The role of pain-related factors on physical activity levels after breast cancer surgery: a one-year follow-up study

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WHY did we do this?

Around **40% of breast cancer** survivors experience **persistent pain** after ending treatment.

Physical activity (PA) can alleviate **pain complaints** and has many other benefits for breast cancer patients and survivors.

Undertaking PA is challenging as **PA levels following breast cancer surgery are often low**.

How pain-related factors influence physical activity behavior after breast cancer surgery is unclear

- **AIM 1** **Changes in PA** across various intensity levels and sedentary time over 12 months after breast cancer surgery.
- **AIM 2** **Contributing factors**, especially pain-related variables, **at multiple timepoints** over 12 months after surgery.
- **AIM 3** **Contributing factors** from early recovery stages (acute & sub-acute) **for PA levels at 12 months** after surgery.

HOW did we do this?

Secondary analysis of the EduCan Trial

Breast cancer patients after surgery, with and without pain (n=184)

Assessments at different timepoints:
T1 Acute stage: 1 week post-surgery
T4 Sub-acute stage: 4 months post-surgery
T12 Long-term: 12 months post-surgery

AIM 1 Linear mixed model
AIM 2 AIM 3 Multiple linear regression analysis

Actigraph accelerometer
- PA (min/week): Light - Moderate - Vigorous - Moderate-to-Vigorous (MVPA)
- Steps (steps/week)
- Sedentary Time (min/week)

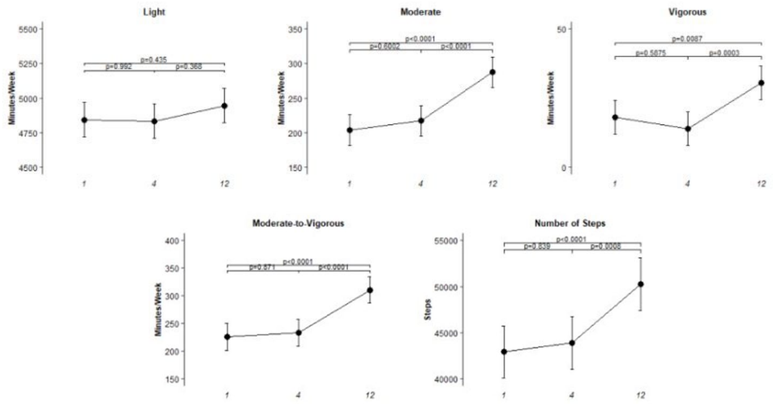
Questionnaires
- Patient characteristics: age, BMI
- Pain-related variables: pain-related disability (PDI), pain catastrophizing (PCS) pain intensity (VAS), symptoms related to central sensitisation mechanisms (CSI)
- Emotional functioning: stress - depression - anxiety
- Upper Limb functioning (ULF)
- QoL

WHAT did we find?

AIM 1 Changes in level of PA

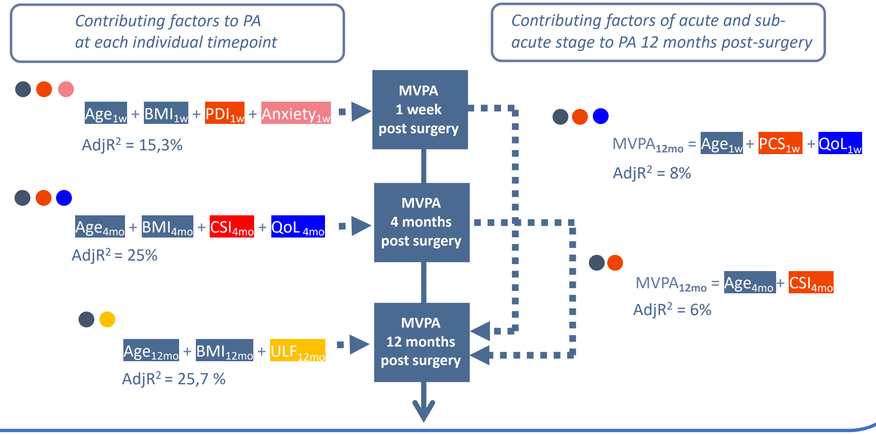
- Significant changes in MVPA and steps.
- Changes in PA happen mostly between 4 and 12 months post-surgery.
- Sedentary time decreases between 1 week and 4 months post-surgery.

Physical Activity Minutes/Week per Intensity and Number of Steps across Timepoints (mean with 95%-CI, p-value)



AIM 2 AIM 3 Contributing factors of PA

- Contributing factors change during the first year after surgery.
- Pain contributes to MVPA in the first week post-surgery and 4 months, but not 12 months post surgery.
- Explained variance of the used contributing factors was small.



Breast cancer survivors increase MVPA and number of steps in the first year after surgery.

Both pain-related, emotional and physical factors contribute to PA.

Rehabilitation should aim to address both immediate and long-term needs to support an active lifestyle.

CONTACT?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