



Effectiveness of Physical Activity Intervention for Rural Pre-Schoolers in Kuching, Sarawak.

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1.0 Executive Summary

Childhood obesity has been growing at an alarming rate and is the most common nutritional problem among children (WHO, 2000). Several reports already showed high and increasing rates of overweight and obesity among preschool children living in developing countries (de Onis & Blössner, 2000). The most common causes are lack of physical activity, unhealthy eating patterns, high level of inactivity or sedentary behaviour, genetic factors, or a combination of these factors.

Traditionally, it is known that early childhood period has the highest levels of physical activity. Young children are naturally physically active or usually known as “supercharged dynamos”. Society usually have the perception that children at this period are habitually “active enough” and therefore, quite healthy. However, parents, healthcare providers, and educational professionals could have overestimated their level of physical activity. Besides, with the advanced of technology and social media, it is worrying that the “digital childhood” begins early, and levels of sedentary behaviour particularly screen time or electronic media used exceeded recommended levels.

According to National Association for Sport and Physical Education (NASPE, 2006), professional groups recommend that young children should participate in 120 minutes of moderate-to-vigorous physical activity (MVPA) daily, 60 min of which is structured and 60

minutes unstructured or in free play. However, it came to our attention that the current trends in the levels of physical activity of children appear to be headed in the wrong direction.

In order to address the research problem, a quasi-experimental study of motor skills performance and physical activity among rural preschool children were carried out early 2017. The sampling frame for this study were all the 22 government kindergartens in Bau District. The inclusion criteria for this study are kindergartens which have access to an outdoor play area and equipment that supported the curriculum; preschool children 3-5 years of age; and children attendance at the childcare centre required at least three days per week. Children with comorbid or disease that could interfere with practice of physical activity and those who are participating in any other clinical trial or other health-oriented project are excluded from the study. There were a total of 158 children (82 boys and 76 girls) from 22 centres. Informed consent and enrolment forms will be obtained from the parents or guardians. Verbal assent will be also obtained from each child by asking the child if he or she would like to participate in a “exercise-time class”. Children responded in a positive manner by nodding their head or saying “yes” indicating their assent to the researcher, with the classroom teachers as witness. Permission to carry out this study was obtained from the Medical and Ethics Research Committee of Universiti Malaysia Sarawak and Ministry of Health Malaysia. Approval was also obtained from Sarawak Community Development Department (Jabatan Kemajuan Masyarakat Negeri Sarawak).

The intervention programme was developed by the researcher targeted mainly the preschool children themselves. In the intervention group, all the children received the same curriculum and training instructions. The kindergarten teachers were trained prior to the intervention. The children in the control group continued their usual routine with one physical activity lesson per week lasting 30 minutes. Kindergarten teachers and parents in the control

group were informed about the study design, the testing and the intervention arm but did not know any further details regarding the intervention modules.

2.0 RESEARCH PROGRESS

Phase	Progress	Remarks
I (a)	❖ <i>Proposal writing and approval application</i>	<p>Permission to carry out this study was obtained from the Medical and Ethics Research Committee of Universiti Malaysia Sarawak on 11/1/2017. Approval was also obtained Department of Community Development (Jabatan Kemajuan Masyarakat Negeri Sarawak) on 24/1/2017, followed by approval from Ministry of Rural and Regional Development on 6/2/2017. Approval from NMRR was obtained on 17/3/2017.</p>
I (b)	❖ Stage I <i>Recruitment</i>	<p>Objectives and methodology of the research were explained to the officers and teachers. All the kindergartens in Bau District were assessed for eligibility to participate in the intervention study. Only 15 kindergartens that fulfilled the criteria were selected after consulting the administrator of each facility. Then, the kindergartens were stratified into two area of village, respectively Opar and Tasik Biru. Subsequently, these two villages were identified as possible study sites as they each met the minimum criteria for number of potential research participants (>60). Then, a letter of cooperation to participate in the study was given out to the centre. Recruitment of participating kindergartens was based on the willingness of these</p>

		<p>kindergartens to participate in the study. After the kindergartens agreed to participate in the study, all the pre-schoolers of the centres were given an information letter to take home in which the purpose of the study was explained to the parents/ caregivers, and the child was invited to wear a pedometer throughout the study. After the recruitment, the kindergartens were matched in terms of population, facilities, socio-economic characteristic and outdoor PA possibilities. The kindergartens were randomised assigned to the intervention or the control condition to avoid contamination between kindergartens in the same municipality.</p>
	<p>❖ Stage II <i>Briefing</i></p>	<p>A letter of invitation was sent to all parents of children 3-5 years old at the selected kindergartens. The researcher organised a respondent information briefing to explain the objectives of the study to the parents or guardians and to answer all questions raised on the day of visit. A total of 75 (63%) parents were present on that day. Among the issues concerned were:</p> <ul style="list-style-type: none"> • What is the intervention programme proposed? How long is the duration of the intervention? • What is the outcome of the research? Is there any follow up after the research? • Pedometer- Price if lost, how to use the pedometer, any invasive procedures? Duration?

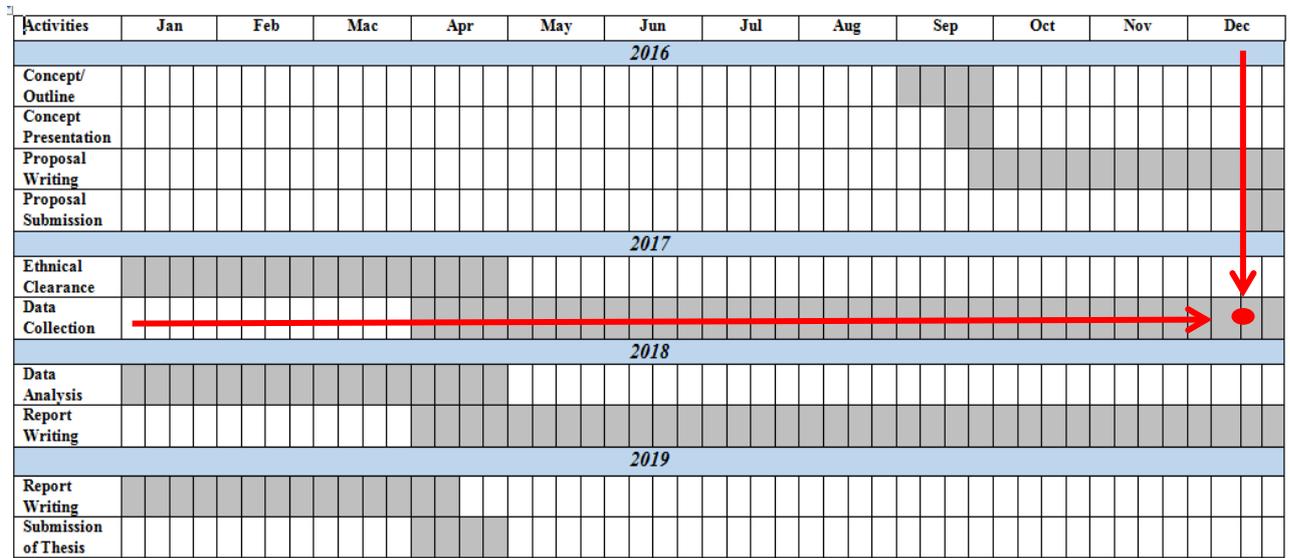
	<p>❖ Stage III</p> <p><i>Training</i></p>	<p>Training consists of three sessions which is understanding the fundamental theory and concept, protocol of the study and intervention module and practical session with research tools. All teachers were given hands-on training on how to use pedometer, and how to use the TGMD-2 Motor Skills Assessment form.</p>
	<p>❖ Stage IV</p> <p><i>Assessments</i></p>	<p>All teachers are given a two-week duration until 16 May 2017 for pre-intervention assessment. All the students participated in the pre-intervention assessment, except two students who refused to participate in the assessment. Then, all the sport equipment was distributed to the intervention groups and subsequently, started the intervention. The intervention was carried out within a six-month duration. In August, after three months of intervention module, a mid assessment was carried out for both intervention and control group. In this mid assessment, there were another three students who withdrew from the study because two were transferred out and one had no guardian at home to use the pedometer. This gives a total sample of 158 students to 153 students to continue the intervention module. The final post intervention assessment was carried out in the last week of November where all the students participated in the study. Throughout the intervention, incentives were given to the participants in terms of presents to motivate them to complete the intervention.</p>

3.0 DURATION OF STUDY

The duration of the study will be three years. It is divided into three major phases. Each phase will be further divided into two parts. For the first phase of the study, it includes proposal preparation from September to December 2016. Then it will be followed by ethical consideration and approval for the second part which lasts for four months. The second part of the first phase includes briefing, training, implementation and assessment, which started in May 2017 and lasted until November.

The second phase will be divided into the first four months for data entry, data cleaning and analysis in January 2018, while the following four months will be the final write up for the dissertation.

4.0 GANTT CHART



5.0 REFERENCES

- de Onis, M., & Blössner, M. (2000). Prevalence and trends of overweight among preschool children in developing countries. *The American Journal of Clinical Nutrition*, 72(4), 1032–1039. <https://doi.org/10.2223/JPED.2092>
- NASPE. (2006). Active Start — Physical Activity Guidelines for Children Birth to Five Years National Association for Sport and Physical Education (NASPE). *Young Children*, (May), 2006–2006.
- WHO. (2000). *Obesity: preventing and managing the global epidemic. Report of a WHO consultation. World Health Organization technical report series* (Vol. 894). [https://doi.org/10.1016/S0140-6736\(57\)91352-1](https://doi.org/10.1016/S0140-6736(57)91352-1)