



PRANAYAMA AND STRESS REDUCTION-A QUASI EXPERIMENTAL STUDY

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Abstract:

Purpose: To design, implement and to assess the effectiveness of pranayama on stress among adolescents of selected pre university college at Mangalore.

Subjects: The setting was Vishwa Mangala Pre university college at Mangalore. A sample of 70 were included in the study (control group, n=35, experimental group, n=35).

Design: Quasi experimental pre-test post-test design

Methods: SQ stress scale was used to compare the post test stress level of experimental and control group

Results: There was a statistically significant difference in the post test stress score of experimental group. As the calculated 't' value ($t=17.016$) was greater than the table value ($t_{68}=1.668$) at 0.05 level of significance, there was a significant reduction in the level of stress in the experimental group after the practice of pranayama. But there was no significant reduction in the level of stress in the control group.

Conclusion: Findings from this research support the current literature base suggesting that practice of pranayama is a relaxation technique to reduce stress

KEY WORDS:

Adolescents, Pranayama, Stress

.INTRODUCTION

BACKGROUND

“When the breath wanders, the mind is unsteady, But when the Breath is still, so is the mind still.”

Hatha Yoga Pradipika I

The adolescent period is considered to be difficult and critical. It is mainly due to the numerous qualitative shifts that takes place at this time. Moreover, the changes that take place are often associated with the manifestation of significantly subjective difficulties of various order².

Today, yoga is found in gyms, health clubs, and even schools across the world. Children see images from yoga in magazines and television, and many have even tried this ancient form³. Yoga is an ancient mind-body technique from India to discipline the mind and body. Yoga developed in the Indian sub-continent over thousands of years⁴.

Yoga is historically considered as a spiritual discipline and it has also been used clinically as a therapeutic intervention. Breathing is life. It is one of our most vital functions. From the Yogic point of view, proper breathing helps to bring more oxygen to the circulation and brain, and controls Prana or the vital life energy. Pranayama is control of breath. “Prana” is breath or vital energy of the body. Prana represents the pranic energy responsible for life or life force, and “ayama” means control. So Pranayama

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means control of breath. One can control the rhythms of pranic energy with pranayama and achieve healthy body and mind. Pranayama is derived from two Sanskrit words - Prana (life force) and Ayama (control).⁵

At the stage of adolescence, independent life feelings emerge and a lot of emotional problems are felt. They don't want to reveal the strange happenings inside them until they have gained some sense of security. Healthy adolescents reflect a country's potential human resources and its future greatly depends on them.⁶

A study conducted on the stress and related problems of teens in the city of Baltimore showed that the biggest causes of adolescent stress are school work 68% parents 56% , friends problems and issues 53%, romantic type of relationship 48% drugs and bad neighbourhoods 48%.⁷

One in five persons in the world today is an adolescent. Eighty-five percent of them live in developing countries and of these sixty percent live in Asia [WHO]. In India this age groups forms 21.4% of the population.⁸ According to the Registrar and Census Commissioner's Office, Govt of India, about one-fifth of India's population is in the adolescent age group. The population of Dakshina Kannada is 26,91,937, among these 1,55,168 are adolescents.⁹

Adolescence period is often difficult for boys and girls to cope up with the situation. The main reason is that throughout the childhood their problems were met and solved by parents or teachers. Because of this many adolescents are inexperienced to cope up the problems alone. Secondly, as the adolescents want to feel that they are independent, they demand the right of coping for their own problems.¹⁰

Yogic practices like yama, niyama, pranayama, asana, dhyana not only helps in reversing the progress of these diseases but also improve the resistances of the body of the psychophysiology level. Such non-medical measures should be adopted to overcome the stressful situation and to maintain alert, mental state.¹¹

Various techniques are there to control and manage adolescent stress like health education, providing practical suggestion, and various relaxation techniques. Pranayama is the simplest way to reduce stress among adolescents.¹⁰ A study was conducted to evaluate the perceived level of stress in a rural area of Pondichery. The study was based on stress module. Simple random technique was used to select the sample. The result showed that 3.2% perceived mild stress, 90.32% perceived moderate stress and 6.46% had severe stress.¹²

According to Mind Body Medical Institute at Harvard University, relaxation technique are helpful tools for coping with stress and promoting long-term health by slowing down the body and quieting the mind. Pranayama may be considered an intermediate between these physical and mental yogic exercises. It is the breathing exercise and voluntary control of energy within the body; we can have better health if we absorb more prana.¹³

Nowadays most of the adolescents' experiences stress which affects their academic performance indirectly. As health care professionals, we have an important role in identifying stress among adolescents and teach the alternatives for reducing stress. Such alternatives will help the students to develop a capacity to control and manage their stress. Hence the investigator felt the need to evaluate the effectiveness of pranayama for reducing stress among adolescent group.

OBJECTIVES

To assess the level of stress among adolescents.

To determine the effectiveness of pranayama on stress among adolescents.

To find the association between the level of stress and selected demographic variables

Hypotheses

All hypotheses were tested at 0.05 level of significance.

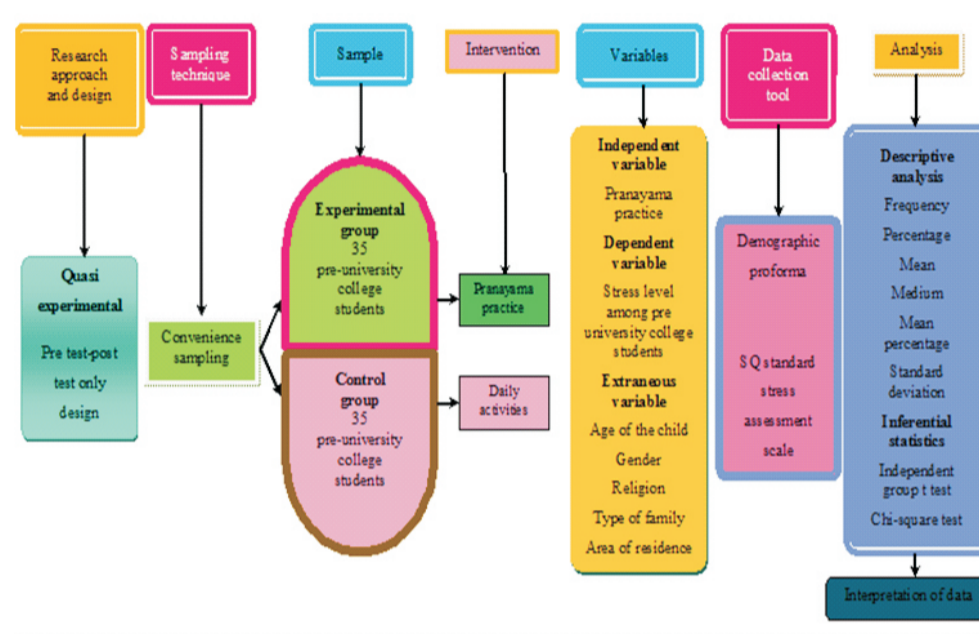
H1: The mean post-test stress score of the students will be significantly lower than the pre-test stress score.

H2: There will be significant association between stress level and selected demographic variables.

Conceptual Framework

The conceptual framework of the present study is based on Betty Neuman's Healthcare System Model. Betty Neuman's model focuses on stress and stress reduction, and is primarily concerned with the effect of stress on health.¹⁴

RESEARCH METHODOLOGY



Instrument

The tools used for the data collection were:

- Section A: Baseline proforma
- Section B: SQ stress scale
- Section A: Baseline proforma

The baseline proforma consisted of 6 items, age, gender, religion, type of family, education, and area of residence

Section B: SQ stress scale

The SQ stress scale was used by the investigator to observe the adolescents' stress level. It included 12 questions. The maximum score was 12 and minimum was 0.

The scores were arbitrarily categorized as follows:

Table1. Interpretation of level of stress

Category	Score
Mild stress level	0-4
Moderate stress level	5-8
Severe stress level	9-12

Stress scale

The following questions pertain to certain physical as well as emotional problems experienced by adolescents. If you face any difficulty with regard to the problem mentioned in each question, put a tick mark in the "yes" box and otherwise put a tick mark in the "no" box

	Yes	No
1. Do you get exhausted very soon?	[]	[]
2. Do you experience a feeling of heaviness inside your chest?	[]	[]
3. Do you find difficulty in concentrating on a given subject?	[]	[]
4. Are you constantly worried about your future?	[]	[]
5. Are you feared of failure?	[]	[]
6. Do you always feel stressed?	[]	[]
7. Are you always gloomy?	[]	[]
8. Do you find difficulty in decision making?	[]	[]
9. Do you breakdown or cry very soon?	[]	[]
10. Do you experience loss of appetite?	[]	[]
11. Do you feel loneliness?	[]	[]
12. Are you in the nature of forgetting the things?	[]	[]

POCEDURE

Permission was obtained from the institutional ethics committee and the principal of the Vishwa Mangala Pre-university College. The principal introduced the investigator to all the students to obtain the cooperation of the students in practicing pranayama. 70 pre-university college students selected by convenience sampling technique on the basis of inclusion and exclusion criteria. The samples who had moderate and severe stress were included for the study. Further they were divided as 35 each in the control and experimental group. On the first day the investigator observed the setting, structure and the appliances for use. The investigator obtained consent from the parents and from the samples to participate in the study. On the first day pre-test stress level of the control group and experimental group was assessed. On the same day after the pre-test pranayama intervention was given only for the experimental group. It was given for 10 days continuously for 12 minutes every day in the morning. After 10 days post-test conducted for both experimental and the control group.

RESULTS AND DISCUSSION

In the experimental group highest percentage (51.4%) of the adolescents were in the age group of 17 years whereas none were in the age group of 15 years. Majority (54.3%) of the adolescents who participated in the study were females. Highest percentage (40.0%) of adolescents belonged to Hindu religion, only (28.6%) belonged to Muslim religion. Majority (62.9%) of the adolescents were from joint family, whereas a few (37.1%) were from nuclear family. All the subjects were studying in II PUC; highest percentage (57.1%) were from urban area.

In the control group highest percentage (71.4%) adolescents were in the age group of 16 years, whereas least (11.4%) were in the age group of 15 years. Majority (88.6%) of the adolescents who participated in the study were males. Highest percentage (62.9%) of adolescents belonged to Hindu religion, only 2.9% were Christian. Majority (65.7%) of the adolescents were from joint family, whereas only a few (2.9%) were from extended family. All the subjects were studying in I PUC. Highest percentage (57.1%) were from rural area.

Data presented in figure.1 and 2 shows that in the experimental group 65.7% had severe stress and 34.3 had moderate stress in the pre-test, whereas in the post-test after pranayama 91.4% had mild stress, 8.6

had moderate stress and none of them had severe stress. In the control group 60 % of the sample had severe stress and 40% had mild stress in the pre-test and it remained the same in the post-test. It was observed that in the experimental group 65.7% had severe stress in the pre-test, whereas in the post-test none had severe stress.

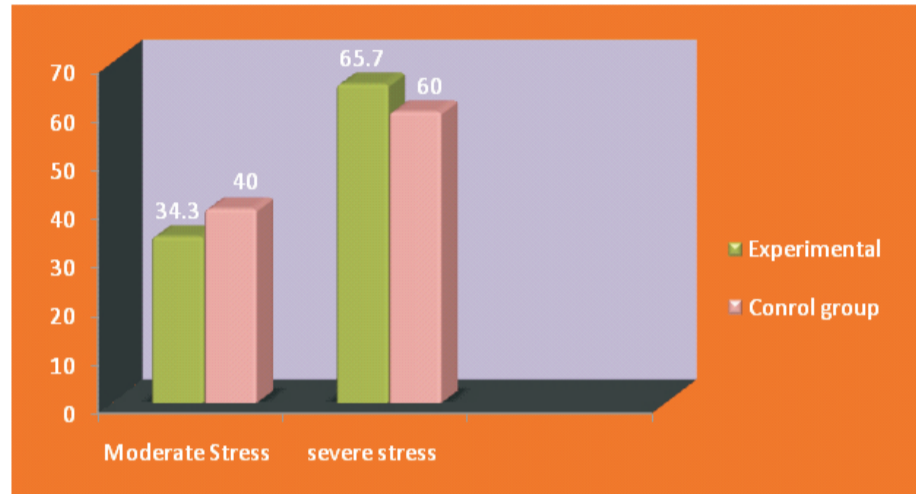


Figure 1. Pre test level of stress

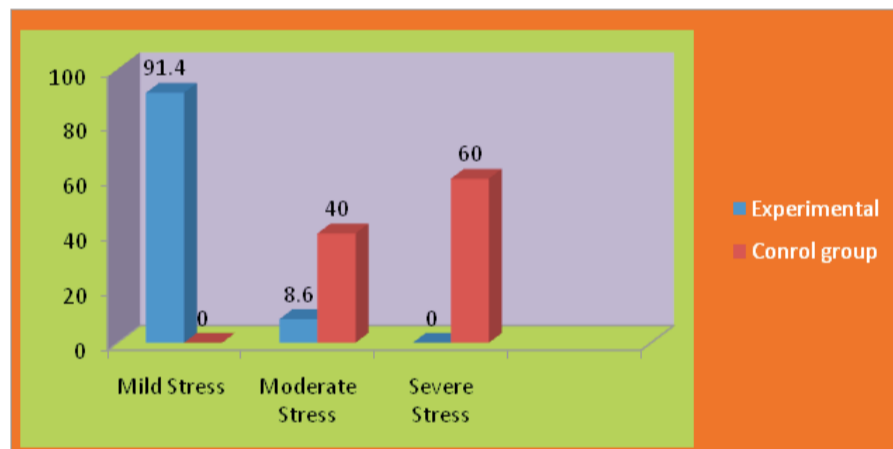


Figure 2. Post-test level of stress

Table.2 Mean, SD, mean difference and 't' value of post-test stress scores in experimental and control groups
N=70

Group	Mean difference	SD	't' value
Experimental group	5.657	1.939	17.016*
Control group	-0.029	0.382	

$t_{68}=1.668$ $P<0.05$ *significance.

Data in Table.2 shows that mean difference of the post-test stress score (5.657) of the experimental group after pranayama was lower than that of the control group (-0.029). As the calculated 't' value ($t=17.016$) was greater than the table value ($t_{68}=1.668$) at 0.05 level of significance, there was a significant reduction in the level of stress in the experimental group after the practice of pranayama. But there was no significant reduction in the level of stress in the control group. The overall findings shows that there was significant difference between the post-test stress level of experimental and control group. It was also found that there was no association found between stress and demographic variables.

This study was supported by a study to assess the effectiveness of meditation on stress among juvenile home children of Vyyoor central jail Kerala. Assessed stress score showed that there is a significant difference between pre-test and post-test stress score. The limitations of the present study were, it was confined to a specific geographical area (selected pre-university college at Mangalore), which obviously imposes limits to any larger generalization. The study was confined to small number of subjects. However, it could be conducted on a larger sample for generalization.

CONCLUSION

Healthcare professionals have the responsibility of moulding a good generation for tomorrow. Teachers should ensure that students are provided with a curriculum that offers the opportunity to relax and reduce their stress. Practising pranayama will help the adolescents to reduce the stress and this practice will help them to lead a peace full adolescent life. It is an inexpensive and highly effective technique to reduce stress among adolescents.

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