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Comparison of physical fitness among tribal girls with different age categories

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Abstract

Regular physical activity can improve women's' health and help prevent many of the diseases and conditions that are major causes of death and disability for women around the world. Many women suffer from disease processes that are associated with inadequate participation in physical activity:

- Cardiovascular diseases account for one-third of deaths among women around the world and half of all deaths in women over 50 years old in developing countries.
- Diabetes affects more than 70 million women in the world and its prevalence is projected to double by 2025.
- Osteoporosis is a disease in which bones become fragile and more likely to break and is most prevalent in post-menopausal women.

Physical Activity has also been associated with improved psychological health by reducing levels of stress, anxiety and depression. This is particularly important for women who demonstrate an incidence of depression that is reported to be almost double that of men in both developed and developing countries. It has also been suggested that physical activity can contribute to building self-esteem and confidence and can provide a vehicle for social integration and equality for women in society.

Sports by their very nature are enjoyable, challenging, all absorbing and requires a certain amount of skill and physical condition. In the present study the researcher tried his best to see whether there is a difference of physical fitness among different age category of tribal girls. To conduct the study, 60 (sixty) school going tribal girls student of Seva Bharati Vidya Yan, Kapgari, Jhargram were considered. The age of the subjects were 11 years, 12 years and 13 years as obtained from the school records. Random group design was used for selecting the subject for the present study to compare Physical Fitness of tribal Girls with different age category. The obtained data in form of digital score was treated statistically to get results and to draw conclusions by using inferential statistics. Significance of statistical difference among the groups was measured by applying "ANOVA" statistics at 0.05 level of significance. The gathered data on the basis of selected tests revealed that the tribal girls of three different age categories differed significantly in respect of Muscular Strength and Speed but in relation to Flexibility, Muscular Endurance and Agility insignificance differences were found among the tribal girls of three different age categories.

Keywords: Physical fitness, muscular strength, flexibility, endurance

Introduction

The human personality is a marvellously intricate structure, delicately woven of motives, emotions, habits, and thoughts into a pattern that balances, however precariously, the pulls and pushes of the world outside. Personality is the total sum of his 'being' and includes physical, mental, social, emotional, and intellectual aspects. One's personality reflects his perception, imagination, attitude, instincts, habits, values, interests, and sentiments about himself and his self-worth. Intelligence, achievement, motivation, modes of adjustment, all these and much more constitute human personality.

These problems are mainly due to ever growing demand for this materialistic world. Whatever these problems may be related to, but these problems, no doubt, are leaving bad effect on mind and body and over the personality of an individual.

Although in principle women should be encouraged to increase their participation in physical activity, it is important not to overlook the fact that often in rural and in low income urban areas women may be already physically exhausted by other forms of day-long "occupational"

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Physical activities. Women in these areas may need a better balanced set of support actions such as adequate nutrition, income generation initiatives, advice on physical activities most relevant to their specific conditions and adapted leisure pursuits. Fitness components are the building blocks of exercise and physical activity. Sports training programs are designed to build these components in the proper proportions that match the requirements of each sport. A basic definition of physical fitness is "the ability to complete daily tasks with energy, reduce health risks due to inactivity, and be able to participate in a variety of physical activities." The 5 fitness components that are deemed health-related are: cardio, strength, endurance, flexibility, and body composition. In addition, speed, agility, power, balance, and coordination have been identified as performance-related. Regular participation in such activities is associated with a longer and better quality of life, reduced risks of a variety of diseases and many psychological and emotional benefits. There is also a large body of literature showing that inactivity is one of the most significant causes of death, disability and reduced quality of life in the developed world. Physical activity may influence the physical health of girls in two ways. First, it can affect the causes of disease during childhood and youth. Evidence suggests a positive relationship between physical activity and a host of factors affecting girls' physical health, including diabetes, blood pressure and the ability to use fat for energy. Second, physical activity could reduce the risk of chronic diseases in later life. With the constant threat of numerous health issues caused by obesity, it is obvious that everyone should be conscious of their personal fitness and mental well-being. The only way to achieve a healthy and fit lifestyle is to make the necessary changes to your everyday life. These changes do not have to be drastic to begin with, and should be things you enjoy and look forward to doing. Thus reviewing the above mentioned facts the researchers find it important to investigate such topic.

Table 1: Analysis of variance for Physical Fitness of tribal girls of different age (11, 12 &13) group

Variables	Mean			Source of variance	SS	df	MSS	F ratio
	11	12	13					
Muscular Strength	12.45	14.41	18.89	Among	487.05	2	243	17.81*
				Within	766.52	57	14.61	
Flexibility	7.85	9.85	6.68	Among	106	2	53.12	2.65
				Within	1180	57	20.81	
Muscular Endurance	17.54	17.65	17.78	Among	0.96	2	0.48	0.0058
				Within	4572	57	80.25	
Agility	12.98	13.53	12.84	Among	9.65	2	4.89	0.0033
				Within	88220.17	57	1555.27	
Speed	9.99	10.28	9.82	Among	4.21	2	2.10	3.67*
				Within	33.84	57	0.57	

*Significance at 0.05 level of confidence F. 05 (2, 57) =3.15, A= among means variance, W = within group variance

The table-1 of analysis of variance for muscular strength of tribal girls of different age (11, 12 &13) group indicated significant F-ratio of 17.81. However, the F-calculated value is 17.81 which was significant as it was greater than the F- of

Purpose of the Study

To compare the physical fitness among tribal girls with different age categories

Methodology

The sixty tribal girl's students were selected from Seva Bharati Vidyatan, Kappgari, Jhargram and divided into three age groups (11years, 12years and 13years) and each age group consisted of 20 students respectively. Random group design was used for selecting the subject for the present study to compare Physical Fitness among tribal Girls with different age categories.

The researcher selected some specific test for the purpose to compare the flexibility, muscular endurance, muscular strength, agility, and speed among girls with different age categories. Selected fitness test were taken on morning session and all the test were conducted in a single day. Flexibility was measured by the application of sit and reach test, muscular endurance by administering sit up test, muscular strength by using Handgrip Strength Test, agility by using shuttle run and lastly speed by the application of 50 yard dash.

The obtained data in form of digital score was treated statistically to get results and to draw conclusions by using inferential statistics. The significance of statistical difference among the groups was measured by applying "ANOVA" statistics at 0.05 level of significance.

Analysis of data and results of the study:

The statistical analysis of data in physical fitness ability among tribal girls of three different age categories, namely group A (11 years girls) group B (12 years girls), group C (13 years girls), respectively were computed by applying analysis of variance statistics to find out the existence of significant difference.

3.15 required for significant at 0.05 level. To find out which age category girl's performance is better on muscular strength, pair wise comparison analysis was done.

Table 2: Pair-wise comparison of mean scores of muscular strength among girls of three different age categories:

11yrs	12yrs	13yrs	Mean difference	C D at 5%level
12.45	14.41		1.96	3.41
12.45		18.89	6.44*	3.41
	14.41	18.89	4.48*	3.41

* Significance at 0.05 level of confidence

From table 2 and it is evident that there is insignificant difference between the mean performance of 11years and 12 years girls. Whereas there is significant difference between 11 years and 13 years and also between 12years and 13 years girls.

From table-1 of analysis of variance for speed of tribal girls of different age (11, 12 &13) groups indicated significant F-ratio of 3.67. However, the F-calculated value is 3.67 which was significant as it was greater than the F- of 3.15 required for significant at 0.05 level. To find out which age category girl's performance is better on speed, pair wise comparison analysis was done.

Table 3: Pair-wise comparison of mean scores of speed among girls of three different age categories

11yrs	12yrs	13yrs	Mean difference	C D at 5%level
9.99	10.28		0.29	0.59
9.99		9.82	0.17	0.59
	10.28	9.82	0.46*	0.59

* Significance at 0.05 level of confidence

From table 3, it is evident that there is insignificant difference between the mean performance of 11years and 12 years girls as well as 11years and 13 years girls. Whereas there is significant difference between 12 years and 13years.

Discussion of Findings

The gathered data on the basis of selected tests revealed that the girls of three different age categories differed significantly in respect of Muscular Strength and Speed but in relation to Flexibility, Muscular Endurance and Agility, insignificance differences were found among the tribal girls of three different age categories.

From the table- 2, it was found that there is insignificant difference between the mean performance of Muscular Strength between 11years and 12 years girls. Whereas there was significant difference of Muscular Strength between 11 years and 13years girls and also between 12years and 13 years girls.

This is an adolescent age and mostly the young generation is very much aware of their body strength and maintaining their figure. This is the start of their feeling regarding their beautification. They are very much health conscious. This may be the reason for significant difference in Muscular Strength.

From table-3, it is evident that there is a significant difference in speed between the mean performance of 12 years and 13 years tribal girls. Whereas there is no significant difference in speed between 11 years and 12 years and also between 11 years and 13 years tribal girls. This is the age the tribal girls develop their interest in sports. They participate regularly in sports activity and in different competitions. The rate of development of other physical fitness components is very prominent at this age.

Further insignificant differences was shown in Flexibility, Muscular Endurance and Agility among the tribal girls of three different age categories was revealed but better differences was observed with the increase in age. This shows that this is the budding age for the development of physical fitness components

A number of adult conditions, such as cancer, diabetes and coronary heart disease, have their origins in childhood, and can be aided, in part, by regular physical activity in the early years. Also, regular activity beginning in childhood helps to improve bone health, thus preventing osteoporosis, which

predominantly affects females.

Conclusions

From the obtain result it was concluded that

1. Significant difference was found among tribal girls of three different age categories in Muscular Strength and Speed.
2. No significant difference was found among tribal girls of three different age categories in Flexibility, Muscular Endurance and Agility
3. Significant difference was found in Muscular Strength between 11 years and 13years girls and also between 12years and 13 years tribal girls
4. Insignificant difference was found in Muscular Strength between 11 years and 12 years tribal girls.
5. Significant difference was found in speed between 12 years and 13 years tribal girls.
6. Insignificant difference was found in speed between 11 years and 12 years and also between 11 years and 13 years tribal girls.

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