

A BETTER
START

E Tīpue Rea

High intensity interval training and mental health in adolescents

Nigel Harris

AUT - Auckland University of Technology

Isaac Warbrick

AUT

Scott Duncan

AUT

Denise Atkins

AUT

Robert Borotkanics

AUT

Terry Fleming

Victoria University of Wellington

David Lubans

Newcastle University, Australia

A Better Start is funded by the Ministry
of Business, Innovation and Employment

Host Institution



LIGGINS
INSTITUTE



8 intermediate schools across Auckland (decile 1-5)
2 school terms (16 weeks)

12±0.5 years, M=184, F=171 (recruitment rate 86%)*

2 classes per school:



1 HIIT (*intervention*) 'Pau te Hau'. 2 x week in-class delivered by teachers

Teachers participated in a 1-day workshop, provided with instructional resources, and heart rate monitors for monitoring of target intensity (90% max)

Included traditional Māori narratives as framework for HIIT sessions

1 'normal PE' (*control*)

*recruitment at 1 school was 54%

Outcome measurements

Mental wellbeing and illbeing (questionnaire scales):

- Strengths and Difficulties score
- 'Warwick Wellbeing Scale'

- Physical fitness
- Exercise enjoyment / self-perceived fitness efficacy
- Executive function
- Small group interviews

- Intervention fidelity and feasibility components

Results

20±7.6 sessions were delivered by teachers, of *'target'* 28

Sessions completed per school (N=8), ordered by total #							
9	14	15	15	22	27	28	29

Heart rate peaks on average over all sessions were 90±3.2%, of *'target'* 90%

Session observations indicated good fidelity, but incorporation of the Māori narrative components not consistently utilised by most teachers.

The **intervention teachers** reported high levels of satisfaction with Pau te Hau, despite some reservations prior to commencement.

Positive aspects included:

- ✓ Engagement of most students in sessions
- ✓ Simplicity and variety
- ✓ Perception of students' achievements with improved fitness, health awareness
- ✓ Class cohesion and behaviour improvement
- ✓ Some outstanding 'success stories'

Almost all **student participants** were positive about participating in Pau te Hau, identifying feelings of confidence and attainment as the term progressed despite some initial familiarisation with intensity.

No adverse events occurred.

Significant intervention effects observed for:

- ✓ Some fitness parameters
- ✓ Exercise self-efficacy
- ✓ Self-perceived fitness

No significant intervention effect on:

- X SDQ score
- X Warwick score

5 of the schools have chosen to continue Pau te Hau as part of PE