The Effectiveness of an Adventure-Based Training in Reducing Fatigue and Enhancing Quality of Life among Childhood Cancer Survivors

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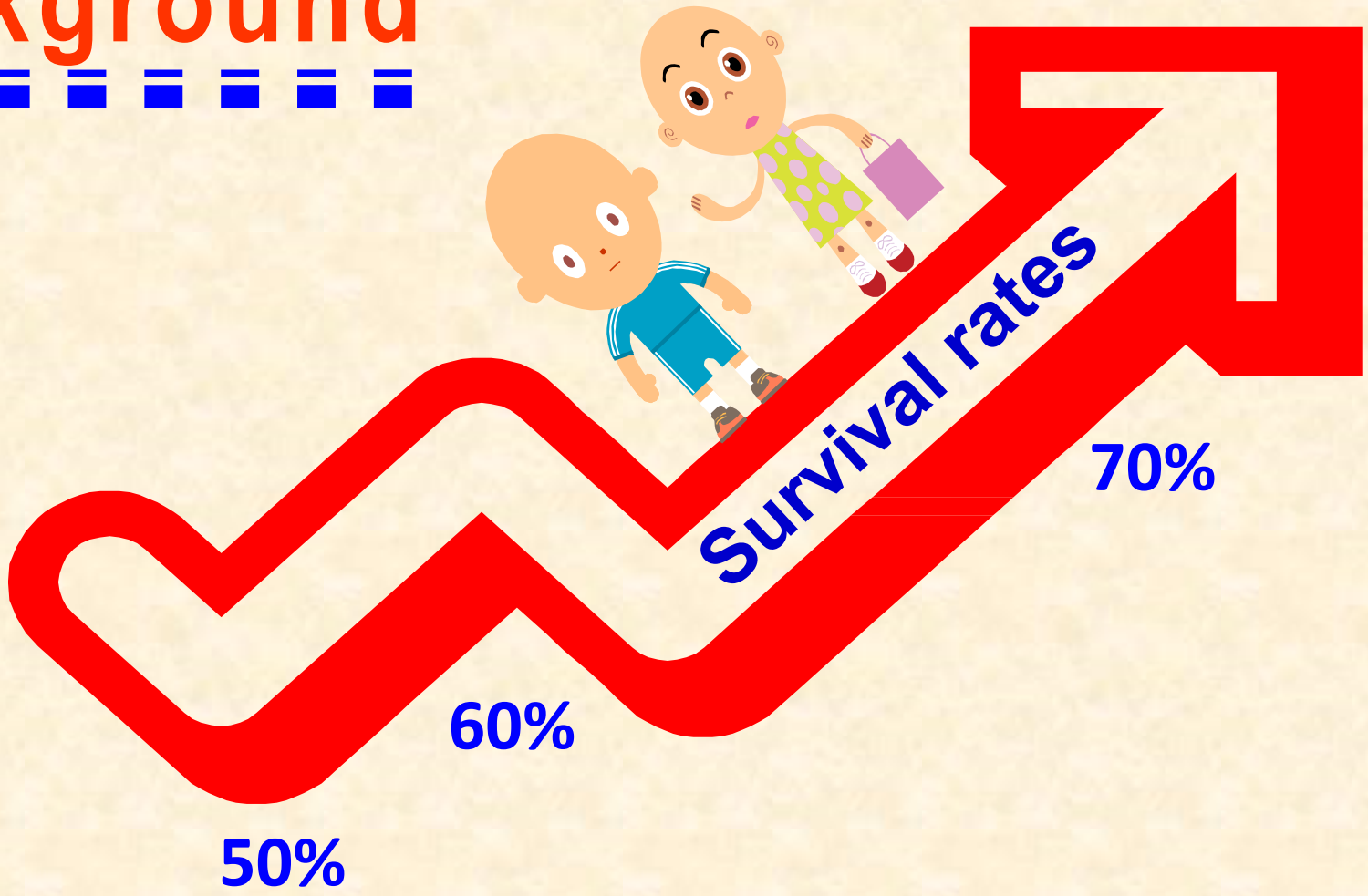
Outlines of Presentation

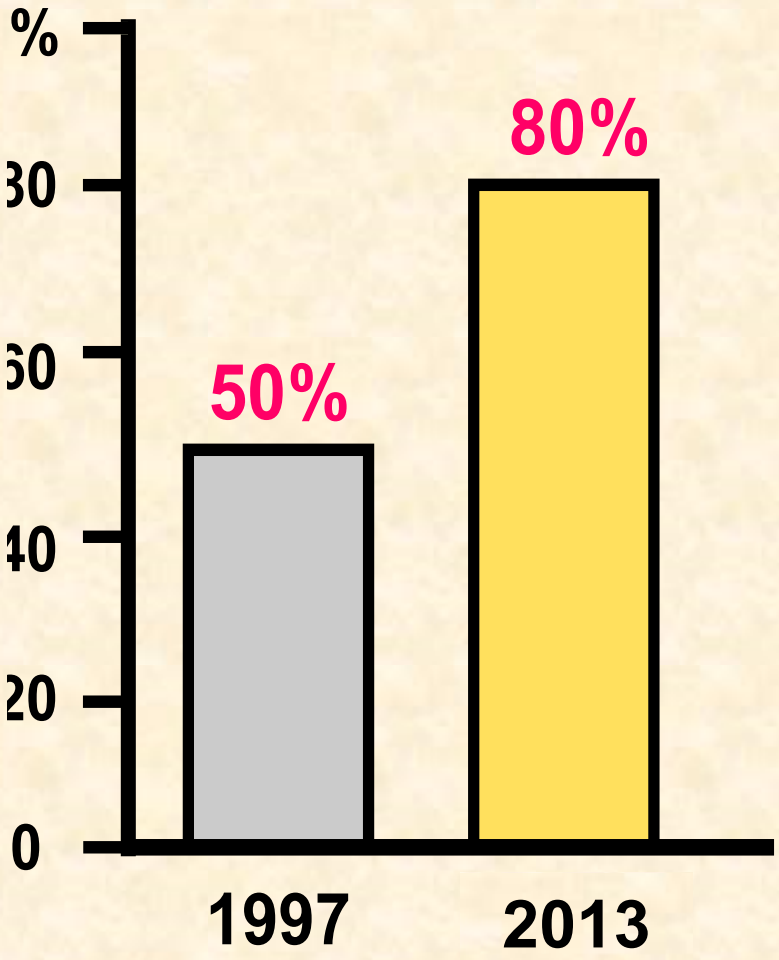
- The background of childhood cancer and survivors in Hong Kong
- The impacts of cancer and its treatment on the physical and psychological well-being of childhood cancer survivors
- Present a Phase III RCT on the effectiveness of adventure-based training

Background



New technological & breakthroughs in cancer treatment

Treatment efficacy has improved…



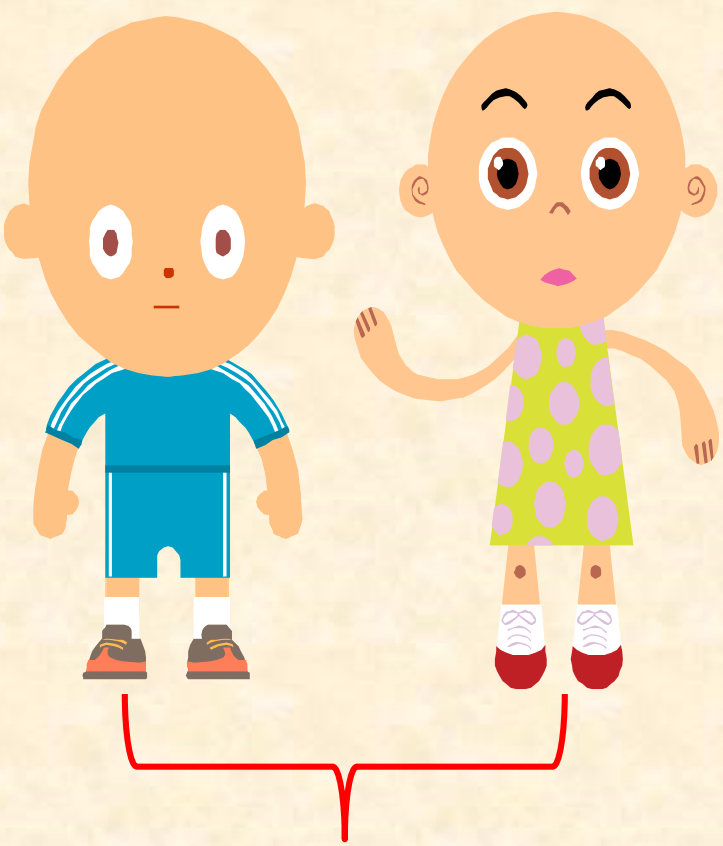
5-Year Survival Rates in 1997 & 2007

…but survivors pay a high price in side effects

- Persistent fatigue
- reduced muscle strength and endurance
- decreases in functional mobility and physical fitness
- poor concentration and decreased attention
- memory loss
- activity intolerance and
- depression, and lower self-esteem

Severely affect the physical & psychological well-being

Amongst all,
Cancer-related fatigue is the most common….



Cancer patients
70%

Cancer survivors
30%

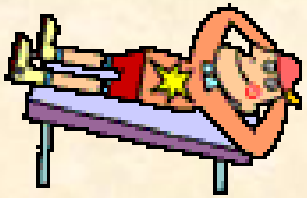
Impact of Cancer-related Fatigue

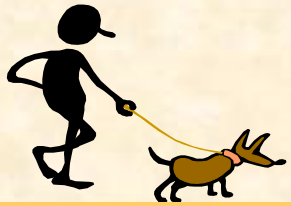
Fatigue ...

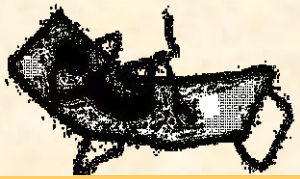
a debilitating adverse effects...

World Health Organization

Physical & Psychological Well-being



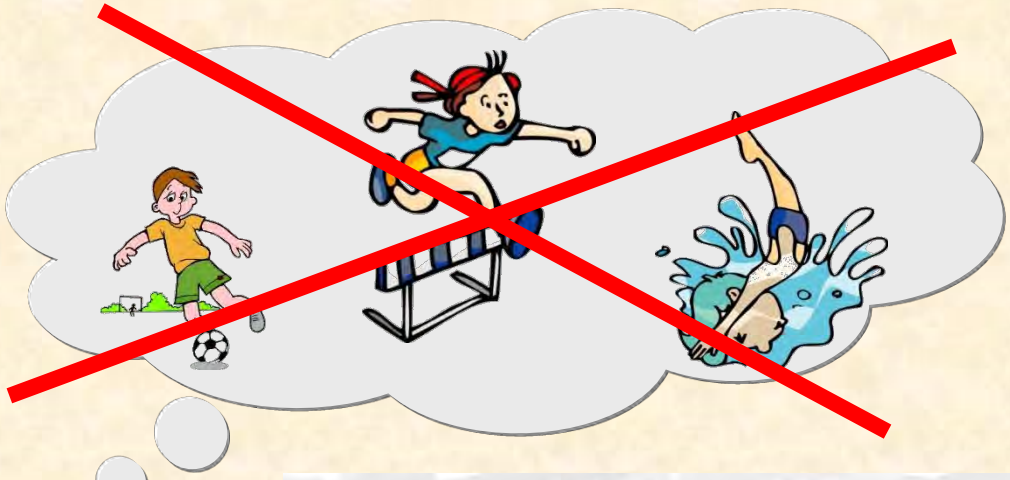




Childhood Cancer

Physical Activity Level

Treatment



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Induces muscle catabolism and causes muscle atrophy

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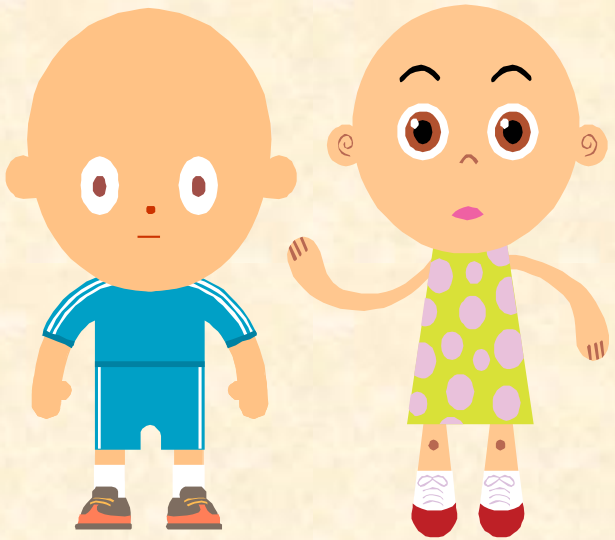
Violeta Lopez, PhD, RN

The Impact of Cancer and Its Treatment on Physical Activity Levels and Behavior in Hong Kong Chinese Childhood Cancer Survivors



Cancer survivors

Physical Activity
Self-Efficacy

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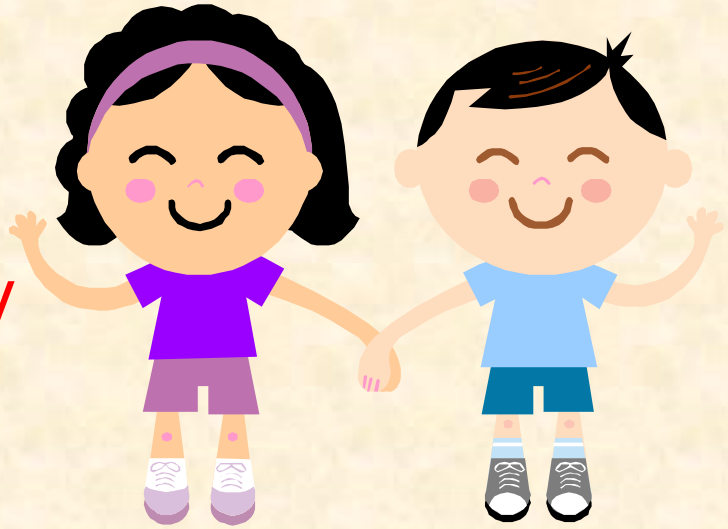

Healthy children

Implications for Nursing Practice

~~Misconceptions~~

↑ Awareness

Education

Physical Activity

The importance of having regular physical activity

The pros and cons of physical activity

Types of light, moderate and vigorous activities

What is the recommended levels of physical activity

Introduce various types of indoor and outdoor physical activities

Strategies to sustain regular physical activity

Adventure-based training

Adventure-Based Training

Aims: Changing cognitive thinking & behaviour through *Experience* and *Practice* in an outdoor environment

Use of games, problem solving exercises, & trust activities as part of an intentional change process

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Effectiveness of an integrated adventure-based training and health education program in promoting regular physical activity among childhood cancer survivors

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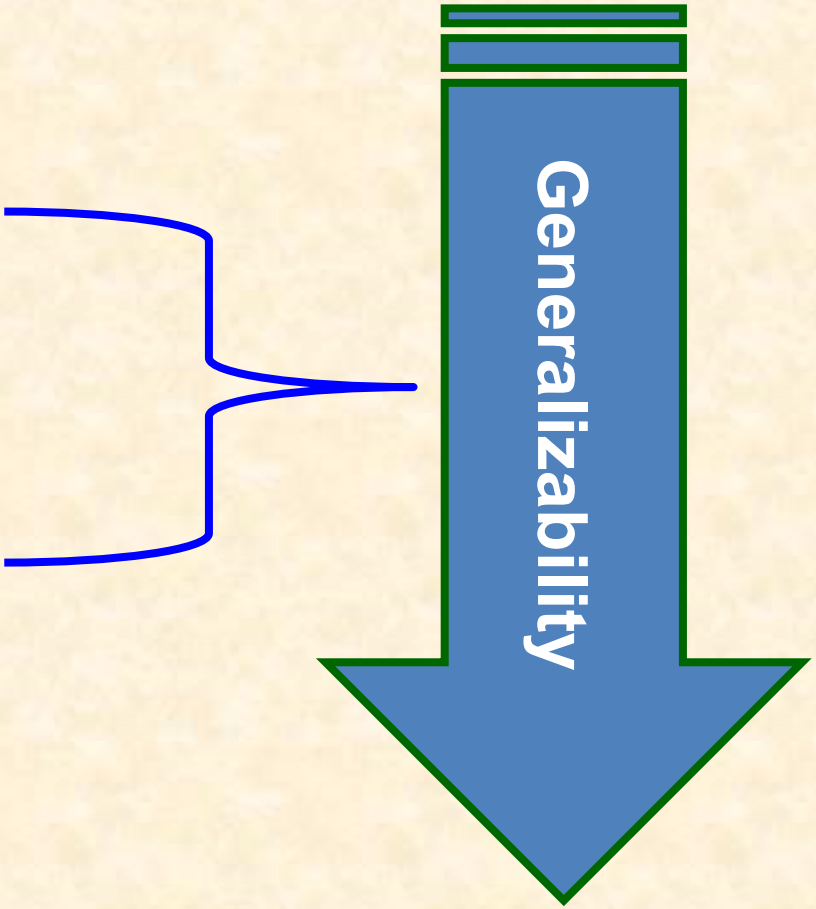
Results

Physical activity self-efficacy

Physical activity level

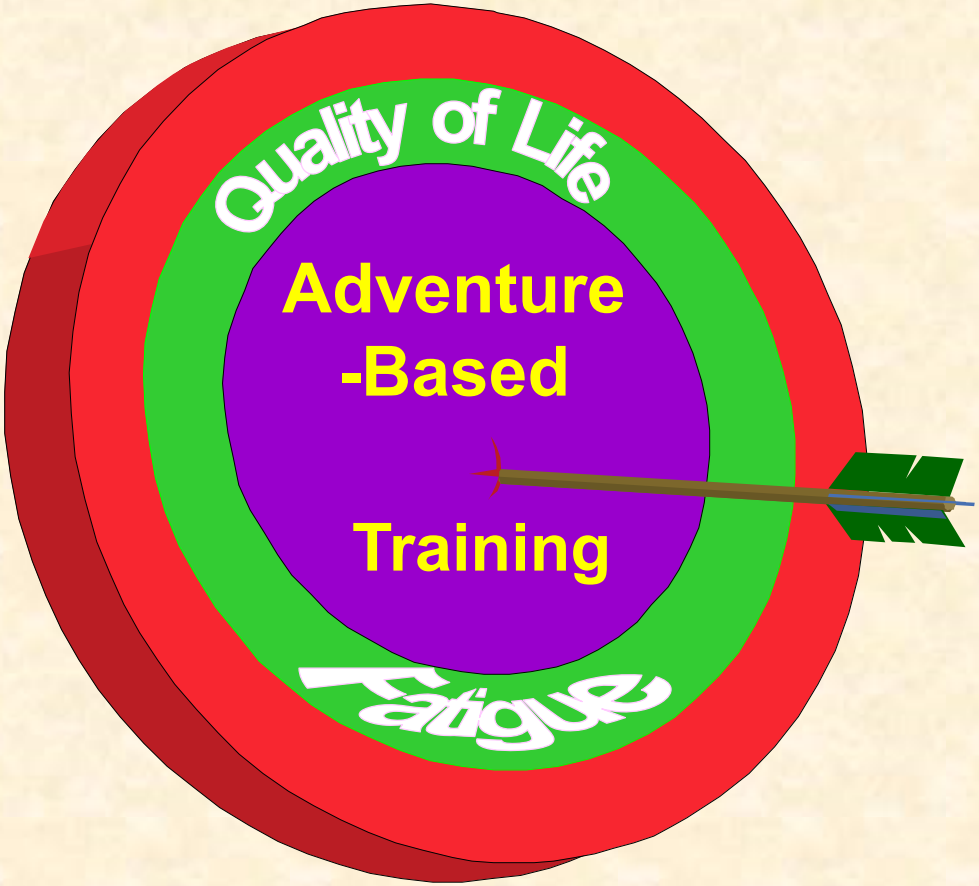
Limitations of the Phase II RCT

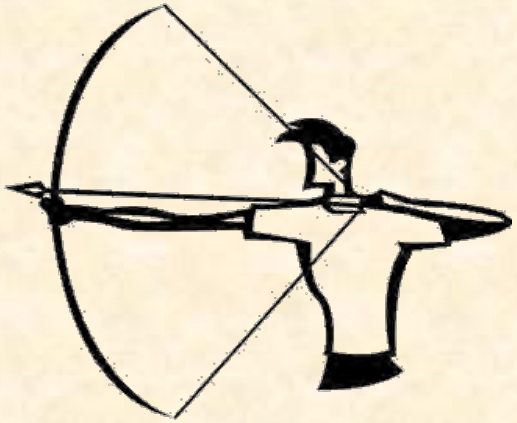
- Small sample size (N =71)
- Data collection conducted mainly in one setting
- Did not measure physiological changes



Aim

To examine the effectiveness of an adventure-based training in reducing fatigue and quality of life among Hong Kong Chinese childhood cancer survivors





Research design

A Phase III RCT, two-group pre-test and repeated post-test between-subject design was used

- Randomization
- Statistical Power
- Outcome Measures

Sample

Inclusion criteria

- Aged 9 to 16
- Able to speak Cantonese and read Chinese
- Completed cancer treatment for at least six month
- Did not engaged in regular physical exercise in the previous six months

Exclusion criteria

- Physical disabilities, impaired mental status, cognitive impairment, communication barriers or had evidence of recurrence or second malignancy

Types of Intervention

Experimental Group

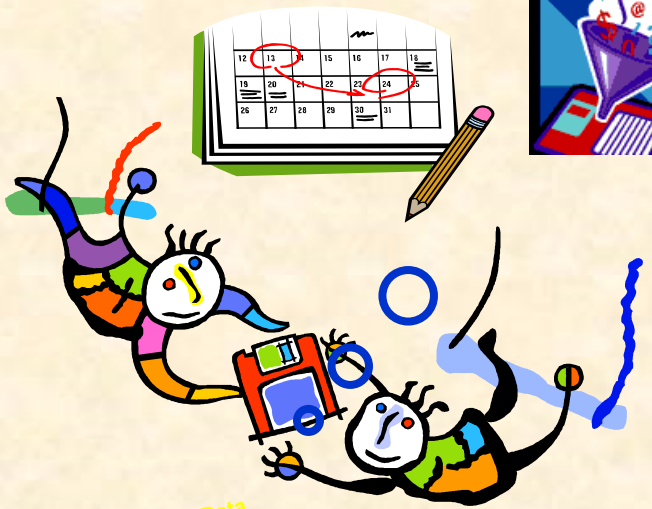
Education Sessions + Adventure-Based Training

Placebo Control Group

Leisure activity sessions + Visit the theme park

Measures

- The Chinese version of the Fatigue Scale (FS-C)
- The Chinese University of Hong Kong: Physical Activity Rating for Children and Youth (CUHK-PARCY)
- The Physical Activity Self-Efficacy (PA-SE)
- The Physical Activity Stages of Change Questionnaire (PASCQ)
- A hand-held dynamometer (HHD) to assess the hand-grip strength
- The Chinese version of the Pediatric Quality of Life Inventory 4.0 Generic Core Scale



Intervention

6 months

4 months

2 months

2 weeks

3 months

6 months

9 months

12 months

Baseline measure: before the intervention

Data Collection

RESULTS

Approached (n = 638)
: Outpatient clinic (n = 108)
: Children's Cancer Foundation (n = 320)
: Sunshine group (n = 210)

Did not turn up (n = 377)
: Children's Cancer Foundation (n = 229)
: Sunshine group (n = 148)

Assessed for eligibility (n = 261)

- Did not meet inclusion criteria (n = 24)
- Refused to participate (n = 15)
- Response rate: 93.7%

Reasons

- children unavailable for interventions
- showed no interest to participate

Randomized (n = 222)
: from Outpatient clinic (n = 103)
: from Children's Cancer foundation (n = 62)
: from Sunshine Group (n = 57)

Experimental Group

- T1 (n = 117)
- T2 (n = 114)
  Retention = 97.4%
- T3 (n = 109)
  Retention = 93.2%
- T4 (n = 105)
  Retention = 89.7%
- T5 (n = 103)
  Retention = 88.0%

Reason for not turning up

No longer interested to participate (n = 14)

Control Group

- T1 (n = 105)
- T2 (n = 100)
  Retention = 95.2%
- T3 (n = 96)
  Retention = 91.4%
- T4 (n = 92)
  Retention = 87.6%
- T5 (n = 89)
  Retention = 84.8%

Reasons for not turning up

- Unsatisfied with the grouping (n = 7)
- No longer interested to participate (n = 9)

Analysed (n = 117)

Analysed (n = 105)

RESULTS

The experimental group reported :

- lower levels of cancer-related fatigue,
- higher levels of self-efficacy and physical activity,
- greater right- and left-hand grip strength, and
- better QoL than the control group.

Effect Size: Low to moderate

Discussion

Importance

- Determines the effectiveness of adventure-based training in promoting physical activity, reducing fatigue, and enhancing self-efficacy and QoL
- The largest RCT examining the effectiveness of adventure-based training. The scientific rigor of the study was strengthened by addressing the limitations of previous studies.

Discussion

Specifically,

This study adds further **Evidence** that…

- Adventure-based training is effective in promoting the adoption and maintenance of regular physical activity among childhood cancer survivors through enhancing their self-efficacy
- Regular physical activity can help alleviate cancer-related fatigue, increase muscle strength and endurance, and enhance QoL

Discussion

Specifically,

This study adds further Evidence that…

- Adventure-based training can significantly change childhood cancer survivors' physical activity behaviour
- Adventure-based training is feasible to implement and acceptable to childhood cancer survivors

Implications for future practice

- Inform future policy making on promoting physical and psychological well-being for childhood cancer survivors
- Adventure-based training can be used to promote the adoption and maintenance of regular physical activity
- Adopt a multi-disciplinary approach to sustain the adventure-based training

Thank you & Bye-bye !

Are you ready？

Lift me up, 1.. 2.. 3... !

Hold me up, hold me tight !

Never give up !

Yes, I can!

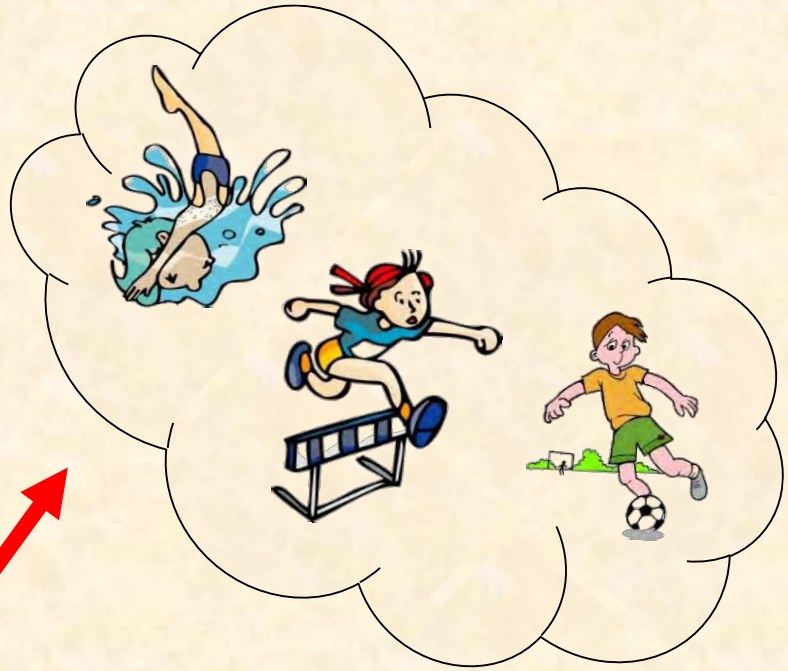
We are happy!

Theoretical Framework

- Experiential Learning Theory
- Social Cognitive Theory
- Transtheoretical Model of Behavior Change


Concrete Experience
Participants: having some physical activities
Trainer: observe and note down the important moments
Reflective Observation
Participants: after activities
Trainer: could recap the experiences that participants had had in the activity
Abstract Conceptualization
Participants: recapping the experience
Trainer: assist them to sum up their experience and help them to discuss
Active Experimentation
Consolidation
Trainer will encourage participants to think of similar situations that they might face in their daily lives
Adventure-Based Training

Social Cognitive Theory



Theoretical Framework