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EFFECT OF THREE MONTHS YOGIC THERAPY ON BODY COMPOSITION OF FEMALE DIABETIC PATIENTS

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ABSTRACT :

The purpose of the present study was to scrutinize the Effects of yogic therapy on variable Body composition of Diabetic patients. To achieve this purpose total sixty(N=60) female subjects were selected for the study. The age of subjects was ranging between 50-70 years, from Patiala district were selected as subjects.After the collection of relevant data parametric statistics technique (Shapiro-Wilk's, Paired sample t test and Analysis of Covariance) was usedwith the help of Statistical Package for the Social Sciences (SPSS) 21 version. To test the hypothesis the significance level was set at 0.05. It is coordinated that there is a significant difference between the female experimental and female control group by controlling the covariates. Moreover, the Partial Eta Squared value showed that three months of yogic training has 11 % positive impact on the experimental group with respect to Body fat percentage. The P-value .010 is less than (p <0.05).

KEYWORDS : *Yoga, Cardiovascular, Body Fat, Lean Body Mass, SPSS.*

INTRODUCTION:

Yoga is very beneficial for our health. If we peep into the advantages of yoga, they are various. It enhances physical wellness, stretch, controls general prosperity, mental clarity and more noteworthy self-comprehension. Individuals of any age can do yoga and it can likewise be adjusted for individuals with incapacities or unique needs. The asanas upgrade muscle quality, coordination, adaptability and can keep our body fit control cholesterol level, decreases weight, controls pulse and enhances cardiovascular performance.Body composition states to the number of body constituents such as fat, bone, other organs and are regarded as one of the major components of physical fitness of actual interest is the percentage of lean body mass and fat mass. Typically, an active physically fit individual has a lower percentage of body fat than an inactive unfit person. The vast number of overweight young people in our society is a cause for concern. Any fitness program, strength or cardiovascular should be planned with an aim to help reduce body fat *(Klavora, 2004)*.

METHODOLOGY:

Selection of Subjects: The subjects were purposively assigned into two groups: Female Group-A *(N$_1$=30)* Experimental group, underwent twelve – weeks training protocol & Group-B *(N$_2$=30)* acted as Control group who did not participate in any special training apart from the regular day to day activities. The testers performed the yogic activities six days a week and continue for three months.

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Selection of Variables:

The researcher had gone through the available literature and had discussions with various experts and his guide before arriving at a conclusion. The availability of the techniques, feasibility and reliability of the procedure and the outcome are extensively analyzed and on various factors associated with the problem, certain variables were selected to test during the study.

BODY COMPOSITION VARIABLES AND UNIT OF MEASUREMENT

S. no	Body composition	Unit of Measurement	Instrument
1.	Body Fat Percentage (BFP)	Percent %	Omron Body composition monitor

Statistical Technique:

After the collection of relevant data parametric statistics technique (Shapiro-Wilk's, Paired sample t test and Analysis of Covariance) was usedwith the help of Statistical Package for the Social Sciences (SPSS) 21 version. To test the hypothesis the significance level was set at 0.05.

RESULTS:
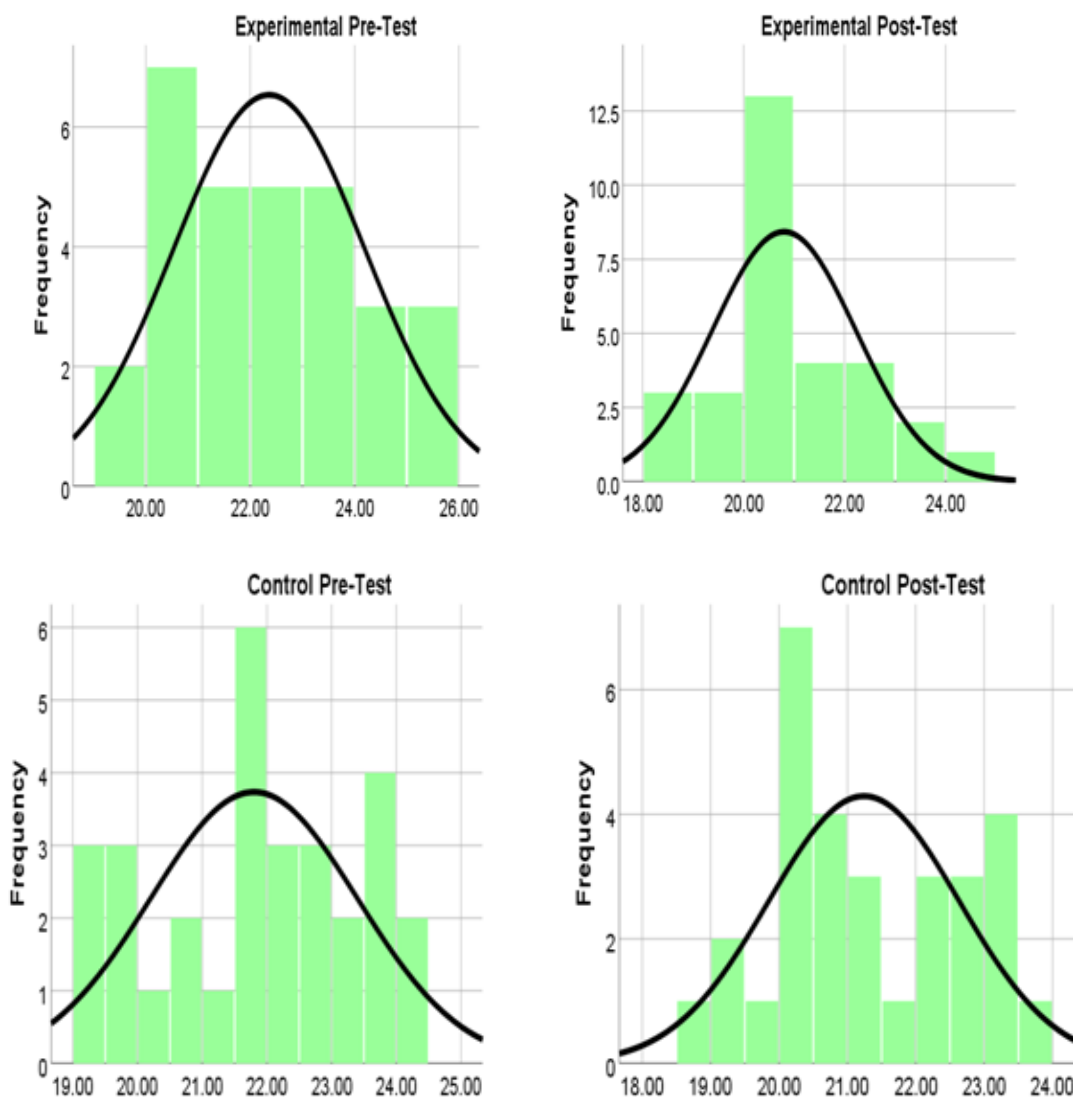### Table – 1(a) Normal Distribution of Data on Body fat percentage of Female Experimental and Control Group.

Group	Shapiro -Wilk's			Skewness	Std. Error	Kurtosis	Std. Error
	Statistic	Df	Sig.				
Female Experimental Pre-test	.942	30	.105	.760	.427	.433	.833
Female Experimental Post-test	.949	30	.160	.336	.427	-.937	.833
Female Control Pre-test	.949	30	.158	-.169	.427	-1.078	.833
Female Control Post-test	.943	30	.111	.185	.427	-1.173	.833

* (p > 0.05 significant level)

Table – 1(a) showed that the normal distribution of data on body fat percentage the p valve of female experimental & control groups was .105/.160 & .158/.111 found greater than 0.05 level of significance.

When we are calculating the skewness and kurtosis values and their standard error both values were within the range of + or - 1.96. Therefore, it concluded that the data of two experimental groups & two control groups in pre-test & post-test were a little skewed and kurtotic approximately normally distributed in terms of Shapiro - Wilk's test, skewness and kurtosis in the range of + or - 1.96.

After the normality test of the data of pre-test & post-test means were compared by paired sample t-test of experimental group (i.e. female experimental group and female control group) were investigated and existing in Tables.

Figure 1: Graphical representation of Normal Distribution of Data for Body Fat Percentage of female Experimental and Control Group.

Table 1(b). Significance of Differences between Pre-Test and Post-Test Means of Experimental Group and the Control Group of Female diabetic patients with regard to Body fat Percentage.

	Group	N	Mean	S.D.	SEM	't' Value	P-value
Female	Experiment (Pre-test)	30	22.362	1.830	.334	7.646	.000
	Experimental (Post-test)	30	20.800	1.419	.259		
Female	Control (Pre-test)	30	21.800	1.602	.292	2.030	.052
	Control (Post-test)	30	21.241	1.394	.254		

*Significant at 0.05 level $t_{.05}(29) = 2.045$

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3

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Table 1(b) presents the outcomes of female experimental group and the control group about the variable body fat percentage. The descriptive statistics show the Mean & SD values of body fat percentage of pre-test and post-test of the experimental group was 22.362±1.830 and 20.800±1.419 respectively, whereas the Mean and SD values of body fat percentage of pre-test and post-test of the control group was 21.800±1.602 and 21.241 ±1.394. The "t" value in case of female experimental group was 7.646 and for the female control group, it was 2.030. The p-value of female experimental group was.000< than 0.05 level of significance and female control group was .052>0.05are more than 0.05 level of significance.
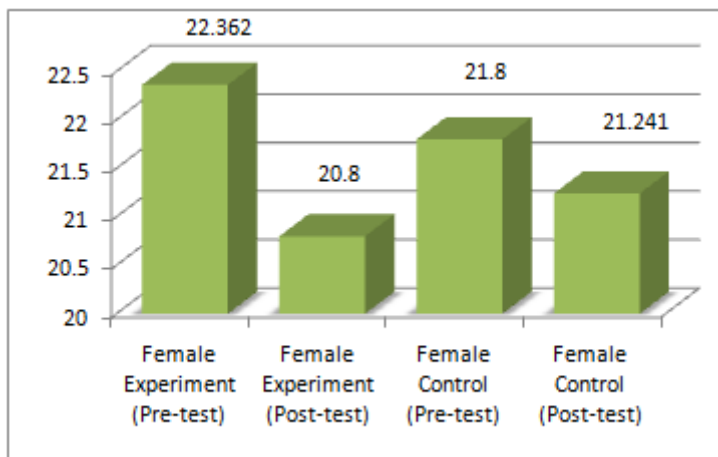

Figure – 2: Represent the Mean scores of Body fat percentage of Female Experimental and Control Group.

Table 1(c). Adjusted Post Test Means of female Experimental Group and Female Control Group in relation to Body fat percentage Assessment.

Group	Mean	Std. Error
Female Experimental Group	20.649	.197
Female Control Group	21.393	.197
a. Covariates appearing in the model are evaluated at the following values: Pretest = 22.0813.		

Table 1 (c) displays the results of the estimated marginal mean of the female experimental and control group was 20.649& 21.393. The estimated marginal mean has been adjusted for the covariate. It simply means that the effect of the covariate i.e. pre-test is statistically removed.

Table – 1(d) Analysis of Covariance of Comparison of Adjusted Post Test Means of female Experimental Group and female Control Group in Body fat percentage Assessment.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	52.414[a]	2	26.207	22.852	.000	.445
Intercept	29.378	1	29.378	25.617	.000	.310
Pretest	49.488	1	49.488	43.152	.000	.431
Experimental Group	**8.076**	**1**	**8.076**	**7.042**	**.010**	**.110**
Error	65.369	57	1.147			
Total	26630.309	60				
Corrected Total	117.783	59				

a. R Squared = .445 (Adjusted R Squared = .426)   *Significant at 0.05 level

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Table 1(d) represents the significant value in Group row. In this analysis, a pre-test is assumed to be covariate. The P-value .010 is less than (p <0.05) and it is concluding that there is a significant difference between the female experimental and female control group by controlling the covariates. Moreover, the Partial Eta Squared value showed that three months of yogic training has 11 % positive impact on the experimental group.

DISCUSSION:

It is coordinated that there is a significant difference between the female experimental and female control group by controlling the covariates. Moreover, the Partial Eta Squared value showed that three months of yogic training has 11 % positive impact on the experimental group with respect to Body fat percentage. The P-value .010 is less than (p<0.05). These outcomes of the research established with the findings of **Pandit et al. (2019) & Manna (2018)** who reported a significant reduction in Body Fat after the application of yogic training protocol.

FINANCIAL SUPPORT AND SPONSORSHIP

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests.

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5