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Age appropriate physical activity: The need of the hour in schools

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Abstract

Age appropriate physical activity has never got its due in numerous schools in India. It is common sight to see students from primary to secondary grade in schools use the same set of equipment to play some random games during physical education classes. Also, as the kids build up their mental and physical fortitude, they ought to participate in physical activities according to their age. Hence, this assessment was proposed to assess the impact of what normally is going on in schools and how an age appropriate activity program could influence the interest and fitness of school going boys. For the purpose of this study agility and flexibility as selected as criterion measure. Hundred and twenty trainees were chosen from Fatima Primary school in Puducherry. Their age ranged from five to ten years. The participants were separated into three age classifications of forty individuals each according to the age group mentioned below. Five to Six years, Seven to eight years and Nine to ten years. The forty selected age appropriate participants were further partitioned into control and experimental group in all the three classifications. Consequently, each set comprised of twenty members. Just the experimental group was exposed to age appropriate physical activity program for about four months and control bunch didn't follow any special treatment modalities other than their normal routine activities during their physical education period. The testing instrument utilized for assessment of flexibility was sit and reach test and T-test were utilized to evaluate agility. The results of pre and post-test were analysed by Paired T-test and descriptive statistics. The investigation concluded that the age appropriate physical activities program has better effect on flexibility and agility of school students and that flexibility and agility was best improved among five to six and nine to ten years children respectively.

Keywords: Flexibility, agility, age appropriate physical activity, school students

Introduction

Engaging in regular physical activities is known to have positive effect on the development of school going children and such improvement carries many desirous changes in physical, mental, and psycho-social well-being of the students. In medical terms, regular physical activities diminish the danger for coronary problems, diabetes mellitus, osteoporosis, hypertension, and metabolic disorder; improves different aspects of our well-being, including exertion limit, muscle and bone quality, flexibility, insulin sensitivity, and lipid profiles; and decreases pressure, tension, and depression. Physical activities can improve emotional wellness by diminishing and preventing stressful conditions, for example, anxiety and depression tent to reduce by engaging in recreative games and fun filled activities. A good state of mind results in managing the stress more effectively. Health related practices and ailment hazard factors track from youth to adulthood, demonstrating that early and continuous open doors for physical movement are required for greatest health advantage. To be viable, physical movement programming must line up with the anticipated formative changes in activities during school age itself. The school going children should be encouraged to participate in wide ranging physical activities that stimulate their motor abilities which in turn influences their interest in engaging in physical exercises as a habit as long as possible. A *Laukkanen et al Sep (30, 2013)* [2] told that regular motor abilities are fundamental for youngsters. Engaging in age-related physical exercises, and gross motor activities assumes a significant function for keeping up adequate level of physical culture during life. *J. M. Muyor et al Jan (14, 2014)* suggested that flexibility is a significant boundary related with health related physical wellness.

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When flexibility is focused at the right age, hamstring adaptability assumes a significant part in keeping up a right spinal stance and preventing potential wounds. Reduced hamstring flexibility has been related with more serious danger of sustaining hamstring injury.

Though, it is likewise commonly seen that in many schools in India, a typical arrangement of sports equipment's is utilized by the students from all the classes to play a couple of sports of their choice or whatever the equipment allows them to play. No consideration is paid to fact that students ought to do engage in physical activity programs in accordance to their age.

Flexibility and agility are two significant parameters that is most appropriate for engagement of school going children. Agility involves quick change of direction in accordance to a stimulus and flexibility is at its best during younger ages of the students.

Physical education has unquestionably made considerable progress since the Spartans and Athenians. From a tyrant type framework to advancing life expectancy through physical education we have involved numerous sciences for examining various aspects of physical activity so as to better the brain and body. These new sciences have clearly expanded the "in sight. However, when planning ahead, there truly is no closure. Children with clinical proof indicating that a lifetime of physical activity will improve their wellness and upgrade their personal satisfaction. They'll become familiar with the significance of both cardiovascular and solid wellness and find how to create sound propensities in these areas. (Allen Jackson, *et al*, 2004). Teaching the Student Body makes suggestions about methodologies for fortifying and improving projects and arrangements for physical activity and physical education in the school. This report spreads out a lot of core values to manage its work on these undertakings. These included: perceiving the advantages of ingraining deep rooted physical activity propensities in kids; the benefit of utilizing frameworks thinking in improving physical movement and physical training in the school; the acknowledgment of current inconsistencies in circumstances and the need to accomplish value in physical activity and physical education; the significance of thinking about a wide range of school conditions; the need to mull over the variety of students as proposals are developed.

A strategic change in approach to physical education in India. In many number of schools there is no ground facilities and not having sufficient equipment's to utilize using the same equipment's for all the age students. The age wise physical activity through minor games will have pleasure and the student will enjoy the activity too. The first and foremost thing in schools, the physical education teacher should create awareness on health benefits through physical activity and its importance in future health benefits. The approach should be in three stages. Movement Stage: In this stage there should be maximum participation of students where they are encouraged to enjoy participating more than anything else. Fitness Stage: this is the stage where the students should graduate to improve and maintain their fitness where the fitness plays a main role in the future either in their daily life or in sport they choose. The sports stage is where the students will move towards the specialized area nor to the fun or career.

But as of now in most school there are not much equipment's and keeping the same set of equipment's to all the age group. There is hardly any general fun or fitness activities planned for students. As a result of the existing approach only few students are engaged in physical activity classes and many of

them or idle or inactive. Recently the government of India has launched the age appropriate fitness protocols where the age categories was five to eighteen years, eighteen to sixty-five years and sixty-five years above. The protocols are very properly and meaningfully listed how the impact of age appropriate physical activity will have an integrity with body and mind. Even the government of India has started the program why the education that is most suitable for schools' students. There is widespread need to inculcate the need for of age appropriate physical activity right from the schools. If the schools follow proper organised physical activity according to age of its students in the physical education classes, it could be more effective in reaching the fitness goals of fit India and Khelo India. Hence this much needed study was initiated to assess, analyse and highlight the importance of right activities at right age and time for school students.

Flexibility

Measure of adaptability are performed to survey the capacity of skeletal muscle and ligament to extend. Adaptability can be both static and dynamic.

Agility

It is the capacity to alter the course of the body productively and adequately and to accomplish this, you require a mix of balance, speed, strength and coordination. (BrainMAC Sports coach)

A number of minor and entertainment games depend on these two motor components. However, the target of this investigation was exclusively to see how the effect of age wise exercises fared between experimental and control groups that were divided as per the set age groups in variables agility and flexibility. The outcomes could recommend suitable changes and appropriate incorporations in the physical training programs rehearsed in schools for better wellbeing and wellness of students. Further, appropriate physical training modules can be contrived for exclusive age groups so the outcomes can be made more effective and efficient in the two selected variables namely agility and flexibility

Statement of the problem

Since larger part of the schools in India do not have or if they do have, they do not practice an age based physical activity program, this examination was attempted to evaluate the impact age appropriate physical movement program on agility and flexibility. This is the need of hour in most schools in India. Further, the study also assessed the quantum of progress in agility and flexibility during the mediation time frame within the experimental groups.

Hypotheses

It was expected that students in the age group of nine to ten would show the most significant enhancement in agility when compared to other age groups.

It was anticipated that students of five to six age group would show the most extreme enhancement for flexibility contrasted with other age groups.

It was expected that the experimental groups will have better improvement than the control groups in agility and flexibility after the treatment.

Delimitation

The study was delimited to the following aspects

- The participants for this study were selected boys from Fatima Primary School, Puducherry

- The study was narrowed to the One hundred and twenty nominated students involved for this study.
- Their age ranged from five to ten years.
- Students were engaged only during their regular physical education periods.

Limitation

- Certain factors like hereditary, life style, daily diet, climatic condition were not taken into consideration.
- Beyond the physical education periods could not be controlled.
- The motivation level of the students from any group were not controlled.

Methodology

Selection of participants

For this exploration the members were chosen from Fatima Primary school. Hundred and twenty members were chosen and divided into two gatherings as control and trial and in understanding to the chose age wise physical activity. Each gathering comprised of twenty members.

Selection of variables

Variables selected for this study were

1. Agility
2. Flexibility

Orientation of the subjects

The students were oriented about the study and testing procedure. The testing protocols were portrayed and shown to the students to give them a clear idea. The motivation behind the investigation was likewise disclosed to them in detail and were allowed to pull back anytime during the experiment without giving any reasons.

Test administration

The assessment tests were administered during the sixteen-week intervention period for all the three age gatherings. All the three age groups were allocated various occasions and date for the tests with the goal that their class hours would not be upset a lot. All the twenty members were given one preliminary before performing to the real test and the equivalent was trailed by the all gatherings.

The sixteen-week intervention period involved specific activities involving agility and flexibility. All the participants of the experimental groups were engaged in wide range of minor games. For example, dog on the bone game was introduced for five to six years group, Zig-Zag race for seven to eight years and alternate cone touch relay for nine to ten years group respectively. The experimental group also engaged in many other games also such as freeze relay for age five to six years, cat and mice for seven to eight and toe touch for nine to ten years during the period of experiment. In the initial stages the games were simple and easy. From mid stage the groups were divided in smaller teams and an element of competition was introduced to stimulate further interest in the activities. After the end of each and every session stretching exercises were performed to keep their flexibility level at an optimum level. This further raised their capacity to be quick and agile. The participants were fully active throughout the intervention period either in the ground as well as in the class rooms.

Analysis technique

The data was collected from all the three age groups before and after the experimental period. Level of significance was fixed at 0.5 for Agility and 0.25 for Flexibility. The collected data was statically analyzed by Paired T- test and Descriptive statistics using SPSS software.

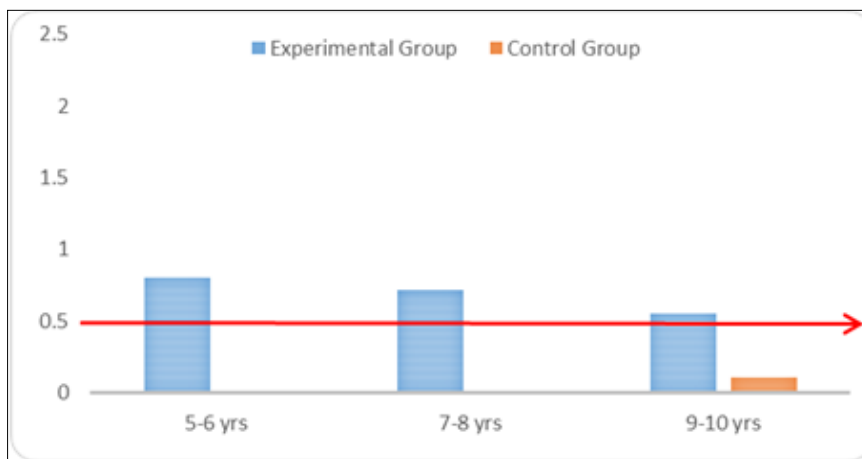
Table 1: Shows Mean, Mean Difference, Standard deviation and post improvement level on Agility

Agility	Age 5 to 6 Years		Age 7 to 8 Years		Age 9 to 10 Years	
	Control	Experiment	Control	Experiment	Control	Experiment
Mean	Pre 15.38	Pre 15.38	Pre 15.34	Pre 15.34	Pre 10.75	Pre 10.77
	Post 15.35	Post 14.58	Post 15.26	Post 14.62	Post 10.63	post 10.21
M.D between Pre & Post	0.071	0.803	0.082	0.71	0.11	0.55
S.D	0.135	0.379	0.119	0.235	0.106	0.453
t Stat	-28.89	3.58	0.67	4.07	-0.52	0.37
P(T<=t) two-tail	3.64	0.001	0.50	0.00	0.60	0.00
Confidence Level (95.0%)	0.063	0.177	0.055	0.110	0.049	0.212
Post improvement level: based on Confidence interval	0.0 – 0.1	0.6 – 1.0	0.0 – 0.1	0.6 – 0.8	0.0 – 0.1	0.4 – 0.8

- Hypothesized mean difference: Control group 0.02, Experimental 0.05 seconds
- Level of significance: 0.05

The above table shows the post improvement level on agility of all six age groups. With the scores of 0.6 - 1.0, 0.6 - 0.8 and 0.4 - 0.8, it was clear that all three experimental age groups had improved in agility when compared to control

group. The result shows that the age group 5 – 6 years has improved the most among the three experimental groups with the best score of 0.6 – 1.0.



Graph 1: The comparison of Agility Mean difference timings between control and experimental groups

The above graph shows the mean difference in timing between the control and experimental groups and also among the experimental groups. The results indicate 5-6 years group has improved the highest as it is the furthest above the level of significance at 0.5 seconds followed by 7-8 and 9-10 years

respectively. The critical line of significance to assess the quantum of improvement was based on the least mean difference in lowest performance value of each groups in agility. In this case the least mean difference in improvement was 0.6 Seconds

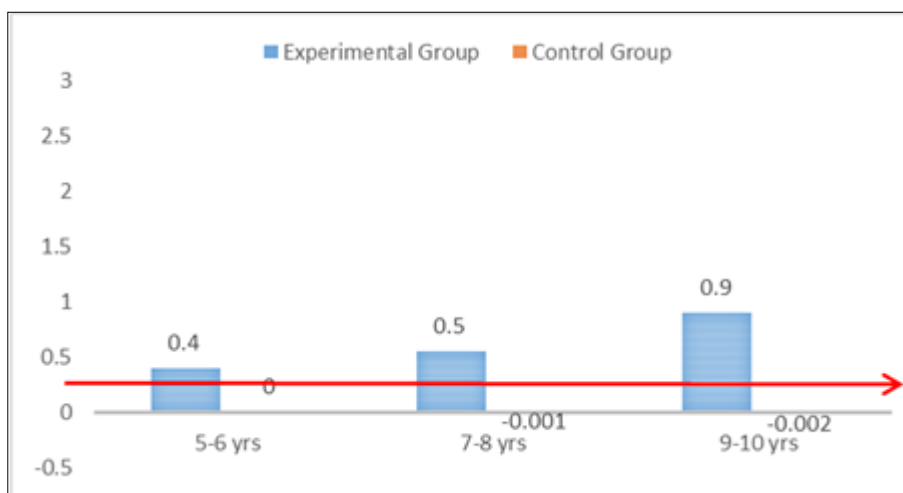
Table 2: Shows Mean, Mean Difference, Standard deviation and post improvement level on Flexibility

Flexibility	Age 5 to 6 Years		Age 7 to 8 Years		Age 9 to 10 Years	
	Control	Experiment	Control	Experiment	Control	Experiment
Mean	Pre 1.802	Pre 2.378	Pre 1.59	Pre 0.65	Pre 1.8	Pre 2.33
	Post 1.801	Post 1.982	Post 1.6	Post 0.15	Post 1.8	Post 1.42
M.D	0.00	0.40	-0.001	0.55	-0.002	0.90
S.D	0.005	0.44	0.11	0.96	0.04	0.53
t Stat	-0.23	4.00	-0.05	2.31	-0.23	6.91
P(T<=t) two-tail	0.814	0.000759	0.955	0.032	0.814	0.982
Confidence Level (95.0%)	0.022	0.25	0.005	0.45	0.002	0.20
Post improvement level: based on Confidence interval	0-003Cm	2-6 Cm	-0.001-003Cm	1-9 Cm	-0.002 – 0.10 Cm	4-11 Cm

- Hypothesized mean difference: Control group 0.01, Experimental 2.5 cms
- Level of significance: 0.25

The above table shows the post improvement level on flexibility of all three age groups. With the scores of 2 – 6, 1 – 9 and 4 – 11 it is clear that all three experimental groups have improved in flexibility when compared to control group. The

result shows that the age group 9-10 years has improved the most among the three experimental groups with the best score of 0.4 – 11.



Graph 2: The comparing the mean of the difference (three groups) of level of flexibility level between control and experimental groups

Result and Discussion

The results of the investigation in the variable agility proved that engagement in general physical activities not necessarily through some organized games among younger students during their normal physical instruction classes, had improved

significantly in the experimental group when compared to the control group. This demonstrates that age appropriate physical intervention engaged by the school students had greater impact on their agility performance than students in the control groups.

Further among the exploratory group the outcomes reasoned that students from five to six years age group had indicated greatest difference in the pre and post testing when compared with other two groups. Hence it can be inferred that five to six years group had the best improvement in agility because of age appropriate physical exercises. It was expected that age group nine to ten years would show the most significant improvement in agility when compared with other age groups, however the outcomes also demonstrated that five to six years group showed the best improvement when compared with other experimental age groups. Therefore, the hypothesis was rejected. The explanation behind the best improvement among the 5 to 6 years age group could be perhaps because their gravity was lower to the ground in light of their shorter height when compared to their partners in the other age groups. Further their body weight might have affected their performance too when compared with their senior students. This may have helped them alter course rapidly and complete the agility course more quickly. A discussion was carried out by Erika Zemková & Dušan Hamar, a decline in agility time toward grown-up age has been found. In any case, the lessening in agility time was fairly more extreme in the age group seven to ten.

The result of this investigation in the variable flexibility has reflected that normal physical movement not necessarily composed of organized games in the younger students during their regular physical training classes had significantly improved in the experiment groups when compared with control groups. This demonstrates that regular practice of flexibility after every physical activity session engaged by the school students greatly improved their flexibility than students who don't involve in regular activity.

Additionally, amongst the treatment groups, the results showed that students from the nine to ten years group had shown the maximum difference in the pre- and post-testing when compared to other two groups namely five to six and seven to eight years. Hence it was concluded that nine to ten years group had the best improvement in flexibility due to age appropriate physical activity. In this study it was hypothesized that age group five to six years would show the maximum improvement in speed when compared to other age groups, but the results indicated that nine to ten years groups have shown the best improvement when compared to other age groups. Therefore, the hypothesis was rejected. The reason for the significant improvement among the nine to ten years age group could be due to the fact that they had better height and better muscle development when compared their counterparts in the other age groups. Further their limbs were also quite lengthy when compared to younger age groups. This may have helped them to stretch more. Similar discussion was formulated by Subramaniam, A *et al*, who demonstrated that the intervention program as less as two minutes' extra stretching exercise program following a thirty minutes' games session, two times per week had improved flexibility level among young boys.

In the third hypothesis it was anticipated that the experimental groups would fare better in flexibility and agility when compared to control groups. The hypothesis was accepted as the results confirmed the same.

Conclusion

The effect of age appropriate physical activities on agility and flexibility of school boys from Fatima primary school, Pondicherry between the age of five to ten years were analyzed. The results highlight that simple yet organized age

appropriate physical activity is more beneficial for school students in five to ten age group. Agility seems to have better improvement in younger age group five to six years and flexibility seems to have better improvement in older age group of nine to ten years compared to other experimental age groups.

Thus, the crux of the current examination is a solid push for age appropriate physical activities program in all the schools in India. The predominance of general physical activity ought to be given high value in the younger students of the school so that the wellbeing and wellness of the students can be effectively and visibly improved and the physical education classes can be effectively and efficiently used.

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