



BACKGROUND

Research has shown the efficacy of exercise training in cancer (Irwin, 2012). Physical and CRFitness, muscular strength, endurance and flexibility are all beneficial for the health during and after cancer treatment . Weight gain is quite usual post treatment due to hormonal actions and diet and exercise can help with weight loss and cachexia which is usual during cancer treatment. Exercise is supposed to improve quality of life, reduces fatigue, nausea and diarrhoea, increases functional capacity and psychological wellbeing and self-esteem. It is suggested that decreases the risk of reappearance of some type of cancers and decreases the risk of chronic diseases.The Alexander Technique intervention has a positive impact on physical skills, emotional, behavioural and psychological well-being. The combined effects of the Alexander technique and exercise classes improve muscle tone, thickness and flexibility. These observations provide possible links between intervention, proprioception, muscle tone and elasticity and outcome. A study by krim (1993) shows how the alexander technique benefits the athletic performance.

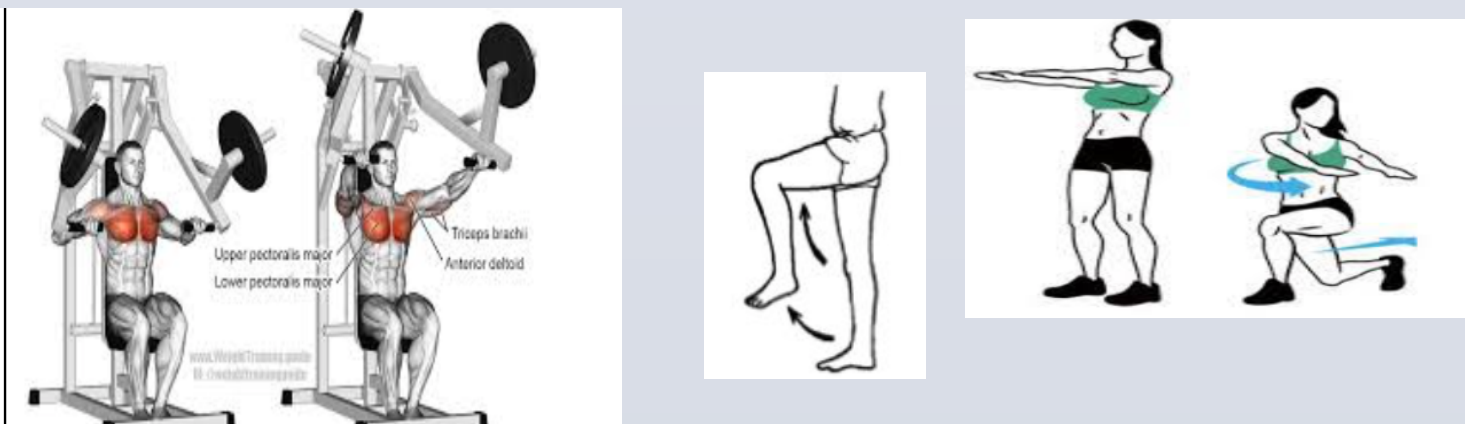
AIM

The aim of the project is to create a community based alexander technique and exercise program for cancer patients to be able to help cancer patients in their recovery.

METHODS AND MATERIALS

We had 11 participants, female patients, ages 42 to 67, previously diagnosed and completed treatment for breast cancer. They were given a one to one exercise program at a level appropriate to the cancer diagnosis and physical condition. The exercise program consisted of one day supervised resistance exercise session in the gym and home based flexibility and balance exercises to do daily. The program was delivered in collaboration with Row to Recovery program, a community based initiative that contributed for their aerobic training (minimum of 150 minutes of moderate exercise a week). They were measured at the beginning of the program, on week 6th and the final week, 12th week on the program. The tests:

- Musculoskeletal Fitness Measurements (1Repetition Maximum Test , Handgrip and back and leg strength test and Sit to stand test).
- Balance Test.
- Flexibility test.



After 5 weeks on the program, 7 participants (1 to 7 in the graphs) and their rowing coach, assisted to weekly Alexander Technique lessons besides continuing their exercise program. The lessons were practice based lessons where the participants learnt to improve their cognitive function and balance. It helped them to build awareness about the importance of exercise, properly done, in rehabilitation and recovery. Picture 1 shows the participant squatting damaging her spine while picture 2 shows the participant squatting safely.

Picture 1

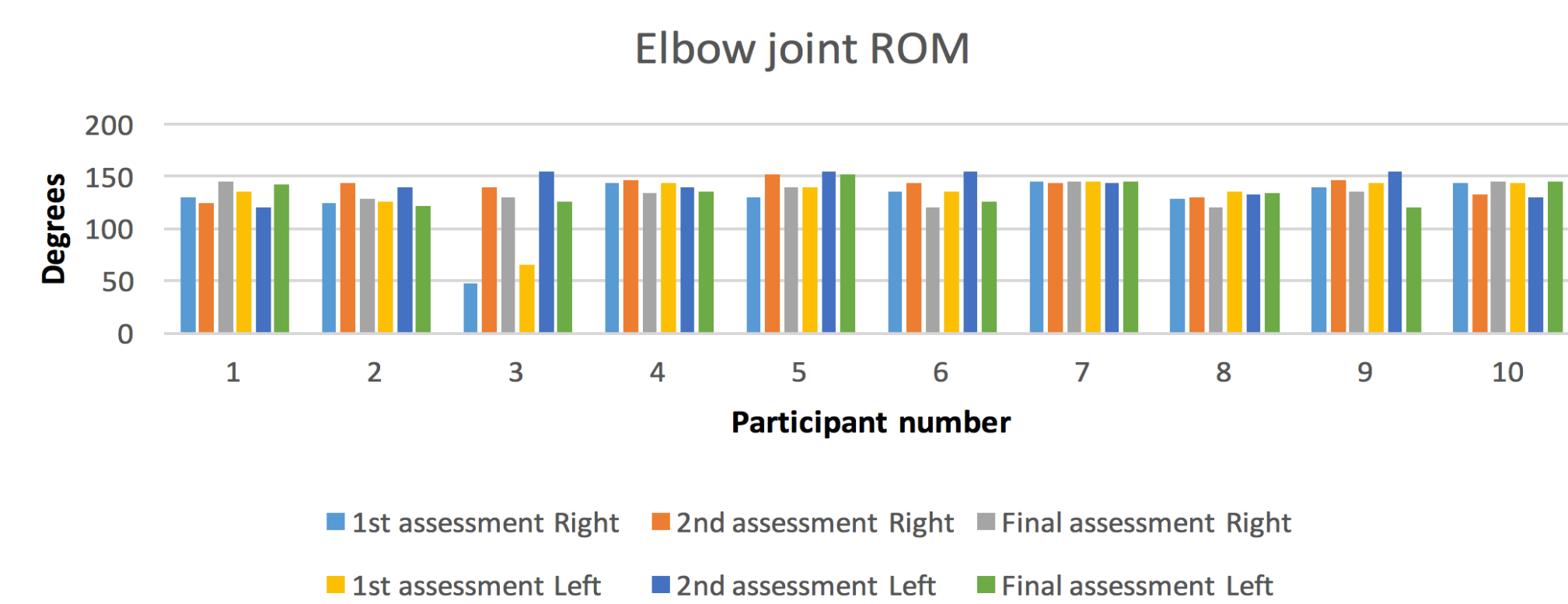


Picture 2



RESULTS

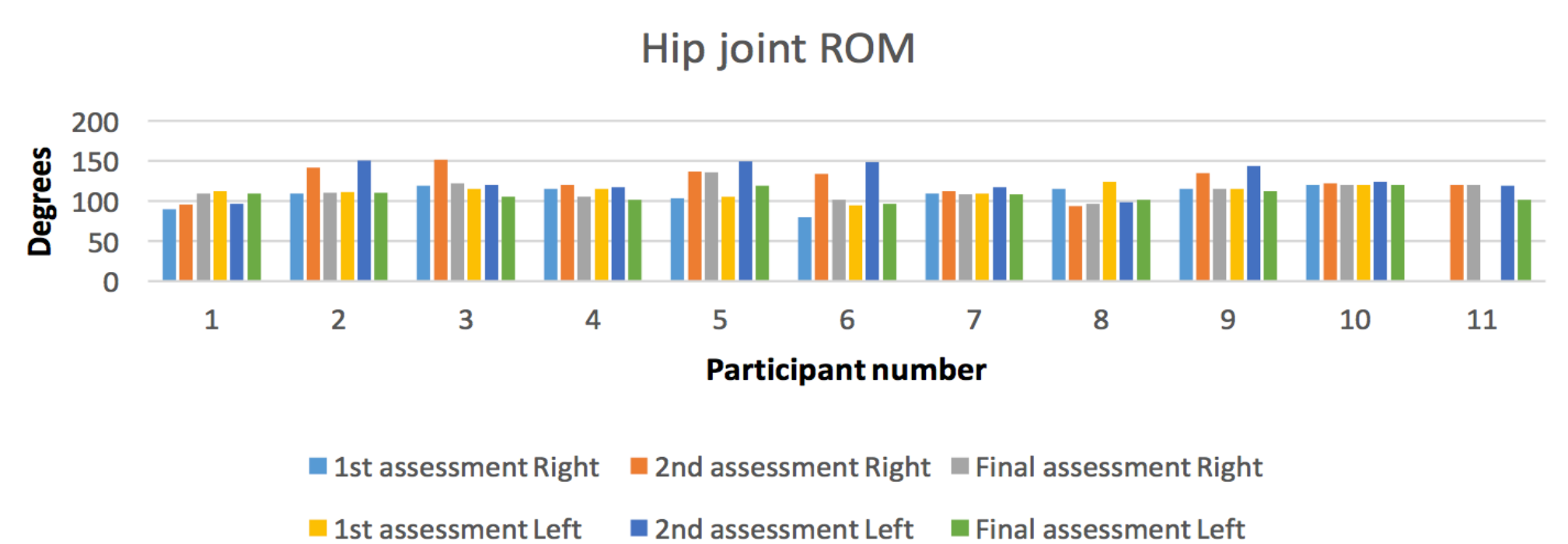
Chart 1



The data in Chart 1 shows $P(T \leq t)$ two-tail= 0.002385464 Right elbow. Hence, almost 100% percent of the participants improved the flexibility for the right elbow.

$P(T \leq t)$ two-tail= 0.000397597 Left elbow. Hence, almost 100% percent of the participants improved the flexibility for the left elbow.

Chart 2



Data in Chart 2 shows that 98% of the participants improved the flexibility for the right and left hip from the first to the final assessment.

In Charts 3 to 6, we can see how Muscular strength for certain muscle groups increased for all participants, hence 1RM from baseline to final follow up increased progressively. Chart 3 shows an overall increase of 98%. Data in Chart 4, chest press, shows a general improvement, $P(T \leq t)$ two-tail=0.197360236. Data in Chart 5, $P(T \leq t)$ two-tail= 0.069207379, shows all participants improved their performance from the 1st assessment to the Final one. The improvements from the 2nd assessment to the Final one are higher in participants 2 and 5. Chart 6 shows all participants improved the lower extremity strength from the 1st assessment to the Final. It is significant to see the improvements from the 2nd to the final assessment is clearly higher.

Chart 3

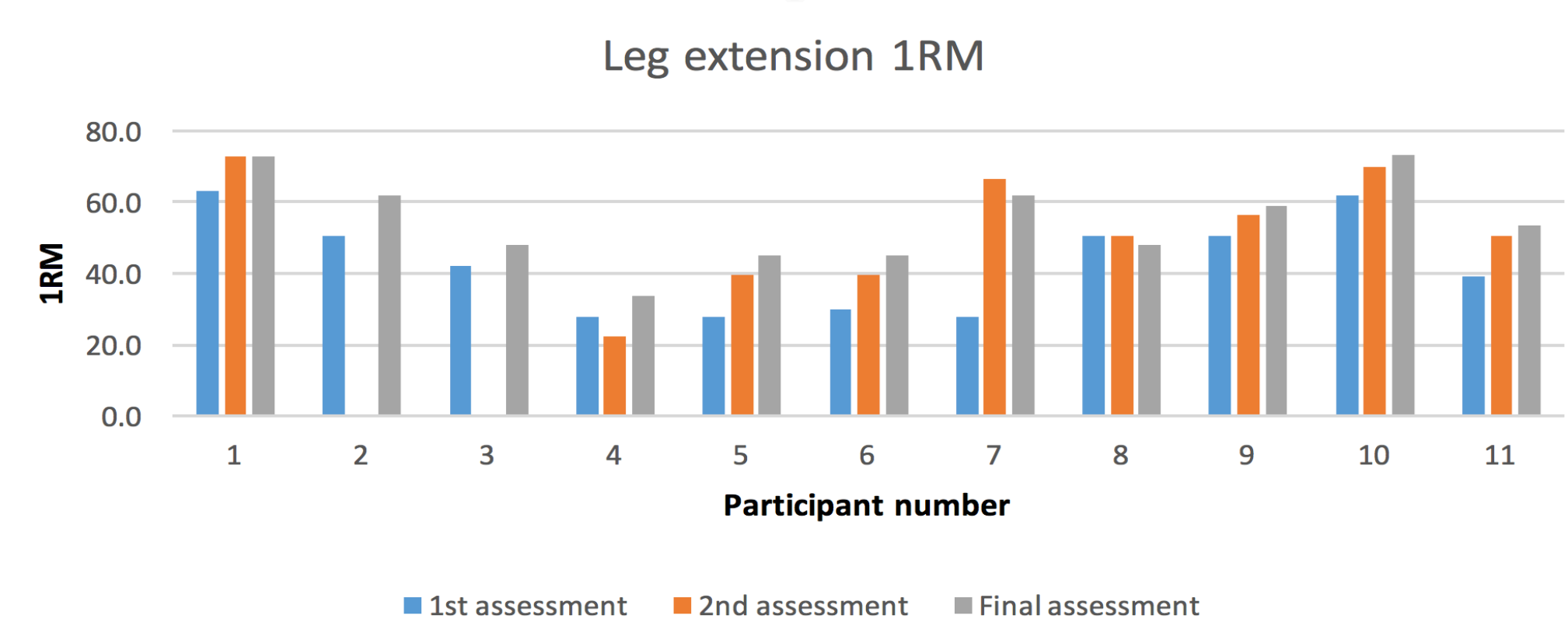


Chart 4

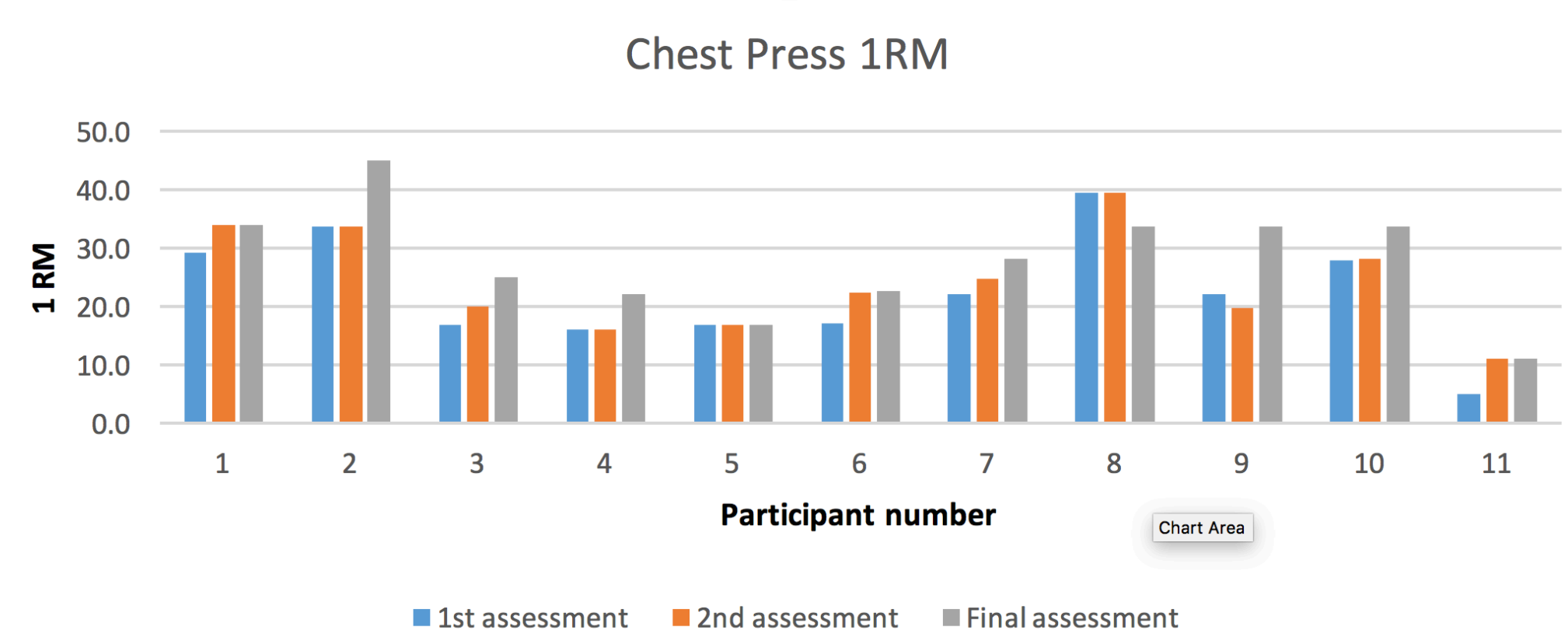


Chart 5

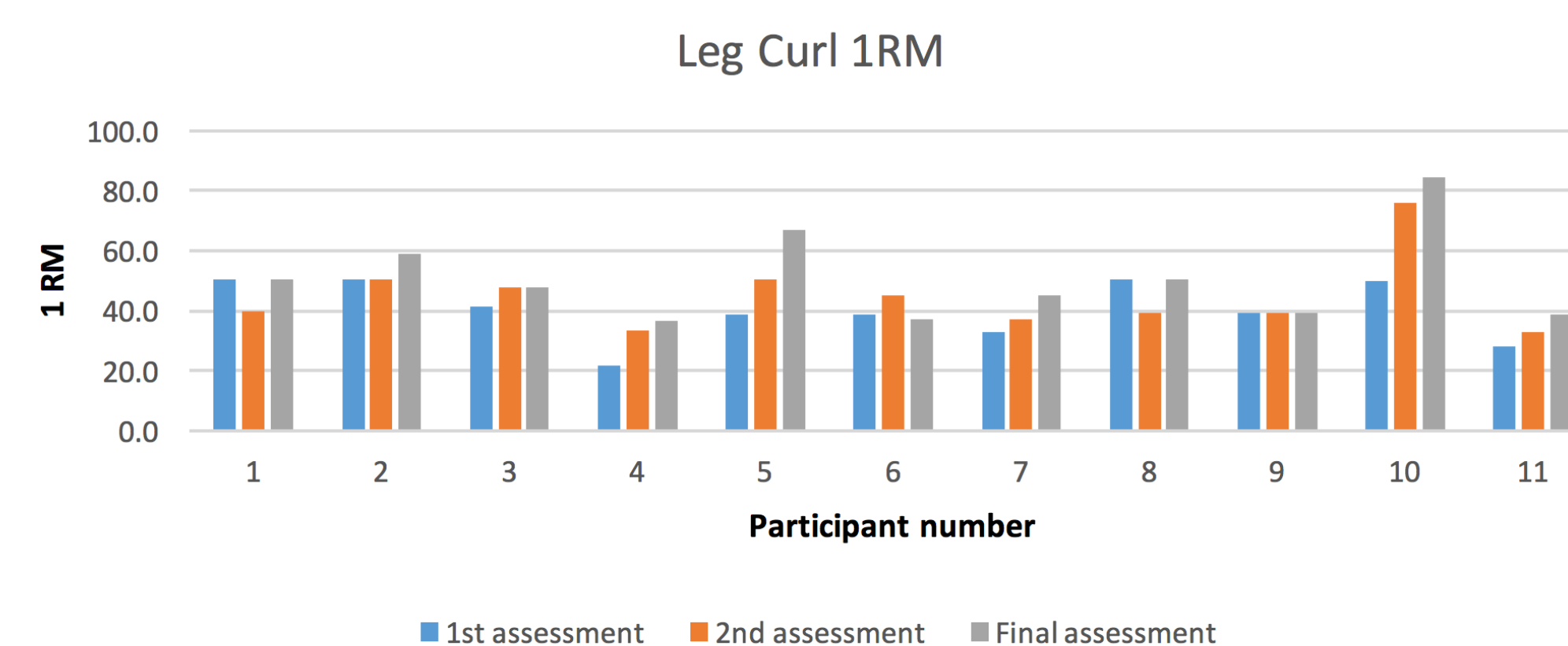
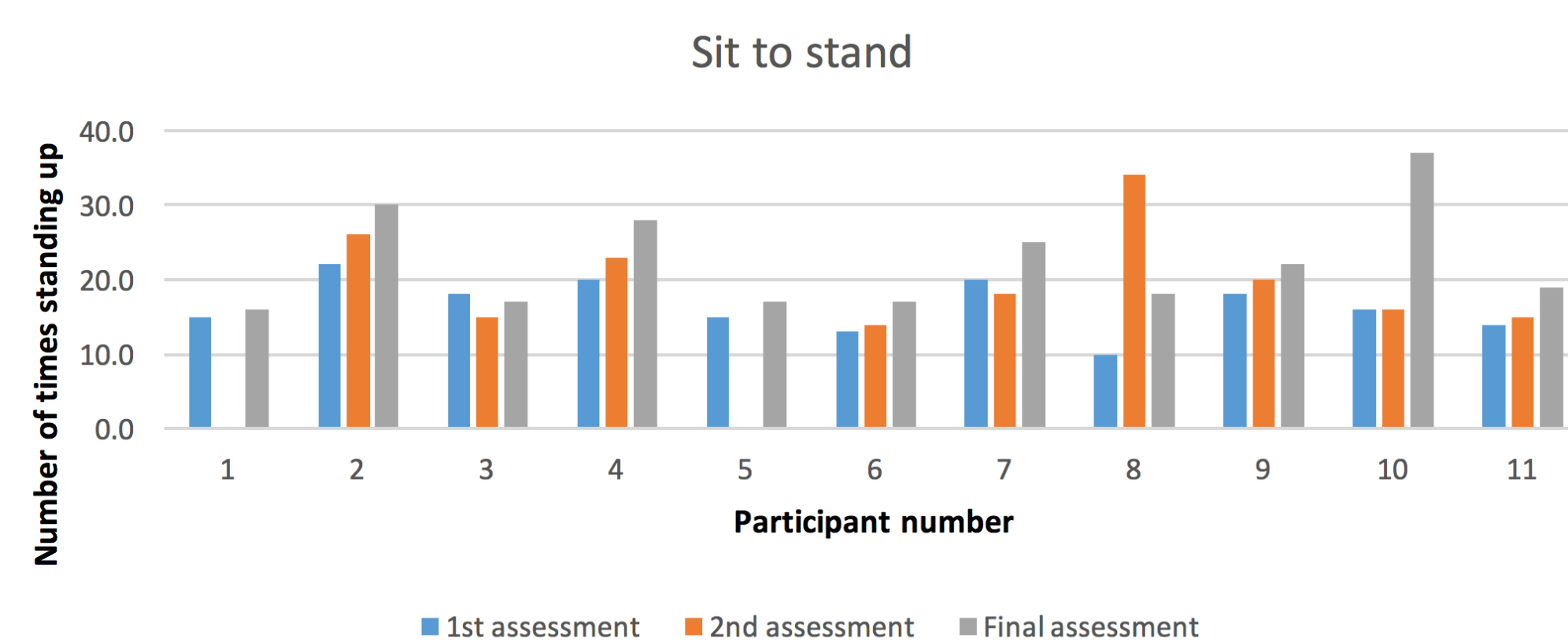


Chart 6



QUALITATIVE RESULTS FROM THE AT LESSONS

A qualitative assessment was done for the participants during the Alexander Technique lessons. Chart 7 & 8 describe how the alexander technique helped the participants during exercise. According to Chart 7, the amount of breaths per minute went down for all the participants.

Data in Chart 8 reveals how 100% of the participants, 7 out of 7, found the Alexander Technique very helpful with their breathing. 90% of the participants, 6 out of 7, found the alexander technique very helpful with their posture during Resistance exercises.. The data also shows that 80% of the participants, 5 out of 7, found the alexander technique very helpful while doing the flexibility exercises.

Chart 7

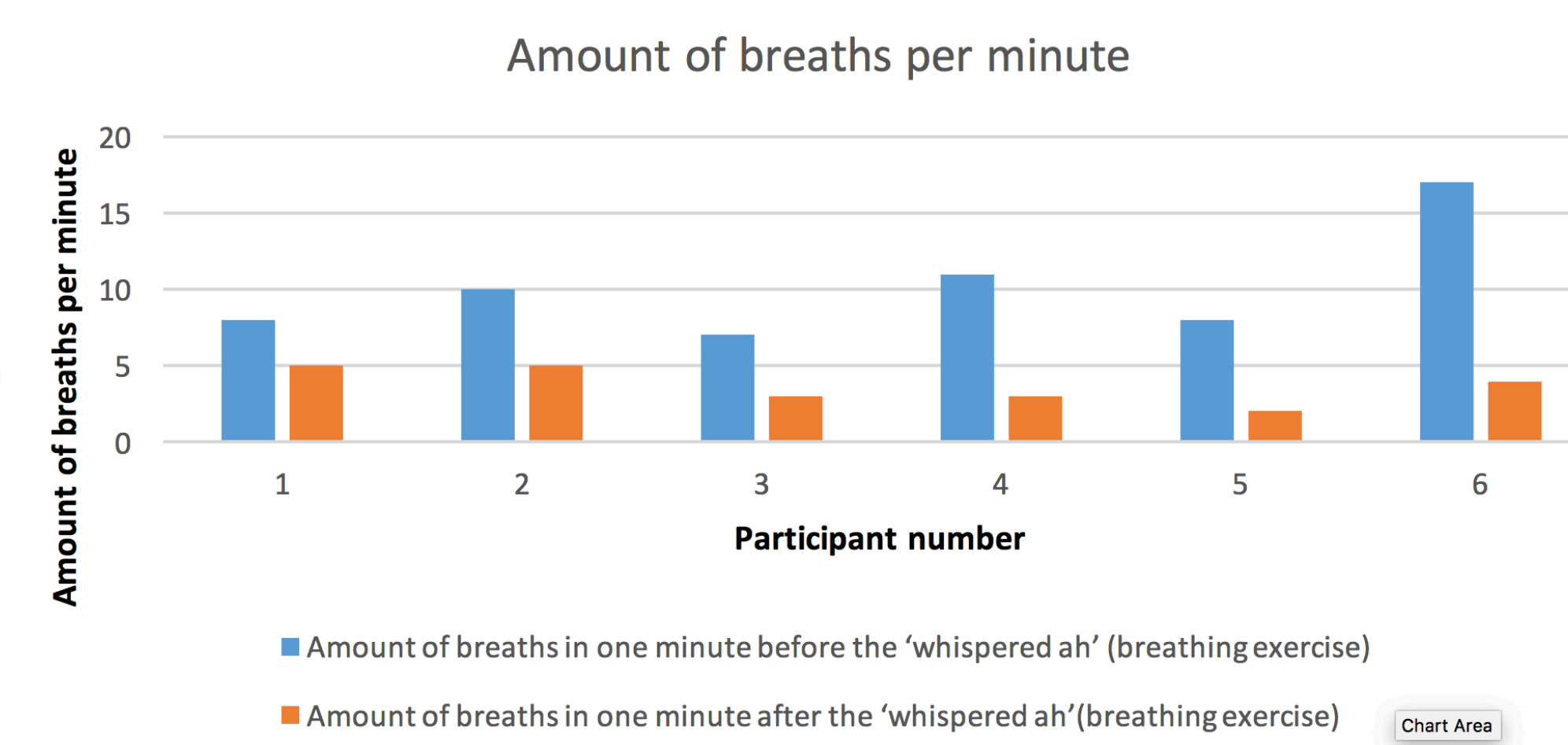
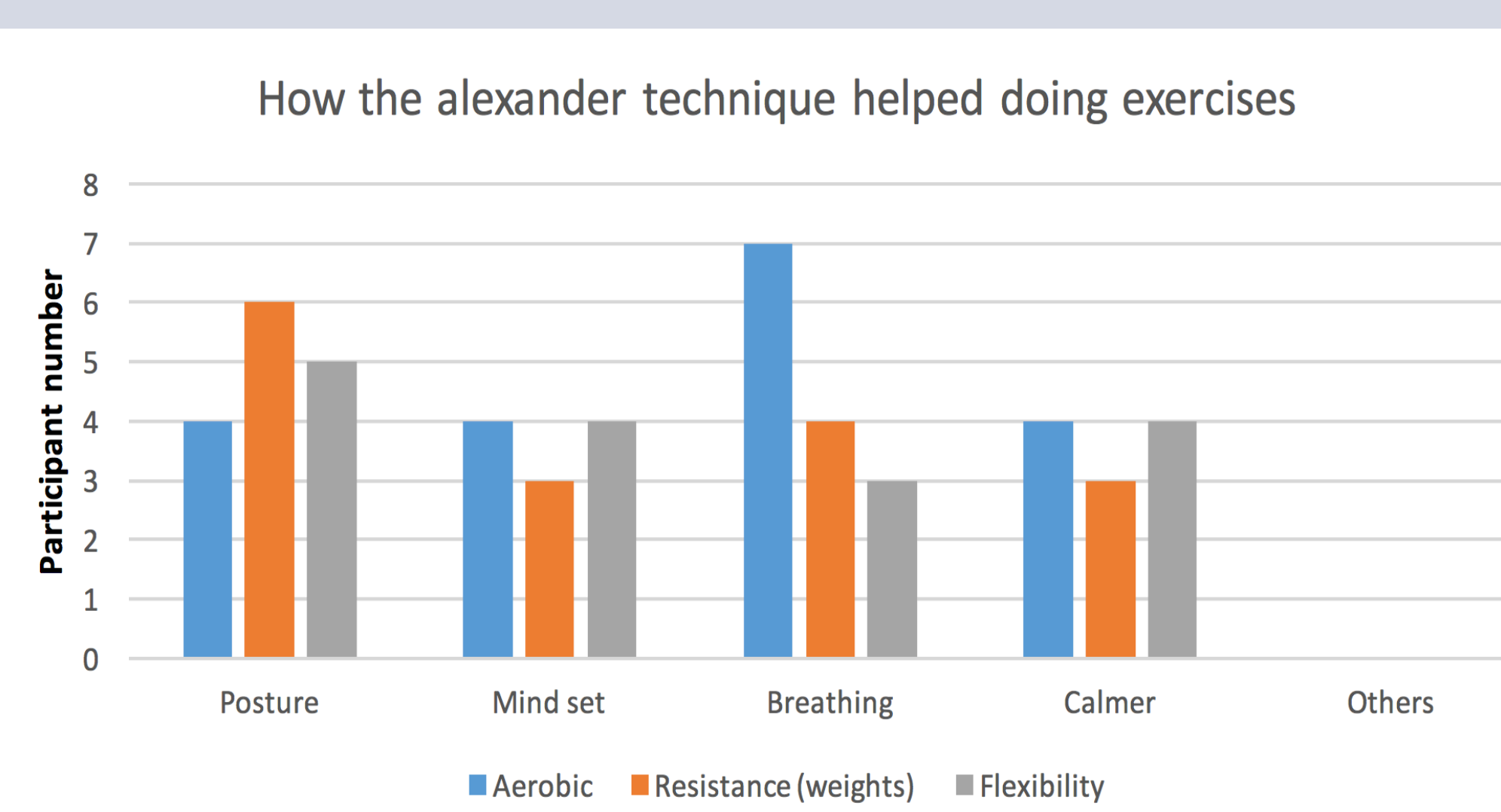


Chart 8



TESTIMONIALS

Figure 1

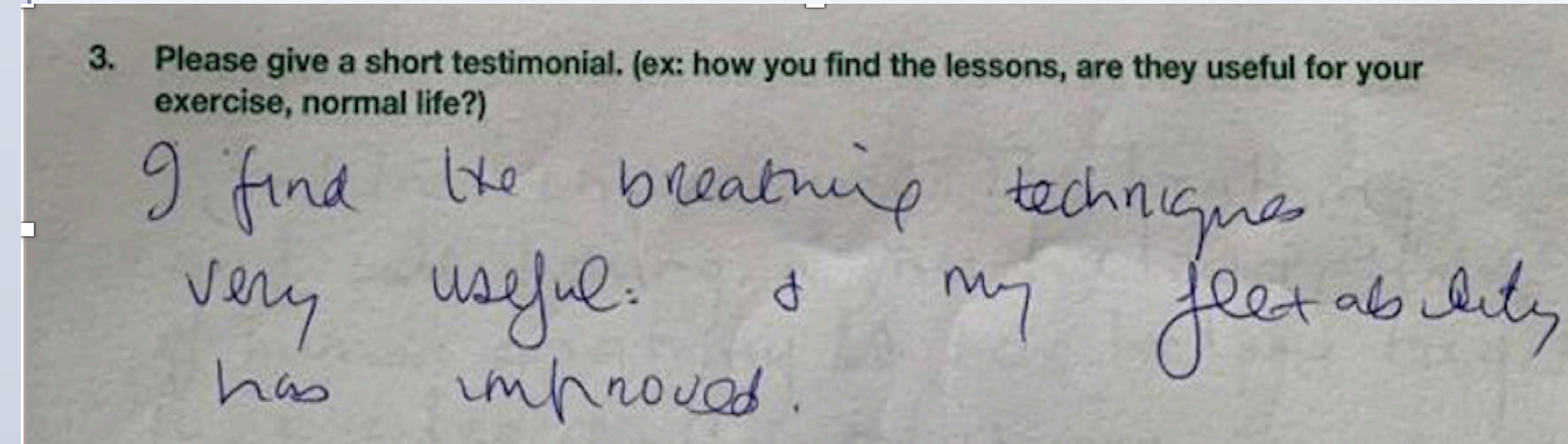


Figure 2

3. Please give a short testimonial. (ex: how you find the lessons, are they useful for your exercise, normal life?)

Unfortunately I was only able to attend 2 sessions, but found both if them very informative and useful. I practised the "lying down" several times and found I was calmer and more relaxed after it, I also feel it may have contributed to improved sleep. I am now more aware of how I sit and the correct way to do it. Yes I will continue to practice what I learned and feel it will be very valuable to me in daily life going forward.

CONCLUSIONS

The data suggests that the project helped cancer patients in their recovery by helping them to increase strength, mobility and balance with the exercise program.

The data gathered in this project seem to indicate that individuals that had Alexander Technique lessons with their exercise had a larger measurable increment in some tests. Unfortunately, the sample data gathered in this study is too small to be used statistically. While these findings may support that Alexander Technique lessons combined with exercise programs can be beneficial, further research data is needed. Future potential studies may require larger groups of participants, for a longer period of time, subject to more lessons in order to quantify potential measurable differences between control groups and study groups before and after Alexander Technique lessons. Furthermore, an appropriate methodology would need to be implemented with regards to the variable measured. This would mean a more rigorous approach in which both control and study groups are subject to the same exercise program, with the only variable being the Alexander Technique lessons.

The Mayo Clinic has recommended the Alexander Technique as a health-enhancing practice. (Mayo clinic and British journal: <https://www.witoldfitzsimon.com/benefits-of-the-alexander-technique/>). Among the many benefits of the Alexander Technique, the freer joints and ease of movement are listed which is connected to a greater flexibility. As the National Health Services, UK (NHS) believes **'The Alexander technique teaches improved posture and movement, which is believed to help reduce and prevent problems caused by unhelpful habits'**

ACKNOLEDGMENTS and contact

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