

## Effectiveness of Yogic Techniques in the Management of Stress Among Adolescents

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### ABSTRACT

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. An attempt has been made to study the effect of Yoga: Pranayama on Stress. A purposive sample of 60 adolescents was selected and a pre and post control group design was used. Bisht Battery Stress Scale (BBSS) constructed and standardized by Dr. Abha Rani Bisht. The test was developed for the measurement of 13 types of stress. Out of 13 scales, four scales, i.e., scale of academic stress, scale of family stress, scale of emotional stress and scale of physical stress were selected. Analysis of results shows that the yoga pranayama had positive effect in the management of Stress as well as in creating positive image about oneself in the experimental group while control group didn't show any significant difference.

**Keywords:** *Yoga module: Pranayama, Stress, and adolescents*

Originating in India thousands of years ago, yoga is considered as an ancient set of techniques for improving and balancing the whole system of body and the mind. Yoga involves the physical practice of stepping the body through a series of poses and postures which help improve strength, flexibility and balance. The practice of yoga relieves muscle tension, lowers blood pressure, and decreases cholesterol levels etc. The references to yoga are available in 'Upanishads' and 'Puranas' composed by Indian Aryans in the later Vedic and post-Vedic period. The main credit for systematizing yoga goes to Patanjali who wrote 'Yoga Sutra', two thousand Years ago. He described the principles of the full eight fold yogic discipline. He composed the treatise in brief code words known as 'Sutras', 'Yoga Sutra' is the most important basic text on Yoga. It is through this basic treatise that the essential message of Yoga spread throughout the world.

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## Effectiveness of Yogic Techniques in the Management of Stress Among Adolescents

Yoga is an ancient Indian science and way of life which brings about relaxation and also induces a balanced mental state. Yoga: Pranayama is also considered our personal physician (**Swami Ramdev 2007**). 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**)

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 whereas stress (distress) is more likely to be the cause of imbalances. **Udupa, (1985)** carried out research on patients of stress related disorders like hypertension, cardiovascular disorders, asthma, hypothyroidism and found beneficial effects of some yogic practices taught to these patients. Positive effects of some yogic practices on stress related problems and their reduction have been shown by many other studies too (**Udupa, 1985 Nagendra, 1988**).

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 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.

### *Objective*

The main objective of the present investigation was to assess the effect of Yoga on stress among adolescents.

### *Hypotheses*

- Prior to learning the Yoga practice, the subjects of experimental-group would not score significantly different from those of the control-group in four areas of stress.
- In comparison to their pre-experimental stage the subjects of experimental group would be found significantly differ in stress scores.

### *Research Design and Sampling*

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 control 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, and four

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types of stress i.e. academic, physical, family and emotional stress were taken as dependent variable. In this present investigation a sample of 60 adolescents subjects were selected for the research from western U.P. with the help of purposive sampling. The total sample was divided into two groups group 1 experimental group and group 2 control group. All the subjects were girls with an age range of 16-18. All the subjects belonged to more or less same socio-cultural background and equivalent in respect of education.

### *Tools*

- **Bisht Battery of Stress Scale:** Bisht Battery Stress Scale (BBSS) constructed and standardized by Dr. Abha Rani Bisht. The test was developed for the measurement of 13 types of stress. Out of 13 scales, four scales, i.e., scale of academic stress, scale of family stress, scale of emotional stress and scale of physical stress were selected. The scoring was done as prescribed in the manual. The test-retest reliability was found to be very high, split half and internal consistency has been found to be high. The face and content validity of BBSS appears to be fairly high.
- **Personal Data Sheet:** A personal data sheet was constructed by the researchers to collect information regarding subject's age, cast, religion, type of family, size of family, family income, family education, types of school etc.

### *Research Procedure*

The four subscale of Bist Battery Stress scale was administered to the subjects and after the scoring we choose only those subjects who were either in average category or high category. Further we have checked some physical tests of the subjects as B.P., weight, sugar, cholesterol etc. At last subjects who were normal in all the tests were chosen and further we divided our subjects into two groups: Experimental Group and control group. In Experimental group we included those subjects who agreed with our condition. After the selection of 60 subjects we started our study with two groups: Experimental Group and control group.

### *Experimental Group*

In this group the BBS Scale was to be filled three times by the subjects for 10 weeks (Pre-Position, after 5 weeks & and after 10 weeks). We trained the subjects for yogic Intervention i.e., Pranayama.

### *Control Group*

In this group also our research procedure was for 10 weeks: In this group the BBS Scale was to be filled three times by the subjects for 10 weeks (Pre-Position, after 5 weeks & and after 10 weeks). We had not given training of yogic Intervention i.e., Pranayama to the subjects of control group. We applied all conditions of filling up the questionnaire as was in experimental group.

### *Intervention*

A yoga module was shared daily for an hour in the morning with the experimental group for 10 weeks. We had used the package of yogasana +Pranayama of seven breathing exercises as suggested by Swami Ramdevji. The seven-breathing exercise of this package are as follows: Bhastrika, Kapalbhati, Bhaya Pranayama (with tribandh), Anulom-Vilom, Bhramri, Udgeet, Omkar Japa, Pranav Pranayama (Meditation of Om with breathing). We tried to train the subjects by right method and the subjects were asked to follow the procedure strictly. Thus, the study was conducted for 10 weeks. The subjects of experimental group were observed every day for three months.

**Statistical Analysis**

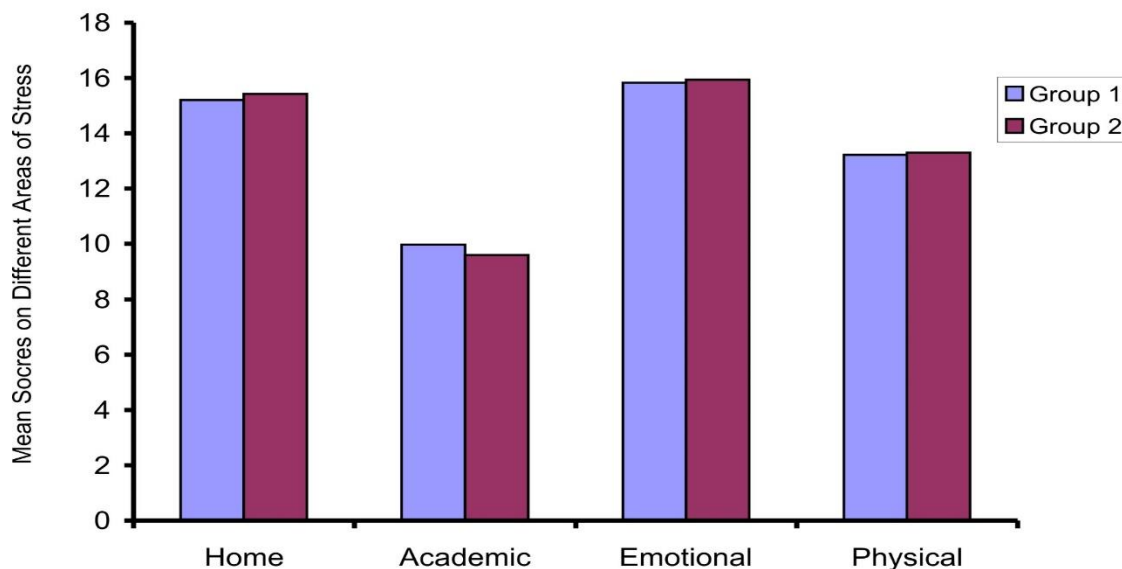
In order to arrive at some conclusions on the basis of the present study the responses of the two group were analyzed by using the statistical procedure of Mean, SD, t value.

**RESULTS AND DISCUSSION**

*Table 1 Showing Mean, SD and t value for experimental group (group1) and control group (group 2) at pre- experimental stage (n=30)*

Areas of Stress	Group 1		Group 2		't' Value	Sig. level
	Mean	S.D.	Mean	S.D.		
Home	15.21	1.66	15.42	2.41	0.198	ns
Academic	9.97	2.39	9.60	2.32	0.353	ns
Emotional	15.83	1.46	15.94	2.81	0.364	ns
Physical	13.23	2.85	13.30	3.96	0.167	ns

**Figure 1**  
Showing Mean for experimental group (group1) and control group (group 2) at pre- experimental stage.



**Pre-experimental stage:**

Result presented in table 1 reveals that the pre-experimental stage of the subjects of both the groups were not found statistically different. Both the groups are similar on all the four areas of stress i.e.-home, academic, physical and emotional stress it means that both groups were homogeneous but were poor in wellbeing.

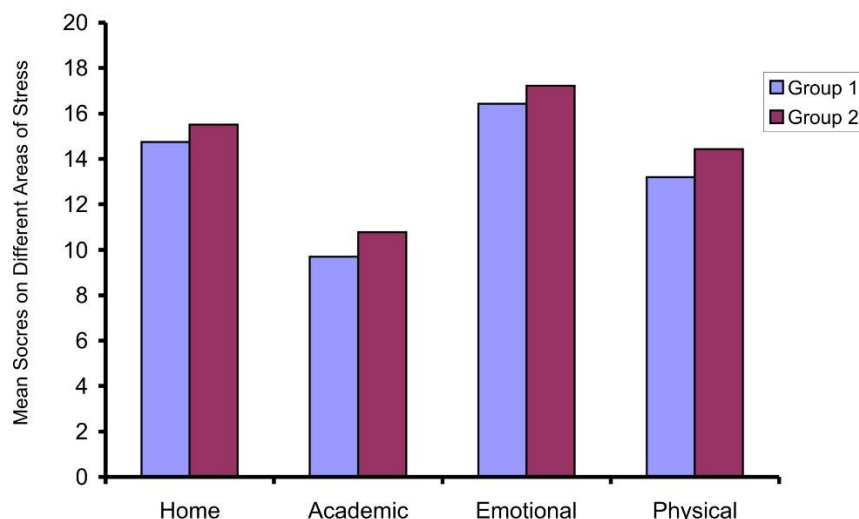
*Table 2 Showing Mean, SD and t value for experimental group (group1) and control group (group 2) at post- experimental stage 1(n=30)*

Areas of Stress	Group 1		Group 2		't' Value	Sig. level
	Mean	S.D.	Mean	S.D.		
Home	14.74	1.76	15.51	2.06	1.80	ns
Academic	9.69	1.39	10.77	2.24	3.21*	sig.
Emotional	16.43	1.83	17.23	3.19	1.89	ns
Physical	13.20	2.55	14.44	3.97	2.55*	Sig

\*denotes significant at .05 level of confidence

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**Figure 2**  
Showing Mean for experimental group (group1) and control group (group 2) at post- experimental stage 1



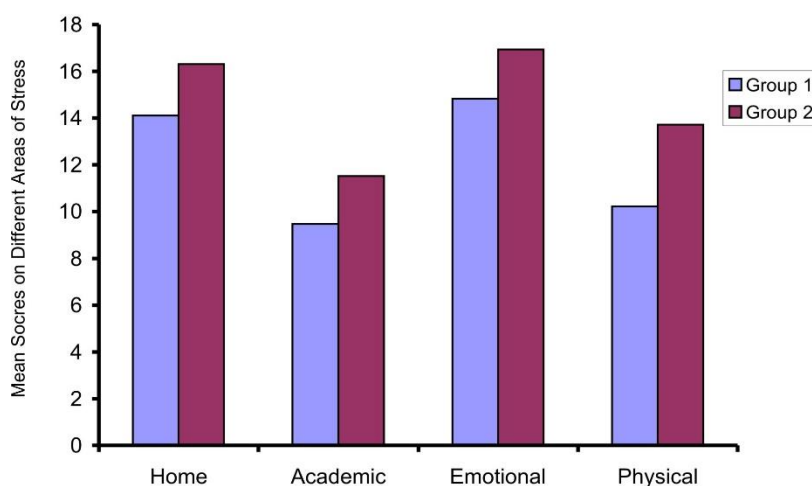
### After five week:

Table 2 leads the results that after 5 weeks of experimental treatment the subjects of experimental group differed significantly on three areas of Bist Battery stress scale from the subjects of control group as their mean scores decreased significantly. These subjects are now found to have significant difference in stress scores. This implies that 5 week practice of yoga technique has brought out significant improvement in the subjects of experimental group.

**Table 3 Showing Mean, SD and t value for experimental group (group1) and control group (group 2) at experimental stage 2 (n=30)**

Areas of Stress	Group 1		Group 2		't' Value	Sig. level
	Mean	S.D.	Mean	S.D.		
Home	14.11	1.87	16.32	1.62	5.98*	Sig
Academic	9.47	1.46	11.52	2.63	6.35*	Sig
Emotional	14.83	1.48	16.94	5.56	3.64*	Sig
Physical	10.23	1.34	13.73	2.87	7.67*	Sig

**Figure 3**  
Showing Mean for experimental group (group1) and control group (group 2) at experimental stage 2



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### After ten weeks:

The results shown in table 3 bring out that both groups were again found to differ significantly on all the four subscales of stress. The mean scores of the experimental group decreased significantly on all the four areas of stress that led to better well-being of the subjects in the areas of home, academic, physical and emotional stress than those of the control group. The subjects of experimental group became more stress free in their life. They were able to understand their problems in all the four areas and became more efficient to solve them smoothly.

The results obtained in the present study support the findings that effect of Yogic Intervention: Pranayama on stress & depression. 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 & depression. 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). 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 O<sub>2</sub> supply to the blood stream and CO<sub>2</sub> drainage. As a result, greater amount of oxygen is available for cerebral metabolism. Further as Iyengar (19980) observes regular practice of various Pranayama will promote mental calm and concentration, which resembles a state of meditative relaxation. A number of studies conclude that mental and physical relaxation leads to an integrated physiological response in which blood is redistributed to the effect of providing greater supply to the cerebral cells. All these physiological effects will have an enhancing effect on cognitive functioning.

**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.

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### *Significance of the Study*

Thus, Yoga is one of India's greatest gifts to the world. It has been practiced in India since times immorial. It is a combination of religion, philosophy and physical culture into one complete science. 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 encephalin. 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, Yoga 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. Yoga 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 Yoga.

Thus, the present study on the one hand helps to confirm the previous results starting the positive effect of Yoga: Pranayama on stress 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.

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. It may be said that Yoga: Pranayama provides us perfect physical, social and psychological well-being even under stressful conditions.

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### **Conflict of Interest**

The author(s) declared no conflict of interest.

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