphedema severity and upper extremity functionality.

Keywords: Lymphedema, smoking, upper limb function