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Efficacy of mountain craft training at enhancing the resilience and physical and psychological well-being of children from low-income families: A pilot randomised controlled trial

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INTRODUCTION

BACKGROUND

- Evidence shows that children from low-income families may have lower self-esteem and quality of life and exhibited more depressive symptoms than children from more affluent families.[1, 2]
- Previous studies showed that by increasing children's resilience in the face of adversity, their psychological well-being and quality of life can be. [3-5]
- Mountain craft training may be a strategy to achieve this, but its efficacy requires rigorous empirical scrutiny.

AIMS

To determine the feasibility, acceptability and preliminary efficacy of mountain craft training at enhancing resilience and self-esteem, reducing depressive symptoms and improving physical health of children from low-income families.

METHODOLOGY

STUDY DESIGN

- A pilot randomized controlled trial, two-group pre- and post-test within-subject design, was conducted.

PARTICIPANTS

- 40 children in the Kwai Tsing District were recruited.
- Inclusion criteria: (i) Form 1 students, (ii) able to speak Cantonese and read Chinese and (iii) from low-income families.
- Children with identified cognitive or learning problems, chronic illness or physical disabilities were excluded.

INTERVENTION GROUP

✓ Participants were invited to join the mountain craft training programme consisted of a 3-hour lecture.
✓ 6-day hiking training programme on weekends (at least 5 km and 4 hr each time).

PLACEBO CONTROL GROUP

➢ The control group mimics the time and attention received by participants in the intervention group.
➢ Participants were asked to join six day-time leisure activities on weekends within a 3-month period organized by the Asbury Methodist Social Service, etc.).
➢ Free access to leisure activities (e.g. cartoon film shows, handicraft workshops, including visits to museum or theme park.

MEASURES

- Resilience Scale-14 (RS-14) [6]
- Chinese version of the Center for Epidemiologic Studies Depression Scale for Children (CES-DC) [7]
- Chinese version of the Rosenberg's Self-Esteem Scale (RSES) [8]
- A miniWright Standard Handheld peak flow meter [9-10]

DATA ANALYSIS

- Resilience, self-esteem, depressive symptoms and were assessed at baseline, 3 months and 6 months after starting the intervention
- Peak expiratory flow rates were assessed at baseline and 6 months after starting the intervention
- The demographic and baseline characteristics of the participants between two groups were evaluated with chi-squared tests for categorical variables and independent sample t-tests for continuous variables.
- A mixed between-within-subject analysis of variance (ANOVA) was performed to determine whether the mountain craft training was effective in outcome variables.
- Post hoc comparisons using independent sample t-tests were conducted to assess the effect of the mountain craft training program on the outcomes at 3 and 6 months.
- A process evaluation was conducted to 10 children and parents randomly selected from the intervention group.

RESULTS

- 17 boys and 22 girls were included in the study. The mean age was 12.23 ± 0.77 years.
- The recruitment rate, response rate and retention rate were 91.49%, 93.02% and 94.74%, respectively, demonstrating the feasibility of implementing mountain craft training for children from low-income families.
- Process evaluation further supported the feasibility, acceptability, and appropriateness of the intervention.
- At 3- and 6-month follow-up, the intervention group had higher levels of resilience, self-esteem, and peak expiratory flow rate than the control group, and had fewer depressive symptoms, although the differences were not statistically significant.
- The study found small to moderate effects on participants' outcomes, and these effects sustained at least six months after starting the intervention.

	Baseline, M (SD)			At 3-month, M (SD)			At 6-month, M (SD)		
	Intervention (n = 19)	Control (n = 20)	*P*	Intervention (n = 19)	Control (n = 20)	*P*	Intervention (n = 19)	Control (n = 20)	*P*
Resilience	**59.63 (6.67)**	**58.55 (2.85)**	**0.15**	**63.21 (8.88)**	**57.40 (9.9)**	**0.15**	**63.53 (7.31)**	**58.80 (9.17)**	**0.08**
Self-esteem	**16.95 (4.31)**	**16.35 (2.6)**	**0.14**	**17.84 (2.97)**	**16.45 (2.82)**	**0.14**	**19.05 (3.61)**	**27.80 (2.2)**	**0.11**
Depressive symptoms	**26.26 (10.36)**	**26.25 (9.45)**	**0.27**	**23.21 (5.46)**	**25.75 (8.37)**	**0.27**	**21.63 (5.11)**	**25.45 (11.03)**	**0.18**
Peak expiratory flow rate	294.74 (56.60)	296.50 (49.45)	0.92	---	----	---	392.47 (48.81)	298.50 (39.24)	0.33

CONCLUSION

This study demonstrated the feasibility, acceptability, appropriateness, and potential efficacy of implementing mountain craft training to enhance resilience and self-esteem, reduce depressive symptoms and improve physical health in children from low-income families.

IMPLICATION

The study findings support the need for a fully powered randomized controlled trial of mountain craft training to provide a rigorous empirical evaluation of its efficacy in this population.

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