



EFFECT OF AEROBIC EXERCISE AND ANAEROBIC EXERCISE ON RESTING PULSE RATE OF MEDICAL STUDENTS

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Abstract

To achieve the purpose, forty five (45) male healthy Medical College students studying Medical colleges in Thiruvananthapuram, Kerala were selected randomly as subjects and their age ranged between 19 to 23 years. The selected subjects were divided into three groups, namely, Aerobic Exercise group, anaerobic exercise group and control group, consisting of 15 subjects in each. The selected aerobic group was given aerobic exercise for 72 days. The anaerobic group was given strength training exercise 72 days. The control group was not exposed to any treatments and was strictly under control. The differences between the initials and final scores were considered as the effect of aerobic and anaerobic on the selected criterion variables. The collected data were analysed through Analysis of Covariance (ANCOVA) and if significant differences were recorded post hoc test using Scheffé's Confidence interval. test was done to compare the differences between paired means. The results of this research on the effect of resting pulse rate were presented in Table I and II. As described in Table I the mean values of resting pulse rate of aerobic exercise group were 70.21 and 67.12 for pre test, post test and adjusted means respectively. The anaerobic group means were 72.81, 69.68 and 68.92 for pre test, post test and adjusted means respectively.

Keywords: Aerobic Exercises, Resting Pulse Rate, Medical Students.

Introduction

Sport is around us and it forms an important part of our lives. Today sports are considered as an International discipline because it develops International understanding and Universal brotherhood. Sports are also one of the factors developing National character. Physical Education and Sports should form an integral part of the lifelong education in over all educational system and their promotion from per school age to old age should be treated as one of the fundamental human rights. Physical Education serves as a medium for men's total education, emotional and intellectual development using experience cantered in movement. Hence the promotion of he physical education and sports is the moral and social responsibilities of each nation. According to Clifford (1993) combining the two elements mental and technical training gives the players an opportunity to establish a constituent, peak performance every time they step on the field. Kamlesh (1986) opines that sports psychology professionals are interested in how participation in sport, exercise, and physical activity may enhance personal development and well being throughout the lifespan. Sport psychology is the study of a person's behaviour in sport. According to Richard (1985) sports psychology mainly seeks to

understand and optimize athletic performance. Achievement Motivation is a habitual desire to achieve goals through one's individual efforts, with an emphasis on establishing realistic goals, mastering the tasks needed to achieve these goals, discovering solution to problem.

Health is more than just absence of disease, it reflects a state of physical, mental, social, emotional well being and it is influenced by life style. The term 'life style' means "the way people live", reflecting a whole range of social values attitude and activities. As Kah Gibran said "your living is determined not so much by what is brings to you as by the attitude you bring of life. Not so much what happens to you as by the way your mind looks at what happens". Healthy life style is highly influenced in our life needs a wide range of nutrients to perform various functions in our body and to lead a healthy life. Physical activity was enjoyed throughout everyday prehistoric life as an integral component of religious, social and cultural expression. Food supplies for the most part were plentiful, allowing ample time for both rest and recreational physical endeavours. Historically speaking, the majority of the populace was farmers, moving from the home to farmlands near and far. People were used to hard work, intense and

strenuous exertion. Life depended on rigorous physical activity both in occupation and recreation. But the advent of western education that resulted to white collar; jobs and pleasure seeking life had drastically reduced exposure to physical activity.

The public servants are the set of people affected the industrial revolution and urbanization, which resulted to sedentary and associated problems. Hypokinetic disorders are the resultant. Exercise improves the respiratory systems by increasing the amount of oxygen that is inhaled and distributed to body tissues. There are many benefits of cardio respiratory fitness. Some include improving stamina, longer endurance, increase in energy, better sleep, and can make a person feel happier. It can also reduce the risk of heart disease, lung cancer, type 2 diabetes, stroke, and many other sicknesses. Cardio respiratory fitness helps improve the condition of the lungs and heart, and will make one feel strong. The present study was designed to find out the effect of aerobic exercise and anaerobic exercise on selected cardiopulmonary fitness, measured through resting pulse rate, among medical college students.

Results

TABLE – 1
RESULTS ON CALCULATION OF ANALYSIS OF COVARIANCE ON RESTING PULSE RATE (SCORES IN BPM)

	Aerobic Group	Anaerobic Group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained F
Pre Test Mean	70.11	72.81	70.10	Between	101.1	1	53.07	1.43
Std Dev	7.30	5.40	5.31	Within	217.2	56	37.20	
Post Test Mean	70.12	60.6	73.41	Between	161.2	2	84.12	181
Std Dev	9.10	61.8	4.10	Within	264.00	56	46.42	
Adjusted Post Test Mean	67.12	68.1	72.12	Between	474.6	2	237.29	16.32
Mean Difference	3.00	3.30	3.15					

The obtained F value of 16.32 on adjusted post test means on resting pulse rate was significantly moderated due to 72 days aerobic and anaerobic of

exercise. Because of the significant result, the data was further subjected to statistical treatment using Scheffe's post hoc test.

TABLE - II
SCHEFFE'S POST HOC ANALYSIS ON RESTING PULSE RATE

Aerobic Group	Anaerobic Group	Control Group	Mean Difference	C.I
64.11	67.91		0.22	0.03
69.16		74.12	6.01	3.03
	68.01	74.16	6.2100	3.03

The post hoc analysis proved that the paired differences of means between aerobic and anaerobic group and control group were significant in moderating the resting pulse rate. However, there was no significant difference between the treatment groups.

Discussions

The results of this research on the effect of resting pulse rate were presented in Table I and II. As described in Table I the mean values of resting pulse rate of aerobic exercise group were 70.21 and 67.12 for pre test, post test and adjusted means respectively. The anaerobic group means were 72.81, 69.68 and 68.92 for

pre test, , post test and adjusted means respectively. The control group means were 70.30, 73.10 and 71.12 pre test, , post test and adjusted means respectively. The obtained F values were 1.43, 1.81 and 16.32 for pre test, post test and adjusted mean scores. The obtained F value for adjusted mean scores was greater than the required table value of 3.15 to be significant at 0.05 levels. Hence, it was proved that the experimental treatments significantly improved Resting pulse rate of the subjects.

The post hoc analysis shown in Table II proved that the mean differences between aerobic exercise group and control group, anaerobic and control group were significant. Comparing between the treatments group,

there was no significant difference between aerobic and anaerobic group. This proved that aerobic and anaerobic group equally improved Resting pulse rate of the medical students and the experimental groups were better than control group in stabilizing resting pulse rate of subjects.

Conclusion

The findings of this study proved that exercise programme significantly moderated resting pulse rate of the medical students and imparted for cardiopulmonary fitness. Physical exercise is a wondrous drug. The hormones produced during the time of exercise has got a vital role in controlling and regulating the Endocrine systems of the body.

Reference

1. Ames, C. (1992). Achievement goals, motivational climates and motivational processes. In C.G. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
2. "Acceptance and Commitment Therapy Training". Act Mindfully.
3. Bäumler, G. (2009). The dawn of sport psychology in Europe, 1880–1930: Early pioneers of a new branch of applied science. In C.D. Green & L.T. Benjamin (Eds.), *Psychology gets in the game* (pp. 20-77). Lincoln, NE: University of Nebraska Press.
4. Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1-26.
5. *Cognitive Techniques for Building Confidence and Enhancing Performance* / Nate Zinsser, Linda Bunker, Jean M. Williams In *Applied Sport Psychology: Personal Growth to Peak Performance* 2005.
6. Carron, A.V., Brawley, L.R., & Widmeyer, W.N. (1998). The measurement of cohesion in sport groups. In J.L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.
7. Danish, S.J., Forneris, T., & Wallace, I. (2005). Sport-based life skills programming in the schools. *Journal of Applied School Psychology*, 21(2), 41-62.
8. Duda, J.L. & Treasure, D.C. (2006). Motivational processes and the facilitation of performance, persistence, and well-being in sport. In J.M. Williams (Ed.), *Applied Sport Psychology: Personal Growth to Peak Performance* (pp. 57-81). New York: McGraw-Hill.
9. Fuchs, A. H. (1998). Psychology and "The Babe". *Journal Of The History Of The Behavioral Sciences*, 34(2), 153-165.