

## COMPARISON ON SELECTED PHYSICAL FITNESS VARIABLES AMONG WOMEN ATHLETES DURING AND AFTER MENSTRUATION

**Dr.C.Jubliet Gnanachellam<sup>A</sup>**, Assistant Professor, Department of Physical Education, SRM IST, Chennai,

**M.Sangitha<sup>A1</sup>**, M.Phil Scholar, Department of Physical Education, SRM IST, Chennai,

**Aparna Joy<sup>A1</sup>**, M.Phil Scholar, Department of Physical Education, SRM IST, Chennai.

**Dr.T.Arun Prasanna<sup>A2</sup>**, Post Doctoral Fellow, Alagappa University College of Physical Education, Karaikudi.

### ABSTRACT

*This study aimed to compare the selected variables of physical activity among female athletes during and after menstruation. Methods: The research scholar selected 30 women from YMCA College of Physical Education, Nandanam, Chennai. To achieve the purpose of the study. The subject's age varied between 19 and 23 years. The subjects were randomly picked. The physical fitness test chosen has three elements which are a 3-minute step-up, push-up, and sit-and-reach exercise. Aerobic activity was reported within 1 minute of recovery heart rate. The number of accurate repetitions performed was measured to the upper body endurance. The score was reported as versatility in centimeters. There were three trials, measuring the highest score to the nearest centimeter. The scores collected during the menstruation cycle and have been statistically evaluated using an Independent 't' test after the subjects' menstruation time. For this analysis, the 0.05 level has been set in every case. Findings: The research findings showed that the selected physical health variables were substantially changed during the menstruation period to after the menstruation period.*

**Keywords:** *Cardio-respiratory endurance, Muscular strength, Flexibility.*

### INTRODUCTION

The menstrual cycle is a chronic series of physiological changes occurring in most mammalian females, including humans and other primates. The menstrual cycle's average period is 28 days although it can differ in individuals between women and from one cycle to another. The menstrual cycle length is determined from the first day of the period until the day before the beginning of the next era. Menarche (starting from the first period) occurs on average between the ages of 11 and 14. Young women have typically already developed secondary sexual attributes, such as pubic hair and developing breasts. Menarche's peak age in men is 12 years but usually between 8 and 16 years. Factors such as inheritance, diet and general health can speed up menarche or delay it. Menopause is considered the suspension of menstrual cycles at the end of a woman's reproductive existence. The average age of menopause in women is 51 years, between 40 and 58 years being usual. Menopause is considered premature before age 35. The age of menopause is mainly the product of genetics; however, earlier menopause may be caused by the disorder, some operations or other medical treatments. On the first day of the menstrual period, menstrual cycles are counted, as the start of menstruation correlates closely to the hormonal cycle. The menstrual cycle can be split into several stages, and the length of each phase varies from woman to woman and from cycle to cycle.

Name of Phase	Days
Menstrual phase	1 to 4
Follicular phase	5 to 13
Ovulation	14
Luteal phase	15 to 28

## Physical Fitness

Physical fitness is the ability to perform, relatively well, different types of physical activity without being overly exhausted and involves qualities which are vital for the health and well-being of the person. "Physical fitness refers to an individual's organic capacity to perform the usual daily task of living without excessive exhaustion or exhaustion having reserves of strength and energy at his disposal to fulfill any suddenly imposed emergency requirements." Nixon.

## Health Related Physical Fitness

Physical fitness related to health may be identified as a scientific body of the positive effects of frequent and vigorous exercises with the prevention of degenerative diseases such as coronary heart disease obesity and various musculoskeletal disorders. Following are the components of Health Related Physical fitness:

### Cardio-respiratory endurance

It is the ability of the lungs, heart and blood vessels to provide the cells with a adequate quantity of oxygen and nutrients to meet the demands of activities characterized by moderate contractions of large muscle groups over an prolonged period.

### Muscular Strength and Endurance

It is the muscle's ability to produce force over a short period of time and also to overcome resistance in the case of medium stimulation strength endurance loads and muscle fatigue resistance.

### Flexibility

It is the ability of a muscle to perform movements with large amplitude (range of motion)

## METHODOLOGY

For the study, 30 women athletes were selected. The subject's ages ranged from 19 to 23 years. The subjects were selected on a random basis. The method used to collect cardio-respiratory endurance data was (Three minutes step-up test), Muscular strength was (Push-ups) and Flexibility was (Sit and reach). Pre and post-test were performed and the collected data were statistically analyzed using an independent "t" test.

**RESULTS****TABLE I**

**TABLE SHOWING DESCRIPTIVE STATISTICS AND OBTAINED 't' VALUE ON DURING AND AFTER MENSTRUATION PERIOD OF WOMEN ON AEROBIC FITNESS**

Test	Mean	MD	SD	't'
<b>During</b>	90.05	1.95	1.57	6.79*
<b>After</b>	92.00			

\* Significant at 0.05 level

The findings reported in Table I showed that the average pre-test value of women's aerobic fitness during menstrual cycle (M: 90.85) increased to 92.00 after menstrual period, with a mean difference of 1.95. The 6.79 't' value obtained was greater than the 1.76 required 't' value. It was also proven that there was a substantial increase in aerobic activity following women's menstrual cycle.

**TABLE II**

**TABLE SHOWING DESCRIPTIVE STATISTICS AND OBTAINED 't' VALUE ON DURING AND AFTER MENSURATION PERIOD OF WOMEN ON UPPER BODY ENDURANCE**

Test	Mean	MD	SD	't'
<b>During</b>	19.00	1.00	1.86	2.94*
<b>After</b>	20.00			

\* Significant at 0.05 level

The results presented in Table II showed that the pre-test mean value of the upper body endurance of women during the menstruation period (M: 19.00) was improved to 20.00 after the menstruation period with a mean difference of 1.00. The obtained 't' value of 2.94 was greater than the required 't' value of 1.76. Hence, it was proved that there was a significant improvement in upper body endurance after the menstruation period of the women. The obtained mean values on the upper body endurance of women during and after the menstruation period were presented through a bar diagram for a better understanding of the results.

TABLE III

**TABLE SHOWING DESCRIPTIVE STATISTICS AND OBTAINED 't' VALUE ON DURING AND AFTER MENSURATION PERIOD OF WOMEN ON FLEXIBILITY**

Test	Mean	MD	SD	't'
During	25.05	0.85	0.67	6.94*
After	25.90			

\* Significant at 0.05 level

The results presented in Table III showed that the pre-test mean value of flexibility of women during the menstruation period (M: 25.05) was improved to 25.90 after the menstruation period with a mean difference of 0.85. The obtained 't' value of 6.94 was greater than the required 't' value of 1.76. Hence, it was proved that there was a significant improvement in flexibility after the menstruation period of women.

## CONCLUSION

A latest research was conducted to establish women's cardio-respiratory capacity, muscle strength and flexibility before and after the time of menstruation. Survey findings have shown that women athletes have increased their physical health, cardiovascular strength, upper body agility, and flexibility from the time to the menstrual period.

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