Relationship between physical activity and academic performance in respect of school children

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Abstract- Children aged 9-12 years were not active enough to meet international guidelines for normal growth and development. An inactive lifestyle during childhood places children at greater risk of becoming obese and developing cardiovascular disease in adulthood. Given the substantial pressures on children, parents, and school administrators to maximize academic performance, it has become increasingly difficult for teachers and school administrators to devote school time to physical activity. The aim of the present study was to find out if there was any significant relation between Physical activity and Academic performance. To achieve the purpose of the study, 37 students were selected from AdityaVidhyashram Residential School, Puducherry and the selected students were participated in regular physical activity every day. The Academic report card of the selected students were collected from the particular school where the grades were given by conducting a theory and practical test in Physical Education along with Language, Mathematics and Science subjects. Physical Education Grade (Theory & Practical) as a dependent variable for the study and the Independent variables were marks obtained in Languages (Best of two Language scores), marks obtained in Mathematics and marks obtained in Science /Social Science (Best of two Science scores) as a variable for the study. To ensure to proficiency of the test the Academic reports card were collected with the prior permission of the school head and verified by the investigator. Based on the available scientific literature pertaining to physical activities and academic performance on the basis of discussions with the experts in the field of sports, the following criterion variables and independent variables were selected for investigation. The study was concluded that there was significant relationship found between the criterion variable of Physical Education grade (theory & practical) and independent variables of Language, Mathematics and Science/Social science performance.

Keywords- Physical Activity, Academic Performance, School Children, Physical Activity, Academic Performance

I. INTRODUCTION

Childhood physical inactivity is a serious problem in India. Children aged 9-12 years were not active enough to meet international guidelines for normal growth and development. An inactive lifestyle during childhood places children at greater risk of becoming obese and developing cardiovascular disease in adulthood. Given the substantial pressures on children, parents, and school administrators to maximize academic performance, it has become increasingly difficult for teachers and school administrators to devote school time to physical activity. Further, there is the perception that time spent on non-academic pursuits negatively impacts children's performance in academics. To assess the role of school-based physical activity on academic performance, the researcher collected the academic assessment reports of the student form class 6th to 10th conducted in a CBSE School, who regularly participated in school based activities such as Basketball, Football, Volleyball, Tennis etc. Academic achievement is of critical importance for youth, and time devoted to learning in schools is central to its success. However, factors other than time spent on core academic subject matter may also contribute to academic success [1], [2], [3], [4].

In addition to being physically active, children need to learn fundamental motor skills and develop health related physical fitness (cardiovascular endurance, muscular strength and endurance, flexibility, and body composition). Physical education, provided at school, is an ideal way to encourage activity and develop fitness among children and, for many children, will be their only preparation for an active lifestyle. The ability to study and remember facts, being able to study effectively and see how facts fit together and form larger patterns of knowledge and being able to think for yourself in relation to facts and thirdly being able to communicate your knowledge verbally or down on paper. Good academic performance is also linked having good organizational skills such as a tidy place to work and good time management [5], [6], [7] & [8].

II. OBJECTIVE OF THE STUDY

The objective of the study was to find out if there was any significant relation between Physical activity and Academic performance.
III. METHODOLOGY

To achieve the purpose of the study, 37 students were selected from AdityaVidhyashram Residential School, Puducherry and the selected students were participated in regular physical activity every day. The Academic report card of the selected students were collected from the particular school where the grades were given by conducting a theory and practical test in Physical Education along with Language, Mathematics and Science subjects.

Physical Education Grade (Theory & Practical) as a dependent variable for the study and the Independent variables were marks obtained in Languages (Best of two Language scores), marks obtained in Mathematics and marks obtained in Science /Social Science (Best of two Science scores) as a variable for the study. To ensure to proficiency of the test the Academic report card were collected with the prior permission of the school head and verified by the investigator. Based on the available scientific literature pertaining to physical activities and academic performance on the basis of discussions with the experts in the field of sports, the following criterion variables and independent variables were selected for investigation.

A. Statistical Techniques

The collected data were classified, and statistical analysis was done to find out the relationship. Statistical analysis was performed using the SPSS (Statistical Package for Social Science) software. Criterion variable was Physical Education Grade (Theory & Practical) and the independent variables were marks obtained in Languages (Best of two Language scores), marks obtained in Mathematics and marks obtained in Science /Social Science (Best of two Science scores). The collected data Academic report and Physical Education variables were subjected to statistical analysis. Pearson- Product Moment Correlation between criterion variable and independent variable was applied and was tested for significance at 0.05 level and was presented in the Table I.

B. Analysis of Data

<table>
<thead>
<tr>
<th>S.No</th>
<th>Variable</th>
<th>Mean</th>
<th>S.D</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Education Grade (theory &amp; practical)</td>
<td>64.6486</td>
<td>10.0449</td>
<td>0.559*</td>
</tr>
<tr>
<td>2</td>
<td>Language Performance</td>
<td>74.3484</td>
<td>14.4363</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.05 level. (Table value required for significance at 0.05 level for with df 35 is 0.325)

Table I reveals that the obtained correlation between the criterion variable and Independent variable (r 0.559) was higher than the table value. It is significant at 0.05 levels. This indicates that there is a relationship between Physical activity and Academic Performance (Language) of school children.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Variable</th>
<th>Mean</th>
<th>S.D</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Education Grade (theory &amp; practical)</td>
<td>64.6486</td>
<td>10.0449</td>
<td>0.368*</td>
</tr>
<tr>
<td>2</td>
<td>Mathematics Performance</td>
<td>76.5946</td>
<td>16.5234</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.05 level. (Table value required for significance at 0.05 level for with df 35 is 0.325)

Table II reveals that the obtained correlation between the criterion variable and Independent variable (r 0.368) was higher than the table value. It is significant at 0.05 levels. This indicates that there is a relationship between Physical activity and Academic Performance (Mathematics) of school children.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Variable</th>
<th>Mean</th>
<th>S.D</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Physical Education Grade (theory &amp; practical)</td>
<td>64.6486</td>
<td>10.0449</td>
<td>0.433*</td>
</tr>
<tr>
<td>2</td>
<td>Science/Social Science Performance</td>
<td>77.9189</td>
<td>17.8611</td>
<td></td>
</tr>
</tbody>
</table>

*Significant at 0.05 level. (Table value required for significance at 0.05 level for with df 35 is 0.325)

Table III reveals that the obtained correlation between the criterion variable and Independent variable (r 0.433) was higher than the table value. It is significant at 0.05 levels. This indicates that there is a relationship between Physical activity and Academic Performance (Science/Social Science) of school children.
IV. DISCUSSION ON FINDINGS

This Available data suggest that school Physical Activity (PE instruction, free time PA or school sport) could become a consistent component of Physical Activity to meet current guidelines for children and adolescents without impairing academic achievement, even if curricular time for so-called academic subjects is shortened. This concept may be applicable if time is spent in paid employment while attending school, but it does not seem to apply to extracurricular activities like sports or curricular PE. In contrast, such activities are likely to increase attachment to school and self-esteem which are indirect but important factors in academic achievement and also developing the mental attitude and aptitude of the child. In the present study the selected variables for the physical activity and academic performance show some significance in academic performance. There was significance between the physical activity and academic performance, so it is concluded that due to regular physical activity the academic performance has improved. The following studies are also supported to my study results [9], [10], [11] & [12].

V. CONCLUSION

The hypothesis formulated by the researcher was that there would be significant relationship between the criterion variable of Physical Education grade (theory & practical) and independent variables of Language, Mathematics and Science/Social science performance as Independent variables.

There was significant relationship found between the criterion variable of Physical Education grade (theory & practical) and independent variables of Language, Mathematics and Science/Social science performance.

REFERENCES