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A Comparative Study of Selected Health Related Physical Fitness Components of Different Faculty Girl Students

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Abstract:

Today the games and sports has become prime importance in the society. Everyone wants to win and stood first. With the enhanced status of sports in the society, the provision of sports training has become very important. Although the need for competent training has long been recognized. Without provision of effective sports training the sports person's potential will never be fulfilled.

The primary objective of the study was "a comparative study of selected health related physical fitness components of different faculties' girls student". Total 120 S.R.T.M University Nanded post graduate students (girls only) were selected as a subject for the presented studies and their age ranged from 18 to 25 years. Subjects were selected from four different faculties of the S.R.T.M. University and 30 from each faculty.

The four faculties are:

1. Commerce and management
2. Math
3. Physics
4. Social science

All the subjects were equally selected from each faculty and therefore N=30 for each faculty. The instructions for administrating of tests were given to the subjects by the researcher. The data was collected through the following tests:

1. Right hand grip strength by dynamometer
2. Sit and reach test for flexibility
3. B.M.I.

To find out the significant difference, the mean difference, standard deviation and ANOVA was applied. The level of significant difference was set as 0.05 level of confidence.

The finding of this study showed no significant difference of hand strength and flexibility. But the study also showed significant difference of body mass index or B.M.I. in different faculty's girl students.

Introduction:

Health is a very important; health people constitute a healthy nation. It is necessary to explain the meaning of health as it is not merely absence of disease but much more. Health is that quantity of life that enables individuals to live most and serve best. Health can be achieved maintained and improved by supplying the basic physical, mental, emotional and social needs in proper proportion. In fact health is the key to education success, good citizenship and happy life.

"Health is a state of complete physical, mental and social well being and not merely an absence of diseases or infirmity"(W.H.O. (1948)).

Physical activity in girls is associated with a lower risk of obesity, cardiovascular disease, high blood pressure, diabetes, cancer, and premature death. There is considerable evidence that cardiovascular disease has its origins in childhood and adolescence. Lipid and lipoprotein profiles, blood pressure, and adiposity in young people tend to persist over their lifetimes (tracking). There is also evidence that behavioral patterns of physical activity in childhood are maintained throughout adulthood. Childhood and adolescence are therefore key to the primary prevention of cardiovascular disease and other conditions associated with a sedentary lifestyle. This is particularly true when we take into account the difficulty involved in modifying adult lifestyles. Although it is usually assumed that more active children will have higher levels of physical fitness, and that the relationship is causal, the assumption may no longer be valid in the light of current knowledge. Only a small amount of the variation in different measures of physical fitness in children and girls can be attributed to physical activity. Measures of physical activity and physical fitness also show great variability. In order to examine the relationship between these 2 concepts in more detail, it is perhaps best to start by defining them. It is usually assumed that physical activity is related to physical fitness and that physically active children will therefore be in better physical condition. For some authors, although they may not make it explicit, this relationship is also causal, and it is often alleged that the evidence indicates that only high intensity physical activity (over 6 MET) improves physical fitness. To date, although the data from the study in question seem to point in that direction, such affirmations have no solid scientific basis, as we will see below. In the first place, it should be pointed out that the relationship between physical activity and physical fitness is only weak or moderate and in some studies it is not significant. Furthermore, daily physical activity explains only a relatively small proportion of aerobic capacity.⁴ It is true that the measurement of physical activity in children and young people is subject to several conditioning factors which threaten validity and reliability. The limitations of measuring physical activity using scales and questionnaires have been dealt with in excellent reviews so it is not necessary to go into detail on that aspect here.⁶ It is worth pointing out, however, that although the measurement of physical activity using accelerometers is undoubtedly the most objective method, it is not exempt from serious limitations which also threaten its validity and reliability. (<http://www.revespcardiol>).

Objectives of the study:

1. To measure the hand grip strength, flexibility and B.M.I of different faculties girl students.
2. To compare the hand grip strength, flexibility and B.M.I of different faculties girl students.

Hypothesis of the study:

1. There would be significant difference of Strength among selected health related physical fitness components of different faculty girl's students.
2. There would be significant difference of Flexibility among selected health related physical fitness components of different faculty girl's students.
3. There would be significant difference of Body Mass Index among selected health related physical fitness components of different faculty girl's students.

Method And Materials:

The subjects were selected through survey method of sampling. The data pertaining to this study were collected from the girl students of S.R.T.M. University campus Nanded.

This student selected through simple random sample method and researcher select the 120 subjects, 30 from each faculty.

Data Analysis And Interpretations:

Health related physical fitness components of different faculties girl students were measured by through different test. For measuring hand grip strength, dynamometer is used and three trials are given to the subject and the highest performance is given to her scoring. For measuring flexibility of girls flexometer is used and the name of the test used is "sit and reach test". Three trials are given to the subject and the maximum distance covered or the final touch on the measuring scale is her scoring. In the end BMI is calculated as: $BMI = \text{Body weight(kg)}/\text{Height in meter}^2$. 0.05 level of significance is obtained. Data was Analysis by SPSS Software.

Table-1.**Descriptive Statistics of Mean scores, standard deviation and Std. Error of strength among different faculties girl students**

Strength	Number	Mean score	S.D.	Std. Error
Commerce	30	22.567	3.847	.7025
Math	30	22.233	5.587	1.020
Social sc.	30	21.933	3.817	.696
Physics	30	22.866	4.023	.7346

As per Table -4.5, show observed that the mean, SD and SE of the strength in commerce girl students is 22.5667, 3.84702 and 0.70251. In the same way, math department's girls students mean, SD and SE is 22.2333, 5.58744 and 1.02012. Social science's mean, SD and SE is 21.9333, 3.81704 and 0.69635. In the end physics department's mean, SD and SE is 22.8667, 4.02349 and 0.73459.

Table No- 2.
Descriptive Statistics of Mean scores, standard deviation and Std. Error of flexibility among different faculties' girl students

Flexibility	Number	Mean score	S.D.	Std. Error
Commerce	30	-0.0333	4.61992	.84348
Math	30	2.2667	4.06782	.74268
Social Sc.	30	.4667	5.28976	.96577
Physics	30	1.9333	4.17656	.76253

As per Table -4.6, show observed that the mean, SD and SE of the flexibility in commerce girl students is -0.0333, 4.61992 and 0.84348. In the same way, math department's mean, SD and SE is 2.2667, 4.06782 and 0.74268. Social science's mean, SD and SE is 0.4667, 5.28976 and 0.96577. In the end physics department's mean, SD and SE is 1.9333, 4.17656 and 0.76253.

Table-3.
Descriptive Statistics of Mean scores, standard deviation and Std. Error of body mass index among different faculties girl students.

BMI	Number	Mean score	S.D.	Std. Error
Commerce	30	19.8790	2.74215	.50065
Math	30	19.0040	2.66335	.48626
Social Sc.	30	18.9540	2.05506	.37520
Physics	30	20.3940	2.85578	.52139

As per Table -4.7, show observed that the mean, SD and SE of the BMI in Commerce girl students are 19.8790, 2.74215 and 0.50065. In the same way, math Department's mean, SD and SE is 19.0040, 2.66335 and 0.48626. Social sciences Mean, SD and SE is 18.9540, 2.05506 and 0.37520. In the end physics Department's mean, SD and SE is 20.3940, 2.85578 and 0.52139.

Table No-4.
Analysis of variance of Strength, Flexibility, BMI among different faculty’s girl students

	Source Variance	Sum of squares	Df	Mean of square	f	Sig.
Strength	Between Groups	8.500	7	1.214	.747	.655
	Within Groups	6.500	4	1.625		
Flexibility	Between Groups	47.000	7	6.714	2.027	.258
	Within Groups	13.250	4	3.313		
BMI	Between Groups	67.917	7	9.702	3.528	.120
	Within Groups	11.000	4	2.750		

Table Show the statistically no significant difference of strength among different faculty girl students. As above observed in F-ratio was .747 which is required to be 2.68 at .05 level of significance. And also no significant difference of flexibility among different Faculty girl students. As above observed in F-ratio was 2.027 which is required to be 2.68 at .05 level of significance. But statistically significant difference of B.M.I. among different faculty girl Students. As above observed in F-ratio was 3.528 which is required to be 2.68 at .05 level of significance .

Table No- 5.
Scheffe post hoc statistical comparison for mean difference of BMI for different faculty girl students.

Commerce and management	Math	Physics	Social science	Mean difference	C.D.
	19.0040	20.3940		1.3900	0.67
		20.3940	18.9540	1.44000	0.67

Table reveals that there is:

As per table No-5, mean difference: 1.3900 and C.D.:0.67. The value of mean difference is higher than the value of C.D., So, There is statistically significant difference of BMI between math and physics faculty girl students. Hence the research hypothesis is accepted.

As per table No-5, mean difference is 1.440 and the value of C.D is 0.67. The value of mean difference is higher than the value of C.D., So, There is Statistically significant difference of BMI between physics and social science faculty girl students. Hence the research hypothesis is accepted

Conclusion:

The following conclusions drawn from the study are as under:

1. There was statistically no significant difference of strength among the commerce & management, math, physics, social science faculty's girl students. Hence the research hypothesis is rejected.
2. There was statistically no significant difference of flexibility among the commerce & management, math, physics, social science faculty's girl students. Hence the research hypothesis is rejected.
3. There was statistically significant difference of body mass index or B.M.I. among the commerce & management, math, physics, social science faculty's girl students. Hence the research hypothesis is accepted.

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