6th International Conference on University Learning and Teaching (InCULT 2012)

Physical Fitness Level between Urban and Rural Students- Case Study

Tan Chee Hian\textsuperscript{a*}, Zainal Fikiri Mahmud\textsuperscript{b}, Tham Yin Choong\textsuperscript{c}

\textsuperscript{a}Faculty of Sport Science & Recreation, Universiti Teknologi MARA, Shah Alam, 40450, Malaysia
\textsuperscript{b} SMK Sg Rasa, Dalat, Sarawak, Malaysia
\textsuperscript{c}Faculty of Sport Science & Recreation, Universiti Teknologi MARA, Arau, Perlis, 02600 Malaysia

Abstract

This study was to determine which group of students had been better physical fitness performance in age of 10-12 years old from different geographically areas. Schools been chosen purposively was the urban (Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur) and the other from rural area (Sekolah Kebangsaan Sungai Rasau, Dalat). Samples comprised of 85 students (61 urban and 24 rural) which was represented 30% of the population from each school. Body composition determined by Body Mass Index, the standard anthropometric method. Fitness components: strength, flexibility, power and cardiovascular endurance were assessed using SEGAK tests which was a standardized fitness norm test for Malaysian students nationwide. Descriptive statistics examine characterize of the samples. Crosstabs were used to find the percentages of the grades achieved by the samples between geographical. The results indicated that there were 100% samples of SK Sg Rasau had categorized having good physical fitness while the SK Sg Besi 2, K.L were considered perform at 99.1% regarding to the norm given. This means that the rural students were better in health-related fitness compared to the urban students as a whole. However, there were more students from the urban scored for 5 Star (Bintang) (39.3%) grade and 4 star (31.1%) as well if compared to the rural students were 37.5% and 29.2% respectively. Moreover, the 3 star achievement in grade, the rural samples scored much higher percentage (33.3%) than the urban students (19.7%) and that had made the rural students got higher overall score than the urban (comprised 3 star and above).

Keywords: Physical fitness, Body Mass Index, SEGAK test, Rural & Urban.

© 2012 The Authors. Published by Elsevier Ltd. Open access under CC BY-NC-ND license.
Selection and/or peer-review under responsibility of the Faculty of Education, University Technology MARA, Malaysia.

1. Introduction

Physical fitness is defined as the ability of body to function efficiently and effectively, to enjoy leisure, to be healthy, to resist disease, and to cope with emergency situations. Health-related components of physical fitness included body-composition, cardiovascular fitness, flexibility, muscular endurance, and strength. Skill-related components included agility, balance, coordination, power, reaction time, and speed. Physical fitness is used in two close meanings: health-related which state the health and well-being and skill-related which more task-oriented based on the ability to perform specific aspects of sports or occupations.

* Corresponding author. Tel.: +063-5544-2949
tanchee@salam.uitm.edu.my
2. Statement of Problem

Along with the modernization of the world, most of the technologies nowadays have make people less active. They do less work but achieve more output as this is what we call efficiency, to do something with little input but bring out more input. As the technologies becoming more advanced, people are less making work and this resulting in the decrement of fitness.

Many factors can be related to level of physical activity among children. Loucaides et. al. (2004) stated five factors that would contributed to level of physical activity among children in their study “Differences in Physical Activity Levels between Urban and Rural School Children in Cyprus”. They stated that the factors that contribute are seasonal factors, space and safety, exercise equipment availability, transportation to and daily activity. Other factors that would related to children's physical activity are, participation in organized sport, physical education classes in schools, transport patterns, electronic and screen based entertainment, and socio cultural changes (Dollman, 2005). These factors, some lead to the result of the urban children to have higher level of physical activity such as the equipment availability and transportation while some factors lead to the result that rural children have better level of physical activity (Loucaides et. al., 2004).

Children nowadays also less active especially in urban areas. Dollman et. al. (2005) stated that children nowadays are more ‘preferred’ to be inactive when choosing activities such as eating and sleeping as their top 10 activities. Furthermore, television watching also get higher rates if years by years especially girls. In Iowa, A study examining differences in physical activity, physical fitness, and overweight among rural and urban children shows that children from rural areas and small cities were more active than urban children (Joens-Matre et. al. 2008).

However, despite higher activity levels, the prevalence of overweight was higher among rural children (25%) than children from urban areas (19%) and small cities (17%). Joens-Matre et.al. believed that diet impacted the weight status of the subjects in their study. Moreover, some researches resulting the vice versa. This may caused by the physical activity done by these children. Maybe the urban children do more physical activity than children who live in rural areas? Do urban children of Malaysia have lower physical fitness level compared to their friends who lived in rural areas?

3. Objectives of the Study

1) Compare health-related fitness level between school children who lives in Dalat (Rural) and Kuala Lumpur (Urban).

2) Determine whether the demographic factors (age and gender) affect the health-related fitness level among school children in Dalat, Sarawak and Kuala Lumpur.

4. Significance of the Study

The significance of this study is to compare whether the Malaysian children who lives in the urban areas has lower physical fitness level than children who lives in the rural areas as happened in most country of the world. The findings of the study could provide a better understanding on the level of fitness of children in urban and rural areas in Malaysia. The findings of the study could provide the information about the physical fitness level of the urban children and it also providing information to policy-makers of the Ministry of Education to create and develop strategies that preventing the decreasing level of physical fitness among urban school children.
5. Definition of Terms

5.1. Physical fitness
Physical fitness is defined as the ability to function efficiently and effectively, to enjoy leisure, to be healthy, to resist disease, and to cope with emergency situations. Operational the results of the SEGAK tests is Star (Bintang) level.

5.2. Health-related Fitness
Health-related Fitness is defined as the functioning of the heart, blood vessels, lungs and muscles to function at optimum efficiency. Operational the components tests with SEGAK- This test comprised strength, flexibility, power and cardiovascular endurance test.

5.3. Children
Children are people those are not an adult. Children in this research are the primary students, aged from 10 to 12 years old.

5.4. Rural areas
Rural areas (also referred to as "the country" or "the countryside") are large and isolated areas of a country, often with low populations. In this study was SK SG Rasau, Dalat, Sarawak- East Malaysia.

5.5. Urban areas
Urban areas (also referred to as “the city”) are places that have the density of population more than 400 persons in square per kilometer. In this study was SK Sg Besi 2 Kula Lumpur – Capital of Malaysia

5.6. Samples:
Samples in this study are the students of Sekolah Kebangsaan Dalat, Sarawak, and Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur. There was 30 percent of each population from their school.

5.7. SEGAK
SEGAK is the abbreviation of Kecergasan Fizikal Kebangsaan. It is a test to determine level of physical fitness among Malaysian students. (3-minute step test, push-ups, half sit-ups, and sit-and-reach test) (3-minute step test, push-ups, half sit-ups, and sit-and-reach test)

6. Research Design

A descriptive with survey method was used in this study. All surveys test and measurement were conducted in 2011 and included the following: - Anthropometric measurements and Fitness tests

The study samples were school children aged 10 – 12 years of both genders from two primary schools in Malaysia, Sekolah Kebangsaan Sungai Rasau, Dalat, Sarawak and Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur. Sekolah Kebangsaan Sungai Rasau was selected because it is a school with P1 (Pendalaman 1) level and it is situated in a rural area. Dalat is an administrative district of Mukah in Sarawak, East Malaysia. It is situated by the river of Rajang. Dalat making up an area of 7916.33 km has an estimated population of 68,083 in 2009 (Majlis Daerah Dalat dan Mukah, 2009).

Sekolah Kebangsaan Sungai Besi 2 was selected because it is situated in Kuala Lumpur, is the capital and the largest city of Malaysia. The city proper, making up an area of 244 km², has an estimated population of 1.6 million in 2006. Greater Kuala Lumpur, also known as the Klang Valley, is an urban agglomeration of 7.2 million. It is the fastest growing metropolitan region in the country, in terms of population as well as economy (Kuala Lumpur Tourism Action Council, 2009).
6.1. Sample Size

A sample of 30 percents representing both schools children were purposively and random selected from the study population. The names of all 10-12 year old children from the participating schools were obtained from the school registrar.

Permission to conduct the study at the selected schools was obtained from the Universiti Teknologi Mara, MOE and the particular school. Informed written consent was obtained from the subjects using standardized consent form. To ensure proper understanding of the content, all forms were translated into Malay language, which is the national language of Malaysia.

7. Results and Findings

The samples n = 85 consisted of 24 students from Sekolah Kebangsaan Sungai Rasau, Dalat and 61 students from Sekolah Kebangsaan Sungai Besi 2. The sample n also consisted of 42 boys and girls where 11 boys and 13 girls from Sekolah Kebangsaan Sungai Rasau, Dalat and 31 boys and 30 girls from Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur.

7.1. SEGAK Test Results

All the students from year 4 to year 6 students have completed the SEGAK test that been done at their school. All the subjects, a randomized 30 percents from the whole population has been chosen to be the samples where consisted of 24 samples from Sekolah Kebangsaan Sungai Rasau who representative of 80 students of the school and 61 students from Sekolah Kebangsaan Sungai Besi 2 who representative by 204 students. Table 2 presents the overall score for the SEGAK test by using the norm provided in the circulation letter from the Ministry of Education KP (BS-Dsr)/2017002/1(4). Table 2 represents the percentages of overall score by the samples from Sekolah Kebangsaan Sungai Rasau, Dalat and Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur.

Most of the samples scored 5 star (bintang), which is the highest grade in SEGAK test with urban students as proportion of 39.3% compared to rural students 37.5%. For the 4 Star (bintang) grade, the urban students also have higher proportion (31.1%) compared to rural (29.2%). However, for the 3 Star (bintang) grade, that was average, the rural students have higher proportion (33.3%) compared to urban (19.7%). Moreover, for the less active (Kurang Cergas) and needed improvement fitness level (Perlu Tingkatkan Kecergasan) grade, the rural has no proportion while the urban with 6.6% for the less active and 3.3% for the needed improvement in fitness grade.

8. Conclusion

The purpose of this study was to compare the level of physical fitness among students of Sekolah Kebangsaan Sungai Rasau, Dalat, Sarawak and Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur. 85 students (24 rural and 61 urban) were tested on their level of physical fitness with SEGAK test.

SEGAK test has been developed from the UDTA test where it does not need a big venue to do the 2.4 km run. From the test, most of the subjects scored higher than 3 Star (bintang) which means that they had good physical fitness level. For the rural samples, all of them (100%) scored a high grades (> 3 star) while the urban (99.1%). From the results, it could be concluded that the students of Sekolah Kebangsaan Sungai Rasau had slightly higher physical fitness level if compared to students of Sekolah Kebangsaan Sungai Besi 2, Kuala Lumpur. The students of Sekolah Kebangsaan Sungai Besi 2 also achieved slightly moderate scores where only 9.9 percents did not achieve the recommended level of physical fitness. It could observed that there were more urban samples had better score of physical fitness because most of them scoring 4 and 5 star if compared to the rural samples, even in percentages. This result could be related to O.G. Eiben (2005) where it was stated that the urban boys and girls produced better physical performance than their rural counterparts. This may caused by several factors that had been stated by
Loucaides et al. (2004) where equipments availability and transportsations were better in urban than the rural. Schools in urban also had better facilities such as field, track and others if compared to rural schools. However, some of the urban samples did not achieve the recommended fitness level which above 3 star. This may caused by obesity because some of the urban samples were obese and overweight and they had affected the overall results with only 99.1 percents of the urban subjects scored 3 star and above. This was supported by a statement by Kellis, S.

9. Tables

Table 1: Number of Subjects by Gender and total (n=85)

<table>
<thead>
<tr>
<th>Population</th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Rural</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>Urban</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>43</td>
</tr>
</tbody>
</table>

Table 2: Grade of Physical Fitness according to SEGAK test

<table>
<thead>
<tr>
<th>Population</th>
<th>Perlu tingkatkan kecergasan</th>
<th>Kurang cergas</th>
<th>3 bintang</th>
<th>4 bintang</th>
<th>5 bintang</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% within samples</td>
<td>% of Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>0%</td>
<td>0</td>
<td>33.3%</td>
<td>29.2%</td>
<td>37.5%</td>
<td>100%</td>
</tr>
<tr>
<td>Count</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>7</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>Urban</td>
<td>3.3%</td>
<td>2.4%</td>
<td>6.6%</td>
<td>19.7%</td>
<td>31.1%</td>
<td>39.3%</td>
</tr>
<tr>
<td>Count</td>
<td>2</td>
<td>4</td>
<td>12</td>
<td>19</td>
<td>24</td>
<td>61</td>
</tr>
<tr>
<td>% of Total</td>
<td>2.4%</td>
<td>4.7%</td>
<td>4.7%</td>
<td>14.1%</td>
<td>22.4%</td>
<td>28.2%</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>4</td>
<td>20</td>
<td>26</td>
<td>33</td>
<td>85</td>
</tr>
</tbody>
</table>

Acknowledgements

Faculty of Sport Science and Recreation UiTM Shah Alam and Perlis.
Headmaster of SK Sg Besi 2 Kuala Lumpur, teachers and students
Headmaster of SK Sg Rasau, Dalat, Sarawak, teachers and students
Mr Zainal Fikri and Family members
Mr Tham and Family Members
Colleagues, friends and my family members

References


Martins E P (1990) Individual and sex differences in the use of the push-up display by the Sagebrush Lizard, Sceloporus Graciosus


