

Strength Training using Computerised Pneumatic Machines for patients in a Palliative Day Care Setting

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BACKGROUND

- Loss of strength and deterioration in physical function are common complaints reported by patients receiving palliative care².
- Physical function appears to play a role in influencing length of life and quality of life^{3, 4}.
- Exercise can improve symptoms, functional capabilities, and quality of life¹.
- Resistance training is a form of exercise with proven health benefits⁵ and can be conducted with computerised pneumatic machines.
- To our knowledge, no studies have explored the use of resistance training using computerised pneumatic machines in local palliative day care setting.

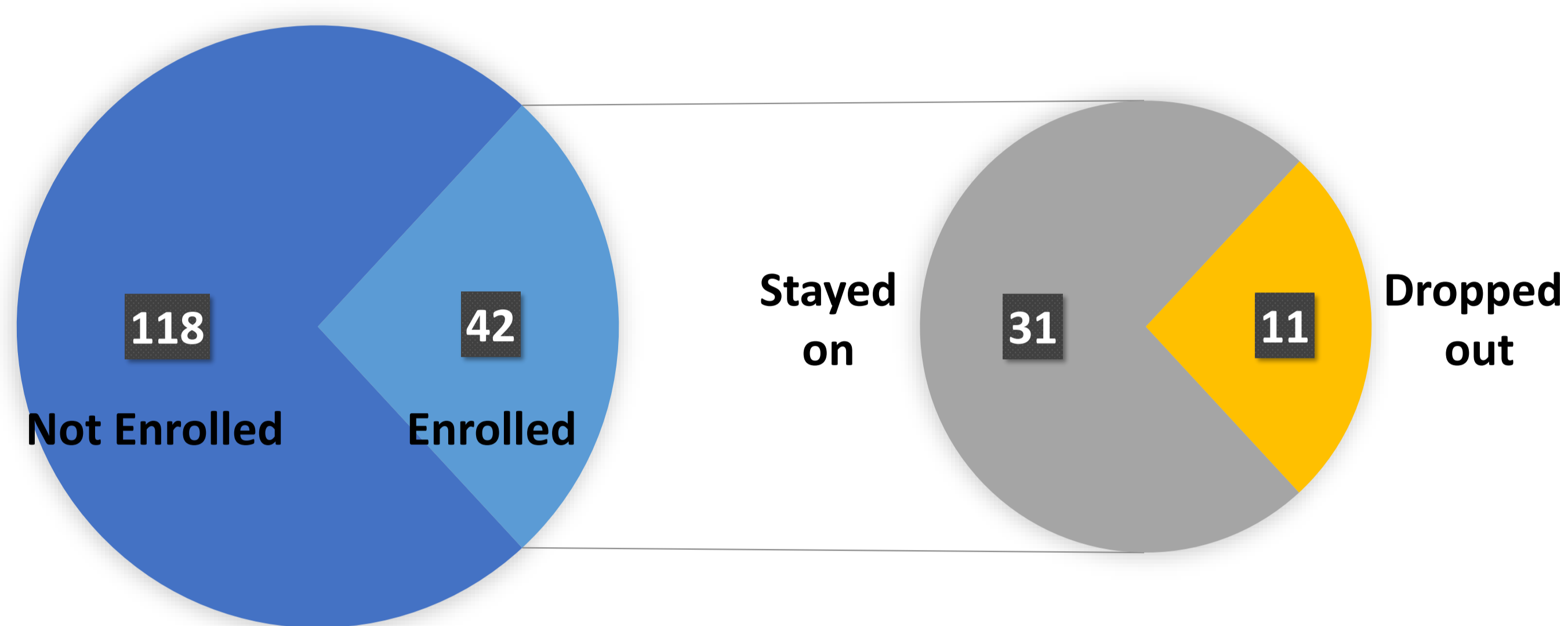
AIM

- To describe the use of computerised pneumatic machines for strength training in a palliative day care setting.

METHODS

- Resistance training was done using computerised pneumatic machines.
- New admissions to Assisi Day Care centre were assessed by a physiotherapist, who prescribed individualised exercise loads.
- Subsequent sessions were run by a trained therapy assistant.
- Patients were reviewed monthly by a physiotherapist for load titration.
- Data collected by the computerized pneumatic machines online platform was reviewed over the period of a year, 1 January 2022 – 31 December 2022.

RESULTS



Total unique patients attending day care: 160

Fig 1. Patient enrolment

Attrition

- 5 discharged from day care service due to disease progression, 5 deceased, 1 not keen to continue.



Pic 1 & 2. Patient on computerised pneumatic machines

Characteristics	n (%)
Total patients	42 (26.25)
Males	22 (52.38)
Females	20 (47.62)
Age (in years)	
Median	70.5
Range	42-99
Disease	
Cancer	16 (38.3)
Non-cancer	26 (61.7)
Function - AKPS	
90	13 (30.95)
80	17 (40.48)
70	6 (14.29)
60	6 (14.29)

Fig 2. Patient characteristics

Patient Outcomes	n%
Load change	
Mean load change	+9.19%
Range	-1.2% to +28.8%

Fig 3. Patient outcomes

DISCUSSION

- Patients who engaged in strength training generally had better AKPS scores.
- Overall load increment suggests exercises were well tolerated and that patients were either maintaining their strength or getting stronger.
- Load titration is done based on patient's Borg Rating of Perceived Exertion (RPE).
- Patients were advised to aim for RPE of 4-6 (moderate activity) during strength training.
- Titration of load was not based on 1 Repetition Maximum as patients tend to be put off if load was too challenging.
- There was only one attrition by choice, which suggests that strength training was an activity that patients were willing to engage in.

CONCLUSION

- Patients with advanced diseases can and are willing to engage in strength training using computerised pneumatic machines.
- Patients were observed to be motivated by others who were doing similar exercises.
- Management of exercise load can contribute to patients' motivation towards exercises.
- Future studies can look at the functional and qualitative impact of strength training on different sub-groups of palliative patients, such as cancer and non-cancer groups.

References

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