

Appraisal

Critically appraised paper: A 6-month experiential training program with coaching is effective in reducing fatigue and promoting physical activity among children with cancer

Synopsis

Summary of: Lam KK, Li WH, Chung OK, Ho KY, Chiu SY, Lam HS, Chan GC. An integrated experiential training programme with coaching to promote physical activity and reduce fatigue among children with cancer: a randomised controlled trial. *Patient Ed Couns* 2018;101:1947–1956.

Question: Does a 6-month program that combines experiential learning with coaching to improve physical activity reduce fatigue in children with cancer? **Design:** Randomised controlled trial with concealed allocation. **Setting:** A public acute-care hospital in Hong Kong. **Participants:** Children aged 9 to 18 years, who spoke Cantonese and read Chinese, were diagnosed with cancer in the previous month, and were receiving active treatment. Exclusion criteria were: cancer recurrence, secondary malignancies, physical impairment, and cognitive problems. Randomisation of 70 participants allocated 37 to the experimental group and 33 to the control group. **Interventions:** During hospitalisation, both groups received usual medical treatment and a 15-minute education talk on the importance of regular exercise for cancer recovery and health. Following discharge, the experimental group received an experiential training program with coaching provided by nursing students. Each participant was allocated a nursing student coach and received 28 1-hour home visits over 6 months. Each session comprised concrete experience (performing physical activity), reflection observation (reflecting on physical activities performed), abstract conceptualisation (thinking about experiences and exploring alternative solutions to challenges encountered), and active experimentation (applying new knowledge and new approaches in

future tasks). Physical activity plans were approved by a committee experienced in psychosocial interventions and paediatric oncology. The control group received 28 1-hour home visits, during which they played card or board games and received health advice on diet and preventing influenza. **Outcome measures:** The primary outcome was fatigue at 9 months measured using the Chinese version of the 13-item Fatigue Scale. Scores ranged from 13 to 62 units, with higher scores representing higher levels of fatigue. Secondary outcome measures were physical activity levels (score range, 0 to 10 units), physical activity self-efficacy (score range, 5 to 15 units), grip strength and quality of life (score range, 0 to 100 units). **Results:** Sixty-three participants completed the study. At 9 months, the experimental group reported lower levels of fatigue (MD 7 units, 95% CI 4 to 11), higher levels of physical activity (2 units, 95% CI 1 to 3), higher levels of physical activity self-efficacy (2 units 95% CI 1 to 3), greater grip strength (right hand 5 units, 95% CI 3 to 6) and higher quality of life (7 units, 95% CI 3 to 10). **Conclusion:** An experiential training program with coaching by nursing students was effective in reducing fatigue and increasing physical activity among children with cancer.

Provenance: Invited. Not peer reviewed.

Nora Shields

*Department of Physiotherapy, Podiatry and Prosthetics and Orthotics,
La Trobe University, Australia*

Commentary

Children undergoing treatment for cancer are less physically active than their age-matched peers.¹ Reduced participation in physical activity has potential implications for their physical development, and may impact their future engagement in an active healthy lifestyle after treatment.² In a complex setting such as acute cancer treatment, it is challenging to overcome the barriers to physical activity.³ The study by Lam et al assessed a novel intervention that addresses many of these barriers.

Showing improvements in fatigue, muscle strength, physical activity levels, and quality of life, and high rates of attendance and retention (80% and 85%, respectively), this study is in contrast to others that implemented physical activity interventions during acute cancer treatment.^{4,5} The success of this intervention may be due to it being individualised, supervised and long-term; and barriers such as low confidence and motivation are addressed. Collaborative problem-solving to overcome the personal barriers to physical activity, and using the home environment are other important features. Appointing student nurses as coaches overcomes the financial burden associated with individualised and long-term interventions.

There may be limitations to the effectiveness of this type of intervention in the clinical setting. It is common for children with cancer to experience physical impairments;⁶ however, this cohort of children were

excluded from this study. This exclusion narrowed the intervention's therapeutic potential and precluded participation by those likely to benefit most. Applying this intervention without adaptation to children with physical impairments is a potential safety concern, given that they often require more expert advice. The inclusion of rehabilitation professionals, such as physiotherapists, for children with more complex needs is one possible solution that could enable more children with cancer to benefit from such a program.

Provenance: Invited. Not peer reviewed.

Sarah L Grimshaw

*Department of Physiotherapy and Children's Cancer Centre,
Royal Children's Hospital, Murdoch Children's Research Institute,
La Trobe University, Melbourne, Australia*

References

1. Winter C, et al. *Pediatr Blood Cancer*. 2009;53:438–443.
2. Ness KK, et al. *Arch Phys Med Rehabil*. 2009;89:128–136.
3. Gotte M, et al. *Pediatr Blood Cancer*. 2014;61:1632–1637.
4. Fiuza-Luces C, et al. *Med Sci Sport Exerc*. 2017;49:223–230.
5. Hartman A, et al. *Pediatr Blood Cancer*. 2009;53:64–71.
6. Braam KI, et al. *Support Care Cancer*. 2016;24:2259–2268.