Can reductions in bra band pressure increase comfort during exercise in lumpectomy patients?

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Abstract
Breast cancer is a prevalent, life-impacting disease. With increasing incidence rates and a growing number of survivors, greater efforts must be directed towards improving the physical functioning and quality of life (QoL) of women living with a diagnosis of breast cancer. Although exercise interventions have been reported to provide these benefits, without the development of adverse events, many impediments to exercise exist (Rogers, 2007). While several psychosocial or physical capacity impediments to exercise have been investigated, a recent study found that a substantial proportion (70.3%) of women living with a breast cancer diagnosis reported experiencing bra discomfort during exercise (Gho, 2007). Furthermore, bra band “tightness” was an acute cause of this discomfort, particularly for lumpectomy patients. For this reason there exists an urgent need to determine whether it is possible to modify the bra band for post-lumpectomy patients to reduce their exercise-induced breast discomfort caused by band tightness. Therefore, the purpose of this study was to determine whether an innovative bra modification could reduce bra band pressure, and therein the uncomfortable bra band “tightness”, experienced by lumpectomy patients.

Disciplines
Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details
This conference paper was originally published as Gho, SA, Steele, JR and Munro, BJ, Can reductions in bra band pressure increase comfort during exercise in lumpectomy patients?, Emed Scientific Meeting 2008, Dundee, Scotland, 28-31 July 2008. Original conference information available here

This conference paper is available at Research Online: https://ro.uow.edu.au/hbspapers/98
CAN REDUCTIONS IN BRA BAND PRESSURE INCREASE COMFORT DURING EXERCISE IN LUMPECTOMY PATIENTS?

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INTRODUCTION

Breast cancer is a prevalent, life-impacting disease. With increasing incidence rates and a growing number of survivors, greater efforts must be directed towards improving the physical functioning and quality of life (QoL) of women living with a diagnosis of breast cancer. Although exercise interventions have been reported to provide these benefits, without the development of adverse events, many impediments to exercise exist (Rogers, 2007).

While several psychosocial or physical capacity impediments to exercise have been investigated, a recent study found that a substantial proportion (70.3%) of women living with a breast cancer diagnosis reported experiencing bra discomfort during exercise (Gho, 2007). Furthermore, bra band "tightness" was an acute cause of this discomfort, particularly for lumpectomy patients. For this reason there exists an urgent need to determine whether it is possible to modify the bra band for post-lumpectomy patients to reduce their exercise-induced breast discomfort caused by band tightness. Therefore, the purpose of this study was to determine whether an innovative bra modification could reduce bra band pressure, and therein the uncomfortable bra band "tightness", experienced by lumpectomy patients.

METHODS

Three female lumpectomy patients who were large breasted (C+ cup), currently exercising, not undergoing active breast cancer treatment, and who had reported experiencing bra discomfort during exercise, were required to exercise at a consistent self-selected pace on a treadmill under three randomly presented bra conditions: Own bra, Sport bra and Experimental bra. For the Experimental bra condition, a custom-designed sliding fastener was incorporated into a standard sports bra to enable the band to be individually adjusted around the torso, without compromising breast support required during exercise.

Bra band pressure data were collected for 60 seconds during each treadmill trial per condition using a Pilance-c Expert system (Novel Inc, Munich, Germany). Two 10 cm calibrated pressure strips (1 sensor/cm²; 10 sensors; 50 Hz) were secured directly to the subject's torso, under the affected side band of the bra in each bra condition and then zeroed. The Pilance-c Expert Online program (version 8.2; Novel Inc, Munich, Germany) was then used to mask the relevant sensors in order to calculate mean pressure (N/cm²) for each condition. Band pressure and bra discomfort, quantified using a visual analogue scale (VAS), were analysed to determine whether these outcome variables differed when subjects exercised in the three bra conditions.

RESULTS

Bra band pressure and bra band discomfort were positively correlated in all three bra conditions, whereby high band pressure was associated with greater discomfort (Fig 1). The Experimental bra condition provided the most consistently low pressure readings (<0.50 N/cm²), and also had the overall lowest band discomfort score.

CONCLUSION

This is the first study to provide evidence to show that, irrespective of bra condition, high band pressure was associated with bra band discomfort on the affected side of post-lumpectomy patients. Reducing bra band pressure through innovative modifications can act to reduce bra band discomfort, thereby enabling more women living with a breast cancer diagnosis to enjoy exercise benefits in comfort.

REFERENCES