

The Impact of a Support Garment on Functional Mobility and Quality of Life in Bariatric Surgery Patients

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Problem

- ✔ Excess skin in abdominal region due to significant weight loss
- ✔ Wait times for surgery to remove tissue can be as long as 5 years and cost is often not covered by government or personal health insurance
- ✔ Excess tissue causes postural instability, low back pain and reduced gait (walking) speed
- ✔ Increased risk of falls and biomechanical restriction during activities of daily living and exercise

Study Objectives

1. To evaluate the effectiveness of a support garment on quality of life, postural stability, gait speed and performance of activities of daily living
2. To determine the feasibility of a custom made garment as an alternative to surgery or as a support while waiting for surgery to remove excess tissue after weight loss

Methods

- ✔ Prospective cohort design. Pilot study.
- ✔ 10 participants with excess tissue in the abdominal region due to weight loss after bariatric surgery were custom fitted with a support garment using standardized procedures
- ✔ Participants completed the IWQOL-Lite and a 7-day garment-wearing log
- ✔ Gait analysis using 3-D technology with and without wearing the garment. Paired t-test were used to compare between conditions.

Results

Participants Demographics

BMI kg/m ² Mean (min-max) at time of fitting	38 (27-50)
Age, years (min-max)	43 (28-56)
Female (%)	80
Weight loss at time of fitting since surgery [kg (min-max)]	42 (27-57)
Time since surgery, months	18 (4-60)

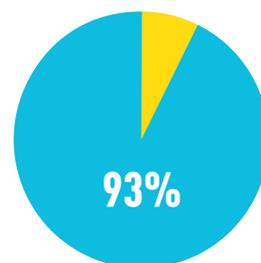
Quality of Life - IWQOL - Lite Results

IWQOL - Lite Scale	Study Sample (n=10) mean (sd)	Severely Obese Community (n=317)* mean (sd)	Bariatric Surgery (n= 1635)* mean (sd)
Physical Function	66.36 (7.7)	48.4 (21.2)	31.7 (21.7)
Self-Esteem	49.29 (10)	45.9 (25.9)	30.4 (25.3)
Sexual Life	58.14 (9.4)	65.9 (29.9)	45.8 (31.8)
Public Distress	54.5 (8.7)	62.0 (24.7)	49.7 (27.5)
Work	78.15 (7.5)	68.1 (23.7)	49.7 (27.5)
Total Score	54.8 (8.6)	54.6 (19.5)	36.9 (19.0)

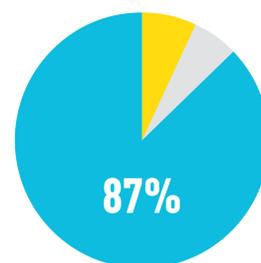
“I was more aware of my posture and the garment worked well to support my core while standing...”

“This garment is AMAZING! It sucked in my loose skin and held it snugly to my body...”

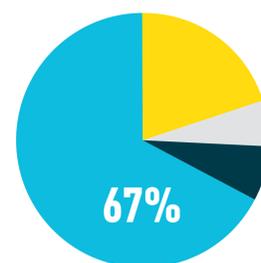
Did wearing the garment increase your confidence?



How would you rate the moisture control of the garment?



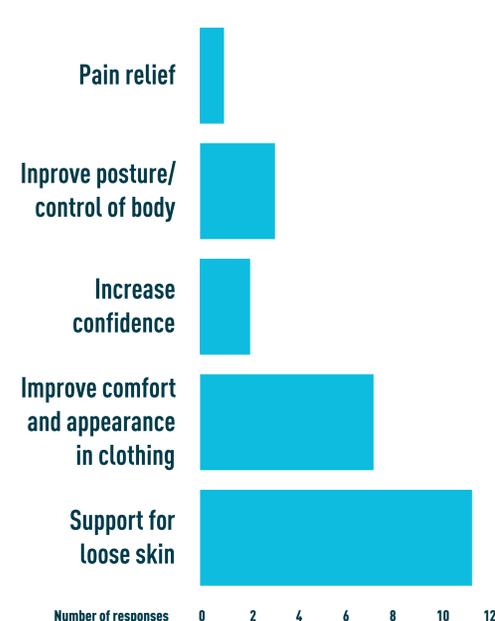
How would you rate the heat control of the garment?



“It gave me even more confidence while out in public because it did make me feel and look good...”

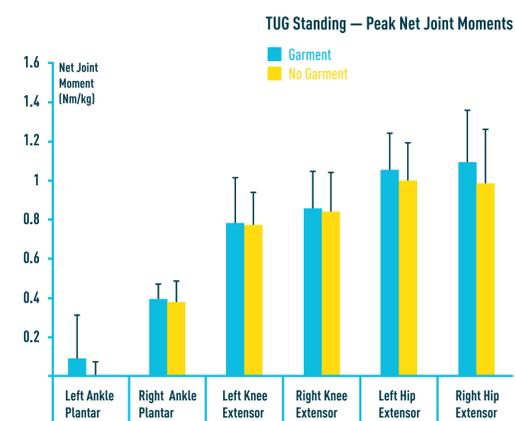
“I felt safer moving around. My balance was amazing. I was even able to run. I have not done that since I was a child...”

What did you expect from the garment?

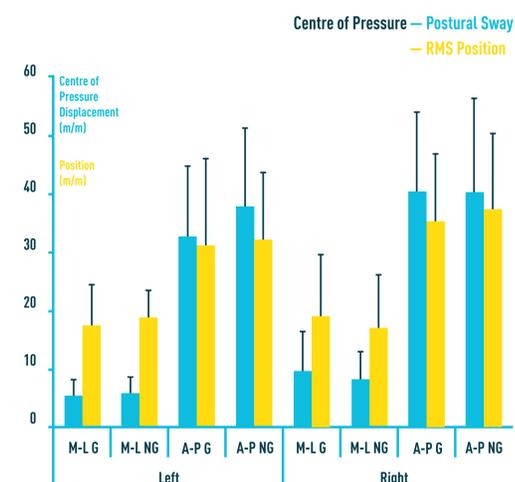


Conclusions

- ✔ Participants in study had similar quality of life compared to groups of patients with severe obesity in the community and better than those who had bariatric surgery.
- ✔ Participants reported that expectations of the garment were met
- ✔ Participants reported that they felt more confident to participate in the activities of daily living, including exercise, while wearing the garment
- ✔ The garment appeared to change the kinematics of the sit-to-stand movement by acting as an external lumbar stabilizer, reducing the load on the low back, changing the angle of the pelvis and increasing the activity of the hip extensors.
- ✔ Participants had reduced AP sway while wearing the garment that could reduce their risk for falls.
- ✔ A custom made garment has the potential to enhance participation in activities of daily living and may be a feasible alternative to surgery to remove excess tissue or used as a support while waiting for surgery.



The right hip extensor net joint movement was significantly greater in the garment condition compared to the non-garment condition ($p=0.02$; effect size=0.85 SD). No difference in net joint movements between conditions for either the left or right lower extremities during the stand-to-sit portion of the TUG test (results not shown here).



No differences found between conditions in RMS position. There were no differences between conditions in the postural sway along the M-L axis. For the left limb, postural sway along the A-P axis was greater in the no garment condition ($p=0.03$; effect size=0.85 SD). Postural sway along the A-P axis was not different between conditions for the right limb.

Next Steps

- ✔ A one-year pilot program is planned to start in the spring of 2016 in Alberta Canada to provide access to custom made garments for patients in treatment for obesity.
- ✔ Further research will be conducted on the impact of the custom garment on functional mobility, quality of life and also the durability and satisfaction with the custom garment.
- ✔ Results of the one-year pilot program will be presented to the Alberta Government for consideration for inclusion of the garment in the provincial aids for daily living program
- ✔ The garment fitting clinics in Alberta will be used as a training and education opportunity for other provinces in Canada interested in making the garments available to their patients.

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