EFFECT OF BODY MASS INDEX AND CONCENTRATION ABILITY ON PHYSICAL ACTIVITIES AND YOGASANAS FOR MALE STAFF MEMBERS

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INTRODUCTION

The BMI is a statistical measurement derived from your height and weight. Although it is considered to be a useful way to estimate healthy body weight, it does not measure the percentage of body fat. The BMI measurement can sometimes be misleading Â a muscleman may have a high BMI but have much less fat than an unfit person whose BMI is lower. However, in general, the BMI measurement can be a useful indicator for the 'average person'. The BMI equation (BMI = Body Mass Index) was originally framed by Adolphe Quetelet, a Belgium mathematician and scientist, between 1830 and 1850. Adolphe was the first person to think of relating weight to height in a statistical, expressible manner. While the BMI tool is fairly reliable, it is only one tool that physicians use in evaluating a person's health status. It is important to take other measures like blood pressure, cardiac health, physical inactivity and abdominal girth. Also keep in mind that BMI does not distinguish between muscles mass and fat mass. A particularly athletic person whose weight is higher due to muscle may have a BMI that indicates that they are overweight, when their weight is simply higher due to muscle mass. We can find out the BMI by using the formula is BMI = kg/m^2 where kg is a person's weight in kilograms and m^2 is their height in meters squared. A BMI of 25.0 or more is overweight, while the healthy range is 18.5 to 24.9 [**Adolphe Quetelet].**

Physical activity for human being is very essential to gain adequate strength, flexibility and to prevent obesity. Physical activity is important for at least three reasons. It develops the habit of physical activity which may carry over a routine life. It contributes to overall health status in later life, and it act as a preventive measure for some diseases during lifespan. The need of the hour is to encourage physical activity, exercise and sports participation. Every individual needs health and fitness to lead a happy and enjoyable life. Individual may be young or old, men or women, ill or handicapped, rich or poor, but they need physical, mental, social and emotional health [**Calfas**].

The Sanskrit word yoga has many meanings, and is derived from the Sanskrit root “yuj”, meaning “to control”, “to yoke”, or “to unite”. Translations include “joining”, “uniting”,

"union", "conjunction", and "means". Originated in ancient India, Yoga typically means 'union' between the mind, body and spirit. It involves the practice of physical postures and poses, which is sometimes referred to as 'asana' in Sanskrit. As the name suggests, the ultimate aim of practicing Yoga is to create a balance between the body and the mind and to attain self-enlightenment. In order to accomplish it, Yoga makes use of different movements, breathing exercises, relaxation technique and meditation. Yoga is associated with a healthy and lively lifestyle with a balanced approach to life the oldest physical discipline in existence known to humankind, Yoga brings stability to the body and the wavering mind. It increases the lubrication of joints, ligaments and tendons of the body. Studies in the field of medicine suggest that Yoga is the only form of physical activity that provides complete exercise to the body, because it massages all the internal organs and glands. This in turn reduces the risk of many diseases. Yoga can create a positive permanent difference to the lifestyle of anybody practicing it on a regular basis **(Stephen Sturgess (1997).**

Concentration, confidence are generally considered to be the main mental qualities that are important for successful performance in most sports and the development of these within the athlete is a major part of the work of the mental trainer. Concentration -ability to maintain focus and confidence - believe in one's abilities. This is the mental quality to focus on the task in hand. If the athlete lacks concentration then their athletic abilities will not be effectively or efficiently applied to the task. Broad/Narrow continuum - the athlete focuses on a large or small number of stimuli. Internal/External continuum - the athlete focuses on internal stimuli (feelings) or external stimuli (ball).The demand for concentration varies with the sport, Sustained concentration - distance running, cycling, tennis, squash, Short bursts of concentration - cricket, golf, shooting, athletic field events and intense concentration - sprinting events and skiing **(Dietrich & Harre, 1982).**

AIM OF THE STUDY

The aim of the study is to find out the effect of body mass index and concentration ability on physical activities and yogasanas.

METHODOLOGY

To achieve this purpose of the study thirty male staff members were selected from Koviloor Andavar Intuitions, Karaikudi and they were randomly divided into two experimental groups and another one is control group of ten each, such as Physical activities group (Group-I), Yogasanas group (Group-II) and control group (Group-III). The ages of the subjects were ranged from forty to forty five years only. The experimental group I underwent physical activities, group II underwent yogasanas for four days per week (Monday, Tuesday, Thursday and Friday) for the period of six weeks training program and Group III was the control group without any specified training. The dependent variables namely body mass index and concentration ability were selected as criterion variables and measured by administering age, height and weight of the individual and Hardy nelson mental skill questionnaire test. The data were collected from each subject before and after the training period and statistically analyzed by analysis of variance

(ANOVA) and analysis of covariance (ANCOVA). It was concluded that physical activities group is found to be better than yogasanas group and control group for degreasing Body mass index and Yogasanas group is found to be better than physical activities group and control group for improving concentration ability on male staff members. All the cases 0.05 level of confidence was to test the hypotheses.

ANALYSIS OF THE DATA

The effect of dependent variables on body mass index and concentration ability was determined through the collected data by using appropriate statistical techniques and the results are presented below. Table I presents pre and post test means and the results of the analysis of variance and covariance of physical activities group, yogasanas group and control group on body mass index and concentration ability.

TABLE - I

ANALYSIS OF VARIANCE AND COVARIANC OF THE DATA ON BODY MASS INDEX AND CONCENTRATION ABILITY OF PHYSICAL ACTIVITIES AND YOGASANAS ON EXPERIMENTAL AND CONTROL GROUPS

Variables	Test	Physical Activities group	Yoga group	Control group	Source of Variance	Sum of Squares	Df	Mean Squares	'F' Ratio
Body Mass Index	Pre Test Mean	27.97	26.62	26.73	Between	11.24	2	5.620	1.67
					Within	91.08	27	3.373	
	Post Test Mean	25.28	25.92	26.81	Between	11.81	2	5.904	**3.45***
					Within	46.22	27	1.712	
	Adjusted mean	24.72	26.24	27.06	Between	25.63	2	12.82	**45.22***
					Within	7.367	26	.283	
Concentration Ability	Pre Test Mean	11.70	11.90	12.30	Between	1.87	2	.933	1.09
					Within	23.10	27	.856	
	Post Test Mean	13.90	13.10	12.20	Between	14.47	2	7.23	**8.35***
					Within	23.40	27	.867	
	Adjusted mean	14.09	13.15	11.95	Between	21.44	2	10.72	**26.31***
					Within	10.59	26	.407	

*** Significant at .05 level of confidence**. (The table values required for significance at .05 level of confidence for 2 and 27 and 2 and 26 are 3.35 and 3.37 respectively)

Table-I shows that analyzed data on Body Mass Index and Concentration Ability assessed through age, height and weight of the individual and hardy nelson mental skill questionnaire test.

Pre test means of body mass index and concentration ability for and Physical activities group (Experimental group I), Yogasanas group (Experimental group II) and control group were 27.97, 26.62, 26.73 and 11.70, 11.90, 12.30 and respectively. The obtained F ratio 1.67 and 1.09 was lesser than the required table value of 3.35. Hence the pre test was insignificant. The post test means for 25.28, 25.92, 26.81 and 13.90, 13.10, 12.20 respectively. The obtained F ratio was 3.45 and 8.35.Which is greater than the required table value of 3.35. Hence the post test was significant. The adjusted post test means for 24.72, 26.24, 27.06 and 14.09, 13.15, 11.95 respectively. The obtained F ratio was 45.22 and 26.31 which is greater than the required table value of 3.37. Hence the adjusted post test was significant at 0.05 level of confidence for the degrees of freedom 2 and 26.

Since, three groups were compared, whenever they obtained 'F' ratio for adjusted post test was found to be significant, the Scheffe's test to find out the paired mean differences and it was presented in Table II.

TABLE II
THE SCHEFFE'S TEST FOR THE DIFFERENCES BETWEEN PAIRED MEANS ON BODY MASS INDEX AND CONCENTRATION ABILITY

Variables	Physical Activities Group	Yogasanas Group	Control Group	Mean Differences	Confidence Interval Value
Body Mass Index	24.72	26.24		1.52	**0.62**
	24.72		27.06	0.82	
		26.24	27.06	2.34	
Concentration Ability	13.15	14.09		0.94	**0.74**
	13.15		11.95	1.19	
		14.09	11.95	2.15	

***Significant at .05 level of confidence**

(***Significant at 0.05 level of confidence; Scheffe's C.I value is 0.62 and 0.74).

Post-hoc test was conducted to evaluate the pair-wise difference among the adjusted post test means for experimental groups and control group in body mass index and concentration ability. The Scheffe's test was used to three pair-wise comparisons with confidence interval value of body mass index is 24.72, 26.24 and 27.06 and concentration ability is 14.09, 13.15 and 11.95. The results showed that the adjusted post test means of physical activities group (M = 24.72) had significantly better decreasing than yogic practices group (M = 26.24) and control group (M = 27.06) in body mass index and the another results showed that the adjusted post test means of yogasanas group (M = 14.09) had significantly better than physical activities group (M = 13.15) and control group (M = 11.95) in concentration ability. The adjusted post test mean difference between the physical activities group and yogasanas group, physical activities group

and control group, yogasanas group and control group are 1.52, 0.82, 2.34 and 0.94, 1.19, 2.15 Body Mass Index and Concentration Ability respectively.

Adjusted means of physical activities group, yogasanas group and control group on body mass index and concentration ability are presented in Figure I and II.

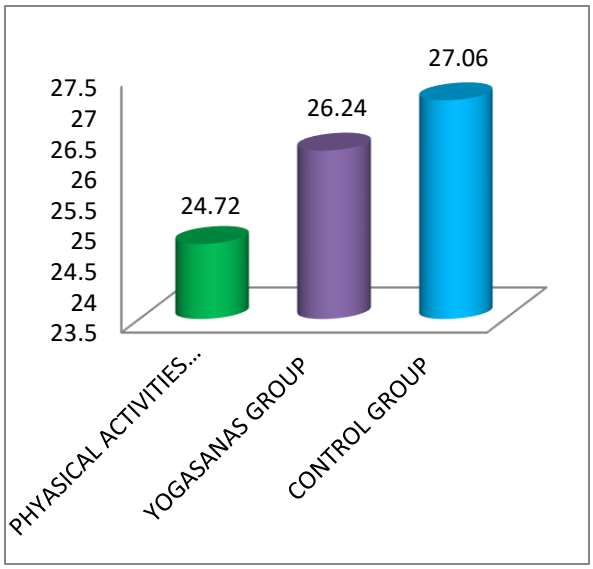

FIGURE – II

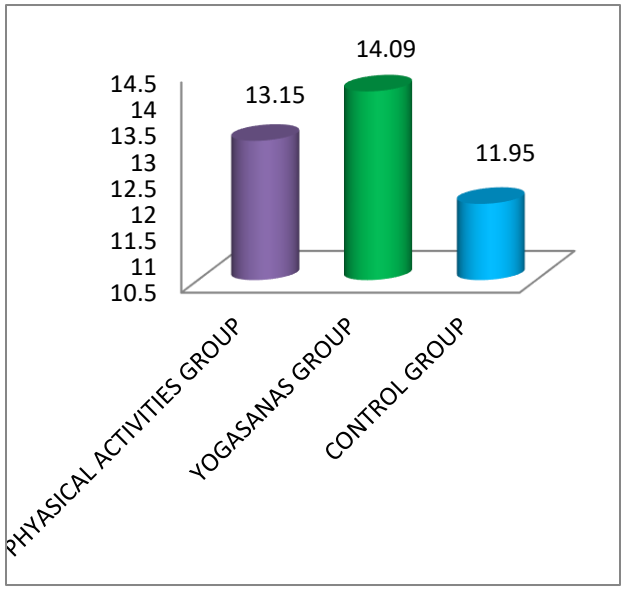

FIGURE – II

DISCUSSION AND FINDINGS

The results of the present study demonstrated that six weeks training program of physical activities group, yogasanas group and control group has showed significant improvement in the selected dependent variables of body mass index and concentration ability. It is understood that there were significant differences between the physical activities group and yogasanas group, physical activities group and control group, yogasanas group and control group on selected body mass index and concentration ability on male staff members.

CONCLUSIONS

1. Two experimental groups namely physical activities group and yogasanas group have achieved significant improvement as compared to control group towards improving the selected criterion variables such as body mass index and concentration ability.
2. It is concluded that physical activities group found to be better than yogasanas group in body mass index reduced.
3. It is concluded that yogasanas group found to be better than physical activities group improving the concentration ability.
4. Control group was insignificant in body mass index and concentration ability.

RECOMMENDATION

The following recommendation for future research is based on the results of this investigation and the related literature. Hence, it is recommended that physical education experts should give importance to the physical activities and yogasanas for the school and college students which will helps to develop physical, physiological and psychologically. Hence the students can be very active and alive in the class room and also healthy in their life style.

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