2010

Preventing obesity among adolescent boys: the Fitness Improvement Lifestyle Awareness (the FILA program) randomised controlled trial

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Recommended Citation

Peralta, Louisa Rosemary, Preventing obesity among adolescent boys: the Fitness Improvement Lifestyle Awareness (the FILA program) randomised controlled trial, Doctor of Philosophy thesis, Faculty of Education, University of Wollongong, 2010.
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Preventing obesity among adolescent boys: The Fitness Improvement Lifestyle Awareness (The FILA Program) Randomised Controlled Trial

A thesis submitted in fulfilment of the requirements for the award of the degree

Doctor of Philosophy

from

The University of Wollongong

by

Louisa Rosemary Peralta
BEd(Hons), MEdL

Faculty of Education
2009
DECLARATION

I, Louisa Peralta, declare that this thesis is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Signed:

Date:

20th April, 2010.
ACKNOWLEDGMENTS

Many people have been involved in the completion of this thesis and to them I am eternally grateful.

To the participating school, teachers, students and parents, I send my thanks for the making the research possible and personally rewarding. In particular, I would like to thank Mr Damien White. Without your tolerance, understanding and support, the research study would not have been possible. Additionally, I would like to thank The FILA Program boys (2006 and 2007) for their participation, enthusiasm (most of the time!) and honesty. I was aware that your participation in the research study took precious time, effort and commitment and to this end I hope that your involvement has been rewarded, and that you will use your learning to promote your own development, as well as assist and support others throughout their lives.

I am especially indebted to my two supervisors, Associate Professor Anthony Okely and Dr Rachel Jones. Words can’t explain how much I have valued your efforts, dedication, and thoroughness, as well as your commitment to the research process and to developing my research knowledge and skills. To my primary supervisor, Associate Professor Anthony Okely, thank you for your leadership, for imparting your expertise, being patient and understanding, and providing continuous guidance, assistance and support. You have been an encouraging mentor. To my secondary supervisor, Dr Rachel Jones, thank you for your research insights, contributions and thoughtful advice, but most of all, your true friendship. You have played an important role in my professional and personal life over the last four years, and I do hope our friendship continues despite distance and difference!

I am very grateful to have been part of the Child Obesity Research Centre (CORe) and to have worked with researchers who have contributed to my professional development and to the completion of this research study and thesis. No matter how big or small, I am truly appreciative. A big thank you to my ‘office 121’ buddies, Lauren Puglisi and Annaleise Riethmuller. Your friendship, advice and encouragement throughout the research process were paramount and an important facet of this learning experience.
Further, thank you to Dr Dylan Cliff, Jodie Andruschko, Dr Wayne Cotton and Dean Dudley for your collegial support, guidance and instruction.

Many other colleagues and friends have also been pillars of strength during the research process and to you I extend my whole-hearted appreciation. Collectively, I would like to thank my Australian College of Physical Education and University of Sydney contemporaries and make special mention of Dr David Baxter, Peter Audsley and Dr Kellie Burns for your selfless decision to read and edit this thesis. Your feedback and advice were invaluable.

Lastly, but above all, I would like to express my absolute gratitude to my family. Your love and support throughout my life, and in particular throughout my PhD years, has been extraordinary. Time and time again, you have listened, provided emotional stability, offered solutions, resolved problems, and delivered entertainment and encouragement. Without this endless support, I would not have persevered. You have been my inspiration, and it is to you I dedicate this thesis.
ABSTRACT

In Australia, the prevalence of overweight and obesity has doubled among young people from the mid-1980s to the mid-1990s. Unfortunately, these rates have continued to increase, with recent data showing prevalence rates for obesity trebling from the 1985. Particularly pertinent for this study is the fact that in the state of New South Wales, adolescent boys aged 12 to 15 years have shown the greatest increase over this time period, compared with girls and younger boys.

The increasing prevalence of adolescent overweight has been driven by key dietary, physical activity and sedentary behaviours. Using an Ecological Systems Model, these key behaviours are influenced by a range of individuals factors, as well as the settings in which adolescents spend most of their time (e.g. home and school), and the people with whom adolescents associate (e.g. family and peers). To prevent adolescent overweight and obesity, it is imperative that these factors are targeted in the development of obesity prevention interventions. To date, one of the most opportune settings for these interventions has been schools, with significant improvements reported in many outcomes, including body mass index (BMI). Despite this, there has been a dearth of evidence guided school-based obesity prevention interventions that target adolescent boys.

This thesis reports on two studies that were part of The Fitness Improvement Lifestyle Awareness (FILA) Program. These were a Proof-of-Concept trial (POC trial) followed by a Pilot Randomised Controlled Trial (Pilot RCT). The aim of both studies was to assess the feasibility (screening, recruitment and retention of participants, and collection of useable measurement data), acceptability (implementation of sessions, participant attendance and enjoyment of sessions, and the promotion of the program among key staff and parents) and the potentially efficacy of a multifaceted secondary school-based obesity prevention program (The FILA Program). In both trials, The FILA Program was designed to prevent unhealthy weight gain, improve cardiorespiratory fitness, promote participation in habitual moderate to vigorous physical activity, reduce time spent in small screen recreation, increase fruit consumption and reduce sweetened beverage consumption among 12 to 13 year old boys. Social Cognitive Theory was the conceptual framework underpinning the design of both trials.
The POC trial assessed the feasibility, acceptability and potential efficacy of *The FILA Program* among a single group of 16 Year 7 boys (mean age = 12.5 ± 0.3 years). Measurements were collected at baseline and follow-up (6 months), with the primary outcome being BMI, and waist circumference, percentage body fat, cardiorespiratory fitness, objectively measured physical activity and time spent in small screen recreation as secondary outcomes. Results confirmed that the POC trial was feasible (appropriate screening procedures), acceptable (implementation of *The FILA Program*; participant attendance and enjoyment of sessions; and staff satisfaction) and potentially efficacious.

With a larger sample and a comparison group, the Pilot RCT endeavoured to more thoroughly test the potential efficacy of *The FILA Program*. The Pilot RCT was a 16 week, 2-arm parallel group trial, in which 33 Year 7 boys (mean age = 12.5 ± 0.4 years) participated. The boys were randomly assigned to an intervention (n = 16) or active comparison group (n = 17). The intervention consisted of one 60 minute curriculum session and two 20 minute lunchtime sessions per week, for 19 weeks. The active comparison group participated in a weekly 60 minute curriculum session. The primary outcome was BMI, with additional measurements of sweetened beverage and fruit consumption included as secondary outcomes. The timing of these measurements were the same as the POC trial (baseline and 6 month follow up).

The Pilot RCT verified that *The FILA Program* was feasible, acceptable and potentially efficacious. Goals for screening and recruitment procedures, retention of participants, collection of useable data, implementation of and participant attendance at sessions and participant and staff satisfaction were attained. Potential efficacy findings reported a small to medium effect size for waist circumference, percentage body fat, cardiorespiratory fitness, weekday physical activity, time spent in small screen recreation on weekends and fruit consumption. These changes occurred with no adverse effect on participants’ physical, emotional and psychosocial functioning. Only small effect sizes were found for BMI, weekend physical activity, time spent in small screen recreation on weekdays and sweetened beverage consumption suggesting that *The FILA Program* was not as beneficial in modifying these outcomes.

The study’s findings reinforce the potential that schools have in reducing the prevalence of adolescent overweight and obesity. Future implementations of *The FILA Program*
will need to be tested in larger efficacy studies that are powered to detect statistically significant changes in outcomes, and enhance the understanding of Social Cognitive Theoretical constructs, by testing single or selected components.
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