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Analysis of physical fitness among secondary school girls

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Abstract
The aim of the study was to find out the status of physical fitness among Amravati city secondary school girls. In the current study as a source of data was taken from different secondary schools of Amravati city. For the current study investigator was selected sixty subjects. The study was delimited to age group of 14 to 16 years. Researcher conducted physical fitness test on 60 subjects of secondary school girls. The subjects divided into three equivalent age groups namely Group-A (14 years old), Group-B (15 years old) and Group-C (16 years old) each consisting of 20 subjects. Physical Fitness Tests was conducted on items namely flexed-arm hang, sit-ups (bent knees), 6 X 10 Meters shuttle run, Standing Vertical Jump. The data was analyzed by applying descriptive statistics and one way analysis of variance (ANOVA) among different age groups secondary schools girls. The level of confidence was fixed at 0.05 level of significance. Data was analyzed using the Microsoft Excel 2007. Result: There was no significant difference in flex arm hang, sit ups, shuttle run and standing vertical jump of age group- A (14), age group-B (15) and age group-C (16) of secondary school girls.

Keywords: physical fitness, school, girls

Introduction
One of the most important and necessary ways to achieve these goals is to become physically fit. Physical fitness is the ability of the whole body to perform at maximum capability. To perform at a high level, the body's systems must be healthy. The physically fit body can breathe in adequate oxygen and deliver it throughout the body. The physically fit body has muscles that work without easily tiring. Joints and muscles in a physically fit body are flexible rather than tight and stiff. And the physically fit body does not carry too much fat. The physically fit body works efficiently, and so it is able to provide something many of us feel we lack: energy. Physically fit people have enough energy to complete their daily work. They have enough energy to enjoy leisure time and respond to any emergency situation. When we look at someone with energy, we often see someone who looks healthy and productive—someone who is living a happy and full life. Achieving physical fitness improves every part of our lives [1].

Methodology
The aim of the study was to find out the status of physical fitness among Amravati city secondary school girls. The current study as a source of data was taken from secondary schools of Amravati city. For the current study investigator was selected sixty subjects. The study was delimited to age group of 14 to 16 years. Researcher conducted physical fitness test on 60 subjects of secondary school girls. The subjects divided into three equivalent age groups namely Group-A (14 years old), Group-B (15 years old) and Group-C (16 years old) each consisting of 20 subjects. Physical Fitness Tests was conducted on items namely flexed-arm hang, sit-ups (bent knees), 6 X 10 Meters shuttle run, Standing Vertical Jump.

Analysis of data
The data was analyzed by applying descriptive statistics and one way analysis of variance (ANOVA) among different age groups secondary schools girls. The level of confidence was fixed at 0.05 level of significance. Data was analyzed using the Microsoft Excel 2007.

Table 1: Descriptive statistics of physical fitness among age groups secondary schools girls

Variables	Groups	Mean	SD
Flex Arm Hang	Group-A (14)	9.75	5.91
	Group-B (15)	9.00	6.20
	Group-C (16)	12.30	7.92
Sit-Ups (Bent Knees)	Group-A (14)	10.95	6.15
	Group-B (15)	12.45	5.71
	Group-C (16)	13.10	4.71
6 X 10 Meters Shuttle Run	Group-A (14)	16.23	1.68
	Group-B (15)	16.22	1.69
	Group-C (16)	15.64	1.27
Standing Vertical Jump	Group-A (14)	14.30	1.78
	Group-B (15)	14.90	1.71
	Group-C (16)	15.45	1.82

Table 2: Analysis of Variance (ANOVA) of flex arm hang among age groups secondary schools girls

Source of Variation	SS	df	MS	F
Between Groups	119.70	2	59.85	1.319
Within Groups	2585.95	57	45.37	

*significant at 0.05 level F0.05 (2, 57) = 3.159

Table-2 reveals that there was significant difference between the means of age group-A (14), group-B (15) and group-C (16) of flex arm hang of secondary school girls. The

calculated 'F' was 1.319 where as tabulated 'F' was 3.159. Calculated 'F' greater than the tabulated 'F', which shows insignificance in age group-A (14), group-B (15) and group-C (16) of flex arm hang of secondary school girls. Therefore, there is no need of post hoc test.

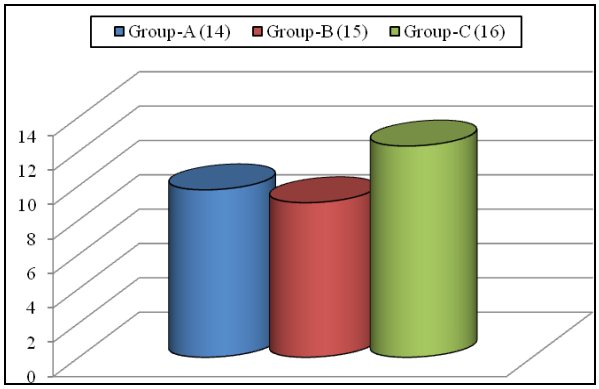

Fig 1: Mean difference of flex arm hang among age groups secondary schools girls

Table 3: Analysis of Variance (ANOVA) of Sit-Ups (Bent Knees) among age groups secondary schools girls

Source of Variation	SS	df	MS	F
Between Groups	48.63	2	24.32	0.788
Within Groups	1759.70	57	30.87	

*significant at 0.05 level F0.05 (2, 57) = 3.159

Table-3 reveals that there was significant difference between the means of age group-A (14), group-B (15) and group-C (16) of sit-ups of secondary school girls. The calculated 'F' was 0.788 where as tabulated 'F' was 3.159. Calculated 'F' greater than the tabulated 'F', which shows insignificance in age group-A (14), group-B (15) and group-C (16) of sit-ups of secondary school girls. Therefore, there is no need of post hoc test.

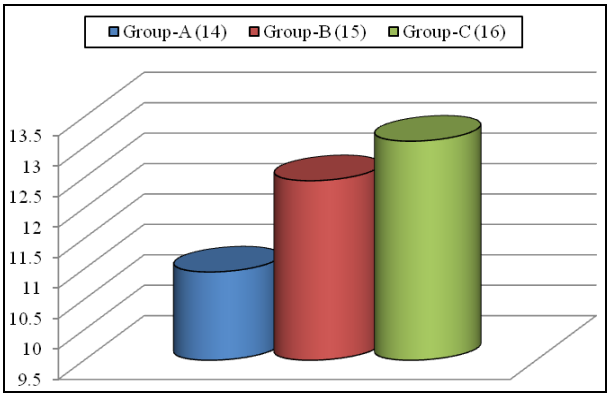

Fig 2: Mean difference of sit-ups among age groups secondary schools girls

Table 4: Analysis of Variance (ANOVA) of 6 X 10 Meters Shuttle Run among age groups secondary schools girls

Source of Variation	SS	df	MS	F
Between Groups	4.60	2	2.30	0.947
Within Groups	138.24	57	2.43	

*significant at 0.05 level F0.05 (2, 57) = 3.159

Table-3 reveals that there was significant difference between the means of age group-A (14), group-B (15) and group-C (16) of shuttle run of secondary school girls. The calculated 'F' was 0.947 where as tabulated 'F' was 3.159. Calculated 'F' greater than the tabulated 'F', which shows insignificance in age group-A (14), group-B (15) and group-C (16) of shuttle run of secondary school girls. Therefore, there is no need of post hoc test.

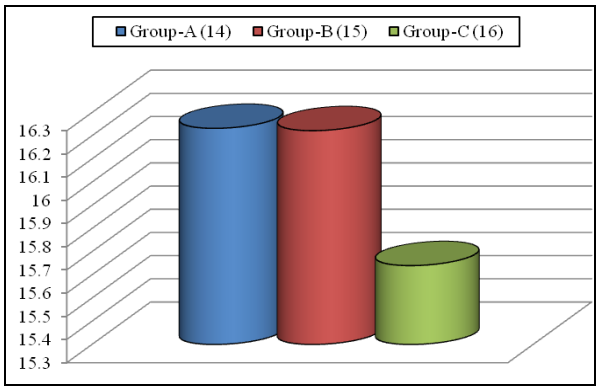

Fig 3: Mean difference of shuttle run among age groups secondary schools girls

Table 5: Analysis of Variance (ANOVA) of Standing Vertical Jump among age groups secondary schools girls

Source of Variation	SS	df	MS	F
Between Groups	13.23	2	6.62	2.108
Within Groups	178.95	57	3.14	

*significant at 0.05 level F0.05 (2, 57) = 3.159

Table-5 reveals that there was significant difference between the means of age group-A (14), group-B (15) and group-C (16) of standing vertical jump of secondary school girls. The calculated 'F' was 2.108 where as tabulated 'F' was 3.159. Calculated 'F' greater than the tabulated 'F', which shows insignificance in age group-A (14), group-B (15) and group-C (16) of standing vertical jump of secondary school girls. Therefore, there is no need of post hoc test.

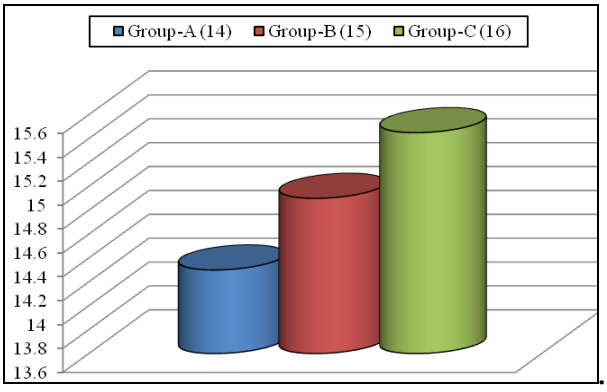

Fig 4: Mean difference of standing vertical jump among age groups secondary schools girls

Conclusion

On the basis of the result drawn with the mentioned methodology the following conclusion were soughed out.

1. There was no significant difference in flex arm hang, sit ups, shuttle run and standing vertical jump of age group-A (14), age group-B (15) and age group-C (16) of secondary school girls.
2. The present study of mean results and graphical stretcher shows that graphically increase the flex arm hang, sit ups, shuttle run and standing vertical jump of secondary school girls.

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