CHILD-CENTRED PHYSICAL ACTIVITY: EFFECT ON MOTOR SKILL DEVELOPMENT IN TODDLERS

A thesis presented in partial fulfilment for the requirements of a Master of Science in Sport and Exercise Science at Massey University, Albany, New Zealand

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2013

ACKNOWLEDGEMENTS

I would first like to thank all of the children and their parents who took part in this study. It was wonderful to have such a positive response to the call for participants and I am so thankful to everyone who gave up their time to take part.

Acknowledgements must also go to my supervisors Dr. Ajmol Ali and Professor Claire McLachlan. Their assistance and advice has been invaluable in producing my Masters thesis. Many thanks must also go to the Ministry of Science and Innovation for funding the study and to Sophie Foster and the Jumping Beans licensees, particularly Chris Morris, for all their support and assistance.

I would also like to acknowledge the continued support of my family and friends, especially those who assisted with my data collection: Mum, Sarah, Rachel and Becky.

Finally, I would like to thank Mr Simon Bennett for always being willing to lend a helping hand, Paula Southworth and Vivian Lee for assisting with data collection and Mr Rory Yates for being my dedicated delivery/pick-up person.

This thesis has received approval from the following ethics committees: Massey University Human Ethics Committee: Southern A (20th March 2013, Application 11/84)

ABSTRACT

Background: Over the last 20-30 years, children's physical activity levels have decreased significantly resulting in obesity rates reaching epidemic levels. To date there has been very little research regarding physical activity in toddlers, with the majority of research focussing on young children (3-5 year-olds) or on children at risk of motor or neurological deficiencies. **Purpose:** To investigate the effects of a nine-week, child-centred physical activity programme on cognitive and motor skill development, safety skills, balance and parent supervision in typically developing 12-24 month-old children. **Methods:** In a randomised, controlled design, 90 toddlers (age 17.0 ± 2.6 months; 52.2% male) and their parents were split into two treatment groups stratified by age and gender at baseline. The intervention completed was either nine weeks (one school term) of one-hour child-centred physical activity classes or normal physical activity for nine weeks. In the school holiday periods prior to, and following the intervention period anthropometric measures (mass and height), overall development (Bayley Scales of Infant Development – Screening Test), safety skills (nine-skill test battery), balance measures (centre of pressure) and parent-child supervision were assessed. **Results:** The nine-week physical activity intervention was successful in improving the overall safety skills score ($p < 0.05$). In addition, the ability to climb over a small-runged A-frame while using a cylinder grip and safe face-the-slope dismount and the execution of a safety roll down a foam wedge were improved as the result of the intervention ($p < 0.05$). There was no effect of the exercise intervention on overall development, measures of balance or supervision aspects. A main effect of Age Group on the mean change score in all

subscales was reported with younger children (12-18 months) tending to show greater improvements as compared to older children (18-24 months). Regression analysis showed that 27.8% of the change in overall development could be predicted by knowing the age of the child and whether their day-to-day environment was mostly home care with their parent or other adult, or not. **Conclusions:** This was the first randomised, controlled trial that examined the effects of a child-centred physical activity programme on overall development, safety skills, balance and supervision in 12-24 month-old children in New Zealand. There is a need for more randomised, controlled trials that incorporate a multitude of external factors that may influence development, namely cognitive and motor skill development.

Keywords: motor skill development, cognitive development, toddlers, physical activity, balance

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