

Effect of Yogic Intervention: Pranayama on the Stress Level of Males & Females

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ABSTRACT

An attempt has been made to study the effect of yoga: pranayama on the stress level of males & females. A purposive sample of 120 persons (60 males & 60 females) was selected and a pre and post control group design was used. Life style questionnaire (referred in introducing health Psychology) & 'Eight State Questionnaire' by Curran & Cattell, Indian adaptation by Shri Malay Kapoor New Delhi, Kapoor & Bhargava (Agra) were used as tools. An analysis of results shows that the yoga pranayama had positive effect in the management of Stress in males & females as well as in creating positive image about oneself in the experimental group while control group didn't show any significant difference.

Keywords: *Yoga: Pranayama, Stress*

Yoga is one of India's greatest gifts to the world. It has been practiced in India since times immemorial. It is a combination of religion, philosophy and physical culture into one complete science. Yoga is a movement based on form of relaxation and meditation that combines physical postures, exercises and breathing to promote physical mental and spiritual well being. In yoga, breath work is known as PRANAYAMA. Pranayama comprises 'Poorak', 'Kumbhak', & 'Rachek' which means inhalation & exhalation with the arrest of breathing process internal & external. By regular practice of Pranayama, pran shakti is being distributed through the body and invigorates all the seven charkas, purifies the mind and streamlines all the systems of the body thereby increasing the longevity. There are various types of Pranayama to be performed as per the bases of need & season. Long & deep breathing, bhastrika, kapalbhati, agnisar, anulom-vilom, bhramri, ujjayi, sheetli, nadishodhan are quite prominent. Yoga improves fitness, lowers blood pressure, promotes relaxation and self-confidence, and reduces stress and depression. People who practice yoga tend to have good coordination, posture, flexibility, range of motion, concentration, sleep habits and digestion. Yoga is a complementary therapy that has been used with conventional therapies to

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Received: April 12, 2018; Revision Received: June 4, 2018; Accepted: June 25, 2018

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help treat a wide range of health problems but it is not, in and of itself, an effective cure for any particular disease.

Many studies have been conducted in this area which supports the findings of the present study. As suggested by **Verma (1996)** reported that yoga practice was as effective as drug therapy in treating psychological disturbance. The effect of yoga practice lasted for over two years with signs of continuing improvement and in addition to alleviation of ill health; there was also a positive sense of well-being which was not observed in drug therapy.

Some forms of yoga were found to have significant anti depressant effects (**Murthy et al. 1998**).

Yoga is an ancient Indian science and way of life which brings about relaxation and also induces a balanced mental state. Yoga: Pranayama is our personal physician (**Swami Ramdev**). As a holistic system, yoga deals with the body, mind and behaviour in a synergistic way. In Pranayama techniques like kapalbhati is with a specific purpose of cleansing the skull region and make it to shine with ample supply of oxygen (**Saraswati, 1985**). The word Pranayama is a combination of two Sanskrit words. Prana+ayama which means expansion of vital energy. According to these texts vital energy is absorbed in subtle form through breathing and in Pranayama this vital energy is expanded. This information that Pranayama enhances oxygen supply to the head which is received from classical texts has been subjected to empirical testing and it was reported that during Pranayama oxygen consumption has increased as compared to normal breathing (**Karambelker, Deshpande, Bhole, 1982**)

Yoga: Pranayama refers to union between body and mind or body, mind and spirit. The traditional connotation of yoga is union between the jivatma and paramatma that is between one's individual consciousness and the universal consciousness therefore yoga refers to a certain state of consciousness as well as to methods that help one reach that goal or state of union with the divine.

The present world is experiencing the accelerating speed of the modern illness: stress. According to stress researcher, **Lazarus**, stress begins with the appraisal of the situation. Almost every system in the body is affected by stress. The key for management of stress is the positive evaluation of the situation. This is possible through yoga. Yoga is a way of life. Yoga considers a human being as a whole-body, mind and spirit together. Disintegration of this personality leads to 'stress'. Yoga aims at harmonizing the physical, mental & spiritual aspects of the personality. Yoga is found to be a holistic method to restore balance of physical, mental and spiritual energy where as stress (distress) is more likely to be the cause of imbalances.

The key for management of stress is the positive evaluation of the situation. This is possible through Yoga: Pranayama. Yoga is a way of life. Yoga considers a human being as a whole-body, mind and spirit together. Yoga aims at harmonizing the physical, mental & spiritual

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aspects of the personality. **Swami Ramdev, Yoga Synergy in medical science (2007)** revealed that by doing Pranayama practice a totally frustrated person can lead a purposeful and enthusiastic life. The survey shows that Yoga and Pranayama increases positive thinking and our life becomes more objective and productive.

Verma (1997) reported that yoga practice was as effective as drug therapy in treating psychological disturbance. The effect of yoga practice lasted for over two years with signs of continuing improvement and in addition to alleviation of ill health; there was also a positive sense of well-being which was not observed in drug therapy.

METHOD

Participants:

Keeping the nature of study in mind a purposive sample of 120 persons (60 males and 60 females) was taken from the sub urban area of BARAUT.

Table-1, The Table showing the Sample of Subjects of Experimental & control group-

Gender	Experimental Group	Control Group	Age Group	No.Of Subjects
Male	Young Adult	Young Adult	20-30	30
	Elderly Adult	Elderly Adult	40-50	30
Female	Young Adult	Young Adult	20-30	30
	Elderly Adult	Elderly Adult	40-50	30

Total No. of Subjects of Experimental Group = 60

Total No. of Subjects of control Group = 60

Total No. of the Subjects = 120

Sampling and research design:

The present study followed a pre and post control group design. As part of the design, the study used an attention control condition, according to which controls subjects were given only research attention, while the treatment group actively participated in the intervention programme. In this study Yoga: Pranayama were taken as independent variable & stress was taken as dependent variable. In this present study our sampling technique was purposive. We needed the subjects who are conscious about their health and for this purpose we selected 120 subjects. The data collection was done in three stages.

Tools:

'Life style questionnaire' (referenced in 'Introducing Health Psychology') & **'Eight State Questionnaire'** by Curran & Cattell, Indian adaptation by Shri Malay Kapoor, New Delhi and Kapoor & Bhargava (AGRA) was used for measuring stress.

Procedure:

The study was completed in three steps. In the first step the **'Life Style Questionnaire'** was to be filled up by subjects. The subjects scoring in the first two categories were chosen and the **'Eight State Questionnaire'** was administered & after the scoring we chose only those subjects who were either in average category or high category. In the third step we have checked some physical tests of the subjects as B.P., Weight, Sugar & Cholesterol. In this final

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step, subjects who were normal in all the tests were chosen and further we divided our subjects to two groups: Experimental Group and Control Group. In Experimental group, we included those subjects who agreed with our conditions. After the selection of 120 subjects we started our study. We had two groups: Experimental Group and Control Group.

Experimental Group: -

In this group the 'Eight State Questionnaire' was to be filled four times by the subjects for three months (Pre-Position, after first month, after two months & after three months). We trained the subjects for Yogic Intervention i.e. Pranayama the procedure was as under:

Training:

Every subject had to do Pranayama in the early morning or at least with a gap of 4-5 hours after taking his meals. The duration was 20-25 minutes. We had used the package of Pranayama of seven breathing exercises as suggested by Swami Ramdevji: **The Seven Breathing Exercises of this package are as follows:** Bhastrika , Kapalbhathi , Bahya Pranayama(with tribandh), Anulom-Vilom, Bhamri, Udgeet 'Omkar Japa', Pranav Pranayama (Meditation of Om with Breathing). The research scholar has been trained in Patanjali Yogpeeth, Haridwar under the supervision of Swami Ramdev. So we tried to train the subjects by right method and the subjects were asked to follow the procedure strictly at least one time for 20-25 minutes. Thus the study was conducted for three months. The members of the experimental group were observed everyday for three months.

Control Group:-

In this group also our research procedure was for three months. The 'Eight State Questionnaire' was filled by the subjects four times i.e. we used to take back the filled booklets every month from the subjects. We had not given training of Yogic Intervention: Pranayama to the subjects of control group. We applied all conditions of filling up the questionnaire as was done in experimental group.

Data analysis:

The responses of the two groups (experimental & control) were analyzed by using the statistical procedures of **Mean, S.D. & 't' ratio** as shown in table 2.

RESULTS AND DISCUSSION:

The purpose of the present study has been to investigate the effect of Yogic Intervention: Pranayama on the stress level of males & females. The present study comprises of one independent variable called Yoga: Pranayama & the other dependent variable, Stress. The dependent variable (Stress) has been symbolized as, (ST) having four distinct categories viz. Stress-Pre-Position, after one month, after two months & after three months they are symbolized as (ST1), (ST2), (ST3) & (ST4) respectively.

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Table- 2, Mean differences & S.D. of Stress-pre-position and the experimental conditions i.e. after one month, two months and three months.

Paired differences (STRESS)	Paired samples test of experimental group (n=60)					
	Mean differences	Std. deviation	Std.error mean	df	t-value	
Pair 1 ST 1 -ST 2	19.76-17.43	2.33	2.17	.28	59	8.30***
Pair 2 ST 1 -ST 3	19.76-14.30	5.46	2.54	.32	59	16.66***
Pair 3 ST 1 -ST 4	19.76- 9.21	10.55	3.29	.42	59	24.79***
Pair 4 ST 2 -ST 3	17.43-14.30	3.13	1.52	.19	59	15.93***
Pair 5 ST 2 -ST 4	17.43- 9.21	8.21	2.42	.31	59	26.20***
Pair 6 ST 3 -ST 4	14.30- 9.21	5.08	1.98	.25	59	19.83***

*****significant at .001 level**

Table 2 shows the mean difference of stress from pre-position (ST1) till three month (ST4) by experimental group. The mean differences between six Pairs i.e. Pair 1, Pair 2, Pair 3, Pair 4, Pair 5 & Pair 6 was highly significant level ($p < .001$). By these mean differences it was found that the stress level of experimental group reduced gradually. It reveals that very positive effect of Pranayama on the experimental group in three months study, as is clear from the graphical presentation in figure 1.

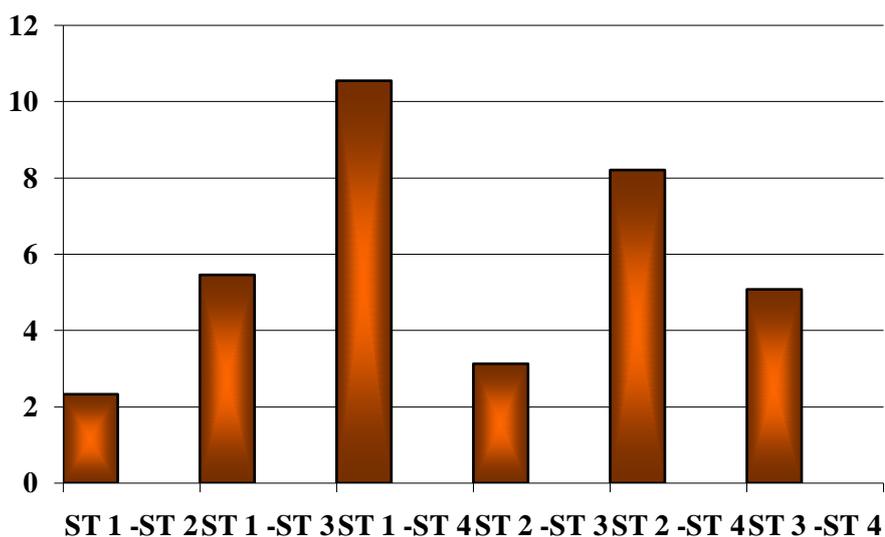


Figure 1 graphically depicts the mean differences on stress by experimental group

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Table- 3, EXPERIMENTAL GROUP, Means of stress by males & females of experimental group during three months.

Variable		Male Mean N(=30)	Female Mean N=(30)	F-Ratio
STRESS	ST1	20.50	19.03	7.76**
	ST2	17.60	17.26	.90(N.S.)
	ST3	14.13	14.46	.98(N.S.)
	ST4	8.83	9.60	4.63*

****significant at .01 level**

***significant at .05 level**

Table 3 shows the means of stress & by males & females of experimental group during three months. In ST1, between males & females the significant difference at .01 level. In ST2, there was not any significant difference. In ST3, also there was not any significant difference & in ST4, the level of significance at .05 level. It shows that overall improvement in males is slightly more than females in stress.

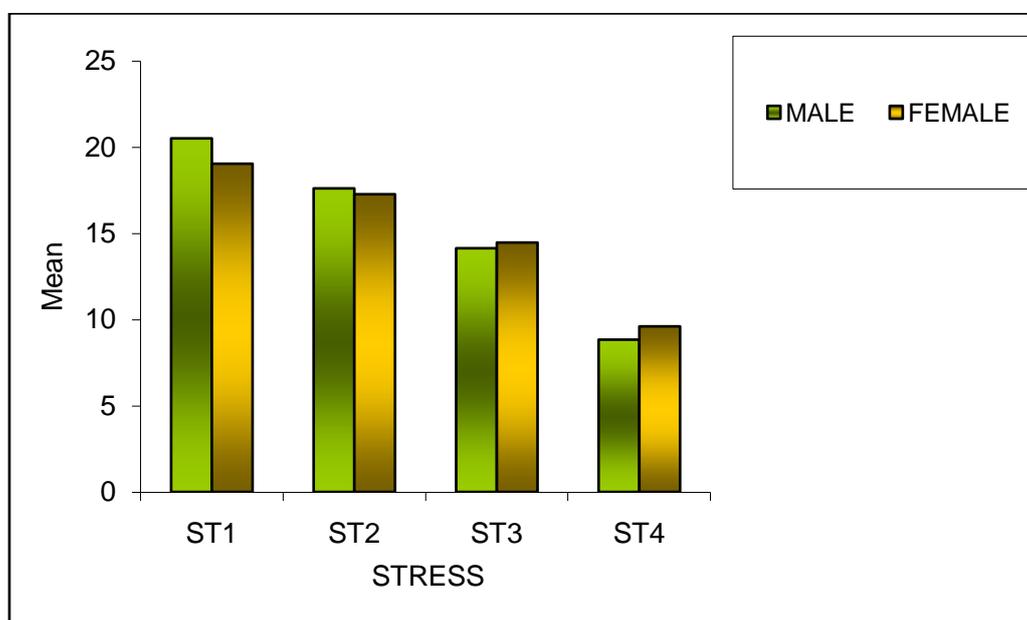


Figure 2 Showing means of stress scores of males & females of the experimental group.

Table- 4, CONTROL GROUP, Means of stress by males & females of control group during three months.

Variable		Male Mean N(=30)	Female Mean N=(30)	F-Ratio
STRESS	ST1	19.49	18.98	2.92(N.S.)
	ST2	20.13	18.70	5.19**
	ST3	18.50	19.23	1.79(N.S.)
	ST4	19.06	19.06	.00 N.S.)

****significant at .01 level**

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Table 4 shows the means of stress by males & females of control group during three months. In ST1, between males & females there was not any significant difference. In ST2, the level of significance at .01 level. In ST3 & ST4 there was not any significant difference. It shows that the level of stress between males & females was same as before.

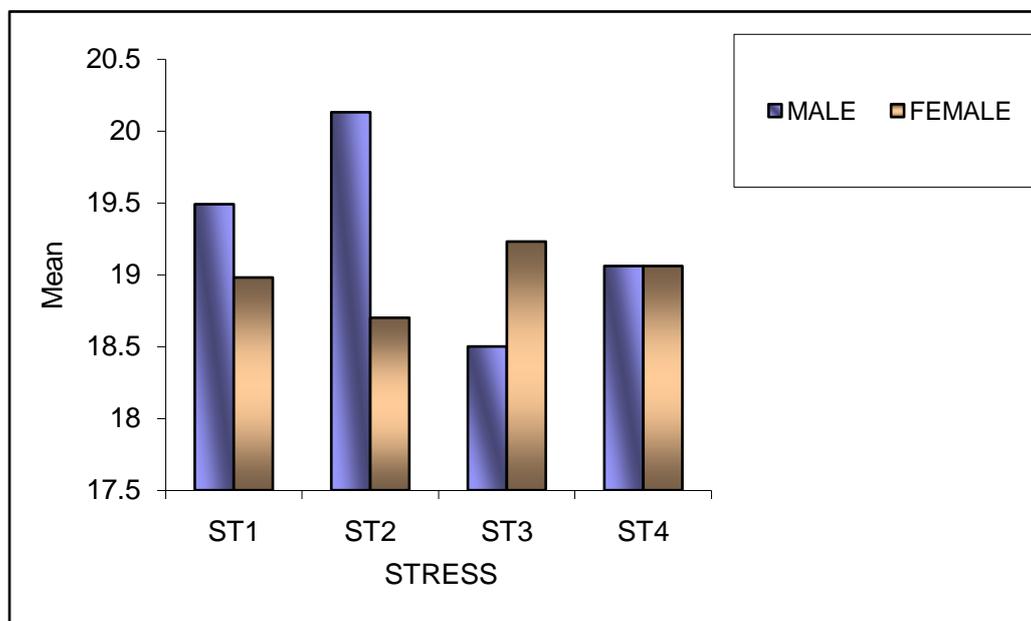


Figure 3 Showing means of stress scores of males & females of the control group during three months.

The results obtained in the present study support the findings that the effect of Yogic Intervention: Pranayama on the stress level of males & females. The results also indicate that yoga: Pranayama improves our mental energy and gives us positive mental health. Observing the results in present study it may be said that positive effect of yoga: Pranayama on stress. As suggested by (Udupa, 1985, Nagendra & Nagarathna, 1988, Subrahmanyam, 1988, Sahajpal & Verma, 1993 Sahajpal & Khanna, 1994). The results in the present study support their idea that beneficial effect of yogic intervention for stressed persons. Some other studies also have worked with yogic intervention effects on ‘quality of sleep’ and sleep disturbances. Knowing the vast adverse impact of poor sleep quality and sleep deprivation on personality and behavior (Keclund et al., 1997, Ohayon, et al., 1997, Labbate, et al.1998). The same type of results suggested by yoga therapy group subjects have not only benefited psychologically but their physiological responses also improved. The change in outlook in perceiving day-to-day problems, effectively dealing with them may be attributed to the yoga training. On the other hand control group subjects showed no such improvement. Actually they reported more symptoms, didn’t show any reduction in stress perceptions and their coping responses were not adaptive. The findings support the view held by earlier studies on yoga therapy and its psychological benefits (Vahia, 1969, Naug, 1975, Datey, 1969). Yoga therapy group subjects are not only benefited physiologically but their psychological responses are also improved. The findings support the view held by earlier studies on Yoga therapy and its psychological benefits. (Vahia, 1969, Naug, 1975, Datey, 1969)

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Pranayama through its moderating effect on the autonomic tone induces both physical and mental relaxation and reduction in emotional arousal. The intensity and frequency of negative emotions, such as anger, hostility, hopelessness, etc., can thus be controlled through the practice of Pranayama.

Yet another effect of Pranayama on the psychological level is in inducing stillness of mind. Mind is a chatterbox with streams of thoughts about the present, past and future. Yoga likens this nature of the mind to a horse without reins. The fixations of attention on the breathing process during Pranayama help the practitioner stop this chatter immediately. The cessation of thoughts is a preliminary step towards meditation.

The Practice of Pranayama leads to greater O₂ supply to the blood stream and CO₂ drainage. As a result, greater amount of oxygen is available for cerebral metabolism. Further as Iyengar (1977) observes regular practice of various Pranayama will promote mental calm and concentration, which resembles a state of meditative relaxation. According to Medical Scientists, Yog and Pranayama therapy is successful because of the balance created in the nervous and endocrine systems which directly influences all the other systems and organs of the body. Yog and Pranayama act both as a curative and preventive therapy.

The very essence of Yog and Pranayama lies in attaining mental peace, improved concentration powers, a relaxed state of living and harmony in relationship. Through the Practice of Yog and Pranayama, we become aware of the interconnectedness between our emotional, mental and physical levels. Gradually this awareness leads to an understanding of the more subtle areas of existence.

Practice of Pranayama, Yoga and meditation controls the limbic hypothalamus axis. This reduces the anxiety and reduces the high level of stress hormones present in the blood. It also increases the level of beneficial hormones like adrenaline and enkephalin. These two hormones have positive effect on our body and strengthen the immunity system. The body gets the ability to protect itself from diseases and does not allow the entry of infections and other contagious diseases. Swami Ramdev, *Yog Synergy in Medical Science*, (2007) revealed that yoga and Pranayama are not merely physical exercises but they strongly influence our consciousness. Yoga and Pranayama have a direct positive impact on our thinking. Yog and Pranayama have also led to lot of reduction in stress levels. The present life style and stress has adversely affected memory power of lot of people and they also got a chance to rejuvenate after coming into the shelter of Yog.

Thus the present study on the one hand helps to confirm the previous results starting the positive the effect of Yogic Intervention: Pranayama on the stress level of males & females and on the other hand it suggests that one can practice Yoga: Pranayama in the present day society without deviating from the basic principles. These make an individual think and live in a positive way with a philosophical view. This helps him to address the life challenges without distress. Several diseases such as depression, stress, migraine pain, headache

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& physical & mental problems which cannot be permanently cured by medicine may be cured by yoga: Pranayama.

But whether we use yoga for spiritual transformation or for the management of stress and physical or social well-being, the benefits are multiple and amazing, if practiced regularly and with faith.

From the above discussion it may be concluded that there is a positive effect of Yogic Intervention: Pranayama on the stress level of males & females. It may also be said that Yoga: Pranayama provides us perfect physical, social and psychological well-being even under stressful conditions.

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Acknowledgments

The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interests: The author declared no conflict of interests.

How to cite this article: Jain, V (2018). Effect of yogic intervention: Pranayama on the stress level of males & females. *International Journal of Indian Psychology*, 6(2), 129-138. DIP:18.01.073/20180602, DOI:10.25215/0602.073