

EFFECT OF PRANAYAMA AND MEDITATION ON PSYCHOLOGICAL VARIABLES AMONG POST GRADUATE ENGINEERING STUDENT

*Dr. S. Kanaka Vishnumoorthi
Director of Physical Education,
Velalar College of Engineering and Technology,
Erode.

Abstract

The aim of present study was to find out the Effect of Pranayama and Meditation on Psychological Variables among Post Graduate Engineering Student. The randomly selected subjects (N=30) were grouped into two groups, namely control group and experimental group respectively, each consisting of fifteen subjects. Pre tests were conducted for all the subjects on selected psychological variables such as stress and self confidence. The experimental group participated in their respective treatment for 56 Days. The post tests were conducted on the above said dependent variables after a period 56 Days.. The difference between the initial and final means was considered as the effect of respective effects on the subjects. The statistical significance was analyzed through ANCOVA. In all cases 0.05 levels was fixed to test the hypothesis of the study. The results presented proved that the Pranayama and Meditation improved overall health conditions of the Post Graduate Student, assessed through psychological variables self confidence with significant improvement and reduction in stress. There would be significant improvement due to the Pranayama and Meditation on psychological variables stress and self confidence than the control group. The comparison of post test means, experimental group 22.00 and control group 25.40 proved to be significant at 0.05 levels as the obtained 'F' value 82.01 was greater than the required table 'F' value of 4.20 to be significant at 0.05 level. The comparison of post test means, experimental group 25.20 and control group 35.07 proved to be significant at 0.05 levels as the obtained 'F' value 74.79 was greater than the required table 'F' value of 4.20 to be significant at 0.05 levels.

INTRODUCTION

Yoga is an ancient philosophical and religious tradition thought to have originated in India in 5000 BC. It has been incorporated into modern medicine during the few decades because of increasing incidence of diseases of modern civilization such as obesity, hypertension, coronary artery diseases, and diabetes mellitus, which are rooted in faulty lifestyle and psychological stress. Yoga is the best lifestyle modification, which aims to attain the unity of mind, body and spirit through asanas (exercise), pranayama (breathing), and meditation.

Breath is a dynamic bridge between the body and mind. Hence, life experiences can distort breathing pattern. Pranayama is the art of prolongation and control of breath helps in bringing conscious awareness to breathing and the reshaping of breathing habits and patterns.

Meditation is a yogic process of providing deep rest to the system by allowing the mind to calm down to its basal states. It is often looked upon as a relaxation technique to be used for treating stress and stress-related illnesses.

Different types of pranayama produce different physiological cardiovascular responses in normal young individuals. During right nostril pranayama and alternate nostril pranayama, the heart rate increased, whereas during left nostril pranayama, there was a decrease or no change in heart rate. Four weeks of Nadisuddhi pranayama has shown significant decrease in pulse rate, diastolic blood pressure and systolic blood pressure along with significant increase in pulse pressure. During 'OM' meditation, there was a significant reduction in heart rate as compared to the control period in which non-targeted thinking was encouraged.

METHODOLOGY: ASSESSMENT OF STRESS

The standard psychological tool device by Everyly and Girdano's was used to quantify psychological stress. This test consists of 14 statements. Each statement consists of 4 responses: Almost always; true; usually true, seldom true, never true. All the statements are positive in nature. The respondents made a tick mark (Ö) on any one of the responses that fit to them best. Hence the inventory in its original form was made use of in this investigation.

Scoring

The inventory was scored with the help of a scoring key which is given below. The scoring obtained for each statement was added and it was treated as individual score. The total score constituted the psychological stress score. The range of psychological stress score of the subject is given in appendix.

This questionnaire measures time urgency, competitiveness and hostility, polyphonic behaviour (trying to do many things at a time) and lack of planning. It consists of 14 items and it tries to measure the degree of stress of the students for every item, four alternatives are given from very high to very low.

Method of Scoring

There are four alternative responses to each item. There are (a) almost always true (b) usually true (c) seldom true and (d) never true. The subject is to check one of the four as it suits to him in accordance with the idea expressed in the respective statement. The alternative answers are assigned weights from 3 to 0. The 0 scores indicate a very low degree of stress and a score of 3 indicates very high stress level in the individual. The sum of all the weights assigned to all items in the total stress score of the individual. The minimum score is 0 and the maximum score is 42. The low score indicates low level of stress and high score indicates the high level of stress.

SELF CONFIDENCE EQUIPMENT

Agnihortry self-confidence inventory (ASCI). Procedure and Scoring: Scoring was the total number of points scored by each subject as per the questionnaire. A score of one is awarded for a response indicative of lack of self-confidence. That is for making cross (x) to wrong response to item numbers 2,7,23,31,40,41,45,53,55 and for making cross (x) to right response to the rest of the items. The lower the score the higher would be the level of confidence and vice versa. Statistical Technique: The data collected from the subjects were treated statistically, by. Analysis of covariance was used to find out the adjusted mean difference among the treatment groups. (Thirumalaisamy, 1998)

Selection of variables

The research scholar reviewed the various scientific literatures pertaining to Post Graduate Engineering Student and yogic practices on psychological variables from books, journals, periodicals, magazines and research papers. Taking into consideration of feasibility criteria, availability of instruments and the relevance of the variables of the present study, the following variables were selected.

Dependent Variables:

1. Psychological Variables
 1. Stress
 2. Self Confidence
2. Independent Variable
 1. Pranayama and Meditation

Experimental Design

The randomly selected subjects (N=30) were grouped into two groups, namely control group and experimental group respectively, each consisting of fifteen subjects. Pre tests were conducted for all the subjects on selected psychological variables such as stress and self

confidence. The experimental group participated in their respective treatment, 56 Days of Pranayama and Meditation. The post tests were conducted on the above said dependent variables after a period 56 Days. The difference between the initial and final means was considered as the effect of respective effects on the subjects. The mean differences were subjected to statistical treatment using ANCOVA. Criterion measures by glancing the literature and in consultation with professional experts, the following variables were selected as the criterion measures in this study.

Table – I

TEST ITEMS FOR THE SELECTED VARIABLES

Sl. No	Variables	Unit of Measurement
1	stress	Everyly and Gardino's Stress Scale
2	Self Confidence	Agnihotri's Self Confidence scale

Reliability of Data

The reliability of data was censured by establishing the instrument reliability, tester's competency and subject reliability.

Reliability was established by the test-retest processes. 30 subjects from all the three groups were tested on selected variables. The repeated measurement of individuals on the same test is done to determine reliability. It is a univariate not a vicariate situation; it makes sense then to use a univariate statistics like the interclass correlation coefficient (Baumgartner and Jackson, 1975). The interclass correlation coefficient obtained for test retest data are presented in Table II.

Table - II

Intra Class Correlation Coefficient of Test – Retest Scores

Sl. No	Variables	Coefficient of Correlation
1	stress	0.89*
2	Self Confidence	0.90*

RESULTS

Results on Stress

The initial and final means on Pranayama and Meditation group and control group on Stress among Post Graduate Engineering Student, through Analysis of Covariance (ANCOVA) is presented in Table - iii

Table - III - Computation of analysis of covariance on stress

	EXPERIMENTAL GROUP	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	'F'
Pre Test Mean	26.04	26.87	B	5.63	1	5.63	1.68
			W	93.73	28	3.35	
Post Test Mean	22.01	25.40	B	86.70	1	86.70	82.01*
			W	29.60	28	1.06	
Adjusted Post Test Mean	21.98	25.42	B	84.11	1	84.11	77.48*
			W	29.31	27	1.09	

The pre test mean on experimental group was 26.00, and control group was 26.87 and the obtained 'F' value was 1.68, which was less than the required 'F' value of 4.20 to be significant. Hence, it was not significant and the groups were equal at initial stage.

The comparison of post test means, experimental group 22.00 and control group 25.40 proved to be significant at 0.05 levels as the obtained 'F' value 82.01 was greater than the required table 'F' value of 4.20 to be significant at 0.05 levels. Taking into consideration the initial and final mean values adjusted post test means were calculated and the obtained F value of 77.48 was greater than the required F value to be significant 4.21 and hence, there was significant difference. Thus, it was proved that experimental group gained mean difference on, Stress 4.00 was due to the Pranayama and Meditation given to post graduate student, and the difference was found to be significant at 0.05 level. The initial, post and adjusted means values of experimental and control group on Stress is presented in Figure I for better understanding of the results of this study.

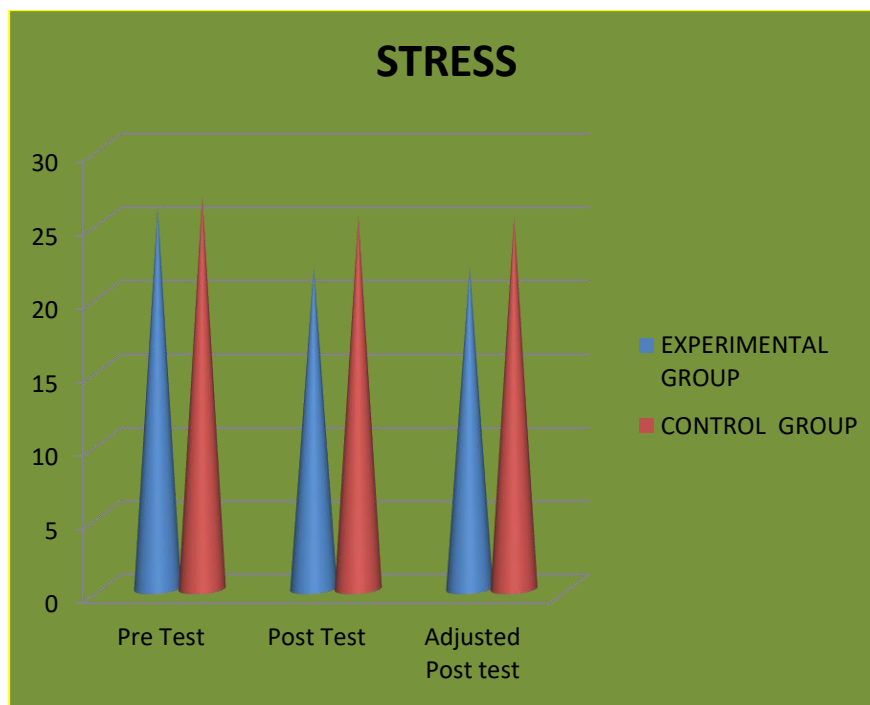


Figure 1 - the initial, post and adjusted means values of experimental and control group on Stress

Results on self confidence

The initial and final means on the pranayama and meditation group and control group on Self Confidence among post graduate student, through Analysis of Covariance (ANCOVA) is presented in Table iii. The pre test mean on experimental group was 34.80, and control group was 37.00 and the obtained 'F' value was 8.58, which was greater than the required 'F' value of 4.20 to be significant. Hence, it was not significant. The comparison of post test means, experimental group 25.20 and control group 35.07 proved to be significant at 0.05 levels as the obtained 'F' value 74.79 was greater than the required table 'F' value of 4.20 to be significant at 0.05 levels. Taking into consideration the initial and final mean values adjusted.

Tabelul IV -- the initial, post and adjusted means values of experimental and control

	EXPERIMENTAL GROUP	CONTROL GROUP	SOURCE OF VARIANCE	SUM OF SQUARES	df	MEAN SQUARES	'F'
Pre Test Mean	34.80	37.00	B	36.30	1	36.30	8.59*
			W	118.40	28	4.23	
Post Test Mean	25.20	35.07	B	730.13	1	730.13	74.79*
			W	273.33	28	9.76	
Adjusted Post Test Mean	25.83	34.44	B	425.59	1	425.59	48.95*
			W	234.74	27	8.69	

Table F-ratio at 0.05 level of confidence for 1 and 28 (df) =4.20, 1 and 27(df) =4.21 . * Significance (0.05)

Post test means were calculated and the obtained 'F' value of 48.95 was greater than the required 'F' value to be significant 4.21 and hence, there was significant difference. Thus, it was proved that experimental group gained mean difference on, Self Confidence 9.60 was due to pranayama and meditation given to post graduate student, and the difference was found to be significant at 0.05 levels. The initial, post and adjusted means values of experimental and control group on Self Confidence is presented in Figure I for better understanding of the results of this study.

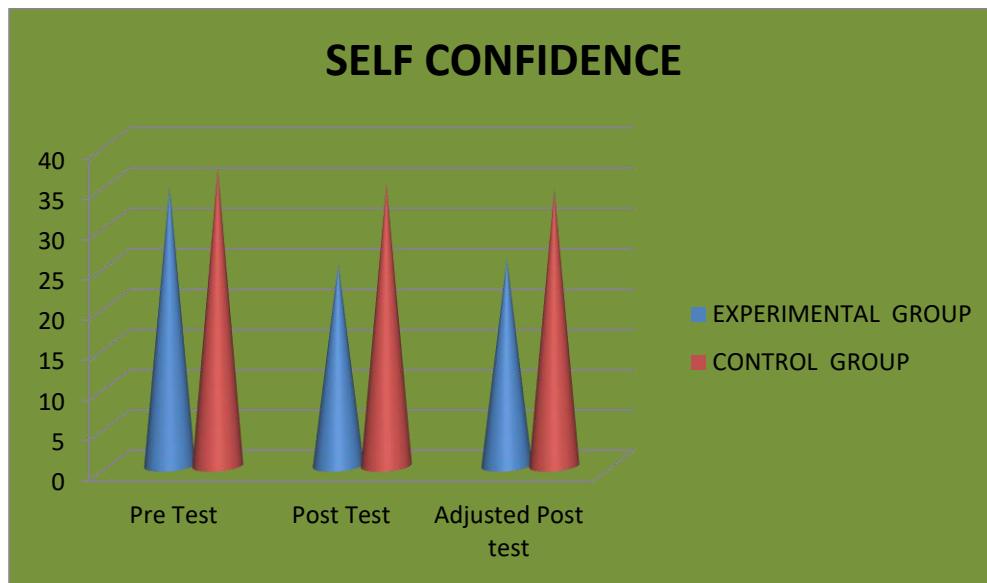


Figure II - the initial, post and adjusted means values of experimental and control group on Self Confidence

D ISCUSSIONS ON HYPOTHESIS

The formulated hypothesis that there would be significant improvement in psychological conditions of post graduate engineering student due to the pranayama and meditation on psychological variables stress and self confidence. The results presented in Table III proved that self confidence of the post graduate student were significantly improved due to the pranayama and meditation the results presented in Table IV proved that stress of the post graduate student were significantly reduced due to the pranayama and meditation among post graduate student. Thus, the results proved that the pranayama and meditation significantly altered psychological variables self confidence and stress to improve the overall psychological levels of the post graduate student and the formulated hypothesis was accepted at 0.05level.

C ONCLUSIONS

Within the limitations and delimitations of the study, the following conclusions were drawn:

1. Psychological variable, self confidence was significantly improved due to the pranayama and meditation among post graduate engineering student and improved their psychological conditions than the control group.

2. Psychological variable, stress was significantly reduced due to the pranayama and meditation among post graduate engineering student and improved their psychological conditions than the control group.

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