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A Comparitive Study On Vital Capacity Between The Post Graduation Students Of Physical Education Department And Other Departments Of Banglore University

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Abstract: Vital capacity is crucial for athletes who must perform with endurance and strength for extended periods while maintaining a breathing mechanism. The present study comprised 20 male students of the University College of Physical Education and 20 other male post-graduation students of Bangalore University. The researcher used descriptive statistics and independent t-test tools to interpret the data. The mean value of other post-graduation students (OPS) and physical education students (PES) at Bangalore University is 3.76 and 4.18, respectively. The median values of OPS and PES at Bangalore University are 4.57 and 4.16, respectively. The standard deviation of OPS and PES at Bangalore University is 0.55 and 0.33, respectively. The minimum values of OPS and PES at Bangalore University are 2.53 and 3.58, respectively. The P-value is 0.002893. Since the p-value is less than 0.05 at the 1% level of significance. It is concluded that the vital capacity of PES is higher than that of OPS at Bangalore University.

Index Terms - Component, formatting, style, styling, insert.

I. INTRODUCTION

Vital capacity is the maximum amount of air a person can inhale after maximal exhalation. Motor qualities, particularly endurance, closely correlate with vital capacity. The functional efficiency of the cardiovascular, metabolic, and nervous systems, along with the level of co- orientation of the body's systems, primarily determine endurance, one of the elements of physical fitness. A healthy male's average vital capacity is 3–5 liters. Pete Reed, a British rower and three-time Olympic gold medallist, holds the largest recorded lung capacity of 11.68 litres , while Michael Phelps, a US swimmer, is believed to have a lung capacity of approximately 12 litres. It enables the intake of the maximum amount of fresh air and the elimination of the foul air in a single respiratory stroke. Hence, it increases the gaseous exchange between the various tissues of the body, this leads to the increased amount of energy available for body functioning.

The body's various tissues contribute to the increased energy available for body functioning. Age, gender, weight, height, ethnicity, physical activity, altitude, and other physiological factors influence lung volumes and capacities, and it is important to consider these factors when interpreting spirometry results. Vital capacity is crucial for players who need to perform with endurance and strength for extended periods using a breathing mechanism. Players in such games require larger lung volumes to ensure adequate oxygen supply to their working muscle groups, which is crucial for optimal performance. With these considerations in mind, the current study endeavors to determine the essential lung capacity.

STATEMENT OF THE PROBLEM:

The Present Research Aims to Find Out the Vital Capacity Difference Between Physical Education Students and Other Postgraduate Students of Bangalore University.

OBJECTIVES OF THE STUDY:

- To understand the vital capacity of the physical education and other Post graduation students of Bangalore university.
- To find the maximum inhale and exhalation capacity of the physical education and other post-graduation students of Bangalore university.
- To measure the lungs' capacity of the physical education and other post- graduation students of Bangalore university.
- To suggest and provide helpful recommendations to develop the vital capacity level.

HYPOTHESIS OF THE STUDY:

It was hypothesized that physical education students are a higher level of vital capacity then other post-graduation student of Bangalore University

REVIEW OF RELATED LITERATURE:

The present reviews are based upon the available literature in respect to the study and therefore confined to the tasks to which the Investigator has accessed.

Sultana Ferdowsi (2019) assessed the effects of slow breathing exercises and anti- depressive medication on selected lung functions. Sixty females diagnosed with MDD and thirty healthy females (served as a control) aged ranging twenty to fifty years from Dhaka were selected as subjects. The sixty females diagnosed with MDD were divided into two groups of thirty each. Group, I received slow breathing exercises, and Group II received anti- depressive medications. The experiment was carried over for three months, and initial and post-treatment data was recorded with the help of a portable digital spirometer of the subjects for selected variables forced vital capacity, forced expiratory volume and FEV1/FVC%. Based on the study, the findings suggest slow breathing exercises significantly improve the depressed lung function of MDD patients, whereas, the anti-depressive medication had shown no significant improvement in the MDD patients.

Geochunlin (2018) conducted a study to generate new reference values and prediction equations for lung parameters. The reference of the study was limited to the Chinese population. The researcher selected fourteen hundred fifty-seven subjects of both genders; male & female, with ages ranging from ten to eighty-one years. These subjects were non- smokers and without chronic or acute diseases. The parameter assessed by Multiple stepwise linear regression were age, height, weight, and BMI of both genders separately. The analysis of the data expressed most of the lung function variables were non-linear with age and showed a plateau in younger adults, with a decline after thirty-one to thirty-five years. All spirometry data of men were higher than those of women except breathing frequency and forced expiratory volume in 1 sec. All measured lung function parameters were strongly correlated to age, height, weight and BMI. The highest correlation was observed in height between both men and women except for tidal volume & expiratory reserve volume among women. The relationship between height and lung function parameters was non-linear, with the variance of lung function parameters increasing with an increase in height.

Gadkari J.C (2017) conducted a study to see the effect of the Transcendental Meditation and Stress Management program on Respiratory rate and Breath-holding time. To serve the purpose of the study one hundred and fifty volunteers were selected as subjects of both genders. These subjects were divided into two groups; Group one constituted thirty- seven males & thirty-eight females and underwent Transcendental Meditation training. Group

II consist of thirty-eight males & thirty-seven females and was undergone with Stress management programme which includes breathing exercises, selected asana & some relaxation techniques. The training was carried over for six weeks; twenty minutes each day. Initial and post-training data that is, after six weeks was recorded for respiratory rate and breath-holding time. The findings revealed a decrease in respiratory rate and an increase in breath-holding time in both groups. But also, breath holding time was significantly observed to increase in Group II in comparison to Group I. Which concluded that the stress management programme was found more effective in increasing breath-holding time.

DR.rathi Manisha (2017) analysed the effects of deep breathing exercises on vital capacities in females. To serve the purpose of the study 102 females (students of physiotherapy) were selected as subjects. These subjects were divided into three groups of seventeen each. Transcendental Meditation & Group III serves as a control. The experiment was carried over for twelve weeks. Initial and post-treatment measurements were recorded for the blood pressure, heart rate & respiratory rate. The findings revealed a significant change in high blood pressure among the experimental group as compared to the control group. the researcher suggested carrying out the study on a larger sample size.

Raichur R.N (2010) analysed the effects of deep breathing exercises on vital capacities in females. To serve the purpose of the study 102 females (students of physiotherapy) were selected as subjects. The experiment was carried over for eight weeks, twice daily. The results of the study revealed improvement in the vital capacity of the subjects. Thus, to improve the vital capacity, Deep breathing exercises are very effective as experimented on the female physiotherapy students.

METHODOLOGY:

To achieve the objective of the study, the researcher adopted an analytical research method. The researcher selected the sample using the random sampling technique. The present study included 20 male physical education students from the University College of Physical Education and another 20 male post-graduation students from Bangalore University as samples. The researcher collected data using spirometry and used descriptive statistics such as mean, median, range, standard deviation, minimum, maximum, and an independent t-test for analysis.

The researcher collected vital capacity data by administering a digital spirometer. The researcher also collected the body mass indexes by measuring the subjects' height and weight. subjects are randomly selected and informed them about the digital spirometer and the testing procedure. Ask them to place the mouthpiece of the digital spirometer in their mouths, and then, upon our instruction, use it to blow air through the spirometer. Each subject is given three trials; the values displayed in the equipment are recorded.

DATA ANALYSIS AND INTERPRETATION:

TABEL 1: DISCERPTIVE STATISTICS BY TWO GROUPS

Subjects	N	Mean	Median	SD	Min	Max	Range	SE
OPS	20	3.76	4.57	0.55	2.53	4.57	2.04	0.12
PES	20	4.18	4.16	0.33	3.58	5.27	1.69	0.07

The mean values of other postgraduate students (OPS) and physical education students (PES) at Bangalore University are 3.76 and 4.18, respectively. The median values of other post- graduation students (OPS) and physical education students (PES) at Bangalore University are 4.57 and 4.16, respectively.

The standard deviation of other post-graduation students (OPS) and physical education students (PES) at Bangalore University is 0.55 and 0.33, respectively.

The minimum value of other post-graduation students (OPS) and physical education students (PES) of Bangalore University is 2.53 & 3.58.

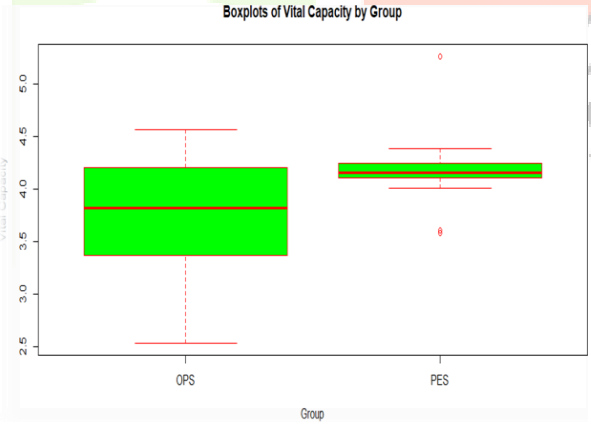

TABLE 2: INDEPENDENT SAMPLES T-TEST

T value	Df	p-value
-2.9641	31.061	0.002893

The p-value is less than 0.05, at 1% level of significance, we accept the hypothesis and hence conclude that the Vital Capacity of Physical Education Students (PES) is at higher level than that of Other Post Graduate Students (OPS) of Bangalore University.

DISCUSSION ON FINDINGS:

Active participation is crucial for an individual's growth and development. It is crucial for a man to consider the biological aspects of his heart while it is in motion. Understanding a specific amount of physiological work in relation to one another helps one acquire biological integrity; therefore, engaging in strenuous activities enhances one's action capacity. During respiration, gaseous exchange takes place between the blood in the capillaries and the air in the alveoli sacs. Under base conditions, the energy output is about forty kilocalories per hour. As physical activity increases, so does energy expenditure, and during intense activities, the physiological capacity of the human body plays a major role in determining physical fitness. Vital capacity is very essential when the players have to perform with endurance and strength endurance for a longer period with a breathing mechanism. Players in such games require larger lung volumes to ensure adequate oxygen supply to their working muscle groups, which is crucial for effective performance. Therefore, the researcher has chosen to focus on the current issue.

The purpose of the present research was a comparison between the physical education students and other post-graduation students of Bangalore University. The present study employed the digital spirometer as a tool. The researcher personally visited the subject area and used the vital capacity physiological test procedure to collect the necessary data for the present study. Twenty physical education students and twenty other post-graduation students from Bangalore University collected the data. The data were collected and recorded. We used descriptive analysis methods to analyse the collected data.

CONCLUSION:

Vital Capacity of Physical Education Students (PES) is at higher level than that of Other Post Graduate Students (OPS) of Bangalore University.

RECOMMENDATIONS:

On the basis of the knowledge accomplished from the research conducted by the investigator, the following recommendations are given:-

- It is suggested that similar study may be carried out on the other educational organization.
- It is suggested that similar study may be carried out on the female students also
- Based on the present study it is recommended that the lower vital capacity students should increase their vital capacity.
- The study helps the coaches to increase or maintain their vital capacity.

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