VOLUME-8, ISSUE-2, FEBRUARY-2019 • PRINT ISSN No 2277 - 8160

Original Research Paper

Physiology

COMPARATIVE STUDY OF CARDIO-VASCULAR ENDURANCE, FLEXIBILITY AND BODY COMPOSITION PARAMETERS OF MALE PHYSICAL TRAINING TEACHERS OF DIFFERENT DISTRICTS IN WEST BENGAL.

Siddhartha Sankar Dash*

Dept. of Physiology, Midnapore College(Autonomus) , Midnapore -721101, West Bengal *Corresponding Author

ABSTRACT

The present study has been conducted with a view to investigate the trend of students during their Graduation's programme. In this research, it was found that though the academic research made in various Indian Universities has been centered on individual practice, yet research title have been transformed from theoretical translation to step in an intensive study on objective facts. This study was conducted on Under-Graduate's dissertations submitted by the Under-Graduate students during their Graduation"s programme in various Indian Universities for their academic purposes.

KEYWORDS : Physiology, Psychology and Sports Training

Introduction

In the history of humankind, physical fitness has been considered as a vital element of everyday life of an individual. In being so, the ancient people were mainly dependent up on their individual strength, vigor and vitality for physical survival (Manmeet Gill, et al, .2010). These involved performances of some basic skills like strength, speed, endurance, flexibility, agility for running, jumping, throwing and climbing for the persistence of hunting, gathering food and building shelter for their living (Mehtap Ozdirenc, Nihal Gelecek, 2005).

Cardio-respiratory fitness is a major component of health-related fitness and depends on a large number of phenotypes associated primarily with cardiac, vascular and respiratory functions. Measurements of sub-maximal exercise capacity and maximal aerobic power are generally performed to assess cardio-respiratory fitness. Body mass index (BMI) is a statistical measure of an individual's weight scaled according to his height. It is a simple index of weight-for-height and is widely used by medical, health and fitness professionals to classify underweight, overweight and obesity in adults. BMI is a useful tool and for most individuals is an accurate way to classify weight, but it should be used along with other measurements as it does have limitations. However, individuals can calculate their BMI without the use of expensive equipment or special knowledge. BMI is calculated by dividing weight (in kilograms) by height (in meters) squared. The World Health Organization defines overweight as a BMI of 25.0 to 29.9 and obesity as a BMI greater than 30. A BMI value of 19.5 to 24.9 is considered normal, and less than 18.5 is defined as underweight. For children and adolescents, weight status must be determined through comparison of the child's BMI with age- and gender-specific values (BMI growth curves). Our bodies are made up of a lot of different kinds of tissues (plus a lot of water). There is muscle, fat, bone, and specialized tissue such as is in our various organs. The body fat percentage is just that – the percentage of our weight which is made up of fat. Body fat percentage is similar to terms such as *body fat ratio* and *body composition*. The review of literature indicates that with an increase in age there is a decline Cardio respiratory fitness that is related to cardiovascular endurance, flexibility and body composition parameters of male physical training teachers of different districts in West Bengal.

Limitations Previous abilities, individuals capabilities and effect of individuals difference was considered as limitation of this study.

Delimitations The study was delimited to ninety physical training teachers those who came to attend the state level orientation course for physical training teachers, sponsored by Sports Authority of West Bengal and organized by Subarnarekha Mahavidyalay, **Ghatal Rabindra Satabarsiki Mahavidyalaya**, **Gourav Guin Memorial College**, (West Bengal). Those who volunteered to participate in the study were selected randomly and divided into three groups districtwise respectively viz. Midnapore (N=30), Bankura (N=30) and Burdwan (N=30) district.

Materials & Methods

Initially selected ninety male physical training teachers who volunteered participated in this study. All the participants those who came in state level orientation course for physical training a teacher (granted by Sports Authority of West Bengal) that was organized by Subarnarekha Mahavidyalay, **Ghatal Rabindra Satabarsiki Mahavidyalaya**, **Gourav Guin Memorial College** .All the important and required information was given to participants and age was checked by their service record. All the subjects were screened and homogenized for absence of any diseases like cardiovascular disease, cardio-respiratory disease and any serious diseases and then divided into three groups districtwise respectively viz. Midnapore (N=30), Bankura (N=30) and Burdwan (N=30), their cardiovascular endurance was measured by Cooper s 12 minute run and walk test, flexibility measured by sit and reach test and body composition like Body mass index (BMI), Fat Mass (FM), Fat Percentage (Fat%), Total Body Water (TBW), Impedance(Ω) and Body Weight (W) measured by Body Composition Analyzer, height measured by stadiometer.

Statistical Analysis

For statistical analysis of data to find out the comparison of cardiovascular endurance, flexibility and body composition parameters of male physical trainig teachers of different districts in West Bengal, One way analysis of variance (***ANOVA***) F-test was applied. The level of significance in the study was chosen at 0.05.

Table-1: Cardiovascular Endurance, Flexibility and Body Compositional Parameters Characteristics of the Physical Education teachers (PET) of different Districts in West Bengal

Sr. No.	Parameters	Midnapore District (PET) Mean	Bankura District (PET) Mean	Burdwan District (PET) Mean	F- Value
1	Cardiovascular Endurance	1713.8	1773	1763.9	0.28
2	Flexibility	25.7	20.86	23.96	3.62*
3	Body Mass Index	24.23	24.23	23.2	1.12
4	Body Weight	68.4	69.73	67	0.76
5	Fat Mass	14.39	14.27	13.18	0.49
6	Age	42.9	37.83	40.56	3.75*
7	Total Body Water	39.62	40.18	39.34	0.50
8	Impedance	532.3	538.26	549.76	0.66
9	Fat Percentage	20.68	20.04	19.21	0.58
10	Height	168	169.366	169.03	0.54

Results & Discussion

Table 1 enlists the mean values of various health related measures and also compares the means statistically using ANOVA. Findings of the study demonstrate significant difference between the three

groups of physical education teachers of three districts of West Bengal in flexibility (Midnapore (Mdp) = 25.7, Bankura (Bnk)= 20.86 and Burdwan (Bdn)= 23.96 and f-value 3.62) and age parameter (Mdp = 42.9, Bnk = 37.83 and Bdn = 40.56 and f-value was 3.75) but no significant differences were observed in cardio-vascular Endurance, Body Mass Index, Body Weight, Fat Mass, Total Body Water, Impedance, Fat Percentage and Height between physical training teachers of different districts in West Bengal.

The obtained result suggested that there was significant difference between Midnapore, Bankura and Burdwan physical training teachers in flexibility and age parameters but there were non significant differences in cardio-vascular Endurance, Body Mass Index, Body Weight, Fat Mass, Impedance, Fat Percentage and Height between physical education teachers of different districts in West Bengal. The reason behind this was age factor because average of age was 38 to 43 when the age of all the physical education teachers was approximately same then all the parameter can be same that's why maximum body composition parameters indicate no significant difference in all the groups. An other reason can be that, state government selected experienced middle age physical training teacher for orientation course. The Body Mass index, Body Weight, Fat Percentage, Total Body Water, Impedance and Fat Percentage of all the Physical training Teachers was in normal range. So according to result of the study we can say that all the Physical training Teachers of different districts in West Bengal neither have neither more Physical fitness nor less physical Fitness.

REFERENCES:

[1] Devid, C. Nieman, Fitness and sports medicine a health related approach , physical activity and aging , III edition (Mayfield publishing company: California) p.429,436

[2] Fitzgerald, M.D., Tanaka, H., Tran, Z. and Seals, D.R. 1997. Age related decline in maximal aerobic capacity in regarding exercising vs sedentary females: a meta analysis, J. Appl.Physiol., 83: 160-165

[3] Trappe, T., Trappe, S., Lee, G., Widrick, J., Fitts, R. and Costill, D. 2006. Cardio respiratory responses to physical work during and following 17 days of bed rest and spaceflight. J. Appl. Physiol., 100(3): 951-7.

[4] Bouchard, C., and L.Pe'Russe (1994).Heredity, activity level, fitness and health. In physical activity. Fitness and health: International proceeding and consensus statement, pp.107-112.

[5] Caspersen, C.T., Powell, K.E., & Christenson, G.M. (1985). Physical activity, exercise, and physical fitness: Definition and distribution for health-related research. Public health research, Pp. 128-131.

[6] Cooper, KH. JAMA. (1968).Research quarterly for exercise and sport, Pp, 80-84.

[7] Fan, L. (1996). Further improving the implementation of the national fitness .Test program on school physical education, pp. 60-62.

[8] Hoeger, W.W.K., Hopkins, D.R., Button, S. & Palmer, T.A. (1990). Comparing the sit and reach with the modified sit and reach in measuring flexibility in adolescents. Pediatric exercise science 2, pp. 155-161.

[9] Hui, S.S.C. & Yuen, P.Y. (2000).Validity of the modified back-saver sitand-reach test: a comparison with others protocols. Med. Sci. Sports Exerc. Pp. 1655-1656.

[10] Ili, G. (1996).The characrestics creation and development of the national fitness test program. School physical education, pp. 6-7 and 41-45. International Journal of Scientific and Research Publications, Volume 7, Issue 6, June 2017 43 ISSN 2250-3153 www.ijsrp.org [11] Jackson, A.W. & Langford, N.J. (1989).The criterion-related validity of the sit and reach test: Replication and extension of previous findings. Res. Q. Exerc. Sport. Pp. 384-387.

[12] Mehtap Ozdirenc, Nihal Gelecek, (2005).Physical fitness in rural children compared with urban children in Turkey. Pediatrics International, pp. 26-31.

[13] Ruiz JR, Castro-Piñero J, Artero EG, Ortega FB, Sjöström M, Suni J et al(2009). Predictive validity of health-related fitness in youth: a systematic review. Br J Sports Med.; pp. 909-923.

[14] Ruiz, J.R., Ortega, F.B., Gutierrez, A., Meusel, D., Sjöström, M., & Castillo, M.J. (2006).Health-related fitness assessment in childhood and adolescence: a European approach based on the Avena, Eyhs and Helena studies. Journal of Public Health, pp. 269-277.

[15] Seefeldt, V., & Vogel.(1989).Physical fitness testing of children: A 30-year history of misguided efforts. Pediatric Exercise Science, PP. 295-302

[16] Sallis JF, Hovell MF, Hofstetter CR (1992).Predictors of adoption and maintenance of vigorous physical activity in men and women. Prev Med, pp.237-251

[17] Sallis JF, Patrick K, (1994). Physical activity guidelines for adolescents: Consensus statement. Pediatric Exercise Science., pp.302–314.

[18] Rabbia F, Grosso T, Cat GG, Conterno A, De Vito B, Mulat-ero P, et al. (2002).Assessing resting heart rate in adolescents: determinants and correlates. J Hum Hyper tens, pp.320-24

[19] Baechle, T.R. (1994). Essentials of strength training and conditioning. Human kinetics. [20] Carbin, C.B.; Lindesy, R. and Welk, G. (2000). Concepts of Physical Fitness: Active Lifestyle for Wellness. Boston: McGraw-Hill Companies, Inc.

[21] Corbin, C.B., G.I, Welk, R.Lindsey and W.R.Corbin, (2003).Concepts of physical fitness. Dubuque: McGraw Hill.

[22] Clarke, Harrison, H (1971).Basic understanding of physical fitness research digital series.INo.2.

[23] Franks, B.D. (1989). YMCA youth fitness test manual. Champaign, IL: Human kinetics. [24] Freedson, P.S, .Cureton, K.J, .and Heath, G.W. (2000).Status of field based fitness testing in children and youth, preventive Medicine.

[25] Getchell, L, G. (1979). Physical fitness a way of life, 2nd Ed. New Jersey, John Wiley and Sons.